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Title page 1

Use this page to introduce the product

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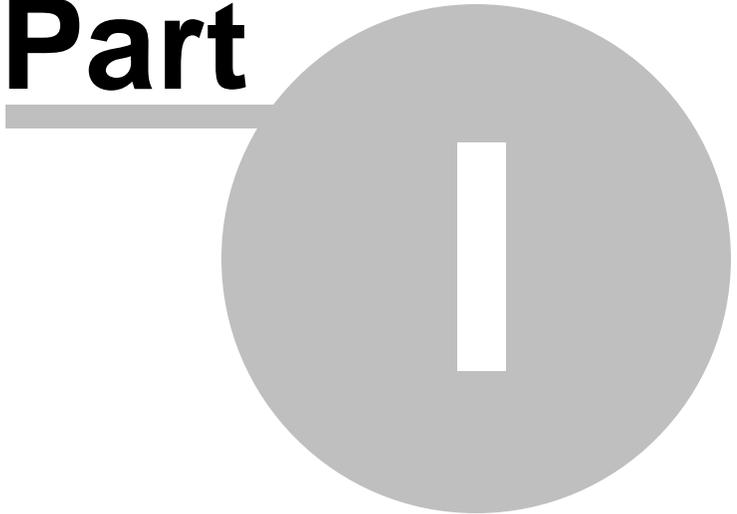
Foreword

This is just another title page
placed between table of contents
and topics

Top Level Intro

This page is printed before a new
top-level chapter starts

Part



1 License

NetCart VisualCron End-User License Agreement

This VisualCron End-User License Agreement (this "Agreement") is dated as of the date specified in the Sales Order (the "Effective Date") by and between You ("Licensee") and NetCart AB ("Licensor").

License Grant

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Documentation

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Update of the online Documentation is generally done with a new software release and as this is noted to our customers with a valid licence and/or registered users, this also indicates that the Documentation may be updated. See the specific release note for areas that are subject to the update.

Trial period

Each VisualCron product has a trial period of 45 days. The trial period gives you a chance to fully test the software, for free. After the trial period has ended you will no longer be able to control the VisualCron Server through the VisualCron Client.

If the trial period has ended, there is no way of using future upgrades without ordering the full license. See Upgrade/Updates.

Activation code

The activation key will lock the Software to the computer it is installed on. Once the activation key is used the code is consumed. This means that you only can activate once. Under limited circumstances, like the server has crashed, the activation key can be unlocked and consumed again. This requires special arrangement with a need to identify you as a buyer. This operation is not prioritized and unlocking may only be done once. Notwithstanding anything herein, we represent and warrant that we will not include any Trojan horses, worms or other codes designed to disable the Software once installed pursuant to a full license.

License types and limitations

Single server licenses - can be installed in and moved but may not be used on more than one server at the same time. This is installation purpose; may it be test, development or production machine.

Site license - allows unlimited server installations within a single physical location (typically a data center).

Country license - allows unlimited server installations within a single country.

World license - allows unlimited server installations world wide.

For "unlimited" cloud installations it is up to discussion depending on usage, expected quantity and locations. The suggested solution may result in a specific agreement that results in 2 or more Site licenses, a Country license or a World license.

Upgrades/Updates

Updates with new functionality and bug fixes may be released anytime. You need a Maintenance pack license in order to upgrade to a newer version than was existing at purchase date. The Maintenance

license also give you access to priority support. The Maintenance pack must be purchased at the same time as when you purchase the license or within 30 days.

Bugs

If you find bugs, please report them on the [contact web page](#).

Lifetime of VisualCron*Support*

The support is limited to the way using of the Software functions included in the VisualCron download. No products or commands, outside the VisualCron download, are supported. The support is limited to the product life cycle described in Upgrades/Updates.

Term and Termination

This license agreement takes effect upon your downloading or acquisition of the VisualCron product and remains effective until terminated. You may terminate it at any time by destroying all copies of the VisualCron product in your possession. This license agreement will terminate upon 30 days written notice if you fail to comply with any of its terms or conditions. You agree on termination of this license to destroy all copies of the VisualCron product in your possession.

Product lifetime

The goal is to keep the VisualCron product "alive" and online as long as possible. The VisualCron product may cease to exist anytime without notice. All VisualCron product services like support, upgrades and unlocking will then also cease to exist. Notwithstanding anything herein to the contrary, in the event the VisualCron product ceases to exist with respect to support or availability, you shall retain all rights to use the product pursuant to the perpetual license set forth herein, except for the right to receive support, Upgrades or Updates.

No Warranty

VisualCron is a useful but also powerful tool. Any misuse can cause loss of data. The VisualCron product has no warranty of fitness, suitability for a particular purpose or satisfactory quality. The VisualCron product is provided to licensee "as is". NetCart is not responsible for any damage that may come through any use of the VisualCron product, except to the extent caused by our gross negligence or intentional misconduct.

General Provisions

This written license agreement is the exclusive agreement between you and us concerning the VisualCron product and supersedes any prior communication, advertising or representation concerning the VisualCron product.

This license agreement may be modified only by a writing signed by you and us.

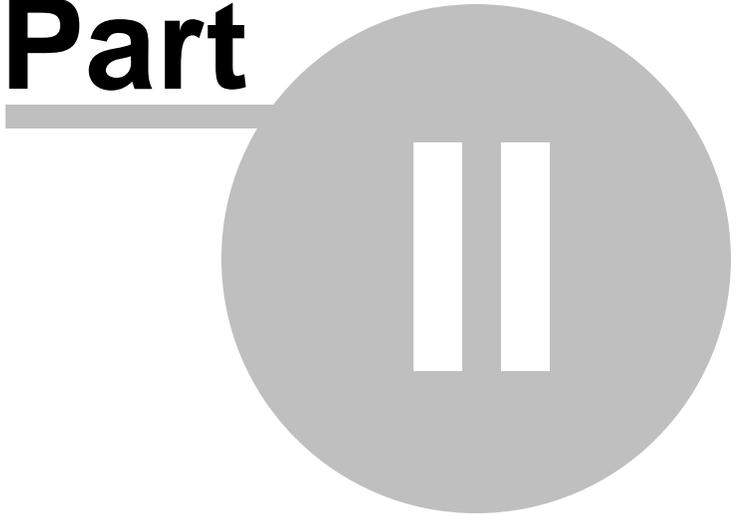
In the event of litigation between you and us concerning the VisualCron product, the prevailing party in the litigation will be entitled to recover attorney fees and expenses from the other party.

Downloading and installing this Software indicates your acceptance of the foregoing agreement. If you choose to decline the foregoing agreement, you should not download or install the software.

Top Level Intro

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top-level chapter starts

Part



2 VisualCron - Automation tool for Windows

VisualCron is an advanced Job/Task scheduler for Windows.

2.1 About VisualCron

VisualCron is a tool/utility that runs other commands/programs/tools/utilities at predefined time(s), interval(s) or events. VisualCron is designed for Windows with the intention to simplify scheduling of Windows Tasks.

VisualCron is provided by the NetCart company (neteject.com), a company that develops applications and web services. Don't hesitate to use [contact web page](#) for improvement suggestions, problem reports or business proposals.

2.2 VisualCron Documentation

This is the VisualCron documentation, build date 2018-01-05.

This document describes VisualCron 7.

See changes from VisualCron 4.x to 5.x [here](#) and 5.x to 6.x [here](#) and 6.x to 7.x [here](#).

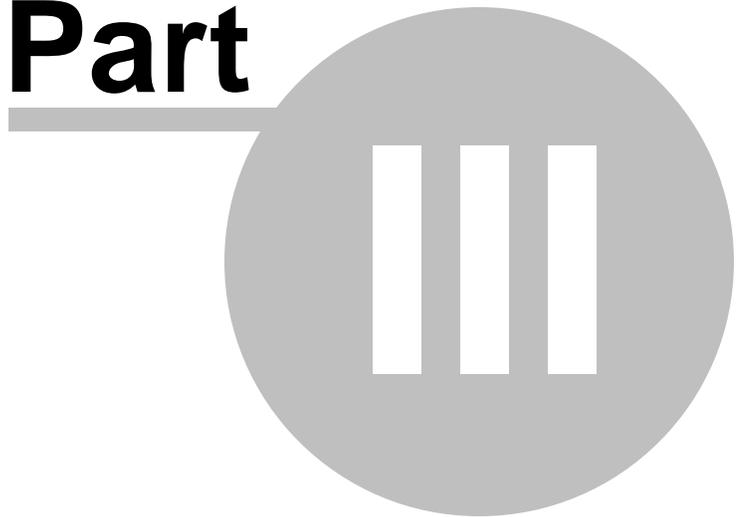
This documentation is provided as is, please check [visualcron.com](#) for latest documentation and support information. For a quick introduction in VisualCron, click on the top right *flash tutorial* area in the [VisualCron web site](#). The goal is to have a tool tip to every enter field, label and combo box in the VisualCron Client application. Hovering the mouse over a field is an easy way to get quick information and what to enter.

Note: If you *Download help file* from [visualcron.com](#), don't forget to "unblock" the file before opening. Due to the Windows security system, the help chapters might show an "Illegal address" message indicating a wrong address entered in an internet browser, instead of the help text. Right-click on the downloaded file *Properties* -> **General** -> *Unblock* (Windows XP).

Top Level Intro

This page is printed before a new
top-level chapter starts

Part



3 Get VisualCron

You can get your copy of VisualCron from several sites on the Internet. To be sure to get the latest version, we encourage you to download VisualCron from this [web page](#).

3.1 System Requirements

VisualCron is designed for Windows based computers and runs on the following operating systems:

- Windows XP
- Windows 2003
- Windows 2008
- Windows 2012
- Windows Vista
- Windows 7
- Windows 8

Other requirements:

- .NET Framework, version 4.0 or above

Requirements for other software:

- Skype installation, useful for communicating with the VisualCron support
- PDF reader (e.g. Adobe Reader), required for reading of some documents

3.2 Download, Install, Upgrade and Uninstall

Download

VisualCron 7 utilizes functions and features in the .NET Framework 4.0. The .NET runtime, typically Version 4.0 Redistributable Package, can be downloaded from [Microsoft](#).

Download the latest VisualCron version from [VisualCron](#).

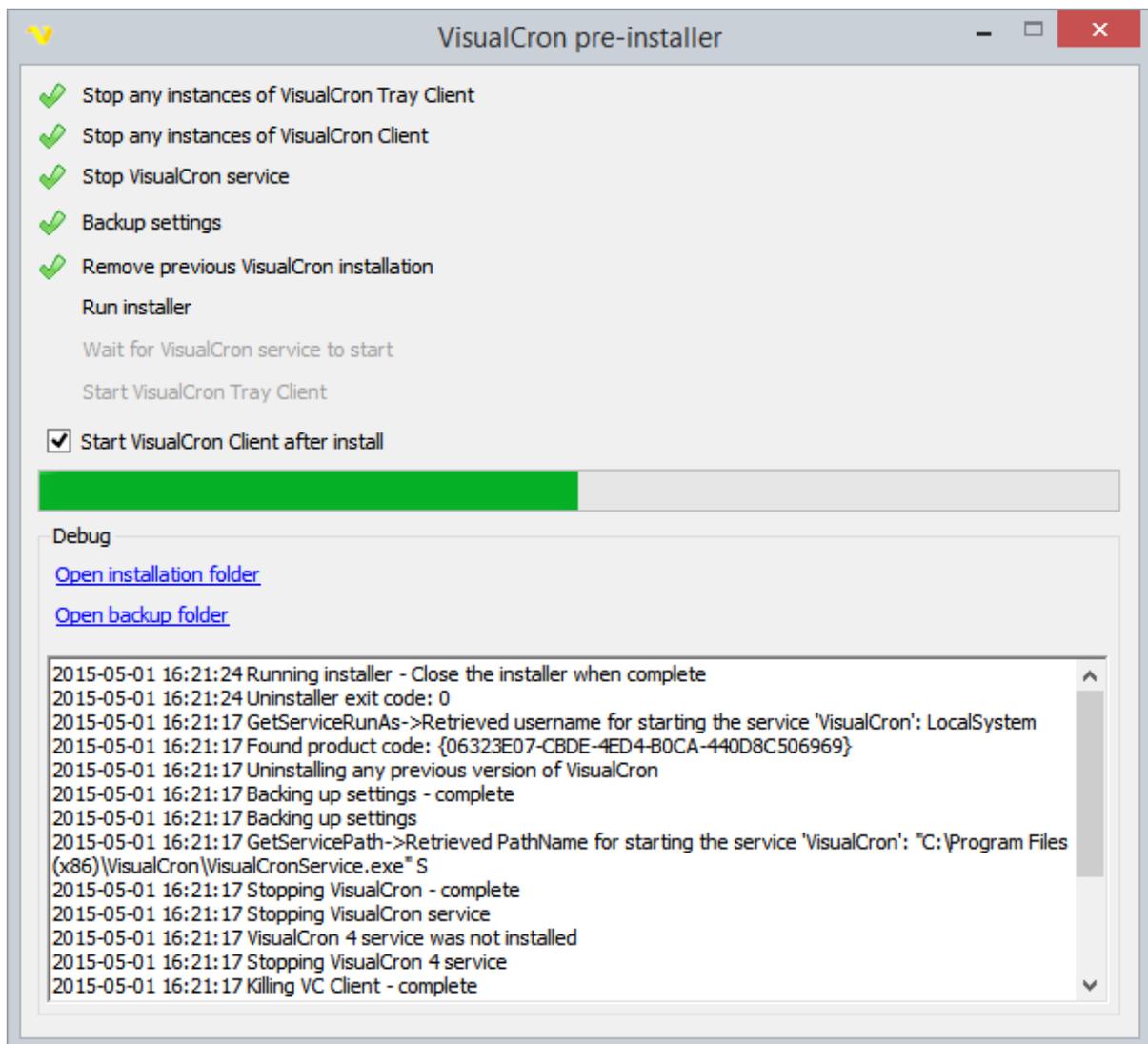
Backup

Always make a backup of existing settings to a safe location before upgrading. This way you can rollback to any previous version if needed. You backup existing settings by connecting with Client to Server. Choose **File > Import/Export > Export settings** tab.

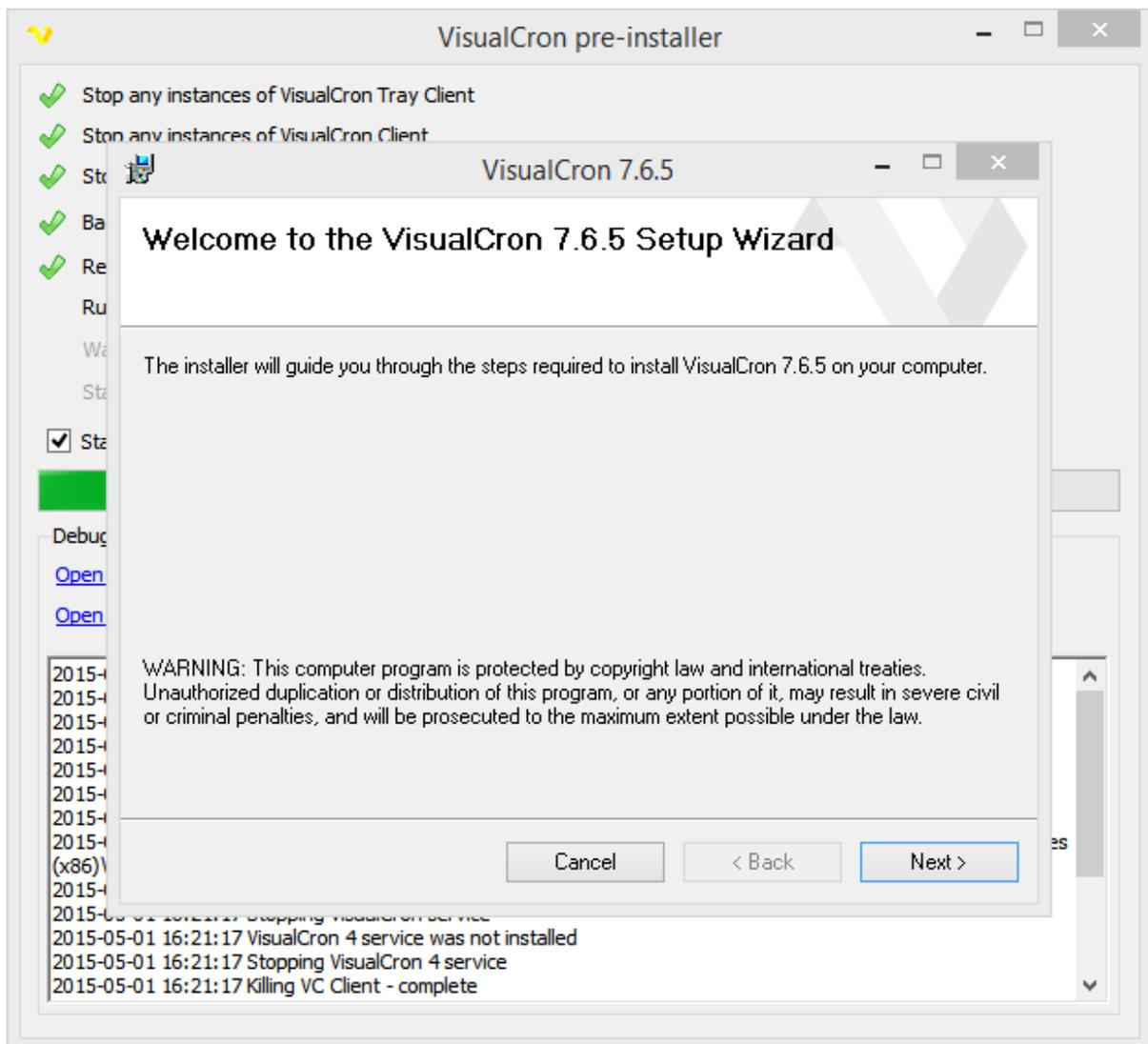
Install/Upgrade

The below steps cover how to install VisualCron. Please note that the installer uninstalls the current installation. No manual uninstall needed first.

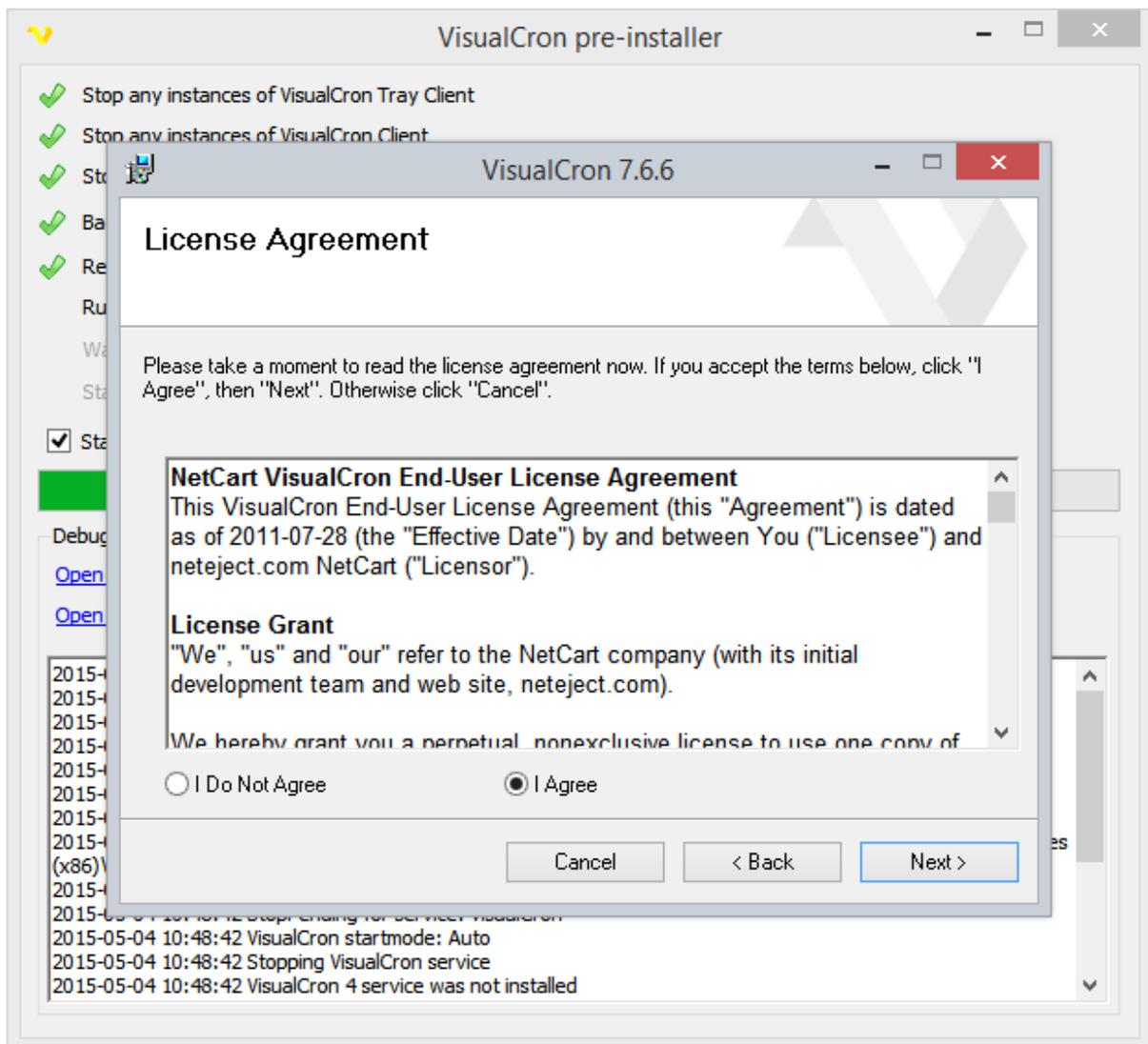
1. Double click on the VisualCron.exe install executable and the below window will appear. This is the pre-installer that is preparing installation files for the msi package - for example, stopping existing applications and uninstalling VisualCron.



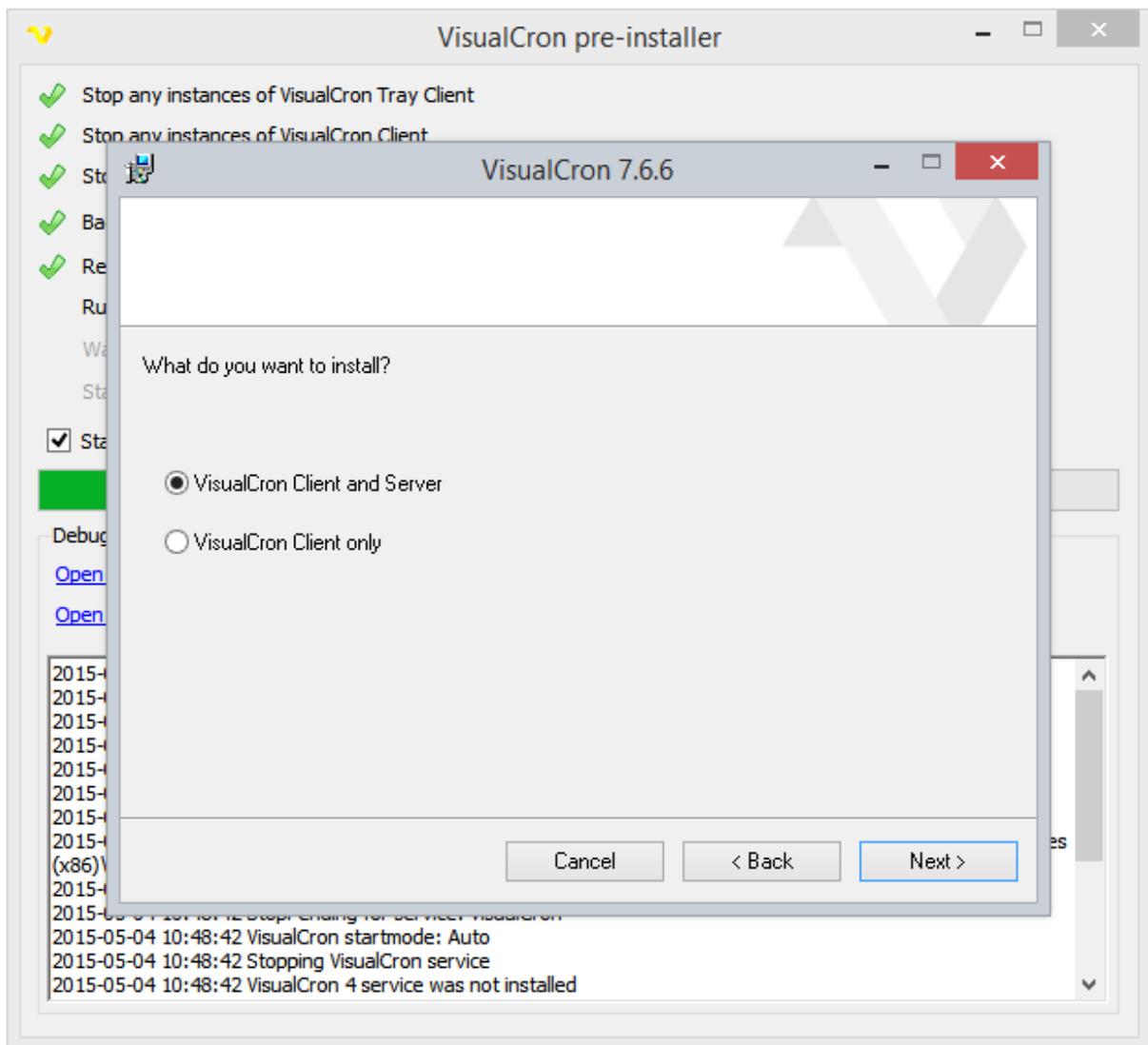
2. When the pre-installer is complete it starts the msi-package



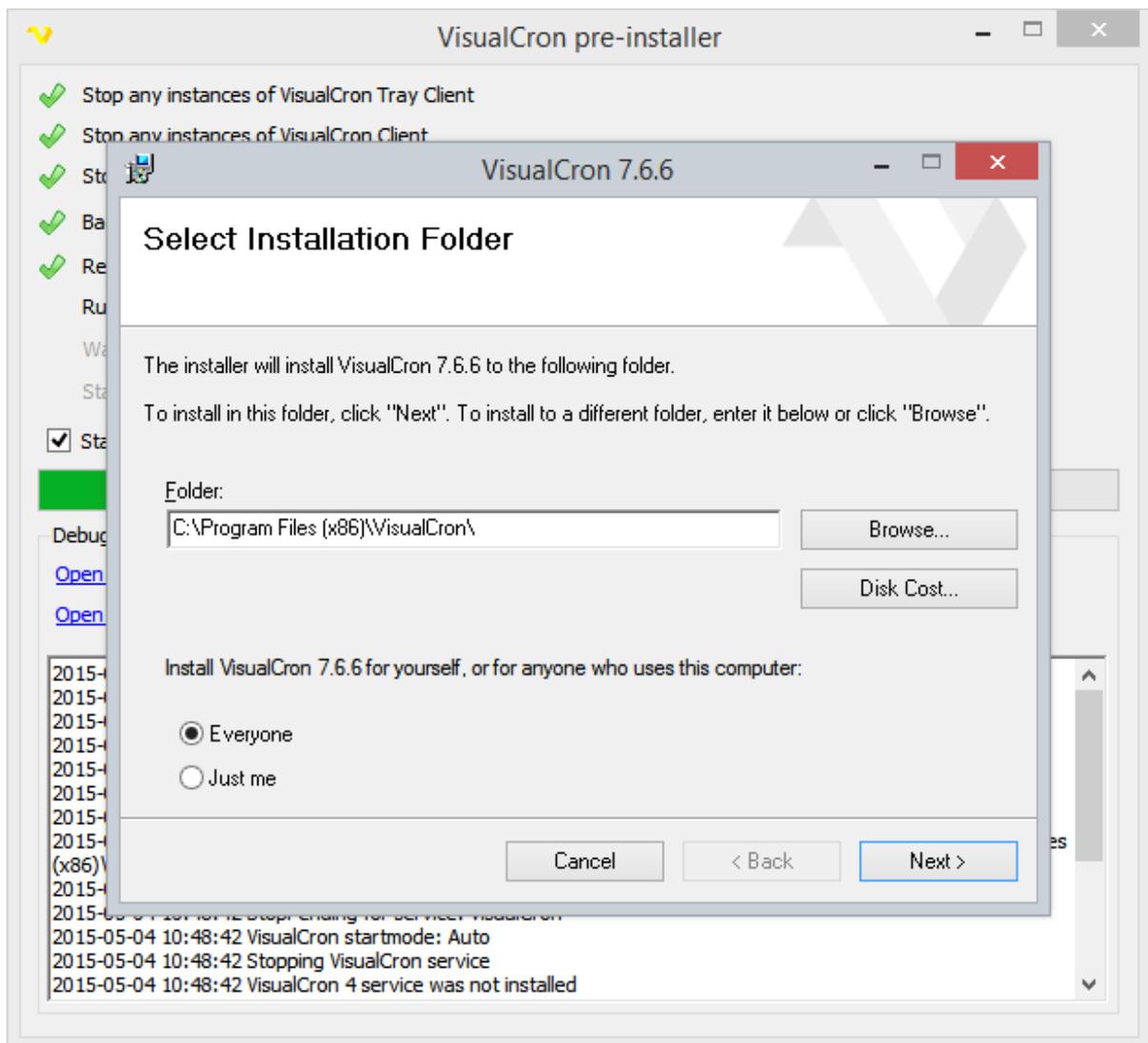
3. Select I Agree in the License Agreement page and click *Next*



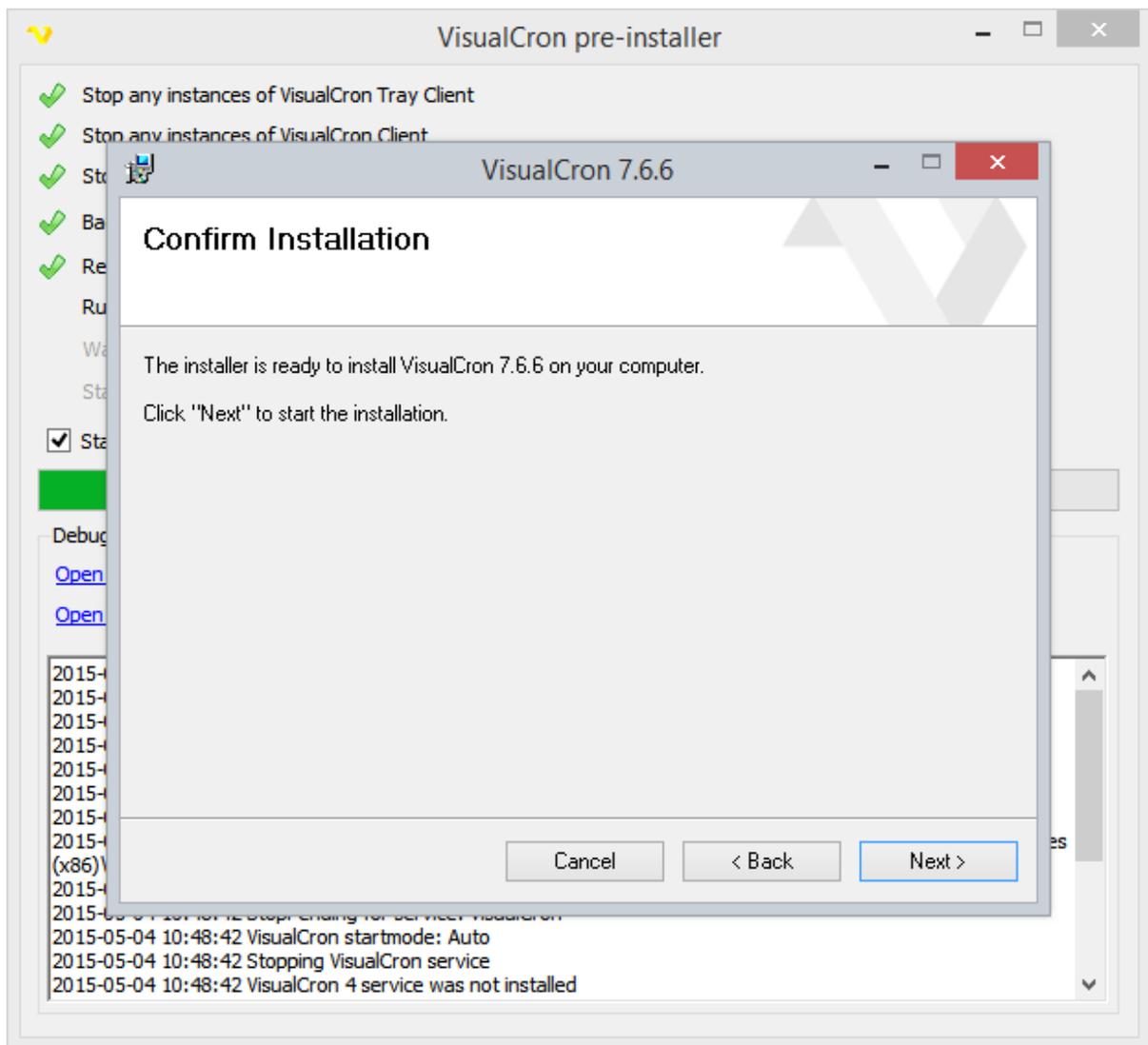
4. The VisualCron installation executable contains installation files both for the VisualCron Client and the Server. You may choose to install both by selecting the first item or just the Client by selecting the second item. When installing just the client the service for the Server will still be installed but "Disabled". If you later need to run the Server on this computer, you can change the service to "Automatic" in Control Panel > Administrative tools > Services > VisualCron and then mark and "Start" the service. Click Next to continue.



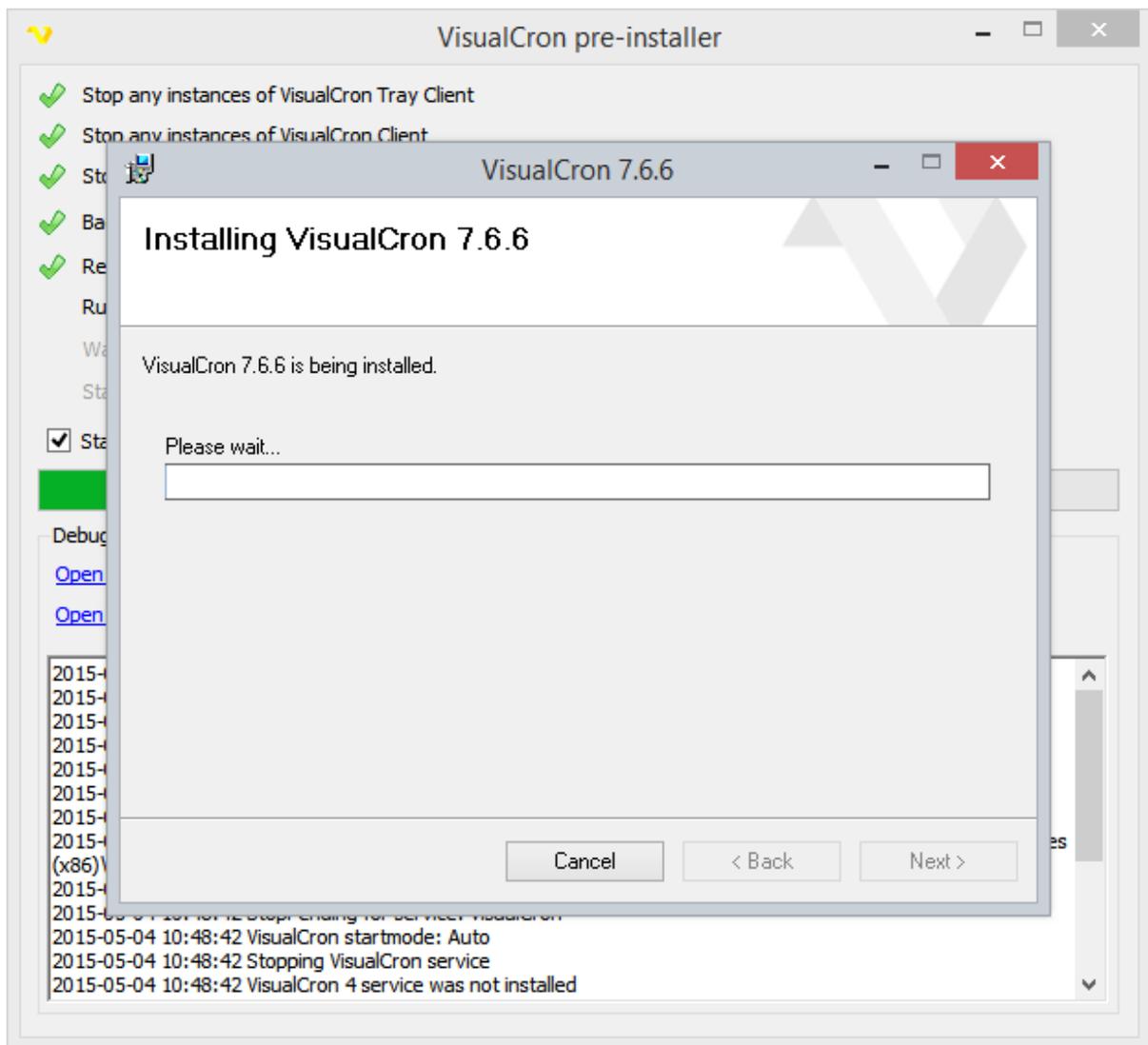
5. Now it is time to choose the installation folder. If you have no objections of the suggested choice just leave it as it is. Click *Next* to continue.



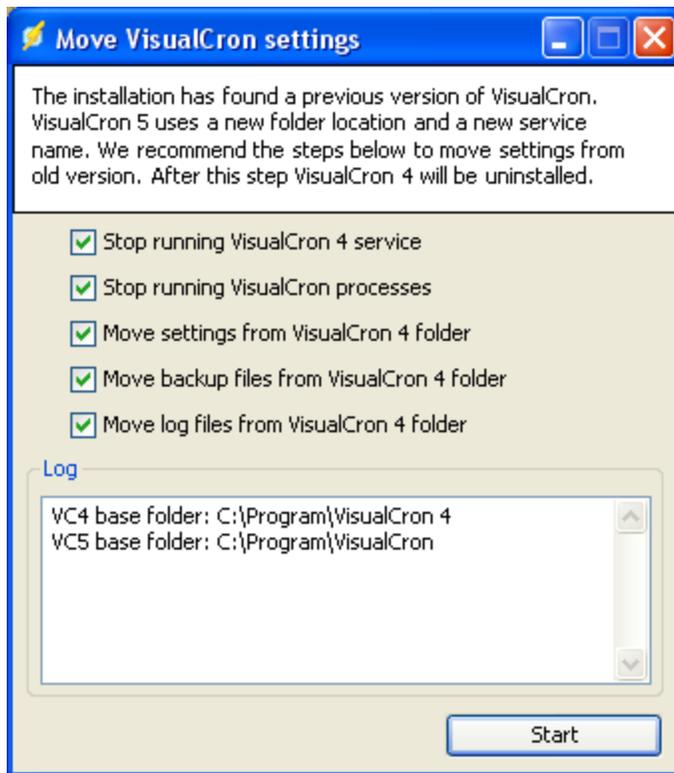
6. This window shows that VisualCron is ready to copy the files and perform the installation. Click *Next* to continue.

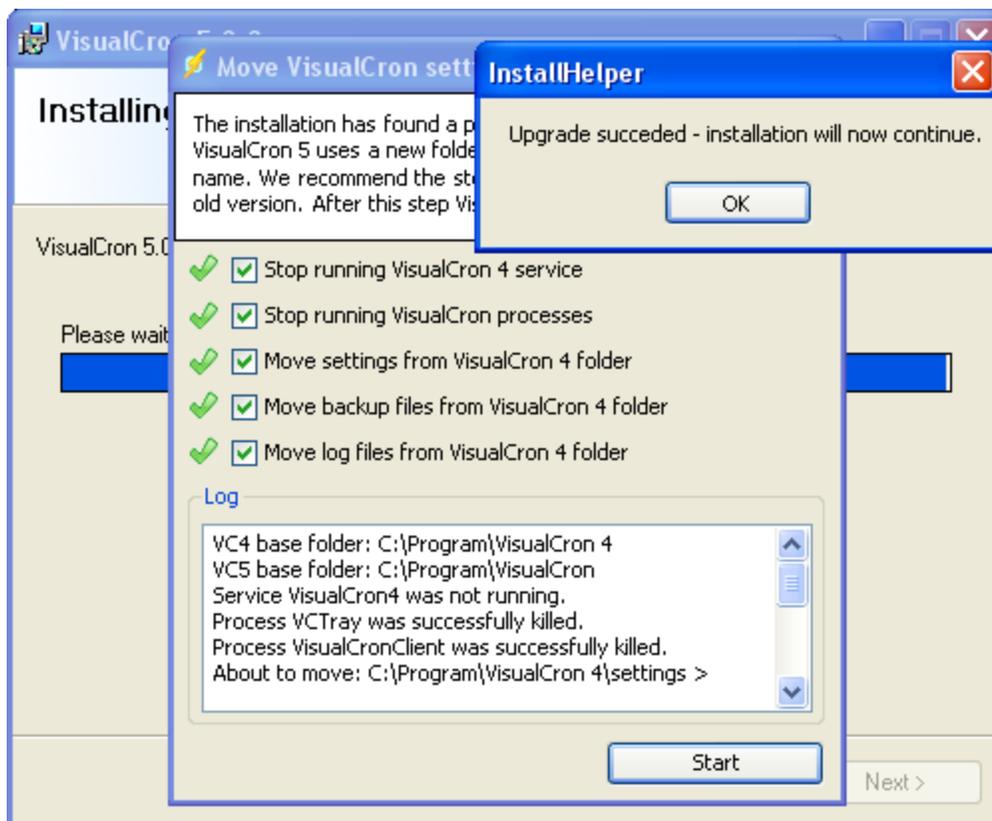


7. The installation has been started and the progress bar shows the current status. Please be patient. The installation may take some minutes depending on the speed of your computer.

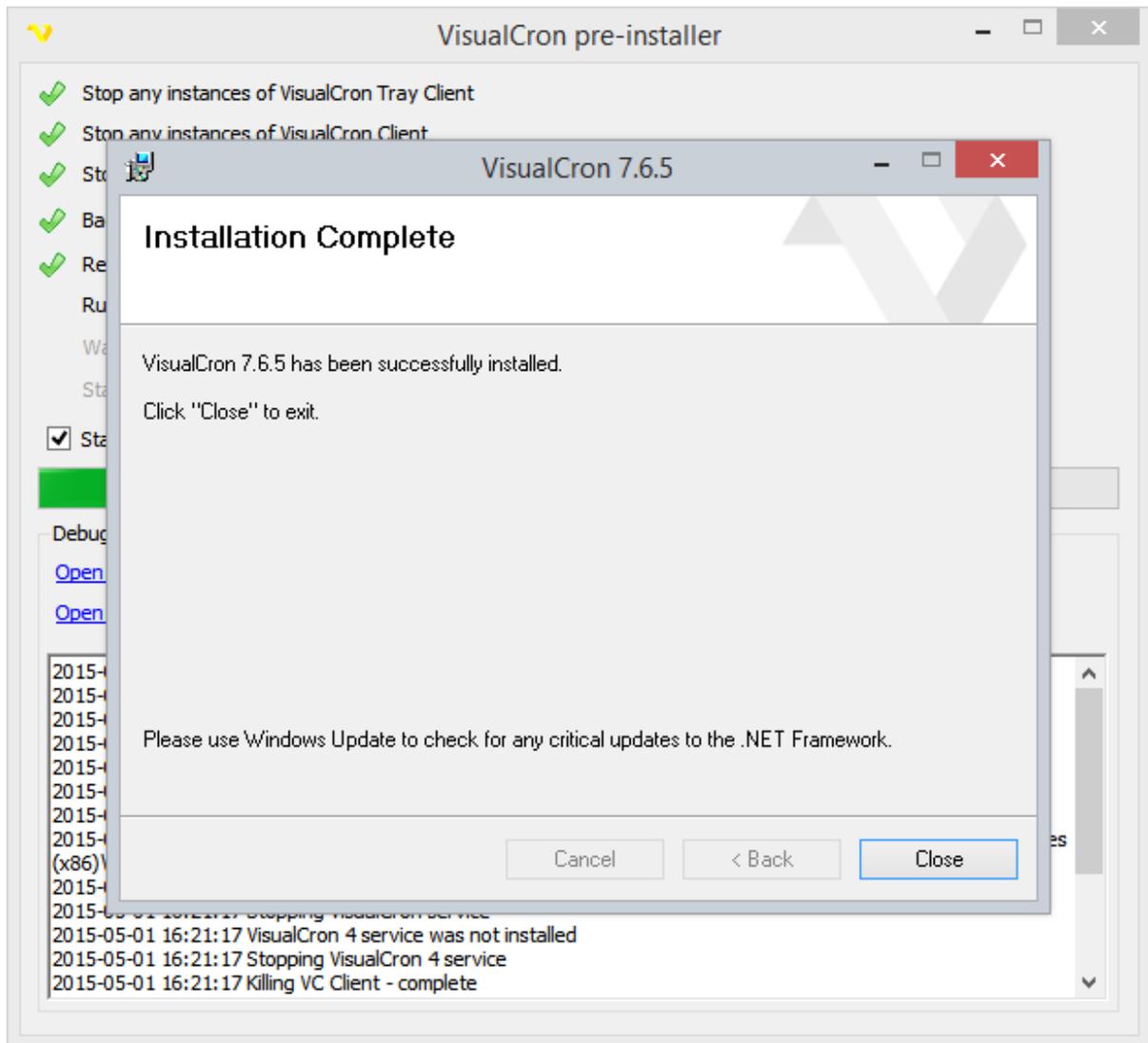


8. The below window will only appear if you have a previous VisualCron installation. VisualCron 5 will be installed in the new %PROGRAMFILES%\VisualCron\ folder and the VisualCron service will be started with the "VisualCron" name. Click *Start* to proceed with the listed upgrade steps.

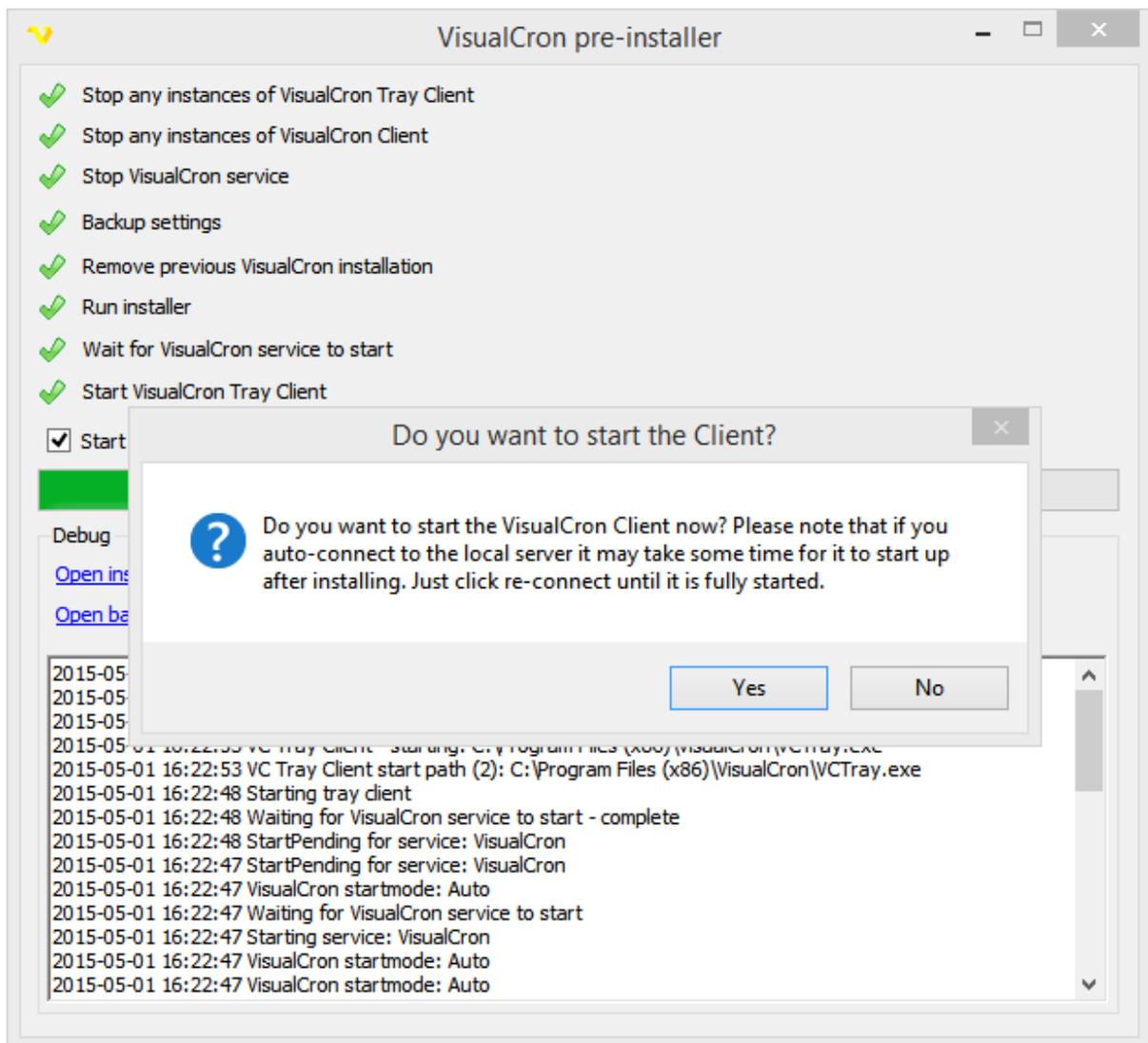




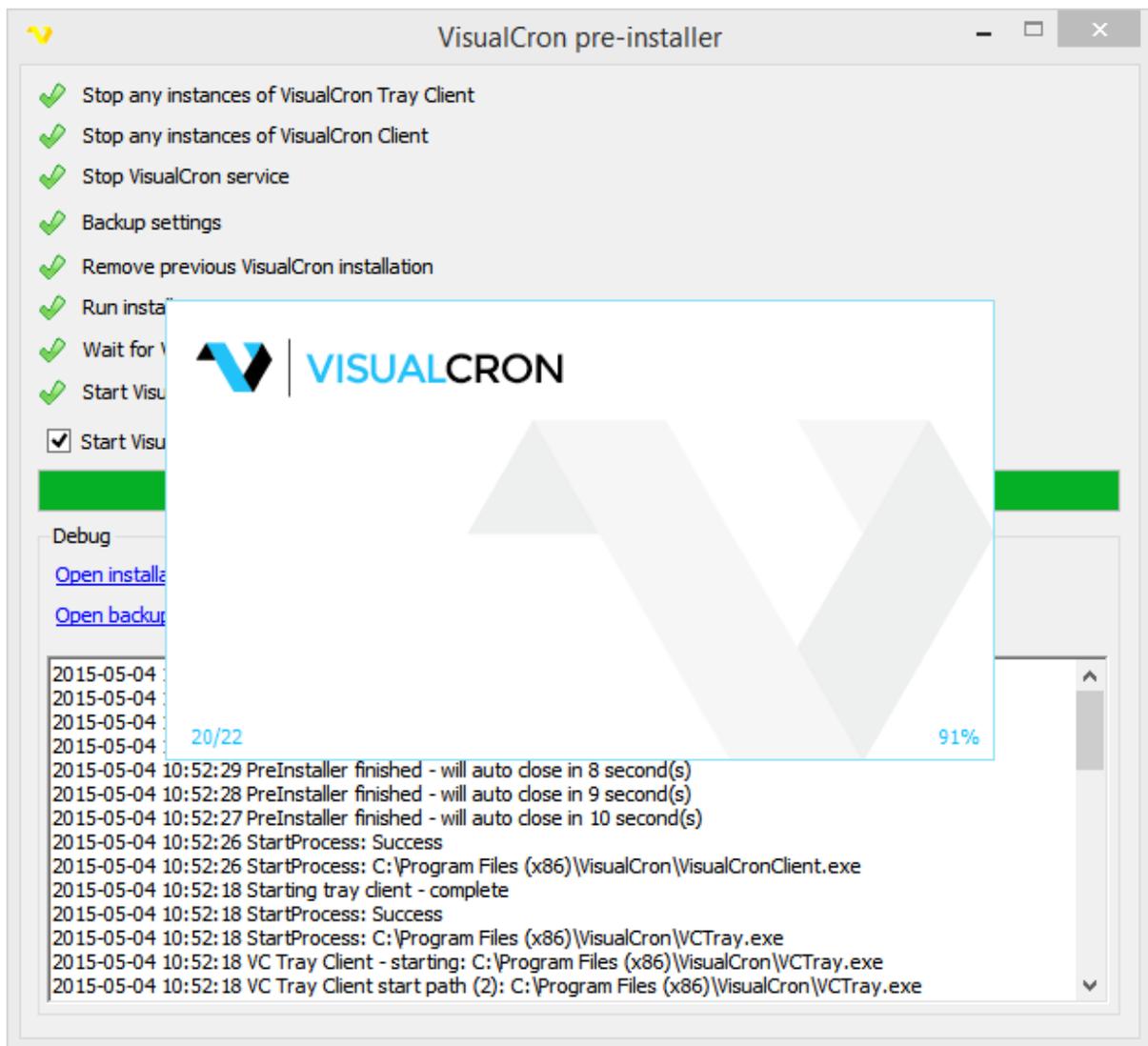
9. The install is now finished. If you have a previous VisualCron installation, it will be uninstalled in the background. Click *C*lose to continue.



10. When you have closed the msi-installtion the pre-installer asks you if you want to start the VisualCron Client. Click Yes to start it.



11. The Client is starting. If you get a connection error at startup then wait 60 seconds and click Yes to reconnect. There is a lot of configuration and loading during startup which might affect first time startup time for the Server.



Firewall

If you have some kind of firewall activated, this application might require user interaction during installation and the initial start of VisualCron. A firewall should detect both that VisualCron is trying to act as a server and that VisualCron is trying to access internet. Normally, you shall respond with something like "allow all connections on all ports" for VisualCron initiated requests.

Upgrade

If you already have VisualCron installed, you will get an upgrade message when trying to install. This message informs about the current version and what version you are about to install. Click *OK* to this message to upgrade.

Uninstall/Remove

VisualCron can be uninstalled by opening the *Control Panel* -> *Add/Remove programs*. Browse down to "VisualCron x.x.x", select and click on the *Remove button*. If you can't find the "VisualCron 5.x.x" entry in Add/Remove programs list, you may have to run the VisualCron installation program again which will open a window with a remove option.

Installation troubleshooting

If you get MSI errors;

1. Download the silent package from the VisualCron download page.
2. Extract it
3. Open command prompt
4. Write something like to log the installation file: `msiexec /i "C:\MyPackage\Example.msi" /L*V "C:\log\example.log"`
5. Send the log file to support@visualcron.com

3.3 Remote and customized installation

Perhaps you have the need for an automated installation of VisualCron on different servers. Since the VisualCron installation is based on MSI you can use already existing Windows tools to perform the installation silently and remotely. You are also able to control where you want to install (installation folder) and if you want to install both the Client and the Server package or just the Client.

Custom installation

1. Download the "Custom installation package" from the [download page](#).
2. Unzip the content to an empty folder
3. Open the command window (cmd.exe)
4. In the command window, go to the folder where the installation is unzipped

To install the Client & Server package, write:

```
msiexec /i VisualCron.msi /q INSTALLMODE="1"
```

To install the Client only, write:

```
msiexec /i VisualCron.msi /q INSTALLMODE="2"
```

To use other than the default installation folder, write:

```
msiexec /i VisualCron.msi /q INSTALLMODE="1" TARGETDIR="C:\Program Files\your folder"
```

Remote installation

It is possible to install VisualCron remotely - on a domain or private network.

1. To do this you need to use a tool called "PsExec" which is downloadable from Microsoft PsExec. Once downloaded, unzip the content of the PSTools.zip file into the "C:\WINDOWS\system32\" folder.
2. Download the "Custom installation package" from the [download page](#).
3. Unzip the package on a shared drive on your network.
4. Open the command window (cmd.exe)
5. Combine the row below with the command string above in the *Custom installation* section like this:

```
psexec \\remoteservername -u adminusername -p adminpassword msiexec /i \  
\\remoteservername\locationofyourmsi\VisualCron.msi
```

3.4 Upgrading from VisualCron 2.x to 4.x

The VisualCron 4 (VC4) release is the most reworked version since the introduction of VisualCron. Fundamental changes have been made in most parts of the application in order to increase functionality, quality and performance. It is the result of the large amount of requests that have been received from our customers.

VC4 is by default stored in C:\Program Files\VisualCron 4\. The reason for a different folder than VC2, is the difference in file structure and formats.

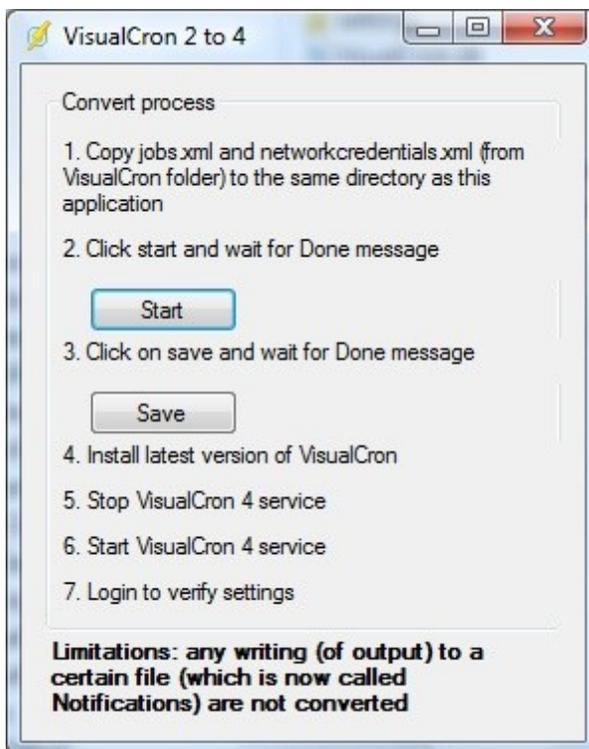
Also, the installation utility is changed in VC4 which means that if you install VC4, it will not uninstall the present VC2 version. An existing VC2 installation will remain until you uninstall it via the Windows Control panel.

The VC4 Job file (jobs.xml) is not compatible with VC2 even though the file name not is changed. The VC4 version of jobs.xml is now stored in the settings folder (not in the installation root folder as for VC2).

Furthermore, Import and Export between VC4 and VC2 does not work. One reason is that the VC4 Job type is more complex than VC2.

UPDATE 2008-05-20

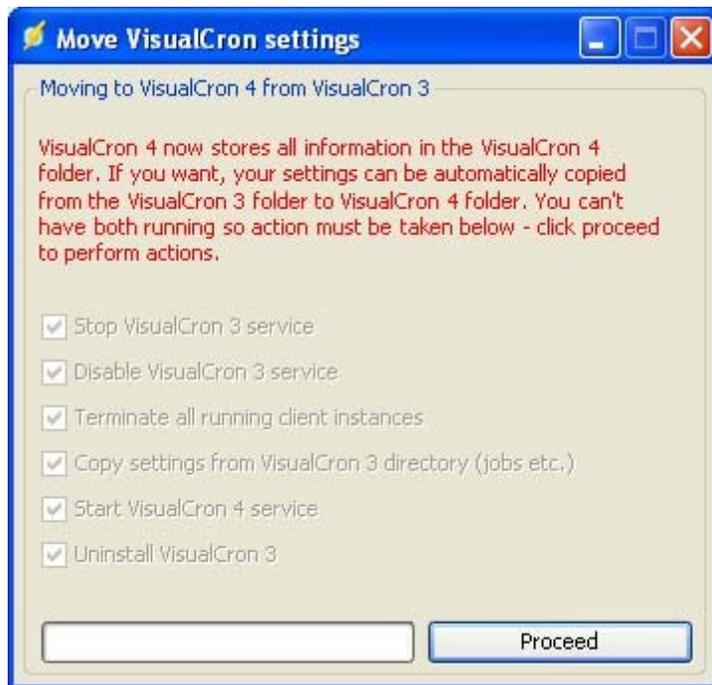
We have created a simple upgrade tool that may help you but not all the way. Please download it here and follow the instructions on the screen. <http://www.visualcron.com/files/VisualCron2-4.zip>



3.5 Upgrading from VisualCron 3.x to 4.x

The below window will only appear as a part of the installation if you have VisualCron 3 and upgrade to VisualCron 4.

This window informs you that VisualCron 4 now will exist in the VisualCron 4 folder and all settings will be copied from the VisualCron 3 folder. Click *Proceed* to continue.



3.6 Upgrading from VisualCron 4.x to 5.x

In version VisualCron version 5 we have optimized a lot of the code structure in earlier version of VisualCron. However, this it was not possible to be completely compatible with version 4, which means that you will lose some information when upgrading from version 4 to 5. Also, other changes exist that may or not affect you. Below is a list of changes for version 5 and how they might affect you and your Jobs.

Install and location

VisualCron 5 will now install by default in %PROGRAMFILES%\VisualCron\. Previously, VisualCron was installed in %PROGRAMFILES%\VisualCron 4\. The installation of VisualCron 5 will not uninstall version 4. Both versions can co-exist.

Service name

The service name for VisualCron 5 is *VisualCron*. For version 4, the service name is *VisualCron 4*. If you previously used a specific user for version 4 you need to set that user to run the VisualCron service for version 5. That information is not transferred automatically.

API

If you are using the API you have to upgrade to the latest version of the API for version 5 in order to connect to version 5. Old version can still connect to VisualCron 4.

Desktop short cut

The desktop shortcut is named VisualCron 5.

Task changes

SQL Task

The connection string is no longer stored in the Task. We wanted to make the actual Connection global and we are now storing the connection in Connections. This means that your old connection string will be missing and that you have to create a Connection and select it in the Task.

FTP/S Task

We have removed the direct link to the certificate file and are now storing Client certificates in Certificates. You need to import any existing certificate in Certificates and then select the actual Certificate in the Task.

SFTP Task

We have removed the direct link to the certificate file and are now storing Client certificates in Certificates. You need to import any existing certificate in Certificates and then select the actual Certificate in the Task.

Notification changes

SQL Notification

The connection string is no longer stored in the Notification. We wanted to make the actual Connection global and we are now storing the connection in Connections. This means that your old connection string will be missing and that you have to create a Connection and select it in the Notification.

Installation notes

If VisualCron 4 is already installed and VisualCron 5 is installed, the following notes are applicable:

- The complete VisualCron 4 installation is kept
- A start guide performs VisualCron 5 installation which copies the log, settings and backup sub folders from the %PROGRAMFILES%\VisualCron 4\ folder to the %PROGRAMFILES%\VisualCron\ folder. Normally this is done in interactive mode meaning that dialogs are showing the result, but it is also possible to use quiet install (Custom) which performs the same action without dialogs
- A start guide shows a few windows with some basic client/server settings. This guide may be issued later using the client main menu **File** -> *Start Guide* option
- The VisualCron 4 Tray client is removed
- The *VisualCron 4* service is shut down and disabled. If VisualCron 4 shall be run, the *VisualCron (5)* service has to be stopped manually and the *VisualCron 4* service has to be started manually
- Some settings cannot be copied to VisualCron 5 automatically, see the above notes. These have to be updated manually using the VisualCron 5 client
- When VisualCron 5 is running with all settings verified, you manually uninstall VisualCron 4 by using the *Control Panel* -> *Add/Remove programs* option
- When uninstalling VisualCron 4, the Tray Client may be stopped/killed. If that happens you just start it again from the *Start menu* -> *Program* -> *VisualCron 5* -> *VisualCron Tray Client*

3.7 Upgrading from VisualCron 5.x to 6.x

A full list of changes between version 5 and 6 can be found here
<http://www.visualcron.com/ChangeLog.aspx>

API

If you are using the API you have to upgrade to the latest version of the API for version 6 in order to connect to version 6.

Desktop short cut

The desktop shortcut is named VisualCron 6.

Installation notes

Always make a backup before upgrading to another version. You can do a backup in Client **File > Import/Export > Export settings** - export to another location than default.

Version 6 version requires .NET 3.5 (previous version required 2.0). .NET redistributable can be downloaded here: <http://www.microsoft.com/download/en/details.aspx?id=21>

VisualCron installer will uninstall the current version and install the new version. Old settings will remain and if needed properties will be upgraded.

You may need to verify these Task types because of changes from version 5.x:

- PGP Encrypt/Decrypt
- Rename Task
- Archive compress/decompress

Especially check source and destination folder properties.

Credentials

The way we handle Credentials have changed to provide more control of the actual Credential. Please read more about Credentials here

3.8 Upgrading from VisualCron 6.x to 7.x

General changes

A lot of things concerning Notifications, On error and exit code handling has been changed from version 6 to 7.

Notifications

Notifications has been upgraded to use existing Tasks. This affects the Email Notification for example which previously couldn't send secure emails – you were bound to use the Email Task.

Also, the Popup Notification was obsolete in many ways.

The way to use Notifications has been changed. The Notifications tab is gone and you are now adding Notifications through the Flow Tab. This new approach adds possibilities to notify you in other situations than the previous. Previously you could just send “On start”, “On complete”, “On error”. There was never a “On success” or send a Notification based on output or based on a specific exit code. This has been added now.

If you use Variables like {TASK(Active,StdOut)} in Notifications you need to change them to {TASK(PrevTask,StdOut)}. The reason is that the new Notifications now inherit from Tasks which means that Active refers to the current Task (in this case Notification). By using PrevTask you step back on step to the last Task that was ran in the Job.

Exit codes and collection

Exit code handling works differently. Previously, an error could be ignored and was then reset to 0. Now, we keep the original exit code and focus on another property – the result of the actual Exit code collection that is used for the Task.

Backwards compatibility and import

Notifications

Notifications should be automatically moved to the “Flow” tab with some exceptions:

Email Notification – we are able to move most settings but as we are using Connections instead of settings from Server settings to configure email settings we have tried to create a new Connection based on previous settings.

Popup Notification – the new Popup Notification is simply too advanced and different. You need to look over settings in that Notification in order for it to work fully.

Conditions

If you are using Conditions that look at exit code in combination with ignoring certain errors you might want to adjust the Condition as the actual exit code is no longer reset to 0 when a Task error is ignored.

3.9 Upgrading from VisualCron 7.x to 8.x

Version 7 messages and protocol is similar to version 8. We have found the following that might cause undesired effects:

FTP Download Task

The feature Create FTP folder structure has never worked in version 7 but was fixed in version 8. As this was enabled by default in version 7 it might cause undesired effects.

3.10 Language management

When the VisualCron client is started after an initial installation, it is possible to select a preferred language. However, this language selection only affects the language in the client user interface.

In VisualCron system related functions, it is not possible to change language from English. Examples of such areas are states (e.g. Server On/Off) and logging.

The information in the VisualCron web site and all documentation/demos etc. are only available in English. The user definable texts in demo Jobs/Tasks available after an initial installation are also in English.

3.11 Custom branding

It is possible to change some parts of the VisualCron including name and images. The customization is done by placing a specific xml file in the installation folder. This feature was presented in version 6.1.7.

Customization file

The latest customization file can be downloaded here:
<http://neteject.com/download/VisualCron/custom.xml>

Place this file in the root of the installation folder of VisualCron. Normally c:/program files/VisualCron

Customization

Customization is done by changing the xml file that can be downloaded and then place it in installation folder.

Customization options

ClientAppName

This is the long name displayed in some places (default "VisualCron - Client")

ServerAppName

This is the long name displayed in some places (default "VisualCron - Server")

ProductName

This is the short name of the product (default "VisualCron")

SupportEmail

This is the support email displayed in some places (default "support@visualcron.com")

SalesEmail

This is the sales email displayed in some places (default "sales@visualcron.com")

SplashRelativePath

This is the relative path (from VisualCron installation folder) to the splash image displayed at startup (default "img\400x250.bmp")

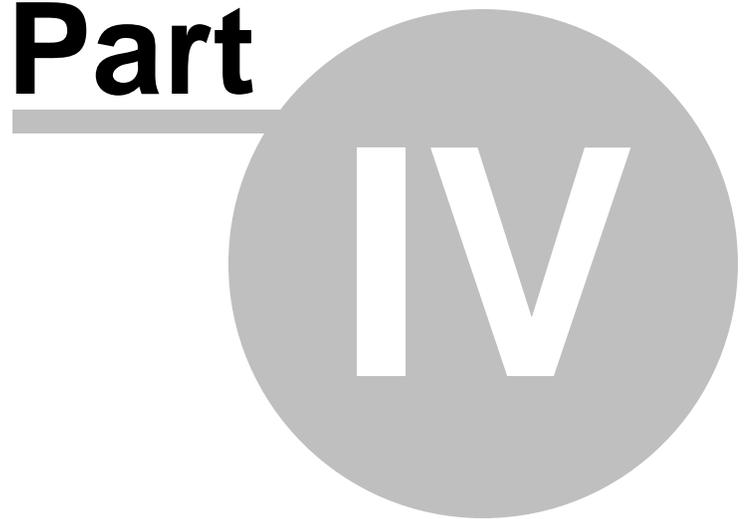
ShowLinks

This property controls if links to the VisualCron web site should be shown (default "true")

Top Level Intro

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top-level chapter starts

Part



4 Using VisualCron

Using VisualCron is simple, just start the VisualCron client. With the ordinary Windows graphical interface, all Jobs, Tasks and settings are managed. Unless otherwise stated, all user actions refer to VisualCron client application.

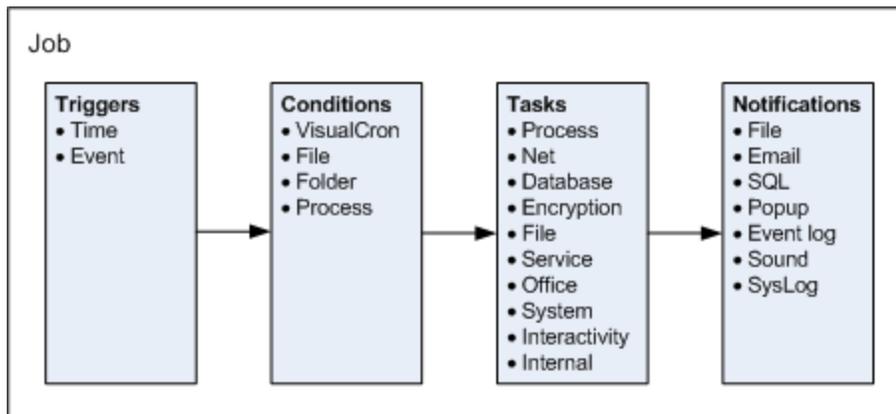
Please note that VisualCron is initially started with server status *On*. Read [here](#) for more information.

For some actions like log, debug and email notification, you need to have knowledge in computer file handling and email account settings.

4.1 How does VisualCron work?

In one aspect, VisualCron works similarly to the Unix/Linux Cron utility. Down to details of seconds, VisualCron can run any executable file periodically, within a time interval or once. However, in VisualCron also an event can be set to trig a Job.

It is important to understand the structure of all VisualCron objects in order to utilize the new features. The flow is: Trigger > Condition > Task > Notification. One trigger (type time or event) fires a Job to run. A condition is a "check" which is evaluated before a Job or a Task is launched. A Job can include one or more Tasks of different types. When the Job and/or its Tasks are completed, one or more notifications (of different types) may be performed.



Note: In the above figure, the lists of Conditions, Tasks and Notifications are just illustrations and not complete. The actual features in VisualCron is constantly expanding.

One way for VisualCron to trig a Job is to keep track of time and match the current time with the time settings in the list of Jobs in order to perform the defined actions. Also, the more simple time interval can be used to trig a Job. The second way of initiating a Job is via an event trigger.

When you are add or edit a Job, the list of Jobs and and Tasks are updated. This list defines how the Job will be managed by the VisualCron server.

Each Task will run as a separate process. When a Task is run, VisualCron will save some statistical values like how long time it took to run the current process.

It's possible to set a Job to be run only once. After this run, the Job stays in the Job list but will be ignored when the Job list is checked at later occasions.

4.2 VisualCron Server

The VisualCron server runs as a Windows **service** in the background. The server service status is *Started* when the server computer is started.

The VisualCron **server** application status can be *On* or *Off*. If the server is *On*, it will be looking for Jobs to run. If *Off*, no Jobs will be run unless a user forces it manually in a client. The server application is running, even if no one is logged on to the computer where the server is running or if no client application is connected to the server.

In the VisualCron client, the currently selected server name is displayed in the main menu **Server** [**<server name>**] tab and in the Username/Server entry in the Server/Groups/Jobs/Tasks grid and in status bar. Server connections are global, thus if you change a connection definition, this will affect all commands associated with this connection.

The default port number between the VisualCron Server and the Client is 16444. This means, that if you are connecting remotely from the outside you may have to open port 16444 in your firewall, software and/or hardware.

4.3 Login

When the VisualCron client is started, an initial login (to server) window is opened. You need to login because the server may be accessed also from other computers. If you haven't defined any connection, VisualCron will use the default server login parameters.

For security reasons, you should change user name and password after the initial login in the main menu **Server > Main settings > User permissions** dialog.

If you want to add new connections, for example to other computers, you select the main menu **File > Servers > Manage servers** option. See manage servers for more information.

4.4 Limitations

There are some limitations in VisualCron which are listed below:

- VisualCron is designed for a set of System Requirements
- The function "run missed Jobs" doesn't take time exceptions into account. A missed Job will run even if there was a time exception during that time
- Calculation of next run doesn't take time exceptions into account
- In Windows 2000 the Credentials are not fully supported. They work in the execute Task but not in other places like Archive, FTP and Notifications. To come around this you can run the VisualCron service as a certain user and map network drives for that account.

4.5 Licensing

VisualCron uses a per Server licensing model. You only need a license for the Server, the Client does not require a license.

Requires license:

- Server installation

Do not require license:

- Using the VisualCron Client
- Using the VisualCron .NET API
- Using the VisualCron Web API
- Using the VisualCron Web Client

4.5.1 Trial time

Trial

You are able to use all VisualCron functions for free for a limited period (45 days). Check the remaining trial days in the main menu *About* -> *About VisualCron* dialog. After the trial period is over, you can't control the server with the client. However, the server will still run all Jobs in the background even though your trial period is over. To be able to manage your Jobs again you must obtain a license.

If you want to extend you trial period you can contact support@visualcron.com and you will get a trial extension code. Enter the trial extension code in Main menu->About->Activate and Trial extension tab.



4.5.2 License and activation

License

You need an activation code to activate VisualCron. An activation code is included in the license. A license can be obtained at the VisualCron web site, [here](#). The license is per server. When you activate VisualCron, you activate the current server you are connected to. You can use several clients to connect to one server with one license.

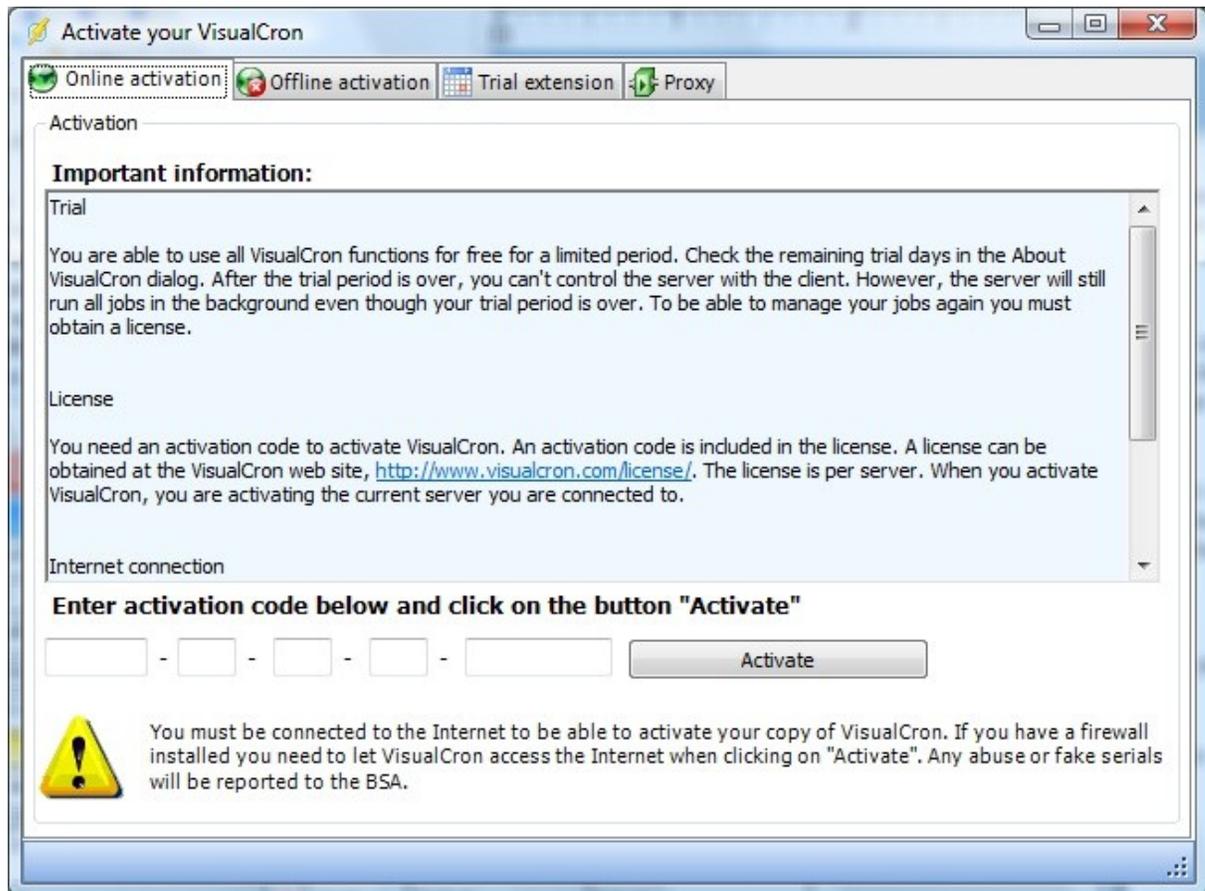
Activation

Once you have an activation code you can activate VisualCron. To activate VisualCron you must login to the server that you want to activate. If you have trial time left you can go to main menu *About* -> *Activate your VisualCron*, which opens the activation form. If you don't have any trial time left, the activation form will open automatically when logging in. Enter the activation code in the fields.

Online activation

To be able to validate your activation code you have to connect to the VisualCron web site, this is done automatically when you click on the *Activate* button. However, you need to:

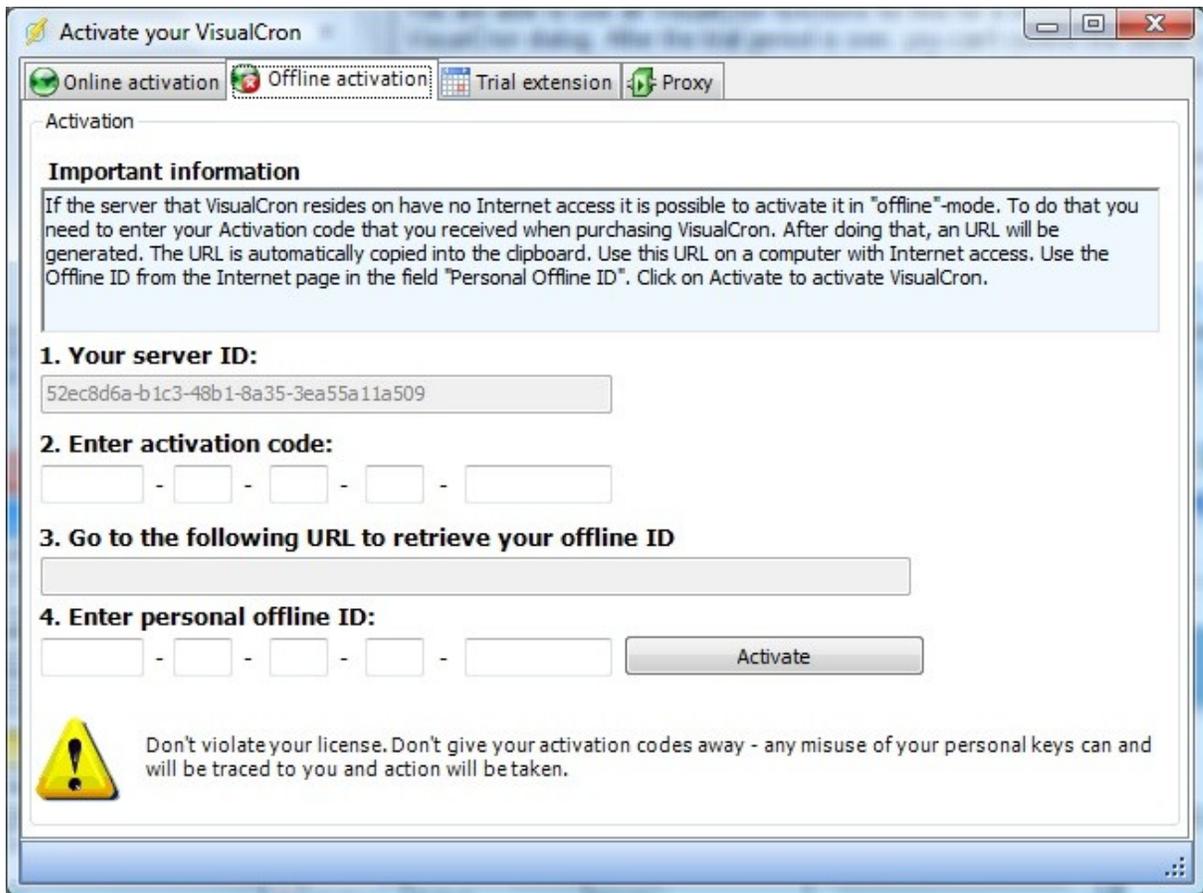
1. Be connected to the Internet
2. Let VisualCron access Internet. If your firewall asks you what to do, you must permit VisualCron to access Internet



Offline activation

This feature is available if you have a server without Internet access. Note that you still can use online activation if your desktop computer has access to Internet and if your desktop computer can be internally connected (within your network) to the server. If that is not possible you can use offline activation. Offline activation can be done with the following steps:

1. Start the Client locally on your server
2. Choose Activate in the About menu
3. Choose Offline activation tab
4. Enter your activation code
5. After entering you will get an URL. Copy that url in some way to USB stick or paper. Enter the URL in a browser on a computer that has Internet access. You will then get an offline ID.
6. Enter the Offline ID in the Client



4.5.3 Maintenance

See general information about **Maintenance and priority support** at:

<https://www.visualcron.com/maintenance.aspx>.

VisualCron licenses are perpetual, but in order to get the latest version and receive support you need an active Maintenance. Each license has a Maintenance expiration date. Usually, this is one year after purchase and can be renewed here. The Maintenance expiration date is covering any version released within that time period, minor or major version.

Online/Offline validation

From time to time we validate the license. Both that the actual activation code is valid and the Maintenance is covering the current version. If our servers cannot be reached you need to do a manual validation from time to time. We strongly recommend that you open firewall to host [visualcron.com](http://www.visualcron.com) on port 443 so this can be validated and updated without you having to do a manual validation.

If you fail to validate VisualCron will either stop working or you will not be able to connect to the Server with the Client.

4.5.3.1 License Validation

From time to time we need to validate your licenses and keep you and VisualCron updated about Maintenance expiration. Please follow the steps below to validate on a computer that has Internet access. To avoid having to do this, please enable access to www.visualcron.com on port 443.

The below screen is shown when the computer where the VisualCron Client runs has been offline for a while. The screen is also shown when the **Server > Information > License > Refresh license data** is issued when the VisualCron Client is offline.

 Offline validation
— □ ×



From time to time we need to validate your licenses and keep you and VisualCron updated about Maintenance expiration. Please follow the steps below to validate on a computer that has Internet access. To avoid having to do this please enable access to www.visualcron.com on port 443.

1. Copy the following code to clipboard

```
85C0AA914A2110948F92D112D7EBAEE2AB86462761FEE16D104D6EB562238980DAE1054C1DCA3FBABFA24C094A543B19F
F87C321C1F747FDAE18916FF8F4C9329E571C0ABC899549829CFB9F6AB6458738317FA2BFC6250355F8845D2A5EEB661C1
64D2E488C40234120246548F3B85352C4BEA659743D87A7806E97FC356DD8C795DBDDF8FA36ED76C6BC685040AF9A1CED
D58881C98B4D5CE71BB4ECDFB1B83AB7436AFE6EBAE0CB72D8E794237666B595C26A4CB806F751920AD6A92C7A993A06E
76B976572CF9604A4BDC72A415EA721A0014A4F7087270DE5CB2C9D212031B3DE8F5A9031C469DAA2A6379CFF6F90C05A
A171E9EB2A70164BBD71F22E4E0B1AEA6D9D87B33CD6AC0B2FCC2C8376F1D4D6595B644ECB2100348D107694076CF16E7
CF5B4E7E1AE85734F7E5E606D402CAED0E7D4C1A0467685499C2EDC3571347250999AAA26907B0BF2682004077B1796E81
EFA883480D7D8493BC0DBBA2A896B9296D7C2A205CF5693373AD9877A23C41D699E58EE48362DA69A962DDA19DC7EDBB
D435E63A667DB7DCDB4425EAC1CE40A6DCEE82B120926E81991CDF4E846932AF54C4A2BACB612B7EF8AFBB8A66FB13B4E
9B14F0EE463621D1DDEBE9187C4BEA92BD268C0E62EB1DF3357CE9B4096D900CE7DEF17CB6528F3716A455196BB0522F3E
19F369B3F4FFF440AC1C40685FC5C86D8BB81DF982305244DD3B19B75036808C4114126722436B6383CC825B0CD44D46F7
6C6B7693380C3423A0E9888C2564B58A02038F7802C43B69EF3E3B03FFDEF3F8D2838161DBC3898253130BC8A70C4E4956
E466E69138213B664DEBF75CAACE66A0E915405C359BEFB677CE6EF33CB8391374476C42AED89508B222DDE1305FF05D6EA
3ABC057C7F12ADDFD3C6436BC3923E5377223A2AD5183237CA59C2483B58A7D2EFEA301CA9568A0E48BCF43F69E538E45
DA41234A6CAEA06475BA6B100B1B46155E6AA183CDD50D1F9913C614EA4EE0BE6EA23852A735438C43E1B6A66F9B4589
68C6A58DB1799A299AA4D9E90EE7F17962A444CAF17F9DAAA9CB3FFF6FE78FA0A5A83587EB29EAA6BC37EEBD6984E44A
A4041834F3051C43FEF0B26403DF5ED06BFC28DDF4060A4F1987A5DAC4C43AE9FFFEFA225746859A9A0623FE3D1DAA39E7
0463640454AF9A9F70E5485676671B7B08B15B83C0439BE41650A1E1311C61D99F07EA8483981E2DFB620B44F60D8276
```

2. Open the below url on a computer with Internet access and follow the instructions on that page

3. Copy the validation code from the web page below and click Validate button

4.5.4 Move a license

1. Download and install VisualCron on your new server (if this is the first time you install VisualCron you will have 45 days of trial with full functionality)
2. Validate on the My licenses page that you have a Maintenance contract that supports the installed new version for the latest version so you do not run into license problems when trying to activate it later
3. Go to the old server and backup your settings using Export from the menu **File > Export settings**
4. Transfer the file to the new server and import it clearing existing settings (unless you already created new Jobs on Server)
5. If the import was successful you can choose **Server > Information > License > Deactivate** in the old Server
6. Go to the new Server and Activate it with the old activation code

If you have any Deactivation/Activation problems contact us [here](#).

If the Server is decommissioned and no longer available please go to My licenses page and click on the Move button next to the activation code.

4.6 Using VisualCron in a clustered environment

It is possible to use VisualCron in a fail over clustered environment. However, VisualCron must be manually activated for each cluster.

To prepare your server you have to:

1. Install VisualCron on the shared drive
2. Check "Is in cluster" in the Server settings window of VisualCron

You must have a license for each server you plan to activate.

We have various topics in our forum online discussing this:

<http://www.visualcron.com/forum.aspx?g=posts&t=130>

<https://visualcron.com/forum.aspx?g=posts&t=447>

4.7 Interacting with VisualCron

Enter topic text here.

4.7.1 VisualCron Client

The VisualCron Client is a separate application that constitutes the main type of user interface for VisualCron. With the client you configure VisualCron and manage the Jobs and Tasks that are run by the server.

Several VisualCron clients can be connected to the same VisualCron server, typically a user have both the VisualCron client application and the VisualCron tray client connected to the same server. See main menu **Server > Main settings > Client connections** for a list of clients that are connected to the currently selected server.

The VisualCron client application can also switch its server connection in the server selection drop-down list in the leftmost part of the toolbar.

4.7.1.1 Starting VisualCron Client

The client application is started from the Windows desktop icon (*VisualCron X*) or the Start menu *Program > VisualCron X > VisualCron Client*. You can also double click on or open the VisualCron Tray Client to start the VisualCron Client.

As the VisualCron server handles the defined Jobs, the VisualCron client can only connect to the VisualCron server when the server is running.

As the VisualCron server runs as a service, the client application can be closed without affecting the core server activities.

4.7.2 VisualCron Tray Client

The VisualCron Tray Client is an application that is part of the VisualCron system. It is shown with a VisualCron icon in the notification area normally located in the bottom right of the Windows screen.

The Tray Client is located to the right in the below image. Right click to interact.

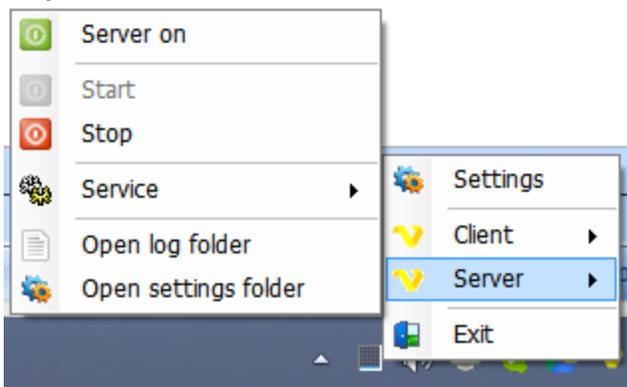


Tray Client Startup

The VisualCron Tray Client starts when a user logs in to the Windows server. When the Tray Client starts, it attempts to connect to the VisualCron Server in order to provide control, allow foreground execution and be able to notify the currently logged in user. When the Tray Client is connected it shows the normal VisualCron icon in the System Tray.

If the Tray Client icon includes a red cross, it is not connected to a server service. One of the reasons may be a stopped service. The change of the icon between having and not having a cross, is based on repeated "ping" from the client and thus it is somewhat delayed related to the actual state of the connection.

Tray Client Features



When the VisualCron Tray Client is connected to the VisualCron Server you are able to control the Client and the Server.

By double clicking on the Tray Client icon you start the VisualCron Client. The Client can also be started by right-click on the Tray Client icon and select *Client > Start*.

By right-click on the Tray Client icon you can choose *Server > Stop/Start*. You can also Stop and Start the Server service.

Foreground execution

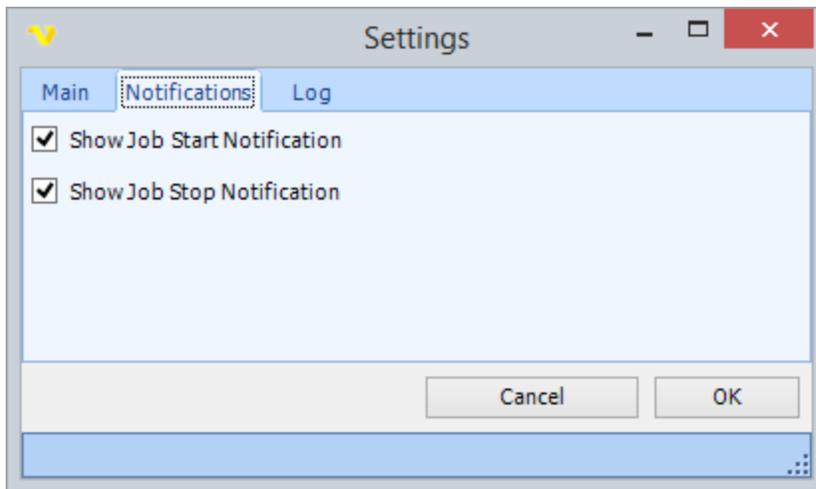
One of the main purposes of the VisualCron Tray Client is to provide foreground execution.

VisualCron Tray Client > Right-click > Settings > Main tab

Start Tray Client on startup

Controls if the tray client should be loaded when each user logs on to the server machine.

VisualCron Tray Client > Right-click > Settings > Notifications tab



In the Notifications window you can control VisualCron Tray Client Notifications. These notifications are MSN-like pop-ups that can show when a Job starts or stops. You can switch off/on these pop-ups here.

VisualCron Tray Client > Right-click > Settings > Log tab

By default *Log to file* (to the log directory) is active in order to be able to debug any problems. You can turn off this logging here.

4.7.3 VisualCron Web Client

The VisualCron Web Client was introduced in version 7.6.5. It lets you connect from any device (phone/browser) to the VisualCron Server. The web client has a real time interface for viewing Job and Task information. It is still very limited compared to the normal Client but good for getting an overview and do basic things like running, activating and stopping Jobs and Tasks.

The screenshot displays the VisualCron Web Client interface in a browser window. The main content area shows a table of jobs with columns for Job name, Description, Next run, Last run, Created, Create..., Modified, Modifi..., and Columns. The 'Backup setti...' job is highlighted in blue. Below the main table, a detailed view of the 'Assembly execute' job is shown, including its last run time and output.

Job na...	Descrip...	Next run	Last run	Created	Create...	Modified	Modifi...	Columns
ass execute		No Trigger s...	2014-01-29 ...	2014-01-16 ...	User name ...	2014-01-27 ...	User name n...	00:00:1,7
Backup setti...	Makes a dail...	2015-05-01 ...	2015-04-28 ...	2011-12-07 ...	User name ...	0001-01-01 ...	User name n...	00:00:02,5

Task name	Last run	Output	Output err
1 Assembly execute	2014-01-29 10:11:26	<?xml version="1.0" encoding="..."	No output

VisualCron API version: 1.0.3.41379, protocol: 7.6.5

Installing the web client

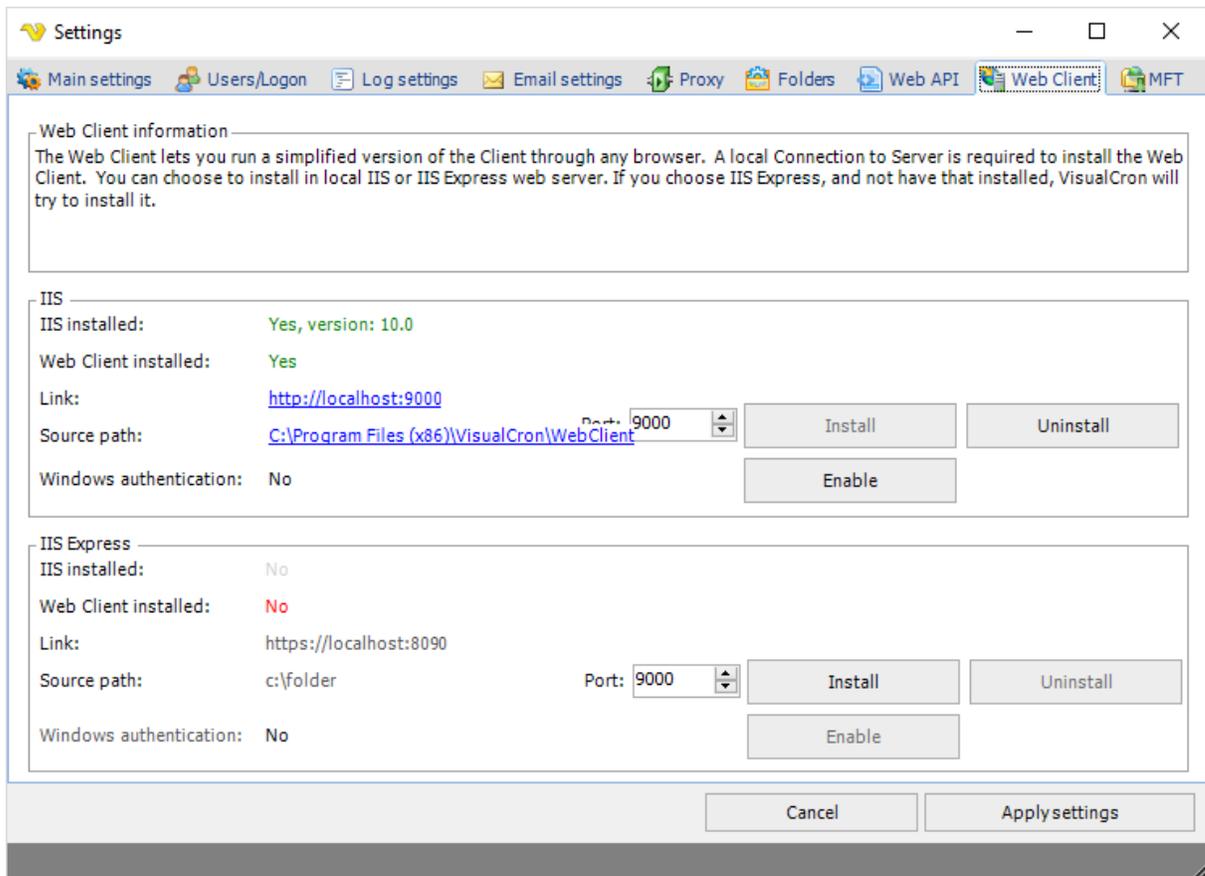
Requirements

IIS 7 or later.

Installation

The web client runs inside Microsoft IIS - a web server. It is possible to install the web client in an existing IIS or install in the free IIS Express version. Installation and configuration of ports are done in Server settings->Web client.

Server > Settings > Web Client tab



The two group boxes display installation status of either IIS or IIS Express. You can see:

- which version of IIS is installed
- if the Web client is installed
- the local link to the web client
- the local path where the web Client is installed
- which port is used

Install

Click on Install to install the web Client. We recommend that you use the normal IIS if it is already installed. If you click Install on IIS Express then IIS Express will be installed first (if not installed already).

If you need to change port you can do that in IIS or by uninstalling and installing again with a new port.

Windows authentication

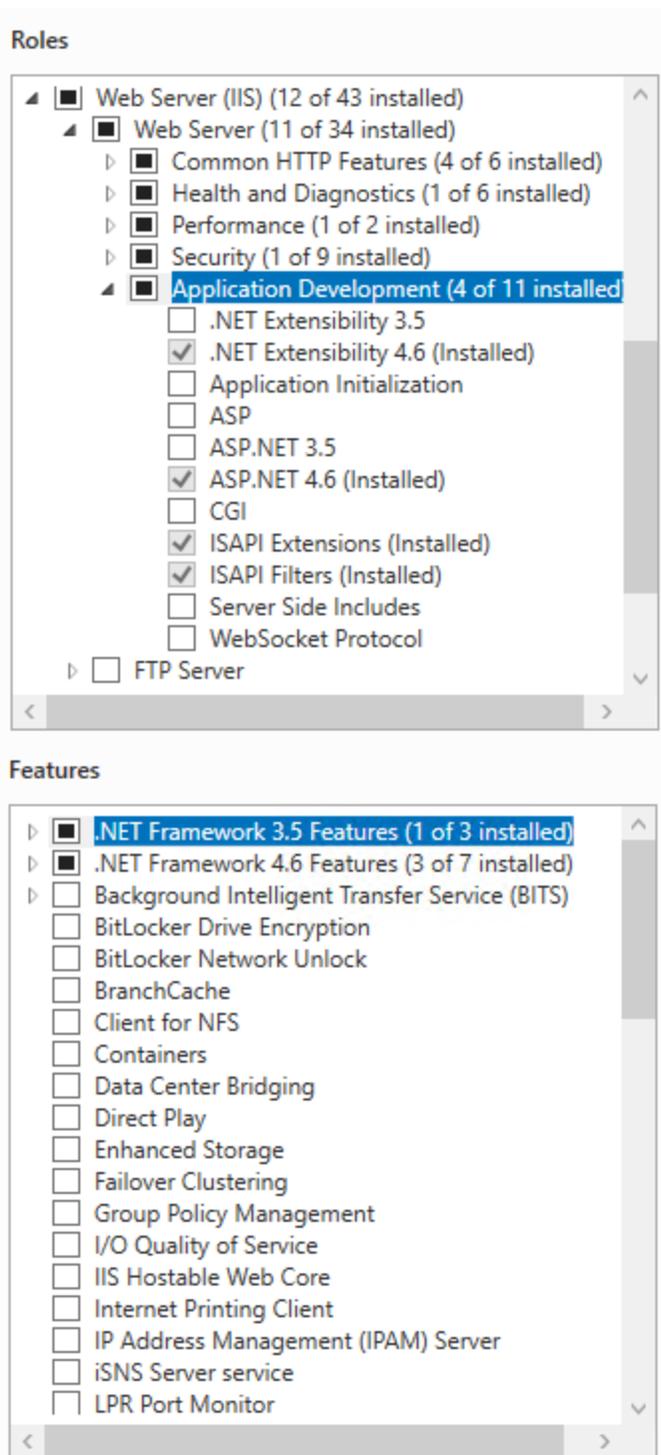
If you are using Active Directory as authentication method in VisualCron > Permissions then you probably want to enable Windows Authentication in the Web Client. Click the *Enable* button to enable.

Troubleshooting Web Client and installation

Preparations

Make sure that you have installed the selected roles and features in the Windows server.

Windows 2016 Server > Server Manager > Dashboard > Add roles and features



Installation errors when clicking install from the Client

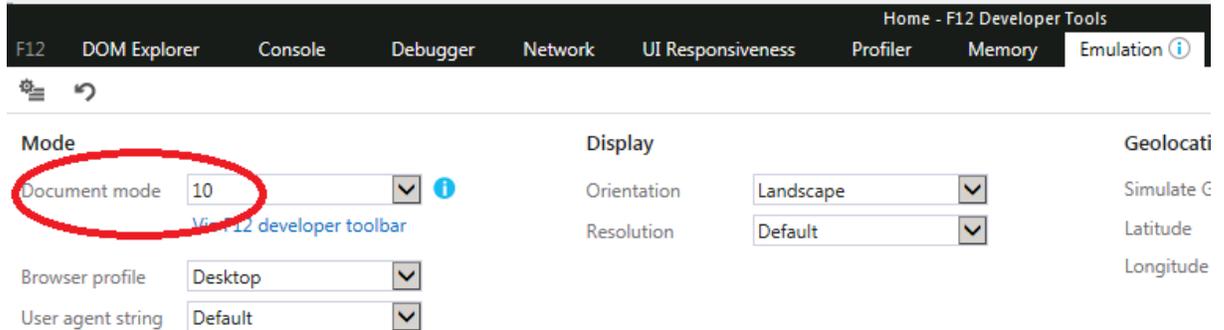
Make sure that you have started the application as Administrator by right clicking on VisualCronClient.exe and select "Run as Administrator". Alternatively, turn off UAC and reboot.

HTTP Error 403.14 error - Forbidden

Please install ASP.NET 3.5 and 4.5 and other features in list mentioned above. Reboot if needed.

Web interface does not display correctly or not working

We recommend using Chrome or Firefox. If using IE make sure that Emulation mode is set to 10. See image below.



AD logon is not working

Open the website in IIS manager and make sure that Windows Authentication is enabled and all other authentication mechanisms are disabled.

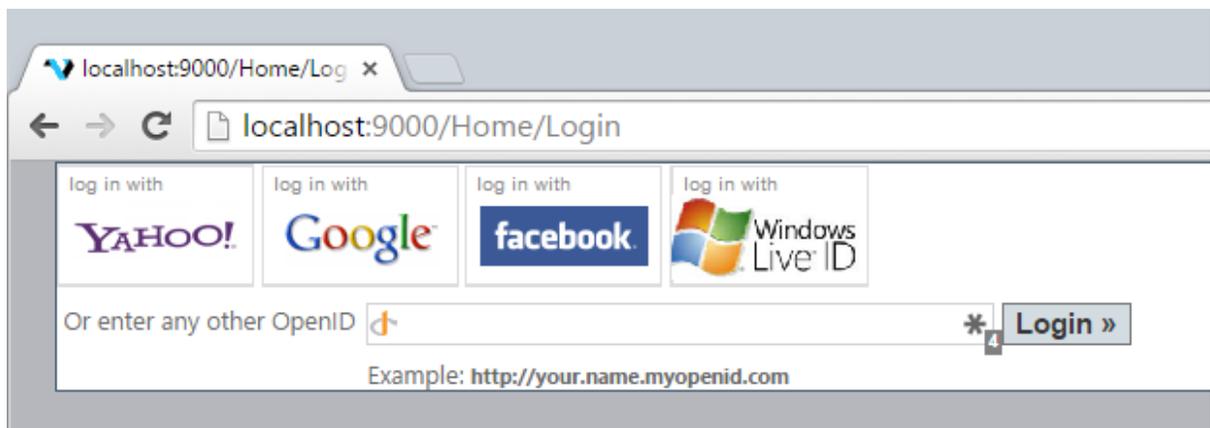
When creating a new Server connection in server connection manager; 1. check Use AD 2. leave username and password empty

Installing the Web Client on other location than Server

Easiest way is to install the VisualCron Server on the IIS Server. Start the Client and connect locally and go to Server settings->Web client and install the web client as usual. Then stop and disable the VC service. For a custom installation package please contact support.

Web Client settings and logon

You logon into the web Client the same way you logon to the Windows Client. But, if you want to store settings you can click on the Login link to the upper right. It is possible to link settings and logon information to different open authentication systems like:



The advantage is that you can store settings like:

- Server connections
- Column settings

Facebook setup

1. create an App in Facebook

2. set *facebookAppID* and *facebookAppSecret* in *web.config*

Windows Live Id setup

1. You need to create your own app on <https://account.live.com/developers/applications/index>

2. * In API parameters add an URL for redirection, which finished with:

~/Home/WindowsLiveIdLogIn

(any domain can be used, like

"http://example.localhost.com:54257/Home/WindowsLiveIdLogIn")

on the "Application settings" tab need to find an application Id and secret key.

3. In order to use redirection to local IP address (127.0.0.1) two approaches can be used:

a. Create a DNS record like "localhost.yourcompany.com" which points to 127.0.0.1

b. Or add a record to local "host" file (%windir%/system32/drivers/etc/host, need to have administrative rights to edit that):

```
127.0.0.1 example.localhost.com
```

4. Setup IIS

4.1 * For IIS EXPRESS in C:\Users%username%\Documents\IISExpress\config\applicationhost.config Change

```
<binding protocol="http" bindingInformation="*:54257:localhost" />
```

to

```
<binding protocol="http" bindingInformation="*:54257:example.localhost.com" />
```

4.2 * For IIS

Open Internet Information Services (IIS) Manager:

In the Connections pane, expand the server name, expand Sites, and then click the Web site on which you want to configure the bindings.

In the Actions pane, click Bindings.

In the Site Bindings dialog box, click Add.

In the Add Site Binding dialog box, add the binding information(example.localhost.com), and then click OK.

5. in *web.config* update these entries with app Id and secret from liveld application :

```
<add key="wl_appid" value="appid" />
```

```
<add key="wl_secret" value="secret" />
```

Manual Web Client installation

It is possible to manually install the web client. The current requirements are:

- the Web Client needs to be installed on the same machine as VisualCron
- IIS 7 or later is required on that machine
- a specific folder needs to be referenced from IIS

Steps for installing the Web Client are:

1. install the VisualCron Server on the machine

2. open IIS and add an application pool called "VisualCronWebClientAppPool". Settings are .NET 4.0 and Integrated mode

 VisualCronWebClientAppPool	Started	v4.0	Integrated	ApplicationPoolId...	1
--	---------	------	------------	----------------------	---

3. Right click on **Sites > Add Website**.

Add Website

Site name: VisualCronWebClient

Application pool: VisualCronWebClientAppPool

Content Directory

Physical path: C:\Program Files (x86)\VisualCron\WebClient

Pass-through authentication

Binding

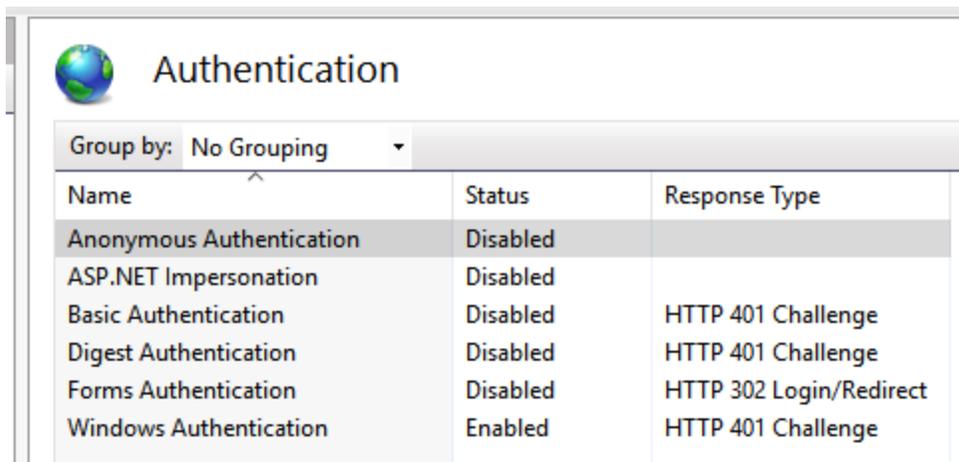
Type: http IP address: All Unassigned Port: 9000

Host name:

Example: www.contoso.com or marketing.contoso.com

Start Website immediately

4. Select the VisualCronWebClientAppPool as Application pool.
5. Set the site name to "VisualCronWebClient".
6. Set the physical path to the "WebClient" folder in the VisualCron installation folder (normally in program files (x86)/VisualCron/WebClient).
7. Set any port (default 9000).
8. Click OK to save the web site
9. If you want to use AD for authentication you need to disable Anonymous Authentication and enable Windows Authentication



Name	Status	Response Type
Anonymous Authentication	Disabled	
ASP.NET Impersonation	Disabled	
Basic Authentication	Disabled	HTTP 401 Challenge
Digest Authentication	Disabled	HTTP 401 Challenge
Forms Authentication	Disabled	HTTP 302 Login/Redirect
Windows Authentication	Enabled	HTTP 401 Challenge

10. Enter url localhost:9000 in your browser to access the Web Client

4.7.4 VisualCron API

The VisualCron API is an easy way to control the VisualCron Server. The .NET API is as powerful as the VisualCron Client. The Client itself uses the API to perform all actions.

You can find the API quick start manual and the API reference documentation by the main menu **Help > API** selection.

Basically, you can use these languages:

- .NET - c# or VB.NET
- PowerShell

Visual Basic 6

We do no longer support Visual Basic 6.

4.7.4.1 .NET (C#/VB.NET)

.NET

A c# project sample with a lot of functionality exists in the API folder of the installation folder.

We recommend looking at the basic tutorial for the API here - then look at the API sample project.

Below is a quick sample in c#:

```
// create Server object that holds all VisualCron objects like Jobs, Credentials,
Connections etc.
Server s;
// create Client object that is used to connect to the Server
Client c = new Client();

// create a Connection object which tells how VisualCron should connect
Connection conn = new Connection();
// use remote connection method to connect to a Server instance on another computer
(default local connection)
conn.ConnectionType = Connection.ConnectionT.Remote;
// specify the DNS name or IP of remote server
conn.Address = "192.168.1.123";
```

```

// specify username you want connect as (default "admin") - user must exist in the
Manage user Permissions window at Server
conn.UserName = "admin";
// specify password you want to connect with (default empty)
conn.Password = "";
// set below to true if you want to connect with your AD credentials (must be setup on
Server to support) - if set you ignore setting username and password
//conn.UseADLogon = true;

// connect to Server, set sync to true to get all Server objects
s = c.Connect(conn, true);

// loop through existing Jobs
foreach (JobClass j in s.Jobs.GetAll())
{
    // write Job name to console
    Console.WriteLine(j.Name);
}

// finally disconnect
s.Disconnect();

```

4.7.4.2 PowerShell

PowerShell

Some of our users have started to use PowerShell to interact with VisualCron. Below are some basic code snippets:

```

Snippet #1
# Load the visualCron API DLLs
$VC = [Reflection.Assembly]::LoadFrom("C:\Program Files (x86)
\VisualCron\VisualCron.dll");
$VCAPI = [Reflection.Assembly]::LoadFrom("C:\Program Files (x86)
\VisualCron\VisualCronAPI.dll");

# Define Client & Server Objects
# Globals to allow sharing of connections
$Global:Client = New-Object -TypeName VisualCronAPI.Client
$Global:Server = New-Object -TypeName VisualCronAPI.Server

# Read Only VisualCron User for API Access
# VisualCron UserName and Password from your site
$Conn_UserName = 'username'
$Conn_Password = 'password'
$Conn_Address = 'localhost'

# Standard Settings
$Conn_Port = 16444
$Conn_ConnectionType = 'Remote'

# Function to Connect to a VisualCron Server using the API
function VCAPI-ConnectServer ([string]$Conn_Address) {

# Define Connection Object
$Conn = New-Object -TypeName VisualCronAPI.Connection

# Set Connection Values
$Conn.Address = $Conn_Address
$Conn.UserName = $Conn_UserName
$Conn.Password = $Conn_Password
$Conn.Port = $Conn_Port
$Conn.ConnectionType = $Conn_ConnectionType

```

```
# Try to Connect to the VisualCron Server
try
    {
        $Global:Server = $Client.Connect($conn, $true);
    }
catch [$ClientLoginFailedException ex]
    {
        MessageBox.Show(ex.Message);
    }
}

# Function to retrieve a User Variable Value using the API
# wrapper for generic get variable API call below
function VCAPI-Get-User-Variable ([string]$Variable_Name) {

    $Variable_Value = VCAPI-Get-Variable("USERVAR(" + $Variable_Name + ")")

    Return $Variable_Value

}

# wrapper for the get-variable API call
# Returns Varian;e Value
function VCAPI-Get-Variable ([string]$Variable_Name) {

    $Variable_Name      = "{" + $Variable_Name + "}"

    $Variable_Value = $Global:Server.Variables.GetGenericVariable($Variable_Name)

    Return $Variable_Value
}

Snippet #2
# Determine Script Path
$Path = Split-Path $MyInvocation.MyCommand.Path

# Determine Script Drive
$Drive = (Get-Item $Path).Root.Name

Remove-Variable -Force HOME
Set-Variable HOME $Path

# include the VisualCron API
. "$HOME\VisualCron_API.ps1"

# API Information - Example - Direct API Call
$OSVersion = [VisualCronAPI.ComputerInfoAPI]::GetOSVersion()
Write-Host 'OSVersion : ' $OSVersion

# API Information - Example - Direct API Call
$LocalAdmins = [VisualCronAPI.ComputerInfoAPI]::GetLocalAdministrators()
Write-Host '$LocalAdmins : ' $LocalAdmins

# Set Client values - Example using $Client Object
$Client.LogToFile = $False

#####
```

```

# Server Connection and API Calls
#
#####

# Connect using Server Name (Fully Qualified)
#VCAPI-ConnectServer('washington.somewhere.com.au')
# or
# IP Address
VCAPI-ConnectServer("123.145.167.89")

# Various Variable Calls - Replace First 2 with UserVariable Names from Your Site
$VCUserVariable = VCAPI-Get-User-Variable("SERVER01")
Write-Host '$VCUserVariable : ' $VCUserVariable

$VCServerName = VCAPI-Get-Variable("USERVAR(SERVER02)")
Write-Host '$VCServerName : ' $VCServerName

$VCServerIP = VCAPI-Get-Variable("SERVER(IP)")
Write-Host '$VCServerIP : ' $VCServerIP

$VCServerPort = VCAPI-Get-Variable("SERVER(Port)")
Write-Host '$VCServerPort : ' $VCServerPort

```

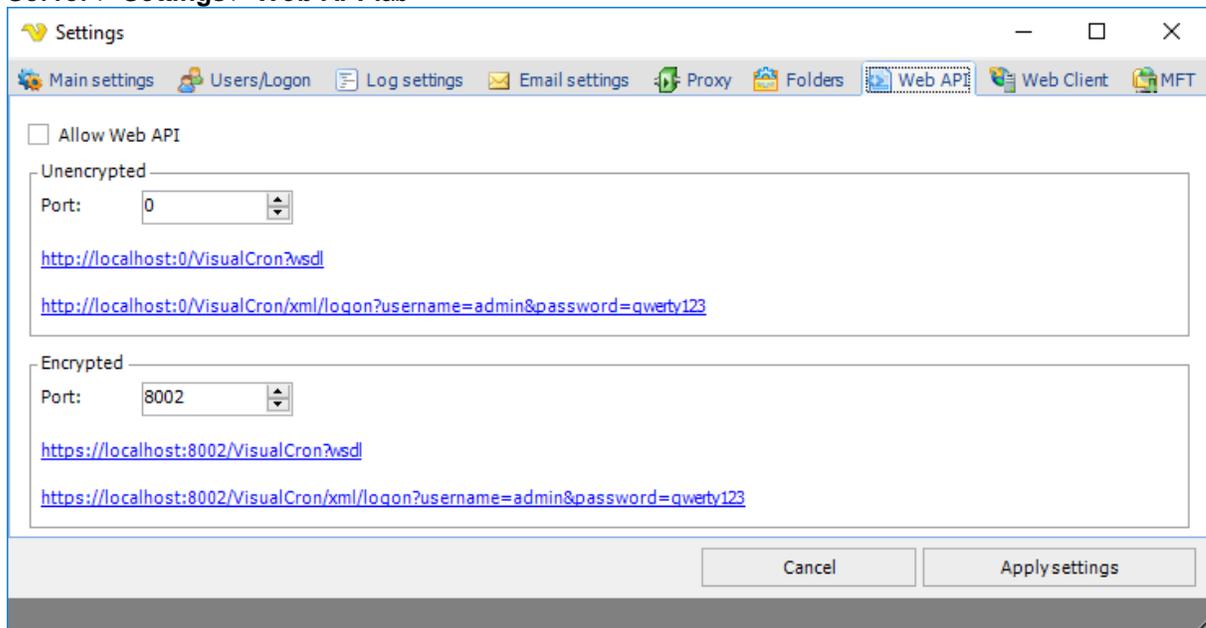
Snippet #3

<https://gist.github.com/atifaziz/9400489>

4.7.5 VisualCron Web API

The VisualCron Web API is an alternative way to interact with VisualCron and extract information.

Server > Settings > Web API tab



Allow Web API

When checked VisualCron open ports for Web API.

Unencrypted/Encrypted ports

The Web API uses two ports for communication. The encrypted one uses a certificate created by VisualCron to enable a secure communication channel.

Permissions

The Web API uses the same permission system as in VisualCron which means that you need to add a user in Manage user permissions window first.

Available methods

Once the WebAPI is allowed you can see available methods here:

<http://localhost:8001/VisualCron/text/Docs>

Calling the Web API

There are two ways of requesting information:

1. REST

The VisualCron REST service communicate through the HTTP protocol. By making simple HTTP calls against the VisualCron service you can easily extract information and interact with VisualCron. The REST service is able to return 3 different result outputs:

Text - plain text output

XML - XML output

JSON - JSON output

The output method is controlled through the url:

[https://localhost:8002/visualcron/text/job/list?token=\[token\]](https://localhost:8002/visualcron/text/job/list?token=[token])

[https://localhost:8002/visualcron/xml/job/list?token=\[token\]](https://localhost:8002/visualcron/xml/job/list?token=[token])

[https://localhost:8002/visualcron/json/job/list?token=\[token\]](https://localhost:8002/visualcron/json/job/list?token=[token])

Output result

By default, if you use text as output headers are added (property names). If you want to exclude these you can set `&includeheaders=false` in the query. By default available properties will be listed but you can also set which properties (columns) to include like this:

[http://localhost:8001/visualcron/text/job/List?id=1&token=\[toke\]=id,name,runmissed,tasks](http://localhost:8001/visualcron/text/job/List?id=1&token=[toke]=id,name,runmissed,tasks)

It is possible to control the field separator, text qualifier and line break like this:

[http://localhost:8001/visualcron/text/job/List?id=1&token=\[token\]=59&textQualifier=34&lineBreak=10](http://localhost:8001/visualcron/text/job/List?id=1&token=[token]=59&textQualifier=34&lineBreak=10)

Tokens and authentication

It is possible to authenticate once and use a token that will work for 24 hours (and will be renewed for each call). The token is then used in each call. You can also authenticate each time you call a method. Using token and a method requires at least 2 calls instead of supplying user name and password in each call. However, using tokens is faster in the long run and generally more secure.

Get token

To get a token you authenticate against the the logon method:

<http://localhost:8001/visualcron/text/logon?username=admin&password=qwerty123>

This call returns a token that you can used in following calls like:

[http://localhost:8001/visualcron/text/job/List?token=\[token\]](http://localhost:8001/visualcron/text/job/List?token=[token])

Authenticate in call

By adding user name and password parameters you can work directly with the method without using tokens:

<http://localhost:8001/visualcron/text/job/List?username=admin&password=qwerty123>

2. Web service/SOAP

It is also possible to communicate with VisualCron through the web service API. The wsdl URL can be found in the Web API tab in Server settings.

There is the following example in the API folder (sample TestClient project):

```

var binding = new BasicHttpBinding()
{
    MaxBufferSize = int.MaxValue,
    MaxReceivedMessageSize = int.MaxValue,
    ReaderQuotas =
        new XmlDictionaryReaderQuotas()
        {
            MaxArrayLength = int.MaxValue,
            MaxStringContentLength = int.MaxValue,
            MaxNameTableCharCount = int.MaxValue
        },
    Security = new BasicHttpSecurity()
    {
        Mode = BasicHttpSecurityMode.TransportCredentialOnly,
        Transport = new HttpTransportSecurity()
        {
            ClientCredentialType = HttpClientCredentialType.Basic
        }
    }
};

var client = new WebServiceClient(binding, new
EndpointAddress("http://localhost:8001/VisualCron"));
//or just:
//
//var client = new WebServiceClient();
//
//but better setup binding

if (client.ChannelFactory.Credentials != null)
{
    //set Credentials
    client.ChannelFactory.Credentials.UserName.UserName =
txtUserName.Text;
    client.ChannelFactory.Credentials.UserName.Password =
txtPassWord.Text;
}
try
{
    //just call methods
    var jobs = client.Job_List();

    foreach (var job in jobs)
    {
        Console.WriteLine(job.Name);
    }
}

```

```
}  
catch  
{  
  
}
```

4.7.6 VCCommand

VCCommand.exe is a command line tool residing in the install folder\VCCommand folder. The VCCommand is an alternate way, just like the API to interact with a local or remote server. This command line tool is based on command line switches that can perform the following actions at the moment:

- Run a Job
- Activate a Job
- Deactivate a Job
- Stop a Job
- Run a Task
- List Jobs
- Activate license
- Deactivate license

You can see existing command switches and examples by running VCCommand.exe without any parameters:

Example: VCCommand --action runjob --connectionmode local --username admin --password xyz --name "Job Id or Name"

Example: VCCommand --action activatejob --connectionmode local --username admin --password xyz --name "Job Id or Name"

Example: VCCommand --action deactivatejob --connectionmode local --username admin --password xyz --name "Job Id or Name"

Example: VCCommand --action stopjob --connectionmode local --username admin --password xyz --name "Job Id or Name"

Example: VCCommand --action runtask --ip 127.0.0.1 --connectionmode remote --username admin --password xyz --name "Job Id or Name"

Example: VCCommand --action runjob --ip 127.0.0.1 --connectionmode remote --username admin --password xyz --name "Job Id or Name"

Example: VCCommand --action listjobs --connectionmode local --username admin --password xyz

Example: VCCommand --logontype ad --action listtasks --connectionmode local

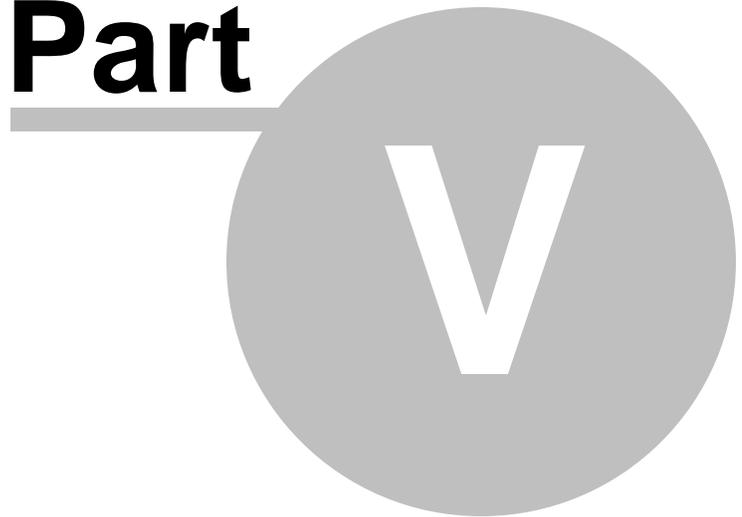
Example: VCCommand --action activate --r xxxxx-xxx-xxxx-xxxx --connectionmode local --username admin --password xyz

Example: VCCommand --action deactivate --connectionmode local --username admin --password xyz

Top Level Intro

This page is printed before a new
top-level chapter starts

Part



5 Client User Interface

The Windows VisualCron client user interface consists of a Windows Caption (top row), a tab/sub tab based menu system, a Toolbar (servers and job handling), a Grid filter (Servers/Groups/Jobs/Tasks), a Server/Group/Job/Task grid (major part) and a Status Bar (bottom row).

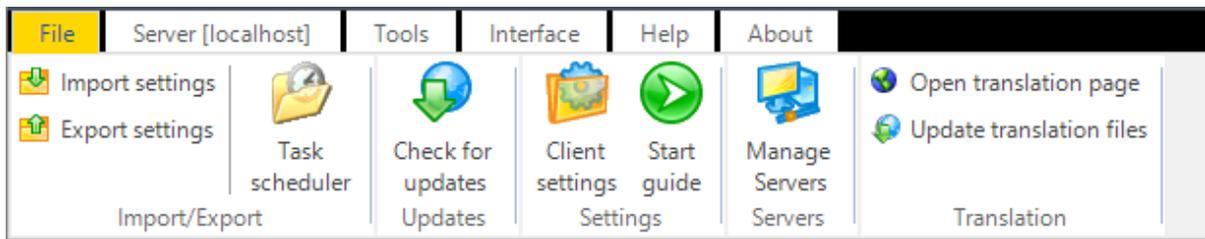
There is also a Windows VisualCron Tray client by which you can control some basic features.

5.1 Main menu

The main menu is located in the top of the VisualCron client screen, just under the Windows caption.

5.1.1 File

The **File** tab is a part of the main menu.

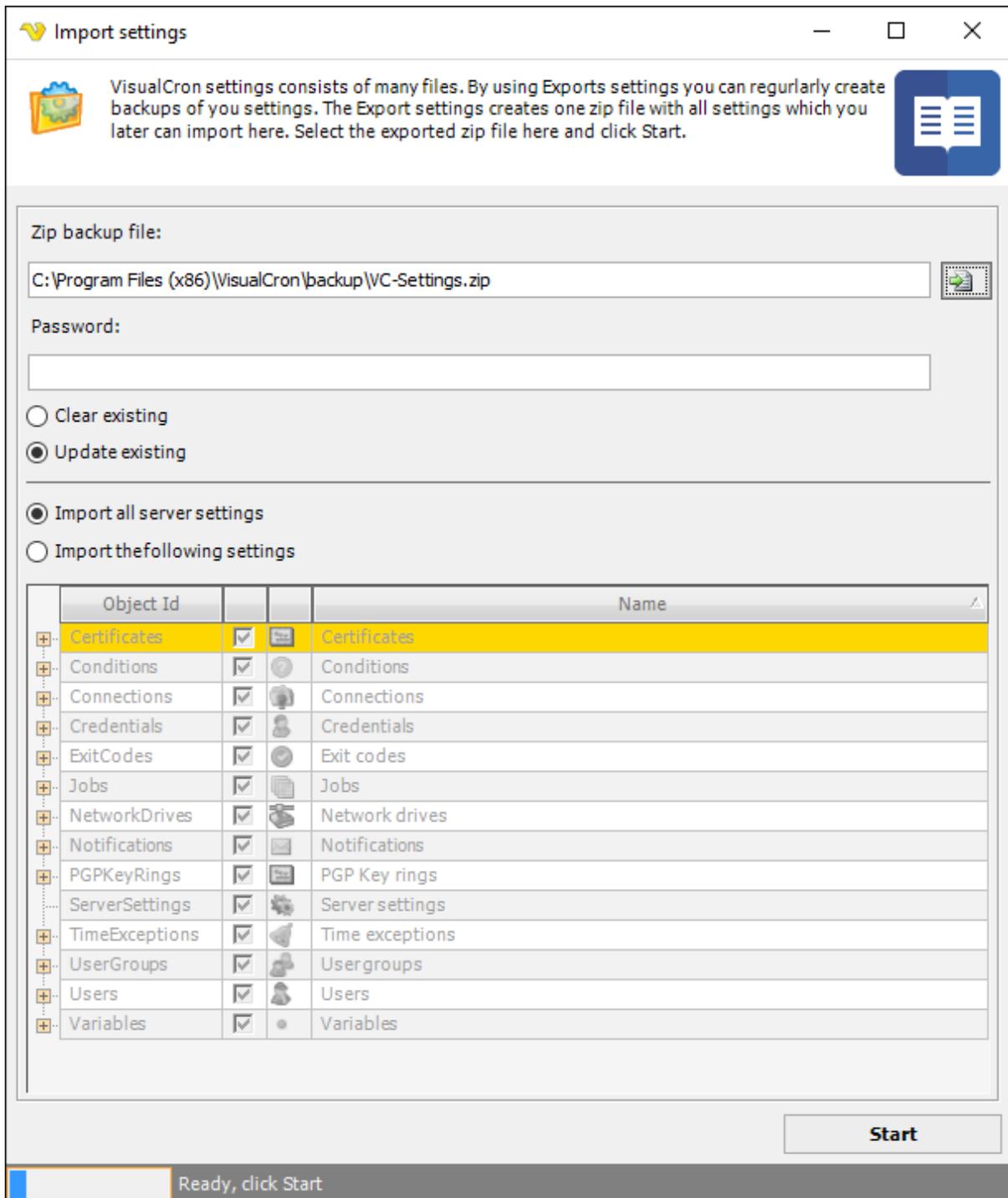


5.1.1.1 Import/Export - Import Settings

The main menu **File > Import/Export > Import settings** option lets you import settings to the currently connected VisualCron server from a previous backup/export. You may import a settings file across the Internet.

VisualCron settings consists of many files. By using Export settings you can regularly create backups of your settings. The Export settings create one zip file with all settings which you later can import here. Select the exported zip file here and click start.

File > Import/Export > Import settings



File to import

Enter full file path or click the *File* icon to browse and select a previously exported settings file. The default file for Export settings is C:\Program Files (x86)\VisualCron\backup\VC-Settings.zip

Password

If the exported zip file was protected with password then enter the password here.

Clear existing

Clears all previous settings, then adds the new settings. A setting is only cleared if that setting exists in the exported file. For example, if only Jobs were exported, only the Jobs will be cleared when importing.

Update existing

Updates existing settings. For example, all previous Jobs will remain and updated, if a Job with the same id exists in the file.

Import all server settings

Imports all settings that exist in the file you import.

Import the following settings

Select the settings that you want to import. Note that the setting must exist in the file (must have been previously exported).

Start

Click on the *Start* button to begin the import.

Troubleshooting

If you have problems importing settings and if you want to overwrite all settings on destination server you can perform the following steps:

1. stop the VisualCron service in the destination server
2. delete all files in the settings folder of installation except license.xml and server_settings.xml
3. copy all settings from source settings folder (except the files above) to destination settings folder
4. start the service

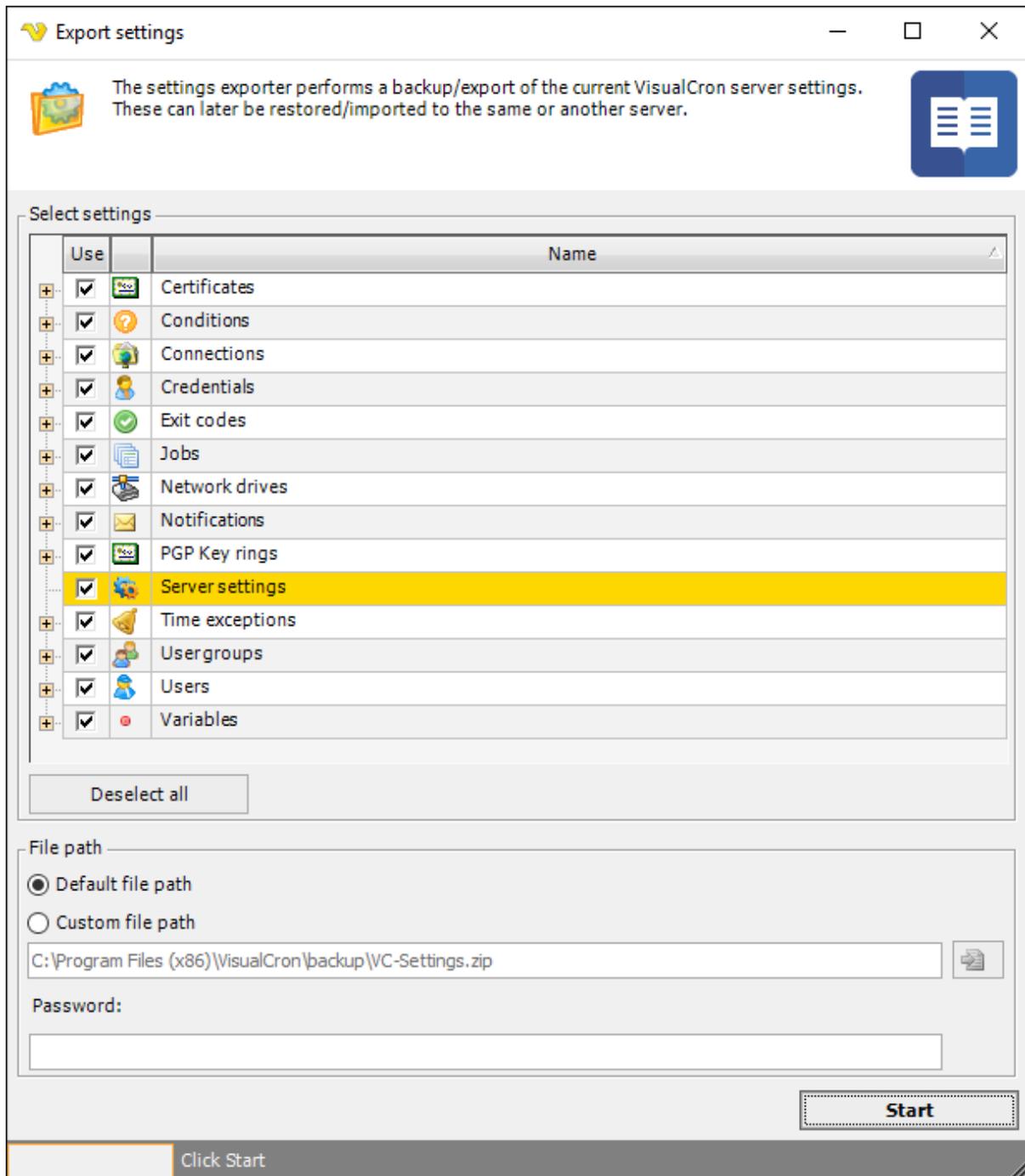
5.1.1.2 Import/Export - Export Settings

The main menu **File > Import/Export > Export settings** option makes a backup of the the currently connected VisualCron server settings. The backup/export may also be used to import these settings to another VisualCron server or to be used as a part of a problem report or a in fault tracing activity. You may Export/Import across the Internet.

It is recommended to perform regular backups using the *Export settings* function. If a setting error occurs and a backup file exists in the default backup file path, VisualCron will use the backup file and automatically restore settings. It is a recommendation that you keep a backup file both in the default folder and in another place.

The exported settings consists of many files, but the *Export settings* function creates one VC-Settings.zip file.

File > Import/Export > Export settings



Select settings

Select the Server settings in the list which you want to export. If there are no specific reason for the export, it is strongly advised that you export all settings, you may later choose to import just some settings. Note that when importing settings again and using "Clear existing settings" only existing object types will be cleared. For example, if you only export your Jobs the Jobs will only be cleared when importing.

Default file path

The default file for Export is C:\Program Files (x86)\VisualCron\backup\VC-Settings.zip.

Custom file path

If you want to use another destination for the exported file than the default file path then specify another file path.

Password

If you want to password protect and encrypt the backup you enter a password here.

Start

Click on the *Start* button to begin the export.

5.1.1.3 Import/Export - Task scheduler

With the main menu **File > Import/Export > Task scheduler** option it is possible to import tasks from the built in Task scheduler. There are some limitations as VisualCron uses different Trigger types and different Tasks. Also, you might need to update information after importing. See more information below in sections *Limitations* and *Manual update*.

Connecting

To connect to an existing Task scheduler instance you enter information below and then click Connect.

Host name

This is the IP/host name of the local or remote server.

User name

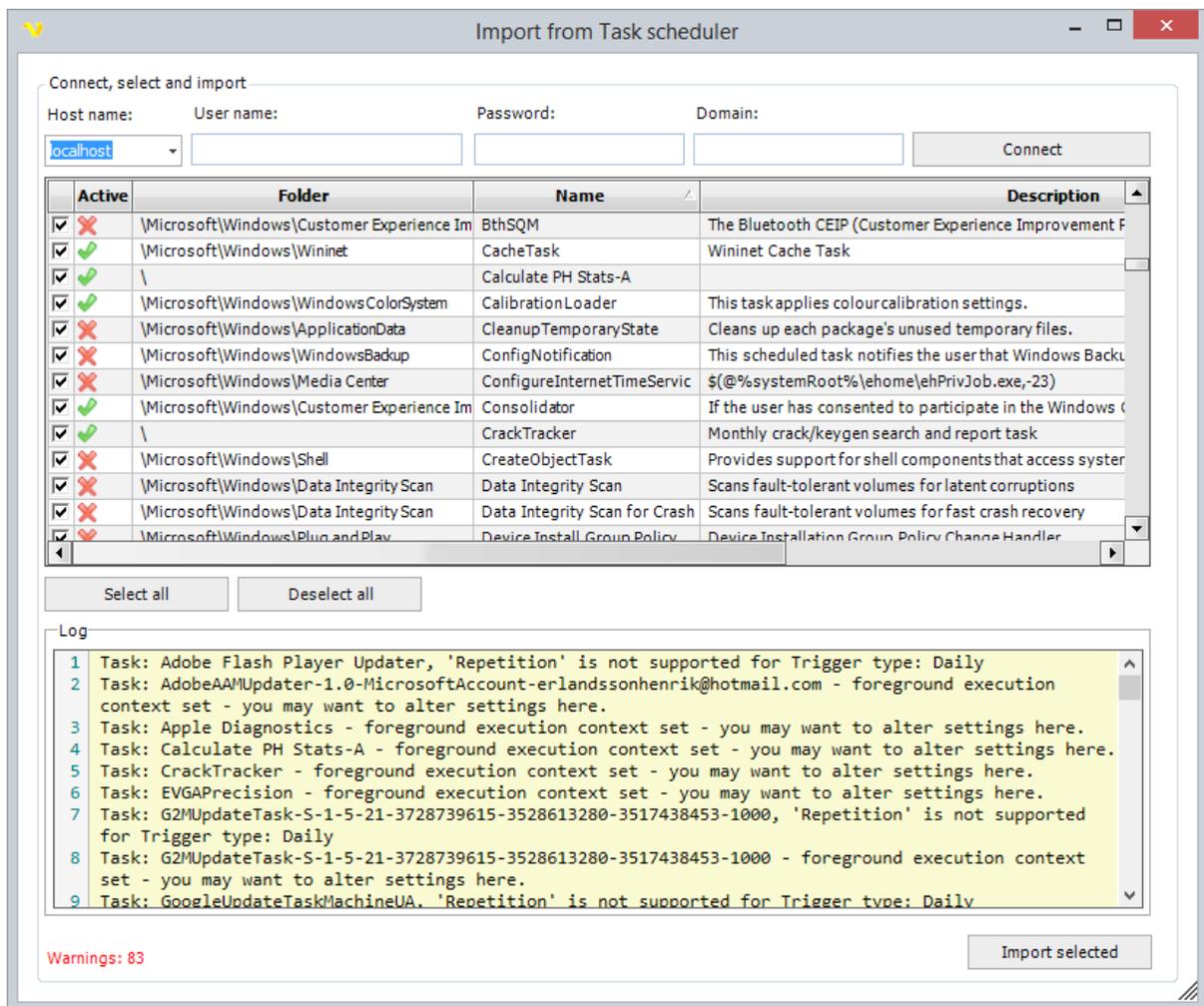
This is the username - used for authenticating against the remote server.

Password

This is the password - used for authenticating against the remote server.

Domain

This is the domain name - used for authenticating against the remote server.



Grid information

The grid displays all Tasks, if they are active or not, the folder they reside in, the name, description and any warnings during the import.

Actual Actions or Triggers within the Task are not visible in the grid but they will be imported.

Task selection

Select the Task you want to import into VisualCron. You can choose to select each one by one, select all or deselect all.

Importing

Click *Import selected* to start the import. Usually, this goes very fast as tasks are already converted and just needs to be sent to VisualCron Server. Jobs that are created will get the Folder property of the task as group name.

Limitations

Task/Action limitations

- One difference is that currently VisualCron does not fall back to background execution when foreground execution fails.

Trigger limitations

- There are properties that cannot be directly transferred into VisualCron like the repetition property.
- There are some Trigger types that is not supported like "Registration", "Idle"

Warnings

Any warnings, mostly related to limitations, will be displayed in the Warnings column next to each task and also in the log textbox.

Manual update

Manual updates of imported tasks might be required. Some manual changes are stated in the log. These type of changes concern two things:

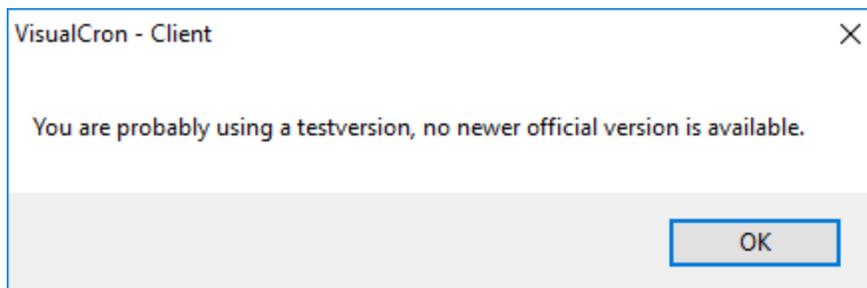
Credentials - update of password. After import go to Manage Credentials and update the password of any new, imported Credentials.

Connections - update of SMTP server information. After import go to Manage Connections and update SMTP server details.

Other types of changes might be to update existing Execute Task. VisualCron does not execute the same way as the Task Scheduler and manual alterations might be needed. For example, if you use cmd.exe you should instead call the full path to the executable/script in the command line instead. This is because VisualCron needs that to be able to capture exit code and output.

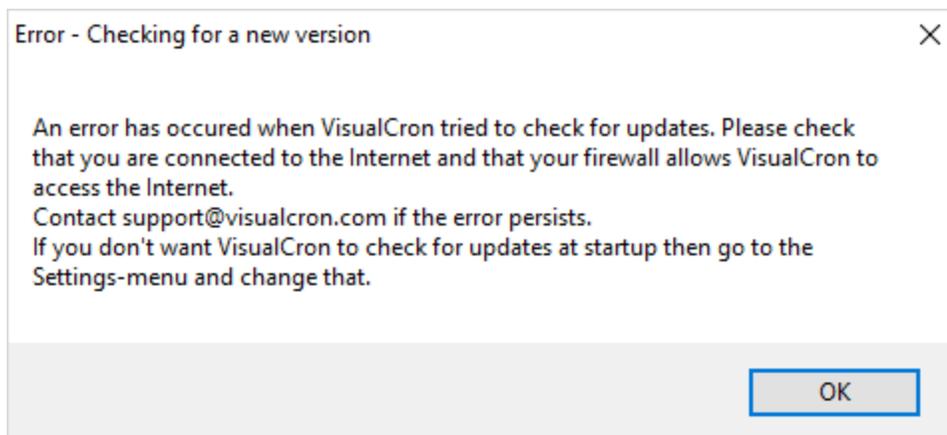
5.1.1.4 Updates - Check for Updates

The main menu **File > Updates > Check for updates** option connects to the VisualCron web site i order to find if there is a later version available.

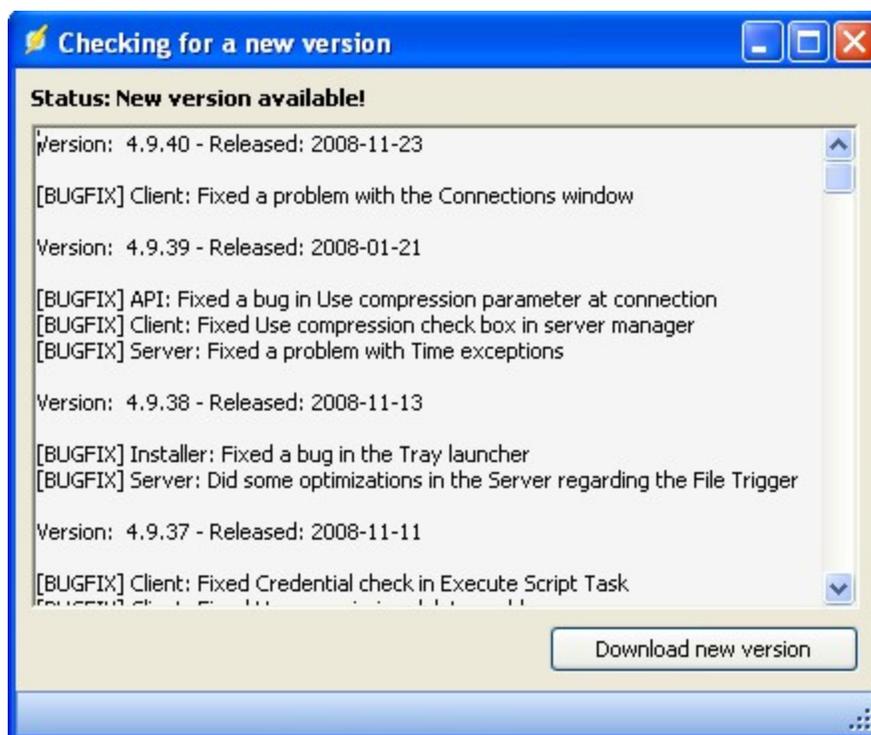


In case of this response, you should repeat the updates function at a later date until the official version is available.

If the VisualCron Client is off, the computer where the VisualCron Client runs is offline and the VisualCron Client is started, the below message is displayed. It is also shown when the computer where the VisualCron Client runs is offline and the **File > Updates > Check for updates** is clicked.



In **File > Settings > Client settings > Main settings** tab, uncheck *Check for updates at startup* if desired.

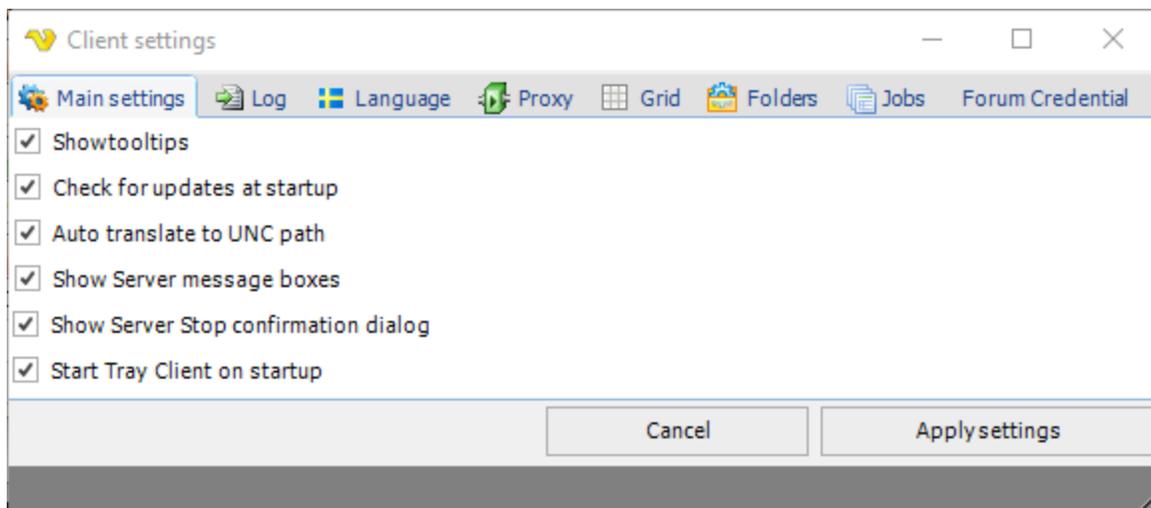


In this case you are encouraged to download the latest official version.

5.1.1.5 Settings - Client Settings

Some general settings are available for the Client. These are located in the main menu **File > Settings > Client settings**.

File > Settings > Client settings > Main settings tab



Show tooltips

If this option is selected, an "Info" window is opened when the mouse points to some settings. The displayed text provides additional information related to the specific setting.

Check for updates at startup

If this option is selected, a connection to visualcron.com is performed at VisualCron client startup in order to check for and notify the user of possible later VisualCron versions.

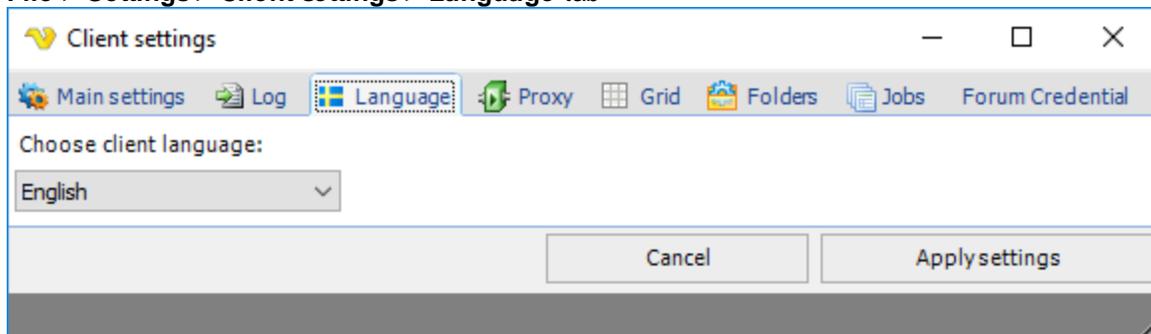
Auto translate to UNC path

When this is checked all logical drives (i.e. Z) is translated to the UNC path (\\servername\folder\file)

Show Server message boxes

If alerts should be displayed. Otherwise shown in log window.

File > Settings > Client settings > Language tab



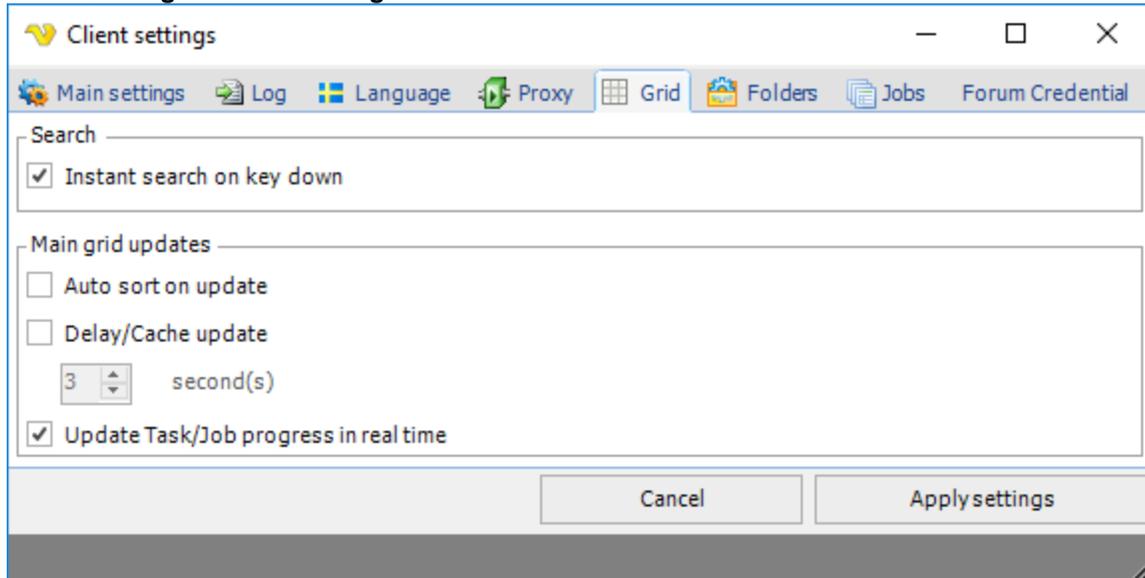
Choose client language

Select language to be used in VisualCron client. In order for the new language to take effect, the client have to be restarted.

Note: The documentation, web, log and debug entries are in English, independently of the language setting. User entered texts, e.g. Job description, remains in the entered language.

File > Settings > Client settings > Proxy tab

Enter specific proxy server data to be used for connection to a server. See description of Server proxy settings for more information.

File > Settings > Client settings > Grid tab*Auto sort on update*

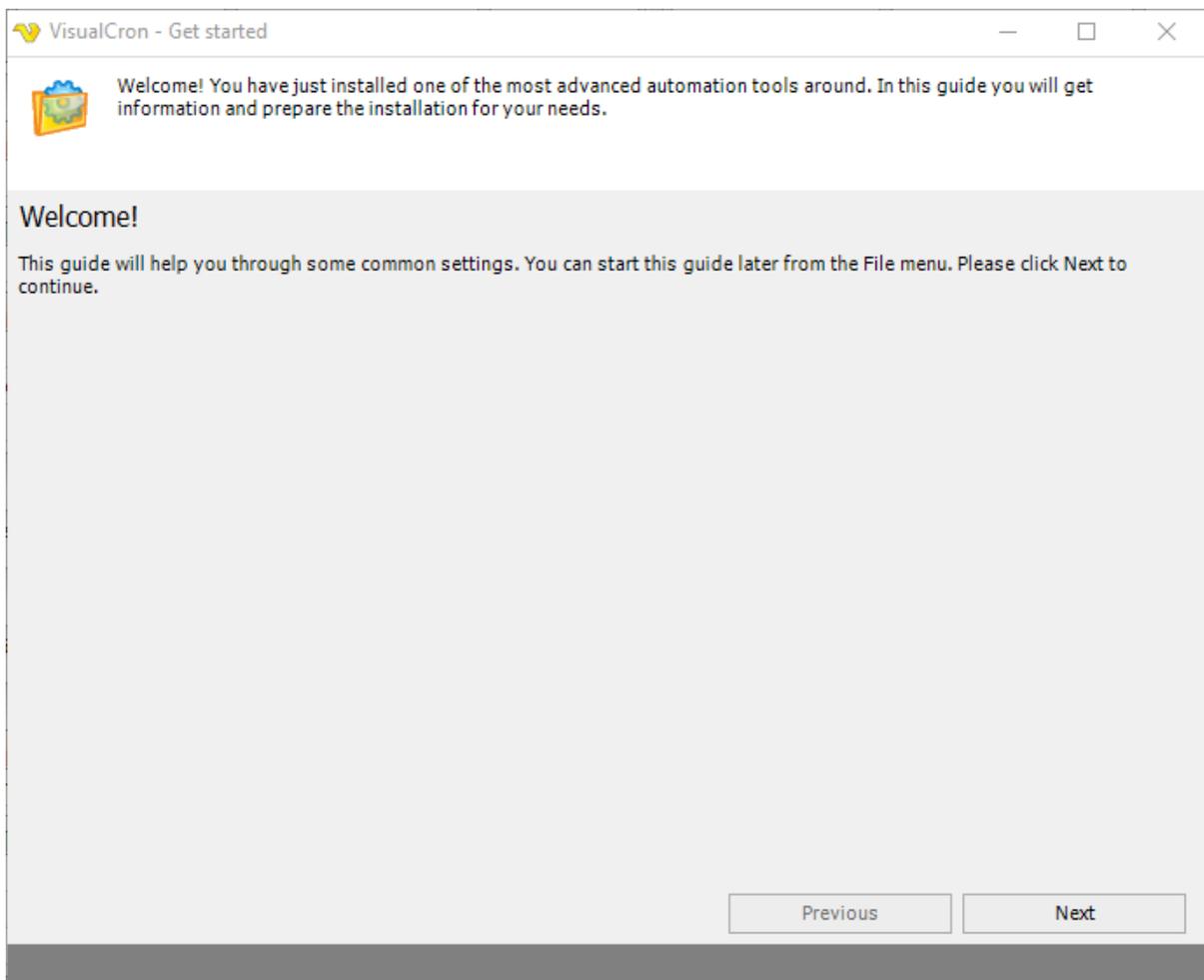
If VisualCron should sort all Jobs when updates are received. Checking this degrades Client performance. Default off.

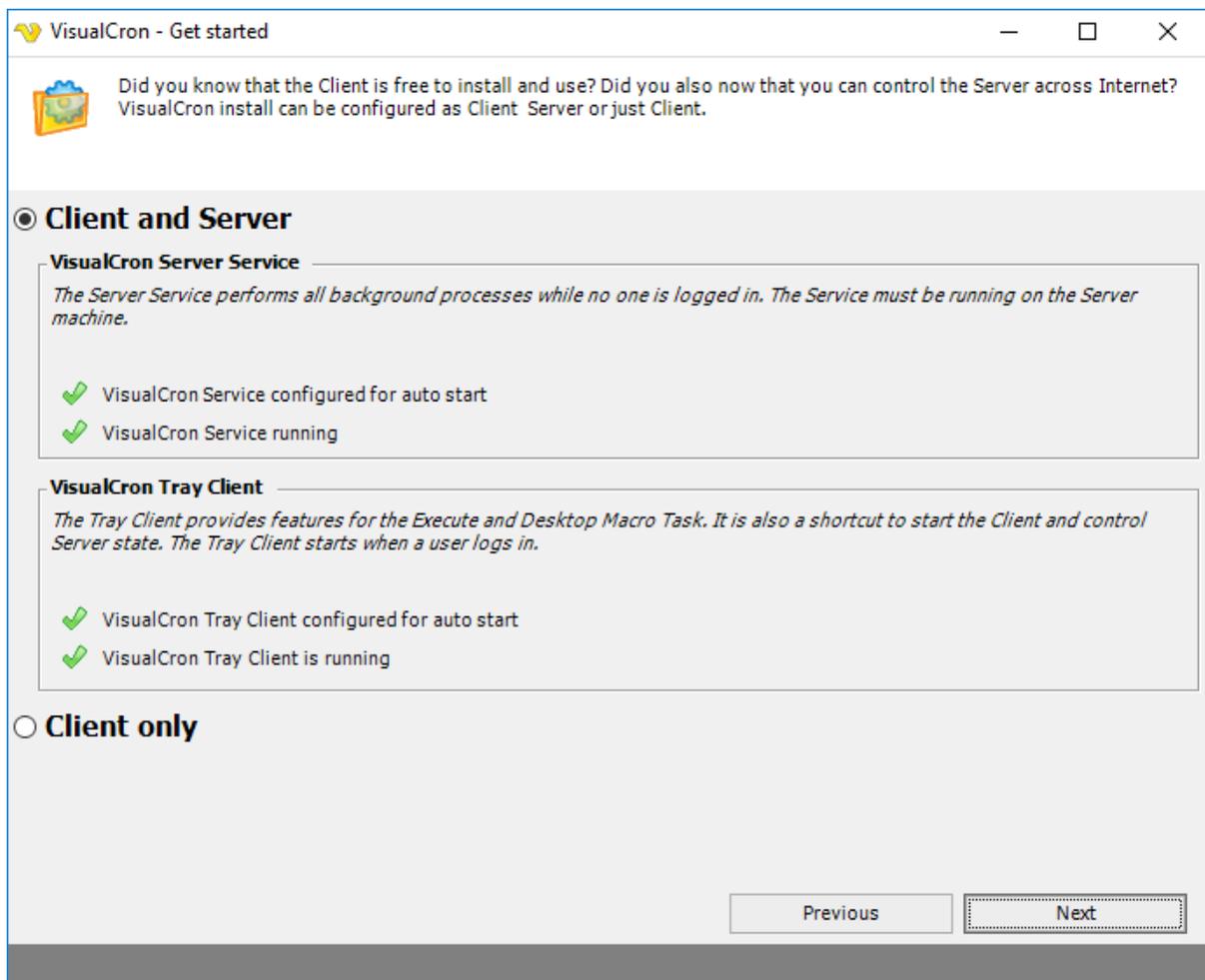
Delay/Cache update

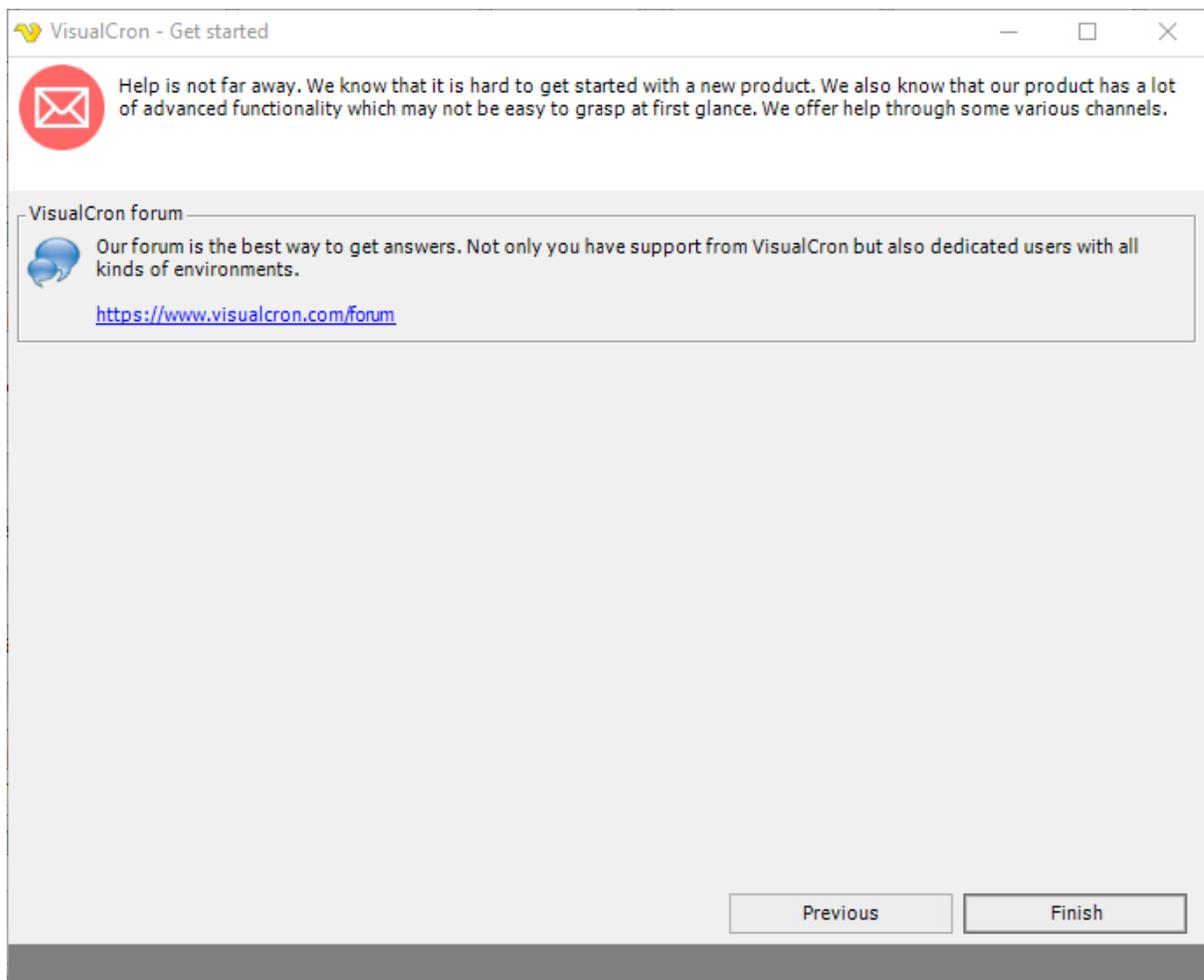
To improve performance you can delay row updates. Default off.

5.1.1.6 Settings - Start Guide

The main menu **File > Settings > Start guide** option repeats the start screens you were presented to when you installed VisualCron for the first time:







5.1.1.7 Servers - Manage Servers

With the main menu **File > Servers > Manage servers** option, the currently connected server name is displayed in the main menu **Server [<server name>]** tab, as a Server/Username entry in the Server/Jobs/Tasks grid and in the status bar.

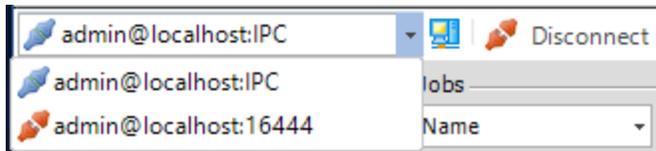
By default, the VisualCron server is installed and started on the same computer as the client. Managing servers is a way to add/edit/delete connections to other VisualCron servers. Thus, it is easy to switch between different connections. It is in the login window you choose what server connection to use when you are connecting. All the server connections are displayed in the combo box at top of the login window.

Switching between servers

Also, when using the VisualCron client it is possible to switch to another server.

The easiest way to switch between servers is to click on a server in a Server/Username "track" in the Server/Job/Task grid. Clicking on another server than the currently connected, immediately updates all parts of the client window with information related the new server.

Switching may also be done by using the toolbar server connection control (Default: "admin@localhost:IPC"):



Use the drop down list in the leftmost part of the toolbar to select a new server. If the icon to the left of the server connection is disconnected, all items in the main menu is "greyed out" and not accessible. Click the *Connect* icon immediately to the right of the drop down server list to connect to the new server. By this, the server name is updated in all parts of the VisualCron client and also all Jobs/Tasks related to the connected server are shown in the Server/Job/Task grid.

Edit and add a server

Choose a server from the list in the **File > Servers > Manage servers** window if you want to edit or delete a server. If you click on *Edit* the connection information will be shown in the text boxes. Edit any value and click *Update*.

To add a connection, click the *Add* icon (or the *Clear* button if you are in edit mode). Enter the values and click on the *Add* button to add the connection.

Auto connect at startup

If you want the Client to automatically connect to this Server at startup you should check this option.

Is a local server

VisualCron can connect to local and remote Servers. Choose *Is a local server* if you are connecting to a computer on the same machine, this will increase the login speed to the server significantly.

Use compression

When this option is used all information that is sent between Client and Server is compressed. This allows faster communication if you have Tasks with large output or communicating remotely with a slower device.

Server

This can be a server name, or IP number. VisualCron will try to resolve or names. Default: "localhost" (your computer).

Port

Default: "16444". You can only change the port number (which the server is listening to) while you are logged in. If you change the port here, remember to change it in the server. Also, be sure to check that, if you use a firewall, that the port is you enter is opened on that computer for incoming traffic.

Use Active Directory logon/Use internal logon

VisualCron has two different authentication systems; one internal and one that is extended by Active Directory. If you want to allow Active directory logon you need to do that in user logon settings.

Username

Default: "admin". This is the user name the server uses. Be sure to change this after the initial login.

Password

By default it is blank. This is the password that the server uses. Be sure to change this after the initial login.

Prompt for login

If you want to enter Username and/or password at connection then you should check this box.

Proxy

Proxy settings concerns checking for update, http Job type and activation. The Proxy setup does not apply to the SSL connection between the VisualCron Client and the VisualCron Server.

If you are using a proxy to connect to the Internet and can't connect, uncheck the *Autodetect* checkbox and enter your settings or contact the network administrator.

5.1.1.8 Translation - Open translation page

The main menu **File > Translation > Open translation page** option handles VisualCron appearing in specific languages. If your language is missing in VisualCron or if a specific VisualCron caption is missing in your language, and you want to contribute with translation work, please contact VisualCron support.

5.1.1.9 Translation - Update translation files

The main menu **File > Translation > Update translation files** option handles VisualCron appearing in specific languages. If your language is missing in VisualCron or if a specific VisualCron caption is missing in your language, and you want to contribute with translation work, please contact VisualCron support.

5.1.2 Server

The **Server** tab is a part of the main menu.



5.1.2.1 Main - Server On/Off

In the main menu **Server > Main settings > Server** dialog, the VisualCron server status can be set to "On" or "Off". The server status is indicated and/or managed by any connected client by the "Server [On]" or "Server [Off]" text in the main menu **Server** option.

The status "Server [Off]" means that the service is running but the server doesn't execute the defined Jobs or Tasks, and the *NextRun* field for any active Job will show the "Server off" text. Switching to "Server[Off]" may be used as an emergency stop for the current Job/Task execution.

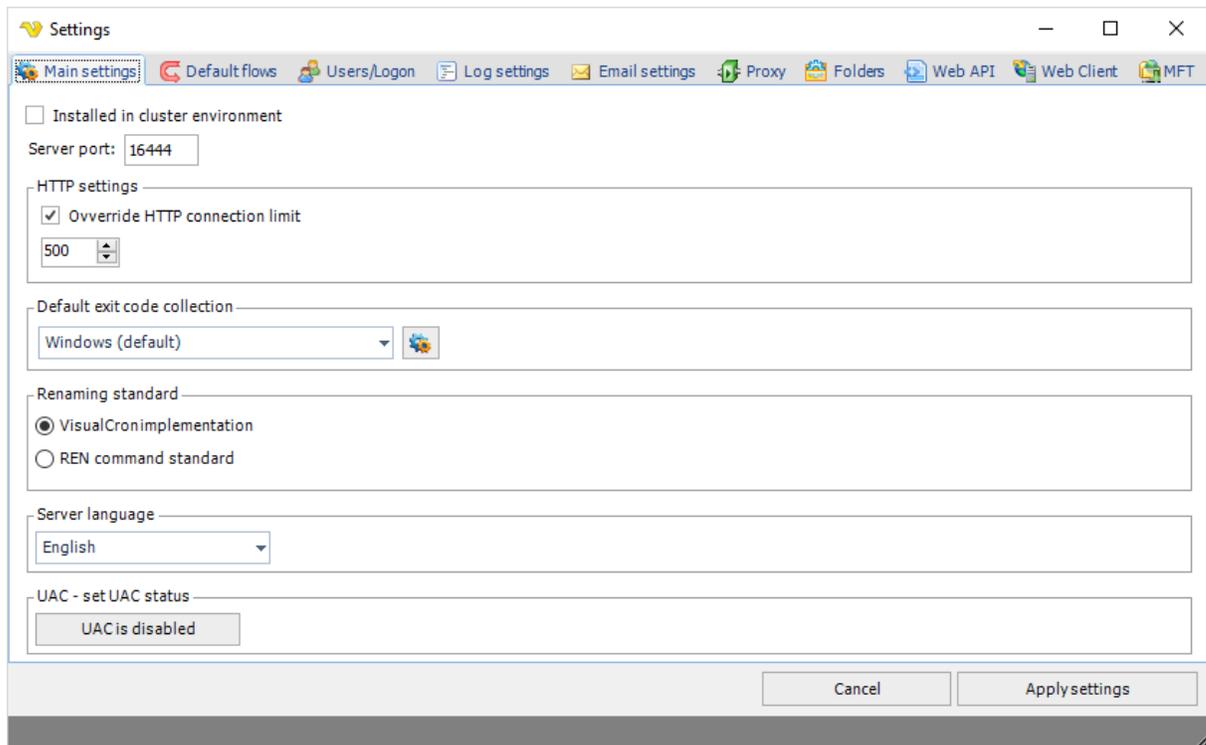
Once you have changed the server status, the status will be saved and VisualCron will use that status the next time the server computer is started.

5.1.2.2 Main - Settings

In the main menu **Server > Main settings > Settings** dialog, there are a set of important setting groups/tabs. See the following sub chapters for information about other tabs than Main settings:

- Main - Settings - Users/Logon
- Main - Settings - Log settings
- Main - Settings - Email settings
- Main - Settings - Proxy
- Main - Settings - Folders
- Main - Settings - Web API
- Main - Settings - Web Client
- Main - Settings - MFT Server

Main > Settings > Main settings tab



Installed in a cluster environment

Check this if you are installing VisualCron on a shared drive.

Server port

VisualCron sends encrypted information across the default TCP port 16444. If you want to change this port you enter a new integer value here.

Override HTTP connection limit

This general setting controls number of HTTP connections that can be done from VisualCron. Increasing this might be good if you plan to run many HTTP requests at once (for example through the HTTP Task).

Default exit code collection

This sets the default exit code collection that is pre-selected in On error tab of a Task.

Renaming standard

For various Tasks VisualCron offers "rename" of various strings. Depending on your requirements there are 2 different implementations. The REN command standard follows renaming conventions of REN command. As many of these conventions were not logical to us and our customers we implemented our own renaming standard - adjusting some of the standards of the REN command.

Server language

This controls the language used on the Server (when writing to logs etc).

UAC - set UAC status

This control the Local Security Policy settings "User Account Control: Turn on Admin Approval Mode" and affects Execute Task primarily. If you use the Execute Task along with a Credential and get error - 1073741502 you should disabled this property and reboot after the change.

This policy setting controls the behavior of all User Account Control (UAC) policy settings for the computer. If you change this policy setting, you must reboot your computer. The options are:

- UAC is disabled: (Default) Admin Approval Mode and all related UAC policy settings are disabled.
Note: If this policy setting is disabled, the Security Center notifies you that the overall security of the operating system has been reduced.
- UAC is enabled: Admin Approval Mode is enabled. This policy must be enabled and related UAC policy settings must also be set appropriately to allow the built-in Administrator account and all other users who are members of the Administrators group to run in Admin Approval Mode.

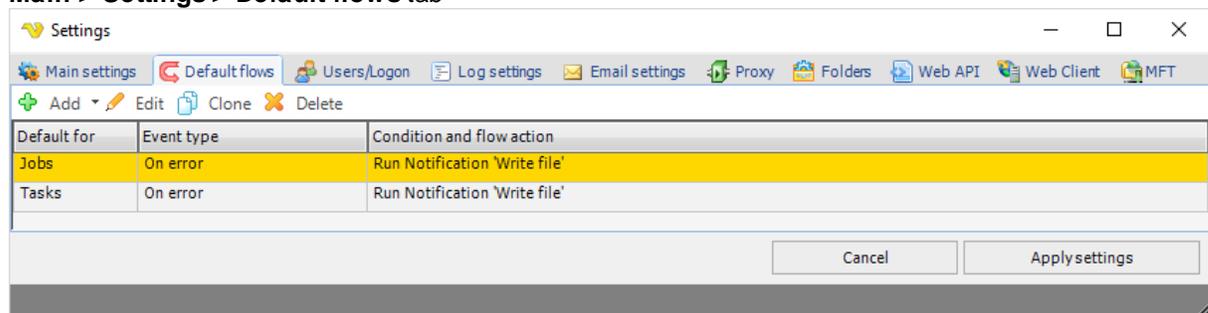
Alternatively you can edit the registry and set:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Windows\NoInteractiveServices to 0

5.1.2.2.1 Settings - Default flows

In the main menu **Server > Main settings > Settings** dialog, you can choose to add Flows that will be added as default for new Jobs OR Tasks. Once you have created a default flow here, the flow will be suggested whenever you open a Job or Task for editing/adding. In this way, Default flows has some resemblances to other global objects but it is not quite the same.

Main > Settings > Default flows tab



Add/Edit/Clone/Delete

Click the **Default flows** icons to update the list of default flows for Jobs and Tasks.

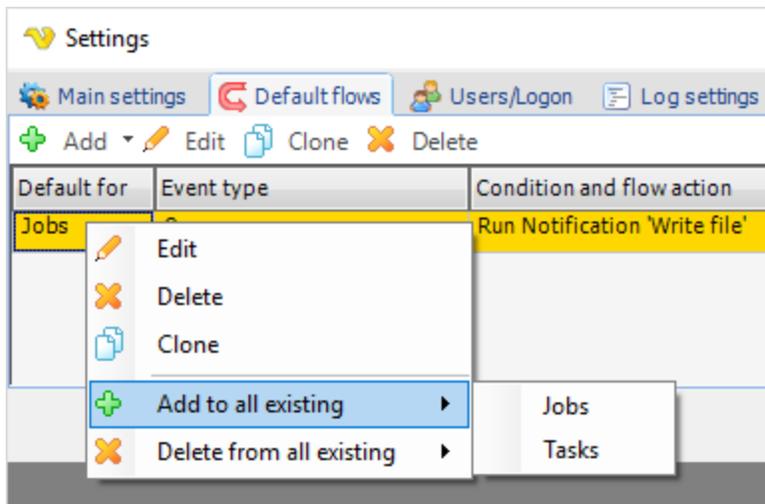
Main > Settings > Default flows > Add > Job flow window

A created default flow will add this flow to all new Jobs or Tasks and will show up in one of the lists in the **Edit Job > Flows** tab or the **Edit Task > Flows** tab. Note that Tasks always have two flows included by default; *On success - Continue with next Task* and *On error - Stop Job*.

If the new default flow is also desired for previously defined Jobs/Tasks, you need to click the *Get default flows* icon for each **Job/Task flow** you want the default flow for.

Independently if you right click in the **Default flows** window or in a **Job Flow** or **Task Flow** window, you have the option to add or remove a flow for all Jobs OR Tasks. This will take some seconds and it will run in the background. Thus, the update will not immediately be seen in the **Job Flow** or **Task Flow** window and the *Cancel* button (not *OK*) shall be clicked when leaving the window in order not to save the screen contents. The Default Flow Add/Edit/Clone/Delete is based on a hidden Id of the unique flow that is created - not the actual actions it takes (i.e Run Notification, Retry etc). This means that even if you create a Flow that behaves exactly like another existing one it is considered a new Flow as it has another Id. Because of this, if you first create a Default flow and then push it out for all Jobs - then modify the Flow to, let say run other Notification, then push it out again to update all.

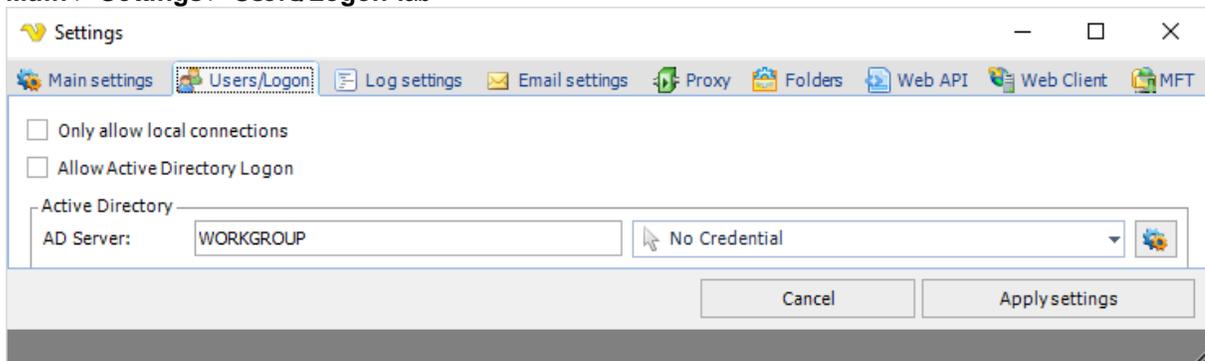
Each single flow in the **Job/Task flow** lists can be deleted and the list is immediately updated, in case the **Job Flow** or **Task Flow** windows are closed by the *OK* button.



5.1.2.2.2 Settings - Users/Logon

In the main menu **Server > Main settings > Settings** dialog, there are a set of important setting groups/tabs. In this tab, the users and logon settings are managed.

Main > Settings > Users/Logon tab



Only allow local connections

This setting closes the remote port 16444 for incoming connections. Local login is only possible.

Allow Active Directory logon

VisualCron has two different authentication systems; one internal and one that is extended by Active Directory. This box needs to be checked in order to allow AD logon.

AD Server

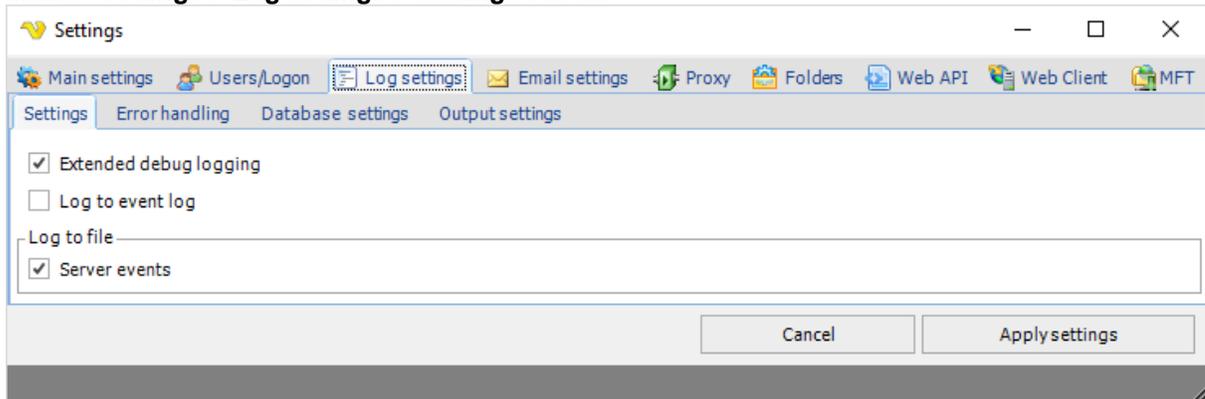
When using Active Directory logon you need to specify server name or IP address. This will be used as default when working with user permissions.

Credential

The AD Server Credential that will be used as default when working with user permissions.

5.1.2.2.3 Settings - Log settings

In the main menu **Server > Main settings > Settings** dialog, there are a set of important setting groups/tabs. In this tab, the log settings are managed.

Main > Settings > Log settings > Settings sub tab*Extended debug logging*

If you experience problems the VisualCron support may ask you to turn on extended debugging. When the support process is done you uncheck this option as it leverages the system.

Log to event log

Use Windows event log for logging.

Log to file - Client events

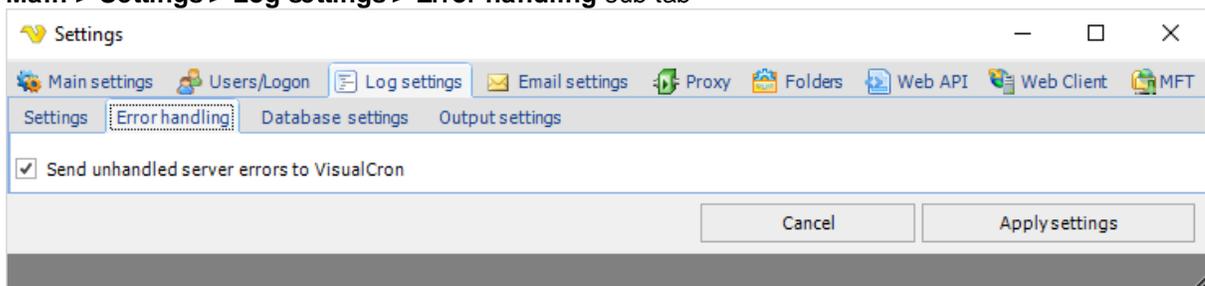
Controls if Client should write events to a file (placed in VisualCron X/log folder).

Log to file - Server events

Controls if Server should write events to a file (placed in VisualCron X/log folder).

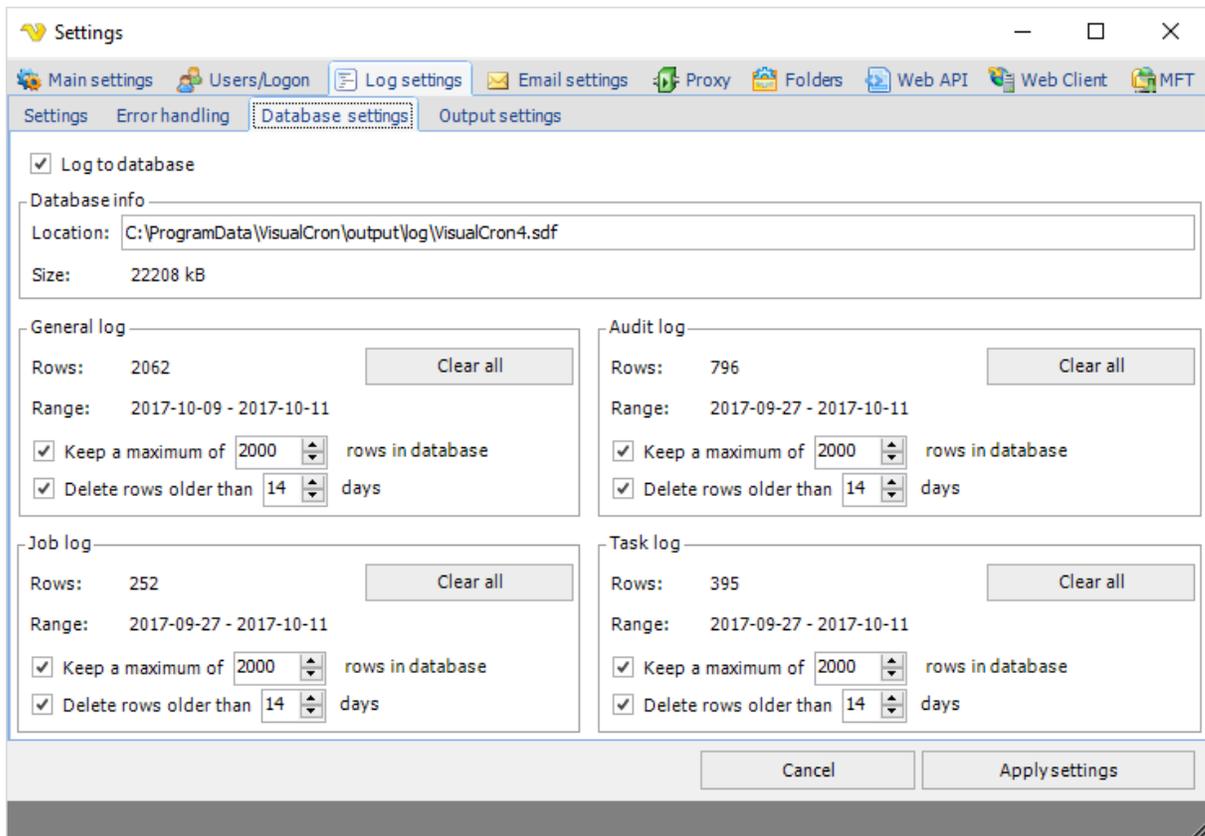
Log to file

If any option is activated, a log file will be created and entries will be written into the log file. A new log file is created for each day. If no Job has been run during a day (with logging on) - no file will be created. The server/client log file names are "log_serverYYYYMMDD.txt"/"log_remoteYYYYMMDD.txt". By default the log files are located in the "C:\Program Files\VisualCron\log\" folder.

Main > Settings > Log settings > Error handling sub tab*Send unhandled server errors to VisualCron*

If you check this all errors are reported back to VisualCron. This way we can get enough information to detect and fix bugs as soon as possible.

Main > Settings > Log settings > Database settings sub tab



VisualCron uses an internal database to log server events and Job/Task result/output and audit logging. These are stored in separate tables in an internal database. You can control how many and/or how long time this data should be stored in each table.

Log to database

This controls if the internal database should be used or not.

Location

This shows the location of the internal database (for debugging purposes).

Size

This shows the current size of the database.

General/Audit/Job/Task Rows

The current number of rows in the current log type

General/Audit/Job/Task Range

The date range of the current stored objects.

General/Audit/Job/Task Keep a maximum of x rows in database

This option controls how many rows to store. If unchecked then unlimited rows will be stored (or limited by number of days in setting below).

General/Audit/Job/Task Delete rows older than x days

This option controls how many days to store. If unchecked then unlimited days will be stored (or limited by number of rows in setting above).

General/Audit/Job/Task Clear all

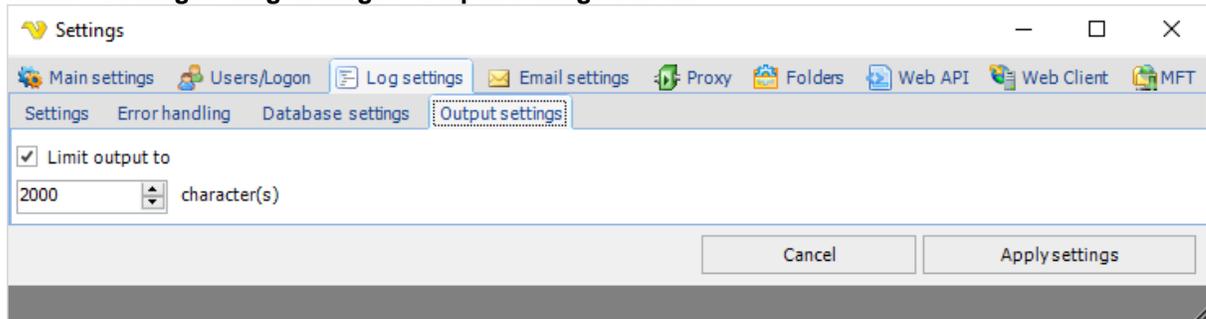
This option deletes all entries for the current log type.

Reset database completely

If the database has exceeded maximum size you may have to manually delete it to restore. Here are the steps:

1. Open the **Main > Settings > Folders** tab and click on the *Output cache folder > Open* button.
2. Stop the VisualCron service
3. In the Explorer window enter the folder "log" and delete the file "VisualCron4.sdf"
4. Start the service again

Main > Settings > Log settings > Output settings sub tab



Limit output to

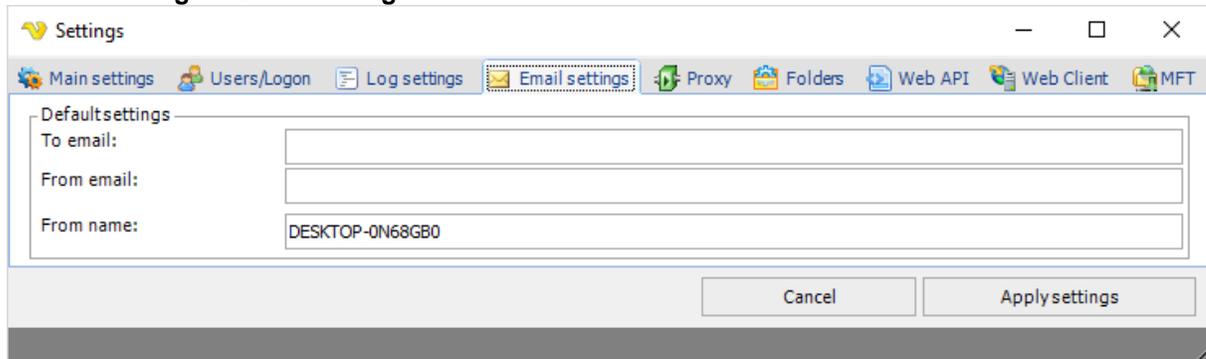
If checked, Task output will be limited in the Task log table to the value you set below. It is recommended to have some kind of limitation so that the database file do not grow to fast which makes it hard to control and connection slow between Client and Server.

5.1.2.2.4 Settings - Email settings

In the main menu **Server > Main settings > Settings** dialog, there are a set of important setting groups/tabs. In this tab, the email settings are managed.

These are the default settings that will be used for the Email Tasks. The SMTP connection details are managed in the Connections - SMTP Connection.

Main > Settings > Email settings tab



To email

By entering information in this field, the fields at *Add Job*, will be automatically entered. You can send to several email addresses at the same time by separating these with a semicolon (;). The *To email* address(es) shall be a valid email address(es) to where the email(s) will be sent.

From email

By entering information in this field, the fields at *Add Job*, will be automatically entered. This is the default email address that VisualCron uses to send email from.

From name

The origin of the the email message. By default it is the server name.

5.1.2.2.5 Settings - Proxy

In the main menu **Server > Main settings > Settings** dialog, there are a set of important setting groups/tabs. In this tab, the proxy settings are managed.

Main > Settings > Proxy tab

Proxy type

Select the proxy type to be used.

Address

The host name or IP address of the proxy server.

Port

The port of the proxy server.

Use credentials

Text ...

Domain

The name of the domain to be used.

Username

The user name to access the proxy server.

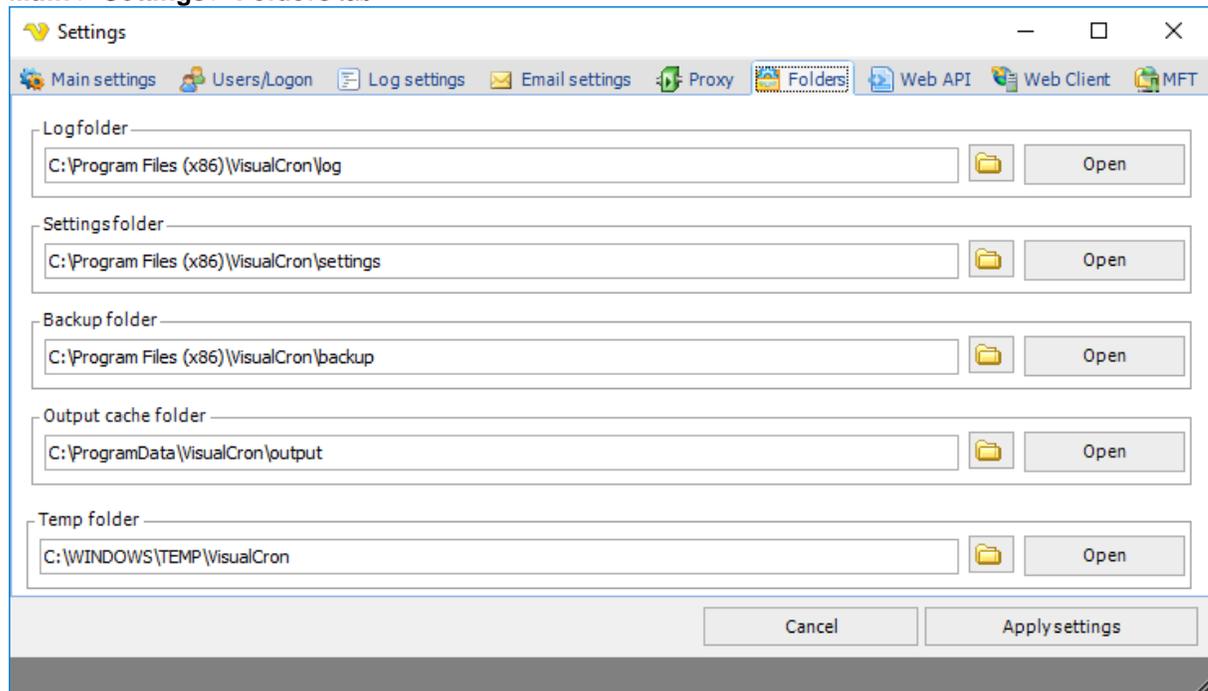
Password

The password to access the proxy server.

5.1.2.2.6 Settings - Folders

In the main menu **Server > Main settings > Settings** dialog, there are a set of important setting groups/tabs. In this tab, the folder settings are managed.

Main > Settings > Folders tab



In the folders tab you view and change the folders that are used within VisualCron.

Log folder

This is where server logs are stored, for example log_serverDATE.txt.

Settings folder

This is where settings are stored.

Backup folder

This is the default backup folder for the default Job "Backup settings".

Output cache folder

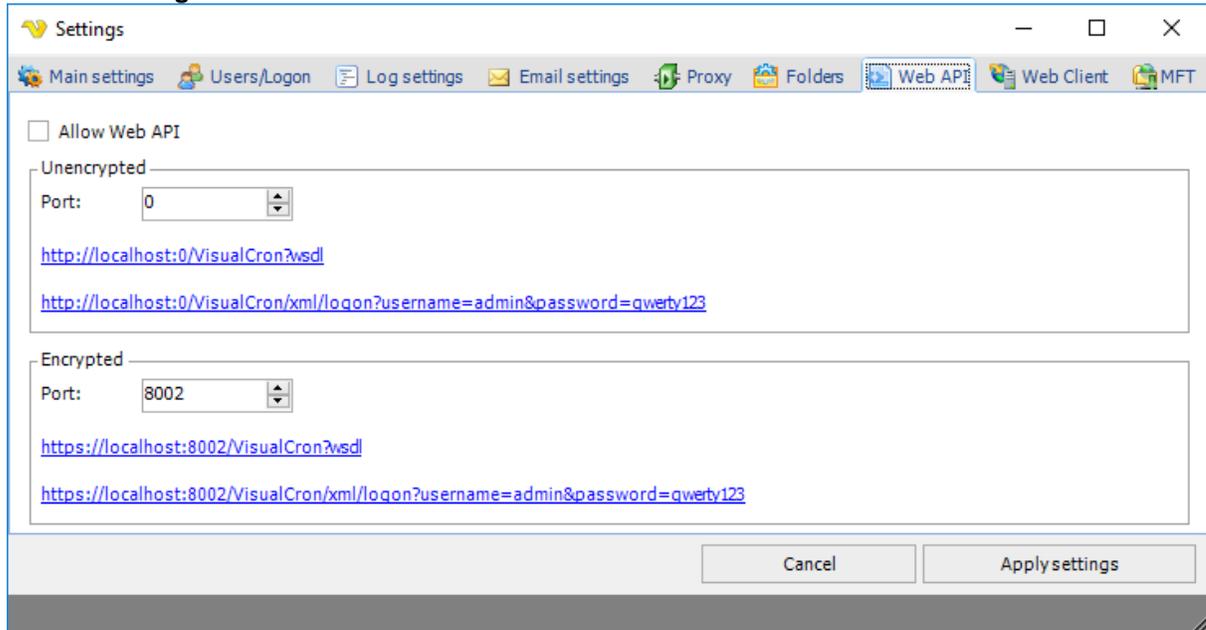
This is where temporary output and the internal database files are stored (sub folder log).

Temp folder

This is the temporary folder that VisualCron uses for storing temporary files when working with various Tasks. This folder is cleaned up from time to time - do not keep any important files here.

5.1.2.2.7 Settings - Web API

In the main menu **Server > Main settings > Settings** dialog, there are a set of important setting groups/tabs. In this tab, the web API settings are managed.

Main > Settings > Web API tab

Allow Web API

Text ...

Unencrypted/Encrypted port

Text ...

5.1.2.2.8 Settings - Web Client

In the main menu **Server > Main settings > Settings** dialog, there are a set of important setting groups/tabs. In this tab, the web client settings are managed.

Main > Settings > Web Client tab

See the Web Client section.

5.1.2.2.9 Settings - MFT Server

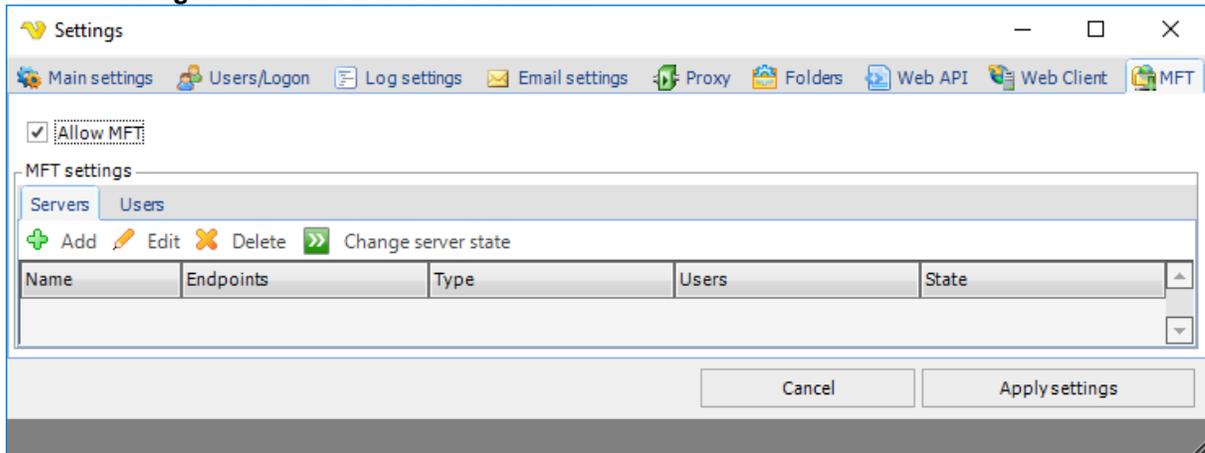
In the main menu **Server > Main settings > Settings** dialog, there are a set of important setting groups/tabs. In this tab, the MFT Server settings are managed.

The MFT Server provides built in support for hosting, inside VisualCron, for the following server types:

- SFTP
- FTP

The advantages of using VisualCron for this are:

- You are not dependent on any second installation of a third party server.
- VisualCron can react faster to any changes within the server through the MFT Trigger. The MFT Trigger can react on various events like file uploaded, download, folder created etc
- Through the Web Client, VisualCron users can manage the files (delete, upload, download)

Main > Settings > MFT Server > Servers sub tab**Allow MFT**

Starts all predefined sub MFT servers (FTP, SFTP etc) at startup when this is checked.

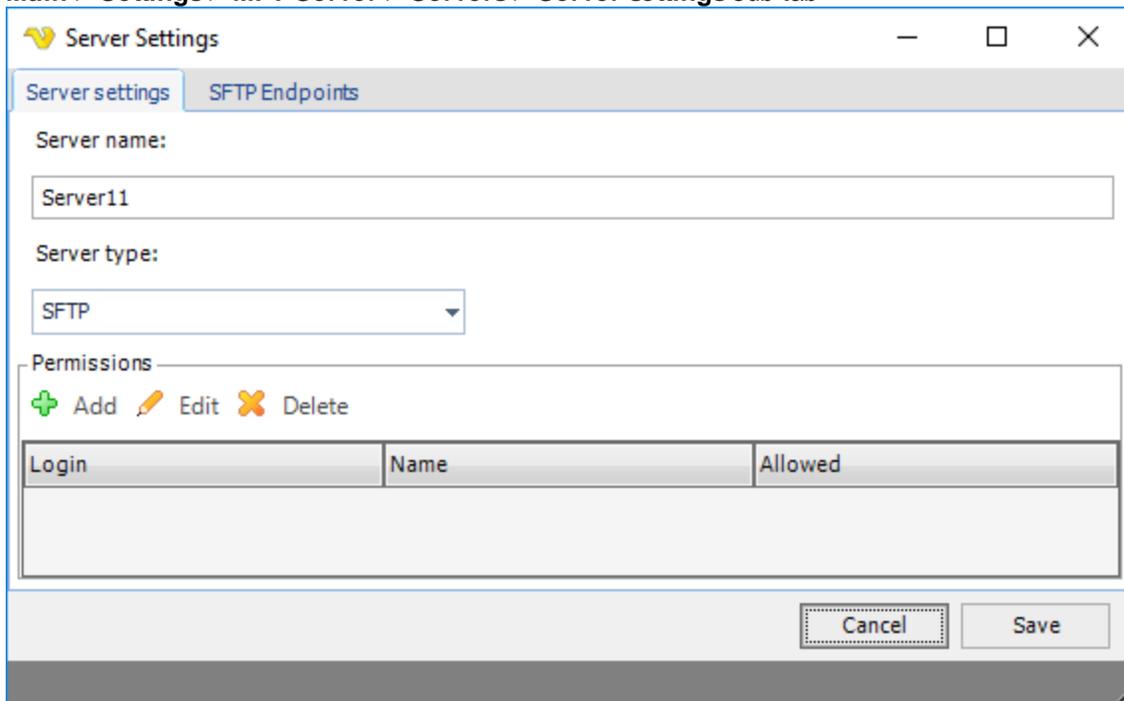
Change server state

Turns on and of the selected MFT server.

MFT Servers list

This is the list of existing MFT servers (of any type).

Upon pressing the Add Servers icon, the Server settings dialog is opened.

Main > Settings > MFT Server > Servers > Server settings sub tab**Server name**

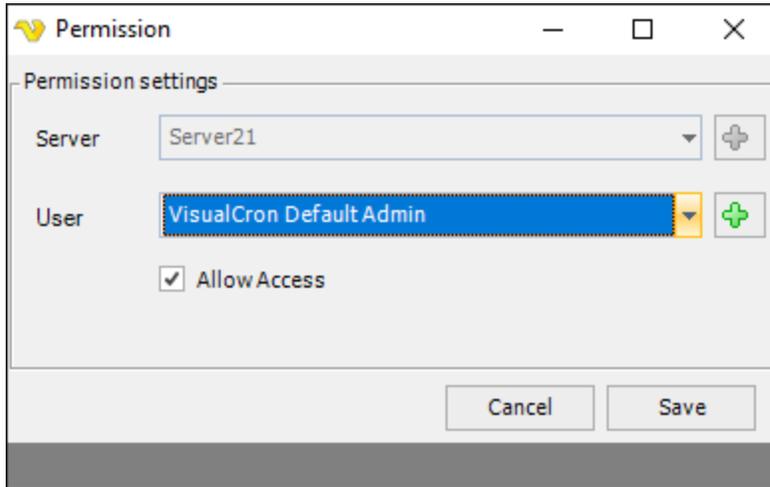
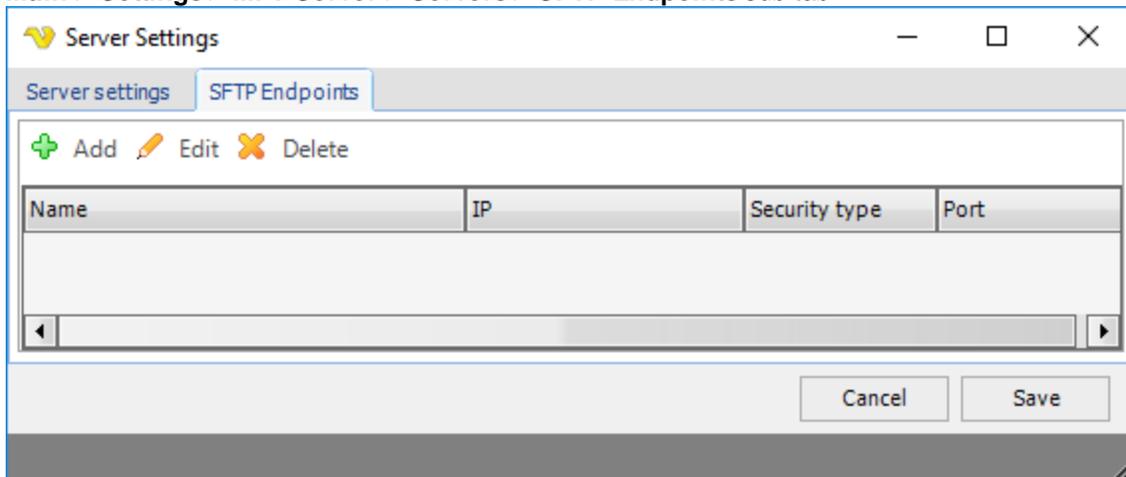
The name of the MFT server.

Server type

Select MFT server type.

Permissions

The permissions grid controls who can access the specific MFT server. Click add to add new permission or double click/Edit to edit a permission.

**Main > Settings > MFT Server > Servers > SFTP Endpoints** sub tab*SFTP Endpoints list*

An endpoint is a combination of IP and port the specific MFT server listens to. Click add to add a new MFT server.

SFTP Endpoint

SFTP Endpoint

Main settings

Name:
Endpoint, port:22

IP:
0.0.0.0

Port:
22

Force compression

Use UTF8

Root folder:
c:\test

Default Credential:
No Credential

Session timeout:
0

Security options

Allow password authentication

Allow public-key authentication

Allow keyboard-interactive authentication

The user must authenticate using ANY of the above method

The user must authenticate using ALL of the above methods

Private key:

Private key password

Test key

Cancel Save

Name

Optional name for the Endpoint for easier identification.

IP

The IP the Endpoint should listen too. 0.0.0.0 are all IPs on the network card.

Port

The port to use for the Endpoint. Default 22 for SFTP server.

Force compression

This property specifies whether the non-compressed transfer is supported by the server. When the property is set to true, CompressionAlgorithms[SSH_CA_NONE] is turned off and the server advertises only ZLIB compression (and not NONE).

Use UTF8

Text ...

Root folder

Base folder for the Endpoint files.

Default Credential

The Credential that should be used for accessing root folder (is needed on network drives).

Session timeout

Timeout for the session in milliseconds. If this property value is 0, the operation will expire after system-default timeout (which is 2 hrs 8 min for TCP stack).

Allow password authentication

If the user should be allowed to authenticate with his/her password.

Allow public-key authentication

If the user should be allowed to authenticate with his/her private key.

Allow keyboard-interactive authentication

If the user should be allowed to authenticate with keyboard-interactive authentication.

The user must authenticate using ANY of the above methods

Any of the allowed must be used for authentication.

The user must authenticate using ALL of the above methods

All allowed must be used for authentication.

FTP Endpoint->Main settings

FTP Endpoint

Main settings | Additional settings

Name:
Endpoint, port: 21

IP:
0.0.0.0

Security type:
None

Port:
21

Allow Anonymous

Use UTF8

Root folder:
[Empty text box] [Folder icon]

Default Credential:
No Credential [Gear icon]

Session timeout: 0

Outgoing speed limit: 0

Incoming speed limit: 0

Cancel Save

Name

Optional name for the Endpoint for easier identification.

IP

The IP the Endpoint should listen too. 0.0.0.0 are all IPs on the network card.

Port

The port to use for the Endpoint. Default 21 for FTP server.

Root folder

Base folder for the Endpoint files.

Default Credential

The Credential that should be used for accessing root folder (is needed on network drives).

Passive mode IP

The IP used for passive mode.

Use UTF8

Text ...

Session timeout

Timeout for the session in milliseconds. If this property value is 0, the operation will expire after system-default timeout (which is 2 hrs 8 min for TCP stack).

Outgoing speed limit

Speed in bytes per second for outgoing traffic. Default 0 is unlimited speed.

Incoming speed limit

Speed in bytes per second for incoming traffic. Default 0 is unlimited speed.

FTP Endpoint->Additional settings

FTP Endpoint

Main settings Additional settings

Additional security settings

Certificate with private key file (required for TLS/SSL):

Implicit SSL

Require TLS for control channel

Require TLS for data channel

Passive mode

Use Passive mode

Passive mode host:

Use Default Host

Use custom port range

0 - 0 (1 - 65535)

Cancel Save

X509 certificates

If you select TLS or SSL for security of the FTP endpoint you can optionally

Use passive mode

FTP is a TCP based service exclusively. There is no UDP component to FTP. FTP is an unusual service in that it utilizes two ports, a 'data' port and a 'command' port (also known as the control port). Traditionally these are port 21 for the command port and port 20 for the data port. The confusion begins however, when we find that depending on the mode, the data port is not always on port 20. In order to resolve the issue of the server initiating the connection to the client a different method for FTP connections was developed. This was known as passive mode, or PASV, after the command used by the client to tell the server it is in passive mode.

Passive mode host

Enter IP or DNS name for resolving IP for passive mode or check *Use default host* for using the current IP of the server.

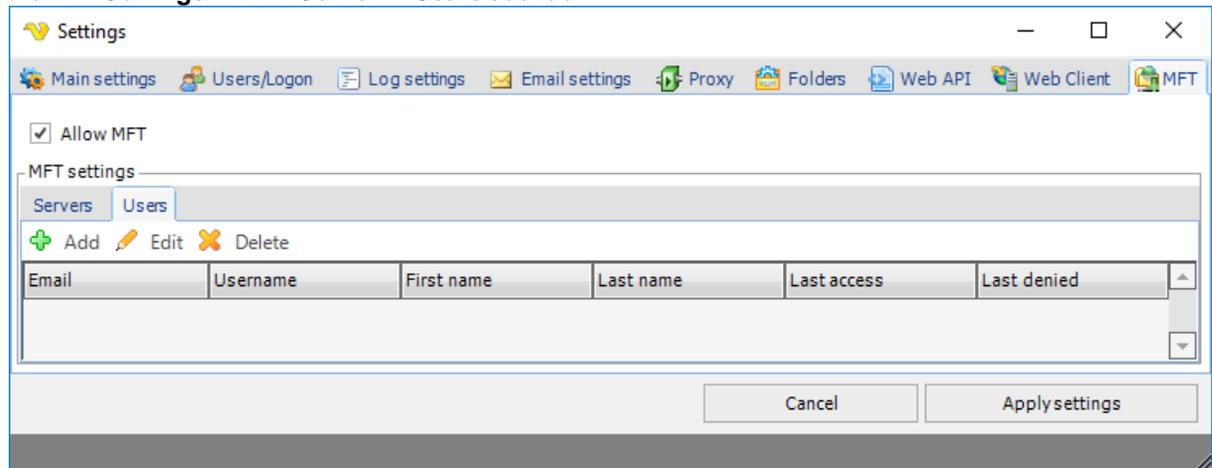
Use default host

Use the current IP of the server.

Use custom port range

Enter any port range for incoming Passive connections. If not checked - random ports will be used.

Main > Settings > MFT Server > Users sub tab

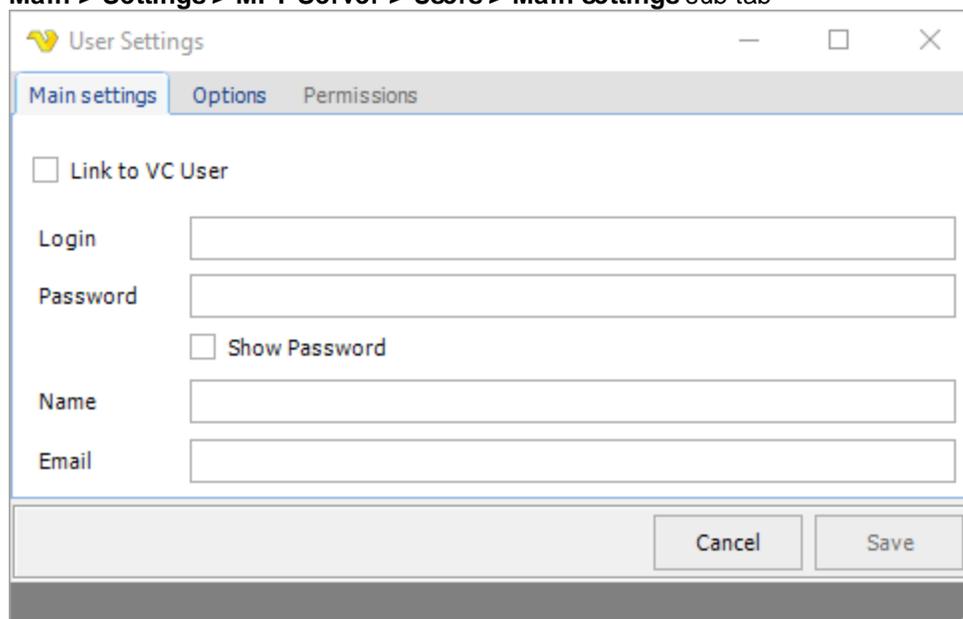


Users list

This is the list of MFT users. A MFT user can be linked to an existing VC user or be specific for MFT server only.

Upon pressing the Add Users icon, the User settings dialog is opened.

Main > Settings > MFT Server > Users > Main settings sub tab



Link to VC User

It is possible to link a VC user to a MFT user or use a specific user account just for MFT. When link is selected it will be using the username and password for the specific VC user.

Login

Unless linked to VC user you enter the username here.

Password

Unless linked to VC user you enter the password here.

Show password

Shows the entered password.

Name

Unless linked to VC user you enter the name here.

Email

Unless linked to VC user you enter the email here.

Main > Settings > MFT Server > Users > Options sub tab

The screenshot shows a 'User Settings' dialog box with three tabs: 'Main settings', 'Options', and 'Permissions'. The 'Options' tab is selected. The dialog contains the following fields and controls:

- Base folder:** A text input field with a folder icon button to its right.
- Credentials:** A dropdown menu showing 'No Credential' with a gear icon button to its right.
- FTP options:** A section containing two input fields: 'Outgoing speed limit' and 'Incoming speed limit', both with the value '0'.
- SFTP options:** A section containing two input fields: 'Private key' and 'Private key password', both with folder icon buttons to their right. A 'Test key' button with a question mark icon is also present.

At the bottom of the dialog are 'Cancel' and 'Save' buttons.

Base folder

Startup folder for the user.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Outgoing speed limit

These are the maximum number of bytes per second for outgoing transfer. 0 is unlimited.

Incoming speed limit

These are the maximum number of bytes per second for incoming transfer. 0 is unlimited.

Private key

The private key used for the connection

Private key password

The private key password used for the connection.

Test key

Text ...

Main > Settings > MFT Server > Users > Permissions sub tab

! Sub tab outgreyed, image missing

5.1.2.3 Main - User Permissions

In the main menu **Server > Main settings > User permissions** dialog, user credentials for different items (Jobs, Tasks, Triggers, Notifications, Client settings, Server settings, Time exceptions, User administration and Log) are handled.

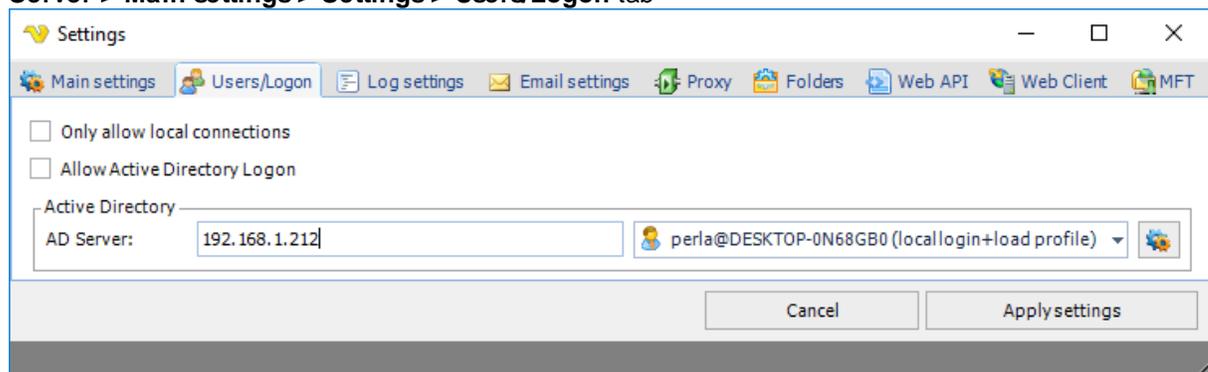
VisualCron uses an internal system for authentication and granting permissions to different objects within VisualCron. The internal system can be extended with users or groups from Active directory to provide a more seamless login.

A user is a set of user name and password. A user can belong to one or more groups. The actual permissions is located in the group. By default, there is a "Administrators" group which can do everything. You can create your own group in order to manage detailed user permissions for this group.

Active directory

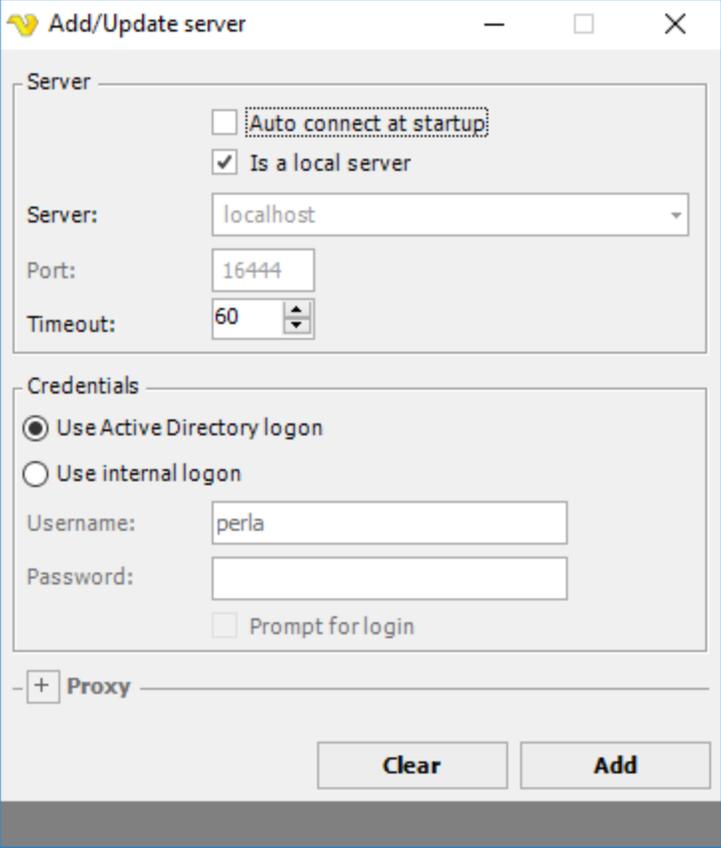
By default the internal system is used. To enable Active Directory support you need to enter Users/Logon settings.

Server > Main settings > Settings > Users/Logon tab



When creating the Server Connection you also need to check "Use Active Directory logon". This way you tell the Client to use AD user login method.

File > Servers > Manage Servers > Add > AD



The screenshot shows a dialog box titled "Add/Update server". It is divided into three main sections: "Server", "Credentials", and "Proxy".

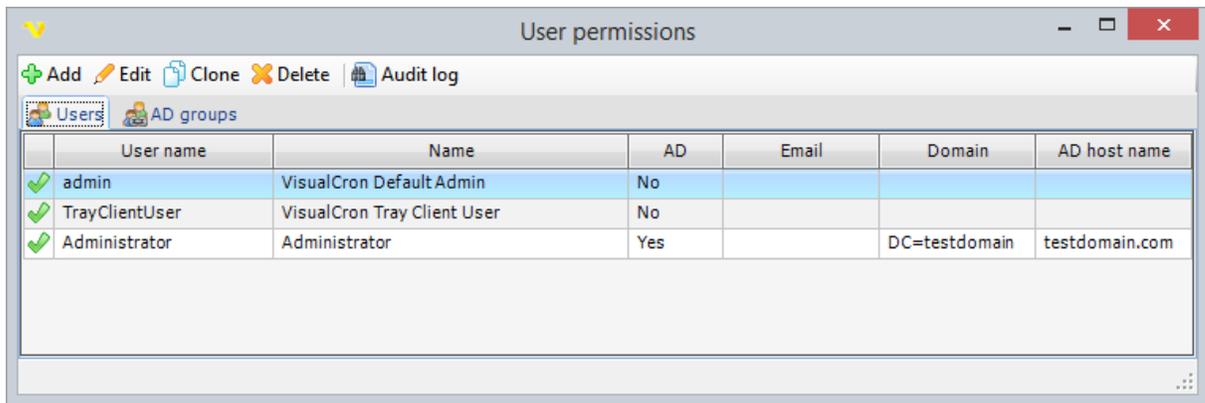
- Server section:**
 - Auto connect at startup
 - Is a local server
 - Server: localhost (dropdown menu)
 - Port: 16444 (text input)
 - Timeout: 60 (spin box)
- Credentials section:**
 - Use Active Directory logon
 - Use internal logon
 - Username: perla (text input)
 - Password: (empty text input)
 - Prompt for login
- Proxy section:** A collapsed section with a plus sign icon.

At the bottom of the dialog are two buttons: "Clear" and "Add".

The main dialog of the *User permissions* window lists all users and AD groups that are allowed to connect to this server. A user can be active (green check icon) or inactive (red cross icon). When active, the user is granted login with the predefined permissions.

The *Add*, *Edit*, *Clone* or *Delete* buttons are context sensitive to the tab you are in. Clone makes a shallow copy, a new user with the same permissions as the original user/group. If you want to add an AD group you need to select that tab and then click Add.

Server > Main settings > User permissions

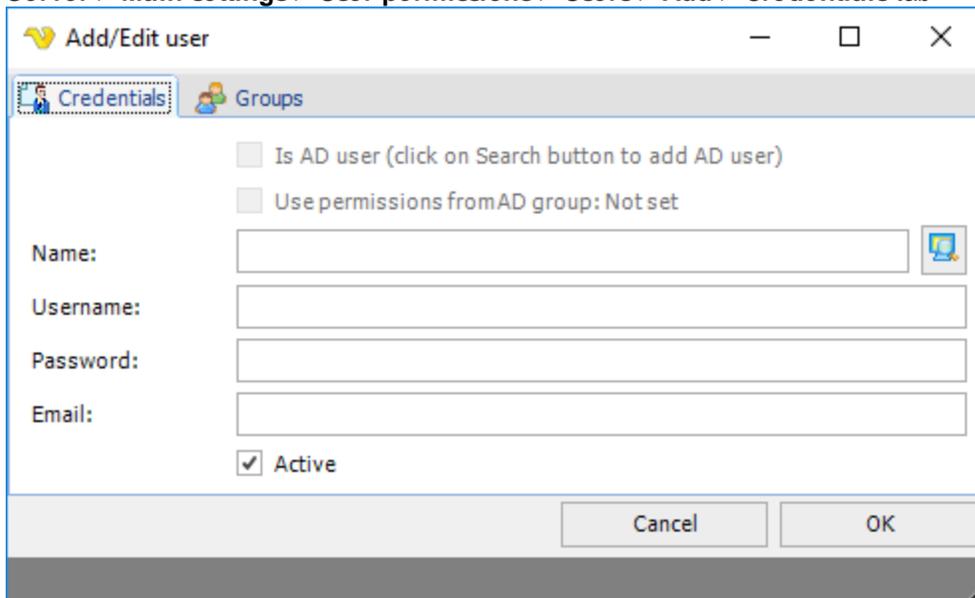


The screenshot shows a window titled "User permissions" with a toolbar containing "Add", "Edit", "Clone", "Delete", and "Audit log". Below the toolbar are tabs for "Users" and "AD groups". A table lists the following users:

	User name	Name	AD	Email	Domain	AD host name
✓	admin	VisualCron Default Admin	No			
✓	TrayClientUser	VisualCron Tray Client User	No			
✓	Administrator	Administrator	Yes		DC=testdomain	testdomain.com

When you add, edit or clone a user you are presented with the *Add/Edit user* window.

Server > Main settings > User permissions > Users > Add > Credentials tab



The screenshot shows the "Add/Edit user" window with the "Credentials" tab selected. The "Groups" tab is also visible. The form contains the following fields and options:

- Is AD user (click on Search button to add AD user)
- Use permissions from AD group: Not set
- Name: 
- Username:
- Password:
- Email:
- Active

Buttons: Cancel, OK

Is AD user

You can select users from the active directory by clicking on the Search button next to the Name.

User permissions from AD Group

It is possible to inherit the permissions from the Groups tab of the AD group. This is enabled by default if user is created from a group. If unchecked, the Groups tab, from the Add user window will be used instead of the settings from the AD group.

Name

This is the name that will be seen in the Manage users list, logs and "created by"/"modified by" in the Job list.

Username

This is the user name which is used at login.

Password

This is the password which is used at login.

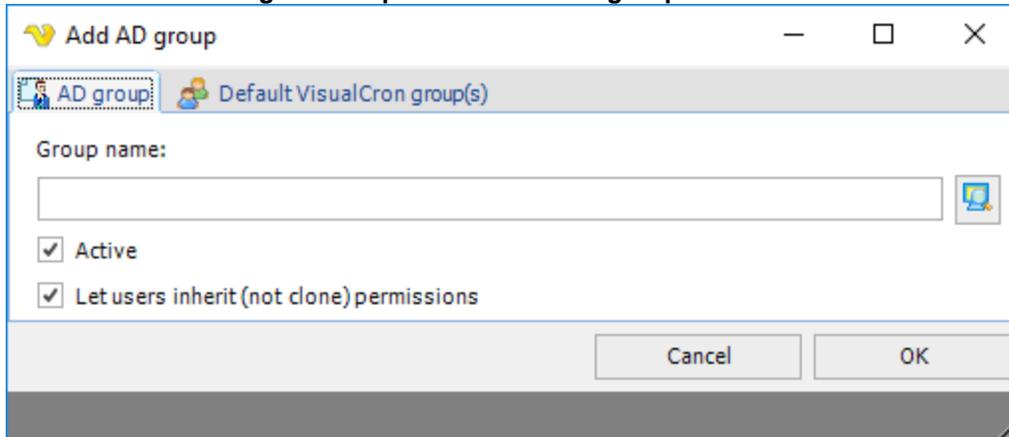
Email

In a future version of VisualCron, the email field will be used for an administrator to send a reminder of the login credentials.

Active

If the current user is active or not (login enabled).

Server > Main settings > User permissions > AD groups > Add tab



The screenshot shows a dialog box titled "Add AD group". It has a tab labeled "AD group" and a sub-tab "Default VisualCron group(s)". The main area contains a "Group name:" label followed by an empty text input field. Below the input field are two checked checkboxes: "Active" and "Let users inherit (not clone) permissions". At the bottom of the dialog are "Cancel" and "OK" buttons.

Group name

The AD group name. This can not be altered manually - you need to search and select the group.

Active

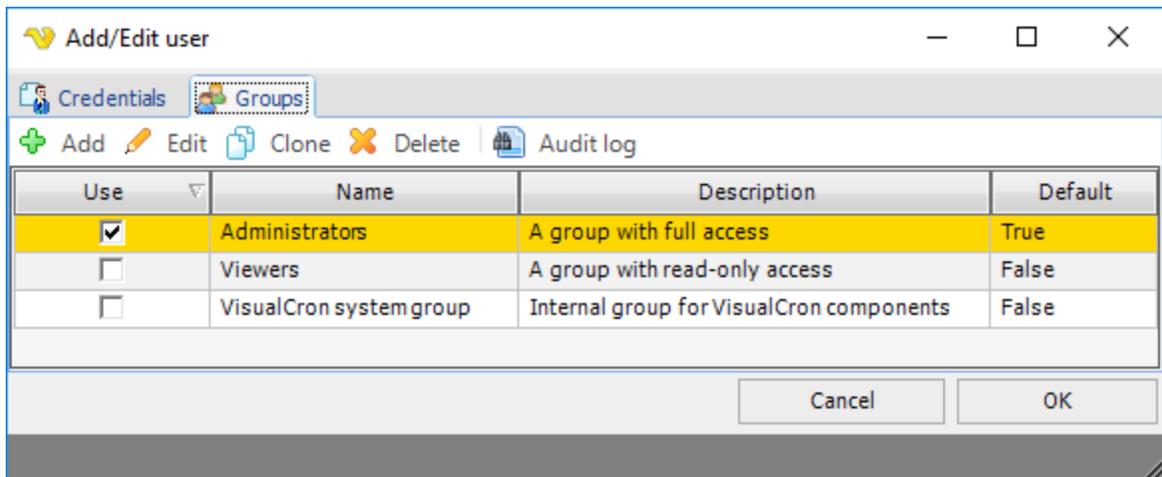
If the current group is active or not (login enabled).

Let users inherit (not clone) permissions

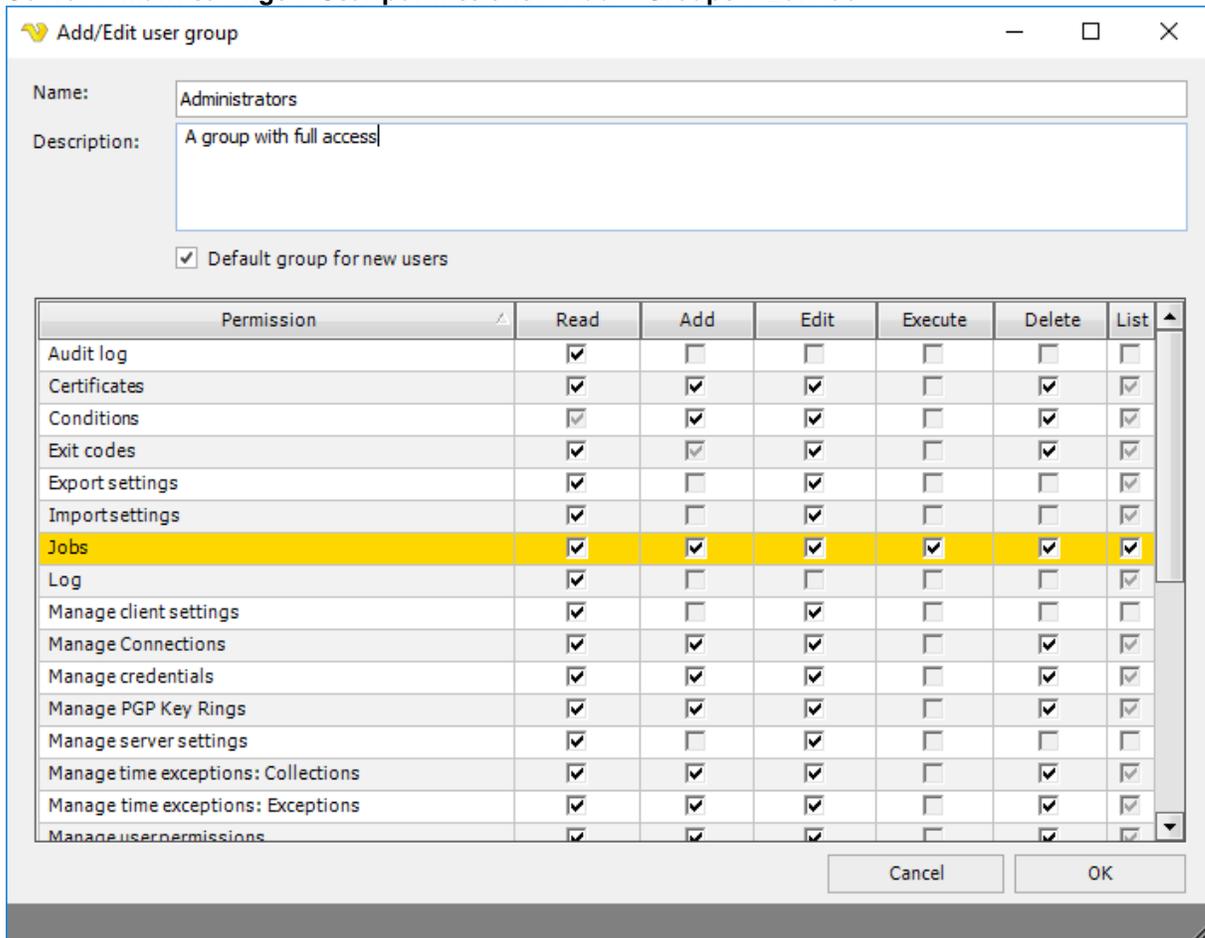
Whenever an AD user logs on that belongs to an existing group the AD user is created in the AD user section. By default, there is a reference to the VisualCron group permissions from the AD group in the new AD user. But you can also uncheck this to be able to set specific group permissions after (so that it not references).

A user can belong to one or more groups. The groups contains the actual permissions. If a specific permission is requested and granted in any of users groups the user is granted to the specific permission.

Server > Main settings > User permissions > Add > Groups tab



Server > Main settings > User permissions > Add > Groups > Edit tab



Name

Name of the group.

Default group for new users

If this group should be the default group when a new user is created.

Permission

A permission can have the following attributes:

- "Read" - Allows the object to be viewed/showed in some way. This can be a window or a list
- "Add" - Allows the user to add an object to a list
- "Edit" - Allows the user to edit an object in a list or window
- "Delete" - Allows the user to delete an object from a list
- "Execute" - Allows the user to run/execute something

Not all permissions has, for obvious reasons, all attributes available. For example, permission "Log" can only be viewable or not and has, therefore, only the "Read" setting is available for change. When a setting cannot be changed for a permission it is grayed out/disabled.

For each permission, use the select boxes to update the valid attribute types. Your changes to a user will be saved when clicking OK.

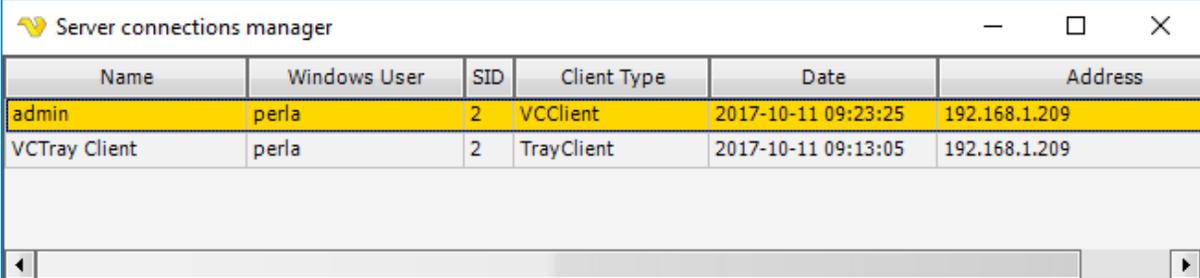
Overriding group permissions

From VisualCron version 6.1.2. permissions can be overridden on Job level so you can set specific permission for a group on a specific Job.

5.1.2.4 Main - Client connections

In the main menu **Server > Main settings > Client connections** dialog, VisualCron clients are managed. Several VisualCron clients can be connected to the same VisualCron server, typically one client both has the VisualCron client application and the VisualCron tray client connected to the same server. See below for a list of clients that are connected to the currently selected server.

Main > Client connections



Name	Windows User	SID	Client Type	Date	Address
admin	perla	2	VCCClient	2017-10-11 09:23:25	192.168.1.209
VCTray Client	perla	2	TrayClient	2017-10-11 09:13:05	192.168.1.209

The VisualCron client can also switch its server connection in the Server/Username "track" in the top of the Server/Job/Task grid.

5.1.2.5 Jobs - Jobs

A defined Job is managed either from the main toolbar or by mouse right-click on a specific Job in the Server/Job/Task grid. To manage a Job you open the *Add Job*, *Edit Job* or *Clone Job* dialogs.

For each Job type, some *Main settings* must be defined. In order to run something automatically, one or more *Triggers* and one or more *Tasks* must be defined for each Job. Finally *Time exceptions*, *Conditions*, *Timeout* and *Notifications* may be defined for each Job.

The only mandatory setting in the *Add Job/Edit Job/Clone Job* windows is the *Name* information. When also the Task settings has been defined, the Job can be tested by the *Test Job* button (in the bottom of the *Add Job/Edit Job/Clone Job* windows).

Note: When you *Clone Job*, please make sure that all underlying variables in Tasks or triggers are updated correctly.

The Job settings are stored by VisualCron in the jobs.xml file, by default stored in the "C:\Program Files (x86)\VisualCron\settings\" folder.

5.1.2.5.1 Job - Main Settings

In the the *Add Job*, *Edit Job* or *Clone Job* dialogs, the Main settings for a Job is available.

Add Job

Add Job - Test job @localhost

The Job - a placeholder for your Tasks

A Job is a place holder for one or more Tasks. Triggers, either based on time or an event start a Job. By default, if any Task fails - the Job will fail. In Flow you can set Notifications to be sent to you upon success and/or failure.

Main settings | Triggers | Time exceptions | Conditions | Tasks | TimeOut | Flow

Main settings

Name: Group:

Description:

Run once (can be reactivated later)

Run missed job once at start

Remove job after execution

Use run r

Do not start if job is already running

Put Job in queue (does not skip Job - runs Job when running Job is finished)

Run tasks in order

Activate (when added)

[Job Variables..](#)

[Permissions..](#)

[Copy Job Id](#)

Variables | Next run: No Trigger specified

Name

Mandatory parameter, unique name for the Job.

Description

Add information to see the difference between Jobs.

Run once (can be activated later)

Run missed Jobs once at start

This function can be used for a specific Job to let a Job automatically run if it should have been run during a time when the VisualCron service was down/stopped for any reason (typically due to server computer off). For example, a Job is supposed to run once a day at 08:00. Let's say that the server goes down at 07:00 because a power failure. The problem is corrected and the server goes up at 09:00. If the *Run missed Jobs once at start* box is checked, VisualCron will at startup check if the Job was supposed to run between the last time VisualCron was up and the current time. If so, that Job will be run **once**.

Note 1: Currently, run missed Jobs doesn't take time exceptions into account. A missed Job will run even if there was a time exception during that time.

Note 2: The "run missed events" behavior is not active when the server has been stopped by the user (i.e. server status "Off").

Remove Job after running

If you check this box the Job will be removed right after running.

Use run random value

To be selected if you want to run Jobs at irregular time intervals. Check the box and enter a probability value. For example value 2 means that the Job will run approximately 1 out of 2 times. So if you want your Job to run approximately three times an hour, you should specify value 20 and in the *Time settings* select to run it every minute. 1 out of 20 times, the Job will run every minute ($60/20 = 3$ times in one hour). Note that this is a probability value. In this case, the Job may run 2 times one hour and 4 times another hour.

Do not start if Job if is already running

When a Job is running it is "flagged" as running. If you don't want to execute your Job while it's running the check this box. This can be useful when using the new events which can trigger your Job very often if you set the watch parameters "loosely". If the Job is triggered when this box is checked, a log entry will inform that the Job wasn't run due to this setting.

Put Job in queue

When checked: if a Job is already running the actual execution Job is postponed until the current Job has completed. This option should be enabled for any Jobs that is using Event Triggers which allows unique processing of an object, i.e. a newly created file when using File Trigger.

Run Tasks in order

One Job can contain many Tasks. If you for some reason want to run your Tasks in a special order, check this checkbox. The specific Task order is set up under the Tasks tab. If you don't want to run the Tasks in order, VisualCron will try to run them at the same time. This can shorten the actual run time for the Job since some Tasks are dependant on external factors like a remote server.

Activate (when added)

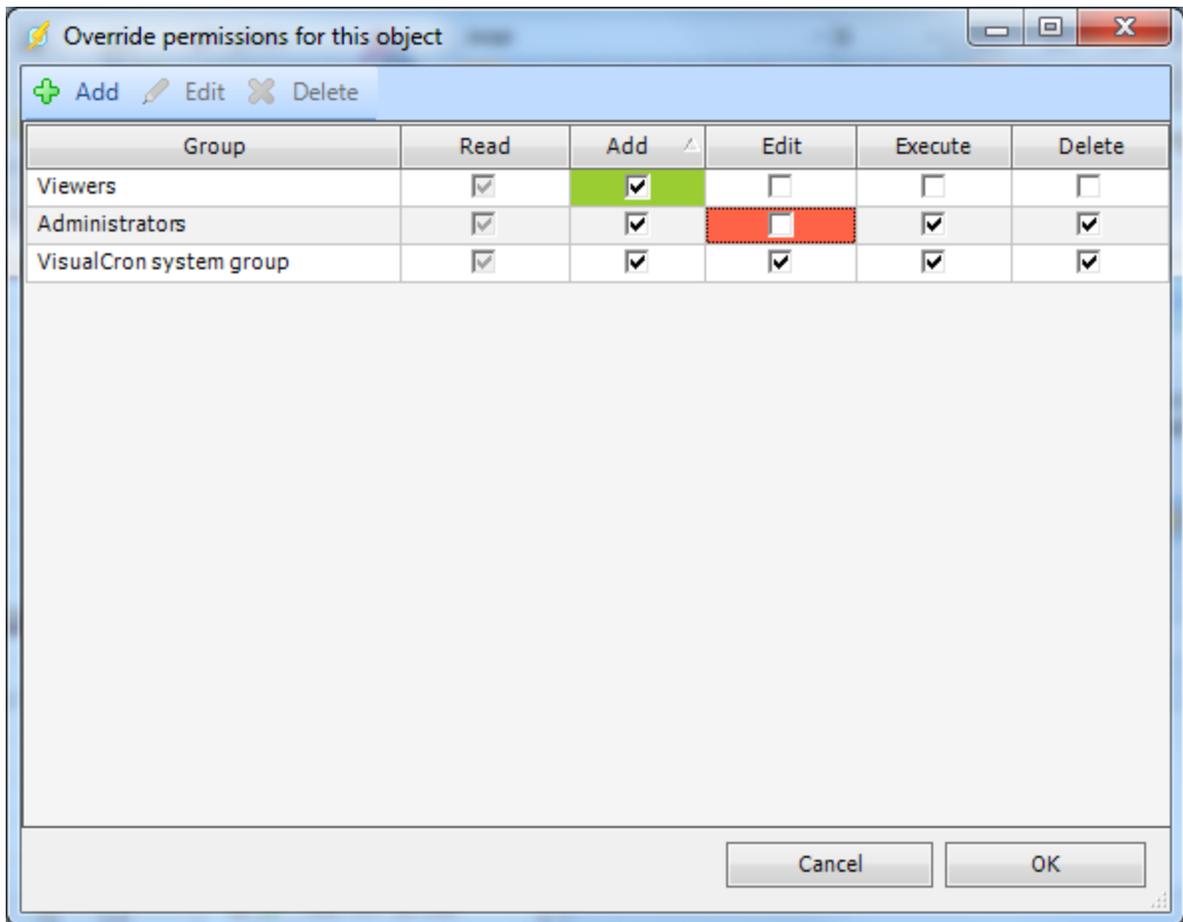
By default a new Job is activated (will be run if the time is right) when it's added.

Job variables

See Job variables for more information.

Permissions..

From VisualCron version 6.1.2, permissions for a specific Job can be set. It is controlled by overriding the current existing groups. When a specific permission is overridden in a positive way (granting access) it becomes green in the grid and it becomes red if overridden in a negative way (denying access).



5.1.2.5.1.1 Job Variables

Job Variables are values/parameters that is connected to a specific Job. When comparing Job Variables with User Variables there are a couple of differences:

- Job Variables are stored in the Job and not global like *User Variables* - still it is possible to refer to a Job Variable from another place in VisualCron
- It is possible to override existing Job Variables with the Job/Task Control Task
- The Job Variables are edited from the main settings of the Job while the User Variables are edited in the Variables browser
- In the Variables browser you can see the Job Variables beneath each Job node while the User Variables are located under the User Variables node

Editing Job Variables

You find the Job Variables for a specific Job in the Job > Main settings tab by clicking on the *Job Variables..* button in the lower right corner.

Add Job > Main settings

Add Job - Test job @localhost

The Job - a placeholder for your Tasks

A Job is a place holder for one or more Tasks. Triggers, either based on time or an event start a Job. By default, if any Task fails - the Job will fail. In Flow you can set Notifications to be sent to you upon success and/or failure.

Main settings | Triggers | Time exceptions | Conditions | Tasks | TimeOut | Flow

Main settings

Name: Group:

Description:

Run once (can be reactivated later)

Run missed job once at start

Remove job after execution

Use run r

Do not start if job is already running

Put Job in queue (does not skip Job - runs Job when running Job is finished)

Run tasks in order

Activate (when added)

[Job Variables..](#)

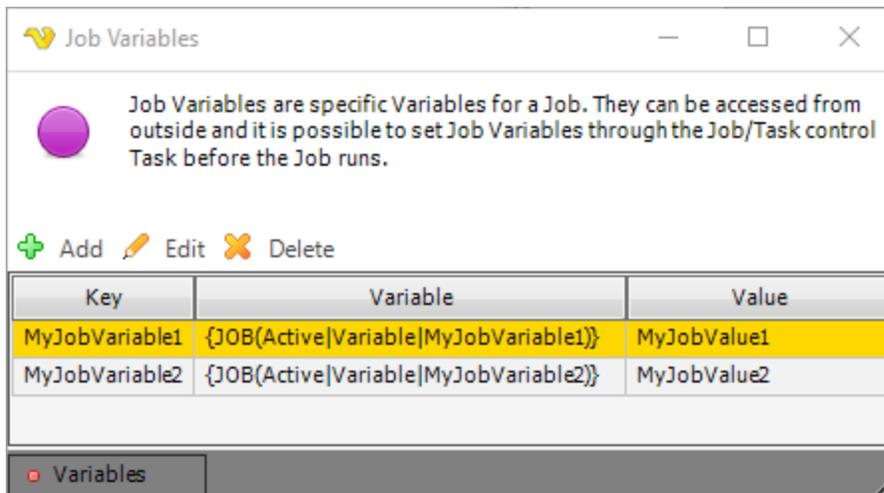
[Permissions..](#)

[Copy Job Id](#)

Variables | Next run: No Trigger specified

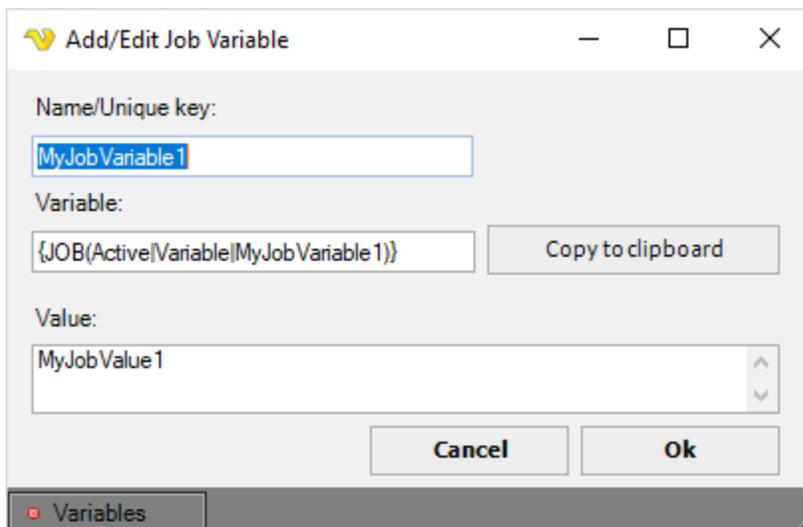
Job Variables

In the Job Variables window all Variables that are connected to the current Job are listed. You can Add new, Edit or Delete by clicking the buttons or by double click on row.



Add/Edit Job Variable

The add/edit Job Variable window lets you Add a new or Edit an existing Job Variable.

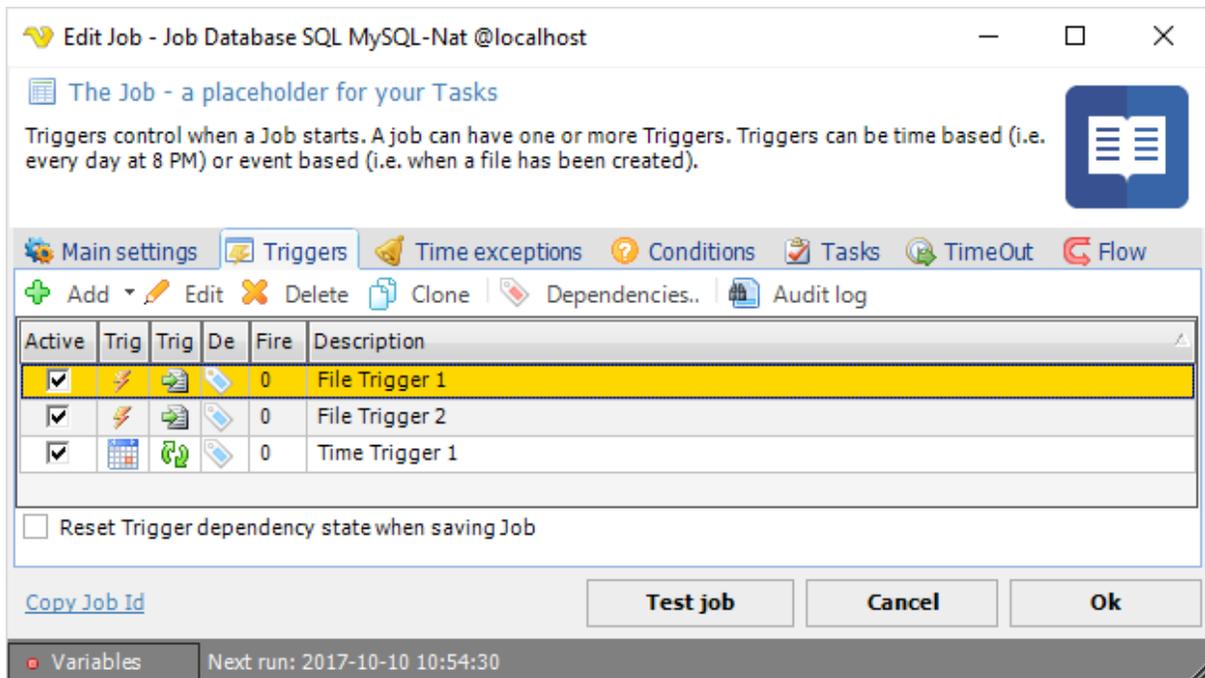


5.1.2.5.2 Job - Triggers

A Trigger is a part of a Job, the object that starts a Job. One Job can have one or more Triggers. A Trigger can either be based on Time (for example *Every minute*) or a system event (*a file has been created*). By default, Triggers are executed in an "OR-matter". This means Triggers do not wait for each other to start the Job. You can create dependencies between one or more Triggers.

By invoking the *Add Job*, *Clone Job* or *Edit Job* functions, the **Triggers** tab can be opened.

Job > Triggers tab

**Add**

By pressing the *Add* button, the different *Time Trigger* and *Event Trigger* options are listed.

Edit

Opens a Trigger for edit. Select a row first.

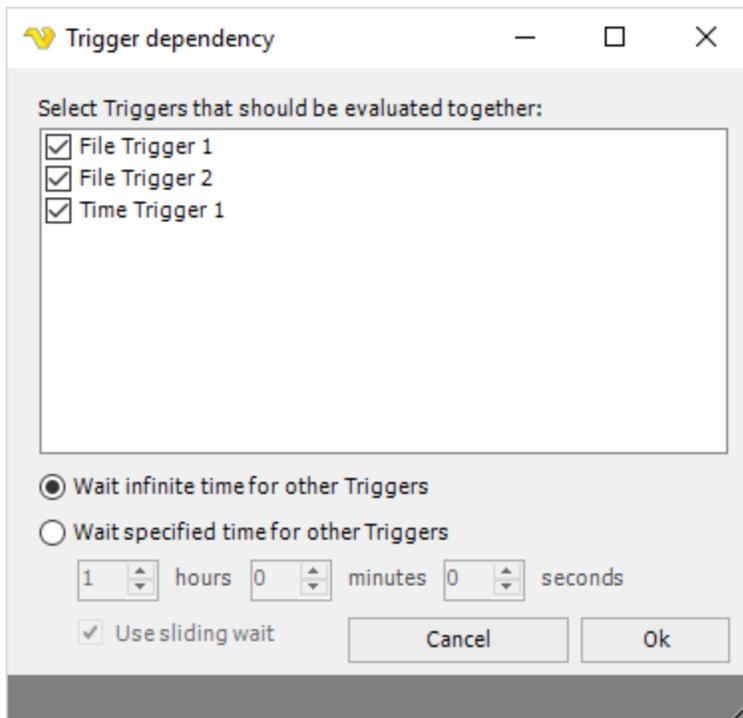
Delete

Deletes a Trigger. Select a row first.

Dependencies

By default, Triggers are executed in an "OR-matter". This means Triggers do not wait for each other to start the Job. You can create dependencies between one or more Triggers by clicking on *Dependencies..*

Job > Tiggers > Dependency



Trigger selection

In the check list box you can select all Triggers that should be in a dependency.

Wait type

For a Job to start all Triggers must fire (if a dependency exist) at least once. The wait time defines how long time before the *state* of firing should exist.

Wait infinite time for other Triggers

VisualCron will never reset state. For example, Trigger 1 might fire 1000 times and the Job will still not start because Trigger 2 has not yet fired.

Wait specified time for other Triggers

After a specified time the state will be reset on all Triggers in the dependency. If you want to use this option then select a time until the state should be reset.

Use sliding wait

When using *specified time* you can use *sliding wait*. This means that the *state wait time* will be reset for each Trigger that fires.

The grid in the **Job > Triggers** tab

The Trigger grid listing contains all Triggers that belong to the current Job. Each trigger is listed as a row in the *Description* table under the *Add*, *Edit* and *Delete* buttons. Mouse double-click on any part of the trigger row opens the same window as the *Edit* button.

The grid has 6 columns:

Active

By default *Active*. This checkbox indicates/controls if a Trigger should be active or not (if active it is waiting for the time/events).

Trigger type

This icon shows if it is a Time or Event Trigger.

Trigger inner type

This icon shows what kind of Time or Event Trigger. For example if the Event Trigger is of inner type File Trigger.

Dependency image

By default, Triggers are executed in an "OR-matter". This means Triggers do not wait for each other to start the Job. You can create dependencies between one or more Triggers. When a Trigger is not in a dependency this column is blank - otherwise, it will have a unique *tag* icon for each dependency collection.

Fired times of Trigger in dependency

How many times a Trigger has fired. This is only updated for Triggers within a dependency. A Job with dependencies do only fire when all Triggers have been fired once. After that - the *fired times* is reset.

Description

Name/description of the Trigger.

Reset Trigger dependency state when saving Job

This resets the state to zero on all Trigger that has a dependency.

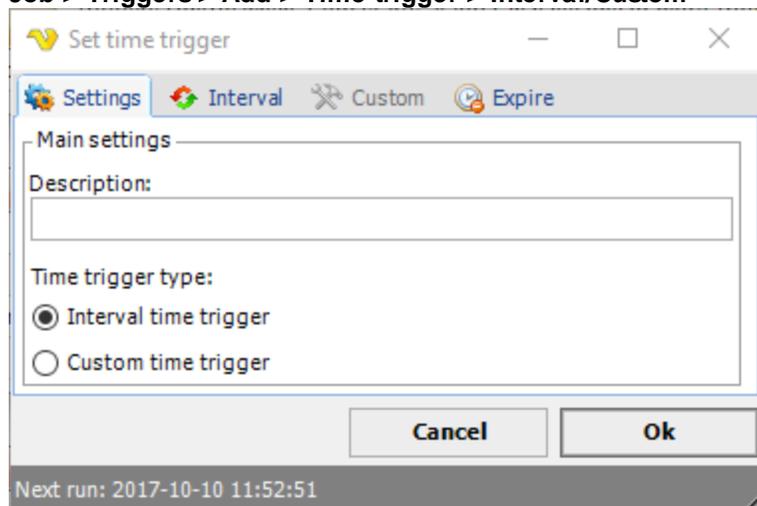
Next run

The Date/time for the next run is shown in the bottom of the Job window.

5.1.2.5.2.1 Time Trigger

For Time trigger select one of *Interval* or *Custom* types.

Job > Triggers > Add > Time trigger > Interval/Custom



Settings tab

Enter a description which will distinguish several triggers from each other in a trigger list. You can also choose between the Interval time trigger and Custom time trigger type triggers. One trigger type is always selected and the other option will be grayed out.

Interval tab

This time trigger is a simplified Custom time trigger. Different *Interval* options are available.

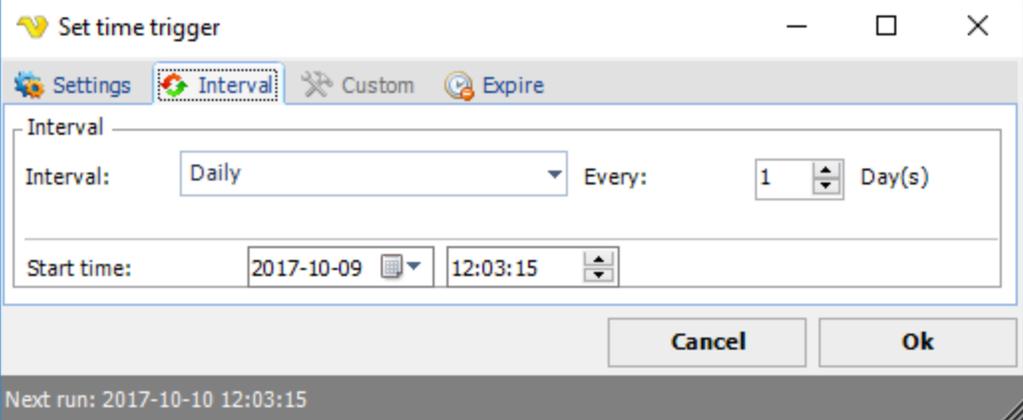
Custom tab

The *Custom* time trigger also allows setting of time details when a Job should be triggered.

Expire tab

The expiration date/time for the time trigger may be set. Also the handling (*Deactivate/Delete trigger*) of the expired trigger is selected.

5.1.2.5.2.2 Time Trigger - Interval

Set time trigger > Interval tab

The screenshot shows a dialog box titled "Set time trigger" with four tabs: "Settings", "Interval", "Custom", and "Expire". The "Interval" tab is active. It contains the following fields:

- Interval:** A dropdown menu set to "Daily".
- Every:** A spinner box set to "1".
- Day(s):** A text field.
- Start time:** A date field set to "2017-10-09" and a time field set to "12:03:15".

At the bottom, there are "Cancel" and "Ok" buttons. A status bar at the very bottom of the dialog box displays "Next run: 2017-10-10 12:03:15".

Interval

The Time unit (day, hour, minute, second or specific days of week/month) how often the Job should be triggered

Every

The occurrence (1:st, 2:nd, etc.) is set.

Whatever interval time unit that is selected, also the *Start time* (date and time for first run occurrence) may be selected.

5.1.2.5.2.3 Time Trigger - Custom

Time trigger -> Custom tab

The screenshot shows the 'Set time trigger' dialog box with the 'Custom' tab selected. The 'Year' tab is active, showing three radio button options: 'Every year' (selected), 'Choose year(s)', and 'Between years'. The 'Choose year(s)' option is expanded, showing a list of years from 2017 to 2036, each with a checked checkbox. Below the list is a 'Deselect all' button. The 'Between years' option is also expanded, showing a dropdown menu with '2017' selected and 'and:' followed by another dropdown menu with '2036' selected. At the bottom of the dialog are 'Cancel' and 'Ok' buttons. A status bar at the bottom left indicates 'Next run: 2017-10-09 12:38:00'.

The *Year*, *Month*, *Day*, *Hour*, *Minute* and *Second* time parameters may be defined.

For each time unit, *Every*, *Choose* or *Between* can be selected. The *Between ...* option specifies a range of values for the specific time unit. For example, *Between weekdays* "Friday" and "Tuesday" means that the Job will run on "Friday", "Saturday", "Sunday", "Monday" and "Tuesday".

Examples

- Choosing for example day "31" results in that the Job will only execute on months with 31 days
- By default, Second = "0" is checked. In order to be able to set a correct time on a Job, a Job must have a least one second specified. Second "0" is the first second in a minute.

Next run

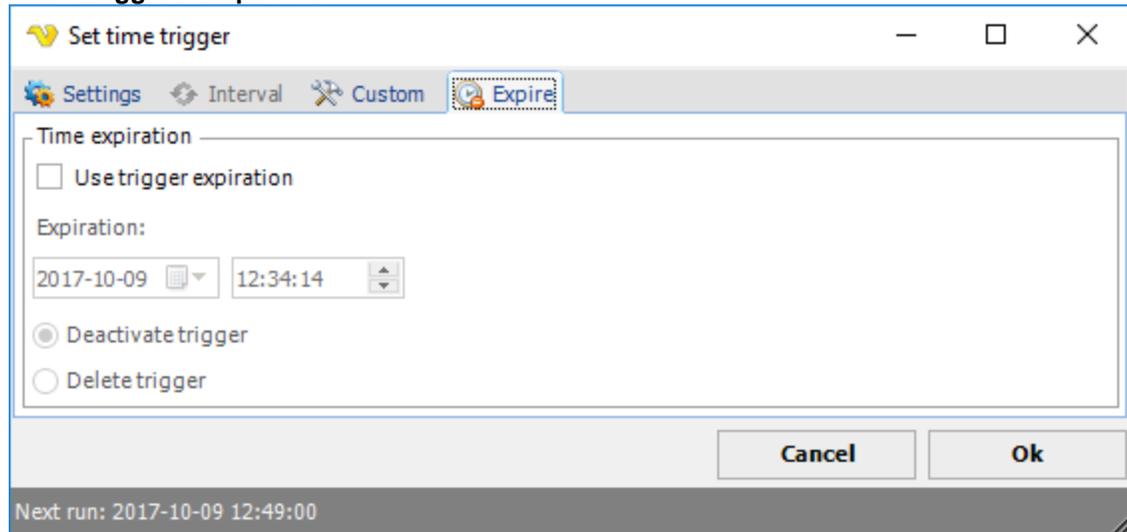
Next run is calculated every second. Next run is based on the values you enter in time settings using the time on the server. Note that next run is an indicative value, that is if you are about to add or edit a Job

and you set that Job to run every minute it won't run every minute until you have finished the add/edit window and the Job has appeared in the Job list.

Note: Calculation of next run does not take any time exceptions into account.

5.1.2.5.2.4 Time Trigger - Expiration

Time Trigger > Expire tab



Set date and time when the time/event trigger should be removed.

There are two kinds of expiration modes:

- *Expire* - the trigger will still remain in the Job but is inactive and cannot be triggered until it is set to active again
- *Delete trigger* - the trigger will be deleted from the Job and will never be seen again

5.1.2.5.2.5 Event Trigger

The event trigger is a complex and sensitive but also powerful way to monitor the system. Events in the system can trig your Job to run if that is the intention. An example is if your web server service dies and you want to know and act upon that.

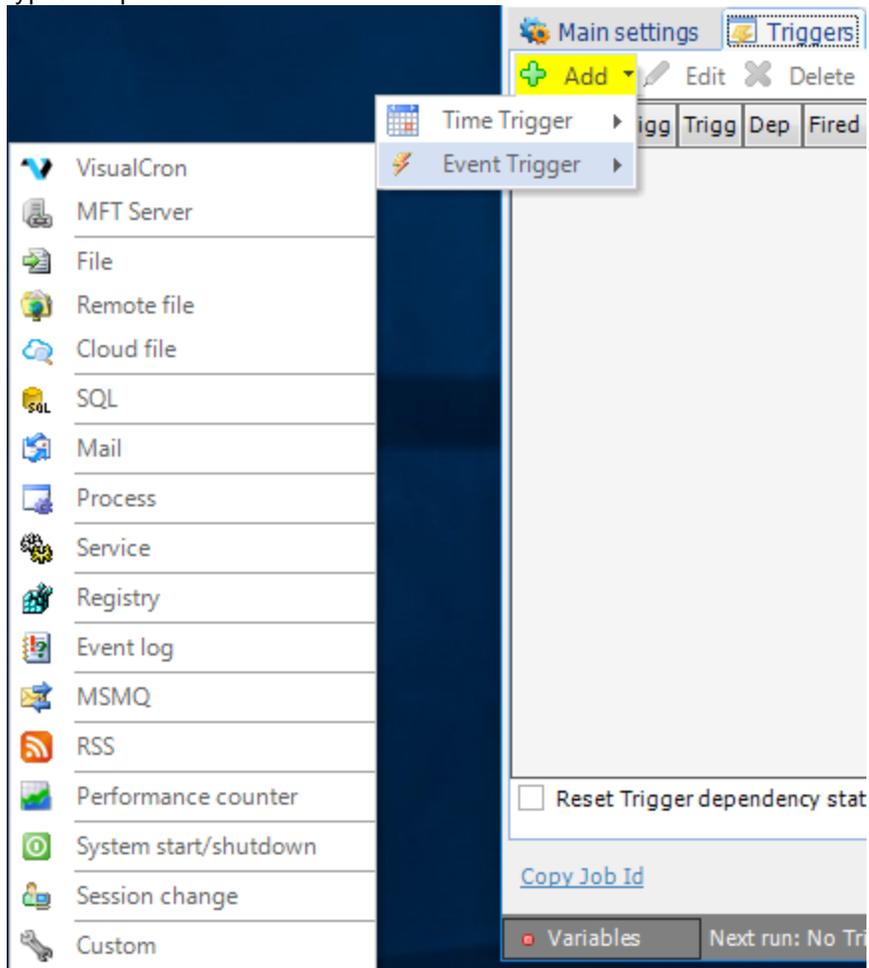
Most events are based on the **WMI** (Windows Management Instrumentation) interface. **WMI** is a management technology allowing scripts to monitor and control managed resources throughout the network. Resources include hard drives, file systems, operating system settings, processes, services, shares, registry settings, networking components, event logs, users, and groups. **WMI** is built into clients with Windows 2000 or above, and can be installed on any other 32-bit Windows client.

Using a **WMI** based trigger, requires some common settings to control the behavior. These common settings are located in the **Main Settings** tab of the Event Trigger window.

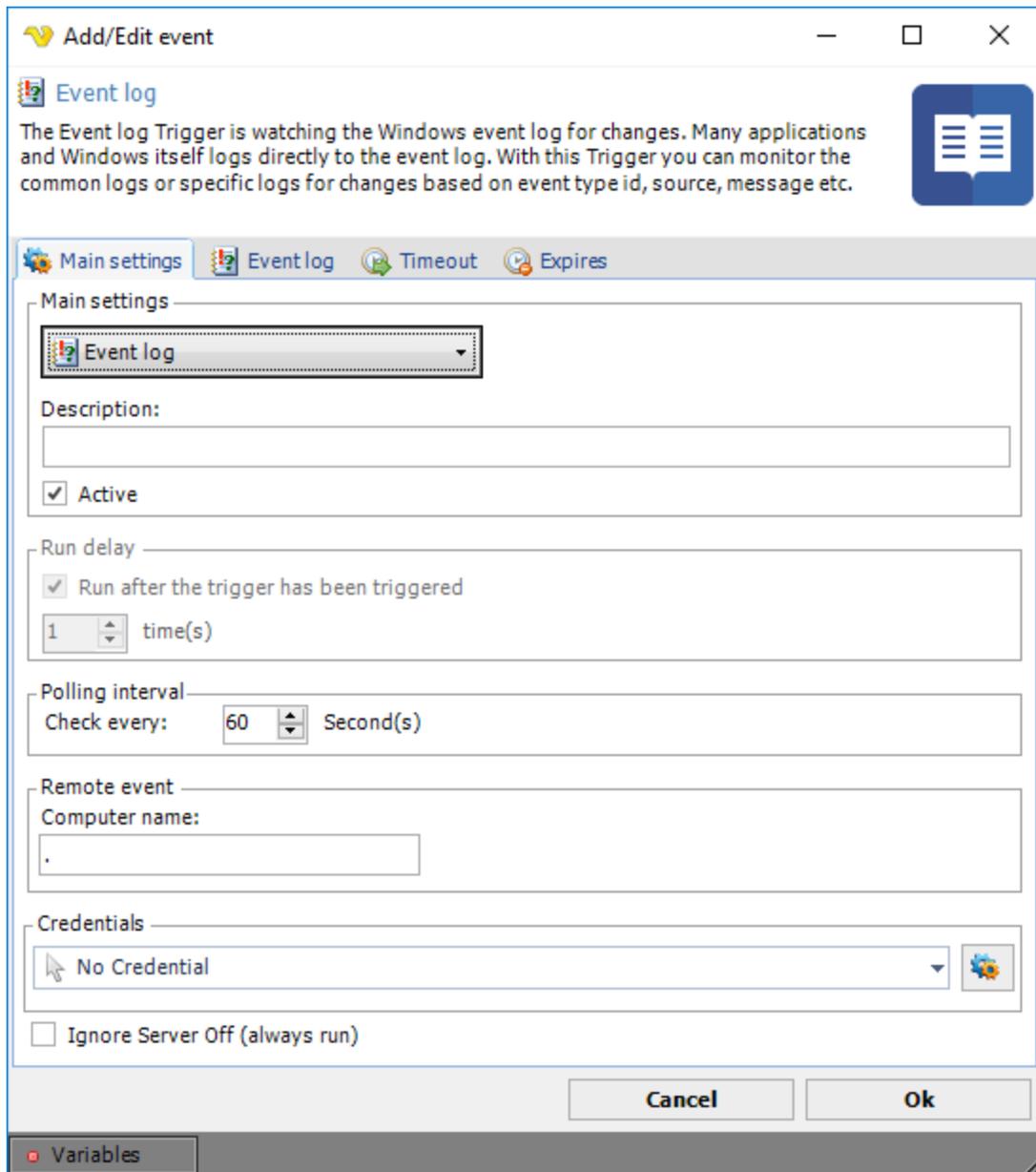
Security: Some Triggers require higher privileges than the default privileges of the LocalSystem account. You need to either change the user that runs the VisualCron service to an administrator or add LocalSystem user to the administrators group (requires a restart of the server). This is especially true when trying to monitor a remote event, like monitoring an event log on another server.

Warning: Some event based triggers, like the File event type, can in some cases, trigger several times a second. This will run your Job several times a second.

In the **Triggers** tab, clicking on *Add > Event trigger*, a selection window for the different event trigger types is opened.



Triggers > Add > Event Trigger > Main settings tab



It is possible to change the event trigger type in the top combo box, which results in that the current trigger type tab is exchanged.

Description

Enter a description which will distinguish several triggers from each other in a trigger list.

Active

Determines if the current event is active from start. If not, it can be reactivated later. Default is active.

Run delay

You can set a delay which means that the trigger will fire x number of times before executing. Default is 1 which means that the it will fire when the first time it has been triggered.

Polling interval

This value is only used by certain WMI events, otherwise grayed out. The polling interval defines how often VisualCron should check for changes in the system. Default is every 60 second. Setting it to a lower value than 10 will increase the load on the server. What's good is that you won't miss any events even though you are not checking it every second. Changes are stored and if something has happened you will be notified at your polling interval. What is important to know is that if you are watching for state "stopped" at a service and the service has started then stopped, any change has not occurred since the service was stopped in the first place. The service has to be started before monitoring a "stopped" change. Also, if the the service has started before monitoring and it turns from started to stopped within the polling interval no change is observed and you won't be notified.

Remote event

This value is only used by certain WMI events, otherwise grayed out. Can remotely monitor another computer in the network, specify the name or IP address of the remote computer. The computer has to be in the local network. Default is "." which means that VisualCron is monitoring the the local computer. A network credential must be specified when connecting to a remote computer. Also you must check so that the remote computer let's this computer or user access the WMI on the remote computer.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Ignore Server Off (always run)

If checked, the Trigger will always run even though the Server status is Off.

Triggers > Add > Event Trigger > Timeout tab

The screenshot shows a dialog box titled "Add/Edit event" with a yellow bell icon. Below the title bar, there is a section for "Event log" with a blue icon and a text box explaining that the trigger watches the Windows event log. Below this, there are four tabs: "Main settings", "Event log", "Timeout" (which is selected and highlighted with a dashed border), and "Expires". The "Timeout" tab contains a section titled "If trigger has not fired in x time" with a checkbox for "Use timeout" (which is unchecked). Below this checkbox are three spinners for "Hour(s)", "Minute(s)", and "Second(s)", all set to "0". Below these spinners is a section titled "Timeout action" with a radio button for "Fire trigger" (which is selected). At the bottom of the dialog are "Cancel" and "Ok" buttons. A "Variables" button is visible at the bottom left.

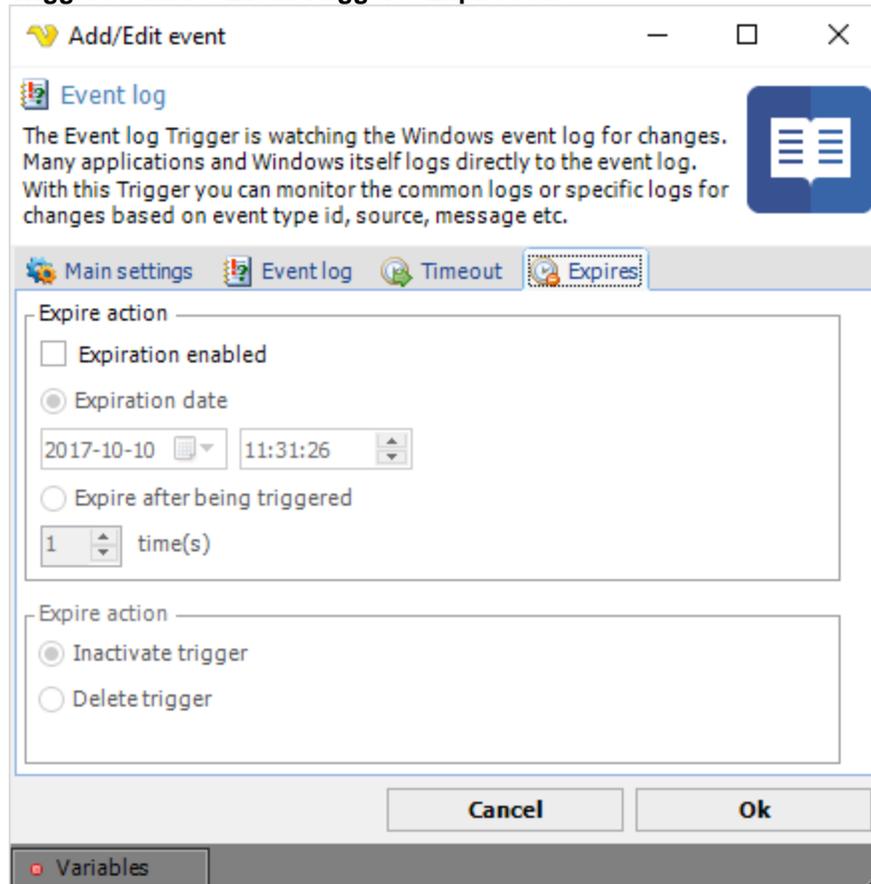
If trigger has not fired in x time

Specify number of hours, minutes and seconds for the timeout.

Timeout action

When VisualCron detects the timeout it will fire the event.

Triggers > Add > Event Trigger > Expires tab



Expiration enabled

Check this option to enable an expiration type. You are able to set if a Trigger should be deleted or deactivated at a certain time or after a certain number of triggered times. Select either date or x time(s) the trigger has to fire before action.

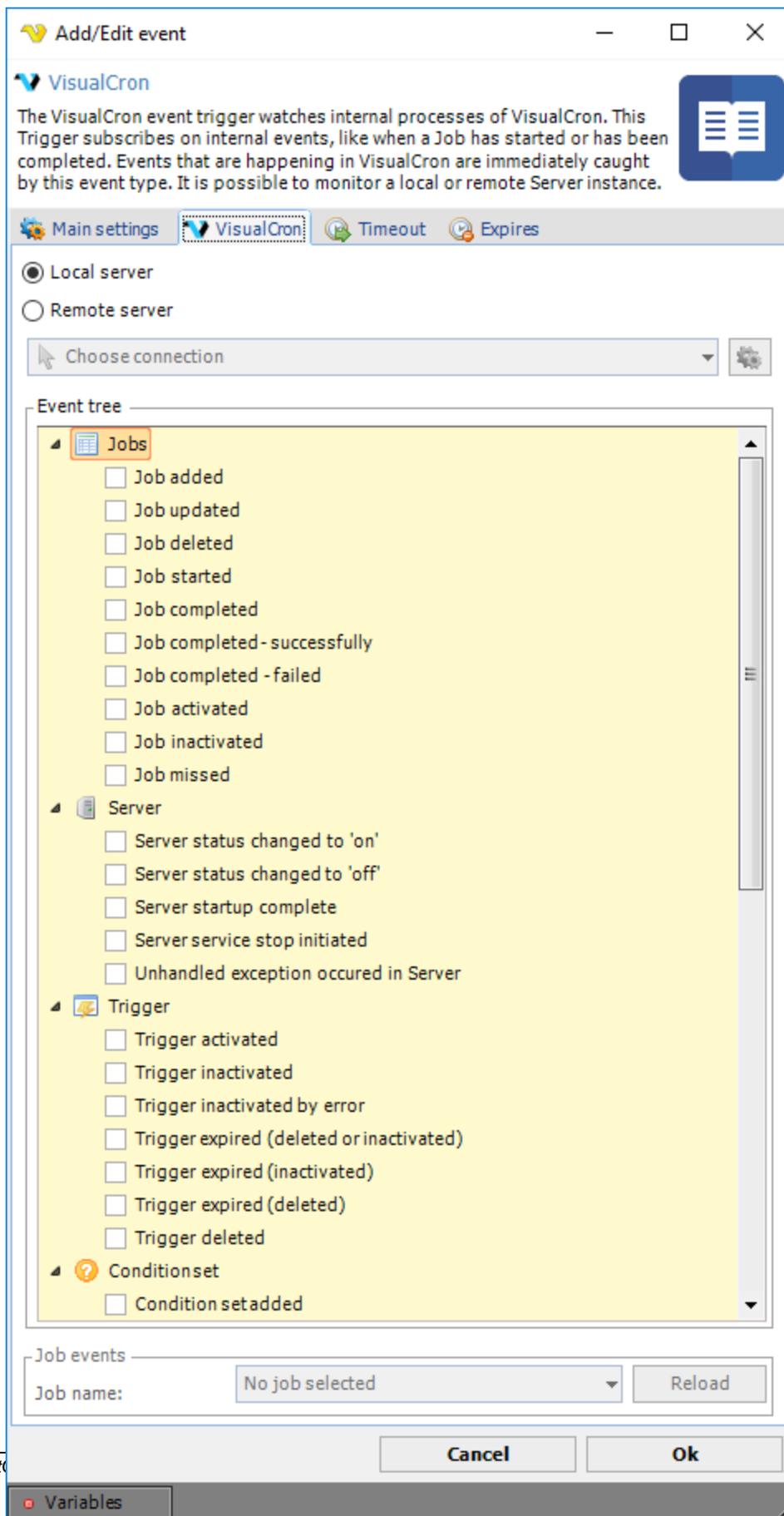
Expire action

Select desired activity when a Trigger has expired. Choose between "Inactivate trigger" and "Delete trigger".

5.1.2.5.2.6 Event Trigger - VisualCron

The VisualCron event trigger watches internal processes of VisualCron. This Trigger subscribes on internal events, like when a Job has started or has been completed. Events that are happening in VisualCron are immediately caught by this event type. It is possible to monitor a local or remote Server instance.

Triggers > Add > Event Trigger > VisualCron tab



Local/Remote server

You can choose to monitor the current *local* Server or a *remote* VisualCron Server. If you want to monitor a *remote* Server you need to select *Remote server* and define a VisualCron Connection.

Job name

If you select an internal Trigger of type Job you need to specify a Job name.

5.1.2.5.2.7 Event Trigger - MFT Server

The MFT Server event trigger monitors the internal MFT server for events. General creation and configuration of MFT server is made in MFT server settings.

Triggers > Add > Event Trigger > MFT Server > MFT event type sub tab

Add/Edit event

MFT Server
The MFT Server Trigger monitors the internal MFT server for events.

Main settings | **MFT Server** | Timeout | Expires

MFT event type

MFT Servers
 All
 Server87 (SFTP)

Event types
 All
 Directory created / Directory deleted / Directory listed / Directory moved / Directory renamed / File created / F

MFT Users
 All
 VisualCron Default Admin

Cancel Ok

Variables

MFT Server name

Select all or a specific MFT endpoint.

Event type

Select all or specific MFT event type.

User

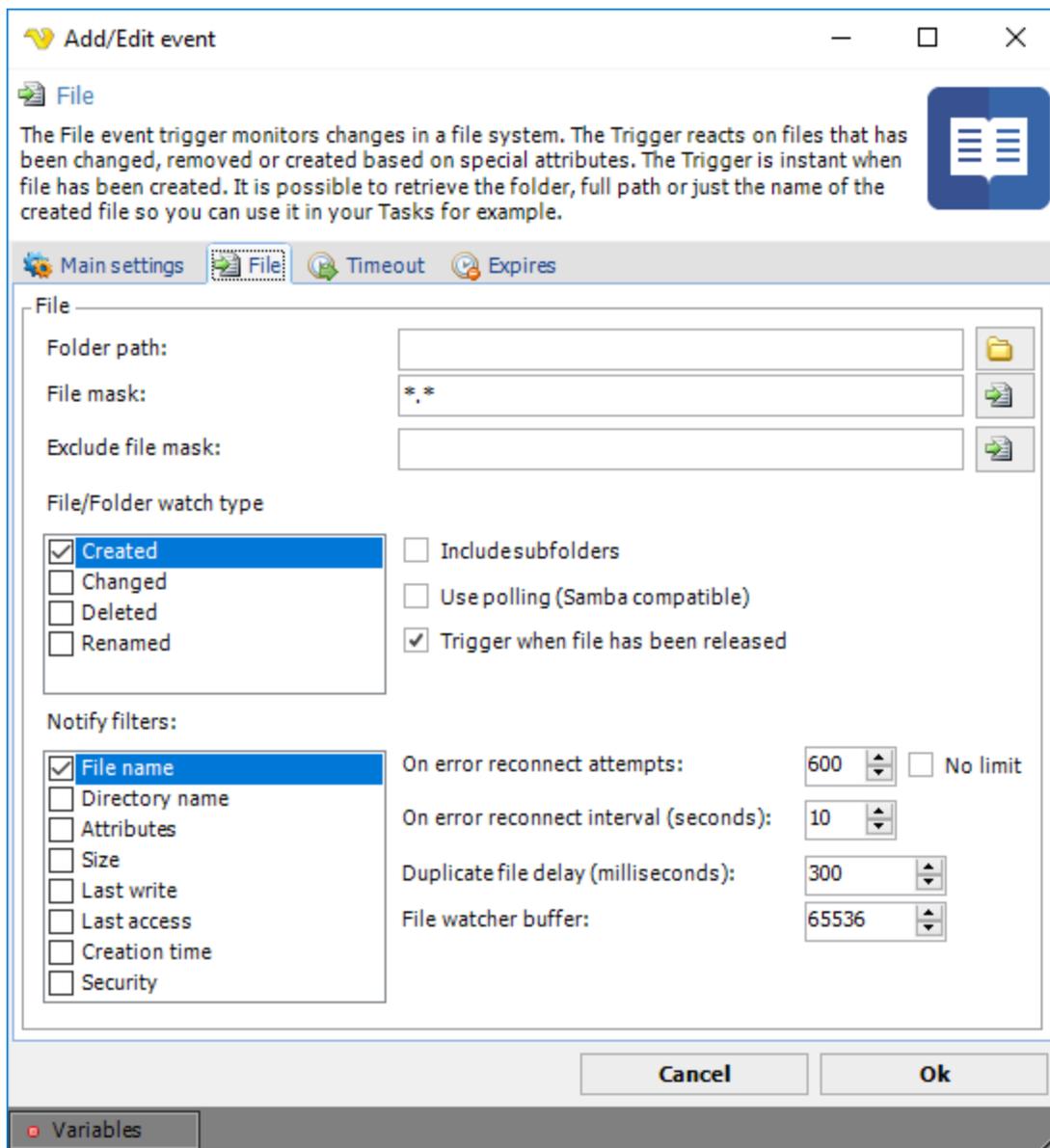
Select all or a specific User.

5.1.2.5.2.8 Event Trigger - File

The File event trigger monitors changes in a file system. The Trigger reacts on files that has been changed, removed or created based on special attributes. The Trigger is instant when file has been created. It is possible to retrieve the folder, full path or just the name of the created file so you can use it in your Tasks for example.

To monitor a change you have to specify a path. The file event is not based on **WMI** but can monitor a remote computer if you specify the appropriate credentials (username, password and computer name for the remote computer).

Triggers > Add > Event Trigger > File tab



Folder path

This is the directory you want to monitor.

File mask

The filter can be a complete file name or you can use *.* to monitor all files (default) or e.g. *.txt to monitor all text files. If you want to check for multiple file masks you can separate them with semicolon (;). For example: *.txt;*.xml

Exclude file mask

This field is used the same as *File mask* but is used to exclude one or more file masks. If you want to check for multiple file masks you can separate them with semicolon (;). For example: *.txt;*.xml. To exclude special characters like # you need to wrap them like this: [#]. For example: [#].txt

File/Folder watch type

There are a set of watch types which monitors changes that might occur to a file or directory:

- "Created" - the creation of a file or folder
- "Changed" - change of a file or folder. The types of changes include: changes to size, attributes, security settings, last write, and last access time
- "Deleted" - the deletion of a file or folder
- "Renamed" - the renaming of a file or folder

-

Include subfolders

This setting enables monitoring of all sub folders of the Path.

Use polling (Samba compatible)

Only use this option if you are monitoring a Samba file share. Samba does not support the normal file events so we are using our own polling technique instead.

Trigger when file has been released

If you are planning on using the file that was triggered directly you could use this option to ensure that the file has been fully changed/written before it is being triggered (and used by you or a later stage in VisualCron).

Notify filters

Specifies changes to watch for in a file or folder. These are used in conjunction with the watch types. Certain combinations can give different results. The following notify filters can be activated:

- "File name" - the name of the file
- "Directory name" - the name of the directory
- "Attributes" - the attributes of the file or folder
- "Size" - the size of the file or folder
- "Last write" - the date the file or folder last was updated
- "Last access" - the date the file or folder was last opened
- "Creation time" - the creation time for a file or folder
- "Security" - the security settings of the file or folder

You can combine the notify filters to watch for more than one kind of change. For example, you can watch for changes in the size of a file or folder, and for changes in security settings. This raises an event anytime there is a change in size or security settings of a file or folder.

On error reconnect attempts

Let say the remote folder you watch gets disconnected for some reason, perhaps the network or computer is down. The reconnect attempts value controls how many times VisualCron tries to reconnect. Default value is 3 times.

On error reconnect interval (seconds)

Let say the remote folder you watch gets disconnected for some reason, perhaps the network or computer is down. The reconnect interval which you can specify is the number of seconds it will wait between each reconnect attempt, in seconds. Value 1 to 500 is available. Default is 5 seconds which may be a long time when the network is down and a short time if the remote computer is down. VisualCron attempts to reconnect 3 times by default.

Duplicate file delay (milliseconds)

Some systems create duplicate Created/Changed events. The duplicate file delay is a time period where no new events are accepted from the same file name.

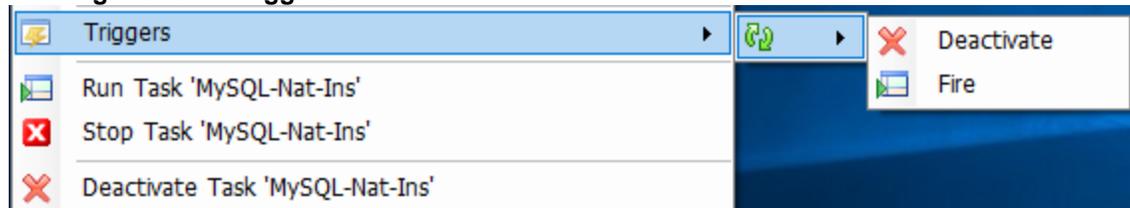
File watcher buffer

You can set the buffer to 4 KB or larger, but it must not exceed 64 KB. Increasing the size of the buffer can prevent missing file system change events. However, increasing buffer size is expensive, so keep the buffer as small as possible.

Trigger on existing files

Once the File Trigger has been setup you can click on the Trigger to manually fire on existing files in folder.

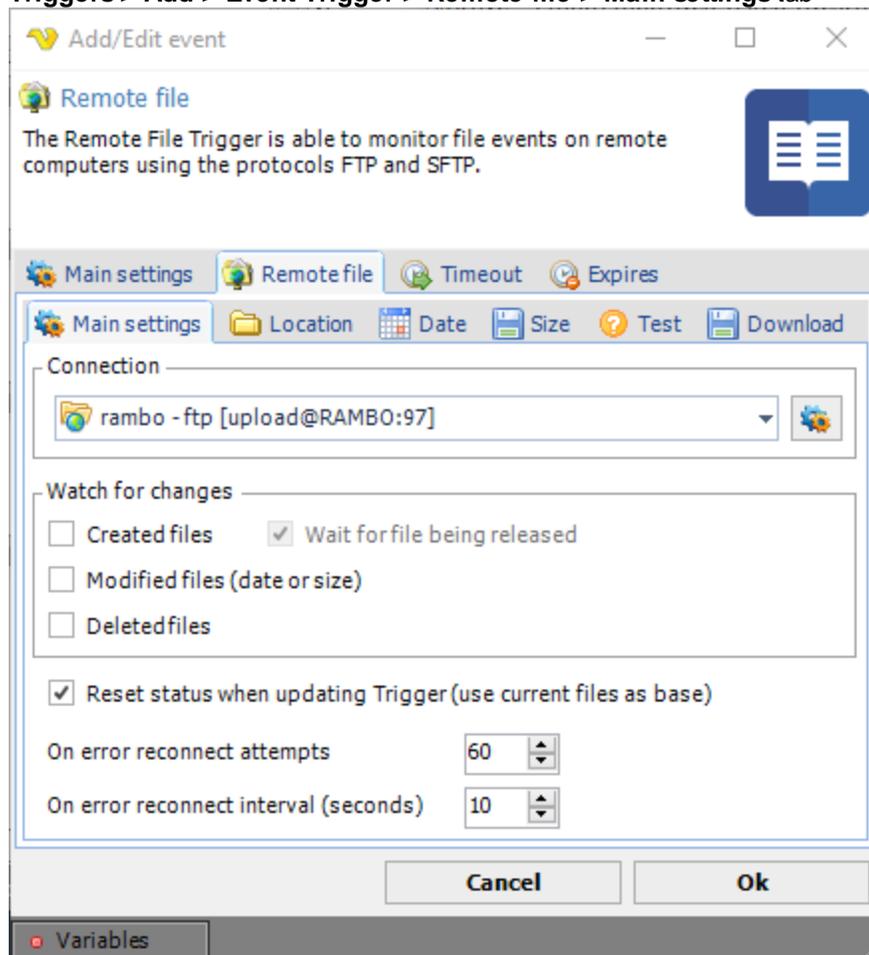
Task right-click > Triggers



5.1.2.5.2.9 Event Trigger - Remote file

The Remote File event trigger is able to monitor file events on remote computers using the protocols FTP, SFTP and SCP.

Triggers > Add > Event Trigger > Remote file > Main settings tab



Connection

This Trigger uses the centrally stored *Connections*. Available protocol types are listed here. Click on *Manage Connections* to add a new one.

Watch for changes

You are able to watch for new, modified and deleted files. Select what you want the Trigger to fire for.

Wait for file being released

The Trigger will monitor a new file for modify date. If modify date has not changed since last check the Trigger will fire 'Created' event.

Reset status when updating Trigger (use current files as base)

This reloads the internal list of files. You should check this if you for some reason change the Connection.

On error reconnect attempts

Let say the remote server you watch gets disconnected for some reason, perhaps the network or computer is down. The reconnect attempts value controls how many times VisualCron tries to reconnect. Default value is 3 times.

On error reconnect interval (seconds)

Let say the remote server you watch gets disconnected for some reason, perhaps the network or computer is down. The reconnect interval which you can specify is the number of seconds it will wait between each reconnect attempt, in seconds. Value 1 to 500 is available. Default is 5 seconds which may be a long time when the network is down and a short time if the remote computer is down. VisualCron attempts to reconnect 3 times by default.

Triggers > Add > Event Trigger > Remote file > Location tab

This Task is using the standard VisualCron Folder filter to find one or more folders.

Triggers > Add > Event Trigger > Remote file > Date tab

This Task is using the standard VisualCron Folder filter to filter for created/modified date.

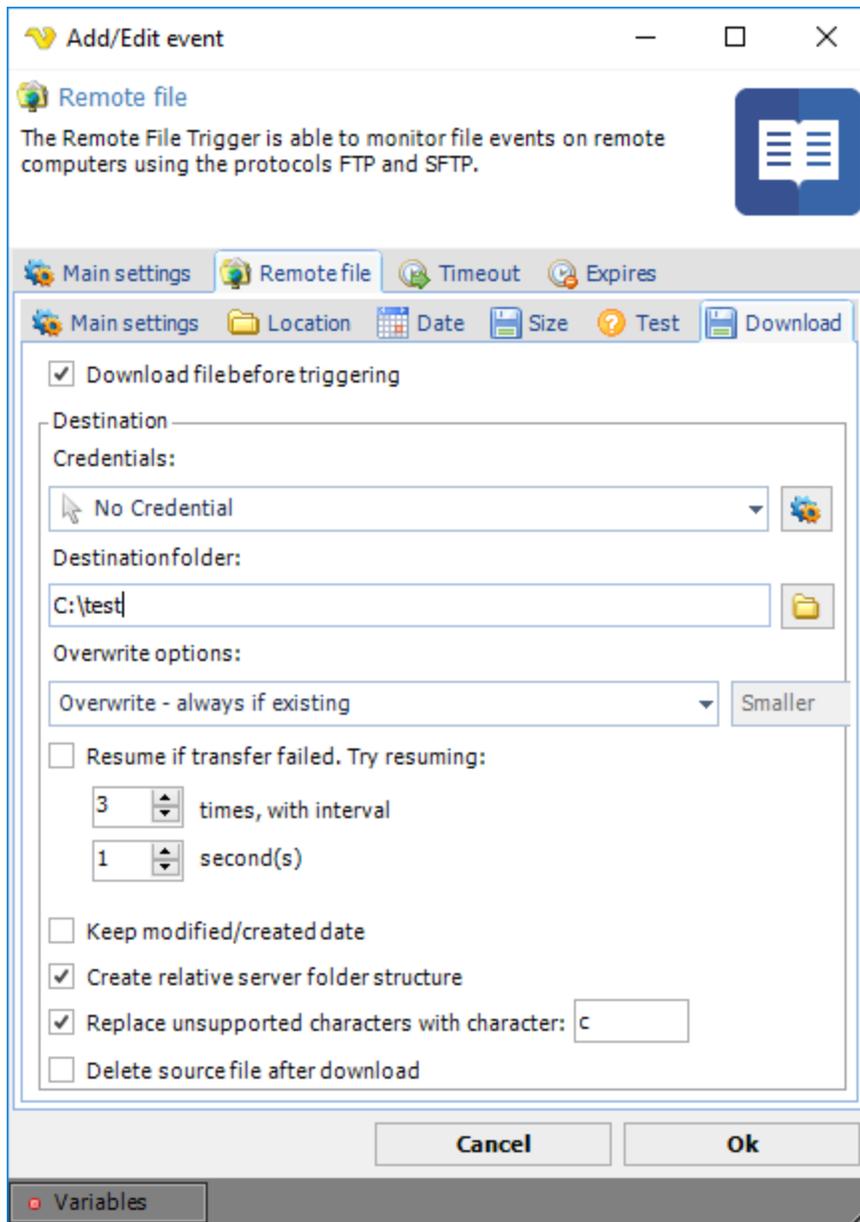
Triggers > Add > Event Trigger > Remote file > Size tab

This Task is using the standard VisualCron Folder filter to filter out files based on size.

Triggers > Add > Event Trigger > Remote file > Test tab

This Task is using the standard VisualCron Folder filter to test your current file filter - if it matches any existing files.

Triggers > Add > Event Trigger > Remote file > Download tab



Download file before triggering

Optionally, you can set the Remote file Trigger to download the file that was just Triggered.

Credential

Select a Credential if you are going to save to a network drive. Click the *Settings* icon to populate the drop-down list with available credentials.

Destination folder

The local folder where the file should be saved.

Overwrite options

If the file exists you can choose different overwrite options.

Resume transfer if failed

If an error occurs while downloading the file you can choose to retry X times and wait Y seconds between each retry.

Keep modified/created date

This option will set the same modified and creation date as the on the ftp.

Keep modified/created date

Sets the modified/created date on locally downloaded files to the same dates as the remote files.

Create relative folder structure

Creates relative folders if checked. If not checked all files (in sub folders) will be saved to destination folder.

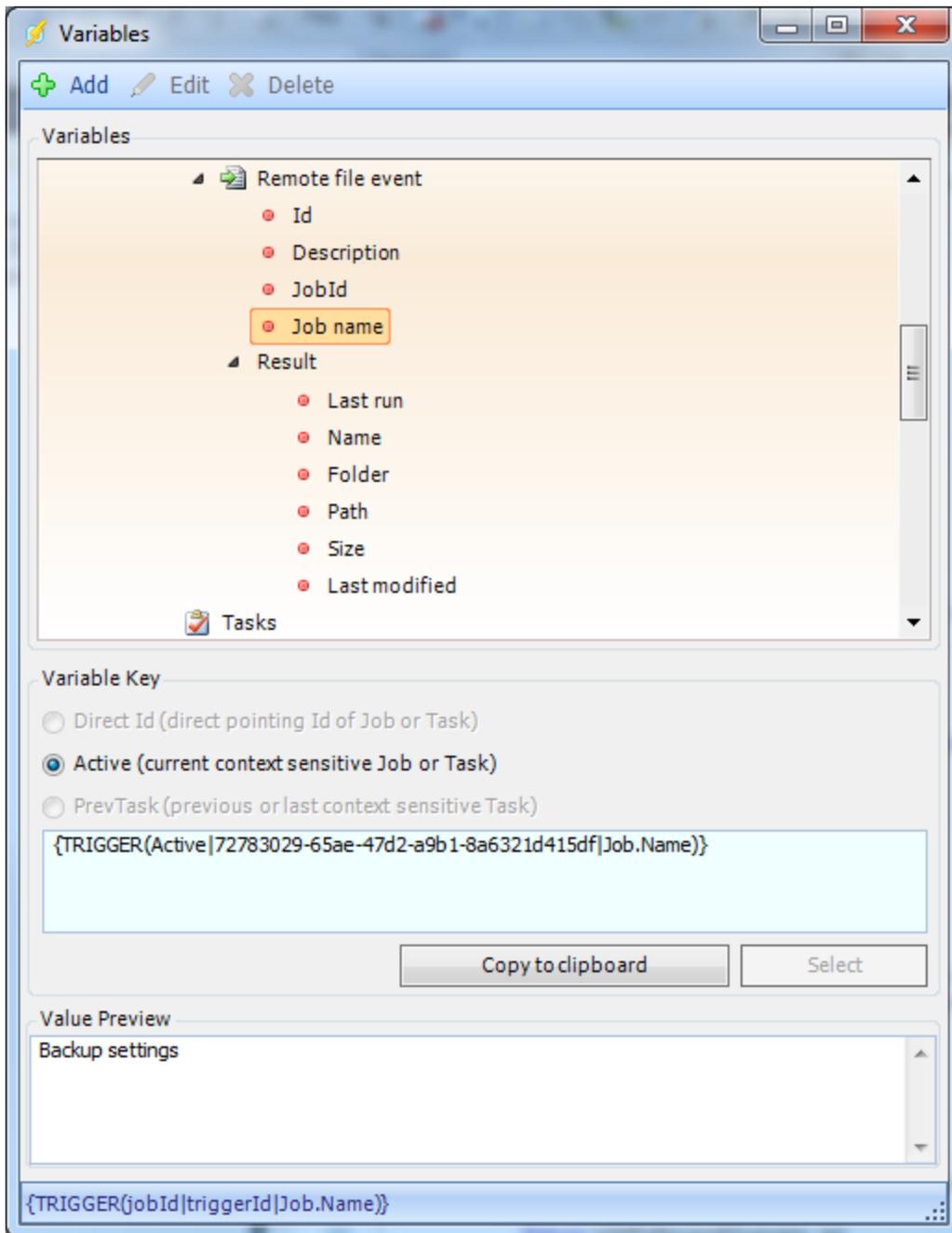
Replace unsupported characters with character

If checked, VisualCron will replace any character that is not supported in Windows file system with the specified character.

Delete source file after download

Optionally delete the remote file after download.

Triggers > Add > Event Trigger > Remote file > Variables

**Last run**

When the Trigger was last run.

Name

The name of the file that was created/modified/deleted.

Folder

The folder of the file that was created/modified/deleted.

Path

The full path to the file that was created/modified/deleted.

Size

The size of the file that was created/modified/deleted.

Last modified

The last modified date of the file that was created/modified/deleted.

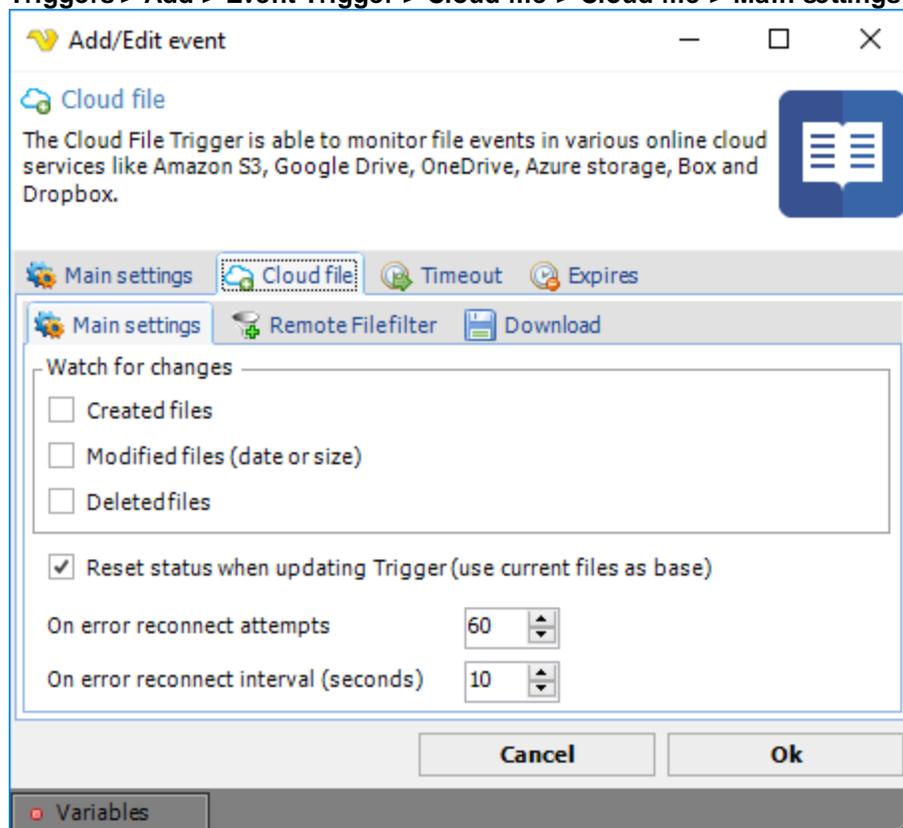
5.1.2.5.2.10 Event Trigger - Cloud file

The Cloud file event trigger is able to monitor file events in various online cloud services:

- Amazon S3
- Box
- DropBox
- Google Drive
- Microsoft Azure
- OneDrive

Different Connections are used depending on the wanted cloud service provider.

Triggers > Add > Event Trigger > Cloud file > Cloud file > Main settings tab



Watch for changes

You are able to watch for new, modified and deleted files. Select what you want the Trigger to fire for.

Reset status when updating Trigger (use current files as base)

This reloads the internal list of files. You should check this if you for some reason change the Connection.

On error reconnect attempts

Let say the remote server you watch gets disconnected for some reason, perhaps the network or computer is down. The reconnect attempts value controls how many times VisualCron tries to reconnect. Default value is 3 times.

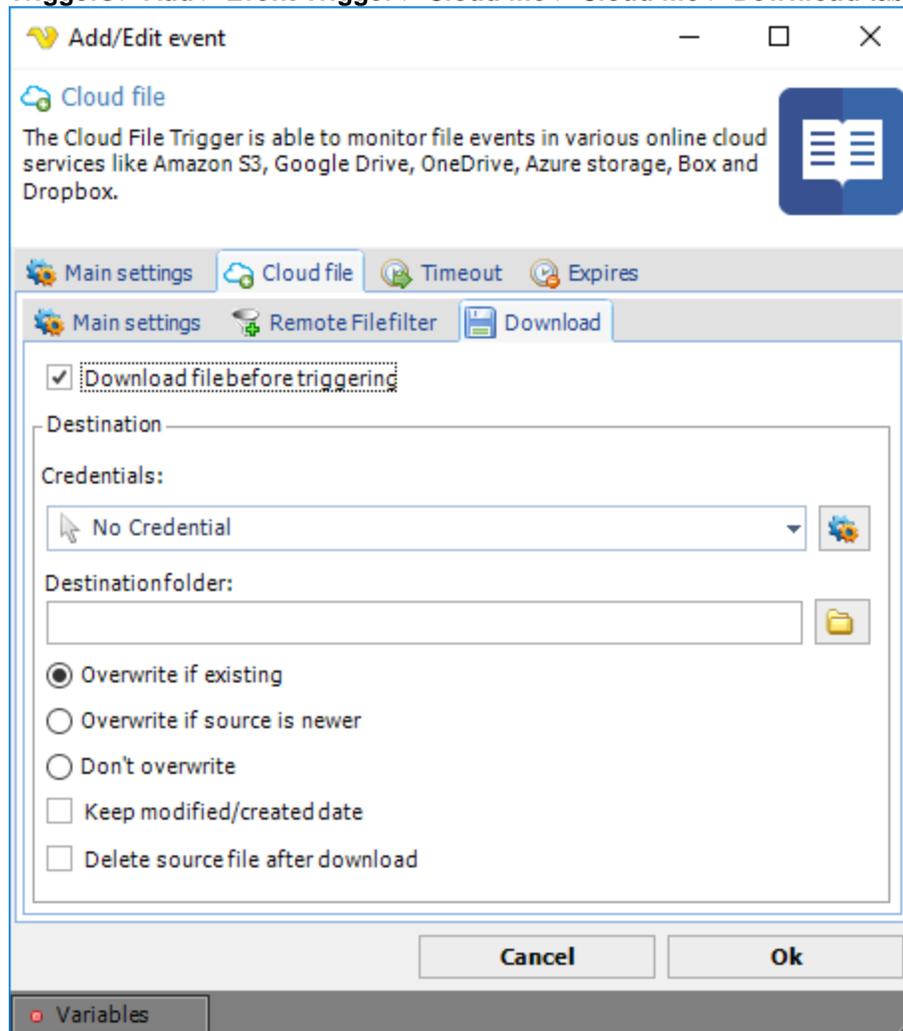
On error reconnect interval (seconds)

Let say the remote server you watch gets disconnected for some reason, perhaps the network or computer is down. The reconnect interval which you can specify is the number of seconds it will wait between each reconnect attempt, in seconds. Value 1 to 500 is available. Default is 5 seconds which may be a long time when the network is down and a short time if the remote computer is down. VisualCron attempts to reconnect 3 times by default.

Triggers > Add > Event Trigger > Cloud file > Cloud file > Remote file filter tab

This Trigger uses the Cloud Remote file filter for filtering out files to check for.

Triggers > Add > Event Trigger > Cloud file > Cloud file > Download tab



Download file before triggering

Optionally, you can set the Remote file Trigger to download the file that was just Triggered.

Credential

Select a Credential if you are going to save to a network drive. Click the *Settings* icon to populate the drop-down list with available credentials.

Destination folder

The local folder where the file should be saved. Click the *Folder* icon in order to browse the folder tree.

Overwrite options

If the file exists you can choose different overwrite options.

Keep modified/created date

Sets the modified/created date on locally downloaded files to the same dates as the remote files.

Delete source file after download

Optionally delete the remote file after download.

5.1.2.5.2.11 Event Trigger - SQL

The SQL event trigger is able to monitor and Trigger upon a result value from a text or stored procedure query. The SQL Trigger supports all kind of database Connections.

Triggers > Add > Event Trigger > SQL > Connection sub tab

The screenshot shows a dialog box titled "Add/Edit event" with a close button. The main heading is "SQL". Below the heading is a descriptive text: "The SQL Trigger is able to monitor and Trigger upon a result value from a text or stored procedure query. The SQL Trigger supports all kind of database Connections." There is a blue icon of an open book to the right of this text. Below the text is a tabbed interface with three tabs: "Main settings", "SQL", and "Expires". The "SQL" tab is selected. Underneath, there is another set of tabs: "Connection", "Trigger", and "Condition". The "Connection" tab is selected. The "Connection" sub-tab contains the following fields:

- Database Connection:** A dropdown menu with "Choose connection" and a gear icon.
- Credential for integrated security:** A dropdown menu with "No Credential" and a gear icon.
- Command timeout:** A numeric input field with "0" and a "seconds" label.
- On error reconnect attempts:** A numeric input field with "60".
- On error reconnect interval (seconds):** A numeric input field with "10".

At the bottom of the dialog are "Cancel" and "Ok" buttons. A "Variables" tab is visible at the very bottom left.

Database Connection

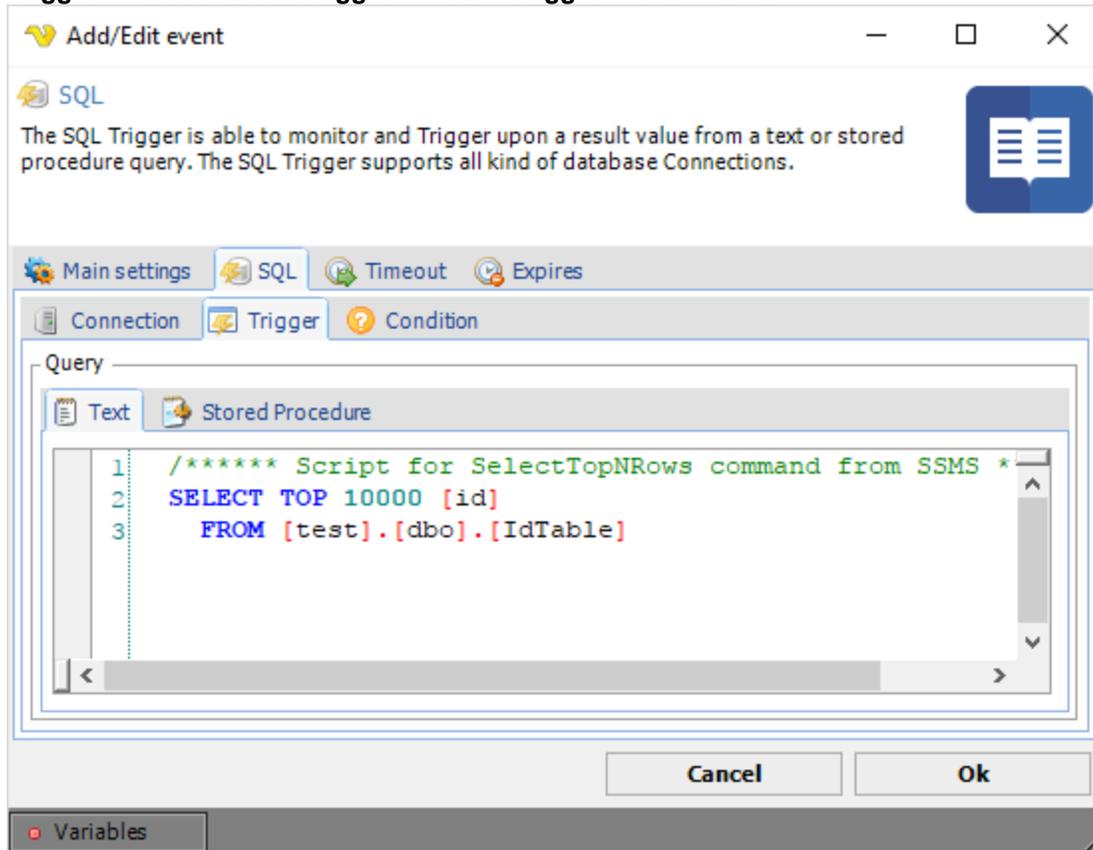
Select an existing database Connection, if not existing you need to create one first. Click the *Settings* icon to open the *Manage Connections* dialog. Once a connection is added you can select it in the combo box.

Credential for integrated security

If your Credential requires integrated security you should select a Windows user that has access to database. Click the *Settings* icon to populate the drop-down list with available Credentials.

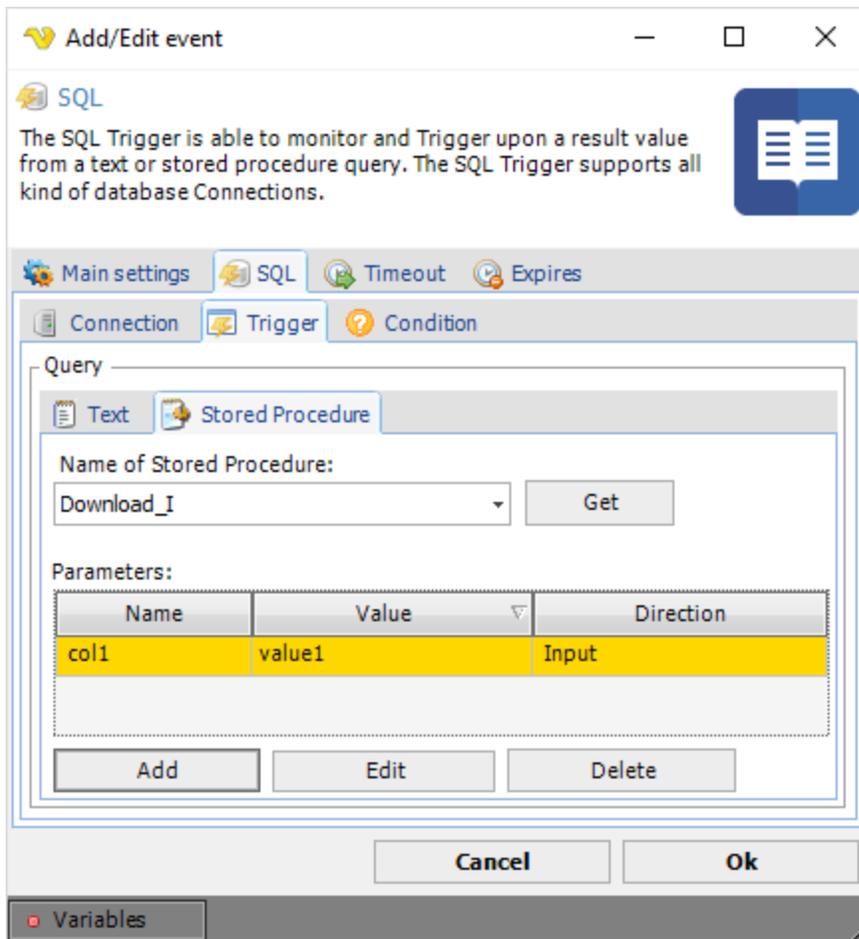
Command timeout

How long time before the query times out.

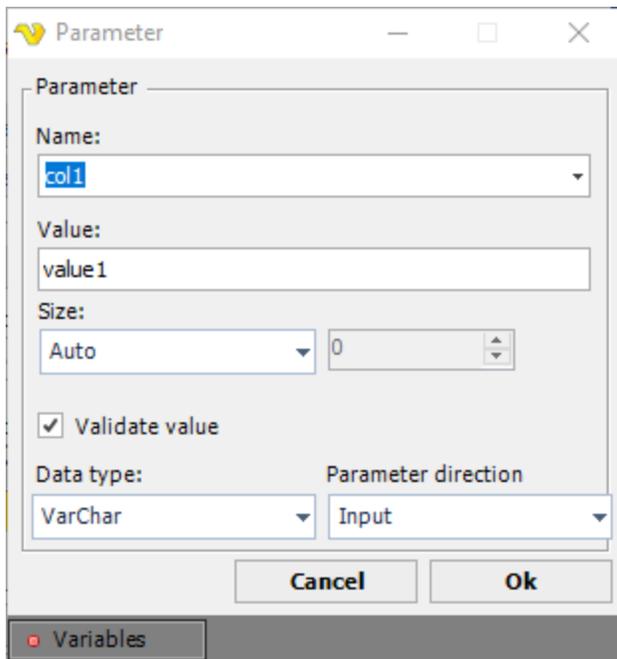
Triggers > Add > Event Trigger > SQL > Trigger > Text sub tab

Enter the query in the text field. If you have a stored procedure - select the stored procedure tab.

Triggers > Add > Event Trigger > SQL > Trigger > Stored procedure sub tab



Enter the name of the stored procedure to execute. The grid shows all parameters. When clicking on the Add button, a parameter window will open. Enter parameter values for Name, Value, Data type and Parameter direction.



The image shows a 'Parameter' dialog box with the following fields and options:

- Name:** A dropdown menu with 'col1' selected.
- Value:** A text input field containing 'value1'.
- Size:** A dropdown menu with 'Auto' selected and a numeric spinner set to '0'.
- Validate value**
- Data type:** A dropdown menu with 'VarChar' selected.
- Parameter direction:** A dropdown menu with 'Input' selected.

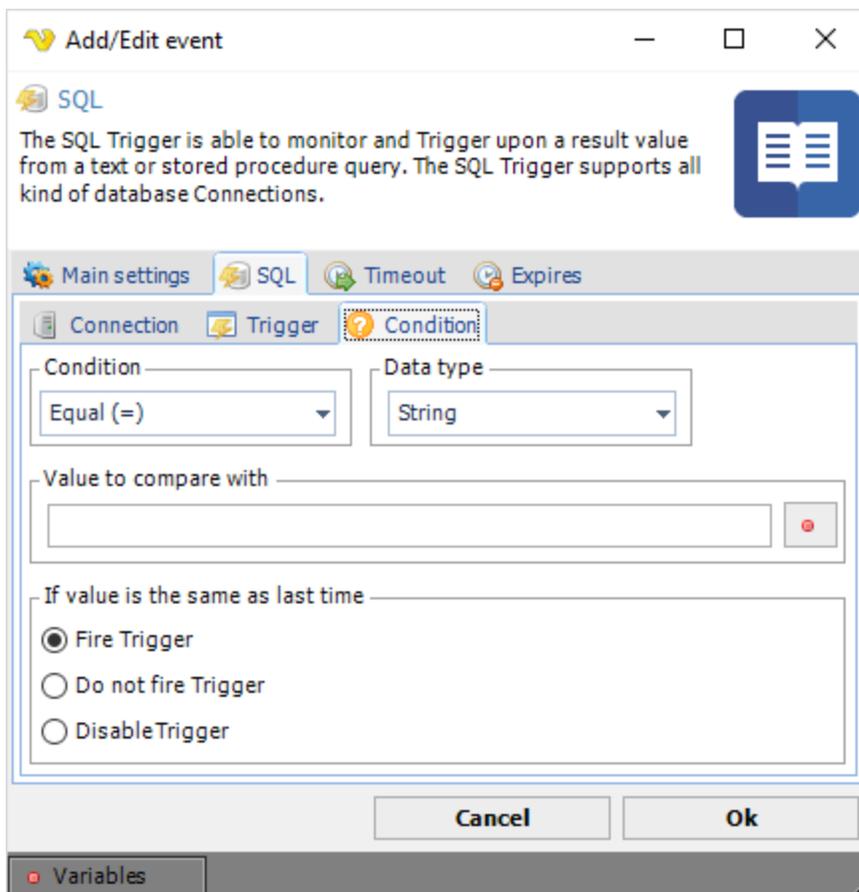
At the bottom of the dialog are 'Cancel' and 'Ok' buttons. A 'Variables' tab is visible at the bottom left of the window.

Validate value

If this value is checked VisualCron will validate the value against the value type. Unselect this if you are using a Variable as value and this Variable is not yet set.

Test your SQL Task before closing the VisualCron client. Errors will be reported in the log window.

Triggers > Add > Event Trigger > SQL > Trigger > Condition sub tab



Condition

Select the comparison method.

Data type

Select the result data type and the value to compare with.

Value to compare with

Enter a value/Variable to compare the result with. Click the *Variables* icon to open the the Variables list.

If value is the same as last time

You can control what happens if the same value comes two times in a row. By default the Trigger fire each time the Condition is met.

5.1.2.5.2.12 Event Trigger - Mail

The Email event trigger is able to monitor a mailbox through the POP3 or the IMAP4 protocol. The actual connection properties are defined in the Connections window. Based on subject, sender and content different actions can be performed with the email.

Triggers > Add > Event Trigger > Email > Main settings tab

Add/Edit event

Email

The Email event trigger is able to monitor a mailbox through POP3 or IMAP4 protocol. The actual connection properties are defined in the Connections window. Based on subject, sender and content different actions can be performed with the email.

Main settings | Email | Timeout | Expires

Main settings

Email

Description:

Active

Run delay

Run after the trigger has been triggered

1 time(s)

Polling interval

Check every: 60 Second(s)

Credentials

No Credential

Ignore Server Off (always run)

Cancel Ok

Variables

Description

Description or name of your Trigger.

Active

If the Trigger is active (watching) or not.

Polling interval

How often the mailbox is to be checked.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Ignore Server Off (always run)

The Trigger will run even though Server is set to off.

Triggers > Add > Event Trigger > Email > Email > Main settings tab

The screenshot shows a window titled "Add/Edit event" with a standard Windows-style title bar (minimize, maximize, close). The window content is divided into several sections:

- Header:** "Email" with a blue icon and a brief description: "The Email event trigger is able to monitor a mailbox through POP3 or IMAP4 protocol. The actual connection properties are defined in the Connections window. Based on subject, sender and content different actions can be performed with the email." A blue icon of an open book is to the right.
- Navigation:** A row of tabs: "Main settings" (selected), "Email", "Timeout", and "Expires".
- Sub-navigation:** A row of icons: "Main settings" (selected), "S/MIME", "Conditions", "Actions", and "Attachments".
- Connection:** A dropdown menu labeled "Choose connection" with a settings icon to its right.
- Mail folder:** Two radio buttons: "Use default folder" (selected) and "Use specified folder". Below the second radio button is a text input field with a folder icon to its right.
- Error handling:** Two spinners: "Connection timeout:" set to 180 and "Number of retries:" set to 3.
- Checkbox:** "Reset checked emails when modified" (unchecked).
- Buttons:** "Cancel" and "Ok" buttons at the bottom.
- Footer:** A "Variables" button with a red dot icon.

Connection

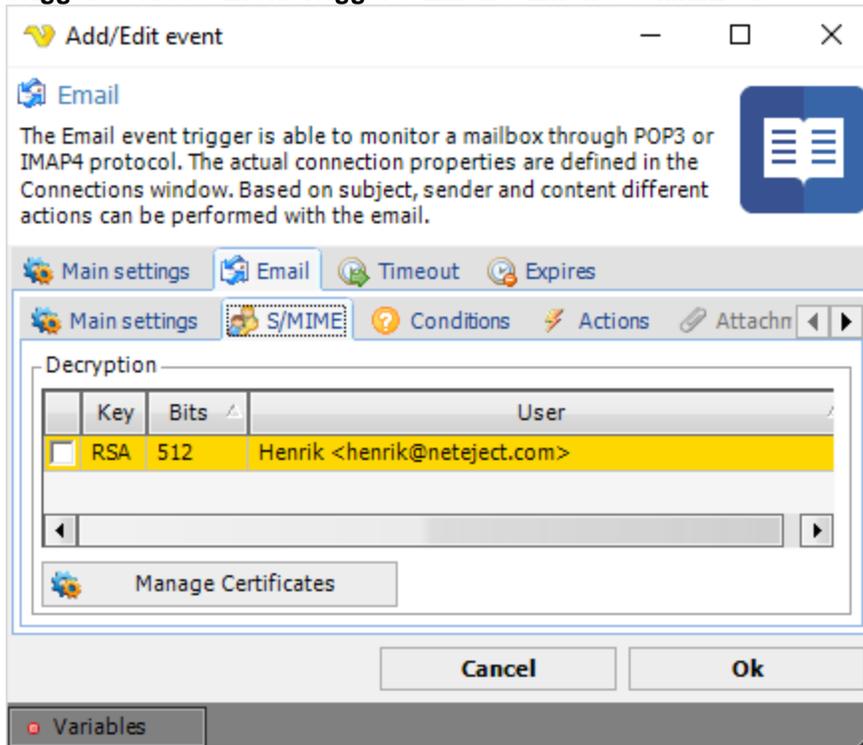
Select an existing POP3/IMAP4 connection, if not existing you need to create one first. Click the *Settings* icon to open the *Manage Connections* dialog. Once a connection is added you can select it in the combo box.

Mail folder

When VisualCron connects it uses the default folder retrieved from the mail server. If you want to change the folder you monitor you select "Use specified folder" and write the folder name in the text box.

Reset checked emails when modified

VisualCron keeps tracks on which emails that have been checked or not. When an email has been checked it is added to an internal list. In the next polling interval VisualCron will check if that email has been parsed or not. To keep this list and efficiency to a minimum it is recommended that you either delete or move the email once the email has been parsed. This is controlled in the Actions tab. If you, for some reason, wants VisualCron to reset that list you check this box and VisualCron will consider all emails found in the mail folder as new.

Triggers > Add > Event Trigger > Email > Email > S/MIME tab


VisualCron is able to decrypt S/MIME emails and verify signatures.

Decryption

If the email is encrypted you need a Certificate to decrypt it. A certificate is often retrieved from the sender of the Certificate and is in the X509 certificate standard. Once you have created or imported a certificate you need to check it in the list. If an email is encrypted VisualCron will try to use that certificate for decryption.

Manage Certificates

You can create/import your certificates defined in the Manage Certificates window.

Triggers > Add > Event Trigger > Email > Email > Conditions tab

Add/Edit event

Email

The Email event trigger is able to monitor a mailbox through POP3 or IMAP4 protocol. The actual connection properties are defined in the Connections window. Based on subject, sender and content different actions can be performed with the email.

Main settings | **Email** | Timeout | Expires

Main settings | S/MIME | **Conditions** | Actions | Attachment filter

From address

Contains (=%) | visualcron.com

Subject

Equal (=) | test | Casesensitive

Body

Don't check | Casesensitive

Received date

Don't check | {DATENOWADD(Minutes,10,T)} |

Cancel | Ok

Variables

The Email Trigger has some Conditions. The Conditions are there to evaluate certain values from the parsed email. Each evaluation returns a result. The following results exist: *All match*, *Any match* and *No match*. If all match the evaluation then it will return *All match*. If at least one is matching it will return *Any match*. If none are matching it will return *No match*. The actual evaluation of the Condition is different depending on what part of the email is evaluated. For example, when evaluating a subject you can choose among the following checks:

- "Equal" - the subject must match the string in the text box exactly
- "Not equal" - the subject must not match the string in the text box
- "Contains" - if any of the letters in the text box matches the subject it is returning a match
- "Don't contain" - if not any of the letters in the text box matches the subject it is returning a match
- "Don't check" - this Condition is not checked at all which is returning a match

From address

This Condition checks the actual address part of the message (not name of sender).

Subject

This Condition checks the subject of the email

Body

This Condition checks the body of the email

Received date

This Condition compares the date and time the message was received against a Variable. Please note that you can only use date Variables and that it does not matter what kind of formatting of the Variable you use.

Triggers > Add > Event Trigger > Email > Email > Actions tab

Add/Edit event

Email

The Email event trigger is able to monitor a mailbox through POP3 or IMAP4 protocol. The actual connection properties are defined in the Connections window. Based on subject, sender and content different actions can be performed with the email.

Main settings | **Email** | Timeout | Expires

Main settings | S/MIME | Conditions | **Actions** | Attachment filter

Trigger: All match

Message on Server: Always

Delete message on Server
 Leave message on Server
 Mark as read (not POP3)

Copy message to folder (not POP3): Never

Mark as read (not POP3)

Save email: Never

Save attachment(s): Never

Save to default folder
 Save to folder:
 Create folder tree based on each email

Cancel Ok

Variables

Actions are controlling what happens when the Conditions has been evaluated - depending on collective result.

Trigger

This action controls if the Job should be triggered or not depending on result.

Message on Server

This controls what happens with the message on the mail server. It is recommended that you delete or move the mail or VisualCron will check that email again in the next polling interval. If you leave the message on the server you can choose to mark it as read (this option is only available in IMAP4 because it does not exist in POP3 protocol). Note that VisualCron does not care if it is read or not - VisualCron has it's internal list to check if email has been checked or not.

Copy message to folder (not POP3)

This option copies a mail to another folder. It does not delete it unless you set *Delete message on Server* in previous setting. This option is only available when using IMAP4 as protocol mode.

Save email

Both the actual mail and/or attachment can be saved to a file. You can choose to save the email at a custom location or at the default location. By default the content is saved in "C:\Program Files\VisualCron\data\triggers\mail\{MailId}\{MailId}.eml". Attachments of an email are by default stored in the attachments folder; "C:\Program Files\VisualCron\data\triggers\mail\{MailId}\attachments".

5.1.2.5.2.13 Event Trigger - Process

The Process event trigger monitors process changes like when a process has started or stopped. With this Trigger VisualCron subscribe to start and stop notifications from the system.

Triggers > Add > Event Trigger > Process tab

The screenshot shows the 'Add/Edit event' dialog box with the 'Process' tab selected. The dialog title is 'Add/Edit event'. Below the title, there is a 'Process' icon and a description: 'The Process event trigger monitors process changes like when a process has started or stopped. With this Trigger VisualCron subscribe to start and stop notifications from the system.' There are four tabs: 'Main settings', 'Process', 'Timeout', and 'Expires'. The 'Process' tab is active. Under 'Process information', there is a 'Process name:' label followed by an empty text box and a 'Select' button. Below that is a 'Process event type:' label followed by a dropdown menu showing 'Process start'. At the bottom of the dialog, there are 'Cancel' and 'Ok' buttons. A 'Variables' section is visible at the very bottom.

Process name

Enter a process name which is listed in the Task Manager, e.g. "WINWORD.EXE". A list of processes from the server can be retrieved by clicking on the *Select* process button. In the list window, double-click on the desired process for selection. Note that the process name is case sensitive.

Process Event type

"Process start" means that you are monitoring for new, created, processes. "Process end" means watching for termination of a running process.

5.1.2.5.2.14 Event Trigger - Service

The Service event trigger monitors changes in the status of a specific Windows service, stopped or started. The trigger reacts instantly on all changes.

A service is a process that runs in the background. List and details about installed services can be retrieved by going to Windows *Control Panel* -> *Administrative Tools* and open "Services".

Often, services start when the computer starts. Normally, a service stops when an error has occurred in the process. The Service Event Monitor is based on **WMI**. This means that you set the polling interval or use the 60 seconds as default.

Triggers > Add > Event Trigger > Service tab

The screenshot shows the 'Add/Edit event' dialog box with the 'Service' tab selected. The 'Service information' section contains a 'Service name' dropdown menu with a refresh icon to its right. Below this are two radio buttons: 'Service status changes' (unselected) and 'Service status changed to' (selected). Under the selected radio button is a list of service states with checkboxes: 'Stopped' (checked), 'Start pending', 'Stop pending', 'Running', 'Continue pending', 'Pause pending', and 'Paused'. At the bottom of the dialog are 'Cancel' and 'Ok' buttons. A 'Variables' tab is visible at the very bottom of the window.

Service name

To add a service event you must specify a service name and at least one state. Click the Refresh icon to populate the drop-down box with service names.

Service status

Tick the check boxes for the states you want to watch. When a service with a specific name changes or has changed to the selected state, the event is triggered. The following service states exist:

- "Stopped" - The service is not running

- "StartPending" - The service is starting
- "StopPending" - The service is stopping
- "Running" - The service is running
- "ContinuePending" - The service continue is pending
- "PausePending" - The service pause is pending
- "Paused" - The service is paused

Note: All services may not have all states implemented. Mostly, a service is either started or stopped. Started ("Running") and "Stopped" are always implemented for all services.

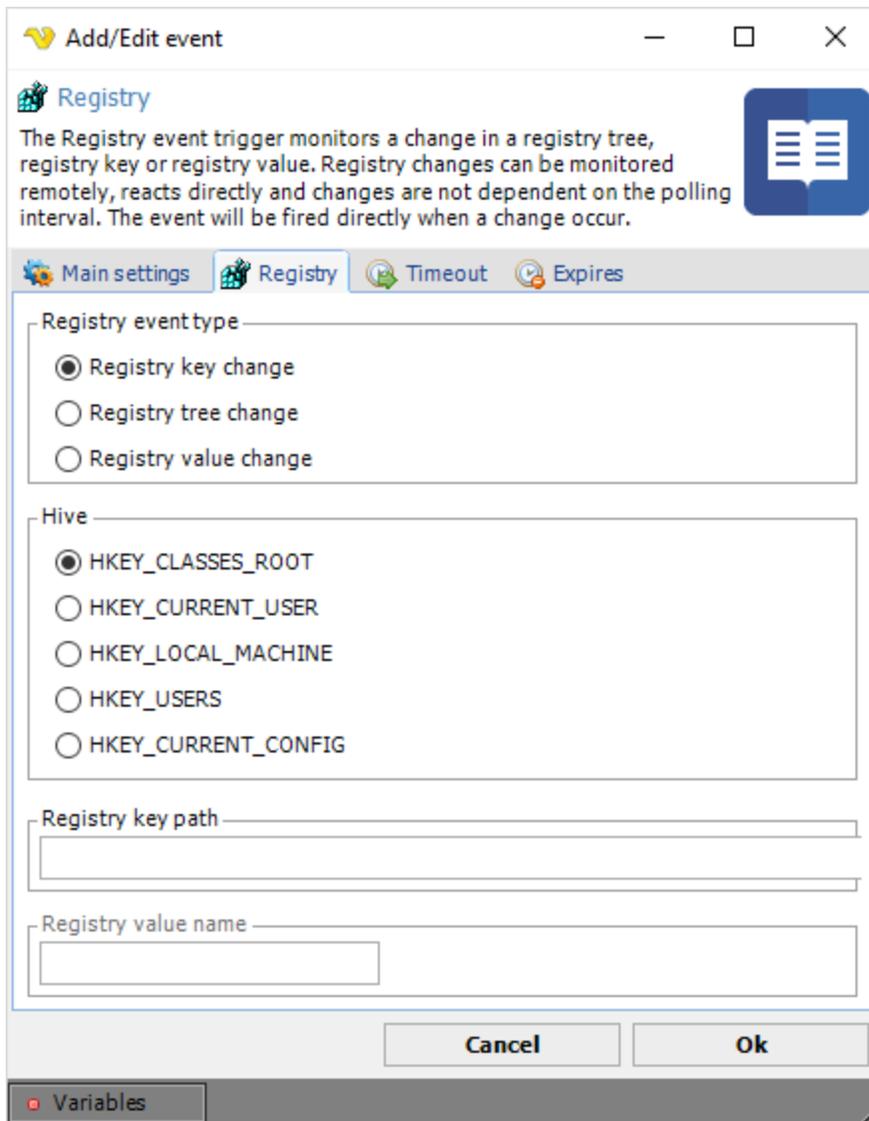
5.1.2.5.2.15 Event Trigger - Registry

The Registry event trigger monitors a change in a registry tree, registry key or registry value. Registry changes can be monitored remotely, reacts directly and changes are not dependent on the polling interval. The event will be fired directly when a change occur.

Many programs and Windows itself stores information and change information during a Windows session. This event trigger is based on **WMI**.

You can examine the registry settings by starting "regedit.exe" from a Windows command window.

Triggers > Add > Event Trigger > Registry tab



Registry event type

The registry can be monitored for changes in the following ways:

- "RegistryKeyChange" - represents changes to a specific key. The changes apply only to the key, not its sub keys
- "RegistryTreeChange" - represents changes to a key and its sub keys
- "RegistryValueChange" - represents changes to a single value of a specific key

Hive

Name of the hive that contains the key (or keys) that is changed.

Registry key path

Path to the registry key. Use backspaces to separate trees. Do not start with a backspace. Registry Key

path example: "SOFTWARE\Microsoft\DirectX"

Registry value name

Name of the value in the registry key.

Example: "InstalledVersion" located in RegistryKeyPath: SOFTWARE\Microsoft\DirectX

5.1.2.5.2.16 Event Trigger - Event log

The Event log trigger is watching the Windows event log for changes. Many applications and Windows itself logs directly to the event log. With this trigger you can monitor the common logs or specific logs for changes based on event ID, source, message etc.

Some applications create their own log files and it is possible for you to create one or view events by the Windows application "Event viewer" which is found in Windows *Control Panel -> Administrative tools*. This event trigger is based on **WMI**.

Triggers > Add > Event Trigger > Event log tab

The screenshot shows the 'Add/Edit event' dialog box with the 'Event log' tab selected. The dialog title is 'Add/Edit event'. Below the title bar, there is a description: 'The Event log Trigger is watching the Windows event log for changes. Many applications and Windows itself logs directly to the event log. With this Trigger you can monitor the common logs or specific logs for changes based on event type id, source, message etc.' To the right of the description is a blue icon of an open book. Below the description are four tabs: 'Main settings', 'Event log' (selected), 'Timeout', and 'Expires'. The 'Event log entry variables' section contains the following fields and dropdowns:

Field	Value	Action
Log file:	[Empty]	Ignore
Category id:	0	Ignore
Category:	[Empty]	Ignore
Event id:	0	Ignore
Event type:	Error	Ignore
Description contains:	[Empty]	Ignore
Source:	[Empty]	Ignore

At the bottom of the dialog are 'Cancel' and 'Ok' buttons. A 'Variables' button is visible at the bottom left of the dialog frame.

You can choose what kind of conditions to use by first enabling the setting and then enter a value in the text window or select a value. When enabling a condition you can choose to use "AND" or "OR". Think of it's as a query.

Log file

Probably you know what log file to look for. Select a specific log file or you may be flooded with Event log events from other log files.

Category id

Each application (event source) can define its own numbered categories and the text strings to which they are mapped. The Event Viewer can use the category to filter events in the log. The categories must be numbered consecutively beginning with number 1.

Category

This is a description of the numeric value, which could be, for example: "Kernel" or "Disk". Each application (event source) can define its own numbered categories and the text strings to which they are mapped. The text strings associated with the category are stored in the computer's registry. The Event Viewer can use the category to filter events in the log.

Event id

Event code is a numeric value to further distinguish an entry.

Event type

There exist some predefined event types which can be selected from the combo box. The predefined event types are:

- "Error" - An error event, indicates a significant problem the user should be aware of; usually a loss of functionality or data
- "Warning" - A warning event, indicates a problem that must not be taken care of immediately, but may indicate conditions that could cause future problems
- "Information" - An information event, indicates a significant and successful operation
- "SuccessAudit" - A success audit event, indicates a security event that occurs when an audited access attempt is successful; for example, logging on successfully
- "FailureAudit" - A failure audit event, indicates a security event that occurs when an audited access attempt fails; for example, a failed attempt to open a file

Description contains

The formatted, localized text for the message. This includes associated replacement strings. Enter a text that exists in a part of the description/message.

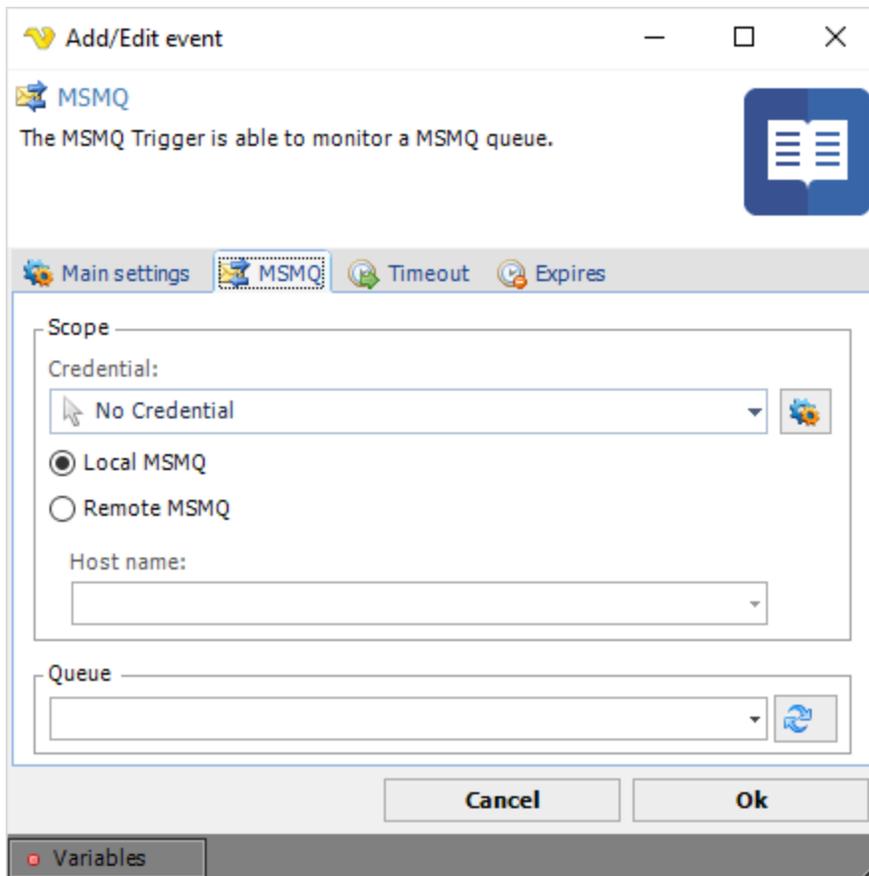
Source

The event source indicates what initiated the event. It is often an application name or the name of a subcomponent of the application if the application is large. Applications and services usually write to (and therefore are sources for) the Application log or a custom log. Device drivers usually write to the System log.

5.1.2.5.2.17 Event Trigger - MSMQ

The MSMQ event trigger is able to monitor a private or public queue for new messages. When a new message arrives you can use VisualCron Variables to extract the information in the new message.

Triggers > Add > Event Trigger > MSMQ tab



Credential

Select a Credential if you are going to monitor a remote MSMQ queue. Click the *Settings* icon to populate the drop-down list with available credentials.

Local/Remote MSMQ

You can choose to monitor a local or a remote MSMQ Server. If you want to monitor a remote MSMQ Server you need to define a Host name.

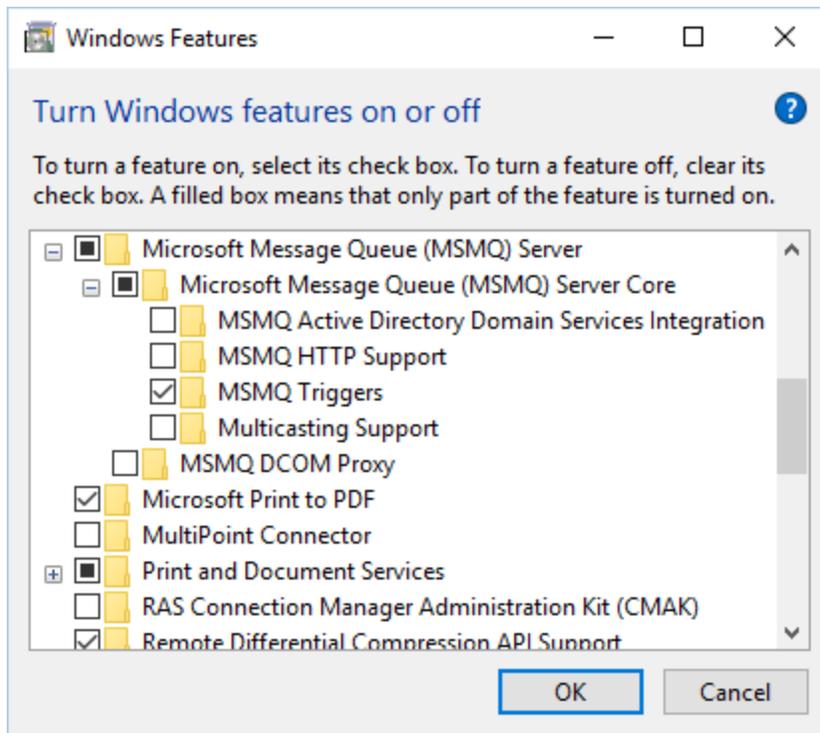
Queue

Select the queue to be received. Click the *Refresh* icon to populate the drop-down list of queues.

Troubleshooting:

Error: Retrieving the COM class factory for component with CLSID {1D9F85C0-9666-11D2-8927-0008C70C0622} failed due to the following error: 80040154 Class not registered (Exception from HRESULT: 0x80040154 (REGDB_E_CLASSNOTREG)).

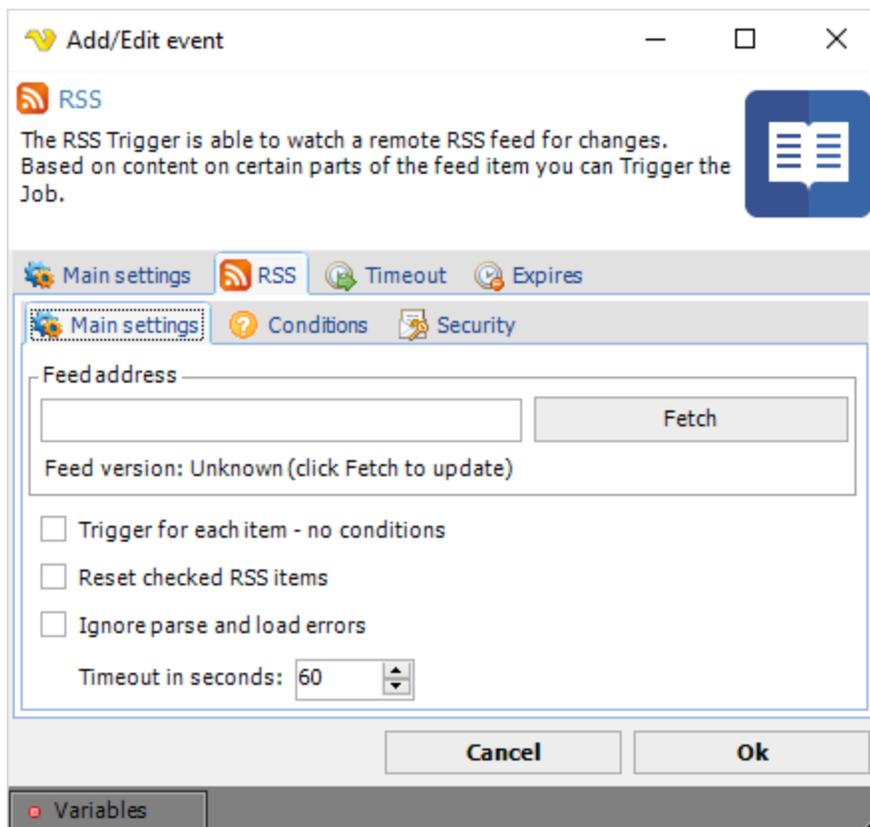
Make sure you have installed MSMQ Triggers in Programs and Features dialog:



5.1.2.5.2.18 Event Trigger - RSS

The RSS event trigger is able to watch a remote RSS feed for changes. Based on content on certain parts of the feed item you can Trigger the Job.

Triggers > Add > Event Trigger > RSS > Main settings tab



Feed address

Text ... Click the *Fetch* button to

Trigger for each item - no conditions

Check this option if you just want to know when a feed has been updated. This setting will fire the Trigger each time a new item has been added.

Reset checked RSS items

Text ...

Ignore parse and load errors

Text ...

Timeout in seconds

Text ...

Note: As for all event triggers we recommend that you set "Put Job in queue" in the man settings of the Job. This will force VisualCron to process one item at a time. For example, if you let your RSS Trigger check every 60 seconds and two new items has been added since last check - then VisualCron will Trigger twice. In order to be able to use Variables from the Trigger correctly "Put Job in queue" needs to be set otherwise a mixup of Variables is possible.

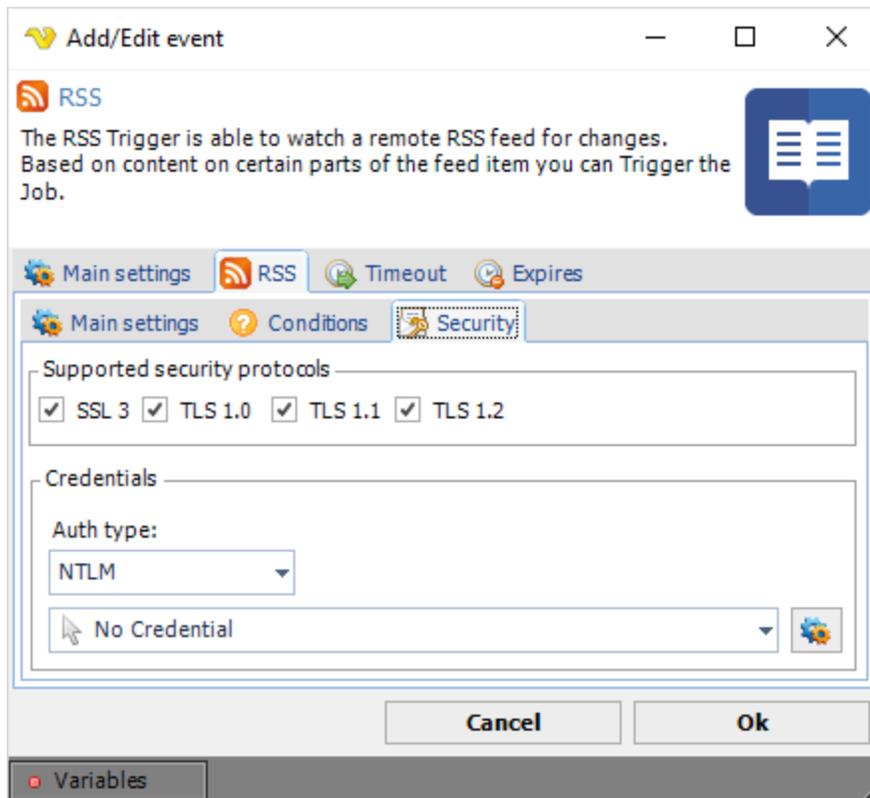
Triggers > Add > Event Trigger > RSS > Conditions tab

The screenshot shows a software window titled "Add/Edit event" with a yellow bird icon. The window has standard Windows window controls (minimize, maximize, close). Below the title bar, there is an "RSS" icon and a blue square icon with a white document symbol. A text block explains: "The RSS Trigger is able to watch a remote RSS feed for changes. Based on content on certain parts of the feed item you can Trigger the Job." Below this is a tabbed interface with "Main settings", "RSS", "Timeout", and "Expires" tabs. The "RSS" tab is active, and within it, there are sub-tabs for "Main settings", "Conditions", and "Security". The "Conditions" sub-tab is selected and highlighted with a dashed border. It contains a section titled "Feed conditions" with seven rows, each with a label and a dropdown menu set to "Don't check" and an empty text box:

Field	Dropdown	Text Box
Title:	Don't check	
Description:	Don't check	
Link:	Don't check	
Author:	Don't check	
Comment:	Don't check	
Content:	Don't check	
Link content:	Don't check	

At the bottom of the dialog are "Cancel" and "Ok" buttons. A "Variables" tab is visible at the very bottom left.

Triggers > Add > Event Trigger > RSS > Security tab

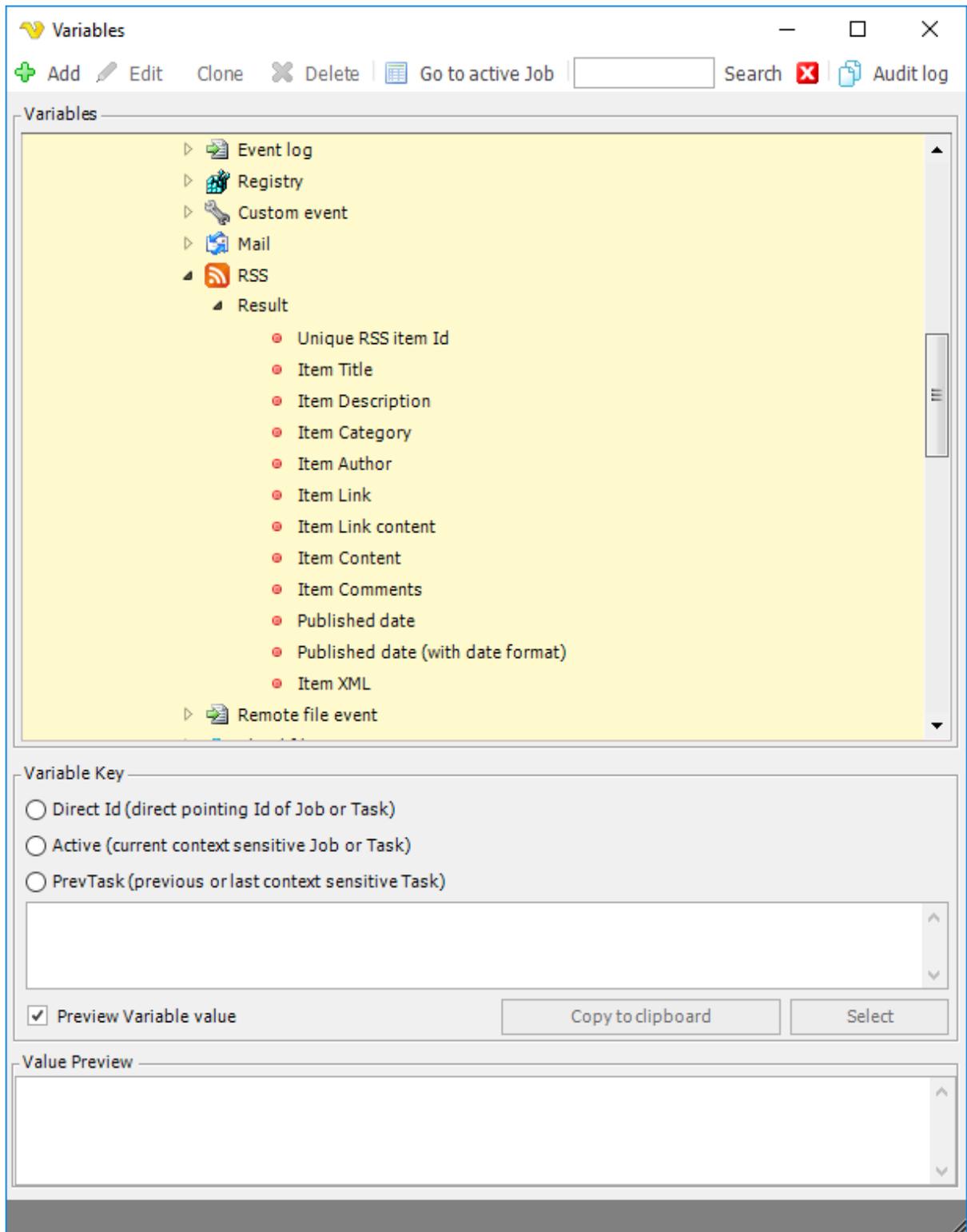


Supported security protocols
Text ...

Auth type
Text ...

Credential
Select a Credential suitable for the selected authentication type. Click the *Settings* icon to populate the drop-down list with available credentials.

RSS Event Trigger Variables



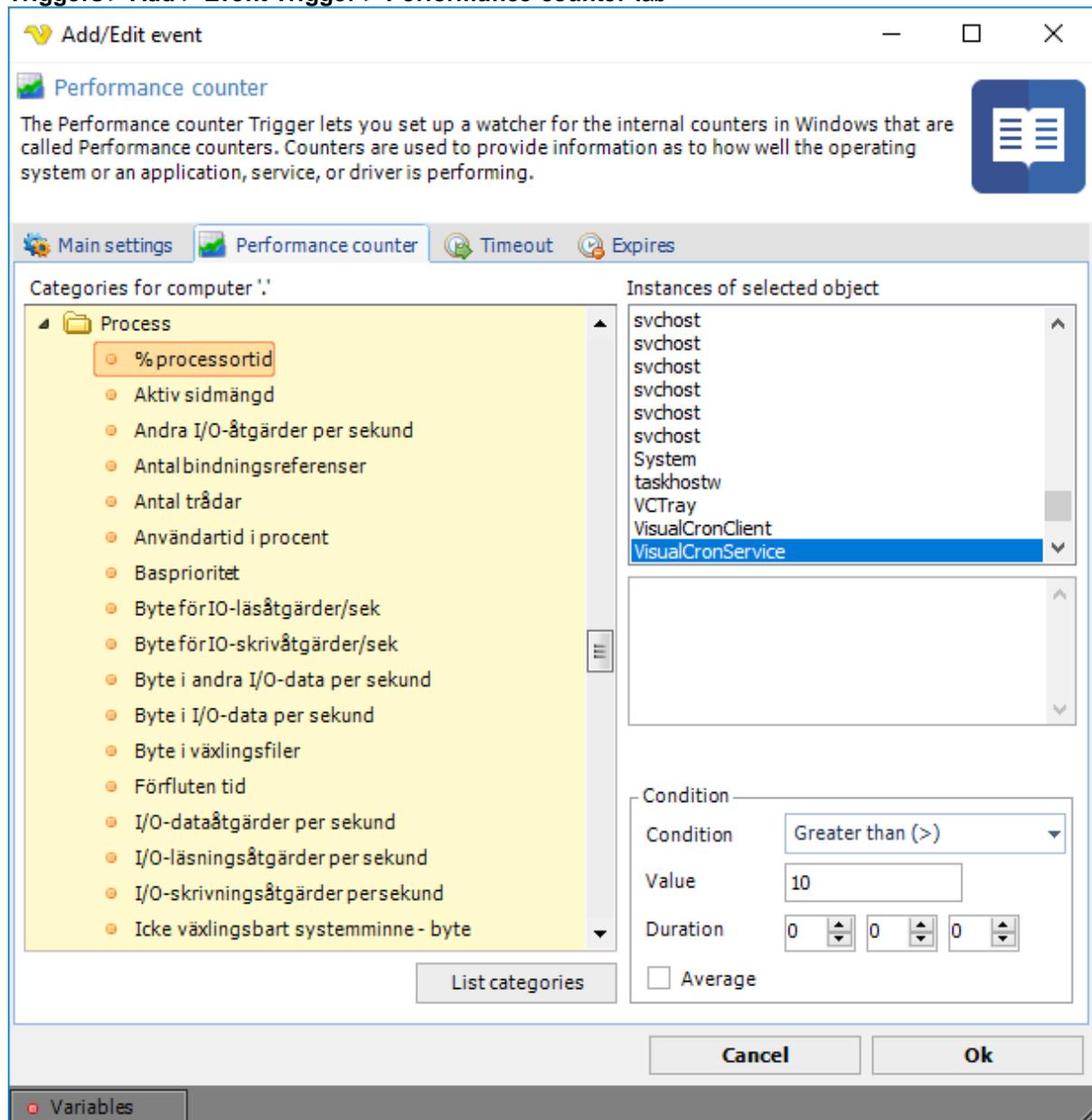
In the Variables window you can find related Variables from the Trigger.

5.1.2.5.2.19 Event Trigger - Performance counter

The Performance counter Trigger lets you set up a watcher for the internal counters in Windows that are called Performance counters. Counters are used to provide information as to how well the operating system or an application, service, or driver is performing.

The counter data can help determine system bottlenecks and fine-tune system and application performance. The operating system, network, and devices provide counter data that an application can consume to provide users with a graphical view of how well the system is performing.

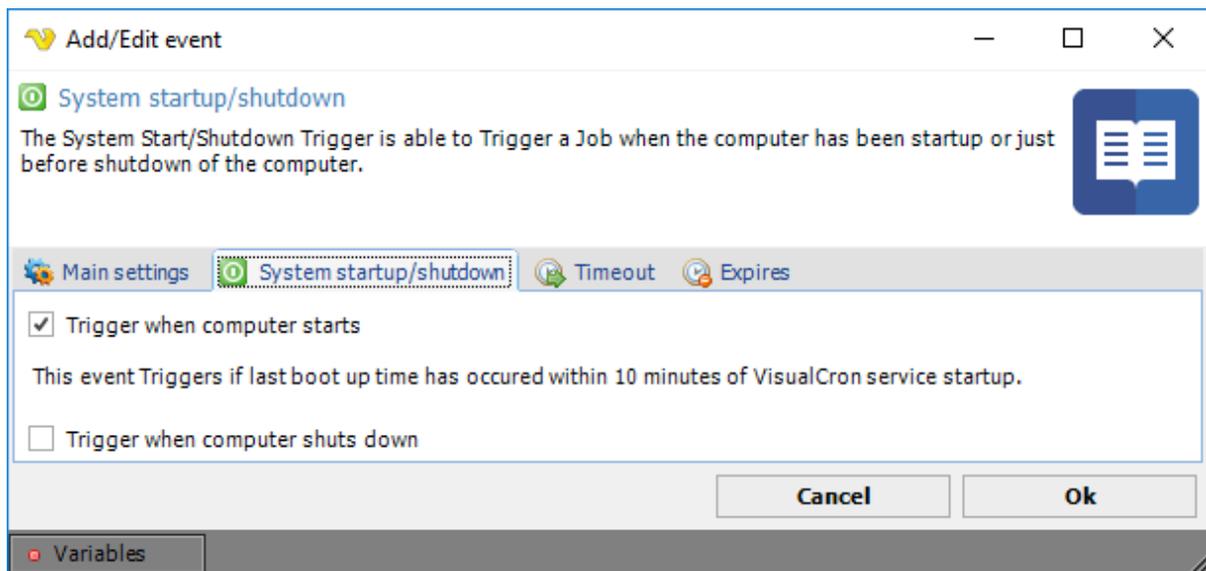
It is possible to monitor a remote computer by entering computer name and Credentials in the main settings.

Triggers > Add > Event Trigger > Performance counter tab

With VisualCron you can select a category and a specific instance of a counter to monitor a value. For example, in the screen shot below you can select the *Process* category with the *% Processor* time counter. This lets you monitor the CPU usage of a specific process. In the built in Conditions you can then select that (in this example); if this process is using more than 10% CPU for more than 10 seconds - then Trigger.

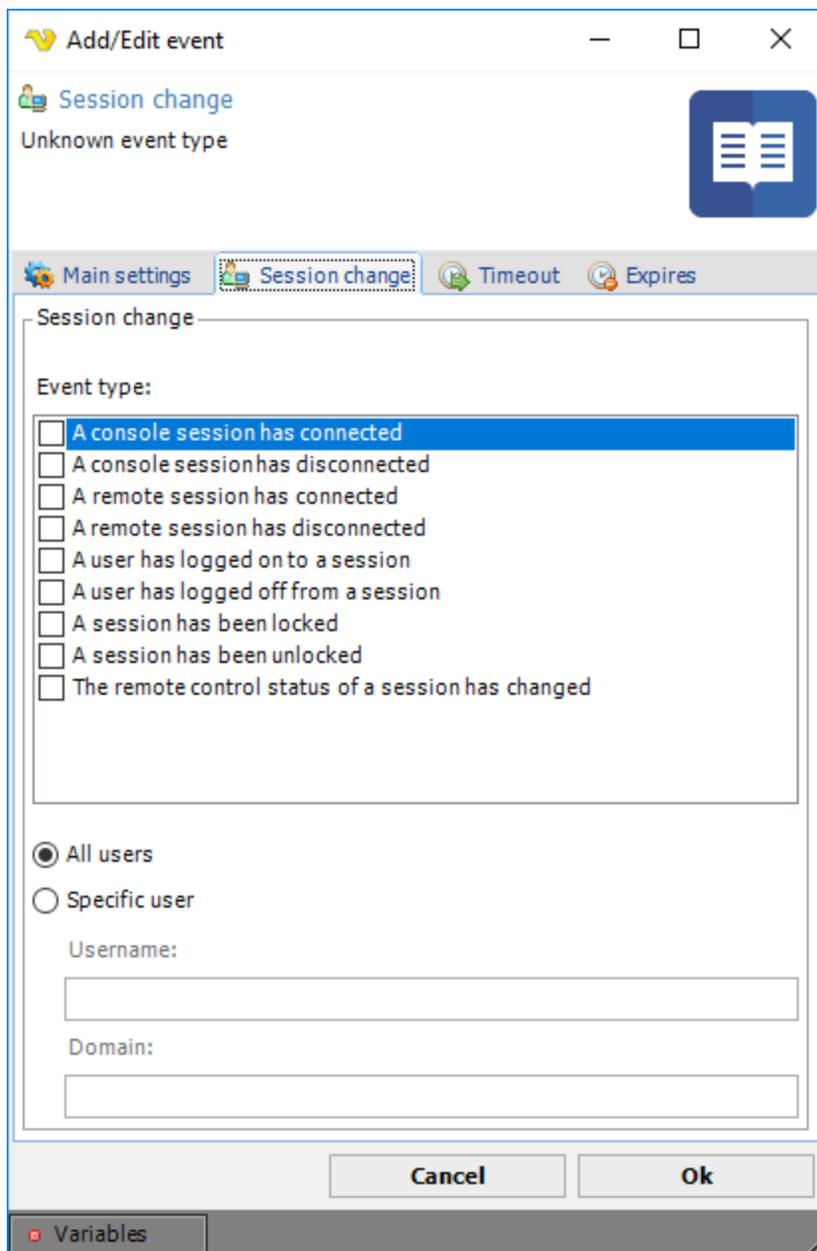
5.1.2.5.2.20 Event Trigger - System start/shutdown

The System Start/Shutdown Trigger is able to Trigger a Job when the computer has been startup or just before shutdown of the computer.



5.1.2.5.2.21 Event Trigger - Session change

Unknown event type.



Event type

Text ...

All/Specified user

Text... UsernameDomain...

5.1.2.5.2.22 Event Trigger - Custom

The Custom event trigger is a wrapper for the most common **WMI** events. There are thousands of events which opens up a lot of options. Almost every installed hardware device in a computer publish events, for example when the CDROM drive is ejected. This event is somewhat depreciated and replaced by the more advanced Performance Counter trigger.

Events that are not considered, may be taken care of by creation of your own WQL (WMI Query Language) query. VisualCron do not take any responsibility for customer created WQLs, however there is a lot of documentation available on the Internet.

When trying to find the right query for an event it's good to have a tool, e.g. the Microsoft WMI Code Creator. This tool let's you browse, test and construct your queries. The tool can be downloaded from [here](#).

The screenshot shows a dialog box titled "Add/Edit event" with a "Custom event" tab selected. The "Custom WMI query" section contains the following fields:

- Path:** \\root\CIM
- Event class name:** (empty text box) Ignore (dropdown menu)
- Query:** (empty text box)

Below the "Query" field is a link: [Read more about writing custom queries in WMI](#). At the bottom of the dialog are "Cancel" and "Ok" buttons. A "Variables" button is located at the bottom left.

Path

WMI supports namespaces, allowing users to logically group WMI classes together. Each WMI provider normally registers its own WMI namespace and then all its classes within that namespace. For example, all Win32 WMI classes can be found in the namespace "root\cimv2", all IIS WMI classes can be found at "root\microsoftiisv2", and all LDAP WMI classes can be found at "root\directory\ldap". The root namespace is called "Root" and namespaces can have child namespaces and WMI classes. The default path is \root\CIMV2.

Event class name

Some drivers require that you specify their class belonging. If necessary, this information can be retrieved from the WMI Code Create. Normally, the Event class name is the "table name" when constructing a query.

Query

This is the field where the query is entered. If you need to specify a polling interval you do that in the query using the operator WITHIN. Example query:

```
SELECT *
FROM __InstanceOperationEvent
WITHIN 10
WHERE
TargetInstance ISA 'Win32_Processor'
```

AND TargetInstance.LoadPercentage > 15

This query checks if the CPU load is over 15%. WITHIN 10 means that it will check that every 10th second. Our recommendation is that you do not use a lower WITHIN value than 10, because this may keep your CPU too busy.

A new query in WMI Code Creator have to be tested before entering in VisualCron. Entering an invalid query may affect the VisualCron stability.

A few WMI links:

Microsoft WMI Scripting Primer

WMI error codes

5.1.2.5.3 Job - Time Exceptions

Time exceptions are "global", which means that once a time exception is defined it can be selected by one or more Jobs. The activated collections include time definitions when the Job will NOT run, i.e. blocking time(s) and interval(s) set in the other *Time settings* sub tabs.

A time exception is a complement to the *Time* trigger settings.

5.1.2.5.4 Job - Conditions

Condition sets are global and the included conditions for Jobs and Tasks are managed in the same way, see Global - Conditions for details.

5.1.2.5.5 Job - Tasks

A Task for a Job is managed either by mouse right-click on a Job (in the Server/Job/Task grid) and select *Add Task to Job '<Job name>'* or by right-click on an existing Task and select *Edit Task '<Task name>'*.

The above is an example of the Task > Main settings window.

For each Job, one or more Tasks must be defined.

By default, a defined Job or Task is set to the "Active" state, but it is possible to inactivate each Job or Task individually, see Activate/Inactivate Job for more information.

5.1.2.5.5.1 Loop functionality

Summary

"Loops" are introduced in VisualCron version 6.0.0. Loops let you run several Tasks multiple times in three loop types:

1. For
2. For Each
3. While

During a loop you are able to access loop runtime Variables. For example, where you are in the current iteration and all related values.

Architecture

Loops are objects that are stored in a Job. On Job can contain a maximum number of loops equal to the maximum number of Tasks. Loops are defined by a start Task and end Task. Anything in between will be looped in Task order. Loops cannot cross each other - you cannot create a loop in a loop.

Task Conditions are checked each time before a Task is run, independent of if Task is in loop or not.

Loop types

There are three different loop types:

For

A loop type with and x and y value where x and y are numeric values.

While

A loop type that can compare two values according to a specific data type (i.e. string, integer) and comparison method (i.e. larger than, contains, equal).

For each

A loop type that iterates through an existing y value. A list of some sort.

Working with loops

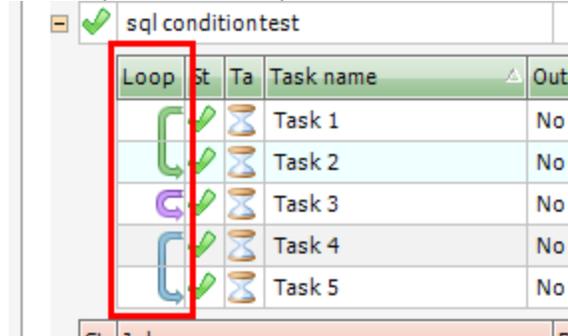
Loop display

If one or more Tasks belong to a loop you can see that in the loop column. You will see how the loop stretches over itself or more Tasks.

Purple loop: For loop

Green loop: While loop

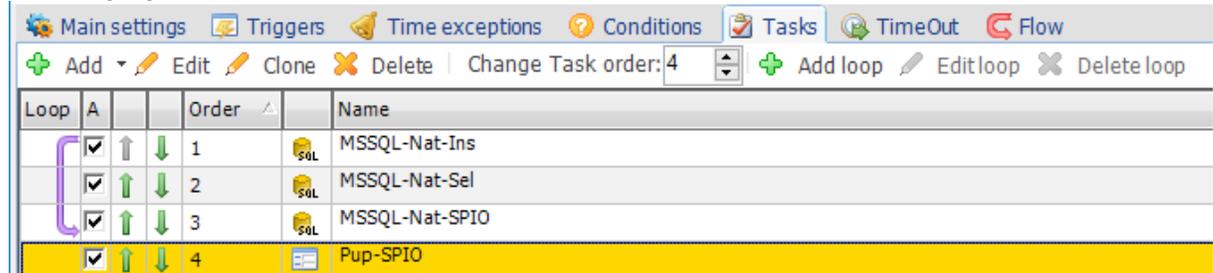
Blue loop: For Each loop



Add/Edit loop

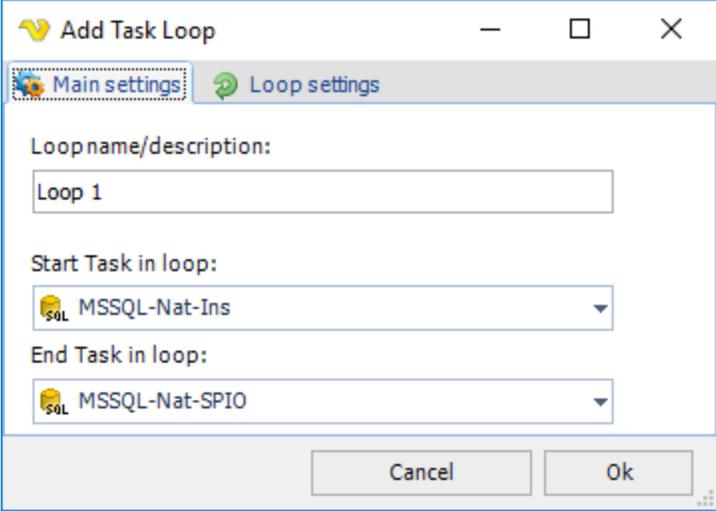
In the Task list, in main window or Task list of add/edit Job you can double click in the “Loop” column in each Task row. This will open up existing or new Loop settings window.

Add loop option



Add loop > Main settings

In the main settings you enter the descriptive name of the Loop. You also set which Task the loop should start and end with.



The screenshot shows a dialog box titled "Add Task Loop" with two tabs: "Main settings" and "Loop settings". The "Loop settings" tab is active. It contains the following fields:

- Loopname/description:** A text input field containing "Loop 1".
- Start Task in loop:** A dropdown menu with a SQL icon and the text "MSSQL-Nat-Ins".
- End Task in loop:** A dropdown menu with a SQL icon and the text "MSSQL-Nat-SPIO".

At the bottom of the dialog are "Cancel" and "Ok" buttons.

Add loop > Loop settings

In the loop settings you control the loop type by clicking on one of the three radio buttons. You can click on the Variable button next to each text field to find and insert a Variable that can be used in the field.

For x to y

Enter two numerical values or Variables that contain numerical values.

While x

Depending on type comparison you enter different kind of values/Variables.

For each x in y

Enter a Variable that contains a list. You may need to alter field separator, text qualifier or line break depending on the format of the Variable list.

Sleep/Wait in each iteration

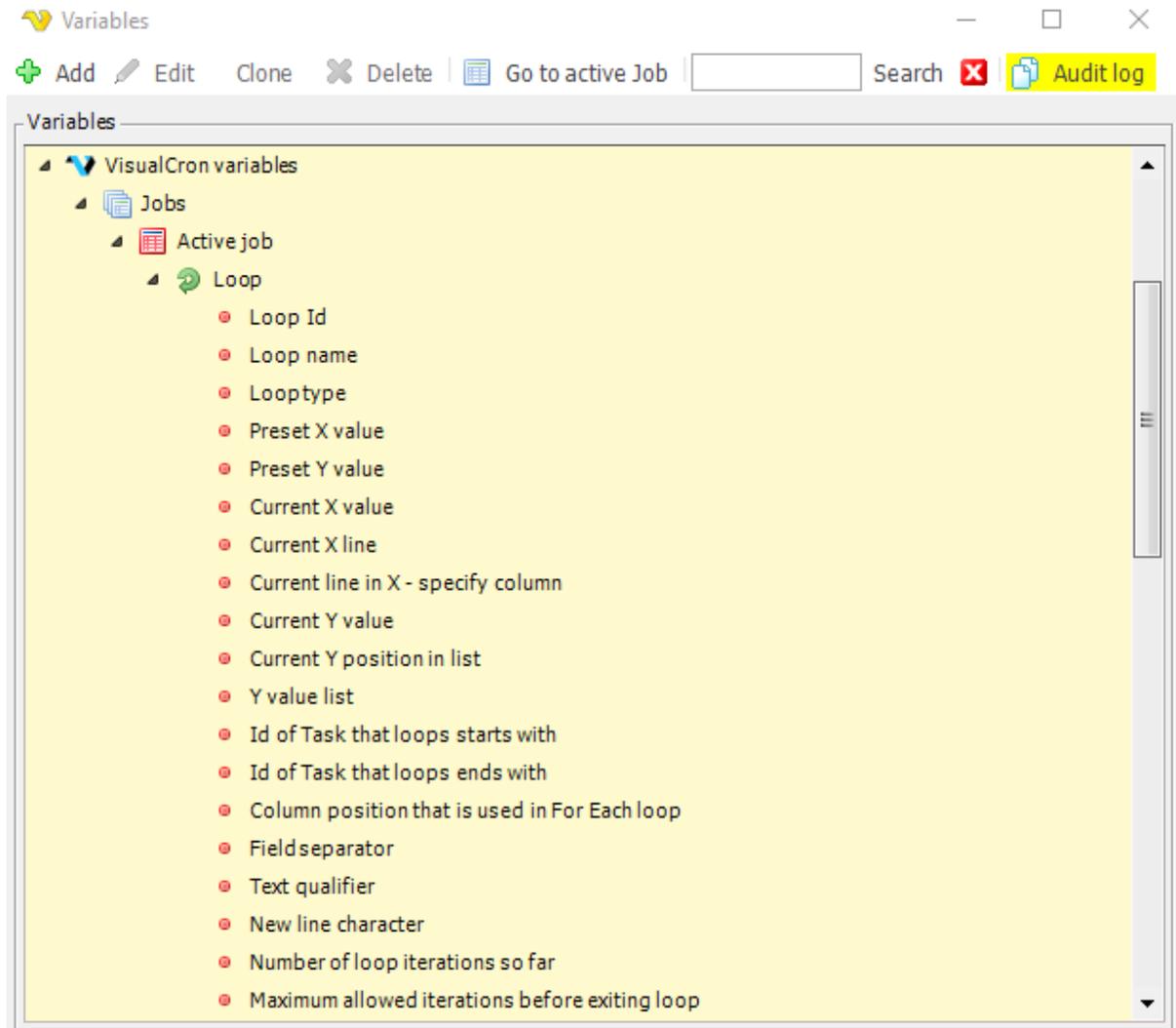
Sets the wait time between each iteration. This is especially interesting if you are using a While loop because you might want to save resources and not check `_all_` the time.

Limitations

Set the maximum number of iterations. If your y value is less than 1000 then lower or keep value to prevent never ending loops.

Add loop > Loop settings > Loop Variables

Any Variable can be used in the settings of the actual loop to provide dynamic x and y values. Also, a set of dynamic, loop context sensitive Variables exist. You find them in the Variables browser:



Loop Id

Each loop in a Job has an internal Id.

Loop name

You are able to set a name of a loop which can be accessed through this Variable.

Loop type

If it is a For, For Each or While loop.

Preset X value

The original left hand value that you used in a For or While loop.

Preset Y value

The original right hand value in For, While or For Each loop.

Current X value

The value of the position in the loop. This value is interesting when using For or For Each loop.

Current Y value

The current value of the right hand value. Should be the same as Preset Y value in most scenarios.

Current Y position in list

A numeric value of the position in the y list. Used when using a For Each loop type.

Y value list

A list containing all rows in y.

Id of Task that loops starts with

Task Id for the selected start Task in the loop.

Id of Task that loops ends with

Task Id for the selected end Task in the loop.

Column position that it used in For Each loop

The numeric value of column position where x value is picked up.

Field separator

The character that is used to separate feilds in For Each loop.

Text qualifier

The surrounding character of each column.

Line break

The line break character that is used in each column.

Number of loop iterations so far

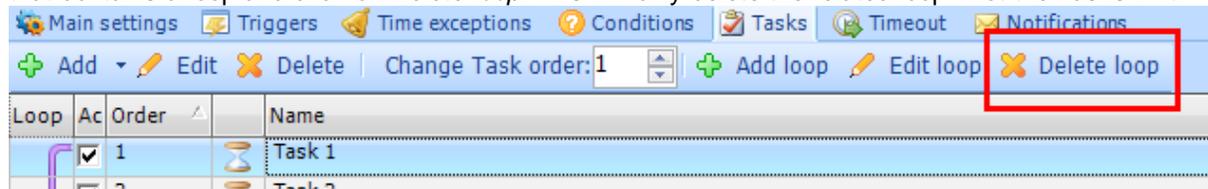
Number of loop “laps”/iterations that has been done so far.

Maximum allowed iterations before exiting a loop

A limit that prevents loop for going on forever. Default 1000. This value is showed here.

Deleting a loop

To delete a loop you open the Add/Edit Job window and go to Tasks tab. Right click/select a Task row that contains a loop and click on *Delete loop*. This will only delete the related loop - not the Tasks in it.



Changing Task order

A change of Task order (clicking up/down in the numeric box in the Task list) affects any existing loop.

If a loop covers 3 Tasks and the first Task is moved up it will include any Task that becomes number two in the list.

Deleting Tasks

If a start or end Task is deleted VisualCron will attempt to shift start or end Task, if loops covers more than one Task. If all Tasks that a loop covers are deleted the loop itself will be deleted.

5.1.2.5.5.2 File filter

The file filter is a part of many Tasks and other objects within VisualCron. The purpose of the file filter is to provide a standardized way of filtering out files for a given Task.

Evaluation

The file filter is evaluated the following way:

- **Location** AND **Content** AND **Date** AND **Size** AND **Attributes** = filtered files
- **Date** = Date older than AND/OR Date newer than
- **Size** = Size smaller than AND/OR Size larger than

File filter > Location

Contains the basic properties of finding one or more files.

The screenshot shows the 'Add/Edit copy file item' dialog box in VisualCron. The 'File filter' tab is selected, and the 'Location' sub-tab is active. The 'Credentials' dropdown is set to 'No Credential'. The 'Folder' field is empty. The 'Include sub folders' checkbox is unchecked. The 'Exclude folder(s)' field is empty. The 'Include file mask' field contains '*' and has a file icon to its right. Below it are checkboxes for 'Is regex' and 'Casesensitive', both unchecked. The 'Use file exclusion' checkbox is also unchecked. The 'Exclude file mask' field contains '*.txt' and has a file icon to its right. Below it is an unchecked 'Is regex' checkbox. At the bottom of the dialog are 'Cancel' and 'Ok' buttons. A 'Variables' button is located at the bottom left of the dialog.

Credentials

To access a remote computer you may need to use a Credential. Normally that Credential is a remote or AD user with "Local logon" unchecked. The Credential must match the user name and password of the

user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Folder

The folder path where the source file(s) reside. You can input several folders by separating with semicolon ";" like this: C:\Temp;C:\test. Click the *Folder* icon to browse the folder tree.

Include sub folders

If the file filter should look for files in sub folders then check this option.

Exclude folder(s)

If the file filter should exclude folder(s) to look for files. Click the *Folder* icon to browse the folder tree.

Include file mask

Define your file mask for the file name here. When not using the *Is regex* string, you can use the normal wildcard characters like * or ?. You can input more than one file mask by separating them with semicolon ";" like this: *.doc;*.txt. Click the *File* icon to browse for files.

Is regex

If the include file mask is a regular expression. For more information about regular expressions please look here: <http://www.regular-expressions.info/>

Case sensitive

If the file name search is case sensitive.

Exclude file mask

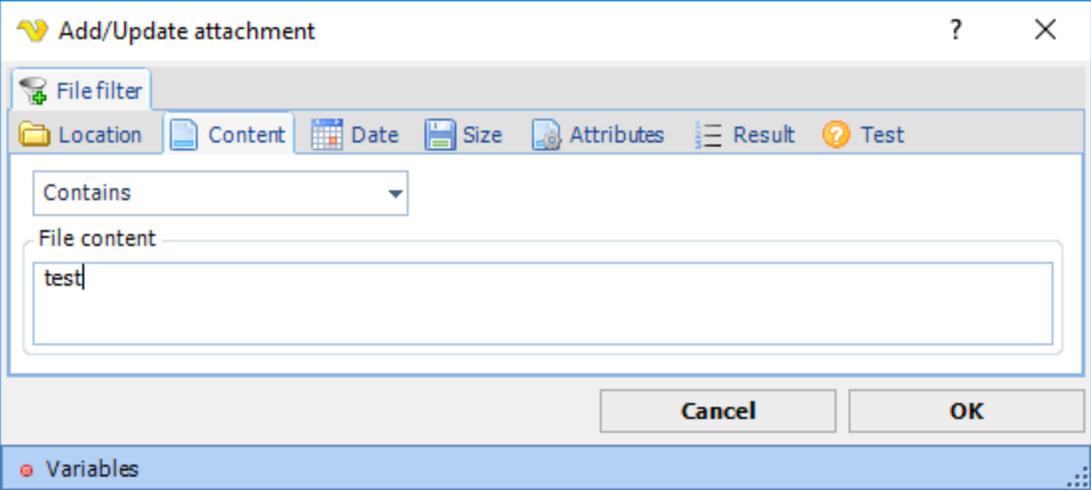
It is possible, the same way, to use a exclusion filter. When not using "Is regex" string here you can use the normal wildcard characters like * or ?.

Is regex

If the exclude file mask is a regular expression. For more information about regular expressions please look here: <http://www.regular-expressions.info/>

File filter > Content

Makes it possible to check found files for content.



The screenshot shows a dialog box titled "Add/Update attachment" with a "File filter" tab selected. The "Content" property is chosen from a drop-down menu. Below it, a text box labeled "File content" contains the text "test". At the bottom, there are "Cancel" and "OK" buttons. A "Variables" section is visible at the bottom left of the dialog.

The default **Content** property is *Don't check*. Use the drop-down list to select the desired property.

File filter > Date

Makes it possible to check the created/modified date against a Variable value.

There are two types of checks *Older than* and *Newer than*. These can be combined with AND/OR or used separately. Only date variables can be used here. Once you have selected a Variable it can be previewed when hovering over text box (tool tip) or in the group caption.

Click the *Variables* icons to view and select available Date Variables.

File filter > Size

Makes it possible to filter out files based on size. Like the Date filter it can be combined with AND/OR and check can be done on *Larger than* or *Smaller than*.

Check if file is smaller than x size

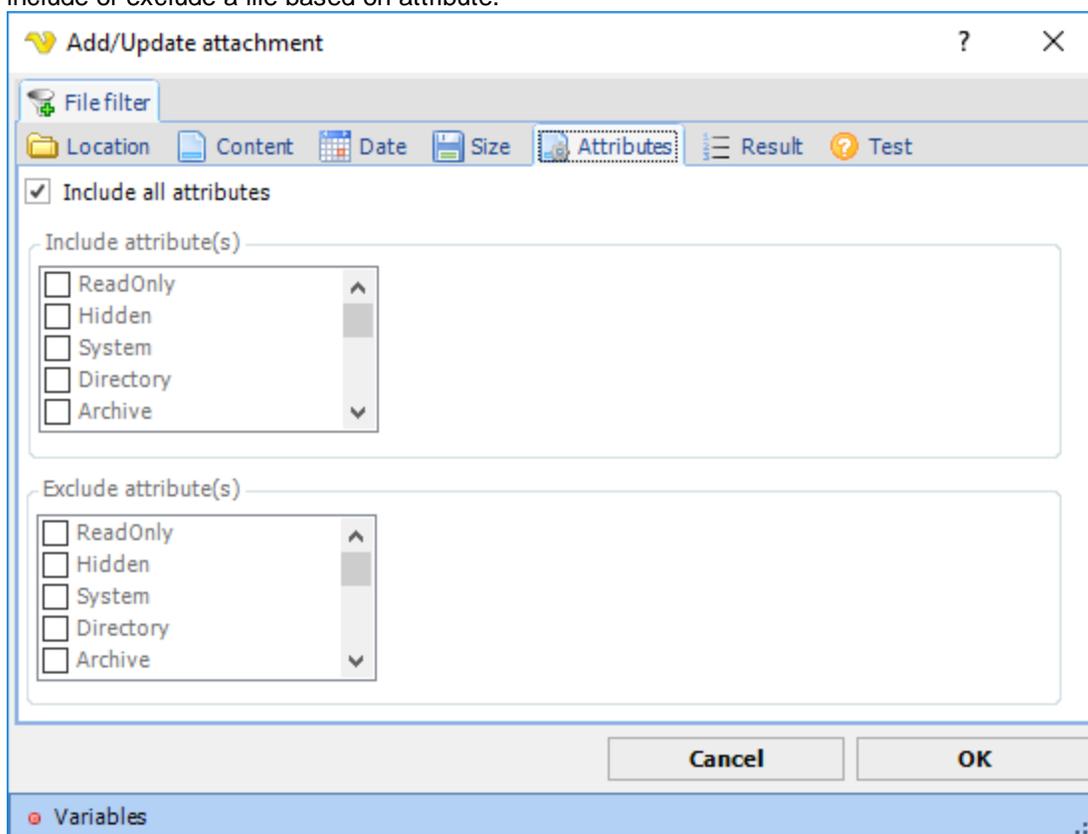
Select this to enable size checking. Enter a value in the numeric text box and select the size unit to compare with. Default is kilobyte(s). If the size on the file is smaller than the value you enter in the numeric box it will return true (= file will be included).

Check if file is larger than x size

Select this to enable size checking. Enter a value in the numeric text box and select the size unit to compare with. Default is kilobyte(s). If the size on the file is larger than the value you enter in the numeric box it will return true (= file will be included).

File filter > Attributes

All files have different attributes. If you want to check for a specific attribute you can use whether to include or exclude a file based on attribute.



Include all attributes

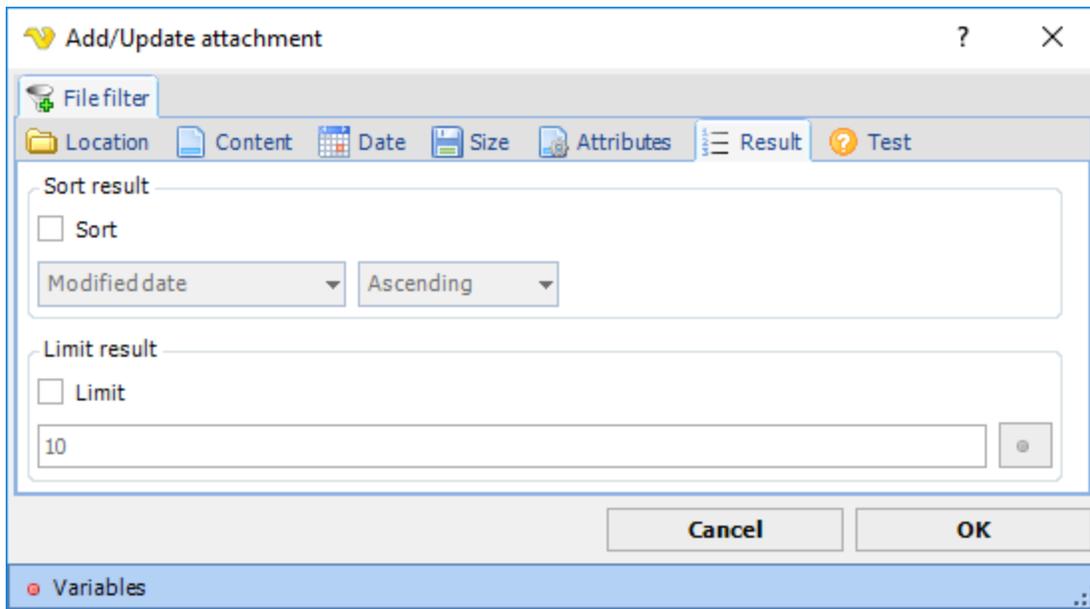
The default is checked, uncheck if you want to filter on attributes.

Include attribute(s), Exclude attribute(s)

Check the attributes you want to include or exclude.

File filter > Result

The filtered files can be presented (in output) in different ways. It is possible to sort the result on various values like name, modified date, created date and size. You can also limit the number of rows returned to, for example, only list the top 3 files according to the current sorting.



Sort

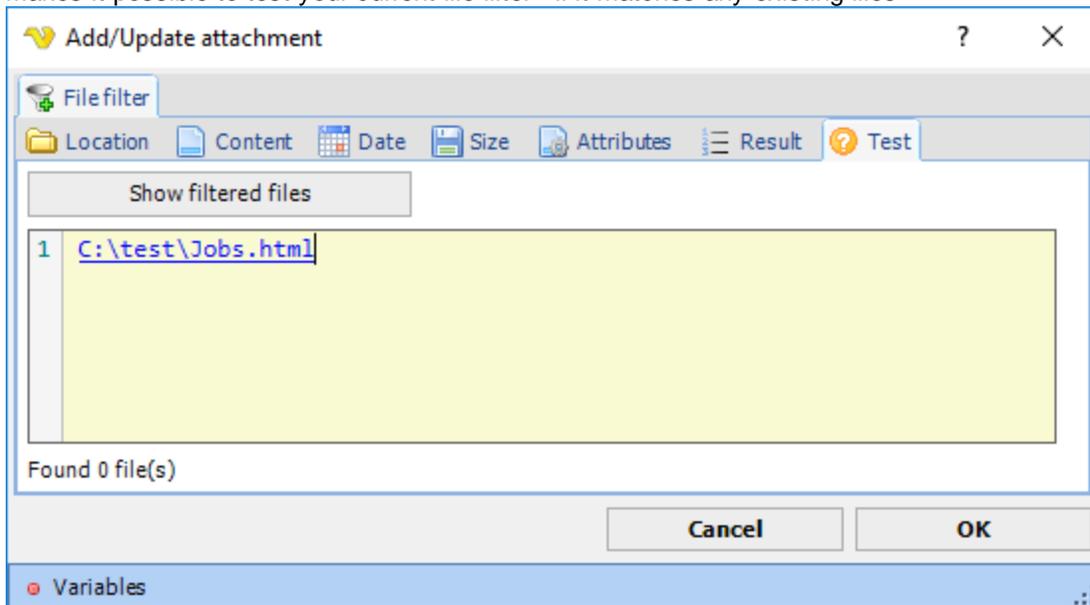
It is possible to sort the result on various values like name, modified date, created date and size. If sort is unchecked the files will just be presented in the order they are discovered.

Limit

Check this if you want to limit the number of rows returned. It will be limited according to the number (which could be a Variable) and the current sorting.

File filter > Test

Makes it possible to test your current file filter - if it matches any existing files



Show filtered files

The test will use the selected Credential. Click to test the filter.

5.1.2.5.3 Remote file filter

The remote file filter is a limited version of the normal local file filter. The difference is that the remote file filter is limited for remote Tasks (like FTP/SFTP) and Triggers (Remote file).

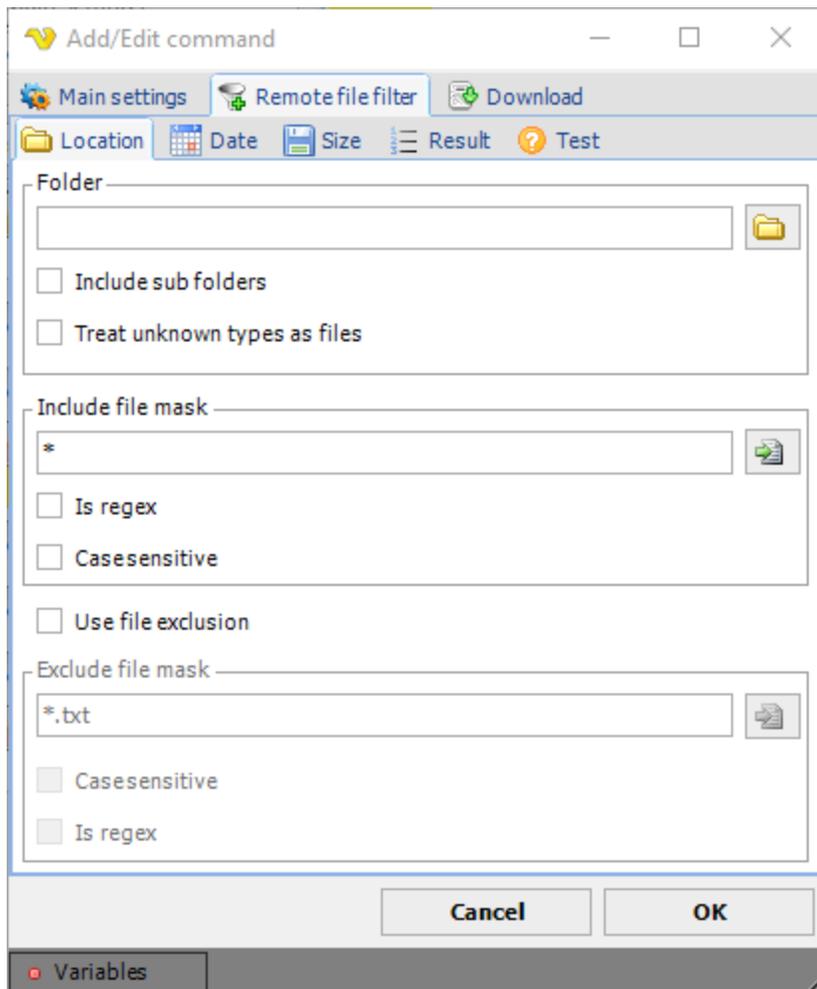
Evaluation

The file filter is evaluated the following way:

- **Location** AND **Content** AND **Date** AND **Size** AND **Attributes** = filtered files
- **Date** = Date older than AND/OR Date newer than
- **Size** = Size smaller than AND/OR Size larger than

Remote file filter > Location sub tab

This tab contains the basic properties of finding one or more files.

**Folder**

The folder path where the source file(s) reside. You can input several folders by separating with semicolon ";" like this:

C:\Temp;C:\test

Include sub folders

If the file filter should look for files in sub folders then check this option.

Treat unknown types as files

Some servers do not report the correct item type (file or folder) when listing items and instead reporting unknown type. When checking this property VisualCron will treat unknown types as files.

Include file mask

Defined your file mask for the file name here. When not using "Is regex" string here you can use the normal wildcard characters like * or ?. You can input more than one file mask by separating them with semicolon ";" like this:

.doc;.txt

Is regex

If the include file mask is a regular expression. For more information about regular expressions please look here: <http://www.regular-expressions.info/>

Case sensitive

If the file name search is case sensitive.

Exclude file mask

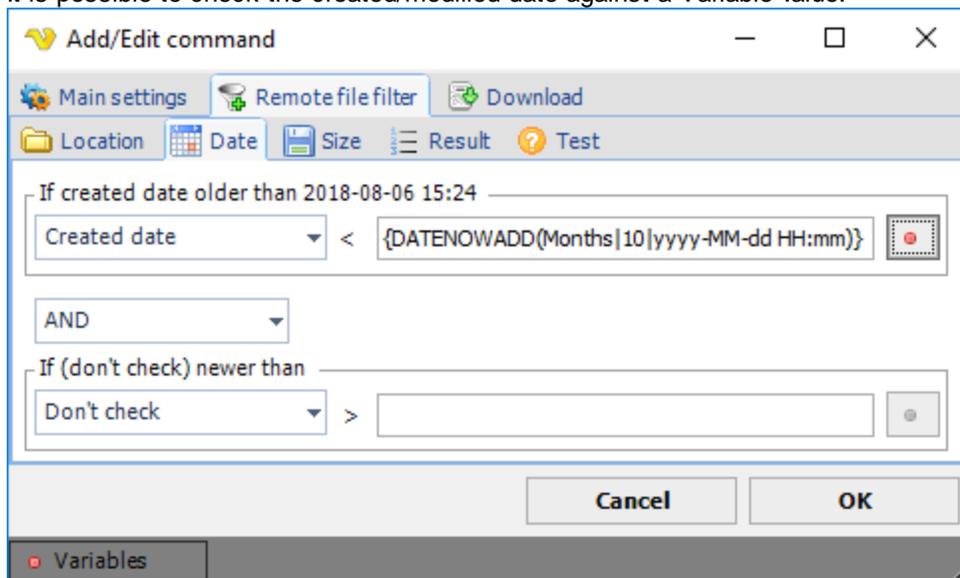
It is possible, the same way, to use an exclusion filter. When not using "Is regex" string here you can use the normal wildcard characters like * or ?.

Is regex

If the exclude file mask is a regular expression. For more information about regular expressions please look here: <http://www.regular-expressions.info/>

Remote file filter > Date sub tab

It is possible to check the created/modified date against a Variable value.

**Remote file filter > Size** sub tab

It is possible to filter out files based on size. Like the Date filter it can be combined with AND/OR and check can be done on *Larger than* or *Smaller than*.

Add/Edit command

Main settings Remote file filter Download

Location Date Size Result Test

Check if file is smaller than x size

File is smaller than _____

_____ kilobyte(s)

AND

Check if file is larger than x size

File is larger than _____

_____ kilobyte(s)

Cancel OK

Variables

Remote file filter > Result sub tab

The filtered files can be presented (in output) in different ways. It is possible to sort the result on various values like name, modified date, created date and size. You can also limit the number of rows returned to, for example, only list the top 3 files according to the current sorting.

Add/Edit command

Main settings Remote file filter Download

Location Date Size Result Test

Sort result

Sort

Modified date Ascending

Limit result

Limit

10

Cancel OK

Variables

Sort

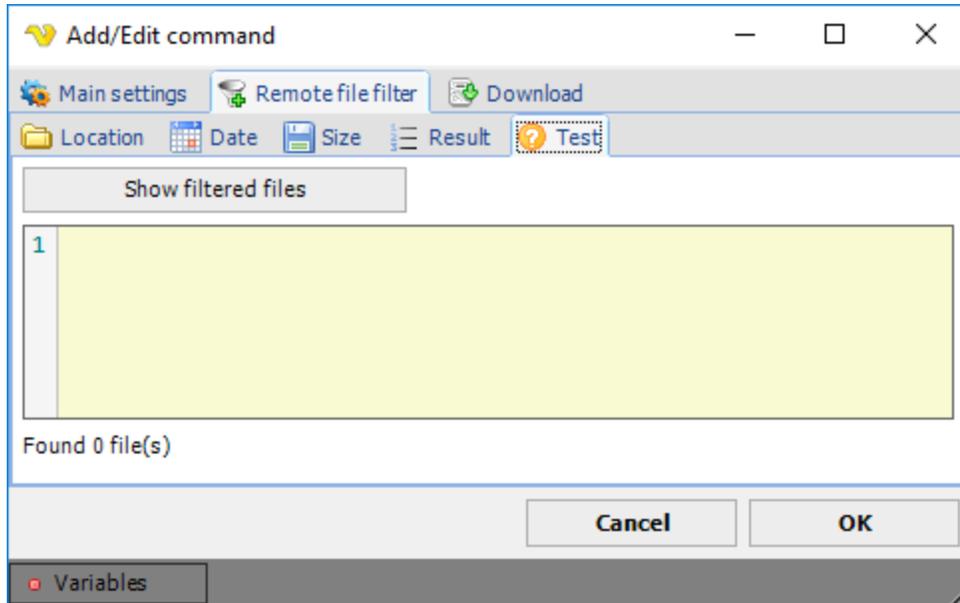
It is possible to sort the result on various values like name, modified date, created date and size. If sort is unchecked the files will just be presented in the order they are discovered.

Limit

Check this if you want to limit the number of rows returned. It will be limited according to the number (which could be a Variable) and the current sorting.

Remote file filter > Test sub tab

In the Test tab you can test your current file filter - if it matches any existing files. The test will use the selected Credential. Click on *Show filtered files* to test filter.

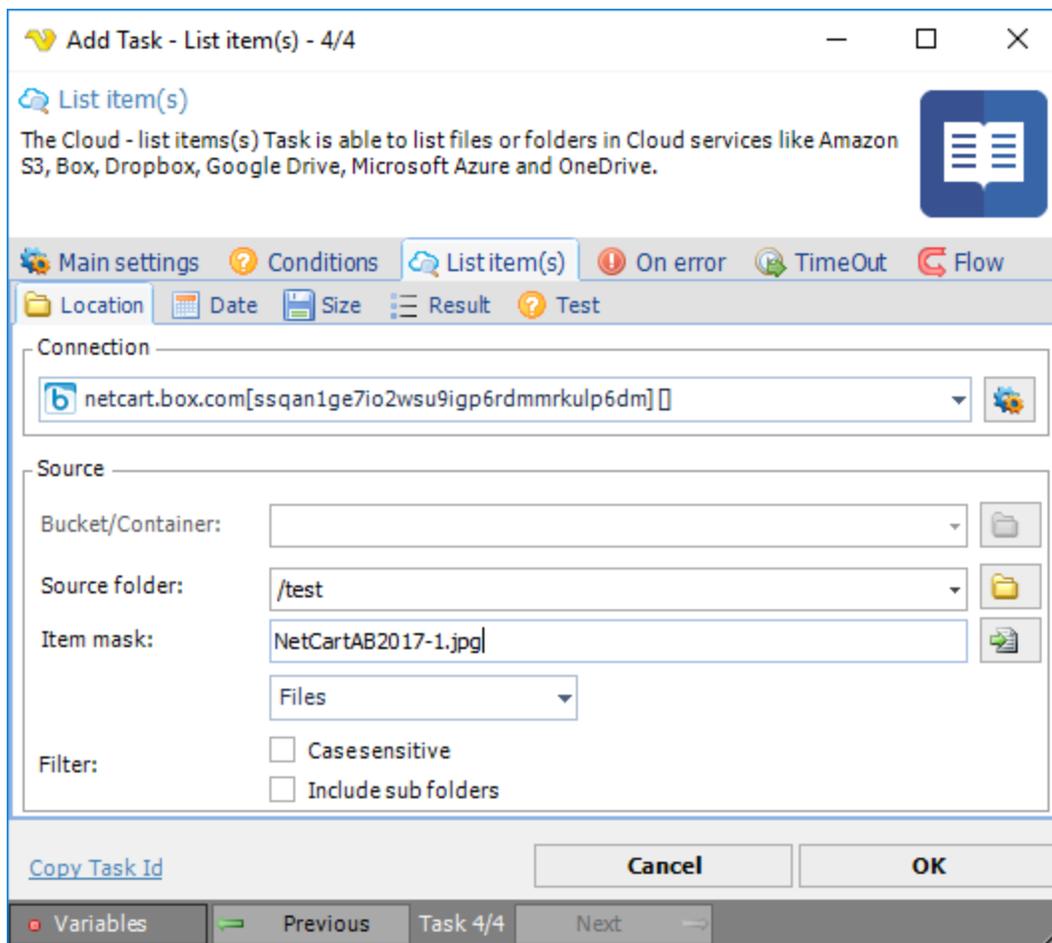


5.1.2.5.5.4 Cloud remote file filter

In order to simplify and unify common parameters, the standard VisualCron Cloud remote filter is used in the below list of Cloud Tasks:

- List item(s)
- Download file(s)
- Delete item(s)

Location sub tab



Connection

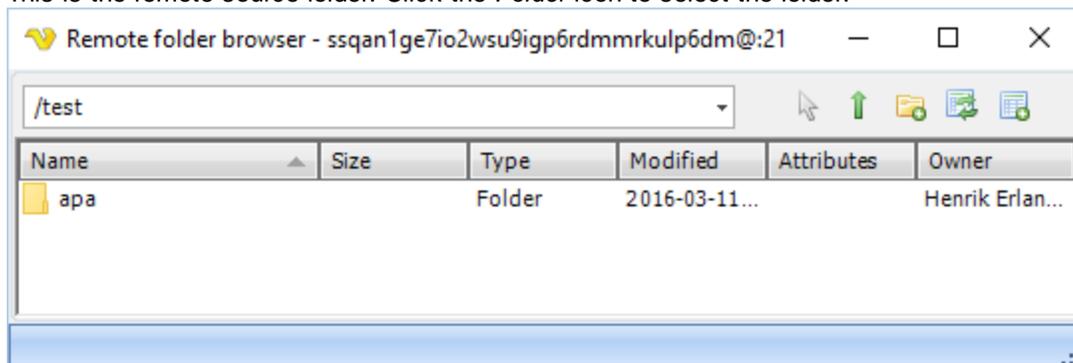
To use a specific cloud service you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Bucket/Container

This property is used for Amazon Cloud services to specify the Bucket.

Source folder

This is the remote source folder. Click the *Folder* icon to select the folder.



Item mask

The file/folder mask. Use wild cards like * and ?. Click the *File* icon to select the file.



Filter

Select whether you want to get Files, Folders or All.

Case sensitive

Check if you want a case sensitive match.

Include sub folders

Check if you want to include sub folders and not just the base *Source folder*.

Date sub tab

Add Task - List item(s) - 4/4

List item(s)

The Cloud - list items(s) Task is able to list files or folders in Cloud services like Amazon S3, Box, Dropbox, Google Drive, Microsoft Azure and OneDrive.

Main settings Conditions **List item(s)** On error TimeOut Flow

Location Date **Size** Result Test

If modified date older than 2017-09-26 15:43

Modified date < {DATENOWADD(Days|-10|yyyy-MM-dd HH:mm)}

AND

If (don't check) newer than

Don't check > []

[Copy Task Id](#) Cancel OK

Variables Previous Task 4/4 Next

Modified date

Use a Variable to, for example, download files older than a specific modified date.

Created date

Use a Variable to, for example, download files older than a specific modified date.

Size sub tab

Add Task - List item(s) - 4/4

List item(s)

The Cloud - list items(s) Task is able to list files or folders in Cloud services like Amazon S3, Box, Dropbox, Google Drive, Microsoft Azure and OneDrive.

Main settings Conditions **List item(s)** On error TimeOut Flow

Location Date **Size** Result Test

Check if file is smaller than x size

File is smaller than kilobyte(s)

AND

Check if file is larger than x size

File is larger than kilobyte(s)

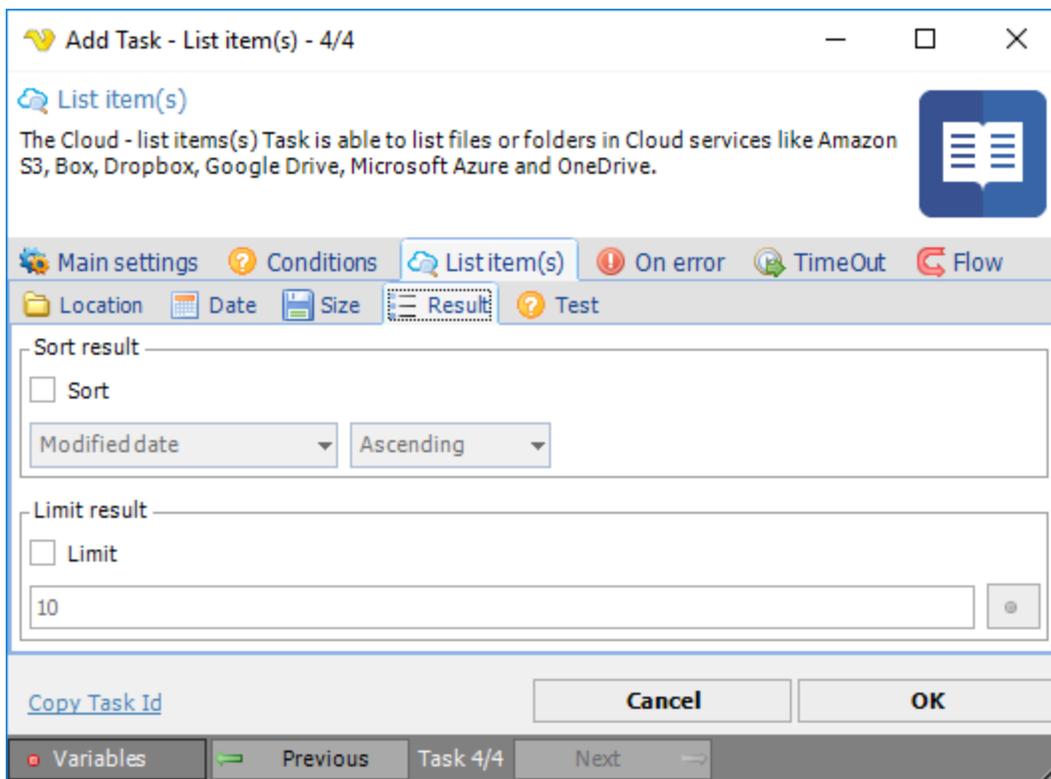
[Copy Task Id](#) Cancel OK

Variables Previous Task 4/4 Next

Check if file is smaller than x size
Filter files that are smaller than a value/Variable.

Check if file is larger than x size
Filter files that are larger than a value/Variable.

Result sub tab



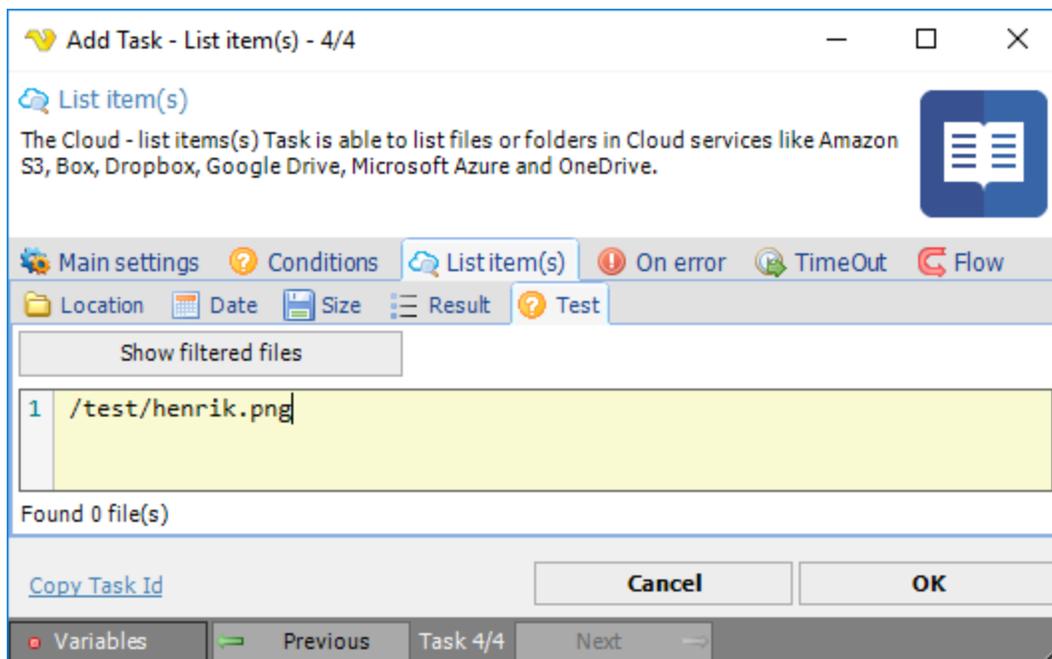
Sort

By checking sort you can sort the found files according to your desired order. This is important if you later want to limit the result to, for example, the 10 newest files.

Limit

How many files you want to return.

Test sub tab



The Test tab lets you test the result of your set filters to see what is really returned.

5.1.2.5.5.5 Folder filter

The folder filter is similar to the file filter but filters out folders only. It is used in various Tasks.

Folder filter > Location sub tab

Add Task - List folders - 4/4

List folders
The Folder list Task lists all folders for the given filter and output format.

Main settings Conditions List folders On error TimeOut Flow

Folder filter Output settings

Location Date Size Test

Credentials
No Credential

Base folder
Include base folder
Include sub folders

Include folder mask
*
Is regex
Casesensitive

Use folder exclusion

Exclude folder mask
*.txt
Is regex
Casesensitive

Copy Task Id Cancel OK

Variables Previous Task 4/4 Next

Credentials

To control a remote computer you may need to use a Credential. Normally that Credential is a remote or AD user with "Local logon" unchecked. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Base folder

Where the search filter should start finding folders. Click the *Folder* icon to browse the folder tree.

Include base folder

If the base folder should be included in the result.

Include sub folders

If sub folders of the base folder should be included in the result.

Include folder mask

Wild card for filtering out folder names. Separate multiple folder names with semicolon ";" like this: C:\Temp;C:\test. Click the *Folder* icon to browse for files.

Is regex

If the *include folder mask* is a regular expression

Case sensitive

If case sensitive search should be done on the *include folder mask*.

Folder filter > Date sub tab

There are two types of checks *Older than* and *Newer than*. These can be combined with AND/OR or used separately. Only date variables can be used here. Once you have selected a Variable it can be previewed when hovering over text box (tool tip) or in the group caption.

Click on the *Variables* icons to view and select available Date Variables.

Folder filter > Size sub tab

Add Task - List folders - 4/4

List folders
The Folder list Task lists all folders for the given filter and output format.

Main settings Conditions List folders On error TimeOut Flow

Folder filter Output settings

Location Date Size Test

Check if folder is smaller than x size

Folder is smaller than _____
0 kilobyte(s)

AND

Check if folder is larger than x size

Folder is larger than _____
0 kilobyte(s)

[Copy Task Id](#) Cancel OK

Variables Previous Task 4/4 Next

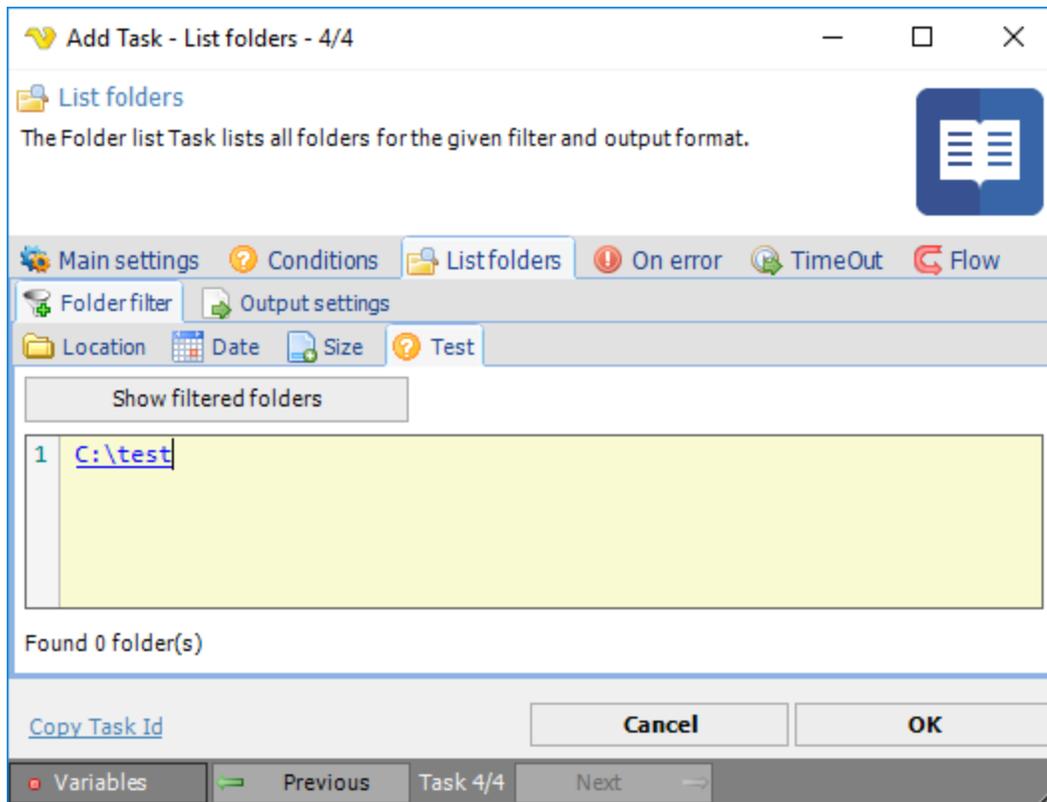
Check if folder is smaller than x size

Select this to enable size checking. Enter a value in the numeric text box and select the size unit to compare with. Default is kilobyte(s). If the size on the folder is smaller than the value you enter in the numeric box it will return true (=folder will be included).

Check if folder is larger than x size

Select this to enable size checking. Enter a value in the numeric text box and select the size unit to compare with. Default is kilobyte(s). If the size on the folder is larger than the value you enter in the numeric box it will return true (=file folder be included).

Folder filter > Test sub tab



Show filtered folders

The test will use the selected Credential and lets you test your folder filter - what folders it returns based on the filter.

5.1.2.5.5.6 Task - Main Settings

A set of different Task types can be defined using the **Add/Edit Job > Tasks** tab, then press the *Add* button to display the list of Tasks.

Add Job > Tasks > Add tab

admin@localhost:IPC Disconnect Add Job

Add Job

The Job - a placeholder for your Tasks

Tasks do the actual work within the Job. Tasks are run in Order. A Job can contain one or more Tasks in a loop - for example looping output from a previous Task.

Main settings Triggers Time exceptions Conditions Tasks

Add Edit Clone Delete Change Task order: 1 Add

Order	Name
-------	------

Next run: No Trigger specified

- Process
- Net
- Messaging
- Social
- Database
- Encryption
- String
- File
- Image
- XML
- Service
- Office
- Reporting
- System
- System restore
- Event log
- Interactivity
- Internal
- Active directory
- SNMP
- Exchange
- Sharepoint
- Virtual Server
- Dynamics CRM
- Cloud transfer
- Amazon EC2
- Azure
- Hyper-V
- VMWare
- MSMQ
- PDF
- SAP

After selecting a Task, in this case the Internal > Set Job Variable, the **Set Job Variable > Main Settings** tab is displayed. Also, the selected Task is preset as *Task type* but this may be changed.

Set Job Variable > Main Settings tab

Set Job Variable

The Internal - Set Variable Task allows you to create or update a Variable. Variables can be used and reached throughout the whole application. You can use this to store static or dynamic values.

Main settings

Task type: Search Task type.. **Set Job Variable**

Name: Set Job Variable

Description:

Encoding: Windows-1252

Execution context

Execution context: Background execution Change

Output

Store standard output

Store standard error

Extra Task debugging

Copy Task Id Cancel OK

Variables Previous Task 1/1 Next

Note: If several Tasks are defined for a Job and the Tasks are under execution, the Task information fields will include just executed, present and previous information. In the *Add/Edit Job > Tasks* window, adjust the *Change Task order* in which the Tasks are executed.

Encoding

The encoding property sets which encoding to use. This feature is not implemented in all Tasks. If you got any encoding problem please contact support.

Execution context

Click the *Change* button to set Execution context.

Output

By default, VisualCron is capturing and storing all output from executed processes. If you don't want this and want Windows to capture all output you uncheck these options.

Task order

The task order can be changed by either clicking on the up/down arrows next to each Task or select a Task row and edit the *Change Task order* numeric field.

Edit Job > Tasks tab

The screenshot shows the 'Edit Job - Job Database SQL MSSQL-Nat @localhost' window with the 'Tasks' tab selected. The window title bar includes standard window controls. Below the title bar, there is a header area with a blue icon and text: 'The Job - a placeholder for your Tasks' and 'Tasks do the actual work within the Job. Tasks are run in Order. A Job can contain one or more Tasks. You can also put one or more Tasks in a loop - for example looping output from a previous Task.' Below this is a toolbar with icons for 'Main settings', 'Triggers', 'Time exceptions', 'Conditions', 'Tasks', 'TimeOut', and 'Flow'. The 'Tasks' tab is active. Below the toolbar is a row of buttons: '+ Add', 'Edit', 'Clone', 'Delete', 'Change Task order: 2', '+ Add loop', and 'Edit loop'. Below this is a table with the following data:

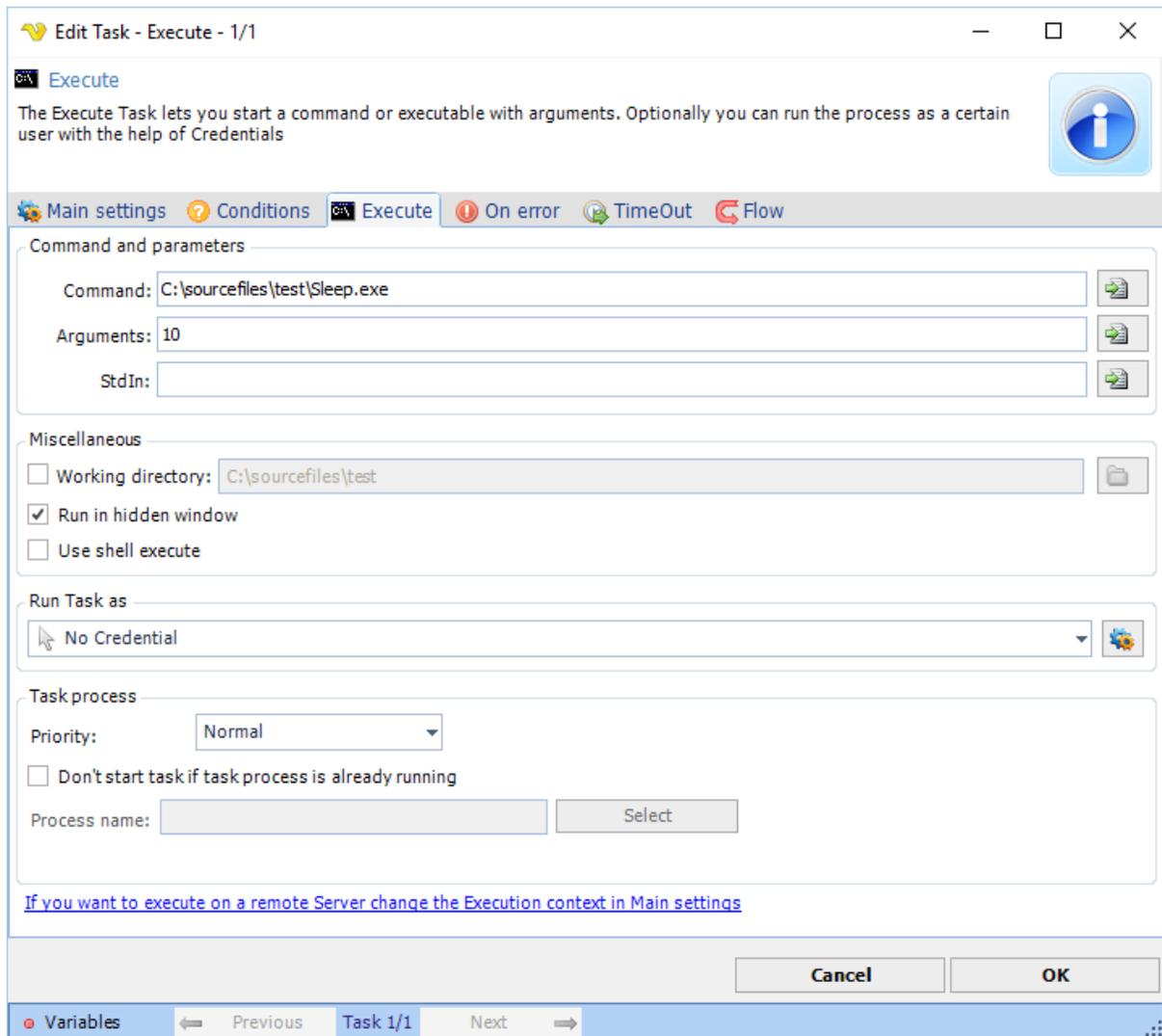
Loop	A	Order	Name
	<input checked="" type="checkbox"/>	1	MSSQL-Nat-Ins
	<input checked="" type="checkbox"/>	2	MSSQL-Nat-Sel
	<input checked="" type="checkbox"/>	3	MSSQL-Nat-SPIO
	<input checked="" type="checkbox"/>	4	Pup-SPIO

Below the table is a 'Copy Job Id' button and three buttons: 'Test job', 'Cancel', and 'Ok'. At the bottom, there is a status bar with a 'Variables' button and the text 'Next run: No Trigger specified'.

Loop

Loops can be added to one or more Tasks, read more about loops here.

The Execute Task lets you start a command or executable with arguments. Optionally you can run the process as a certain user with the help of Credentials.



Command

This is the path to the executable - always enter full path and name to the executable file. The rightmost button opens a file browser for selection. The only mandatory parameter in the Execute window.

Arguments

Arguments don't have to start with a space key, look at the Add Task view for an example. Use "" around long arguments.

Working directory

This option may be used if you for example want to execute a PHP script which has no absolute links. Let say that the PHP script tries to write a file "test.txt". If you specify a working directory, you also specify where PHP will write the file. If not specified in this case, PHP will write the file where php.exe is stored, not where the script is stored (that is because the Working Directory by default will be where the command is located, in this case php.exe is the Task and the script is the argument).

Run in hidden window

When checked, VisualCron will run the Task in hidden mode which means that if a Task normally creates a window, this will not be displayed. If you want to hide a GUI application (winform) you must also check *Use shell execute*.

Use shell execute

False is unchecked and true refers to checked.

This setting concerns whether or not to use the operating system shell to start the process. Default is unchecked which means that the process is created directly from the executable file instead of (checked) use the shell when starting the process.

Working Directory

The *Working Directory* property behaves differently when *Use shell execute* is true than when *Use shell execute* is false. When *Use shell execute* is true, *Working Directory* specifies the location of the executable. If *Working Directory* is an empty string, the current directory is understood to contain the executable. When *Use shell execute* is false, the *Working Directory* property is not used to find the executable. Instead, it is used by the process that is launched and only has meaning within the context of the new process.

Setting this property to false enables you to redirect input, output, and error streams.

One reason to use shell execute is when you want to run a GUI application (winform) in hidden mode and not want output of the application. To make a winform application hidden you must use shell execute in combination with run in hidden window.

Run Task as

This functionality currently only works for the *Task type* "Execute". Select appropriate *Credentials* in the select box. You can add new credentials by clicking on the *Manage credentials* button.

Logon type

Logon type has been moved and settings for logging in with profile or not is located in the Credential now.

Note about domain:

If the user belongs to a domain you must specify that domain. If the computer is not connected to a domain you should use the exact computer name. This can be found when opening "My computer".

Note about arguments/parameters:

Use "" around arguments.

Run with API code

When using this option all processes as started through an API call of Win32 API.

This is the default option. Don't change this unless you get problems with Access Denied when opening Desktop in the log file.

Run with managed code

When using this option the all processes are started through the managed wrapper of the API. Don't change to this setting unless you get problems with Access Denied when opening Desktop in the log file.

Process priority

VisualCron Tasks can be run with any standard process priority. The following priorities are available:

- "Idle" - Indicates a process whose threads run only when the system is idle and is preempted by the threads of any process running in a higher priority class. An example is a screen saver. The idle priority class is inherited by child processes.
- "Below Normal" - Indicates a process that has priority higher than Idle but lower than Normal.
- "Normal" - Default value, indicates a normal process with no special scheduling needs.
- "Above Normal" - Indicates a process that has priority higher than Normal but lower than High.
- "High" - Indicates a process that performs time-critical Tasks that must be executed immediately for it to run correctly. The threads of a high-priority class process preempt the threads of normal or idle priority class processes. An example is the Task List, which must respond quickly when called by the user, regardless of the load on the operating system. Use extreme care when using the high-priority class, because a high-priority class CPU-bound application can use nearly all available cycles.
- "RealTime" - Indicates a process that has the highest possible priority. The threads of a real-time priority class process preempt the threads of all other processes, including operating system processes performing important Tasks. For example, a real-time process that executes for more than a very brief interval can cause disk caches not to flush or cause the mouse to be unresponsive.

Don't start Task if Task process is already running

If you want VisualCron to start a Task only if a process is NOT running, then check this box and enter the name of the process. The process name must be an existing process, for convenience use the "3-dotsbutton" and pick that process (ensure that it is running before you open the window).

Kill process / Close main window

Instead of adding two Tasks, one execute and one kill, you can specify the time the main window or process should be active. If you for example check the box and specify "Kill process" after "1 minute(s)", the Task will start and then terminated after exactly one minute. However, try "Close main window" instead of "Kill process". Killing the process is harder and may interrupt the process if it is trying to save anything on exit. Kill may also result in Task exit code -1. When trying to kill a hidden window you must use kill process.

Notes about Troubleshooting:

Error: The service cannot be started, either because it is disabled or because it has not enabled services associated with it

Always use the full path to the file. Also, make sure that you split up command and argument. For example, if your command is normally:
netsh DHCP server \\silvercreek dump

Then use:

Command: c:\windows\system32\netsh.exe

Argument: DHCP server \\servername dump

Error: You want do redirect output to file but it does not work or causes errors

By default VisualCron captures all output. The advantages with that is that you can reuse the data in other Tasks. For example, in the body of an Email Task.

Error: I get a UAC popup warning

Set the Execute Task to run "Hidden". From Vista and forward, a process started by a background process (in this case a service), must not interact with desktop.

Error: The process cannot be started because the file cannot be found

A couple of reasons:

1. If there is a dependency between ENVIRONMENT Variables for a new runtime or anything like that then you have to restart the VisualCron service to reload those variables. You can verify ENVIRONMENT Variables by creating a batch file that just "print %PATH%". You will then see existing Variables in
2. Make sure you use the full path to the file.
3. Do not mix arguments and path to executable in command. Divide them - see first error.

Error: Exit code -1073741502

If you use 8.1.2 or later:

1. Turn on Extended debugging in Server settings.
2. Edit the Credential that you use
3. Change Execution options to Use Win32 API CreateProcessAsUser

Error: Unhandled error when trying to start process: A required privilege is not held by the client. If the credential is removed, the job runs successfully.

Go to Server settings->Log and uncheck "Extended debug logging". Edit the Credential you use and change to option "CreateProcessWithLogonW".

If you use 8.1.1 or earlier:

Please try any of the following:

1. turn off UAC and reboot from Server settings
2. Open Services->Find VisualCron and right click and select Properties. Uncheck "Allow service to interact with desktop". Restart the service.

This Task type can execute commands on a remote server. If you want to execute commands locally you should use the Execute Task. Optionally you can wait for process completion.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Command

Enter full path and name to the executable file. The rightmost button opens a file browser for selection. The only mandatory parameter in the Execute window.

Arguments

Arguments don't have to start with a space key, look at the Add Task view for an example. Use "" around long arguments.

Working directory

This option may be used if you for example want to execute a PHP script which has no absolute links. Let say that the PHP script tries to write a file "test.txt". If you specify a working directory, you also specify where PHP will write the file. If not specified in this case, PHP will write the file where php.exe is

stored, not where the script is stored (that is because the Working Directory by default will be where the command is located, in this case php.exe is the Task and the script is the argument).

Run in hidden window

When checked, VisualCron will run the Task in hidden mode which means that if a Task normally creates a window, this will not be displayed. If you want to hide a GUI application (winform) you must also check *Use shell execute*.

Note about arguments/parameters:

Use "" around arguments.

Process priority

VisualCron Tasks can be run with any standard process priority. The following priorities are available:

- *Idle* - Indicates a process whose threads run only when the system is idle and is preempted by the threads of any process running in a higher priority class. An example is a screen saver. The idle priority class is inherited by child processes
- *Below Normal* - Indicates a process that has priority higher than Idle but lower than Normal
- *Normal* - Default value, indicates a normal process with no special scheduling needs
- *Above Normal* - Indicates a process that has priority higher than Normal but lower than High
- *High* - Indicates a process that performs time-critical Tasks that must be executed immediately for it to run correctly. The threads of a high-priority class process preempt the threads of normal or idle priority class processes. An example is the Task List, which must respond quickly when called by the user, regardless of the load on the operating system. Use extreme care when using the high-priority class, because a high-priority class CPU-bound application can use nearly all available cycles.
- *RealTime* - Indicates a process that has the highest possible priority. The threads of a real-time priority class process preempt the threads of all other processes, including operating system processes performing important Tasks. For example, a real-time process that executes for more than a very brief interval can cause disk caches not to flush or cause the mouse to be unresponsive.

Note about Return codes:

Successful completion (0)

Access denied (2)

Insufficient privilege (3)

Unknown failure (8)

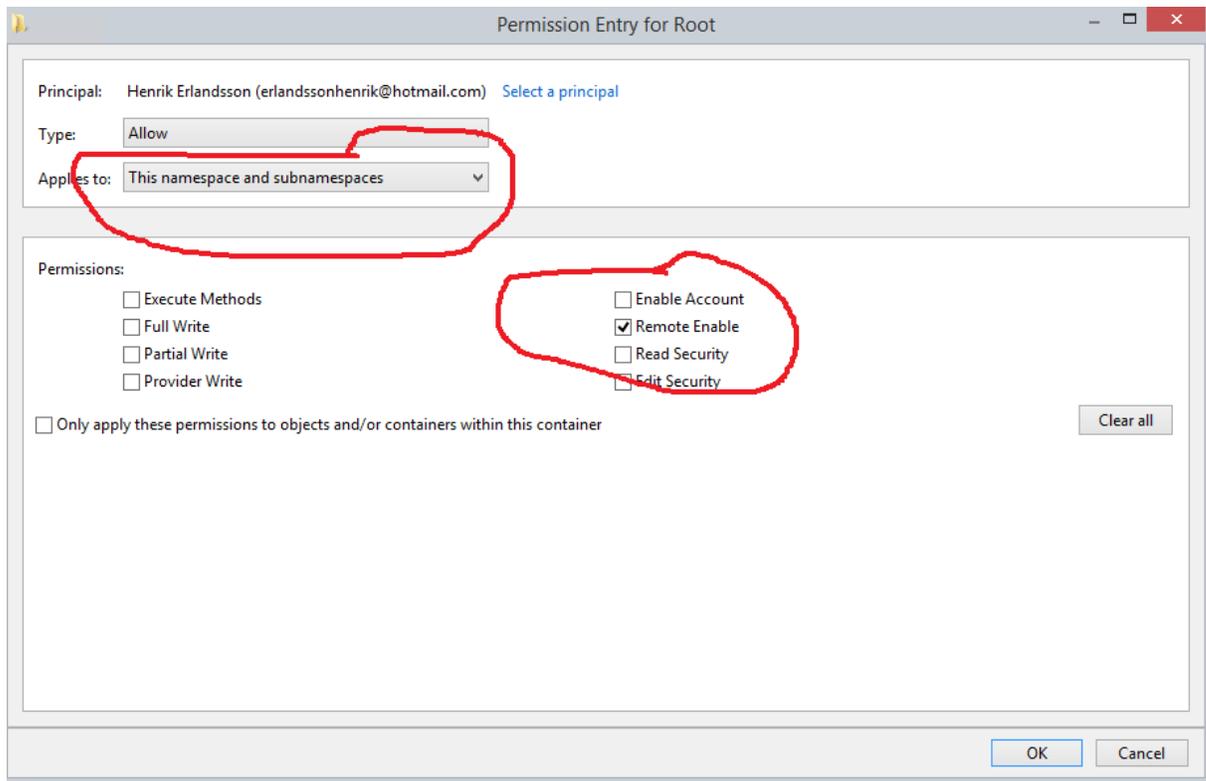
Path not found (9)

Invalid parameter (21)

Other (22–4294967295)

Note about Security settings:

These are the settings needed for a user account in Computer Management->WMI Control->Properties->Security tab->Select user and click Advanced:



Firewall settings on remote host

1. Run: `netsh advfirewall firewall add rule name="WinRM-HTTP" dir=in localport=5985 protocol=TCP action=allow`
2. Run `winrm quickconfig` and answered y on the activate question

Other security settings on **remote** host

Step 1. DCOM permission

1. Open Dcomcnfg
2. Expand Component Service -> Computers -> My computer
3. Go to the properties of My Computer
4. Select the COM Security Tab
5. Click on "Edit Limits" under Access Permissions, and ensure "Everyone" user group has "Local Access" and "Remote Access" permission.
6. Click on the "Edit Limit" for the launch and activation permissions, and ensure "Everyone" user group has "Local Activation" and "Local Launch" permission.
7. Highlight "DCOM Config" node, and right click "Windows Management and Instruments", and click Properties.
8. <Please add the steps to check Launch and Activation Permissions, Access Permissions, Configuration Permissions based on the default of Windows Server 2008>

Step 2. Permission for the user to the WMI namespace

1. Open WMIgmt.msc
2. Go to the Properties of WMI Control
3. Go to the Security Tab
4. Select "Root" and open "Security"
5. Ensure "Authenticated Users" has "Execute Methods", "Provider Right" and "Enable Account" right; ensure Administrators has all permission.

Step 3. Verify WMI Impersonation Rights

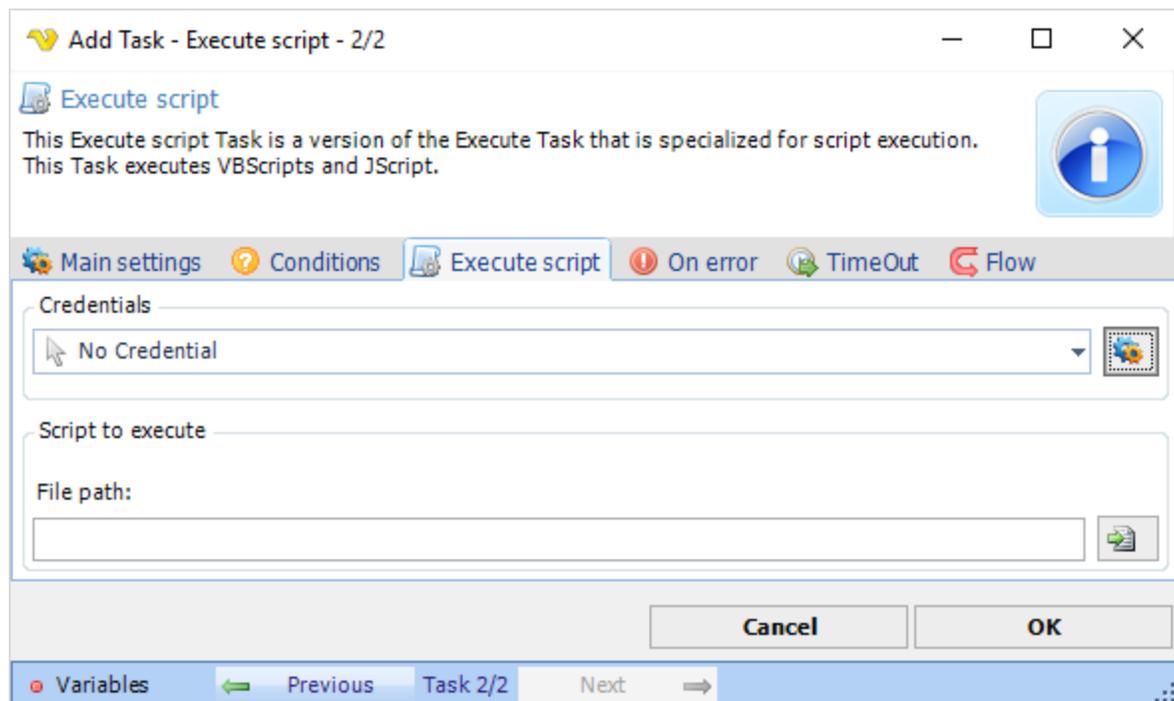
1. Click Start, click Run, type gpedit.msc, and then click OK.
2. Under Local Computer Policy, expand Computer Configuration, and then expand Windows Settings.
3. Expand Security Settings, expand Local Policies, and then click User Rights Assignment.
4. Verify that the SERVICE account is specifically granted Impersonate a client after authentication rights.

Note about Verifying security settings:

Run WBEMTest from local computer. Put domain, username and password and connect to remote machine.

<https://technet.microsoft.com/en-us/library/cc180684.aspx?f=255&MSPPErr=-2147217396>

This Task type is a version of the Execute Task - specialized for script execution. This Task executes VBScripts and JScripts.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

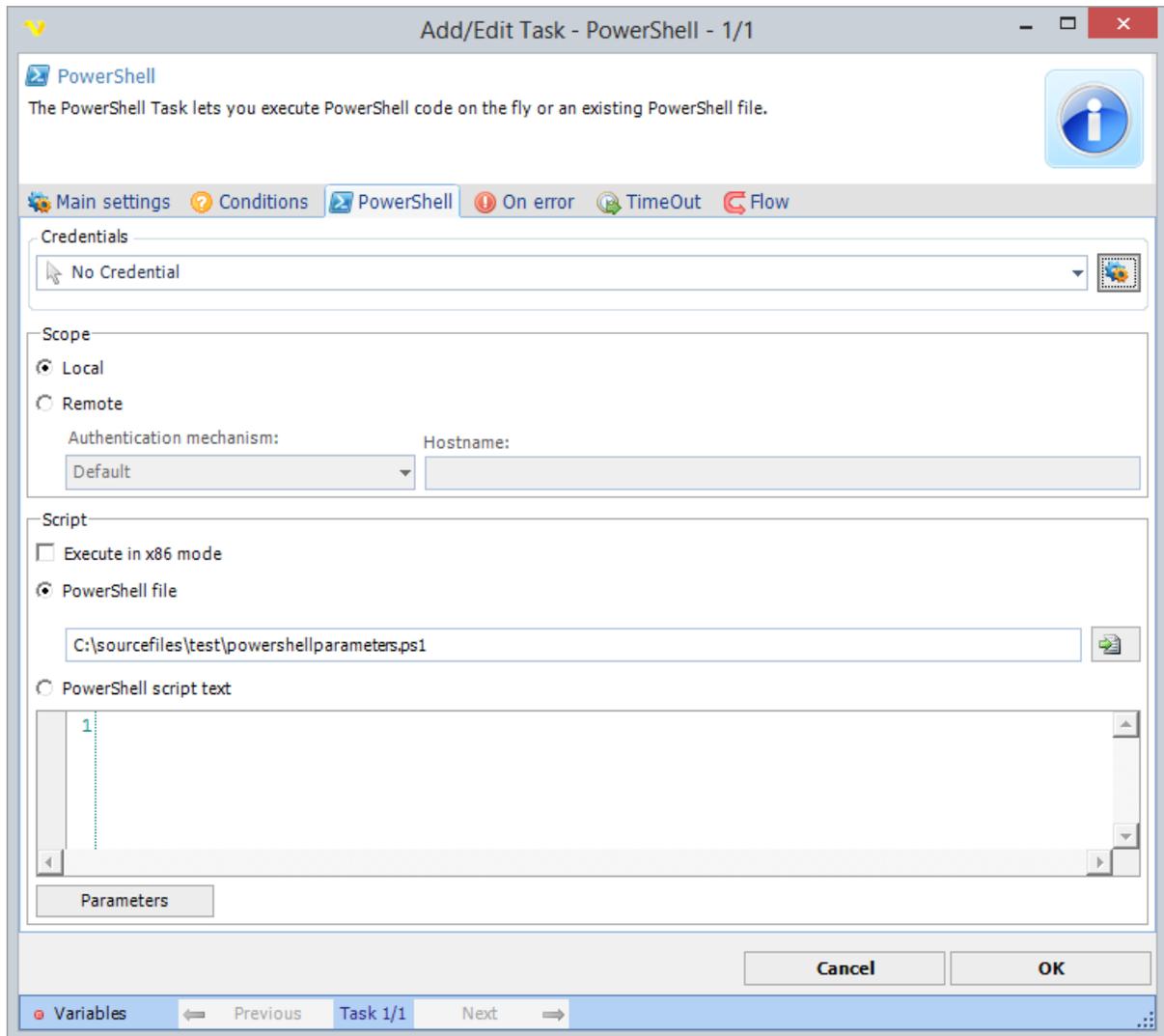
File path

This is the full path to the script file.

Notes:

- This Task will return error if the standard error is not empty.
- Please view standard error or standard output column for more information.
- The standard error column will contain details about row number when failed.

The **PowerShell** Task lets you execute PowerShell code on the fly or an existing PowerShell file.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Scope

You can execute on the local machine or on a remote machine. To execute on a remote machine you need to combine settings with a Credential.

Execute in x86 mode

This settings is forcing 32 bit execution of your PowerShell script.

PowerShell file

Full path to a PowerShell script.

PowerShell script text

You enter your PowerShell code here which will be compiled and run in real time.

Parameters

Click on Parameters button to edit parameters. You can parse parameters in the PowerShell script like this:

```
param (
    [string]$parameterkeyname1 = "mydefaultvalue1",
    [string]$parameterkeyname2 = "mydefaultvalue2"
)
Write-Output $parameterkeyname1
```

Passing back data from PowerShell

You can use these PowerShell commands to pass back output to VisualCron:

VisualCron standard output

```
write-output "my output"
```

VisualCron standard error

```
write-error "my error"
```

Raising/Throwing errors

Use the Powershell *throw* command to raise errors. By default we are considering the Task fail if it contains any text written to error output. When that happens the standard output is overwritten with debug information. To override this behavior go to On error tab of Task and uncheck *Contains error output*.

The Process - Kill Task lets you stop a process on the same computer.

Add Task - Kill - 2/2

Kill
The Kill Task lets you stop a process on the same computer.

Main settings

Kill process with name:

Casesensitive

Type of kill:
 Kill process

Kill child processes

If more than one matching process is found then

Terminate all matching processes
 Terminate newest process
 Terminate oldest process
 Skip

Conditions

Memory usage is Over kB

CPU usage is Over %

Variables Previous Task 2/2 Next

Process name

Enter the name of the process, i.e. notepad.exe. If you want to be sure of the name then you can start the process on the server and then click on "Select" to show a list of all running processes.

Case sensitive

If the process name matching should be case sensitive or not.

Type of kill The kill functionality in VisualCron can be used to shut down a running application or process.

The *Type of kill* can be one of:

- Kill process
- Close main window

Closing the main window of the application is a nicer method because the application may need to save some settings before it is closed down. It will close down the main window like when an application is terminated by clicking in the top right corner.

Please note that the application will not shut down if there is a dialog box to confirm exit (i.e. "Are you sure you want to quit?"). If this is used try to disable the confirm dialog or, if it's not possible, use the "Kill process" method.

"Kill process" terminates all processes with the defined name directly. It is similar to open the Task manager and right click to select "End process".

If more than one matching process is found

If several process are running that matches the Process name you have several options:

Terminate all matching processes

Kills all matching processes.

Terminate the newest process

Kills only the process that was last started.

Terminate the oldest process

Kills only the process that was started first of all processes.

Skip

Do not kill any process.

Conditions

Limits for memory and CPU to be considered in kill process.

The Process - Remote Kill Task can terminate a process on another server in the network. If you want to terminate local process then you should use the Kill Task instead.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Process name

Enter the name of the process, like notepad.exe. If you want to be sure of the name then you can start the process on the server and then click on "Select" to show a list of all running processes.

Case sensitive

If the process name matching should be case sensitive or not.

If more than one matching process is found

If several processes are running that match the Process name you have several options:

Terminate all matching processes

Kills all matching processes.

Terminate the newest process

Kills only the process that was last started.

Terminate the oldest process

Kills only the process that was started first of all processes.

Skip

Do not kill any process.

The Process - Assembly execute Task lets you specify a .NET .exe or .dll file and execute methods within that assembly. Select an assembly, class and method. Then double click on parameter rows to set values. Depending on the value type different input forms will be used.

Output

The Assembly execute will return a string representation of the result and will try to separate value by a comma if it is an array.

The screenshot shows the 'Add Task - Assembly execute' dialog box. It has a title bar with the text 'Add Task - Assembly execute - 1/1'. Below the title bar is a header area with the text 'Assembly execute' and a description: 'Assembly execute Task lets you specify a .NET .exe or .dll file and execute methods within that assembly.' There are navigation tabs: 'Main settings', 'Conditions', 'Assembly execute', 'Output', 'On error', 'TimeOut', and 'Flow'. The 'Assembly execute' tab is active.

The 'Credentials' section has a dropdown menu set to 'No Credential' and a settings icon.

The 'Select dll/exe file' section has a text box containing 'C:\sourcefiles\test\reflectiontest\SuccessFail\bin\Debug\SuccessFail.dll' and a 'Load app.config if existing' checkbox which is checked.

The 'Select class and method' section has two dropdown menus. The 'Class' dropdown is set to 'SuccessFail.Class1' and the 'Method' dropdown is set to 'SuccessFail.Class1.OneForSuccess(System.Int32)'. There are checkboxes for 'Show only Public types' and 'Show only Public methods', both of which are checked. The 'Return type' is 'System.Object'.

The 'Parameters (double click to edit)' section contains a table with the following data:

Parameter name	Data type	Value preview
i	System.Int32	4

At the bottom of the dialog are 'Cancel' and 'OK' buttons. The footer bar shows 'Variables', 'Previous', 'Task 1/1', and 'Next'.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Select dll/exe file

This is the full path to the assembly file. If you move this Task to another place you need to move the assembly file as well. The file selection button opens the explorer to select the file. The Refresh button reloads the class/method information.

Execute in x86 mode

Executes the assembly in a x86 process.

Local execution

Hosts the assembly in VisualCron instead of external process. Should only be used for simple assemblies without dependencies. Please note that you need to restart the VisualCron service to reload any assembly into memory with this option checked.

Load app.config if existing

Tries to load the app.config of your dll if it exists.

Class

This is the name of the Class.

Show only public types

When selecting a file or clicking refresh class information is loaded from the assembly. By default, only public classes are loaded. If you want to load class with other modifiers/visibility you must uncheck this.

Method

When you change the Class all methods within that Class will be populated into the method combo box.

Show only Public methods

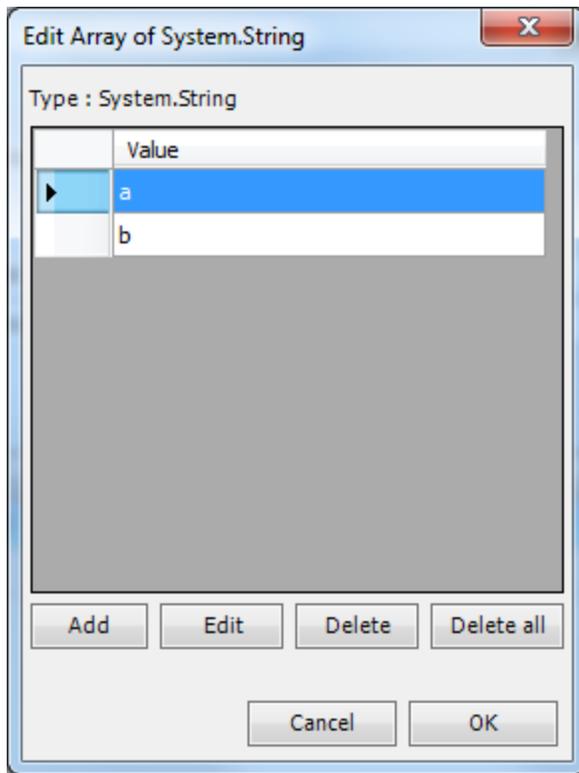
When selecting a file or clicking refresh method information is loaded from the assembly. By default, only public methods are loaded. If you want to load method with other modifiers/visibility you must uncheck this.

Return type

This label shows the return type of the selected method. This is the type that will be converted to a string in the Output of the Task.

Parameters

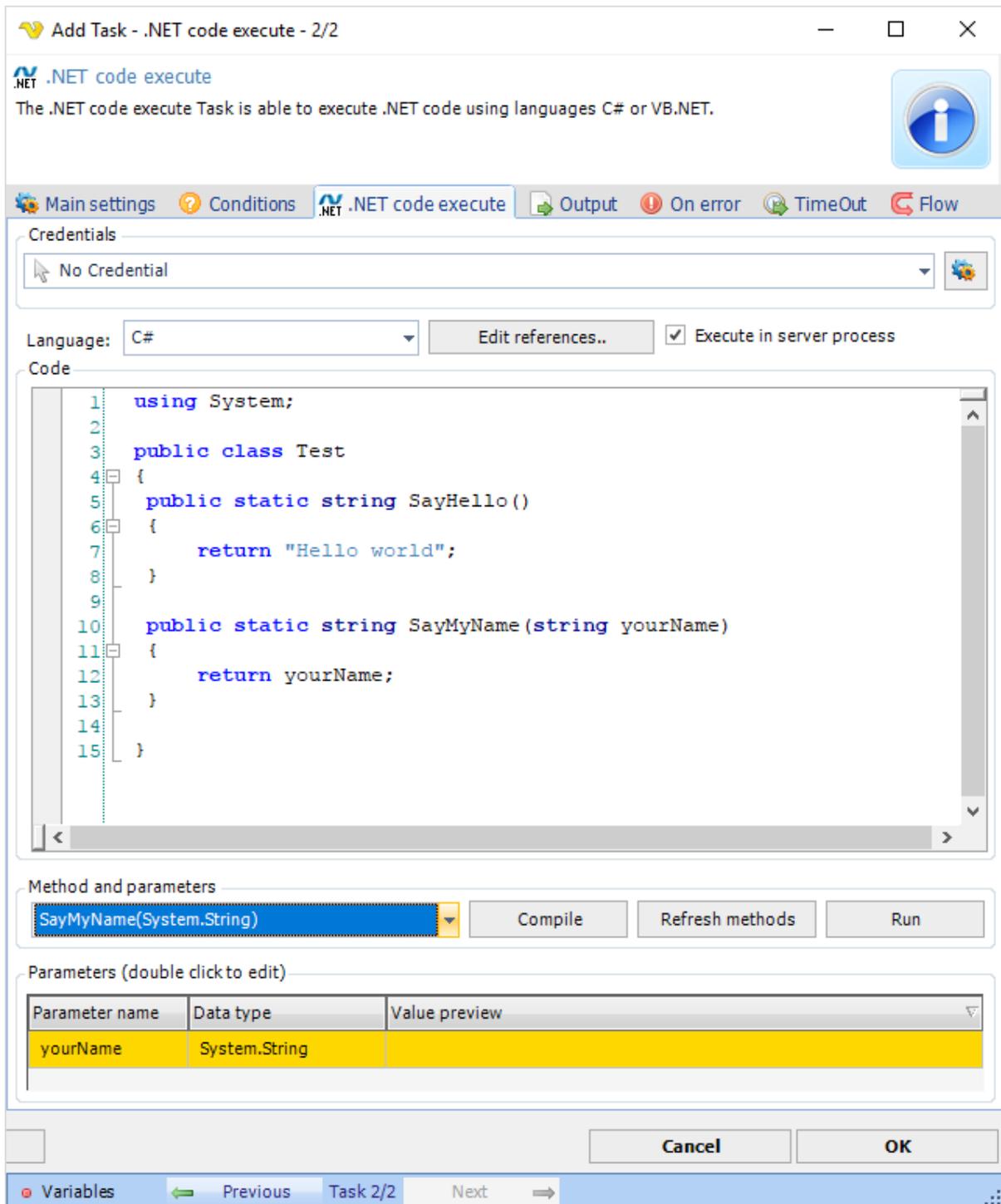
Double click on parameter rows to set values. Depending on the value type different input forms will be used.



The Process - .NET code execute Task is able to execute .NET code using languages C# or VB.NET.

You are able to use Variables wherever in the code and parameters. The output of the method is converted to string. The purposes of this Task could be many but you could use it to solve a specific problem for you (when no existing Task can do that for you).

The code is compiled in real time for each execution.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Language

Select either C# or VB.NET language. The syntax editor and compile methods will alter depending on selected language.

Edit references..

Add/remove any dll that you want to use as a reference to make our code work or be more compact.

Code

In this text box you insert your code. It is important that:

- The code exists in a class
- That you use static/shared methods only

Any return value will be converted to a string.

Method selection

Select the method you want to use. After you have added new code please press "Refresh methods" button.

Compile

This button tests if the code can compile and will return a popup with error if not.

Refresh methods

This button compiles the codes and add all existing static methods into the method combo box.

Run

This button compiles and runs the code so you can test it.

Parameters

If the selected method contains any parameter can double click on the row to add your own parameter value.

Executes a method with parameters on an unmanaged dll.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Select dll/exe file

This is the full path to the assembly file. If you move this Task to another place you need to move the assembly file as well. The file selection button open the explorer to select the file. The Refresh button reloads the class/method information.

Force 32-bit execution

Text ...

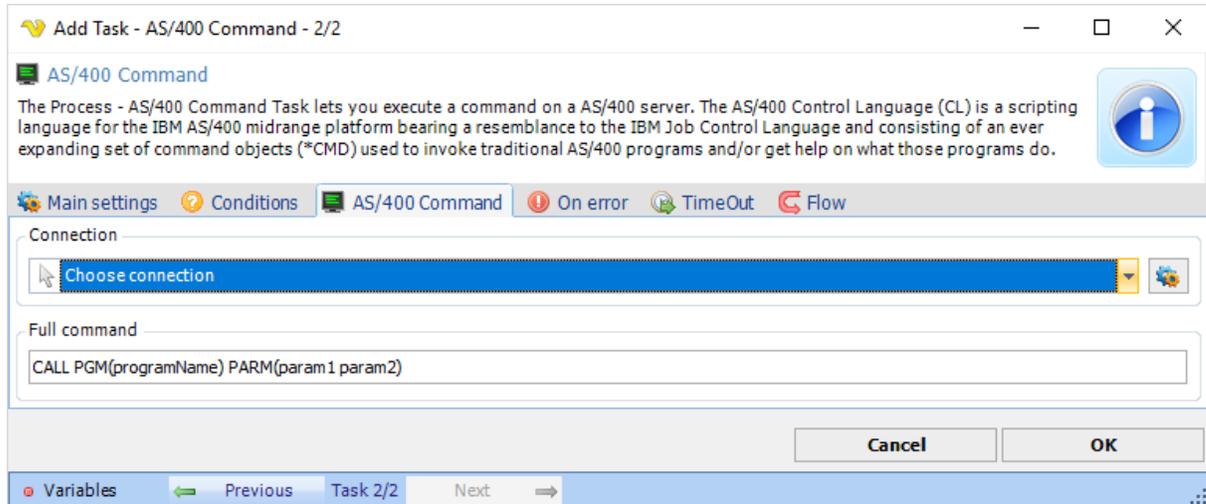
Select function and return type

Text ...

Parameters

If the selected method contains any parameter can double click on the row to add your own parameter value.

The Process - AS/400 Command Task lets you execute a command on a AS/400 server. The AS/400 Control Language (CL) is a scripting language for the AS/400 midrange platform bearing a resemblance to the IBM Job Control Language and consisting of an ever expanding set of command objects (*CMD) used to invoke traditional AS/400 programs and/or get help on what these programs do.



Connection

Select a AS/400 Connection. You can set up the Connection here: AS/400 Connection.

Full command

Specify the command to call the program with any parameters according to the default format.

Note:

The AS/400 Command Task requires that you install IBM Client Access (V5R3 or later) on the VisualCron Server.

The Net - Web macro Task is able to record actions in the built in browser and later play it back in the background at any time.

Below are some features of the Web Macro Task in VisualCron:

- The playback is based on Chrome which gives you speed and compatibility - also, Chrome plugins are supported (not Extensions but Pepper plugins)
- The playback of web recordings are done from a Windows service which requires zero interaction from a user – no one is required to be logged on. This means that multiple instance can be running at the same time and you can work on the computer at the same time without disturbing the background playback.
- Passwords are stored in an encrypted format VisualCron uses file filters, Variables, stored Credentials to dynamically present values (like dates).
- VisualCron can handle many web instances at the same time and copy/paste data between
- VisualCron handles popup windows.
- VisualCron supports uploading and downloading files – dynamically with file filters VisualCron supports proxy and proxy change anytime during the automation which helps if you want to create unique web requests.
- In VisualCron you can import Client certificates and they will be presented upon request.
- VisualCron supports multiple tabs and switching between tabs.
- When creating a tab you can choose to browse with Incognito mode.
- You are able to Print and take a screen shot (save to file).

- VisualCron lets you set any User-Agent you like VisualCron lets you inject JS anywhere in a page.
- VisualCron lets you override HTTP referrer.
- VisualCron lets you set Accept-Language.
- VisualCron lets you set GoogleId to support Google Speech and other APIs from Google
- VisualCron lets you control speed of playback, from typing text to waiting before and after a step.

Web macro > Main settings tab

Web macro

The Net - Web macro Task is able to record actions in the built in browser and play it back in the background at any time.

Main settings Conditions Web macro On error TimeOut Flow

Main settings Steps Proxy Certificates Plugins

Browser options

Load images Store cookies

Block popups

Lite mode

Disable WebSecurity

Override User-Agent

Mozilla/5.0 (Windows NT 10.0; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/54.0.2840.99 Safari/537.36

Override referer

www.visualcron.com

Accept-Language:

en-US

Google API

GoogleClientID:

GoogleAPIKey:

GoogleClientSecret:

Play Record

[Copy Task Id](#) Cancel OK

Variables Previous Task 1/1 Next

Load images

Controls if the browser should load images or not. If you deselect this loading of page will be faster. Do not deselect this if you are dependent on images.

Block popups

When a popup to a new window occurs VisualCron will open that new window in a new tab. If you do not want this behavior you can check *Block popups*.

Lite mode

Text...

Disable WebSecurity

Text...

Override User-Agent

By default, the User-Agent of the current Chrome version is sent. If you want to override this you check this property and enter your User-Agent in text field.

Store cookies

Optionally VisualCron can store the cookies between each call. This is create if you first want to record entering some security questions. First check *Store cookies*, then record once entering the security questions. Then record again and any cookies from previous record will exist in memory.

Override referer

By default, the last page visited is sent as referer. If you want to override this you check this property and type in any referer you want to use in the text field.

Accept-Language

By default, English with US location Accept-Language will be sent. This might give you different results back (depending on developers of web page), for example how time and date is presented or which language a page is presented in. If you want a specific Accept-Language to be sent you can alter this here.

Google API

A number of features supported by the Chrome browser engine relies on certain Google API to function. For example, the location service relies on Google Map's GEO location service API, and speech recognition relies on Google's Speech API. In order to use these features, you must acquire and apply your Google API keys first.

Follow the steps below to acquire your Google API keys. Note that due to Google frequently updates their systems, the exact UI/step may be slightly different.

1. Visit <https://console.developers.google.com/> and login with your Google account;
2. If you have not already created a project, you will be prompted to create a project;
3. After you have created a project, click "Use Google APIs" from the project's Dashboard;
4. Make sure the corresponding API is enabled. For example, to use speech recognition feature, you must enable "Speech API";
5. Select "Credentials" from the list on the left side, click "Create Credentials" -> "API Key" -> "Browser Key" to create an API key;

GoogleClientID

Your Google Client ID.

GoogleAPIKey

Your Google API key.

GoogleClientSecret

Your Google Client secret.

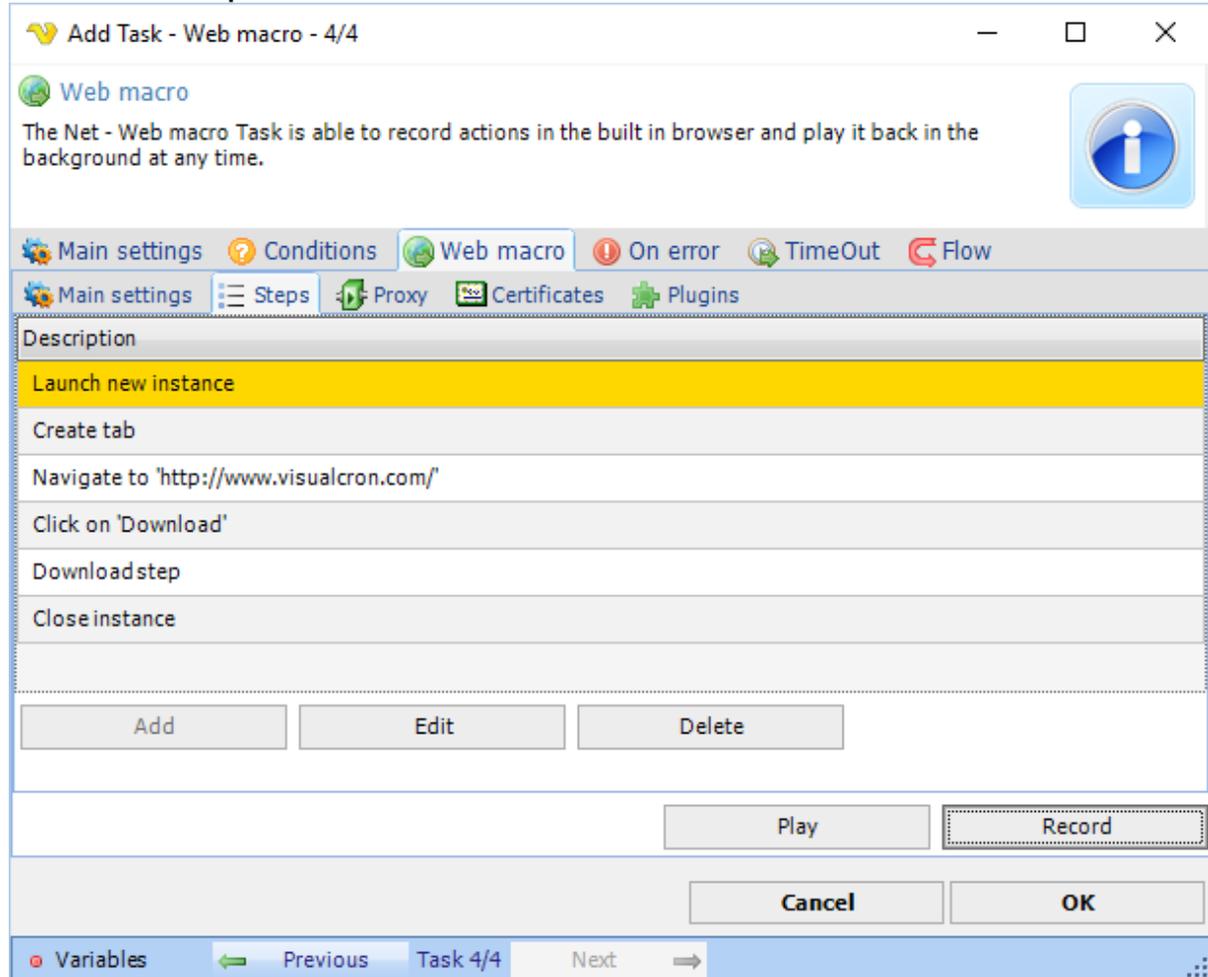
Recording a web macro

Click on the Record button to start recording. This open the Web macro recorder window (see screenshots and description later down).

Playing back a web macro

A web macro can be played back in both Client and Server. If you press Play it starts playing back in Client. You can also press *Pause* to stop playback.

Web macro > Steps tab



The Steps tab contains all recorded steps. Some of them can be edited/deleted by double clicking on Step or select and click Edit. Adding a step manually is currently not possible.

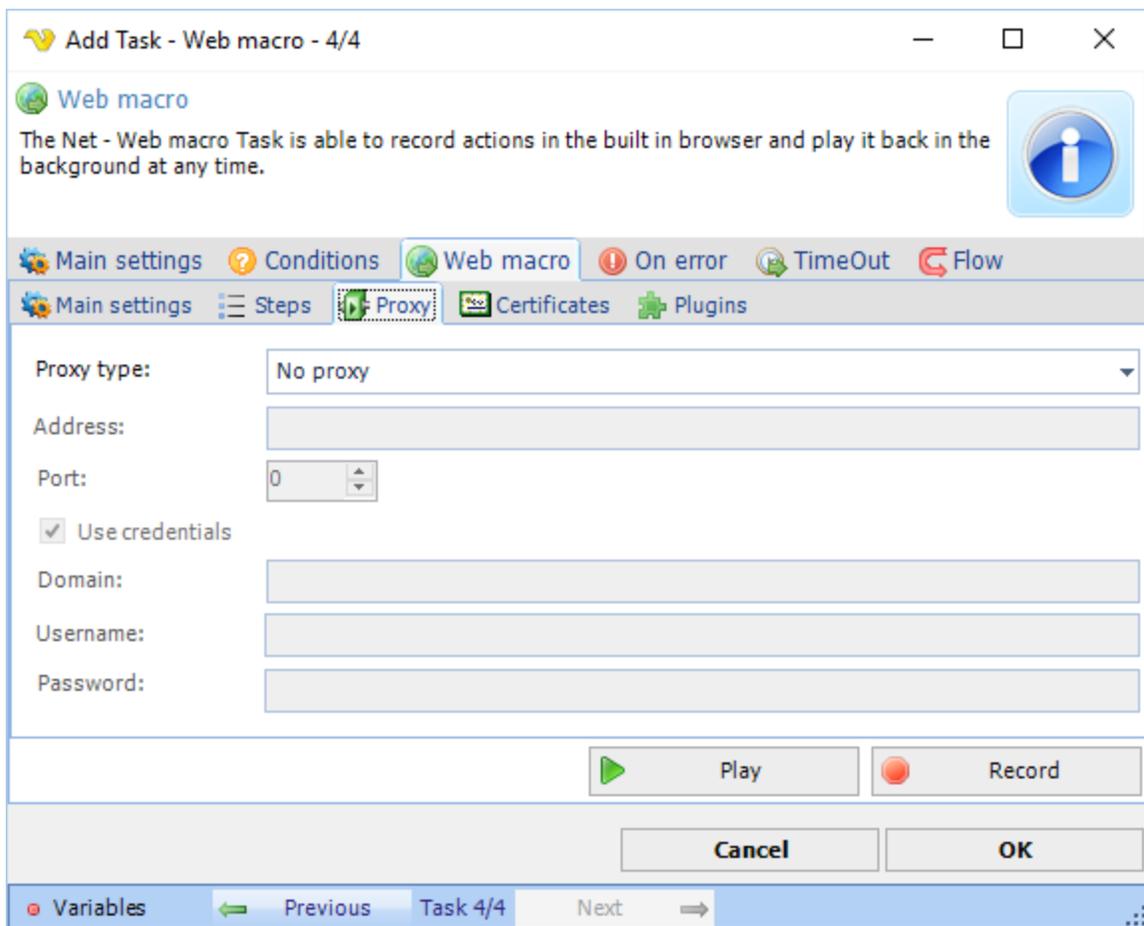
Set wait for all steps

Each Step has a Before and After step wait time in milliseconds. If you want to increase or decrease this on all steps you can click this button and set these values for all steps.

Auto-creation of steps and adding manually

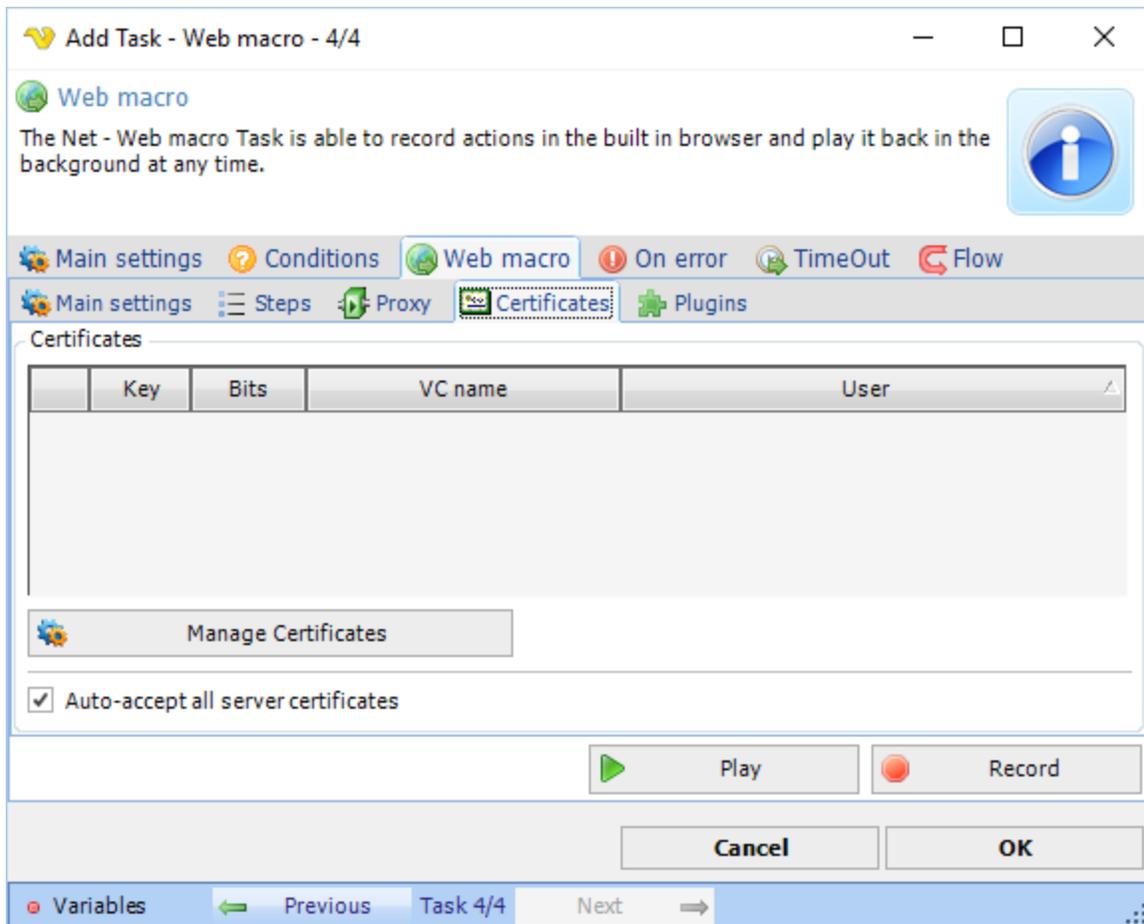
Steps are auto-created during recording but it also possible to manually add some steps by clicking on toolbar or right click on an element in the browser.

Web macro > Proxy tab



The proxy tab lets you set the default proxy to use in all tabs. You can override this by adding the Set proxy step.

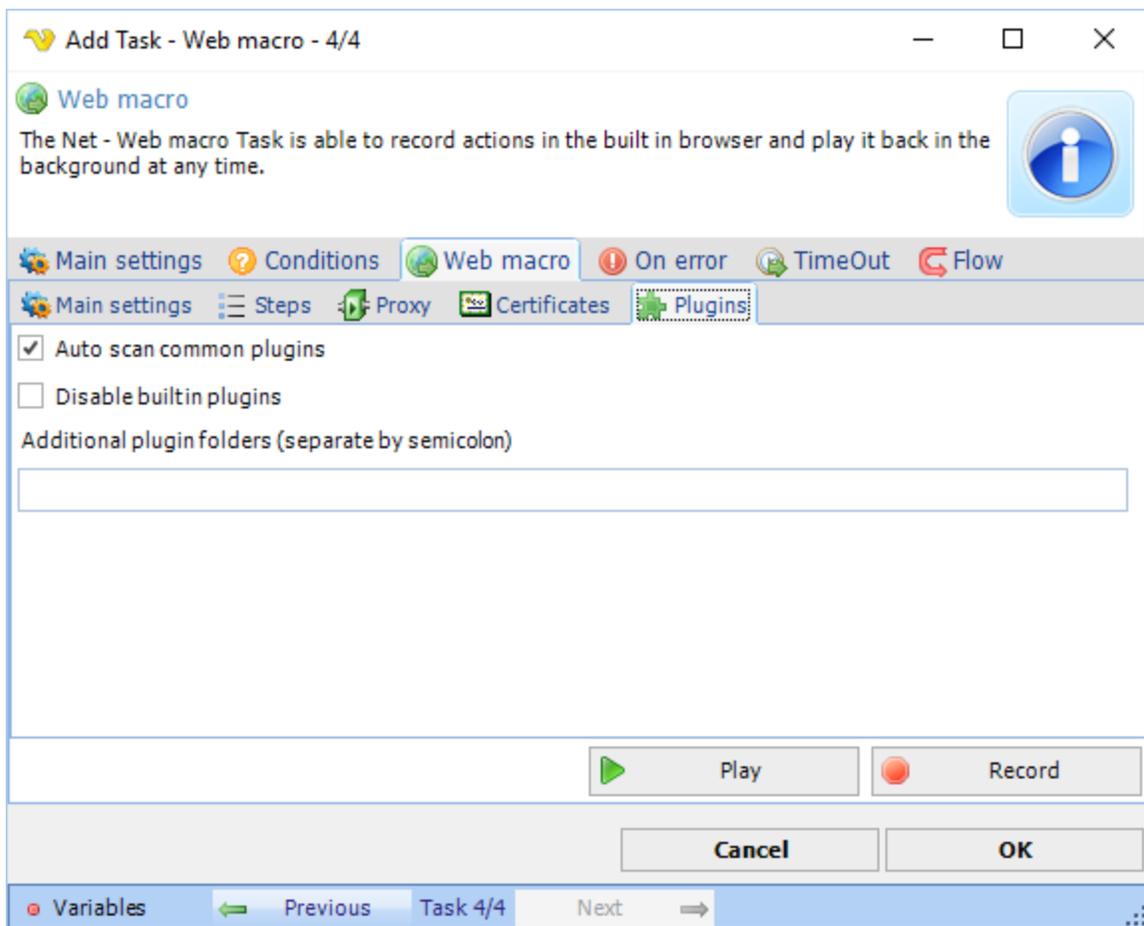
Web macro > Certificates tab



Certificates

The web macro Task supports handling of both Client and Server Certificates. The Client certificates are globally managed in Manage Certificates window. Add a client certificate - the will be presented to remote server when needed. By default all remote server certificates are accepted. We recommend this option checked to prevent playback issues.

Web macro > Plugins tab



There are two different type of plug-in standard: NPAPI and PPAPI. NPAPI originates from Netscape and were supported by all major browsers until Google developed PPAPI. The Chromium project (upon which both Google Chrome browser is built) has been supporting both for a while until finally it dropped NPAPI support. a result, VisualCron does not support NPAPI either.

Auto scan common plugins

Indicating whether to automatically scan commonly used plugins.

Disable built in plugins

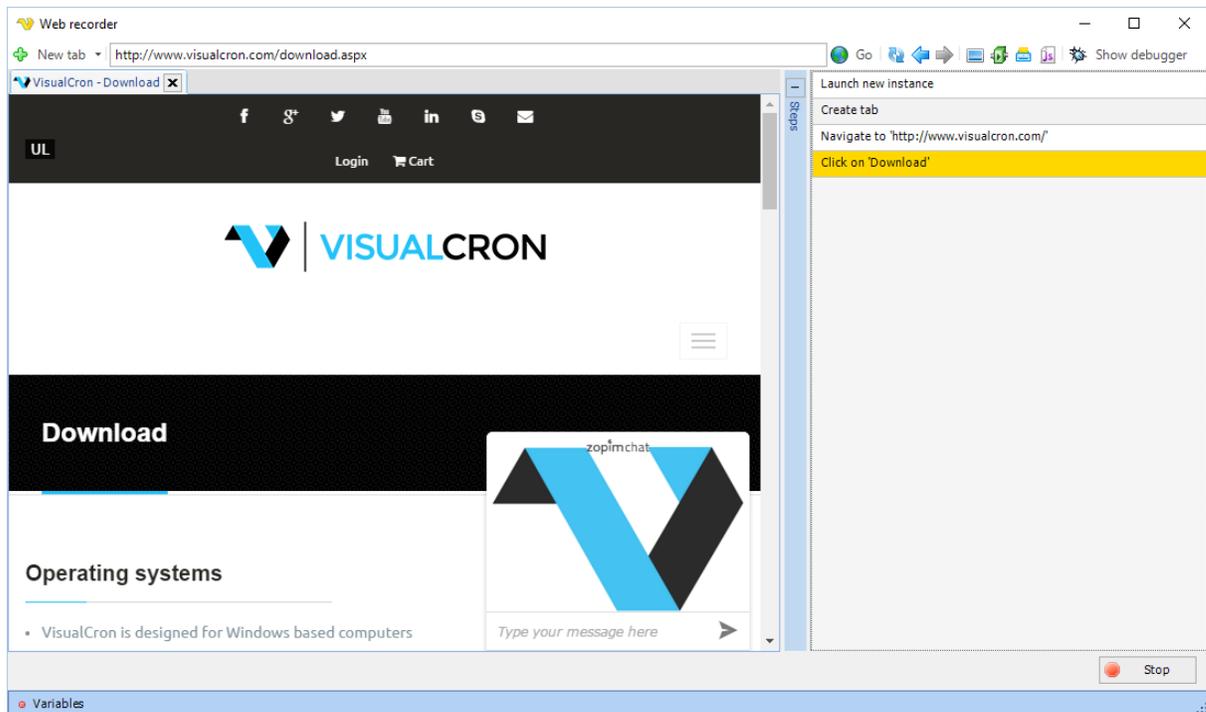
Disables the built-in PDF plugin.

Additional plugin folders

If you have plugins located elsewhere please add the folder(s) here. If more than one then separate with semicolon.

Web macro recorder window

When pressing Record or Play button the Web macro recorder window is opened.



Auto-creation and adding steps manually

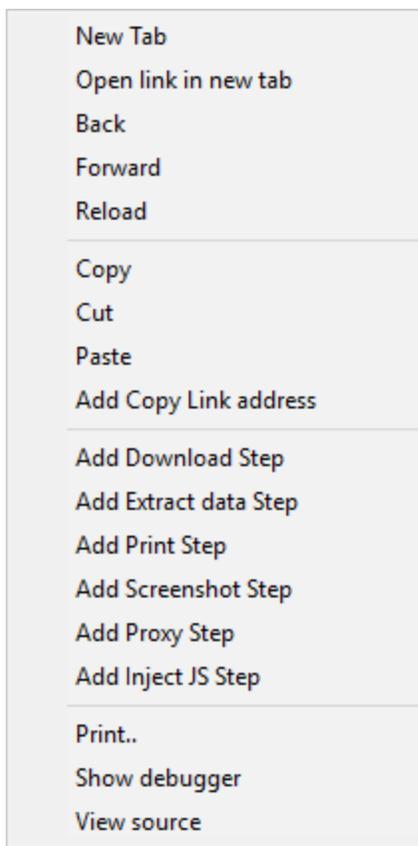
Steps are auto-created during recording but it is also possible to manually add some steps by clicking on the toolbar or right-clicking on an element in the browser.

Tabs

VisualCron handles multiple tabs. A tab is created automatically when a popup with a new target window appears. You can also click on "New tab" and select to create a new tab. You can create a "Normal" tab or "Incognito tab". When using incognito mode, no cookies are stored.

Right click menu

You can right-click anywhere within the browser window, but some menu items are context-sensitive, like "Add Download Step" and "Add Extract data Step".



The extract data steps extracts an attribute of a page element. This attribute can be stored in either local Job Variable or global User Variable.

To extract a certain attribute you right click on it and chose Add Extract data step below:

Web recorder

New tab <http://www.visualcron.com/>

VisualCron - Windows Schedulin...n | Task Scheduler Alternative

f g+ t y in s e

V | **VISUALCRON**

Home Features Download Order Support My pages Blog S

Home Home

H1

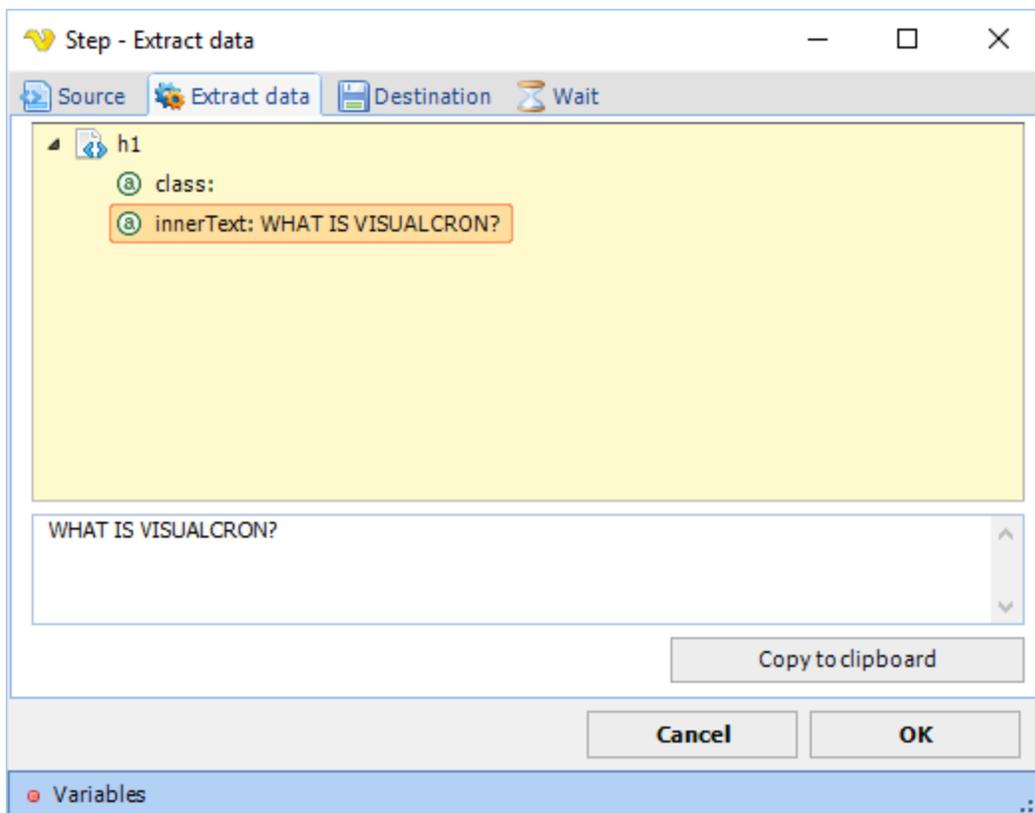
WHAT IS VISUAL CRON?

VisualCron is an automation, integrat...

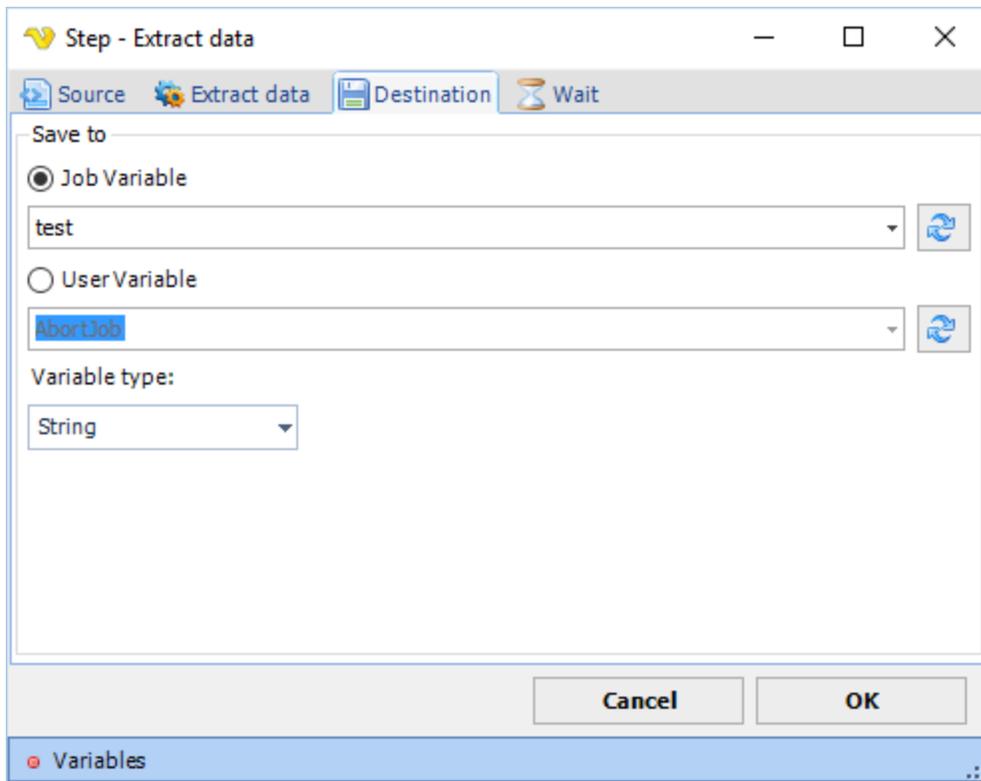
Automation Tool And T

- New Tab
- Open link in new tab
- Back
- Forward
- Reload
- Copy
- Cut
- Paste
- Add Copy Link address
- Add Download Step
- Add Extract data Step

Then select the attribute you want to extract below:

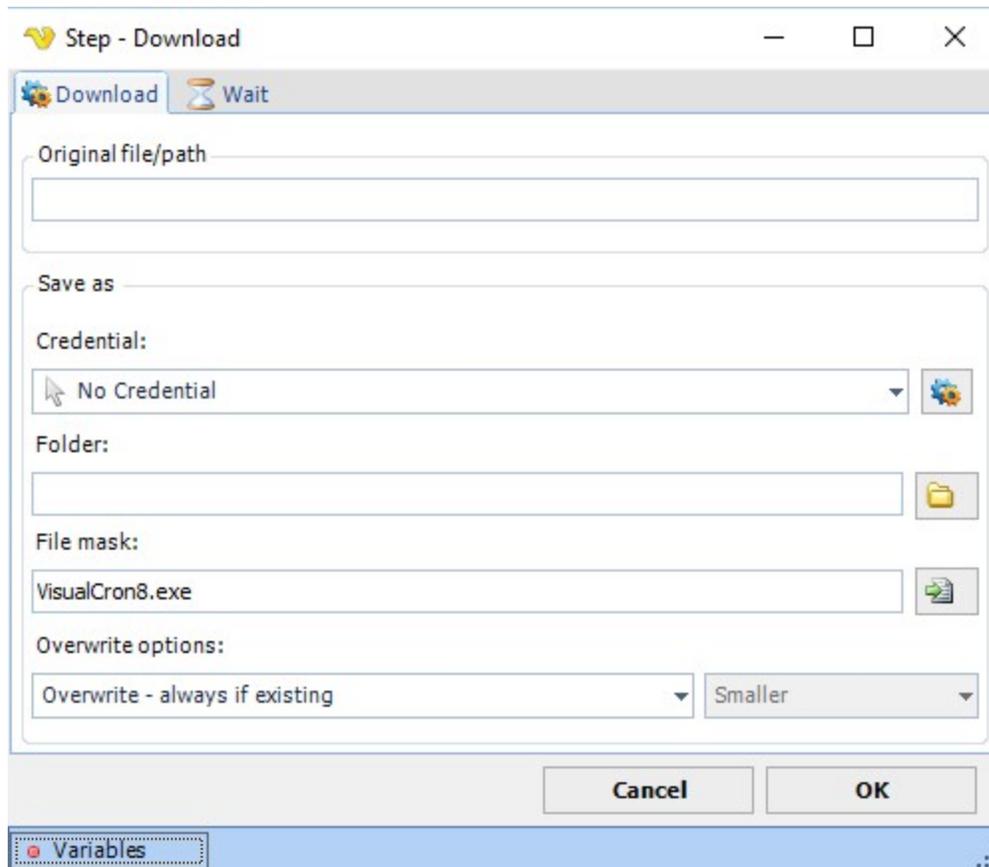


Then set where you want to save the attribute value (in which Variable):

**Wait tab**

The wait tab controls how long time the step should wait before performing the step and after performing the step (in milliseconds).

The Download step is triggered automatically when a web page presents something for download - this could be initiated originally by a click.



Original file path

This field is filled later and contains the source file.

Credential

If you need to save the file on a network resource you probably need a Credential to elevate the rights. Use an existing or add one.

Folder

This is the destination folder.

File mask

This is the destination file mask / file name.

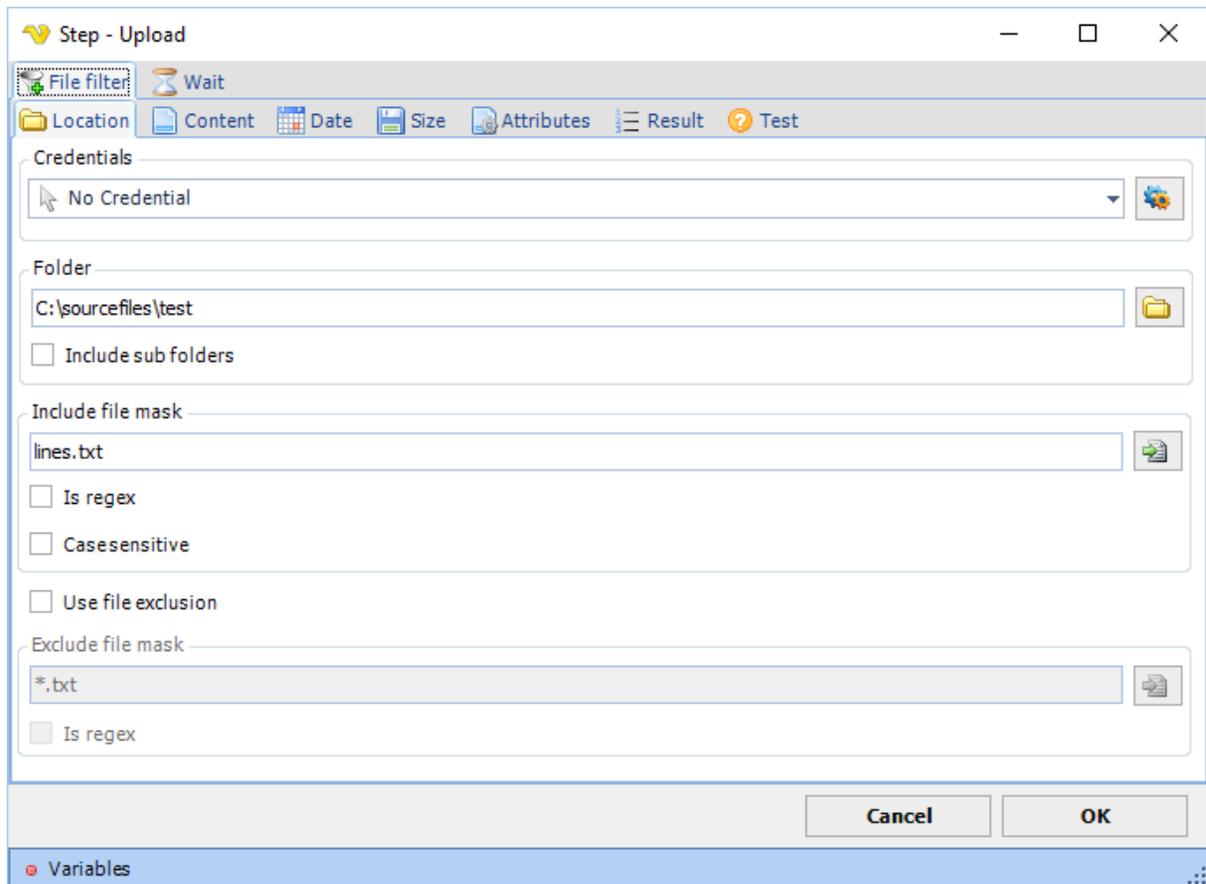
Overwrite options

Control what happens if the file already exists with these settings.

Wait tab

The wait tab controls how long time the step should wait before performing the step and after performing the step (in milliseconds).

The upload file step is created wherever you select a file to upload in a web page. What is important to know that the step is created there but then you can later edit the step to make it more dynamic.

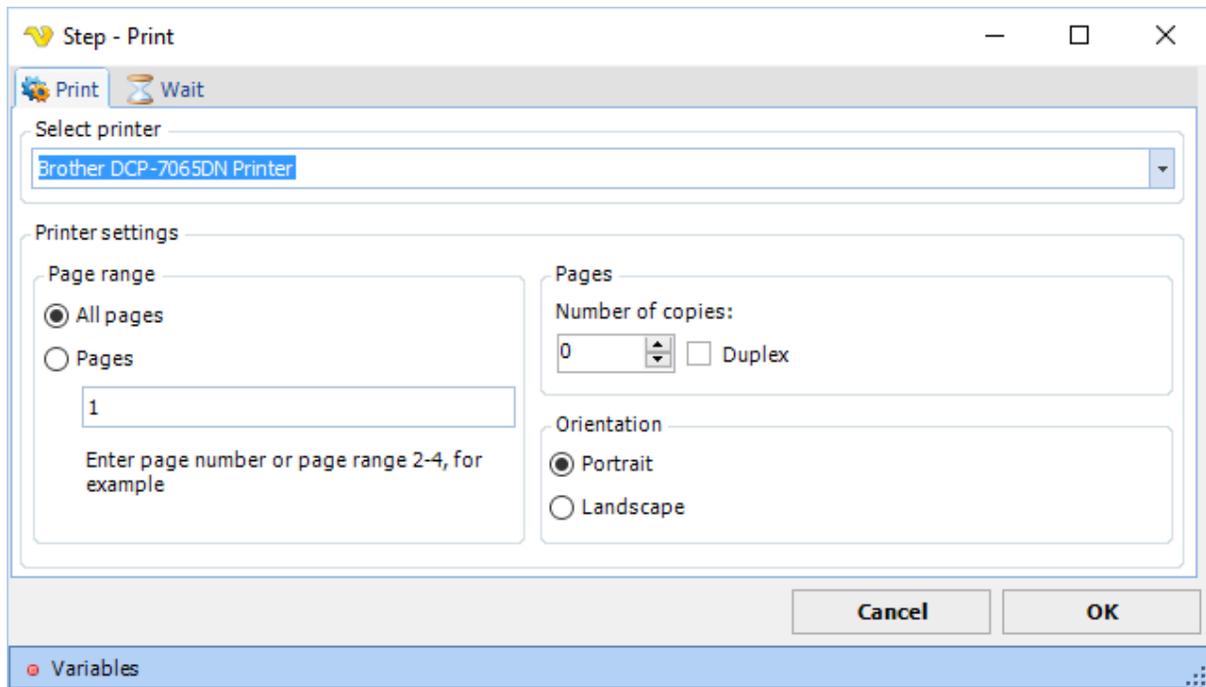


The upload step uses the same file filter as the rest of VisualCron application.

Wait tab

The wait tab controls how long time the step should wait before performing the step and after performing the step (in milliseconds).

The Print step prints the current page(s). You add this step by either right clicking in web browser or click on the Print icon in toolbar.

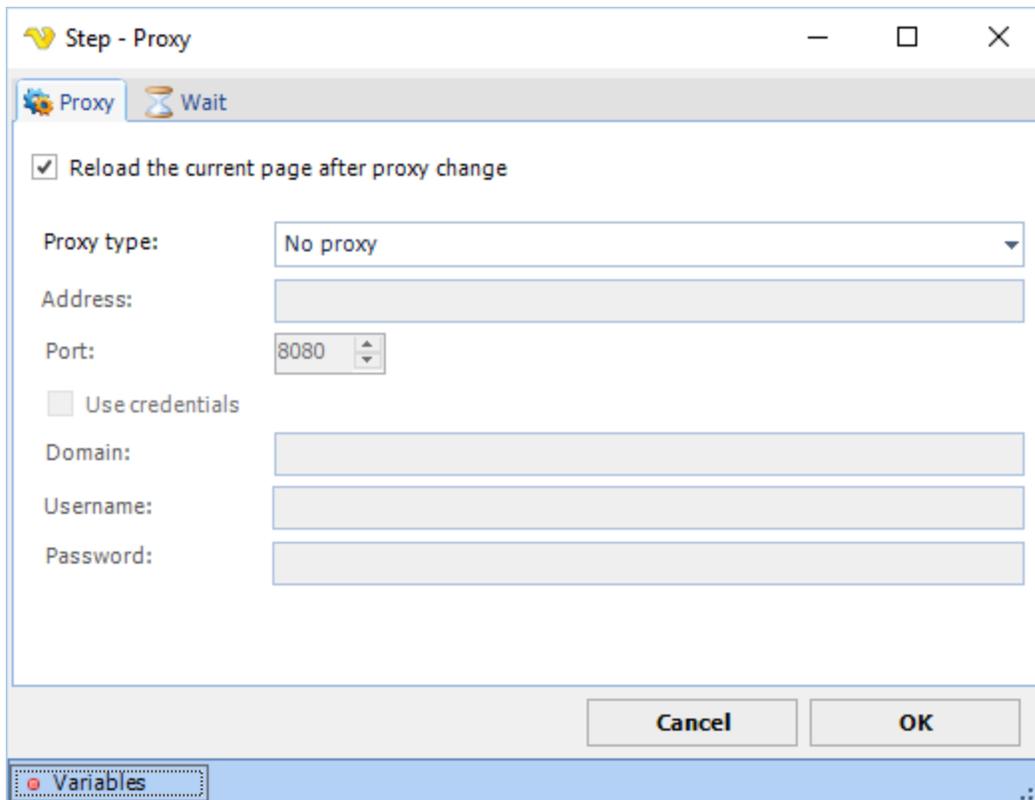


The Print step exposes the most common printer settings.

Wait tab

The wait tab controls how long time the step should wait before performing the step and after performing the step (in milliseconds).

The Proxy step lets you change the proxy being used during run time. It overrides any previous set proxy in the Task.



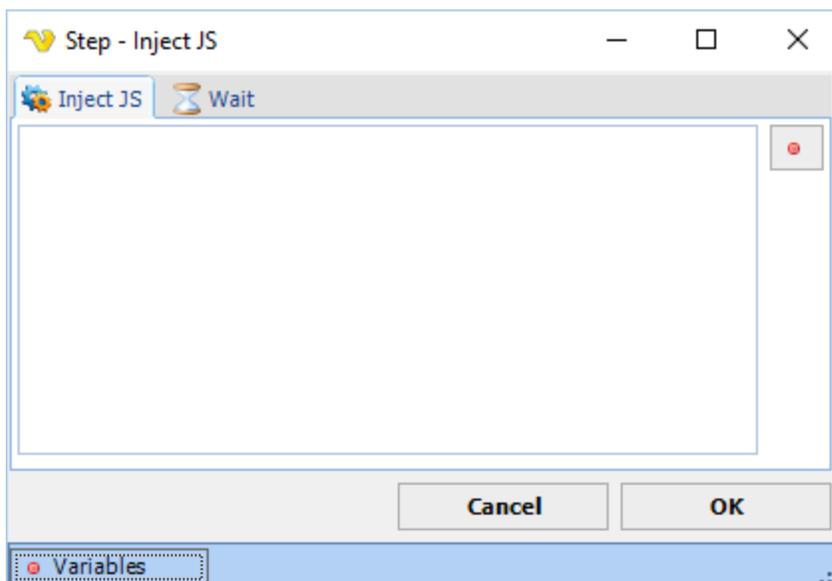
Reload the current page after proxy change

If you do check this the the current page will not be affected.

Wait tab

The wait tab controls how long time the step should wait before performing the step and after performing the step (in milliseconds).

The Inject JS step lets you send javascript code for execution on the current page.



Wait tab

The wait tab controls how long time the step should wait before performing the step and after performing the step (in milliseconds).

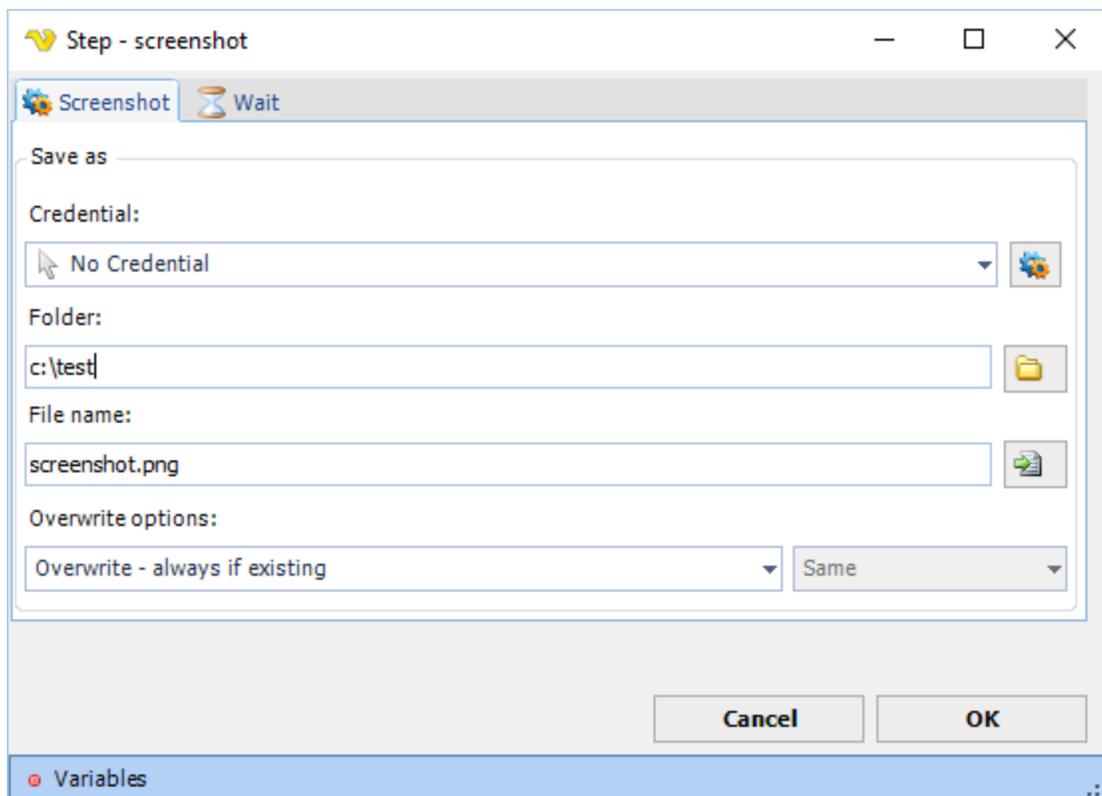
The Copy link address steps lets you right click and copy a link.

This step is still in development

Wait tab

The wait tab controls how long time the step should wait before performing the step and after performing the step (in milliseconds).

The Screenshot step takes a screenshot of the current webbrowser and saves it to a file.

**Wait tab**

The wait tab controls how long time the step should wait before performing the step and after performing the step (in milliseconds).

The Task type HTTP enables execution a remote script/load webpage with standard HTTP POST or HTTP GET. You can combine this function with logging the output of the script/page on a file or send the output by mail.

HTTP > Main settings tab

Endpoint/URL

This is the remote script or page to be called. Use the following format:

`http://www.yourwebpage.com/yourscript.php`. If you use a GET you can either add parameters like `?mykey1=myvalue1&mykey2=myvalue2` or use the *Parameters/Body* tab to input parameters. If you use POST you should only use the *Parameters/Body* tab.

Proxy..

Select if you want to use a proxy.

Method

There are two kinds of methods which are most common when calling a remote script or page. Some web frameworks (such as PHP) provide separate mechanisms for accessing POST and GET data. POST is generally recommended because URL:s don't appear in web logs.

Version

Select which HTTP version to use. Default 1.1.

UserAgent

Optional. If your script requires a certain UserAgent you can use this field to let VisualCron pretend to be a certain UserAgent.

Timeout in seconds

This is the timeout of the web request. Default is 600 seconds.

KeepAlive

Set this property to true to send a Connection HTTP header with the value Keep-alive. An application uses KeepAlive to indicate a preference for persistent connections. When the KeepAlive property is true, the application makes persistent connections to the servers that support them.

When using HTTP/1.1, Keep-Alive is on by default. Setting KeepAlive to false may result in sending a Connection: Close header to the server.

AllowAutoRedirect

Set AllowAutoRedirect to true if you want the request to automatically follow HTTP redirection headers to the new location of the resource.

Expect 100 Continue

Enable this if you get HTTP error 417.

HTTP > Headers tab

Content-type header:

application/x-www-form-urlencoded

Base on file type

Other headers

Key	Value
TestHeader	TestValue

Add Edit Delete

Cancel OK

Variables Previous Task 3/9 Next

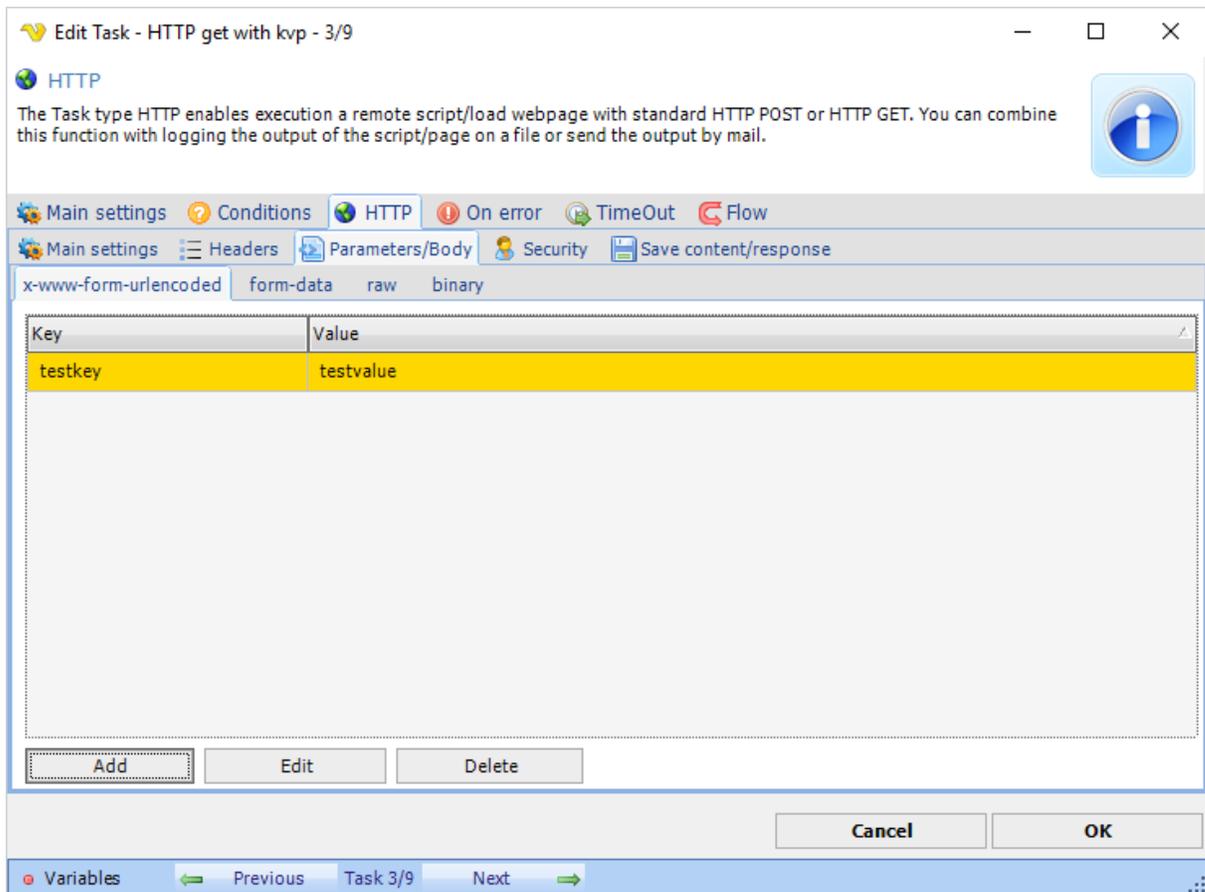
Content-type header

This header controls the content type of the HTTP request. In the drop down most common headers can be found. This setting is also related to the *Parameters/Body tab* as it affects the way the body is posted.

Other headers

Custom headers can also be added by pressing Add button.

HTTP > Parameters/Body tab



Parameters/body

Depending on content-type header you can POST various content in the body. By selecting a tab you choose how the body is sent - please note that you need to set a matching content-header as well. Different body options;

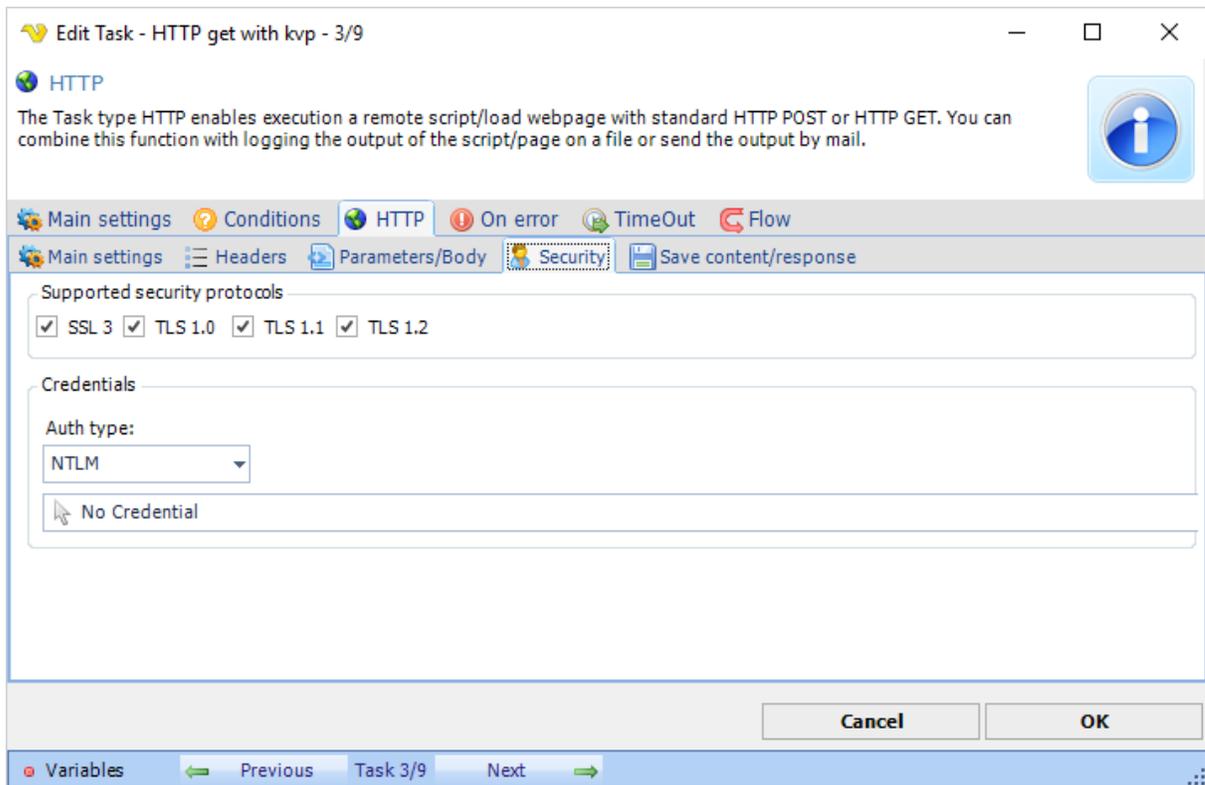
x-www-form-urlencoded - use this for simple key/value pairs

form-data - use this if form-data content-type header required and if you want to POST multi-part data like files (and maybe text).

raw - use this for sending body text raw - for example when sending a Json request

binary - use this for sending a stream of binary data like one file

HTTP > Security tab



Supported security protocols

Set the supported security protocols (by your web server) to use the maximum security.

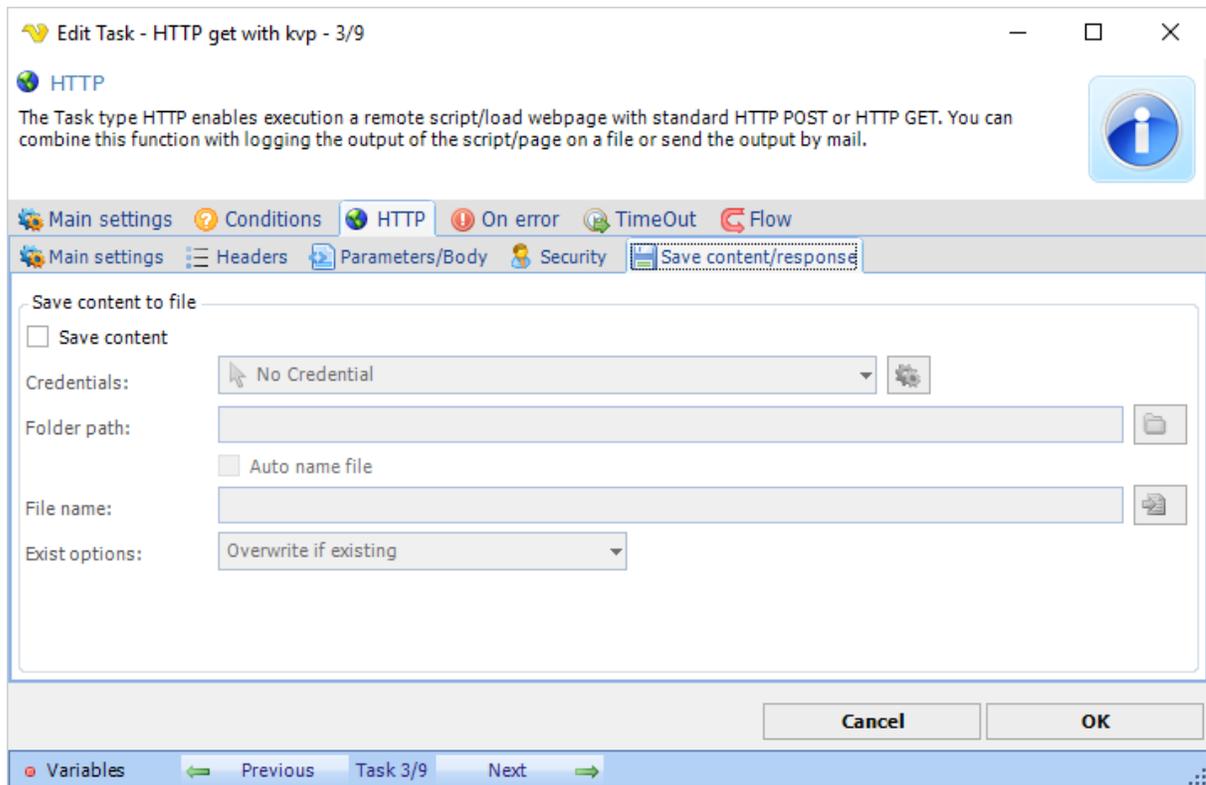
Credentials

Optional. If your script requires authentication you can select a credential from the combo box. By clicking on Manage credentials you can add or edit current credentials.

Auth type

What kind of authentication method that is used. No authentication method is used if no Credential is selected. By default NTLM auth type is used.

HTTP > Save content/response tab



Save content

Normally, the content from the request is stored in the HTTP output. For example, if you script returns a text it can be found the Result of the HTTP Task. It is stored in text mode. If you want to use the binary output, for example if you want to download a file, you should check *Save content*.

Credentials

Optional. If you want to save the content in a folder which requires network credentials then select a valid credential for that folder. By clicking on Manage credentials you can add or edit current credentials.

Folder path

Specify a path where you want to save the content/file.

Auto name file

Optional. If this box is checked your file will be named after the the last part of the url.

File name

The name of the file to be saved.

Exist options

Select how VisualCron should handle existing files. Append, overwrite, overwrite if newer or skip the saving.

Notes about Troubleshooting:

Error "The requested security protocol is not supported."

Try unchecking protocols in Supported security protocols. Start with disabling TLS1.1 and TLS1.2.

The web service / WCF Task lets you execute web service- and WCF (basic HTTP binding) methods.

Output

This Task returns a string representation of the original return type (of the method).

Edit Task - Webservice/WCF execute - 2/2

Webservice/WCF execute
The web service / WCF Task lets you execute web service- and WCF (basic HTTP binding) methods.

Main settings Conditions Webservice/WCFexecute Output On error TimeOut Flow

Security

None No Certificate No Credential

URL

http://www.webservices.net/globalweather.asmx Proxy..

Timeout in seconds: 3600 Custom endpoint:

SOAP Header (XML) - optional

Discovery mode

WCF Web service Binding:

Select class and method

Class: GlobalWeather Show only Public types

Method: GlobalWeather.GetCitiesByCountry(System.String) Show only Public methods

Return type: System.String Expect 100 Continue

Parameters (double click to edit)

Parameter name	Data type	Value preview
CountryName	System.String	sweden

Cancel OK

Variables Previous Task 2/2 Next

Security - Authentication method

This Task lets you execute a web service with some different security methods for web authentication:

1. None - no authentication is made
2. Basic - Before transmission, the user name is appended with a colon and concatenated with the password. The resulting string is encoded with the Base64 algorithm. For example, given the user name Aladdin and password open sesame, the string Aladdin:open sesame is Base64 encoded, resulting in QWxhZGRpbjpvYGVuIHNIc2FtZQ==. The Base64-encoded string is transmitted and decoded by the receiver, resulting in the colon-separated user name and password string.

3. Digest - Digest authentication is intended to supersede unencrypted use of the Basic access authentication, allowing user identity to be established securely without having to send a password in plain text.
4. Windows - the current Windows user information on the client computer is supplied by client through a cryptographic exchange involving hashing with the Web server.
5. Certificate - this authentication method uses your existing Windows certificates when authenticating

Credential

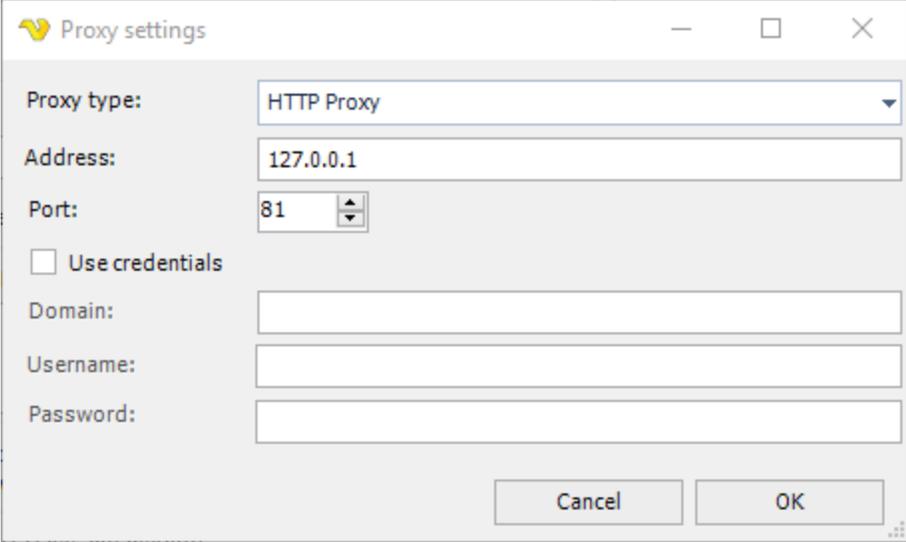
This is the Credential that is used in the authentication method. Click on Manage Credentials to create a new Credential.

URL

This is the URL that points to the web service. If the method should be executed on a different port you separate original URL with a colon and then enter the port number like this:
http://mywebsite/mywebservice.asmx:8080

Proxy

If you want to execute through a Proxy you click on the "Proxy.." button which will show the proxy settings window.



Timeout in seconds

Time until the Task gives up to receive a response. Default one hour, 3600 seconds.

SOAP header

An optional header to use before the normal XML message. Could be used for some simple authentication.

Discovery mode

Select if the service is a WCF or Web service.

Binding

When selecting a WCF service you may select binding after refreshing the classes and methods. The binding tells VisualCron which communication method to use.

Class

This is the name of the Class.

Show only public types

When selecting a file or clicking refresh class information is loaded from the assembly. By default, only public classes are loaded. If you want to load class with other modifiers/visibility you must uncheck this.

Method

When you change the Class all methods within that Class will be populated into the method combo box.

Show only Public methods

When selecting a file or clicking refresh method information is loaded from the assembly. By default, only public methods are loaded. If you want to load method with other modifiers/visibility you must uncheck this.

Expect 100 Continue

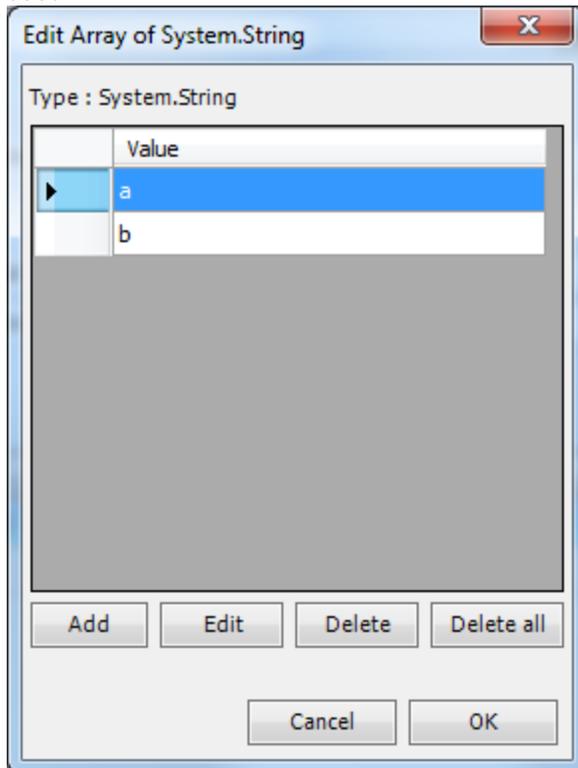
Enable this if you get HTTP error 417.

Return type

This label shows the return type of the selected method. This is the type that will be converted to a string in the Output of the Task.

Parameters

Double click on parameter rows to set values. Depending on the value type different input forms will be used.



Notes about Troubleshooting:

The HTTP request is unauthorized with client authentication scheme 'Ntlm'. The authentication header received from the server was 'NTLM'.

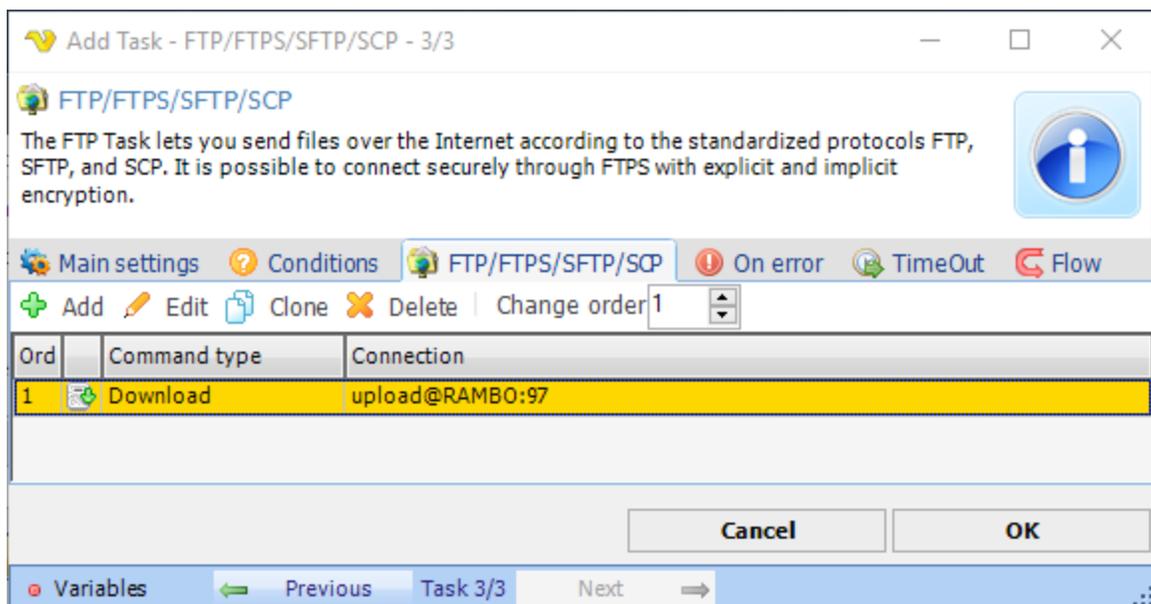
The user name and/or password is wrong.

The FTP Task lets you send files over the Internet according to the standardized FTP protocol, SCP and SFTP using the SSH protocol. It is possible to connect securely through FTPS with explicit and implicit encryption. The FTP/SCP/SFTP Task uses the FTP/SCP/SFTP Connection for configuring how to connect to the remote server.

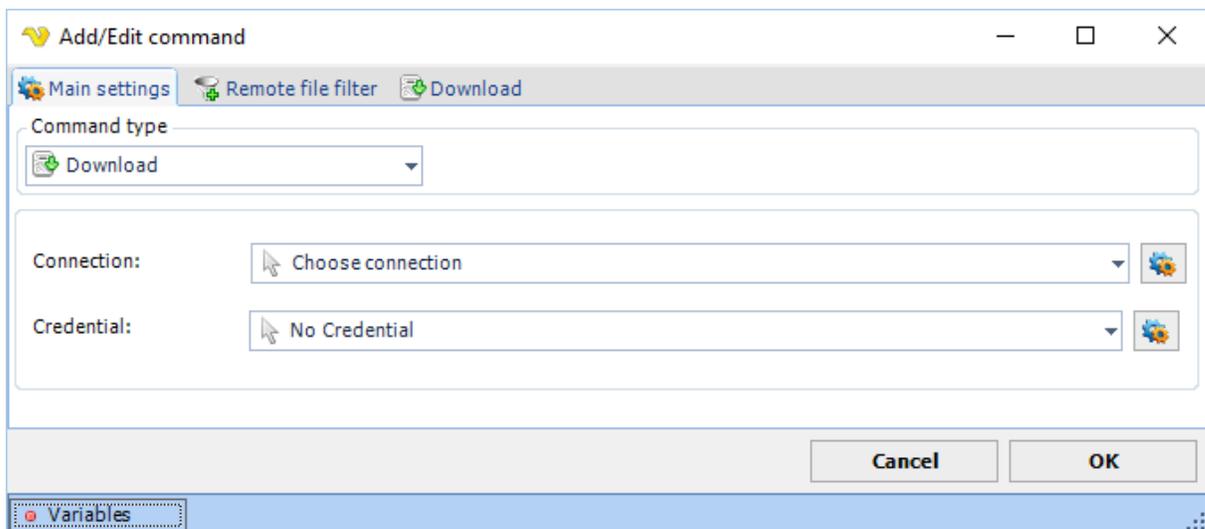
In VisualCron, the connection properties are separated from the FTP Task properties to give advantages such as re-use of connections.

To add a FTP Task, you select *Task type* "FTP/FTPS/SFTP/SCP" from the combo box in the *Add/Edit Task* -> *Main settings* tab and enter a name for the Task and specific data for the Task.

In the *FTP/FTPS/SFTP/SCP* tab, all the defined FTP commands that are associated with this Task are listed. These FTP commands are run in the list order. You can change the order by marking a row and click on the numeric up/down button. When different commands use different Connections, it is recommended that you run the commands with the same connection in order. Thus, VisualCron does not have to disconnect between commands which else will slow down the Task.



Click on *FTP/FTPS/SFTP* -> *Add* button to add a new FTP command in the *Add/Edit FTP command* window.



Command type

Select the appropriate FTP command.

The following commands exist currently:

- Upload file(s)
- Download file(s)
- Rename file(s)
- Copy/Move file(s)
- List files
- Delete file(s)
- Create folder
- Delete folder(s)
- Change folder
- Rename folder
- Custom command

Note 1: The *Custom command* method does not support custom commands that require a data connection such as STOR (Upload), RETR (Download), NLST and LIST (GetFolderContents), etc.

Note 2: This command type is not available for SFTP protocol type.

Connection

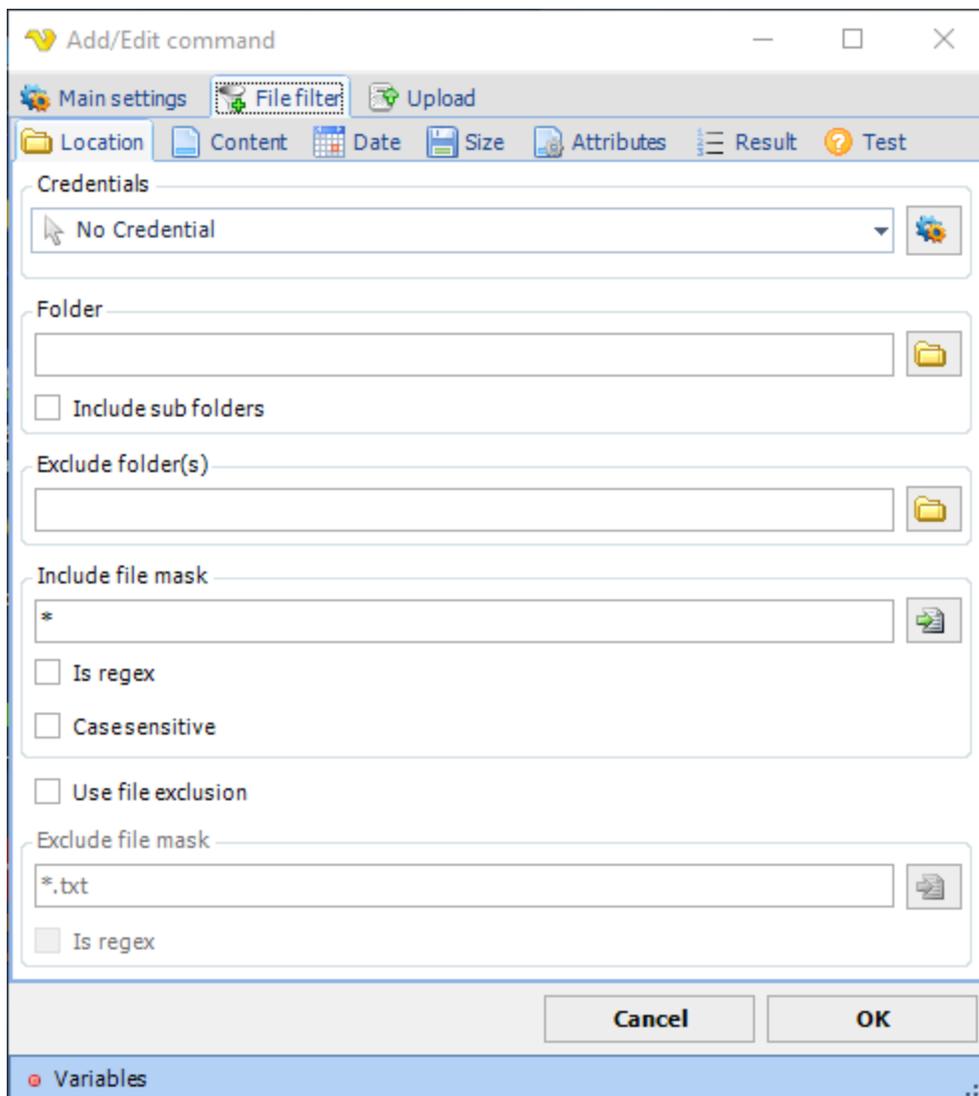
Click on the *Manage connections* button to add/edit existing connections. Select a connection once you have configured it.

Credential

Credentials could be needed if you want to upload or download files to or from a network drive. Click on the *Manage credentials* button to add a new credential. Be sure to specify a UNC path to the file/folder when uploading/downloading (\\servername\folder\file)

The upload command sends one or more files and creates recursive folders if necessary.

Upload > File filter sub tab



For upload, VisualCron uses the standard file filter to specify files that should be uploaded.

Upload sub tab

Delete source file after copy

Deletes the local file after being uploaded.

Destination folder

Enter the folder name where the files are to be sent. If your server supports relative paths, you could specify a destination folder in this way: /topfolder/subfolder

Overwrite options

- Overwrite - always if existing: if destination file already exists it will be overwritten
- Overwrite - if newer: if the source file is newer than the destination file the destination file will be overwritten
- Overwrite - if destination size is -: with this option you can overwrite a file depending on destination file size compared to the original file size on the ftp
- Do not overwrite if existing - VisualCron does not overwrite the existing file if it already exists
- Append if destination is smaller - otherwise overwrite: writes bytes to existing data until size is the same as source - if not smaller then a overwrite will done
- Append if destination is smaller - otherwise overwrite if newer: writes bytes to existing data until size is the same as source - if not smaller then a overwrite will done if source file is newer than destination file

- Append if destination is smaller - otherwise skip: writes bytes to existing data until size is the same as source - if not the file will not be sent

Resume if transfer failed

Will append to the file if something fails during transfer. The second interval will be used as a pause between each retry. Specify number of retries it will do before finally giving up.

Transfer type

Original transfer type settings are stored in the Connection. It is possible to override this setting for this specific command.

The download command is able to receive one or more files recursively if needed.

For download, VisualCron uses the remote file filter to specify files that should be downloaded.

Download sub tab

The screenshot shows the 'Add/Edit FTP command' dialog box with the 'Download' sub-tab selected. The settings are as follows:

- Source:**
 - Delete source file after copy
 - Use raw listing fallback
- Destination:**
 - Destination folder: C:\test
 - Overwrite options: Overwrite - always if existing, Smaller
 - Resume if transfer failed. Try resumimg:
 - 3 times, with interval
 - 1 second(s)
 - Keep modified/created date
 - Replace unsupported characters with character: C
 - Save files to destination folder
 - Save files to destination relative to source path
 - Save files to destination with full relative path
- Transfer type:**
 - Override transfer type set in Connection
 - Binary

Buttons: Cancel, Ok

Variables: Variables

Delete source file after copy

Deletes the original file on the ftp after it has been downloaded.

Use raw listing fallback

Some old *nix servers have problems with the LIST command. You can try this function if download fails.

Destination folder

The local folder (or network drive) where you want store the file(s). Use credentials if you want store files on a network drive.

Overwrite options

- Overwrite - always if existing: if destination file already exists it will be overwritten
- Overwrite - if newer: if the source file is newer than the destination file the destination file will be overwritten
- Overwrite - if destination size is -: with this option you can overwrite a file depending on destination file size compared to the original file size on the ftp
- Do not overwrite if existing - VisualCron does not overwrite the existing file if it already exists
- Append if destination is smaller - otherwise overwrite: writes bytes to existing data until size is the same as source - if not smaller then a overwrite will done
- Append if destination is smaller - otherwise overwrite if newer: writes bytes to existing data until size is the same as source - if not smaller then a overwrite will done if source file is newer than destination file
- Append if destination is smaller - otherwise skip: writes bytes to existing data until size is the same as source - if not the file will not be sent

Resume if transfer failed

Will append to the file if something fails during transfer. The second interval will be used as a pause between each retry. Specify number of retries it will do before finally giving up.

Keep modified/created date

This option will set the same modified and creation date as the on the ftp.

Save files to destination folder

This option saves all files (including files in sub folders if *Include sub folders* are checked) in the root of the destination folder.

Save files to destination relative to source path

This option will create sub folders (if existing) relative to the Source folder in remote file filter. For example, if source is /ftp/download, destination is c:\test and files reside in /ftp/download/subfolder the folder c:\test\subfolder will be created for the file.

Save files to destination with full relative path

This option will create sub folders (if existing) by appending the current path to the destination path. For example, if source is /ftp/download, destination is c:\test and files reside in /ftp/download/subfolder the folder c:\test\ftp\download\subfolder will be created for the file.

Replace unsupported characters with character

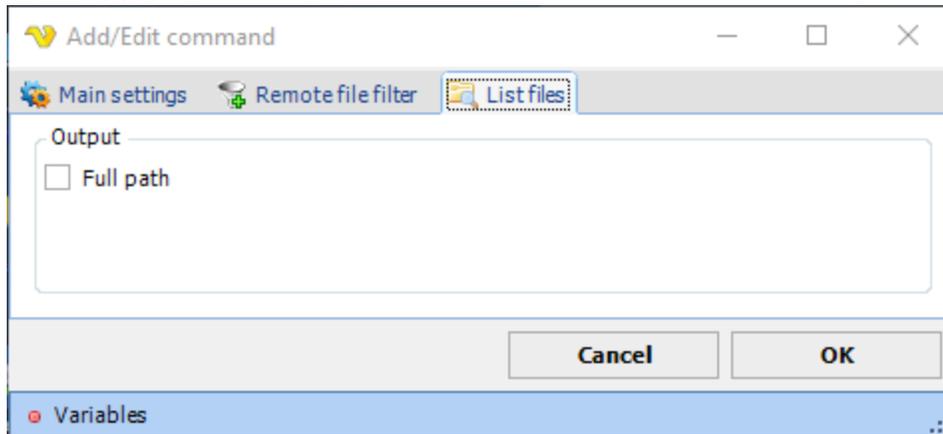
If checked, VisualCron will replace any character that is not supported in Windows file system with the specified character.

Transfer type

Original transfer type settings are stored in the Connection. It is possible to override this setting for this specific command.

For list files, VisualCron uses the remote file filter to specify files that should be listed.

List files sub tab

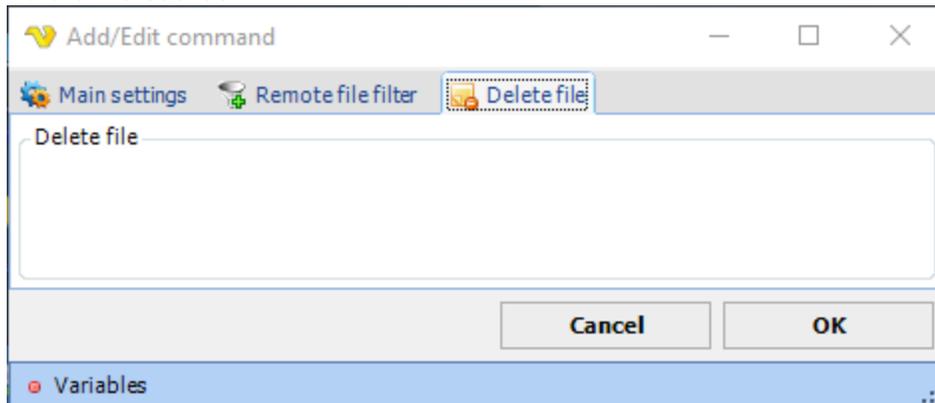


Output

Disable or enable Full path for listed files

For delete files, VisualCron uses the remote file filter to specify files that should be deleted.

Delete file sub tab



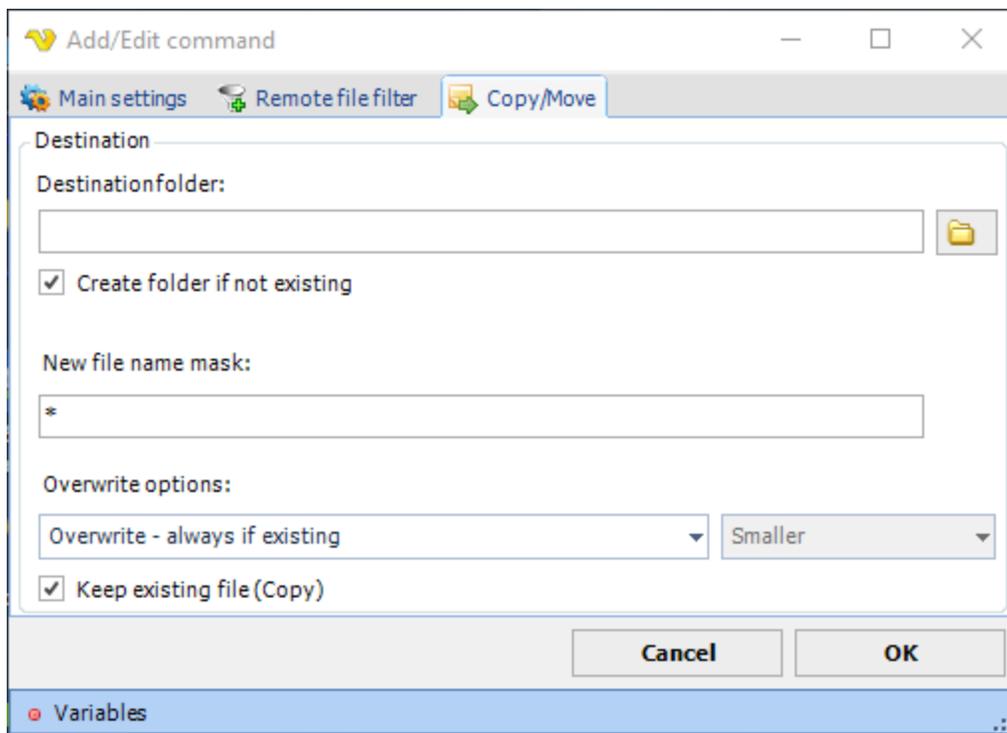
Delete file

Text ...

The Copy/Move command copies or moves one file on the remote server to another folder on the remote server.

This command uses the Remote file filter to identify files to move or copy.

Copy/Move sub tab



Destination folder

The folder which the file(s) should be moved/copied to.

Create folder if not existing

If this is checked the destination folder will be created if not existing.

New file name mask

The name that the file should have when entering the destination folder. Use * for keeping the original name.

Overwrite options

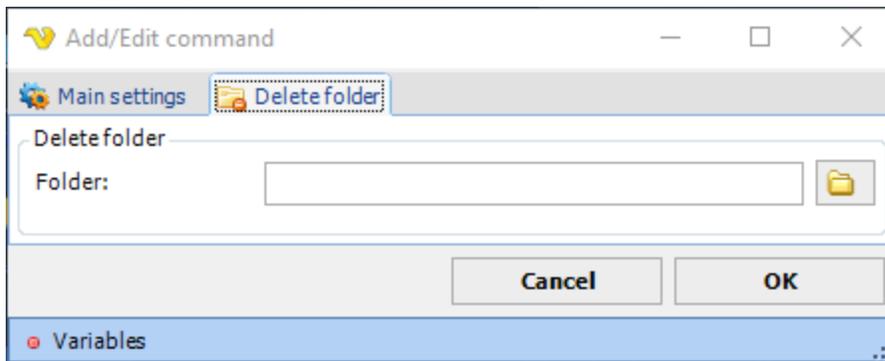
Optionally you can choose to copy/move only depending on file properties on the destination file (if it exists).

Keep existing file

If this property is checked the original file will be copied to the destination file and the original file will be kept. Otherwise, a move/rename will occur.

The Delete folder(s) command deletes one or more folders on the remote server.

Delete folder sub tab



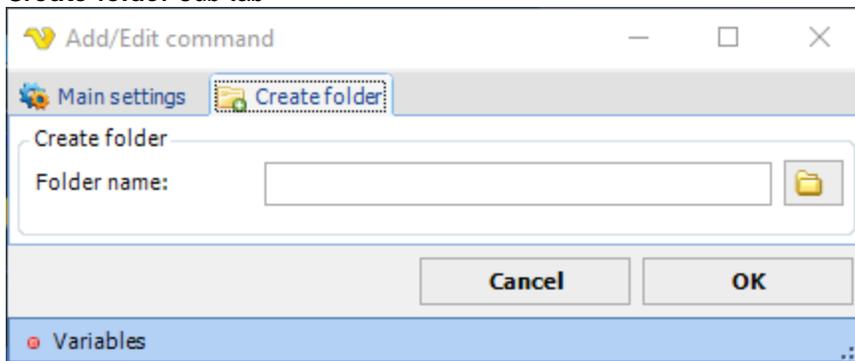
Folder

Specify the name of a folder to delete on the server. If the server supports it you can specify a relative path; /folder/subfolder. If not, you first have to use the change folder command (if you are not already in that folder).

If sub folder(s) to a folder to be deleted exist, also these are deleted.

The Create folder command creates a folder on the remote server.

Create folder sub tab

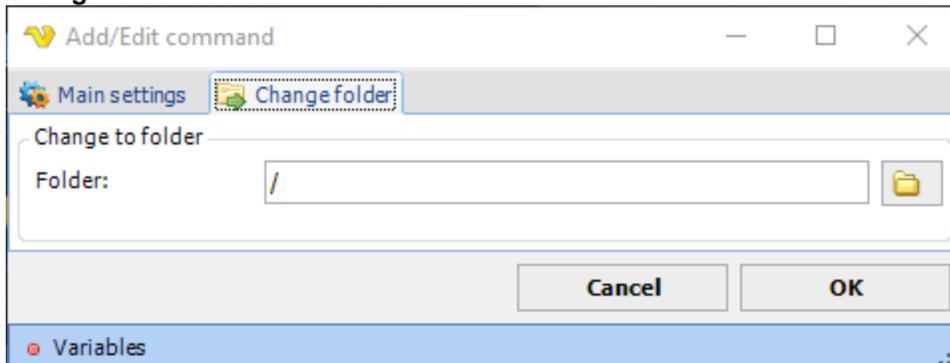


Folder name

Specify the folder name to be created. If the server supports it you can specify a relative path; /folder/subfolder. If not, you first have to use the change folder command (if you are not already in that folder).

The Change folder command changes to another folder location on the remote server.

Change folder sub tab



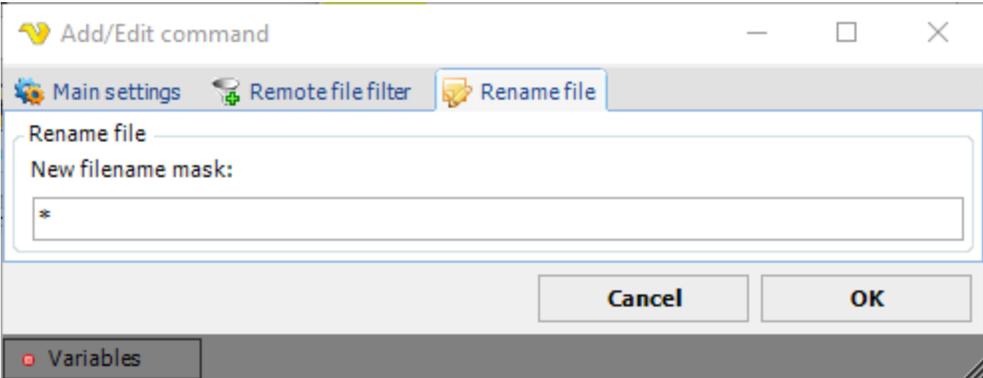
Folder name

Specify the folder name to change to. If the server supports it you can specify a relative path; /folder/subfolder. If not, you first have to use the change folder several times to get to your folder.

The Rename file command renames one or more files on the remote server.

For rename files, VisualCron uses the remote file filter to specify files that should be renamed.

Rename file sub tab

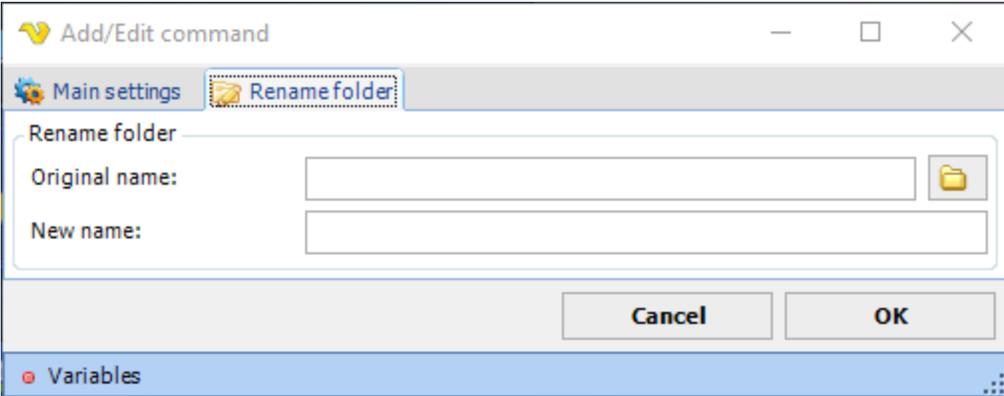


New name

The new relative file name.

The Rename folder command renames a folder on the remote server.

Rename folder sub tab



Original name

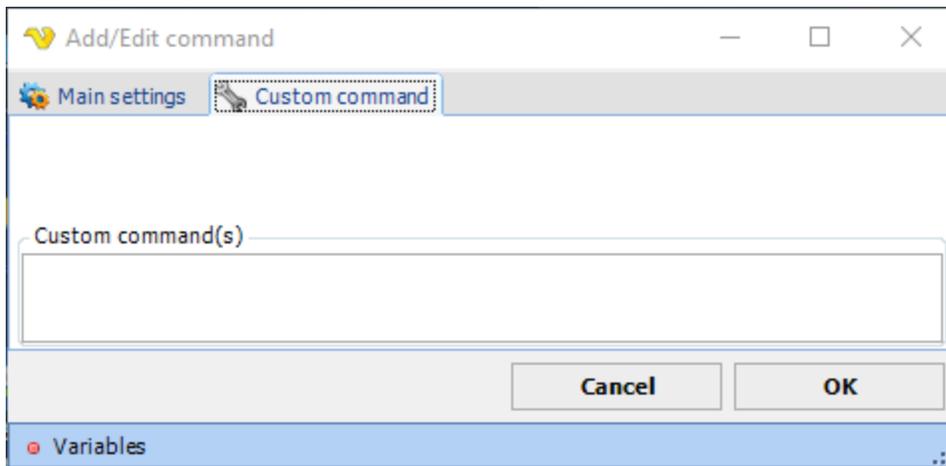
The original relative folder name.

New name

The new relative folder name.

Custom commands can be sent. This can be useful if you need to send a command which is not implemented in VisualCron. However, not all commands are supported by all FTP servers. In order to determine which commands are supported, you can the send the "HELP" command (and turn on output logging from the connection).

Custom command sub tab

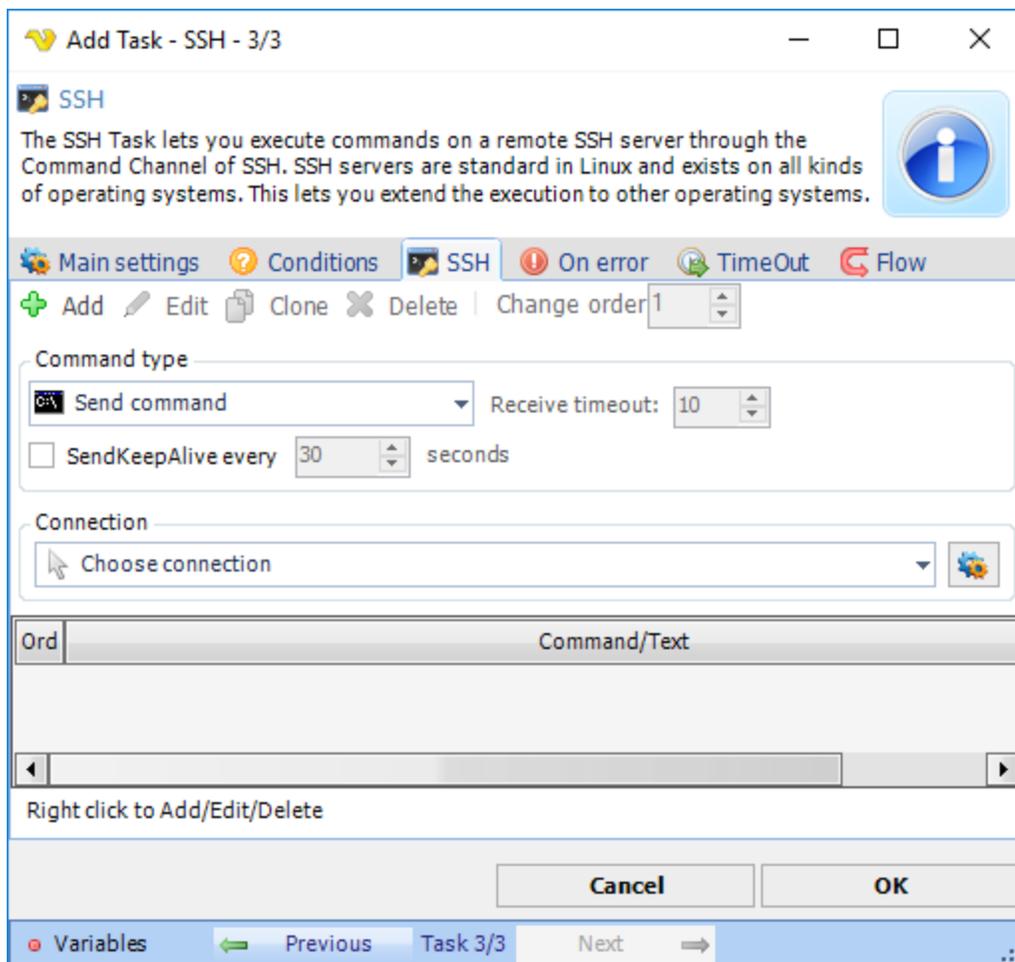


Enter the commands separated by new lines in the text box.

The SSH Task lets you execute commands on a remote SSH server through the Command Channel of SSH. SSH servers are standard in Linux and exists on all kinds of operating systems. This lets you extend the execution to other operating systems.

In computing, Secure Shell or SSH is a set of standards and an associated network protocol that allows establishing a secure channel between a local and a remote computer. It uses public-key cryptography to authenticate the remote computer and (optionally) to allow the remote computer to authenticate the user. SSH provides confidentiality and integrity of data exchanged between the two computers using encryption and message authentication codes (MACs). SSH is typically used to log into a remote machine and execute commands.

VisualCron can, with the SSH Task, connect to a remote computer and execute commands securely via SSH. All output is captured and returned to the output of the Task.



Command type

You can execute one or more commands after each other. When one command is done, the next command in order is executed. The output of each command is added to the output of the Task. If you need to separate the output from the different commands, then add a new Task for each command.

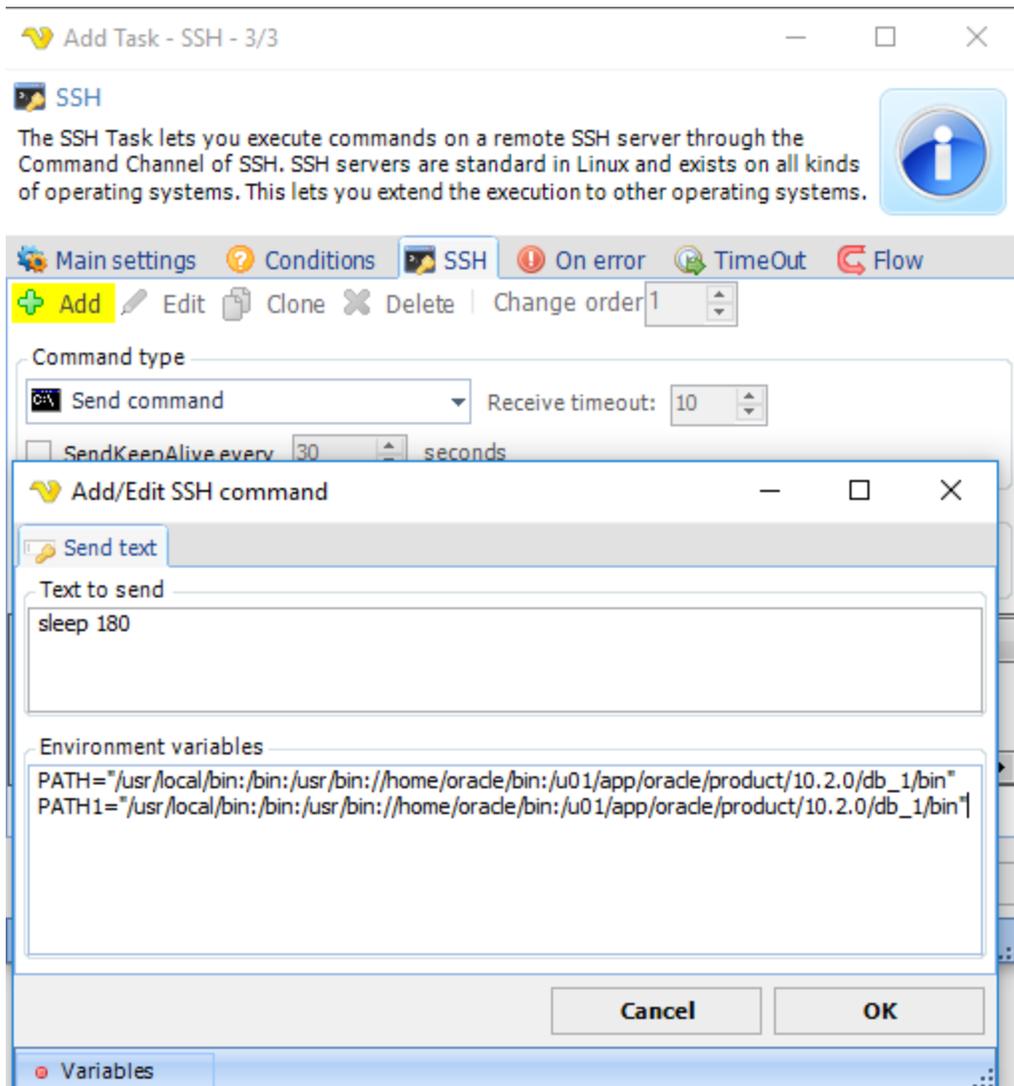
Send command: This is a high-level method that connects to server, executes command and gets the entire response. Use this method to execute a simple command which does not require client-server interaction.

Send text: Use SendText to send a string data through the logical connection.

Connection

Before entering any command you must create a Connection. Click on *Manage Connections* to add a new Connection. Select SSH connection and alter connection settings. There are some specific settings for the SSH connection like if there is support for SSH1 or SSH2.

To add a new Command click on Add. Enter the Command in the text field and click on OK to save it.



If you are using Command type *Send command*, the environment variables are not picked up automatically but you can specify them in the text field.

The ping Task is used to test whether a particular host is reachable across an IP network. It works by sending ICMP “echo request” packets to the target host and listening for ICMP “echo response” replies. ping estimates the round-trip time in milliseconds.

Add Task - Ping - 3/3

Ping

The ping Task is used to test whether a particular host is reachable across an IP network. It works by sending ICMP 'echo request' packets to the target host and listening for ICMP 'echo response' replies. ping estimates the round-trip time in milliseconds.

Main settings Conditions Ping On error TimeOut Flow

Ping any machine

Hostname:

Timeout in milliseconds:

2000

TTL:

32

Cancel OK

Variables Previous Task 3/3 Next

Hostname

The IP address or host name of the server you want to PING.

Timeout in milliseconds

Timeout before the reply is considered too long. Produces error if longer than timeout.

TTL

Time to live (sometimes abbreviated TTL) is a limit on the period of time or number of iterations or transmissions in computer and computer network technology that a unit of data (e.g. a packet) can experience before it should be discarded. Use a value between 1 and 255.

The Net - Check port Task lets you check if a certain port on a host is up.

Add Task - Check port - 2/2

Check port
The Net - Check port Task lets you check if a certain port on a host is up.

Main settings **Conditions** **Check port** **On error** **TimeOut** **Flow**

Ping any machine

Hostname:

Port: 16444

Protocol: TCP

Timeout in milliseconds: 5000

Cancel OK

Variables Previous Task 2/2 Next

Hostname

The IP address or host name of the server you want to check port for.

Port

Port number to be used.

Protocol

Type of protocol to be used.

Timeout in milliseconds

Timeout before the reply is considered too long. Produces error if longer than timeout.

The Serial send Task lets you communicate with a wide range of devices that uses COM port interface.

Add Task - Serial - Send - 3/3

Serial - Send

The Serial send Task lets you communicate with a wide range of devices that uses COM port interface.

Main settings ? **Conditions** **Serial - Send** ! **On error** ⌚ **TimeOut** ↻ **Flow**

Connection

Serial port: [Dropdown]

Baud rate: 9600 [Dropdown]

Parity: None [Dropdown]

Handshake: None [Dropdown]

Stop bits: One [Dropdown]

Data bits: 8 [Spinner]

Send text

String to write: [Text Box]

New line: None [Dropdown]

Cancel OK

Variables ← Previous Task 3/3 Next →

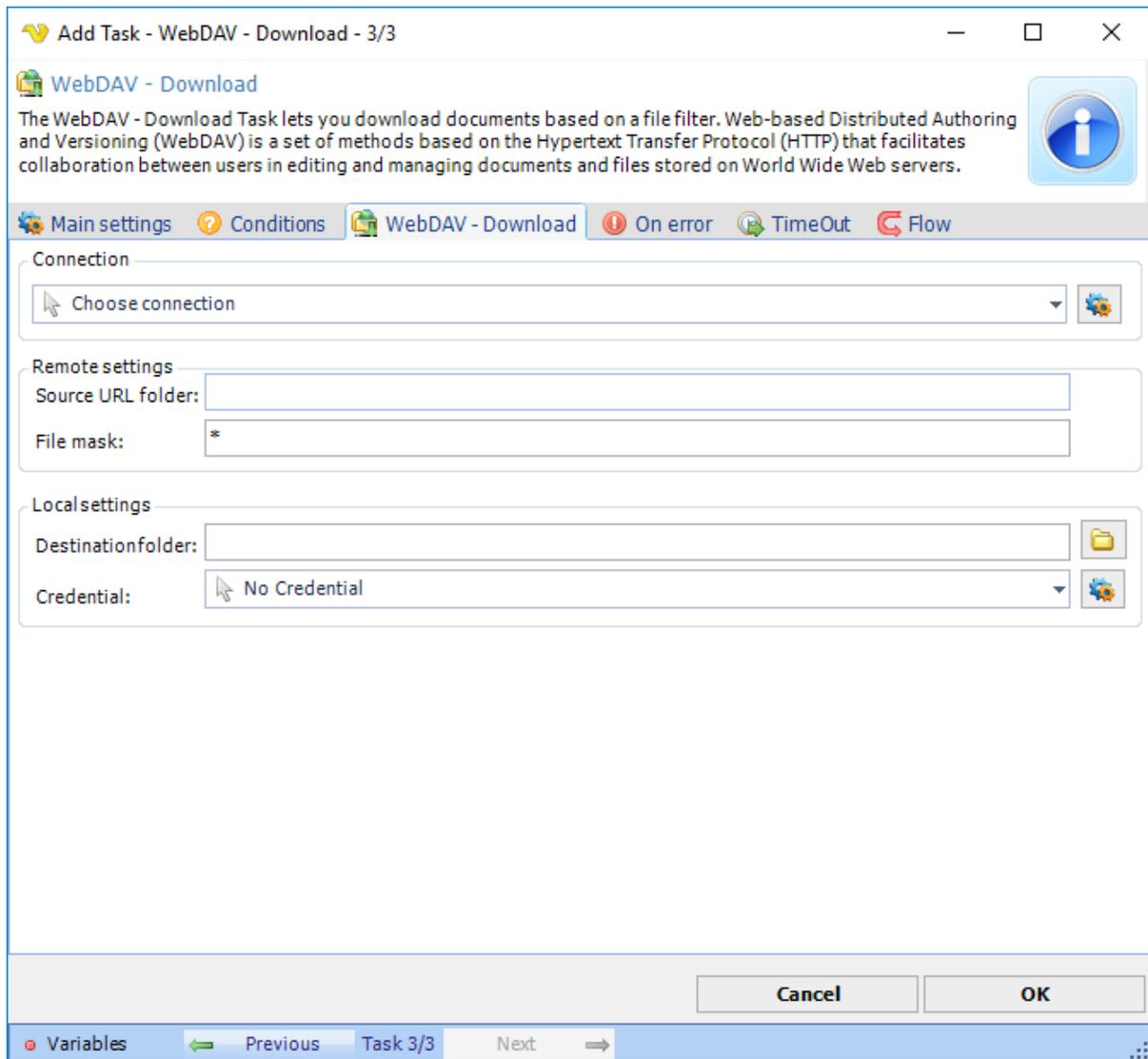
Connection

Serial connection parameters of the device to connect to.

Send text

Text to send to the device by connection.

The WebDAV - Download Task lets you download documents based on a file filter. Web-based Distributed Authoring and Versioning (WebDAV) is a set of methods based on the Hypertext Transfer Protocol (HTTP) that facilitates collaboration between users in editing and managing documents and files stored on World Wide Web servers.



Connection

All WebDAV Task uses connection settings from a Connection. In Connections you can create a new WebDAV connection with all other details like Proxy. In the combo box you select the Connection after creation.

Source URL folder

This is the URL where the remote file(s) reside.

File mask

This field is able to use either the exact name of a file you want to copy/move or a combination with wild cards to find one or more files.

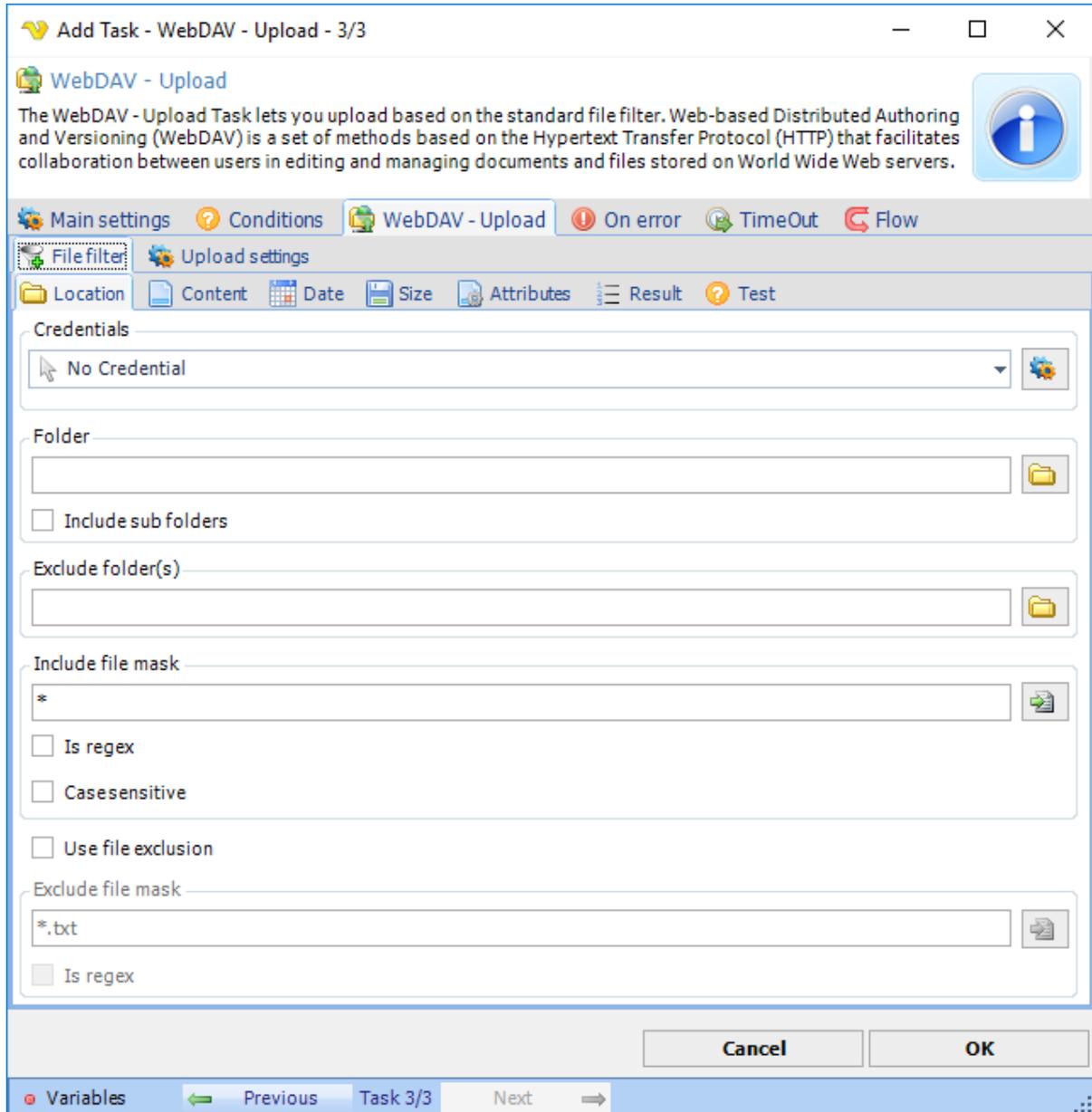
Destination folder

This is the local folder where the file(s) should be downloaded to.

Credential

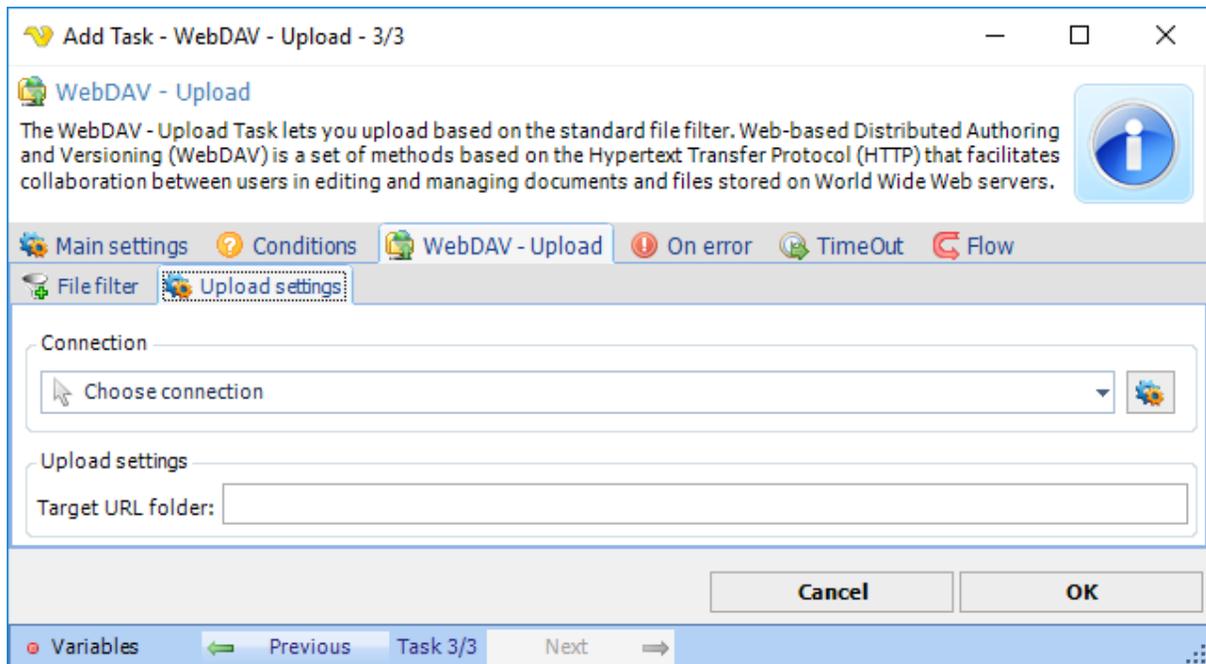
Select a Credential if you want to download to a network drive.

The WebDAV - Download Task lets you upload documents based on a file filter. Web-based Distributed Authoring and Versioning (WebDAV) is a set of methods based on the Hypertext Transfer Protocol (HTTP) that facilitates collaboration between users in editing and managing documents and files stored on World Wide Web servers.



The WebDAV - Upload Task lets you upload based on the standard file filter.

WebDAV Upload > Upload settings tab



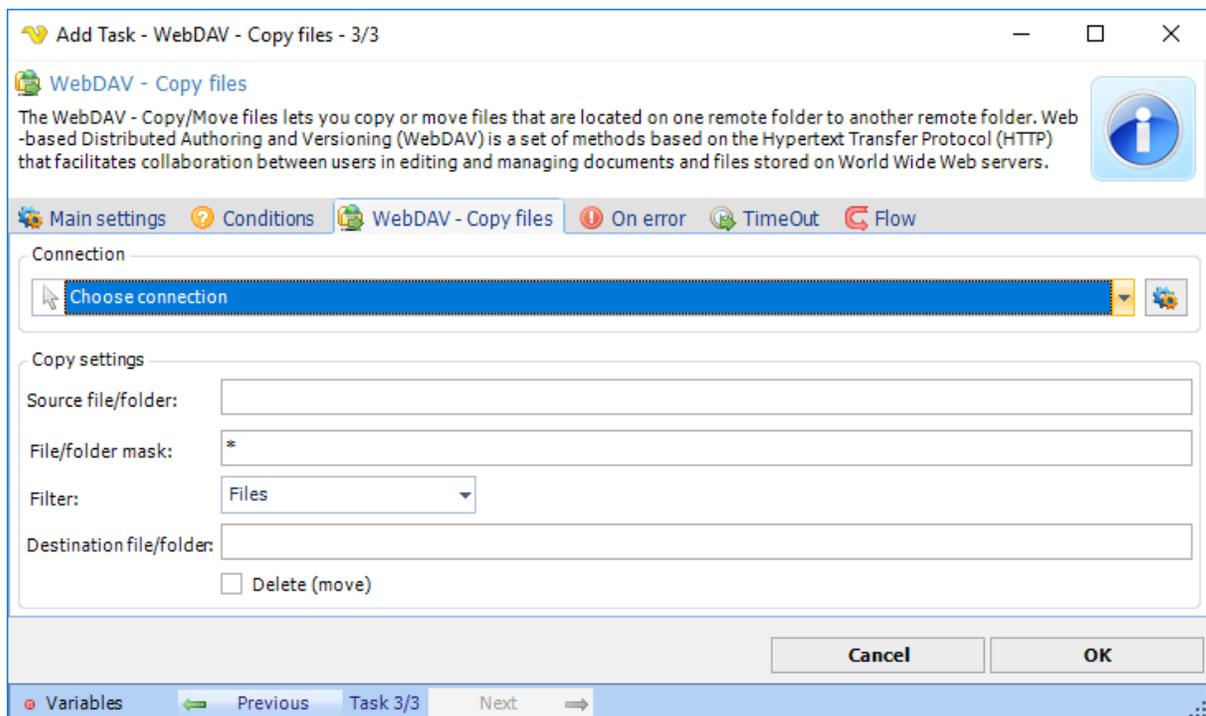
Connection

All WebDAV Task uses connection settings from a Connection. In Connections you can create a new WebDAV connection with all other details like Proxy. In the combo box you select the Connection after creation.

Target URL Folder

This is the remote folder you want to upload to.

The WebDAV - Copy/Move files lets you copy or move files that are located on one remote folder to another remote folder. Web-based Distributed Authoring and Versioning (WebDAV) is a set of methods based on the Hypertext Transfer Protocol (HTTP) that facilitates collaboration between users in editing and managing documents and files stored on World Wide Web servers.



Connection

All WebDAV Task uses connection settings from a Connection. In Connections you can create a new WebDAV connection with all other details like Proxy. In the combo box you select the Connection after creation.

Source file/folder

The full url to a file or folder you want to copy or move.

File/folder mask

This field is able to use either the exact name of a file or folder you want to copy/move or a combination with wild cards to find one or more files.

Filter

The filter decides what to copy/move. If you specify "Files" it will only use the *File/Folder mask* to find files.

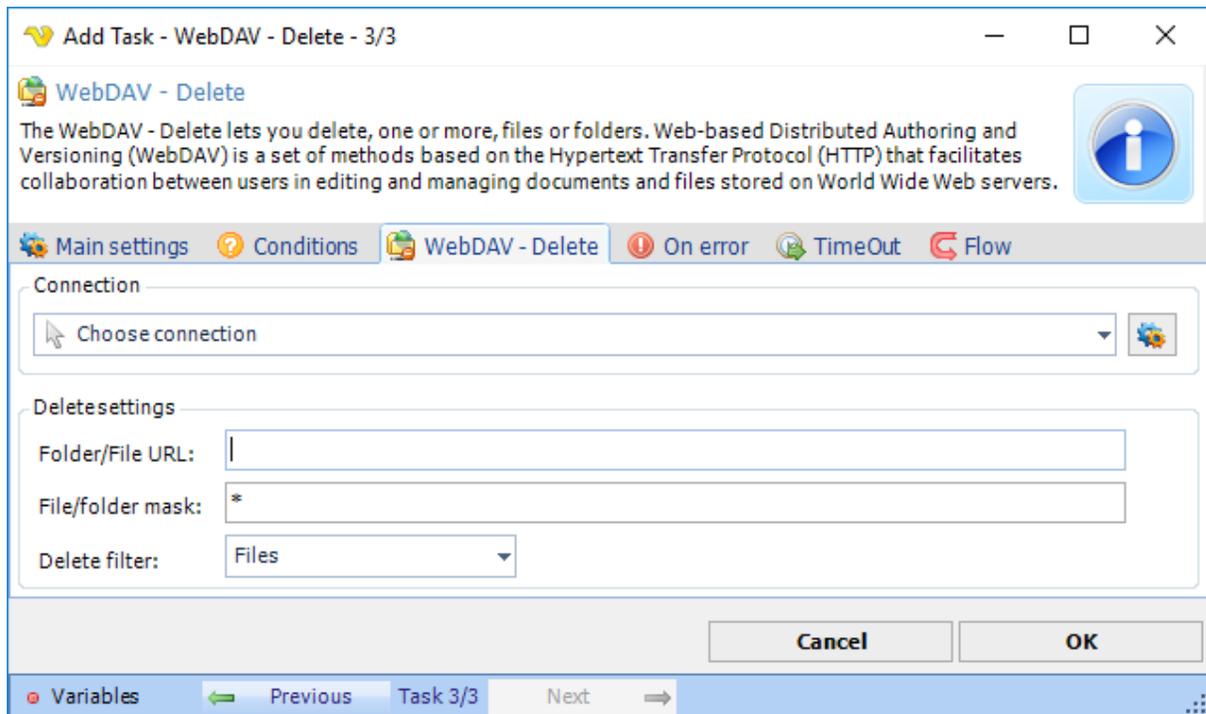
Destination file/folder

The full url to a file or folder you want to copy or move to.

Delete

If checked, a "Move" operation will be done - otherwise copy (keep original file).

The WebDAV - Delete lets you delete, one or more, files or folders. Web-based Distributed Authoring and Versioning (WebDAV) is a set of methods based on the Hypertext Transfer Protocol (HTTP) that facilitates collaboration between users in editing and managing documents and files stored on World Wide Web servers.



Connection

All WebDAV Task uses connection settings from a Connection. In Connections you can create a new WebDAV connection with all other details like Proxy. In the combo box you select the Connection after creation.

Folder URL

The full remote base folder URL.

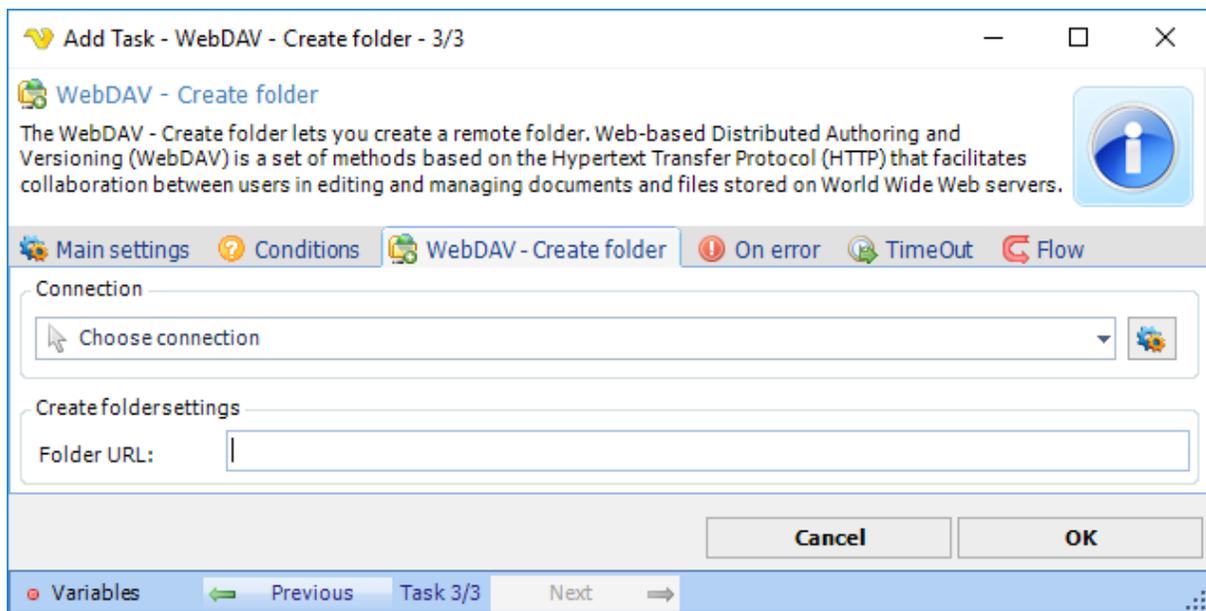
File/folder mask

This field is able to use either the exact name of a file or folder you want to delete or a combination with wild cards to find one or more files.

Delete filter

If the *file/folder mask* should look for Files or Folders when deleting.

The WebDAV - Create folder lets you create a remote folder. Web-based Distributed Authoring and Versioning (WebDAV) is a set of methods based on the Hypertext Transfer Protocol (HTTP) that facilitates collaboration between users in editing and managing documents and files stored on World Wide Web servers.



Connection

All WebDAV Task uses connection settings from a Connection. In Connections you can create a new WebDAV connection with all other details like Proxy. In the combo box you select the Connection after creation.

Folder URL

The full URL to the folder you want to create.

The Messaging Email Task lets you send text and/or HTML emails that can be encrypted/signed through SMIME or PGP to one or more recipients. You may add attachments to the email. You can set priority and get notifications if file has been read or received.

Connection

You have to select a SMTP Connection. All connections are "global" and you can add new connections by clicking on *Manage connection*.

Subject

Subject of your message.

From name

The name that will appear as "from" in the email.

From email

The email address that will appear as "from" in the email.

Reply to email If you want another reply address than the *From email* you enter it here. Leave blank if you don't want to use it.

Priority

The priority of the email. Will be marked differently depending on what type of client the recipient has.

Security

You can choose to Sign and/or Encrypt the message in S/MIME or PGP/MIME format. Select appropriate method. When selected new tabs Sign/Encrypt will be enabled which needs further settings to complete the Task.

Message type

The message can be sent in text and/or html format. Check the boxes here and tabs will be enabled for editing.

Email -> Recipients sub tab

The screenshot shows a dialog box titled "Add Task - Email - 3/3". The main content area is titled "Email" and contains the text: "The Email Task lets you send text and/or HTML emails that can be encrypted/signed through SMIME or PGP." Below this is a tabbed interface with tabs for "Main settings", "Conditions", "Email", "On error", "TimeOut", and "Flow". The "Recipients" sub-tab is active, showing a "Recipient separator:" dropdown set to "Semicolon". There are three rows for "To..", "Cc..", and "Bcc..", each with a dropdown menu (set to "Manual", "Not used", and "Not used" respectively) and a text input field. A "Send separate emails" checkbox is checked. At the bottom are "Cancel" and "OK" buttons. The footer shows "Variables", "Previous", "Task 3/3", and "Next" navigation options.

Recipients separator

If you specify multiple addresses manually or in a file, VisualCron needs to know how you separated these. Select the appropriate separator here.

Specify manually

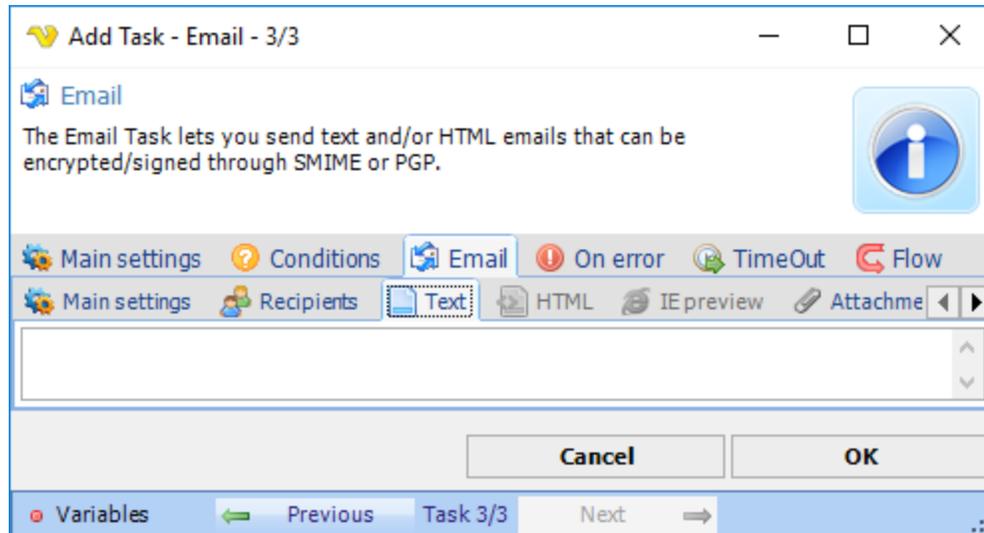
Here you can manually enter email addresses separated by the appropriate separator.

Load from file

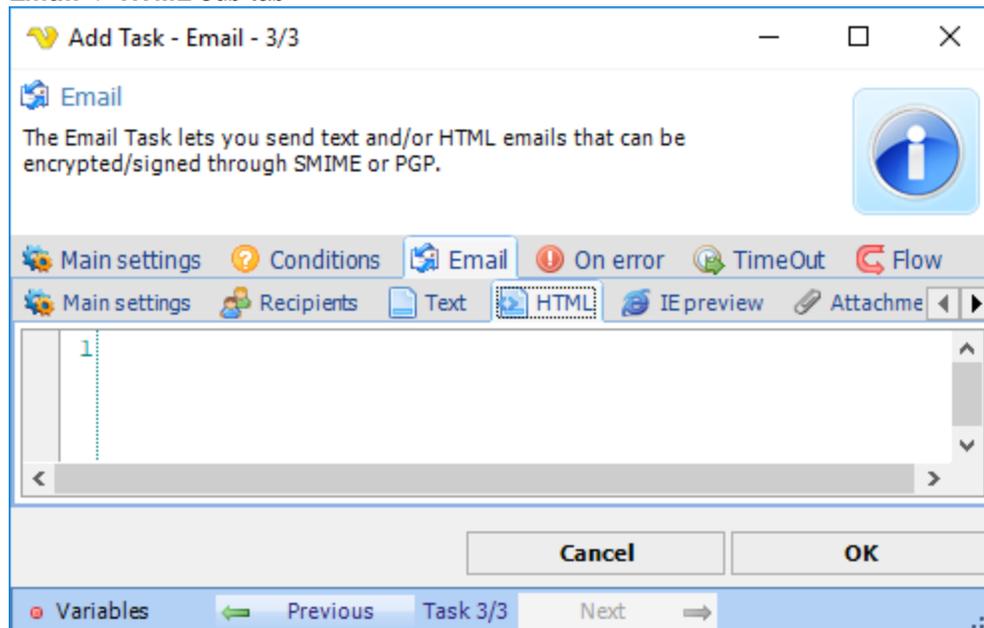
Specify a path to a file that contains a separated list of emails.

Send separate emails

By default, for privacy, VisualCron sends one email per recipient and does not show other recipients in the To-field. If you want to change this behavior you can uncheck this box.

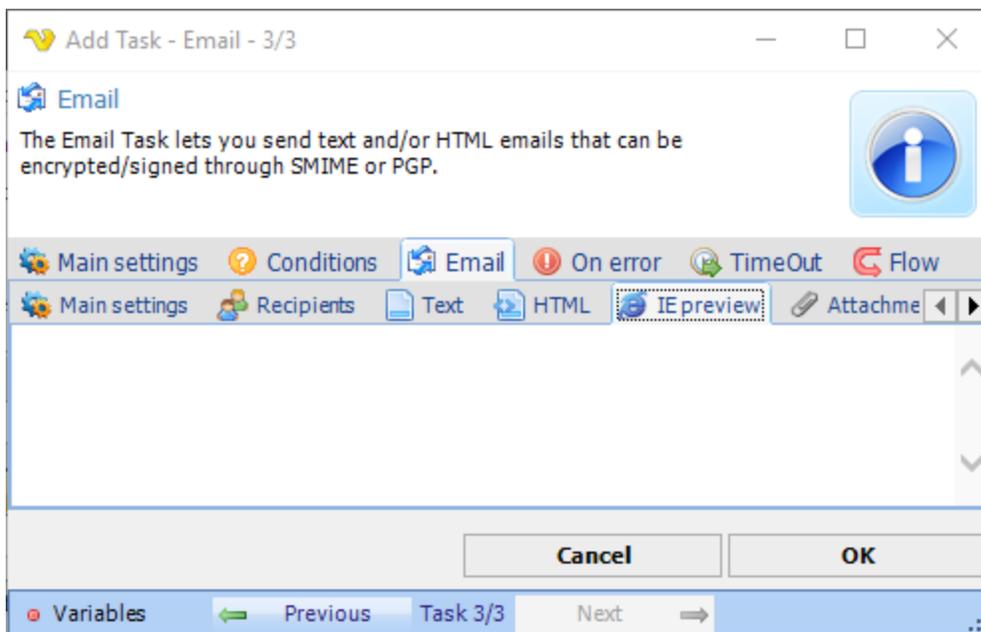
Email -> Text sub tab

Enter the text message here. Will only be enabled if you have selected *Text* as message type.

Email -> HTML sub tab

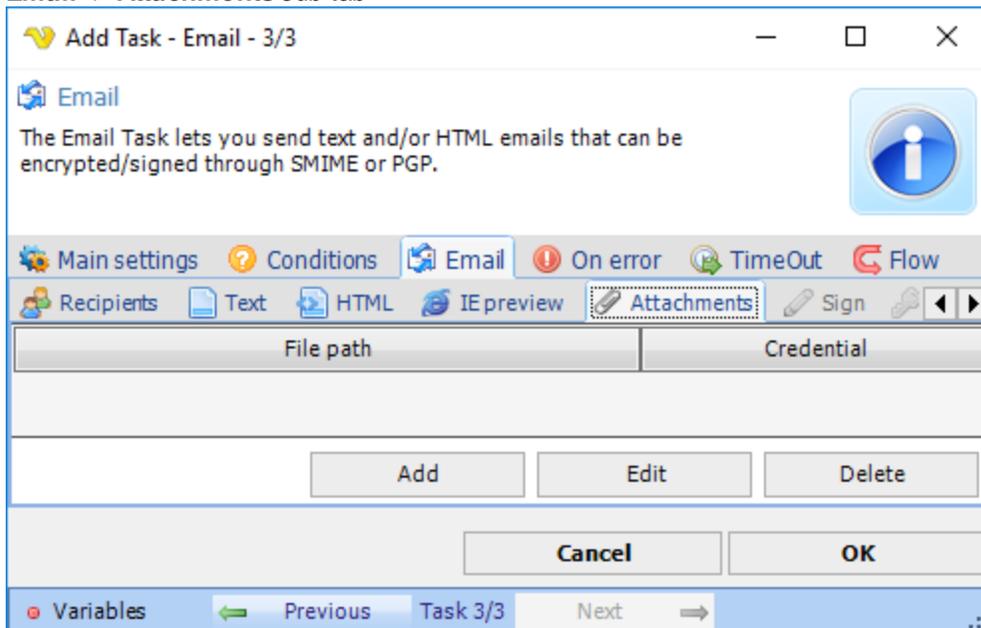
Enter the HTML message here. Will only be enabled if you have selected *HTML* as message type.

Email -> IE Preview sub tab



In the IE Preview tab you can see how your HTML text would look in the Internet Explorer web browser.

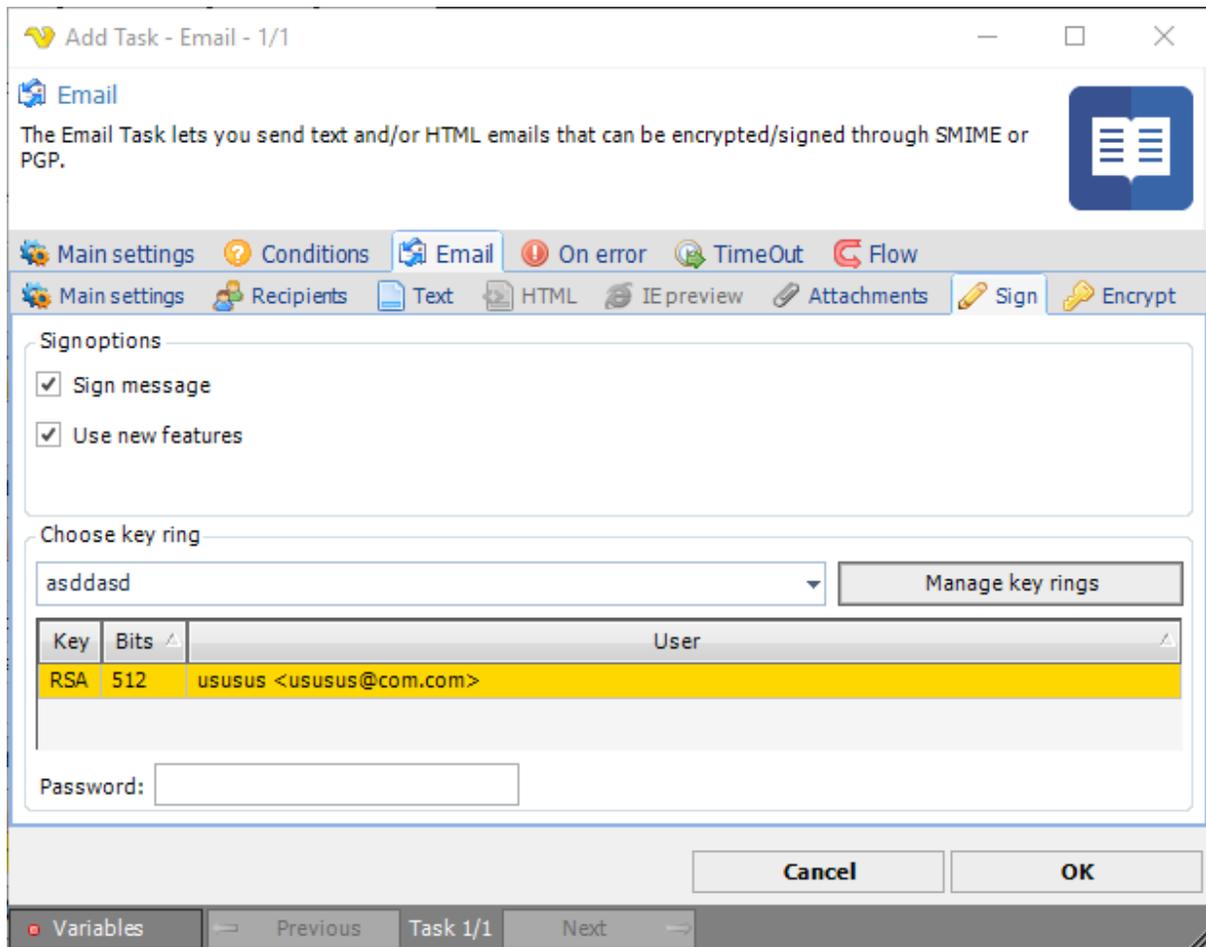
Email -> Attachments sub tab



You can send any kind of attachment with the Email Messaging Task. If the attachments are located on a restricted area/network drive you must use a Credential to access it. You select the Credential when editing the attachment. The attachment tab shows a list. Click on Add, Edit or Delete to alter which attachments to use.

If Add is selected, the standard file filter definitions are opened.

Email > Sign (PGP/MIME) sub tab



In order to be able to activate the Sign settings, the *Use PGP/MIME security features* must be selected in the Email > Main settings window.

Sign message

Click on Sign message to activate signing

Use new features

Use this property for compatibility with old versions of PGP-compatible software. If this property is set to True, then newer and stronger algorithms will be used. If the property is set to False, then the result will be compatible with PGP 2.6.x, while the keys are compatible (i.e. don't use features not supported by PGP 2.6.x).

Choose key ring

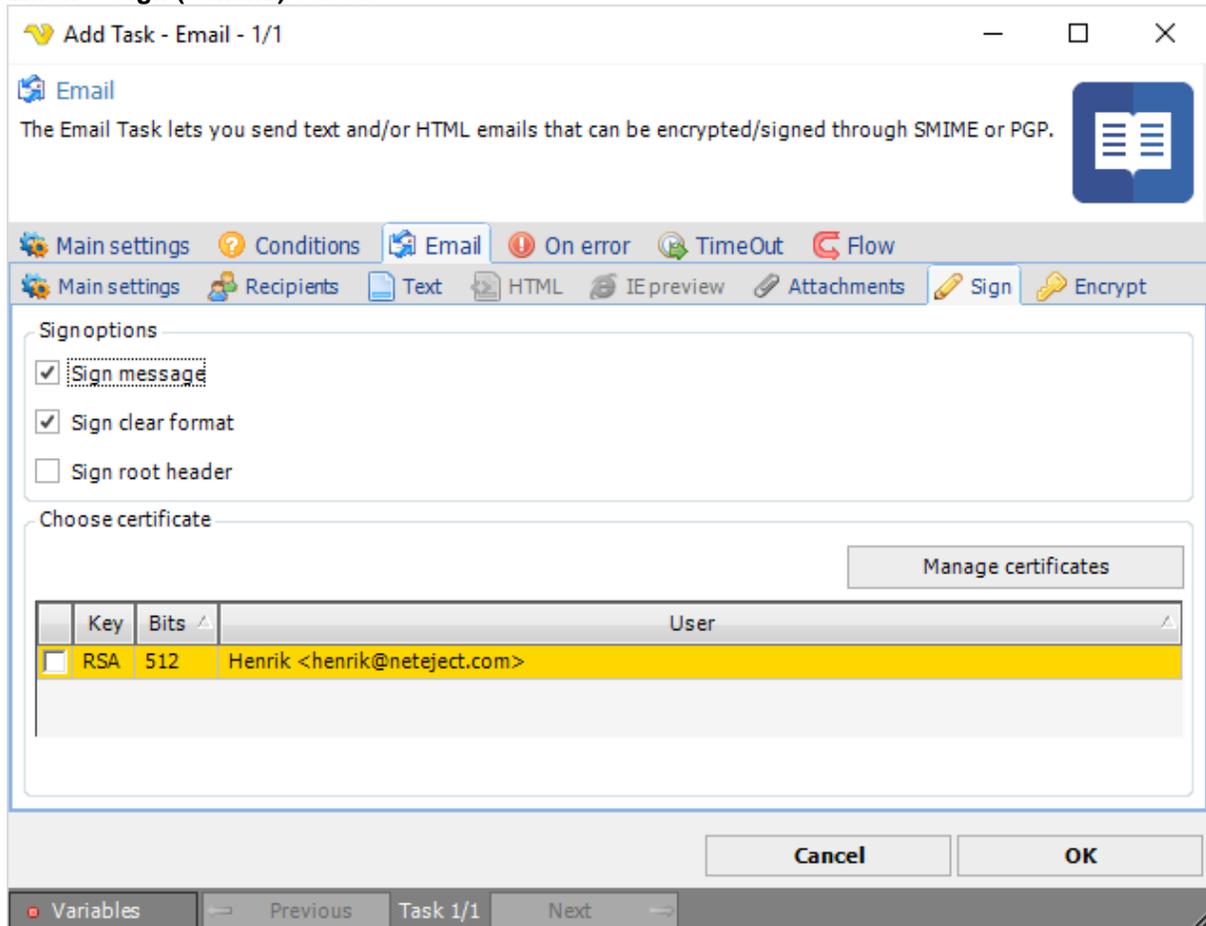
Select one of existing key rings to match for senders email. When selecting a key ring all existing keys will be listed in the grid.

Manage key rings

Click on this button to create/import new key rings.

Password

If your key requires a password you should enter it here.

Email > Sign (S/MIME) sub tab

In order to be able to activate the Sign settings, the *Use S/MIME security features* must be selected in the Email > Main settings window.

Sign message

Click on Sign message to activate signing

Sign clear format

There are two possible types of message signing. If the first type is used any user will be able to read the message. If program that can't process signatures is used there is no way to check signature but it is still possible to read the message. When this type is used content-type of the message is 'multipart/signed'.

When second type is used, such program will be only able to show attachment with no meaning. But the second type is more protected against damages during passing the mail servers. When this type is used, content-type of the message is 'application/pksc7-mime; smime-type=signed-data'. Default value is True which corresponds to the first type.

Sign root header

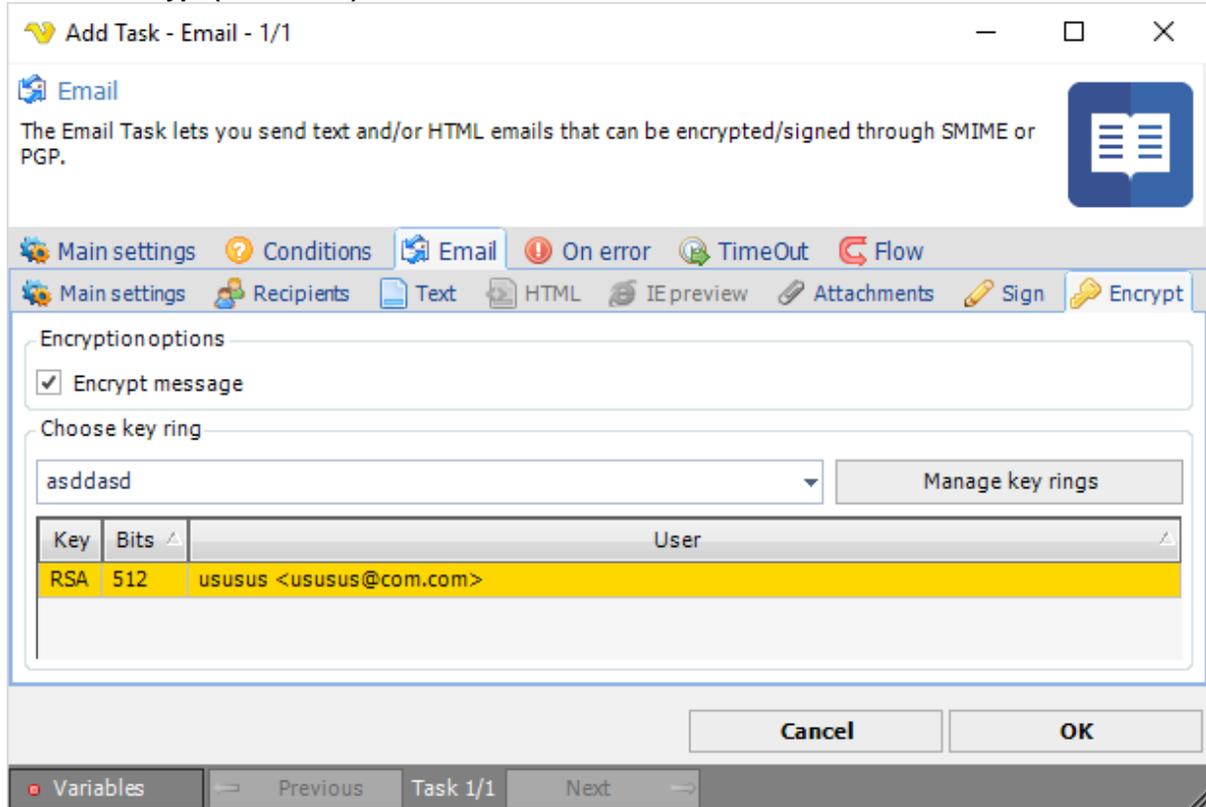
Use this property to specify whether to sign root header of the message.

Manage certificates

Click on this button to create/import new certificates.

Choose certificate grid

You must select one certificate that matches your from address in order to be able to sign.

Email > Encrypt (PGP/MIME) sub tab

In order to be able to activate the Encrypt settings, the *Use PGP/MIME security features* must be selected in the Email > Main settings window.

Encrypt message

Click on Encrypt message to activate encryption

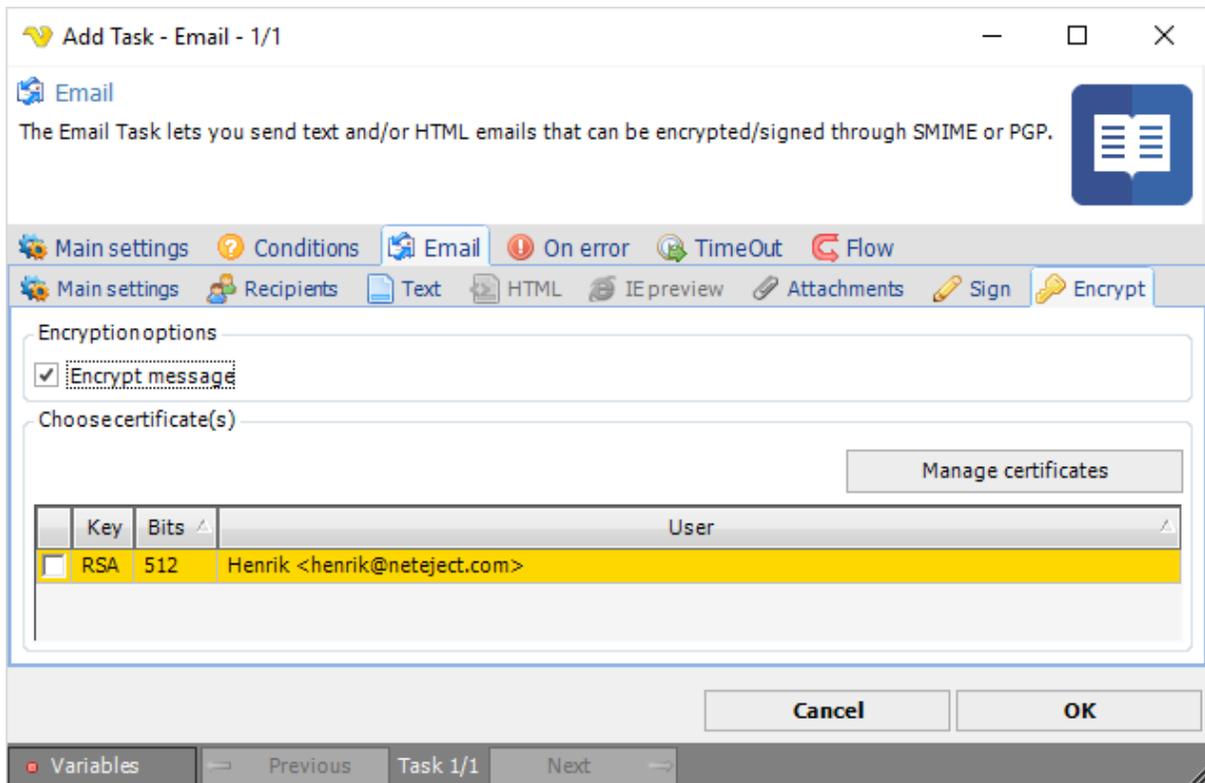
Choose key ring

Select one of existing key rings to match recipients email. When selecting a key ring all existing keys will be listed in the grid.

Manage key rings

Click on this button to create/import new key rings

Email > Encrypt (S/MIME) sub tab



In order to be able to activate the Encrypt settings, the *Use S/MIME security features* must be selected in the Email > Main settings window.

Encrypt message

Click on Encrypt message to activate encryption

Manage certificates

Click on this button to create/import new certificates.

Choose certificate grid

You must select a certificate that matches each recipient in order to encrypt.

The Messaging - XendApp Task send messages of multiple content types directly to your phone or other device. Combining the best features of SMS and email. See <http://xendapp.com> for more information.

XendApp is a platform for delivering instant messages to any device (phone/tablet). It is a free service which uses notification services to deliver a message. Registration can be done here. The XendApp Task uses the XendApp Connection.

Connection

The instant messaging sender is centrally stored in Connections. You need to create a Connection representing the user you want to send the message from.

Provider

Text ...

Channel

Text ...

Subject

Text ...

Content type

Text ...

Body

Text ...

Encrypt body

Text ...

The Messaging - Instant messaging Task lets you send a message by a number of instant messaging protocols including: MSN, Yahoo, Google Talk, ICQ, AIM and Jabber. The Task connects, send message and then disconnects. This Task uses the IM Connection.

Add Task - Instant messaging - 3/3

Instant messaging

The Task type Instant message lets you send a message to a number of instant messaging protocols including: MSN, Yahoo, Google Talk, ICQ, AIM and Jabber. The Task connects, send message and then disconnects.

Main settings Conditions Instant messaging On error TimeOut Flow

Connection

Choose connection Manage connections

Protocol:

MSN

Recipient:

Message:

Cancel OK

Variables Previous Task 3/3 Next

Connection

The instant messaging sender is centrally stored in Connections. You need to create a Connection representing the user you want to send the message from.

Protocol

If you want to use MSN, Yahoo, Google Talk, ICQ, AIM or Jabber.

Recipient

This is the user name or email of the user that should receive the message. Please note that some protocols want the username instead of email and vice versa.

When using GTalk the recipient is the full email. Note that the sender in Connection should only be username - not email.

Message

This is the message that should be sent. You can use Variables in this fields.

Notes about Instant messaging:

No output.

When using GTalk the user name is just the user. For example if the email is visualcron@gmail.com you should just use "visualcron".

The SysLog Task can be used for computer system management and security auditing as well as generalized informational, analysis and debugging message. It is supported by a wide variety of devices (like printers and routers) and receivers across multiple platforms. Because of this, SysLog can be used to integrate log data from many different types of systems into a central repository.

Host

Host name to connect to.

Message properties

Type of message to be sent.

Message

The Syslog message to be sent.

The Pushbullet - Send message Task allows you to send a message to any contact and/or your own device and/or channel.

Edit Task - Pushbullet - Send message - 1/6

Pushbullet - Send message
The Pushbullet - Send message Task send a message notification to your device.

Main settings Conditions **Pushbullet - Send message** On error TimeOut Flow

Message Recipient(s)

Connection
test

Title:
test

Body:
testbody

Cancel OK

Variables Previous Task 1/6 Next

Connection

Select an existing global Pushbullet Connection for storing connection credentials.

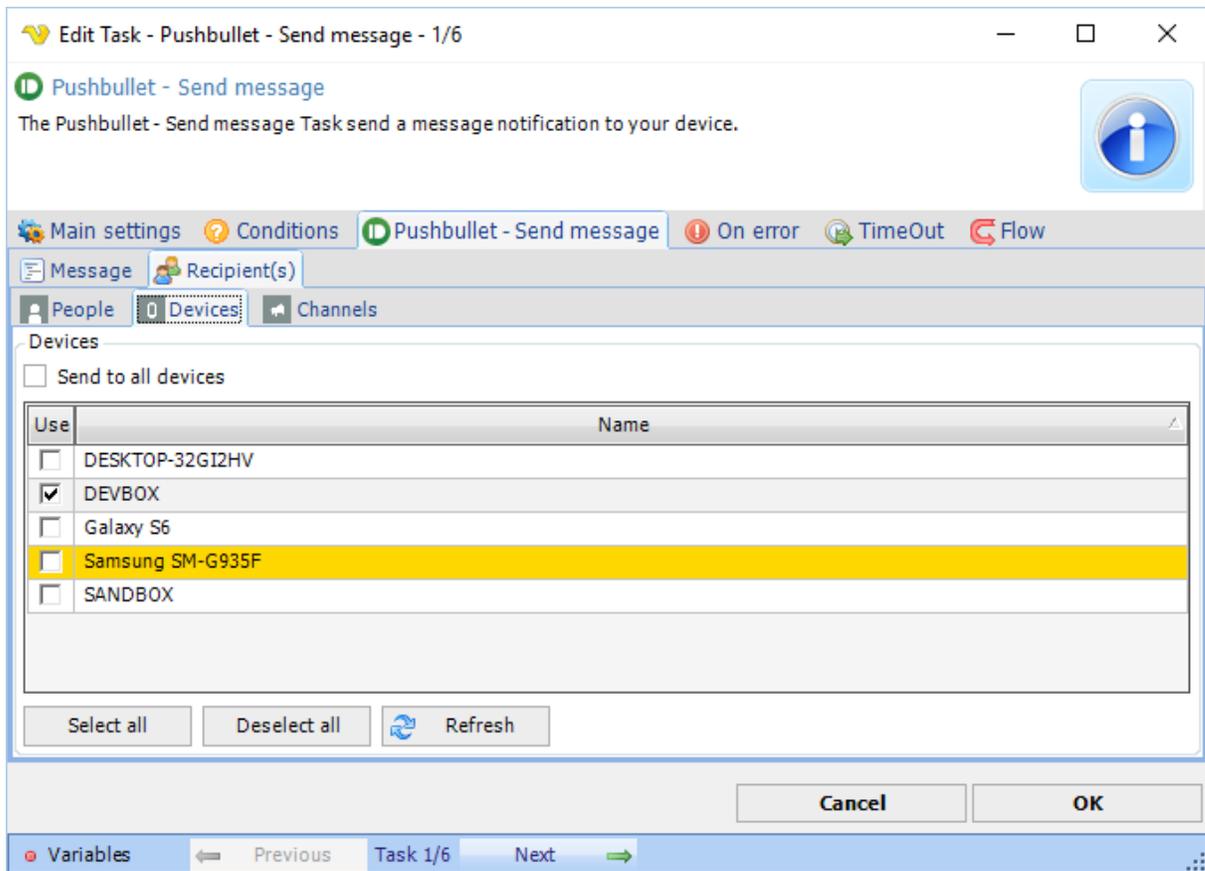
Title

The notification title.

Body

The message of the notification.

Pushbullet - Send Message > Recipients > Devices sub tab



With Pushbullet you can send to a Contact, Device or a Channel. If you have selected a Connection these will refresh and you will be able to select on or more recipients.

The Pushbullet - Send SMS Task lets you to send an SMS through your registered device to any phone number. A device could be a phone that you have linked to Pushbullet services.

Edit Task - Pushbullet - Send SMS - 3/6

Pushbullet - Send SMS
The Pushbullet - Send SMS Task lets you send an SMS through your registered device to any phone number.

Main settings Conditions **Pushbullet - Send SMS** On error TimeOut Flow

Send SMS Sending device(s)

Connection
test

Phone number:
123456789

Body:
test

Cancel OK

Variables Previous Task 3/6 Next

Connection

Select an existing global Pushbullet Connection for storing connection credentials.

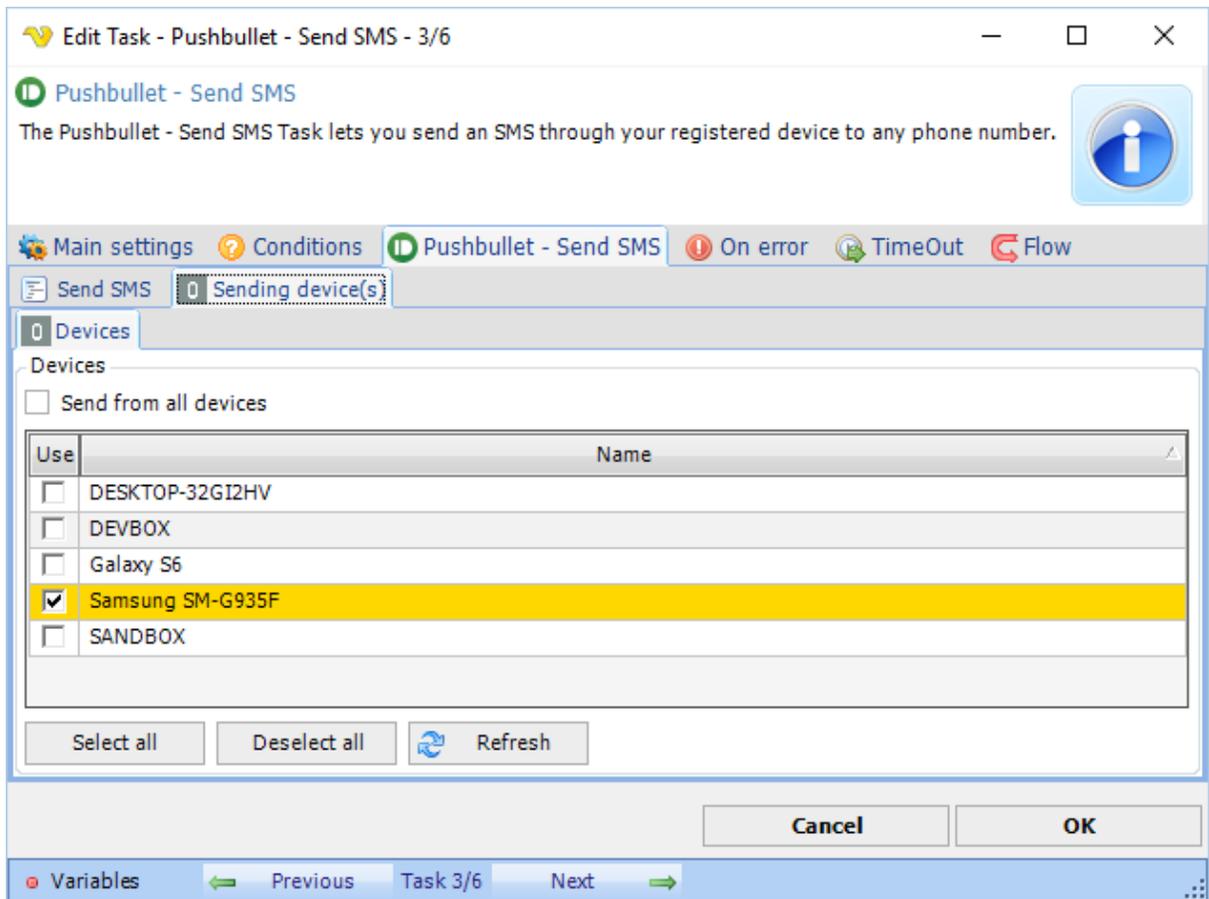
Phone number

The recipient phone number.

Body

The message of the SMS.

Pushbullet - Send SMS > Sending device(s) > Devices sub tab



Devices

Select a phone (among the devices) that will send the SMS.

The Pushbullet - Send message Task allows you to send a link to any contact and/or your own device and/or channel.

Edit Task - Pushbullet - Send link - 2/6

Pushbullet - Send link
The Pushbullet - Send link Task sends a link through a notification in your device

Main settings Conditions **Pushbullet - Send link** On error TimeOut Flow

Send link Recipient(s)

Connection
test

Title:
title

Link URL:
http://www.visualcron.com

Body:
Body

Cancel OK

Variables Previous Task 2/6 Next

Connection

Select an existing global Pushbullet Connection for storing connection credentials.

Title

The notification title.

Link

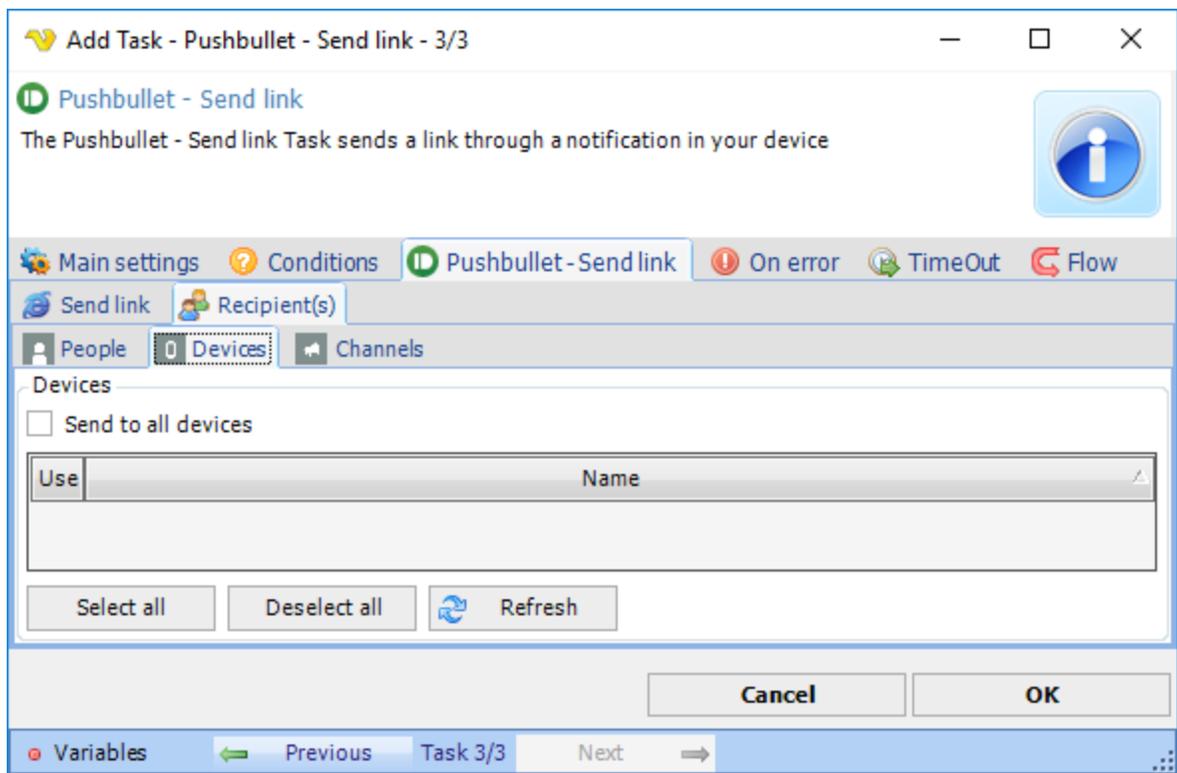
The URL that the user should get to when clicking on title.

Body

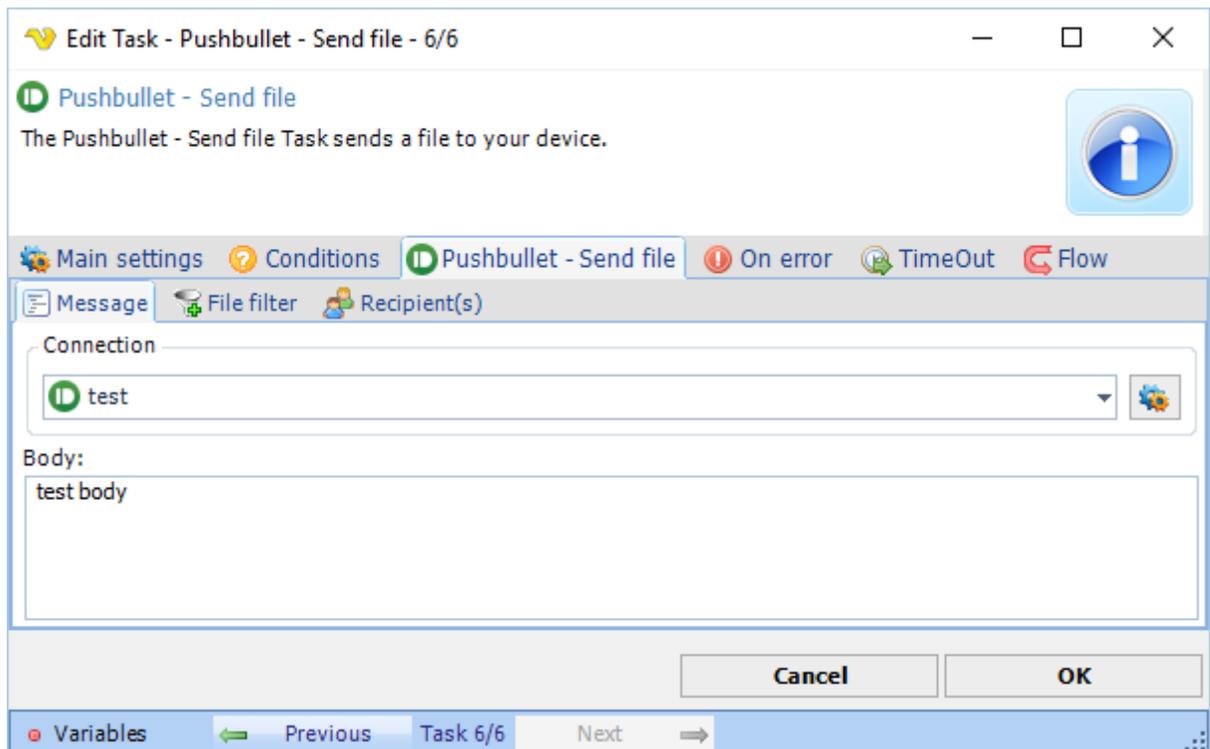
The message of the notification.

With Pushbullet you can send to a Contact, Device or a Channel. If you have selected a Connection these will refresh and you will be able to select on or more recipients.

Pushbullet - Send Link > Recipients > Devices sub tab



The Pushbullet - Send file Task allows you to send a file to any contact and/or your own device and/or channel.



Connection

Select an existing global Pushbullet Connection for storing connection credentials.

Body

The message associated with the file being sent.

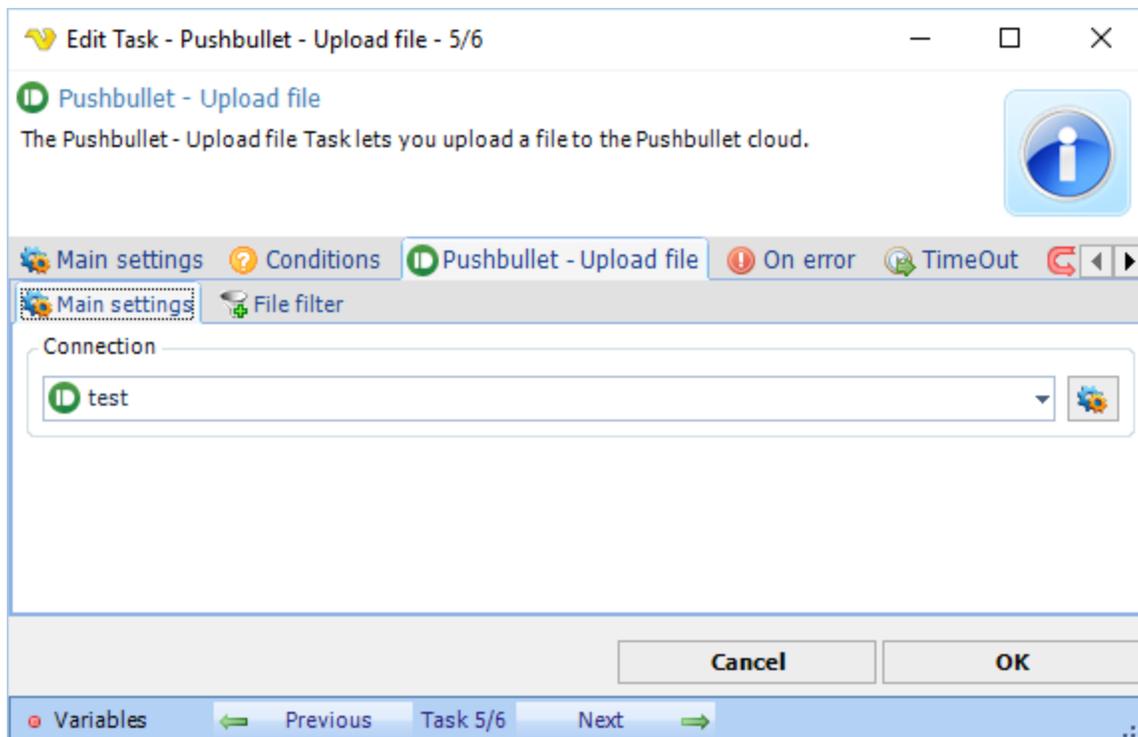
Pushbullet - Send file > File filter sub tab

Use the standard File filter to select one or more files to send.

Pushbullet - Send File > Recipients sub tabs

With Pushbullet you can send to a Contact or a Channel. If you have selected a Connection these will refresh and you will be able to select on or more recipients.

The Pushbullet - Upload file Task allows you to upload one or more files to the Pushbullet cloud repository. This Task will return the URL to the uploaded file.



Connection

Select an existing global Pushbullet Connection for storing connection credentials.

Pushbullet - Upload file > File filter sub tab

Use the standard File filter to select one or more files to upload.

Telegram Bot Send - Send message to subscribers of Telegram bot. Please read more about Telegram bots here.

Add Task - Telegram - Send Bot message - 2/2

Telegram - Send Bot message
Telegram Bot Send - Send message to subscribers of telegram bot

Main settings Conditions Telegram - Send Bot message On error TimeOut Flow

Message Recipient(s)

Send to ...

Token:

Message:

Cancel OK

Variables Previous Task 2/2 Next

Send to Token

Use the token from creating a new bot here.

Message

The message you want to send.

Telegram User Send - Send message to users from user.

Add Task - Telegram - User Send message - 2/2

Telegram - User Send message
Telegram User Send - Send message to users from user

Main settings Conditions Telegram - User Send message On error TimeOut Flow

Message

Send to ...

Connection:
Choose connection

Phone number:

Message:

Cancel OK

Variables Previous Task 2/2 Next

Send to Connection

Select an existing Telegram Connection.

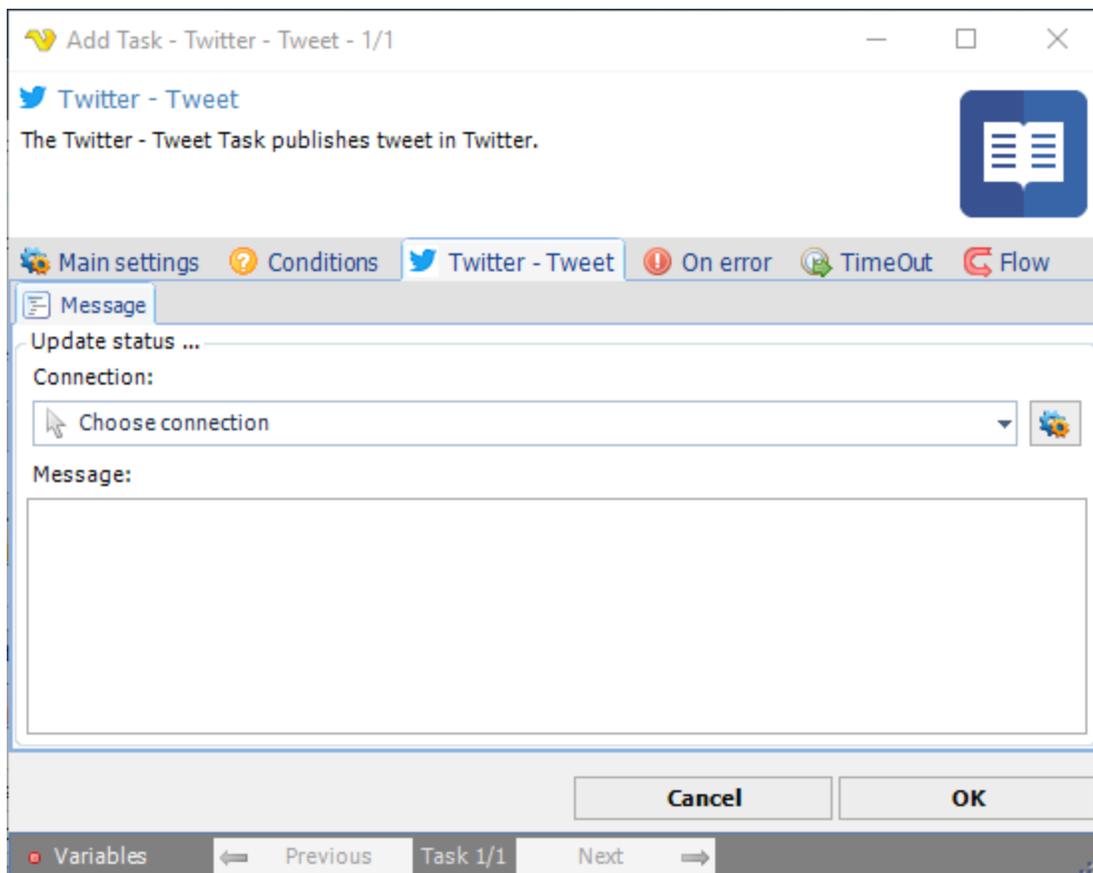
Send to Phone number

The phone number of the user you want to send to including country code like; +1888555222

Message

The message you want to send.

The Twitter - Tweet Task publishes tweet in Twitter.



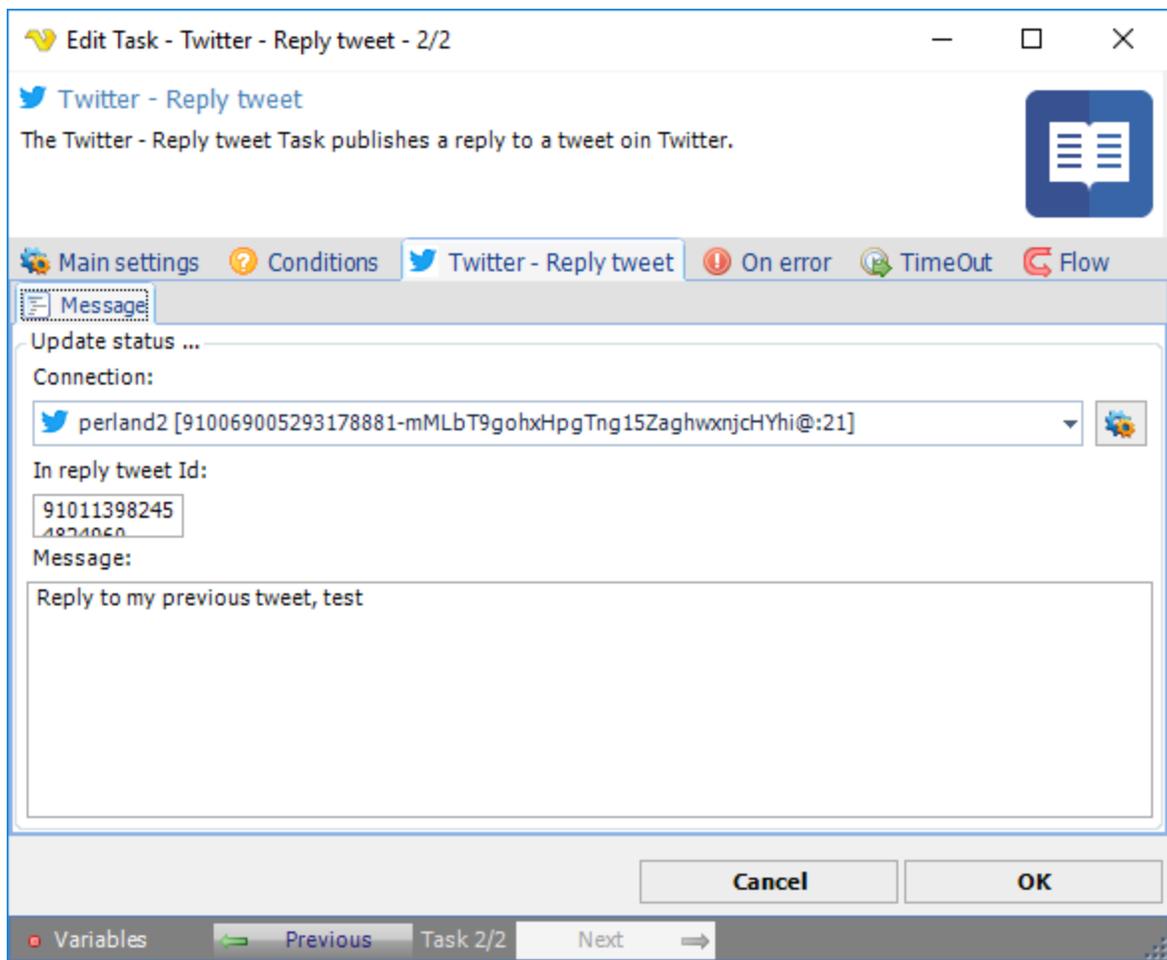
Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

Message

The tweet to be published.

The Twitter - Reply tweet Task publishes a reply to a tweet in Twitter.



Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

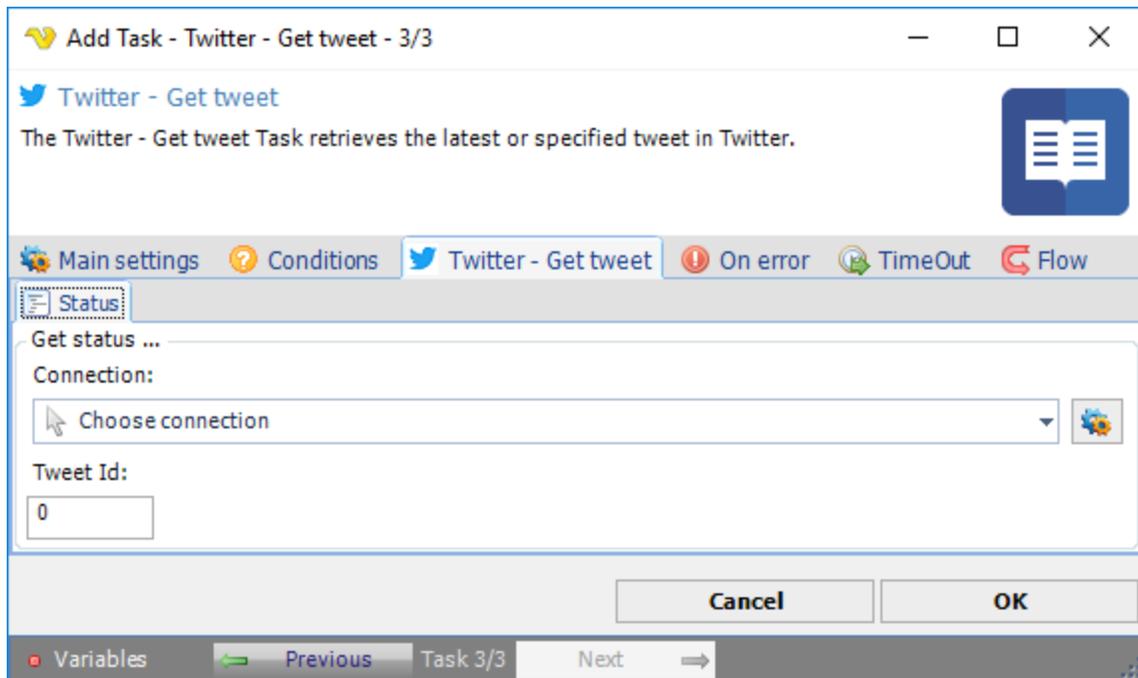
Id reply to tweet Id

The tweet id to post a reply to

Message

The reply message to be sent

The Twitter - Get tweet Task retrieves the latest or specified tweet in Twitter.



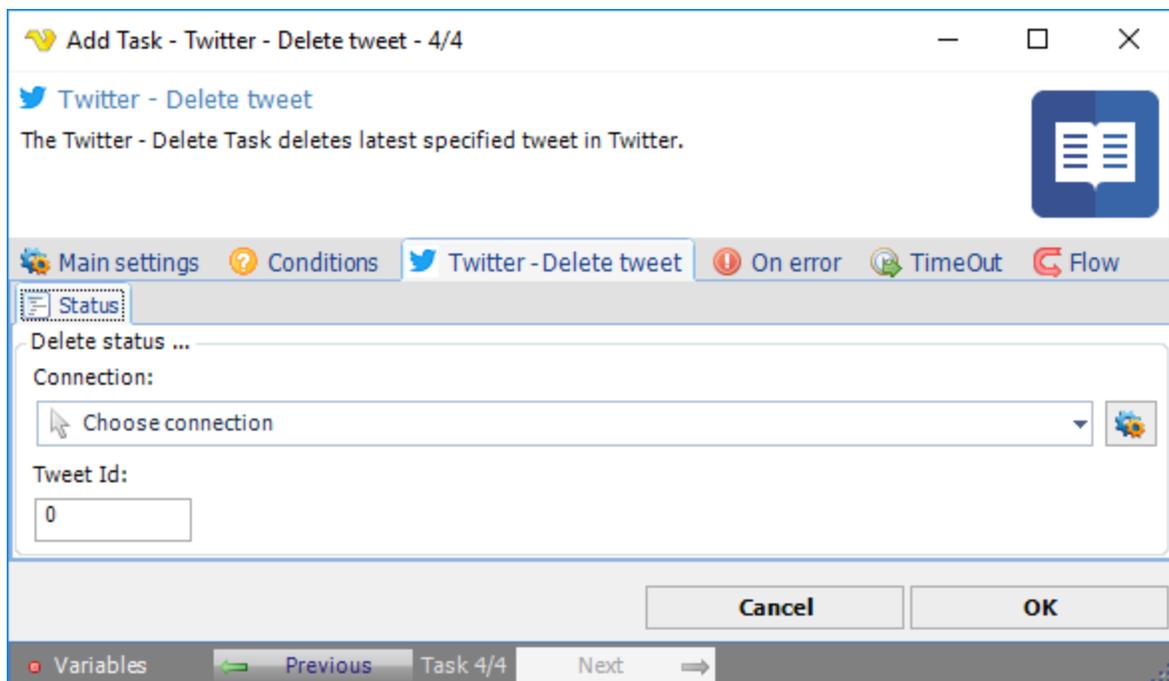
Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

Tweet Id

The tweet id to be retrieved where 0 specifies the latest tweet. The retrieved tweet is presented in output of the task.

The Social - Twitter delete tweet Task deletes latest or specified tweet in Twitter.



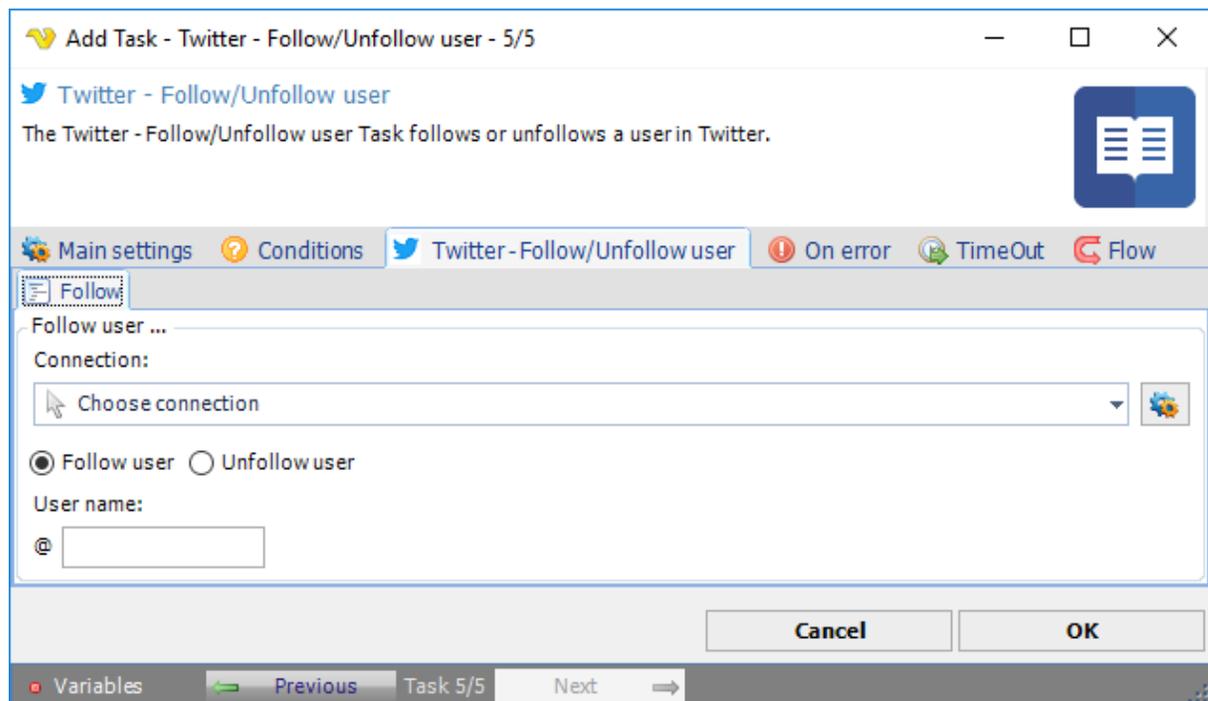
Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

Tweet Id

The tweet id to be retrieved where 0 specifies the latest tweet. The retrieved tweet is presented in output of the task.

The Social - Twitter Follow/Unfollow user Task follows or unfollows a user in Twitter.



Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

User name

Twitter user to follow or unfollow.

The Social - Twitter Send direct message Task sends a direct message to a user in Twitter.

Edit Task - Twitter - Send direct message - 6/16

Twitter - Send direct message

The Twitter - Send direct message Task sends a direct message to user in Twitter.

Main settings Conditions Twitter - Send direct message On error TimeOut Flow

Message

Send direct message to ...

Connection:

perland2 [910069005293178881-8XGihRsmKKBVsPahtwJtiao5wISxOar@:21]

User name:

@ VisualCron

Message:

Test av Social > Twitter send direct message Task

Cancel OK

Variables Previous Task 6/16 Next

Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

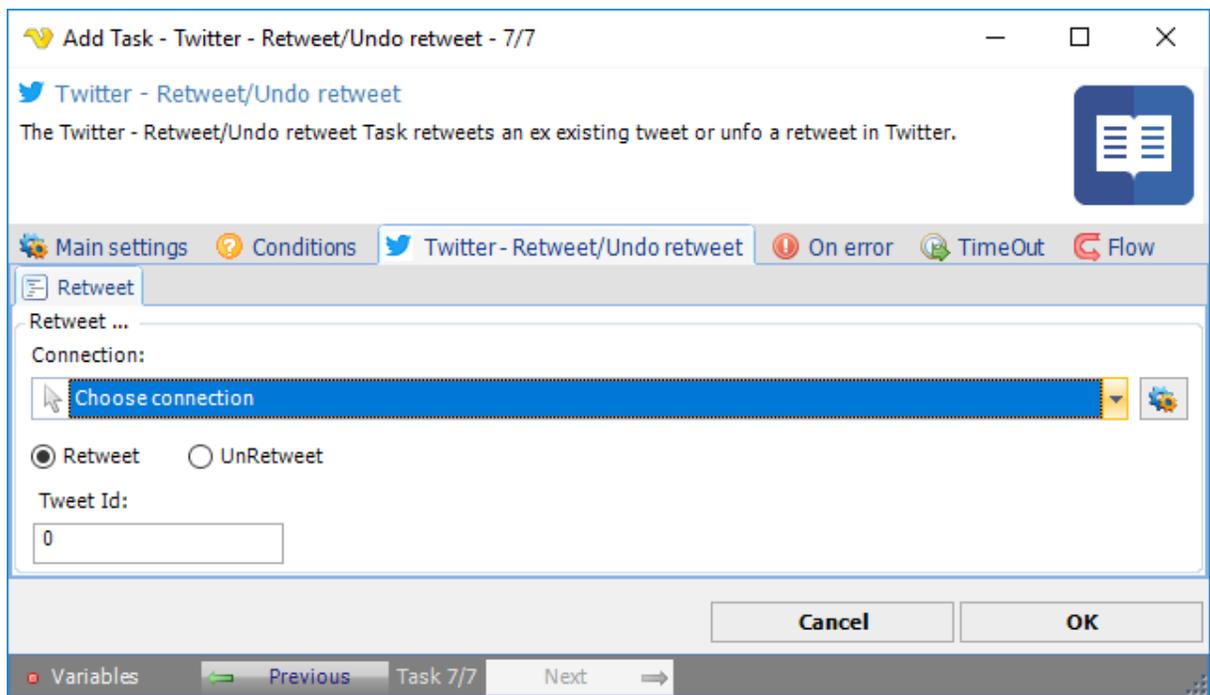
User name

Twitter user to send message to.

Note about Send direct message:

You cannot send a message to a user who are not following you.

The Twitter - Retweet/Undo retweet Task retweets an existing tweet or undo a retweet in Twitter.



Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

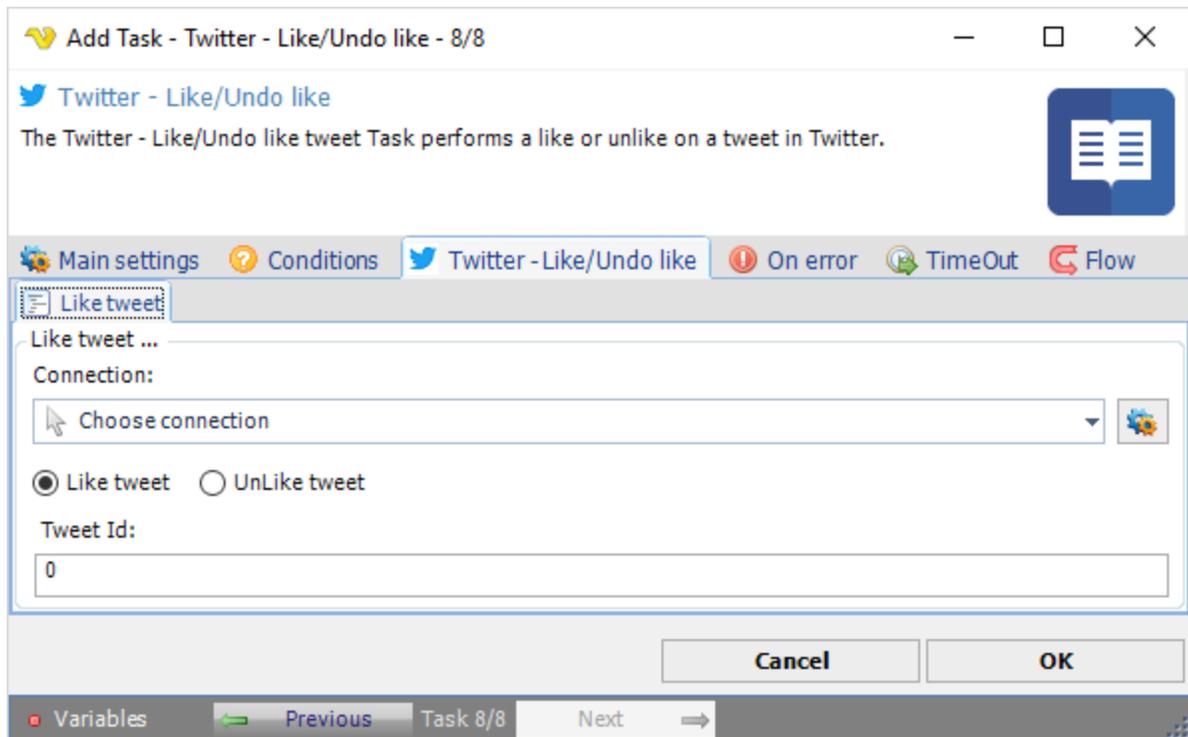
Undo retweet

Deletes a previous retweet by all Twitter account accounts following the used account.

Tweet Id

Number part in link to tweet.

The Twitter - Like/Undo like tweet Task performs a like or unlike on a tweet in Twitter.



Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

UnLike tweet

Removes a previous liked tweet.

Tweet Id

Number part in link to tweet.

The Twitter - Search tweets Task searches tweets in Twitter.

Add Task - Twitter - Search tweets - 9/9

Twitter - Search tweets
The Twitter - Search tweets Task searches tweets in Twitter.

Main settings Conditions **Twitter - Search tweets** On error TimeOut Flow

Search tweets

Search tweets ...

Connection:
Choose connection

Search query:

Search parameters (optional)

Locale: Since:

Max # of results: Until:

Geo Data Filter tweets not containing geo information Since ID:

Geo Latitude: Max ID:

Geo Longitude: Language:

Geo Radius: Search type:

Geo Radius measure: Search tweet type:

Filters:

Custom query parameters:

Name	Value
*	

Cancel OK

Variables Previous Task 9/9 Next

Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

Search query

A UTF-8, URL-encoded search query of 500 characters maximum, including operators. The only required search parameter.

Locale

Intended for language-specific consumers and the default should work in the majority of cases.

Max # of results

The number of tweets to return per page, up to a maximum of 100. Defaults to 15.

Geo data

Returns tweets by users located within a given radius of the given latitude/longitude.

Until

Returns tweets created before the given date. Date should be formatted as YYYY-MM-DD.

Since ID

Returns results with an ID greater than (that is, more recent than) the specified ID.

Max ID

Returns results with an ID less than (that is, older than) or equal to the specified ID.

Language

Returns tweets by language, given by an ISO 639-1 code.

Geo data

Returns tweets by users located within a given radius of the given latitude/longitude.

See Twitter Developer Documentation for detailed GET search/tweets information.

The Twitter - Get messages Task retrieves sent or received messages in Twitter.

Add Task - Twitter - Get messages - 10/10

Twitter - Get messages
The Twitter - Get messages Task retrieves sent or received messages in Twitter.

Main settings Conditions Twitter - Get messages On error TimeOut Flow

Get messages ...

Get messages ...

Connection:
Choose connection

Type:
 Sent Received

Optional parameters:

Maximum number of messages:

Since ID:

Max ID:

Skip Status
 Full text
 Include entities

Custom query parameters:

Name	Value
*	

Cancel OK

Variables Previous Task 10/10 Next

Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

Maximum number of messages

Specifies the number of direct messages to try and retrieve, up to a maximum of 200.

Since ID

Returns results with an ID greater than (that is, more recent than) the specified ID.

Max ID

Returns results with an ID less than (that is, older than) or equal to the specified ID.

Skip status

When checked, statuses will not be included in the returned user objects.

Include entities

The entities node will not be included when not checked.

See Twitter Developer Documentation for detailed GET messages information.

The Twitter - Get timeline Task retrieves own or specified user timeline in Twitter.

Add Task - Twitter - Get timeline - 11/11

Twitter - Get timeline

The Twitter - Get timeline Task retrieves own or specified user timeline in Twitter.

Main settings Conditions Twitter - Get timeline On error TimeOut Flow

Get timeline ...

Get timeline ...

Connection:

Choose connection

Type:

Home User

Optional parameters:

Max count of tweets to retrieve:

Since ID:

Max ID:

Include entities Trim User

Include contributor details Include RTS

Exclude replies

Custom query parameters:

Name	Value
*	

Cancel OK

Variables Previous Task 11/11 Next

Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

Home/User

Select own or specified user time-line.

Max count of tweets to retrieve

Specifies the number of Tweets to try and retrieve, up to a maximum of 200 per distinct request.

Since ID

Returns results with an ID greater than (that is, more recent than) the specified ID.

Max ID

Returns results with an ID less than (that is, older than) or equal to the specified ID.

Include entities

The entities node will not be included when not checked.

Exclude replies

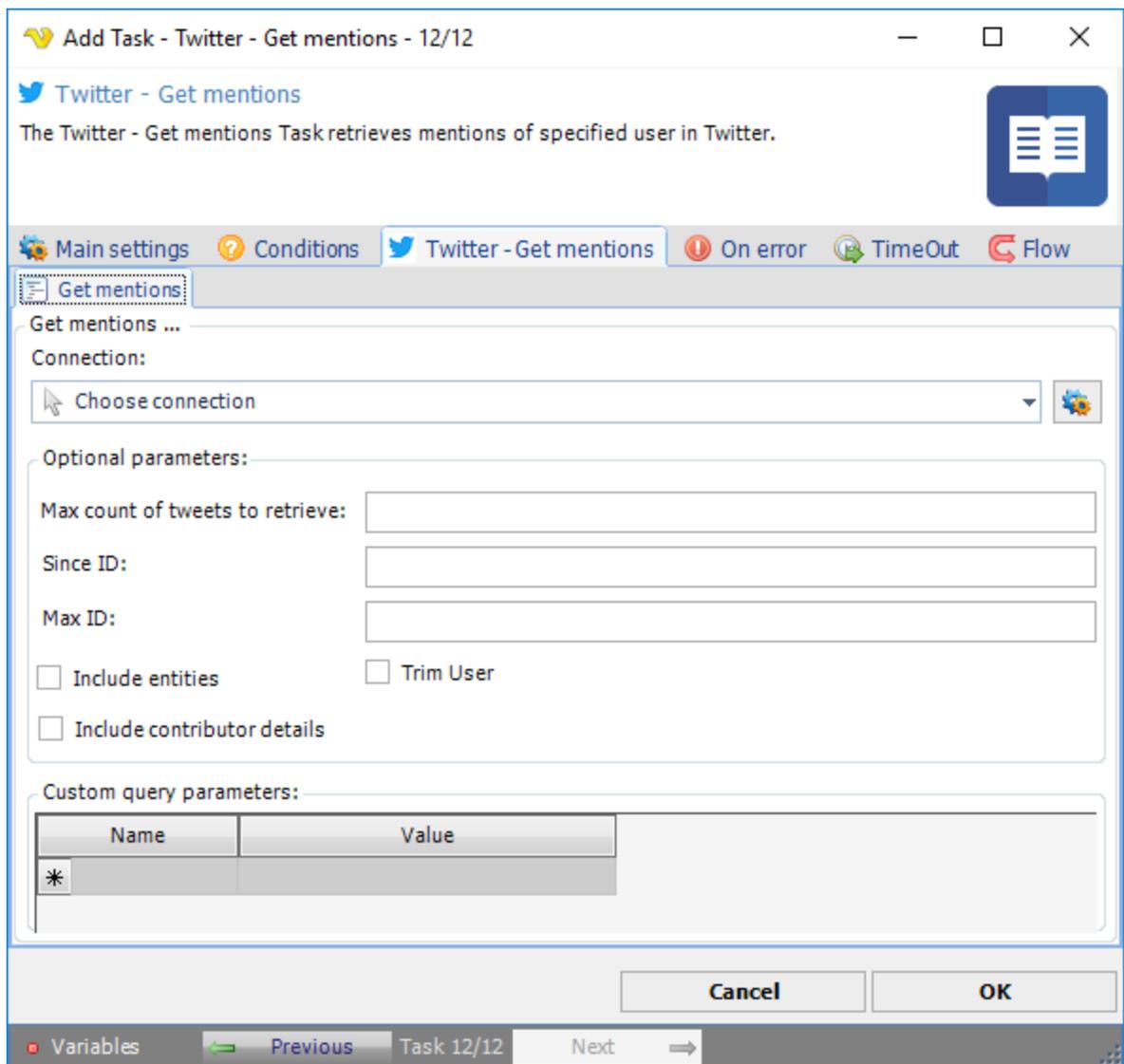
This setting prevents replies from appearing in the returned timeline.

Trim user

When checked, each Tweet returned in a timeline will include a user object including only the status authors numerical ID.

See Twitter Developer Documentation for detailed GET timeline information.

The Twitter - Get mentions Task retrieves of specified user in Twitter.



Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

Max count of tweets to retrieve

Specifies the number of Tweets to try and retrieve, up to a maximum of 200 per distinct request.

Since ID

Returns results with an ID greater than (that is, more recent than) the specified ID.

Max ID

Returns results with an ID less than (that is, older than) or equal to the specified ID.

Include entities

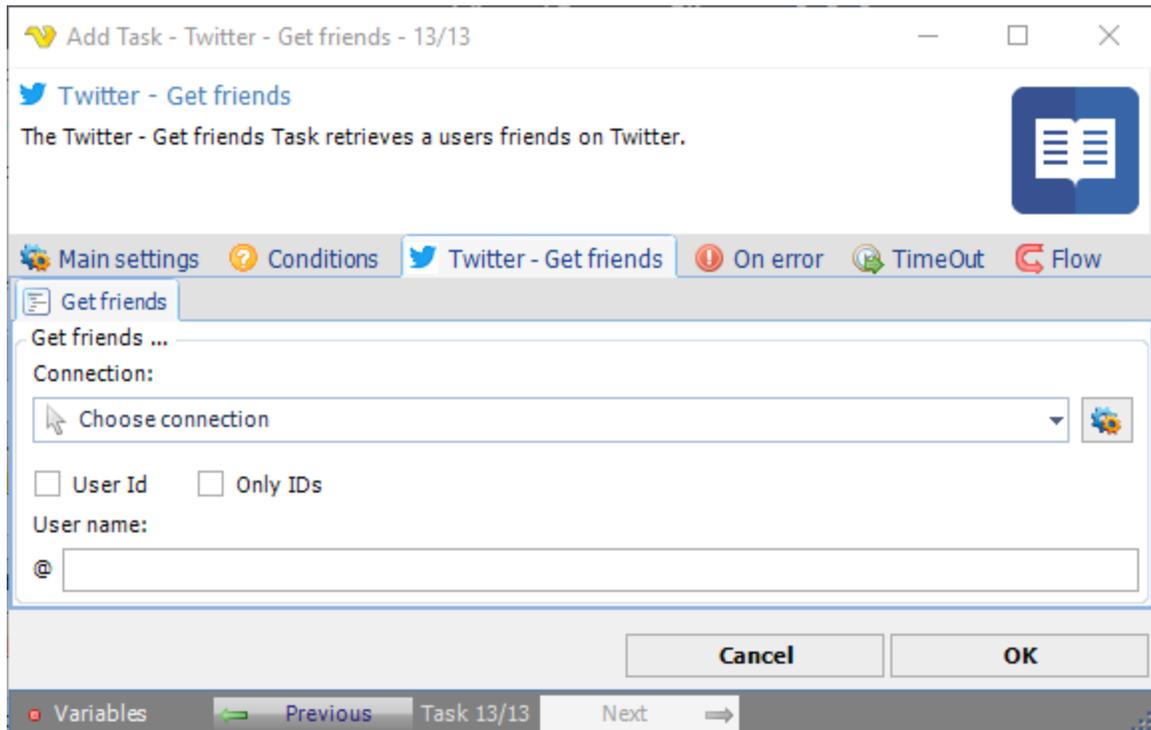
The entities node will not be included when not checked.

Trim user

When checked, each Tweet returned in a timeline will include a user object including only the status authors numerical ID.

See Twitter Developer Documentation for detailed GET mentions information.

The Twitter - Get friends Task retrieves a users friends on Twitter.



Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

User ID

The screen name of the user for whom to return results for.

Only IDs

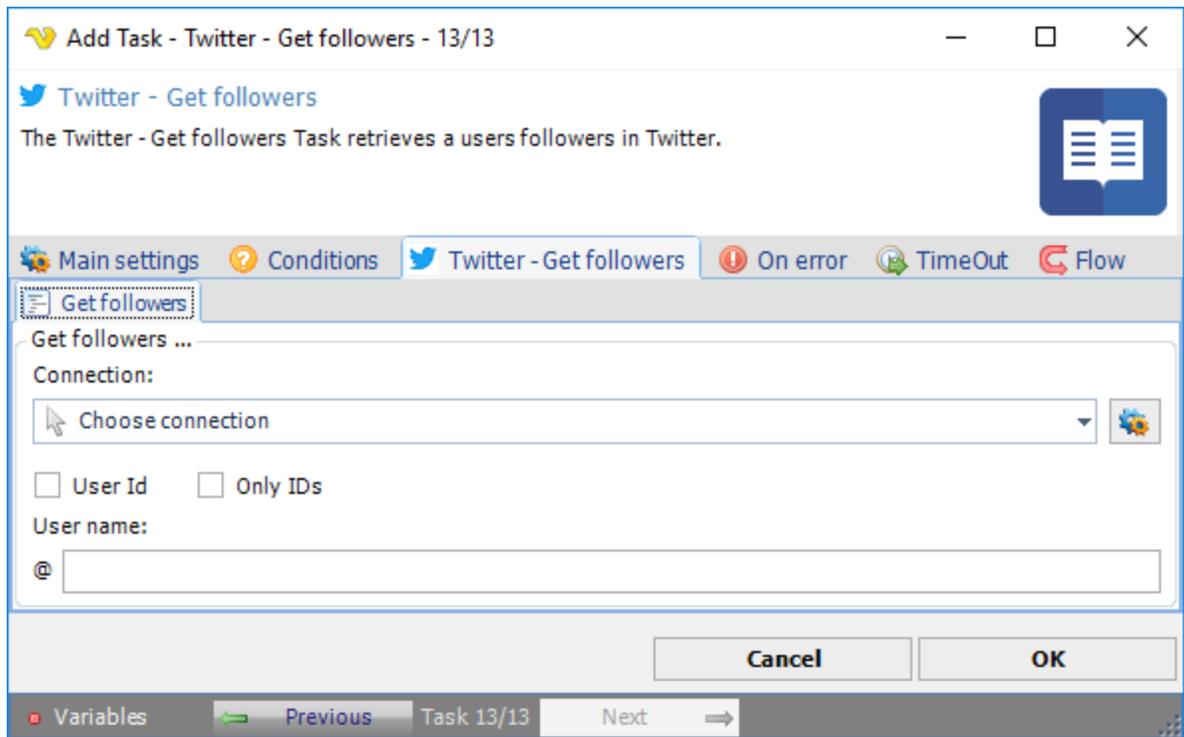
Returns only friends ID numbers.

User name

The screen name of the user for whom to return results for.

See Twitter Developer Documentation for detailed GET friends information.

The Twitter - Get followers Task retrieves a users followers in Twitter.



Connection

To use Twitter Tasks you need to create a Connection first. You do that in the Twitter Connection dialog.

User ID

The screen name of the user for whom to return results for.

Only IDs

Returns only followers ID numbers.

User name

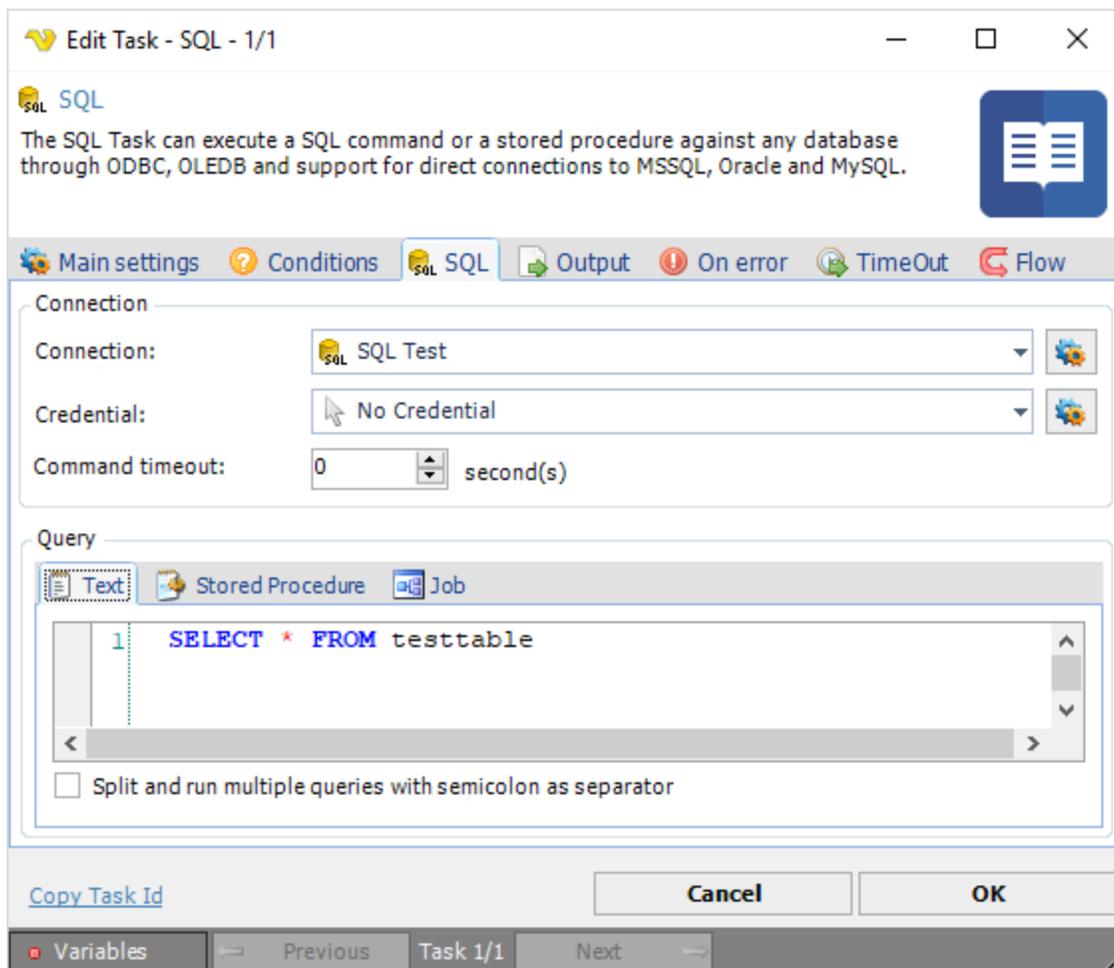
The screen name of the user for whom to return results for.

See Twitter Developer Documentation for detailed GET followers information.

The SQL Task can execute a SQL command or a stored procedure against any database through ODBC, OLEDB and support for direct connections to MSSQL, Oracle and MySQL.

Select type of query; *Text* or *Stored Procedure*, only the active tab is saved.

SQL > Text sub tab



Connection

To use the SQL Task you need to create a Connection first. You do that in the Connections dialog.

Credential

If you want to Execute with a trusted connection in MSSQL you need to use a Credential in combination with the Connection for trusted connection. The Credential must be a valid Windows user on the local server (if database is local) or a valid user on remote server (if server is not local).

Command Timeout

Timeout in seconds before the query should exit.

Text

Enter your SQL text query.

Split and run multiple queries with semicolon as separator

Text ...

SQL > Stored Procedure sub tab

Add/Edit Task - SQL - 2/2

SQL
The SQL Task can execute a SQL command or a stored procedure against any database through ODBC, OLEDB and support for direct connections to MSSQL, Oracle and MySQL.

Main settings Conditions SQL Output On error Timeout Flow

Connection

Connection: gladiator - odbc

Credential: Administrator@GLADIATOR

Command timeout: 0 Second(s)

Query

SQL text query Stored procedure Job

Name of stored procedure:
AddWord;1

Parameters:

Name	Data type	Direction	Value
TagID	Int	Input	
LanguageID	Int	Input	
Word	NVarChar	Input	

Refresh parameters Add Edit Delete

Cancel Ok

Variables Previous Task 2/2 Next

Name of stored procedure

The name of the stored procedure to be executed. Click the Refresh icon to populate the drop-down list of stored procedures.

Parameters

The grid shows all defined parameters. Click the *Add* button to open the parameter window. Click other buttons to update the list of parameters.

Parameter

Name:

Value:

Use null value

Validate value

Data type: Parameter direction:

Size:

Variables

Enter parameter values for Name, Value, Data type and Parameter direction.

Use null value

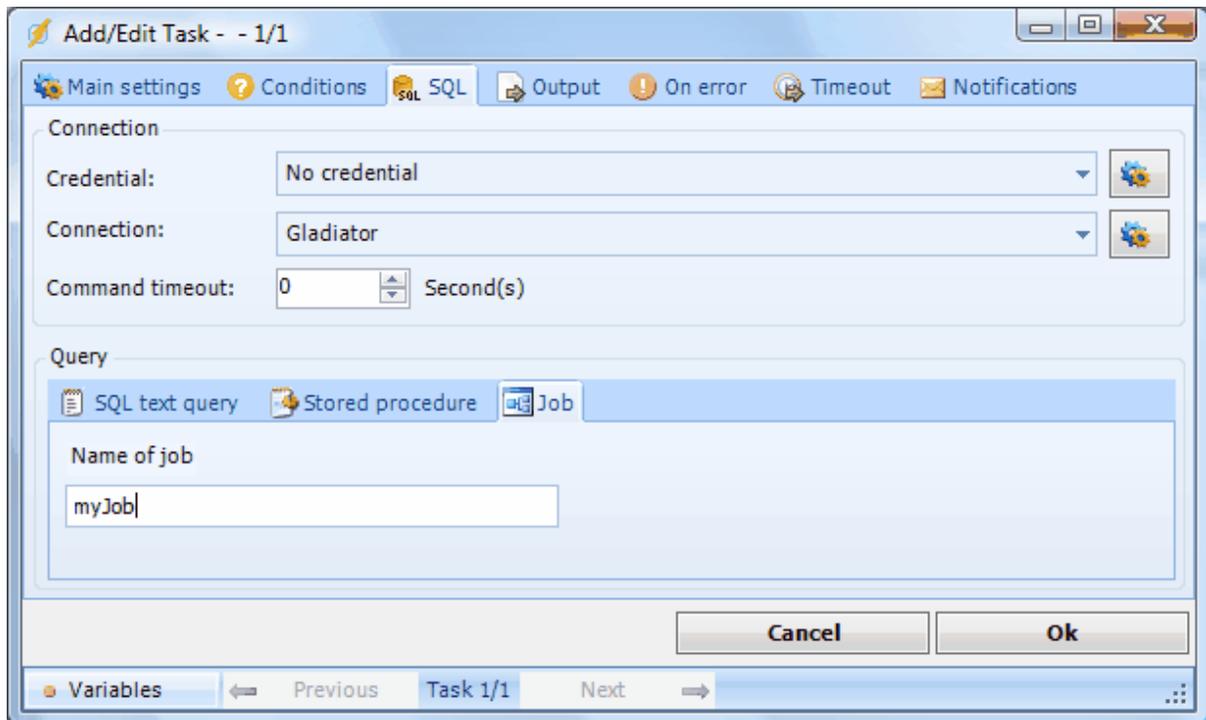
If checked, the NULL value will override the *Value*.

Validate value

If checked, VisualCron will validate the value with the value type. Leave not checked if you are using a Variable as value and the Variable is not yet set.

Test your SQL Task before closing the VisualCron client. Errors will be reported in the log window.

SQL > Job sub tab



The Job definitions are only valid for MSSQL.

Use this option if you want to execute a remote Package of type SSIS/DTS. You need to create a Job of your package first.

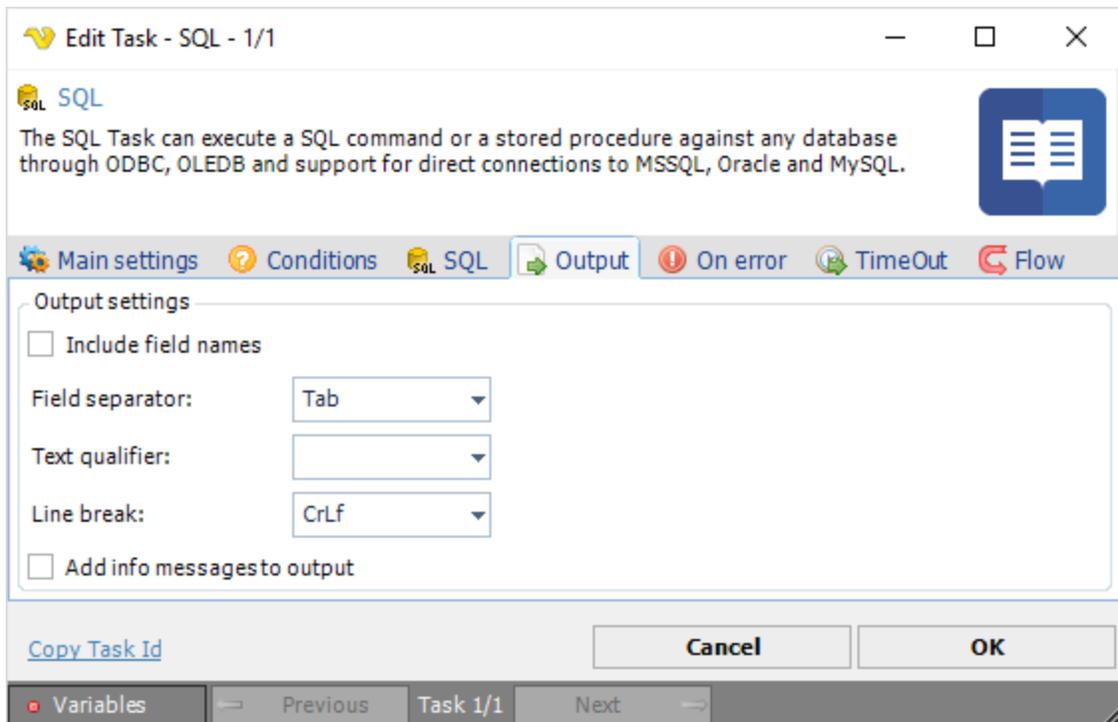
Name of Job

Specify the Job name if you want to execute a Job in the database.

Job steps

Define a flow of steps with decision points depending on correct or failed result.

Output tab



The output tab controls the format of the data output from the SQL Task.

Include field names

If the columns should be included in the output or not.

Field separator

Here you can control what separates each field.

Text qualifier

The text qualifier is the parts surrounding a field. Normally nothing which is default.

Line break

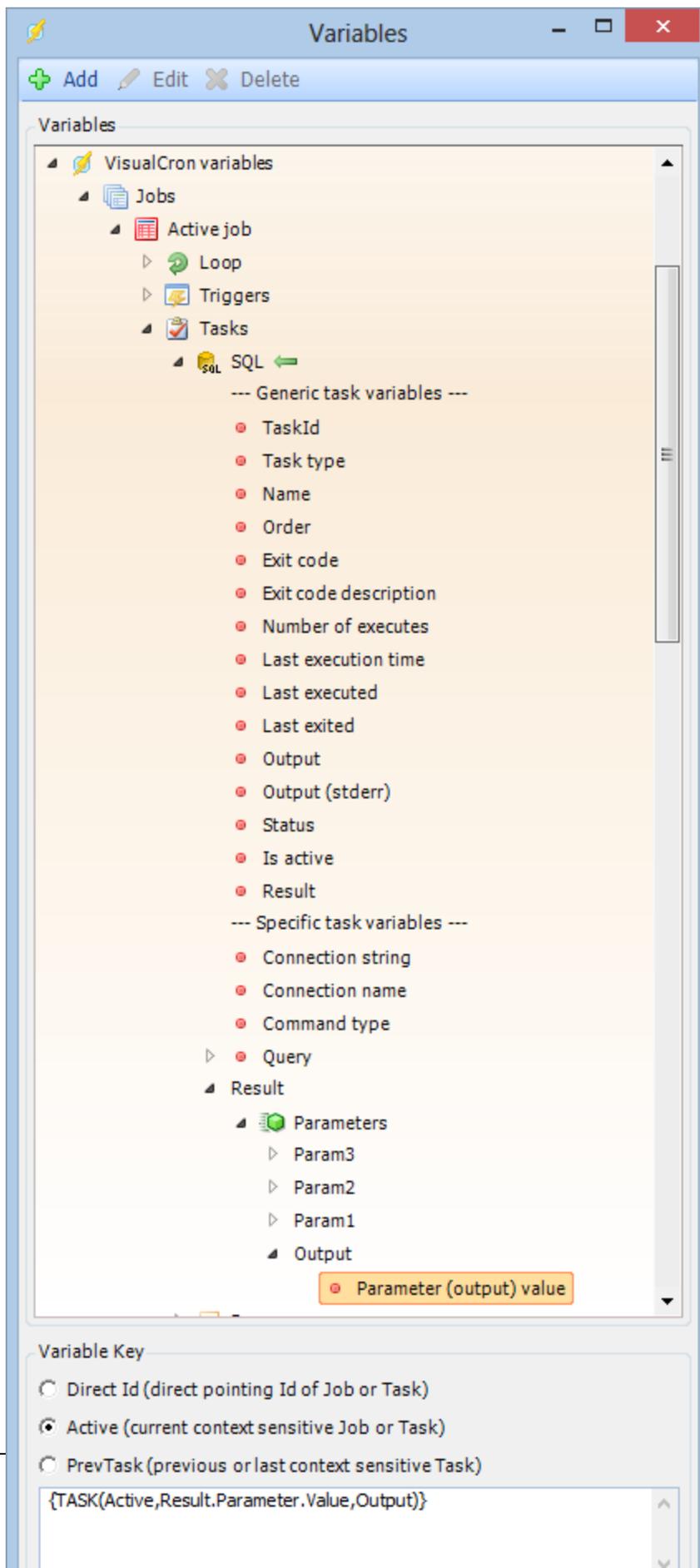
Controls what type of line break should be used.

Add info messages to output

Internal SQL database engine debug and warning output will be added to Task output if this is checked.

Some SQL Task notes:

- use appropriate prefix on variable, normally @variablename
- take advantage of predefined connection strings
- when using ODBC, remember to add your parameters in the order you want to use them
- if you have DNS connections - take advantage of them
- test SQL Tasks and look for error message in the log window
- if you are running PL-SQL statement on Oracle write them like this: BEGIN FM.MQ.ADD_MSG_DIRECT('FORM','LV_SENDER','LV_POSN_UPLOAD',213,'ORG_ID'); END;
- to get Output parameters please use the result Variables below:



Troubleshooting:

1. ODBC->ERROR [42000] [Microsoft][ODBC SQL Server Driver][SQL Server]Invalid parameter 1 ("): Data type 0x23 is a deprecated large object, or LOB, but is marked as output parameter. Deprecated types are not supported as output parameters. Use current large object types instead.

- Try changing data type from Text to VarChar or NVarChar.

- Also, make sure you are using the exact length of the parameter compared to the object in MSSQL.

2. The Size property has an invalid size of 0.

Try setting the same exact size as the parameter.

This Task lets you execute local DTS packages. VisualCron must reside on the server machine to be able to execute this Task. To execute remote DTS packages you can use the SQL Task and type Job.

Add Task - Execute DTS package - 3/3

Execute DTS package

This DTS execute Task lets you execute DTS packages. Data Transformation Services, or DTS, is a set of objects and utilities to allow the automation of extract, transform and load operations to or from a database.

Main settings

Package located in file

Package path:

Package located in database

Package name:

SQL Credential:

Use trusted connection

Variables

Name	Value	Direction

Add Edit Delete

Cancel OK

Variables Previous Task 3/3 Next

Package located in file

Specify the full path to the file.

Package located in database

If the package is located in the database then you specify the package name here.

SQL Credential

When using a *Trusted connection* this should be a Windows user that have access to the SQL server. Use Load profile option in the Credential. The domain name must be the DNS name or IP of the SQL server.

When not using a *Trusted connection* this should be the username and password of the SQL Server. The domain name must be the DNS name or IP of the SQL server.

Use trusted connection

Check this if you want to impersonate as a Windows user to access database instead of using SQL Server credentials.

Variables

If the package needs variables you enter them here by clicking on Add.

This Task lets you execute local SSIS packages. VisualCron must reside on the server machine to be able to execute this Task. To execute remote SSIS packages you can use the **SQL** Task and type Job.

Add Task - Execute SSIS package - 1/1

Execute SSIS package

This Task lets you execute local SSIS packages. VisualCron must reside on the server machine to be able to execute this Task. To execute remote SSIS packages you can use the SQL Task and type Job.

Main settings ? Conditions Execute SSIS package ! On error TimeOut Flow

Main settings

MSSQL server version: 2005 Execute in 32bit mode

Trusted connection

Credential for trusted connection: No Credential

Package password:

Configuration file

Package located in file

Package path:

Package located in database

Package name:

Database ip/dns name:

Database credential: No Credential

Variables

Name	Value	Direction

Add Edit Delete

Cancel OK

Variables Previous Task 1/1 Next

MSSQL server version

Select if you are using MSSQL 2005 or 2008.

Execute in 32 bit mode

Check this if your MSSQL version is running in 32 bit mode.

Credential

A set of Credentials that is used to impersonate the whole SSIS call.

Package located in file

Specify the full path to the file.

Package located in database

If the package is located in the database then you specify the package name here.

SQL Credential

Specify a Credential that consists of the server name or IP address together with user name and password.

Variables

If the package needs variables you enter them here by clicking on Add.

Note

For this Task to work you need to have installed, at least, *SQL Server Integration Services*, on the machine that VisualCron is installed on.

For more information, see *SQL Server Integration Services*.

The Task Database - Execute SSISDB package executes an existing package in from catalogs (SSISDB).

Add Task - Execute SSISDB package - 1/1

Execute SSISDB package
The Task Database - Execute SSISDB package executes an existing package in from catalogs (SSISDB).

Main settings Conditions **Execute SSISDB package** On error TimeOut Flow

Connection

Connection: Choose connection

Credential: No Credential

Package details

Catalog: Refresh

Folder: Refresh

Project name: Refresh

Package name: Refresh

Environment: Refresh

Package parameters Project parameters

Name	Data type	Direction	Value

Refresh Add Edit Delete

Execution details

Execute in 32 bit mode (on 64 bit systems)

Cancel OK

Variables Previous Task 1/1 Next

Connection

Text ...

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Package details

Text ...

Package parameters

Text ...

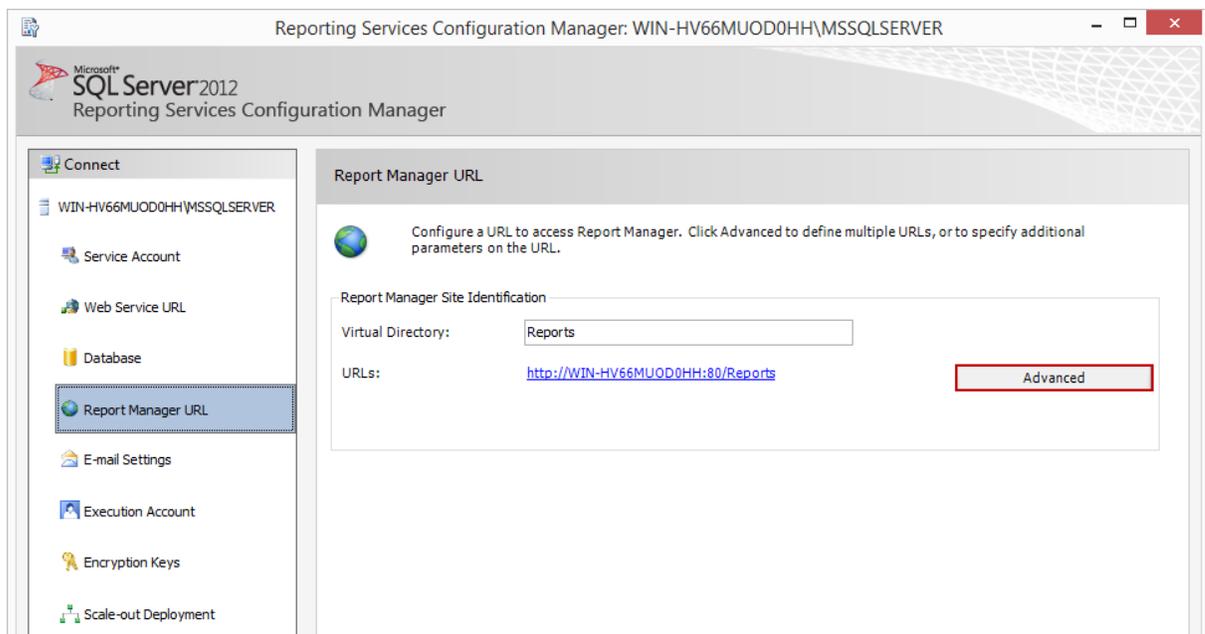
The Database - SSRS Task lets you execute reports in SQL Server Reporting Services and return the result in various formats.

Connection

This Task type uses the global SSRS Connection type. Define username, password, host name and proxy in the Connection.

Report

Click Refresh to show the paths to all reports in the Reporting server. Select the path to an existing Report. You can find it in the Reporting Services Configuration Manager under Virtual Directory here:



Is SharePoint report

This defines that the execution is related to a SharePoint report.

Service type

This describes what kind of service type the Reporting server uses. Use SSRS for SQL Server 2005.

SSRS > Parameters tab

Edit Task - SSRS - 1/1

SSRS
The Database - SSRS Task lets you execute reports in SQL Server Reporting Service and return the result in various formats.

Main settings Conditions SSRS On error TimeOut Flow

Main settings Parameters Destination

Name	Data type	Value
TextParameter	Text	vc
BooleanParameter	Boolean	False
DateTimeParameter	Date	2010-10-10 00:00:00
IntegerParameter	Integer	1
FloatParameter	Float	2

Refresh Add Edit Delete

Cancel OK

Variables Previous Task 1/1 Next

Click Refresh to load all parameters for the selected Report path. Add/Edit the values supplied to each report.

SSRS > Destination tab

The screenshot shows the 'Edit Task - SSRS - 1/1' dialog box. The 'Destination' tab is active. The 'File format' dropdown is set to 'PDF'. The 'Save to..' section includes a 'Credential:' dropdown set to 'No Credential', a 'Folder:' text box with 'c:\test', and a 'File mask:' text box with 'mypdf.*'. The dialog has 'Cancel' and 'OK' buttons at the bottom. A status bar at the bottom indicates 'Task 1/1'.

File format

This is the output file format.

Credential

If you need to save to a network share you should use a Credential.

Folder

Destination folder for the output file.

File mask

Any file mask (compared to the actual report name). Using * uses the report name + extension.

Troubleshooting:

Exception in Task: System.Web.Services.Protocols.SoapException: You have attempted to use a rendering extension that is either not registered for this report server or it is not supported in this edition of Reporting Services

Check the file `rsreportserver.config` in `c:\Program Files\Microsoft SQL Server\MSRS10_50.MSSQLSERVER_RS\Reporting Services\ReportServer`

The problem in our case is that via API we were requesting a report and attempting to convert the report from HTML to a different rendering extension. And, unfortunately, the specific Reporting

Services instance's configuration file has not been configured\extended to support the requested rendering format.

In MS SQL Server 2008-R2, the configuration file is located in a directory structure resembling the following:

```
E:\
  \Program Files
    \Microsoft SQL Server
      \MSRS10_50.MSSQLSERVER_RS
        \Reporting Services
          \ReportServer
```

In the configuration file, find the "Render" section:

```
< Configuration >
< Extensions >
< Render >
```

Within the Render section, find the corresponding "Extension" entry.

If your file format is HTML4 and you see the section try changing from name HTML4.0 to HTML4.

The PGP - encrypt Task lets you encrypt one or more files using OpenPGP standard. You can either encrypt with PGP keys or plain password. Optional signing is also provided.

General PGP information is available.

The *PGP* Task is selected in the *Add/Edit Task* window by *Encryption -> PGP*. In the *Main settings* tab a name for the Task is entered.

PGP Encrypt > File filter > Location sub tab

In the File filter tab you define which files should be encrypted. Read more about file filter here.

PGP Encrypt > Encrypt sub tab

Add Task - PGP - Encrypt - 1/1

PGP - Encrypt
The PGP - encrypt Task lets you encrypt one or more files using OpenPGP standard. You can either encrypt with PGP keys or plain password. Optional signing is also provided.

Main settings | Conditions | **PGP - Encrypt** | On error | TimeOut | Flow

File filter | **Encrypt** | Recipients | Signers

Encryption

Encrypt source
 Encryption algorithm: CAST5 | Protection level: Low

Use conventional (password) encryption
 Password:

Armor data
 Armor boundary: PGP MESSAGE

Compress data before encryption | Use new features

Signing

Sign source | Detached signature
 Treat input as text
 Password:

Destination

Use same folder as source
 Use custom destination folder

Destination file mask:

Cancel | OK

Variables | Previous | Task 1/1 | Next

Here you have two major options when encrypting a file; either Encrypt, Sign or both.

Encrypt source

Mark this option to enable encryption of your file. The *Recipients* tab is connected to this property.

Encryption algorithm

VisualCron offers some standard algorithms. If you need any other algorithm then contact us.

Protection level

- "Low" - to get the key from password only, password hash is used
- "Normal" - hash from password and salt concatenation is used
- "High" - hash from multiple password and salt concatenation is used

Use conventional (password) encryption

A password will be used for encryption. Enter a password in the password field. You can use this for doing simple symmetric encryption without key rings.

Aarmor data

Use this property to determine if resulting data should be armored, i.e. wrapped into base64-cover.

Compress data before encryption

Specifies if the data should be compressed before encryption.

Use new features

Use this property for compatibility with old versions of PGP-compatible software.

If this property is set to True, then newer and stronger algorithms will be used in this Signing will be compatible with PGP 2.6.x, while Encrypt and sign will not.

If the property is set to False, then the result will be compatible with PGP 2.6.x, while the keys are compatible (i.e. don't use features not supported by PGP 2.6.x). Default value is True.

Sign source

Mark this option if you want to sign your file. Use the this option along with selecting private key rings in the *PGP* -> *Signers* tab.

Treat input as text

Use this property when you want to specify that input data must be interpreted as text.

Password

If you have a password on your private key, then enter it here.

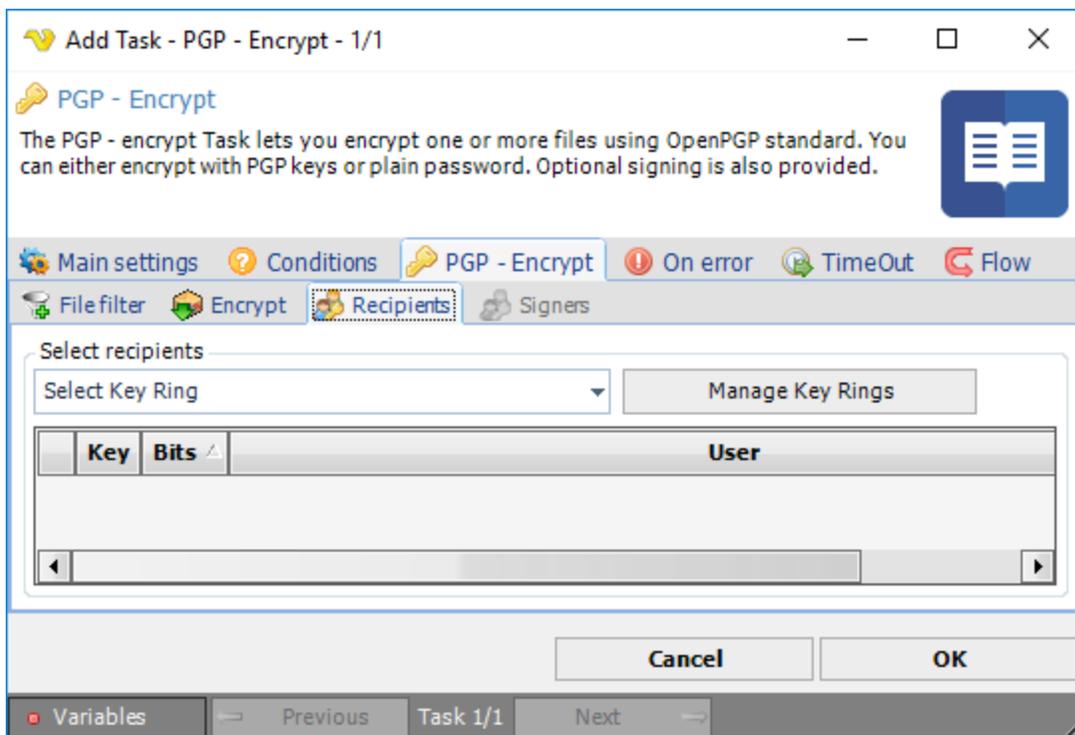
Destination file/Destination folder

The destination file is the path to the file where the encrypted file should be saved or, when using Decrypt, where the decrypted file should be saved. When using wild cards this field will become *Destination folder* and all source files will be appended with ".pgp".

Use default naming for destination file

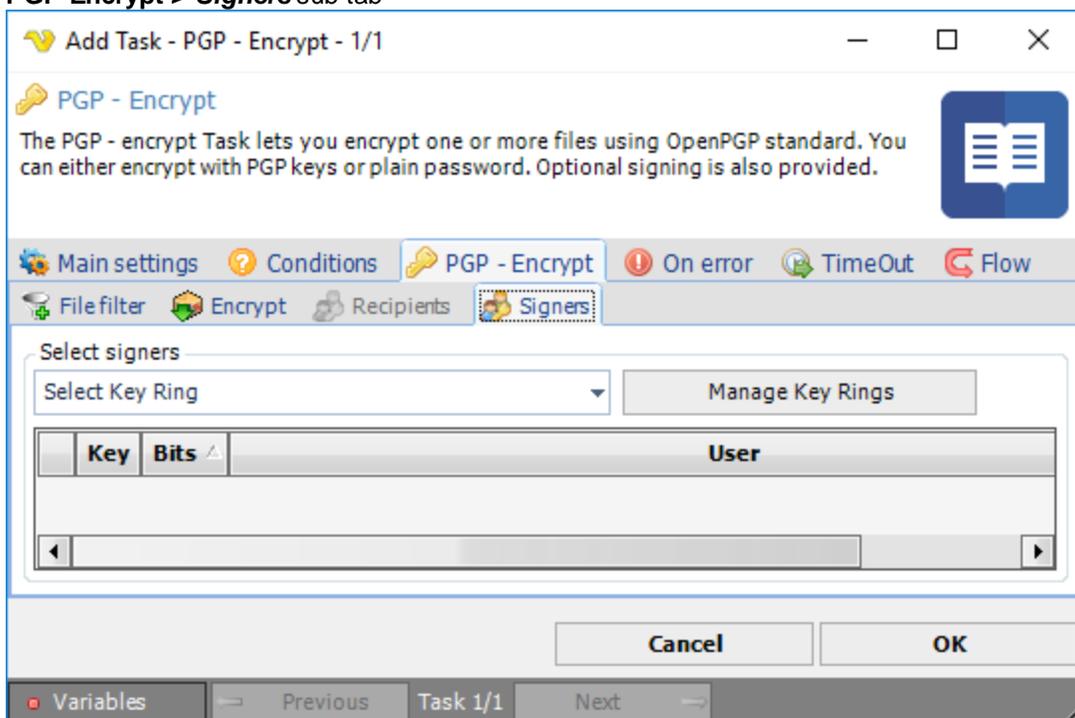
When decrypting a file you can either specify a file name in the *Destination file* or use this property. When using this property the original name (from the PGP MESSAGE) will be used when writing the file. When this property is checked you can use *Destination file* for specifying another folder than the source file folder location.

PGP Encrypt > Recipients sub tab



Specifies the key ring with public keys that belongs to the recipients of the file. Select a key ring, then mark the (public) keys that belongs to a recipient of the file.

PGP Encrypt > *Signers* sub tab



Specifies the key ring with keys which must be used for data signing. Select a key ring, then check the (private) keys you want to use for signing.

Key rings are managed in the *PGP -> Recipients* or the *PGP -> Signers* tabs by clicking on *Manage Key Rings* button. In the *Manage PGP Key Ring* window, click on the *Add* button to open the *Add PGP Key Ring* window. More information is available for manage PGP key rings.

The PGP - decrypt Task can decrypt one more more encrypted files using the OpenPGP standard.

General PGP information is available.

PGP decrypt > File filter > Location sub tab

In the File filter tab you define which files should be decrypted. Read more about file filter here.

PGP decrypt > Decrypt sub tab

Add Task - PGP - Decrypt - 1/1

PGP - Decrypt

The PGP - decrypt Task can decrypt one more more encrypted files using the OpenPGP standard.

Main settings ? Conditions PGP - Decrypt ! On error TimeOut Flow

File filter Decrypt

Select Key Ring

asddasd Manage Key Rings

Password

Destination

Use same folder as source

Use custom destination folder

Destination file mask:

*

Base destination file name on inner file name

Base destination file name on encrypted file name

Post process mask with Variable - use {NEWNAME()} in Variable

{STRING(Replace |{NEWNAME()}|oldValue|newValue)}

Overwrite if existing

Cancel OK

Variables Previous Task 1/1 Next

Select key ring

Select a key ring that contains the key that should be used for decryption.

Password

If the file is encrypted with a password then enter the password here.

Use same folder as source

The decrypted file will be placed in the same folder as were the original encrypted file was found.

Use custom destination folder

If the destination file name should be changed in some way then you can enter a new file mask for this here. Default "*" keeps the same original name.

Destination file mask

You can use a wild card to replace the original name. For example *.pdf keeps the original name but changes the extension to "pdf". You can use ? and * as wild card characters. ? replaces/matches a single letter.

Base destination file name on inner file name/Base destination file name on encrypted file name

Encrypted PGP files have an inner name that is set by encrypting tool. Normally, that name is the original file name. Sometimes it is different depending on tool. With this option you can choose if you want destination file mask and post process features to be based on the original name inside the pgp file or the encrypted file (the source, encrypted file).

Post process mask with Variable

Sometimes you might want to change the name with the help of a Variable. Use default * in the *New name mask* and then check this box to add support for Variable renaming.

The default value shows how to use this property. {STRING(Replace|{NEWNAME()}oldValue|newValue)}. {NEWNAME()} is the new name *after* the New name mask has been processed. You need this Variable pointer to find the "current" name you want to rename.

Overwrite if existing

If the destination file already exists it will be overwritten - otherwise nothing will happen.

Key rings are managed in the *PGP -> Recipients* or the *PGP -> Signers* tabs by clicking on *Manage Key Rings* button. In the *Manage PGP Key Ring* window, click on the *Add* button to open the *Add PGP Key Ring* window. More information is available for manage PGP key rings.

Symmetric encryption Task provides simple encryption/decryption with a single password. The output is in RAW format, if you want PGP format then use the PGP Encrypt Task. The Task is using standard encryption algorithms like:

Provider	Length (bits)	Known Vulnerabilities
DES	64	yes
RC2	40-128	yes
Rijndael	128, 192, 256	no
TripleDES	128, 192	no
AES	128, 192, 256	no

If you have a choice, we recommend using AES encryption.

The Encryption - Encrypt (symmetric) Task is able to encrypt one or more files to a specific folder.

Encrypt > Encryption settings tab

Add Task - Encrypt (symmetric) - 1/1

Encrypt (symmetric)

Symmetric encryption Task provides simple encryption/decryption with a single password. The output is in RAW format, if you want PGP format then use the PGP Encrypt Task. The Task is using standard encryption algorithms like DES,RC2,Rijndael and TripleDES.

Main settings Conditions **Encrypt (symmetric)** On error TimeOut Flow

Encryption settings File filter Destination

Encryption

Encryption algorithm:
TripleDES

Key bit length:
192

Password:
[] Copy

Initialization Vector (IV):
***** Copy

Padding mode:
PKCS7

Cancel OK

Variables Previous Task 1/1 Next

Encryption algorithm

Select between the following encryption algorithms:

- DES
- RC2
- Rijndael
- TripleDES
- AES

Please note that different algorithms support different *Key bit length*.

Key bit length

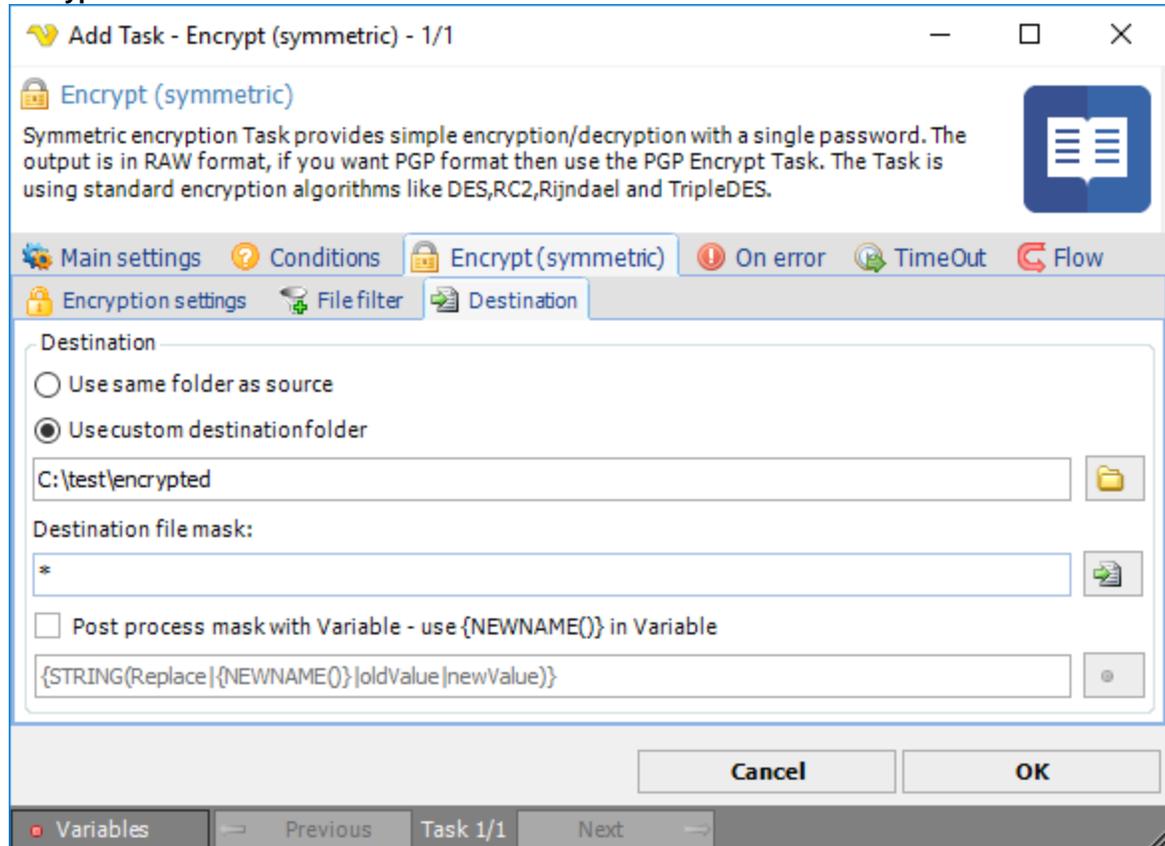
The key bit length defines the strength of the encryption. The higher the better. Different algorithms support different key bit length.

Password

Select a password that will be used for encryption/decryption. The password is hidden in the interface but you can press *Copy* to copy the the password to clip board.

Encrypt > File filter tab

In the File filter tab you define which files should be encrypted. Read more about file filter here.

Encrypt > Destination tab*Destination*

You can choose to encrypt files to same folder as where the original file was found by selecting *Use same folder as source*. If you select *Use custom destination folder* you are able to select a different destination folder for the encrypted file than source folder.

Destination file mask

Destination file mask is a quick way to change the file name to something else. By default it is using * which means that the same file name will be used for destination folder. If you are going to use * you need to use another destination folder. If you for example want to change the original extension to ".enc" instead you can change this destination file mask to *.enc.

Post process mask with Variable

This property gives you more advanced ways to change the file name. We recommend that you use *Destination file mask* with value * when using this property. When checking this property the new name will be stored in a temporary variable {NEWNAME()}. You will be able to use this Variable for processing with other Variable functions. As an example we have provided the default value for this property: {STRING(Replace|{NEWNAME()}|oldValue|newValue)}. The example uses the String.Replace method from the Variables window. It uses the {NEWNAME()} as input Variable with options to set a value that you want to replace from original file name "oldValue" and the new value "newValue".

Symmetric encryption Task provides simple encryption/decryption with a single password. The output is in RAW format, if you want PGP format then use the PGP Encrypt Task. The Task is using standard encryption algorithms like:

Provider	Length (bits)	Known Vulnerabilities
DES	64	yes
RC2	40-128	yes
Rijndael	128, 192, 256	no
TripleDES	128, 192	no
AES	128, 192, 256	no

If you have a choice, we recommend using AES encryption.

The Decrypt (symmetric) Task is able to decrypt one or more files from a specific folder.

Decrypt > Decryption settings tab

Add Task - Decrypt (symmetric) - 1/1

Decrypt (symmetric)
Symmetric encryption Task provides simple encryption/decryption with a single password. The output is in RAW format, if you want PGP format then use the PGP Encrypt Task. The Task is using standard encryption algorithms like DES,RC2,Rijndael and TripleDES

Main settings Conditions **Decrypt (symmetric)** On error TimeOut Flow

Decryption settings File filter Destination

Encryption

Encryption algorithm:
TripleDES

Password:
[Text Field] Copy

Initialization Vector (IV):
***** Copy

Padding mode:
PKCS7

Cancel OK

Variables Previous Task 1/1 Next

Encryption algorithm

Select between the following encryption algorithms:

- DES
- RC2
- Rijndael
- TripleDES
- AES

Please note that different algorithms support different *Key bit length*.

Password

Select a password that will be used for encryption/decryption. The password is hidden in the interface but you can press *Copy* to copy the the password to clip board.

Decrypt > File filter > Location sub tab

In the File filter tab you define which files should be decrypted. Read more about file filter here.

Decrypt > Destination tab

Destination

You can choose to decrypt files to same folder as where the original file was found by selecting *Use same folder as source*. If you select *Use custom destination folder* you are able to select a different destination folder for the decrypted file than source folder.

Destination file mask

Destination file mask is a quick way to change the file name to something else. By default it is using * which means that the same file name will be used for destination folder. If you are going to use * you need to use another destination folder. If you for example know it is a text file want to change the original extension from ".enc" instead you can change this destination file mask to "*.txt".

Post process mask with Variable

This property gives you more advanced ways to change the file name. We recommend that you use *Destination file mask* with value `*` when using this property. When checking this property the new name will be stored in a temporary variable `{NEWNAME()}`. You will be able to use this Variable for processing with other Variable functions. As an example we have provided the default value for this property: `{STRING(Replace|{NEWNAME()}|oldValue|newValue)}`. The example uses the `String.Replace` method from the Variables window. It uses the `{NEWNAME()}` as input Variable with options to set a value that you want to replace from original file name "oldValue" and the new value "newValue".

Enter topic text here.

The String - JSON filter Task lets you perform JSON queries with the JSONPath and the JQ engine against a JSON file or value/Variable.

JQ filter manual: <https://stedolan.github.io/jq/manual/>

Edit Task - JSON filter JSONPath Var - 3/3

JSON filter
The String - JSON filter Task lets you perform JSON queries with the JSONPath and the JQ engine against a JSON file or value/Variable.

Main settings | Conditions | **JSON filter** | Output | On error | TimeOut | Flow

Credentials
No Credential

File

Variable/Value
{"foo": 42, "bar": "less interesting data"}

JSON filter engine:
 JSONPath
 JQ

Filter expression:
bar

Copy Task Id | Cancel | OK

Variables | Previous | Task 3/3 | Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

File

Click the File radio button to enter a full file path to a JSON file. Click the *File* icon to browse for a JSON file.

Variable/Value

Enter Variable or value as input string. Click the *Settings* icon to to browse for Variables.

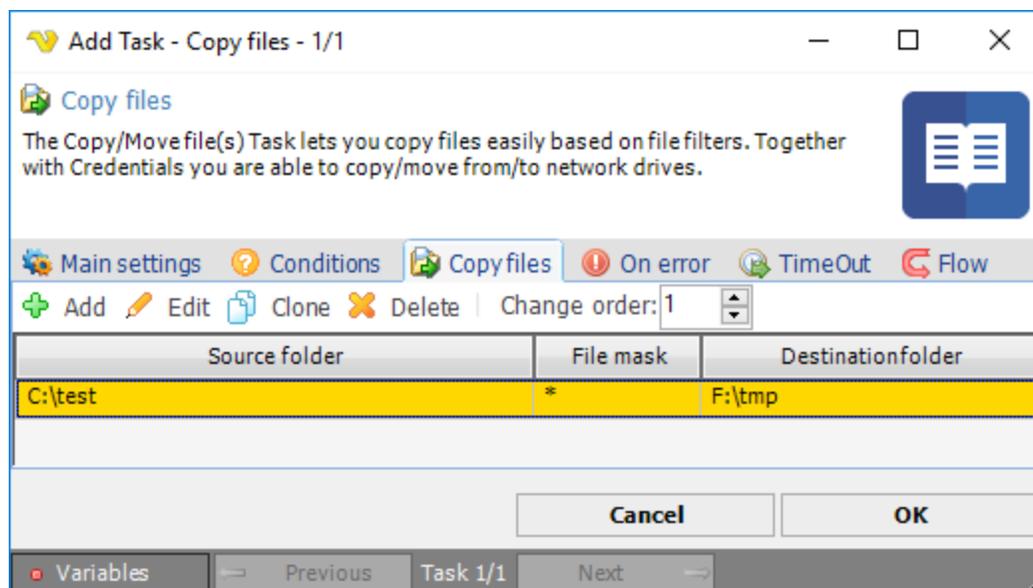
JSON filter engine

Select JSONPath or JQ program as a “filter”: it takes an input, and produces an output.

Filter expression

Enter the JSONPath or JQ filter expression. Click the *Filter expression* icon to browse the input stream structure.

The Copy/Move file(s) Task lets you copy files easily based on file filters. Together with Credentials you are able to to copy/move from/to network drives.

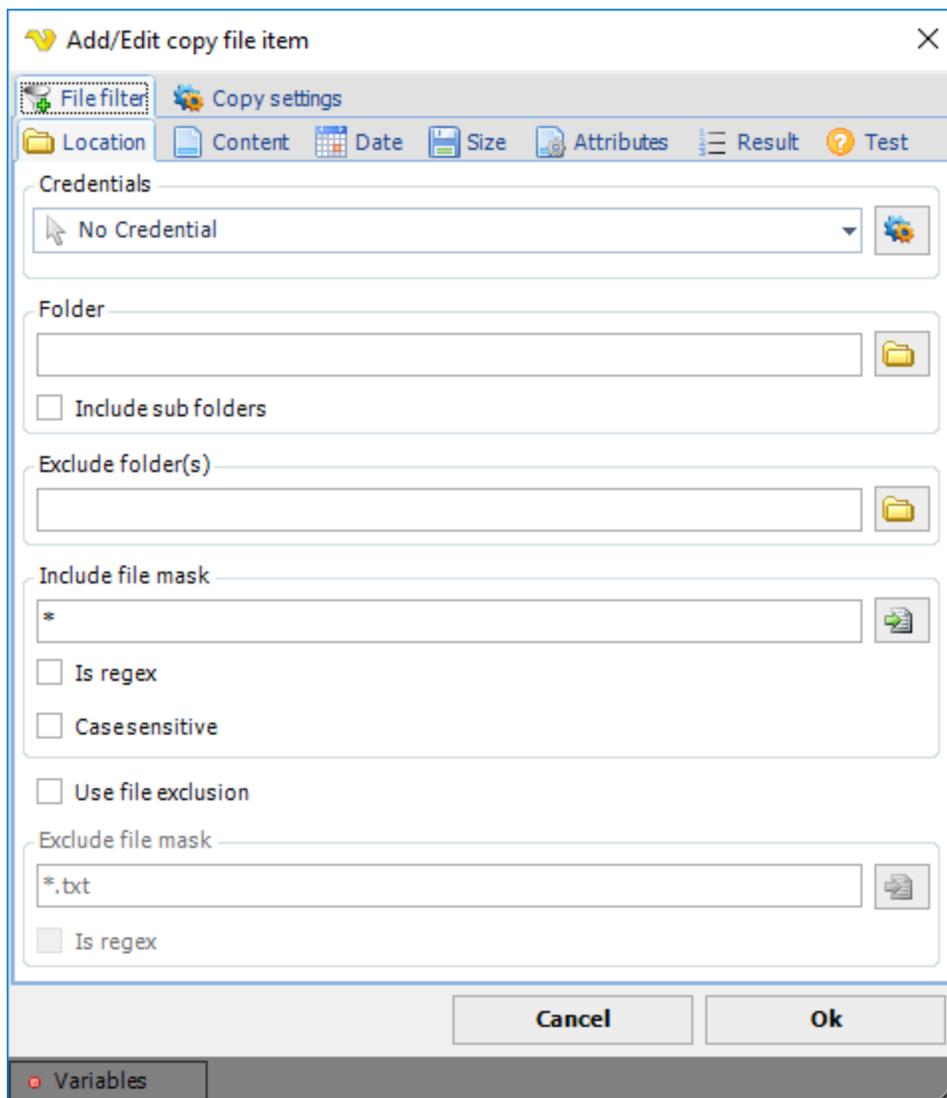


In the Copy files dialog you add, edit, clone or delete copy items and change order of copy items. Changes may be done either by the toolbar buttons or mouse right click on the grid.

One Copy files Task may contain several copy items. For each copy item a source folder, a file mask and a destination folders is defined.

Clicking on the Add option opens the File filter > Location tab.

File filter > Location sub tab



The file filter sub tab contains the standard file filter. You use the file filter to "find" the files you want to copy.

Copy settings sub tab

The screenshot shows a dialog box titled "Add/Edit copy file item" with a close button (X) in the top right corner. The dialog has two tabs: "File filter" and "Copy settings", with "Copy settings" being the active tab. The "Copy settings" tab contains the following fields and options:

- Credentials:** A dropdown menu currently showing "No Credential" and a gear icon for settings.
- Destination folder:** An empty text input field with a folder icon to its right.
- Destination file name mask:** A text input field containing an asterisk (*) with a document icon to its right.
- Post process mask with Variable - use {NEWNAME()} in Variable
- Variable mask:** A text input field containing the expression `{STRING(Replace){NEWNAME()}oldValue|newValue}}` and a gear icon.
- Overwrite options:** A group box containing three radio buttons:
 - Overwrite if existing
 - Overwrite if source file is newer
 - Don't overwrite if existing
- Folder creation options:** A group box containing three radio buttons:
 - Create sub folders
 - Create full folder structure
 - Don't create sub folders
- Delete source file after copy
- Log copy result to output

At the bottom of the dialog are "Cancel" and "Ok" buttons. A "Variables" tab is visible at the bottom left of the dialog's frame.

In the copy settings sub tab you control destination folder, naming and what should happen if the file already exists.

Credential

To access a remote computer you may need to use a Credential. Normally that Credential is a remote or AD user with "Local logon" unchecked. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials. This Credential is used to access the destination directory.

Destination folder

Specify a absolute path to the directory you want to copy to.

Note 1: When you are accessing a network drive (a folder on a remote computer) as source or destination folder you must specify the path in UNC format and not the letter of the logical drive. For example Y:\remotefolder\ must be specified as \\remoteservername\remotefolder\.

Note 2: The folder path is not case-sensitive.

Note 3: To speed up copying it is recommended that you group the items that are using the same credential after each other. In this way, VisualCron does not need to switch between different (login) credentials.

Destination file name mask

You can use a wild card to replace the original name. For example *.pdf keeps the original name but changes the extension to "pdf". You can use ? and * as wild card characters. ? replaces/matches a single letter.

Post process mask with Variable

This property gives you more advanced ways to change the file name. We recommend that you use *Destination file mask* with value * when using this property. When checking this property the new name will be stored in a temporary variable {NEWNAME()}. You will be able to use this Variable for processing with other Variable functions. As an example we have provided the default value for this property: {STRING(Replace|{NEWNAME()}|oldValue|newValue)}. The example uses the String.Replace method from the Variables window. It uses the {NEWNAME()} as input Variable with options to set a value that you want to replace from original file name "oldValue" and the new value "newValue".

Overwrite if existing

When this setting is checked, all matching files in the destination folder (older or never) will be replaced by the source files.

Overwrite if source file is newer

When this setting is checked, the destination file (if existing) will only be replaced if the source file is newer.

Don't overwrite if existing

When this setting is checked no files are overwritten if they exist.

Delete source file after copy

When this setting is checked, the source file (not the folder) will be deleted after a successful copy. Thus, the source file will be deleted even though it wasn't copied due to the settings of *Overwrite if existing* (if it was already existing) and *Overwrite if source file is newer* (if the source file was older than the destination).

Folder creation options

1. Create full folder structure

Creates the full directory structure from root folder and up.

2. Don't create sub folders

Puts all files in in the same (destination) folder

Log copy result to output

When this setting is checked, the result, source and destination file is added to the Task output. All files that are copied is added to the output.

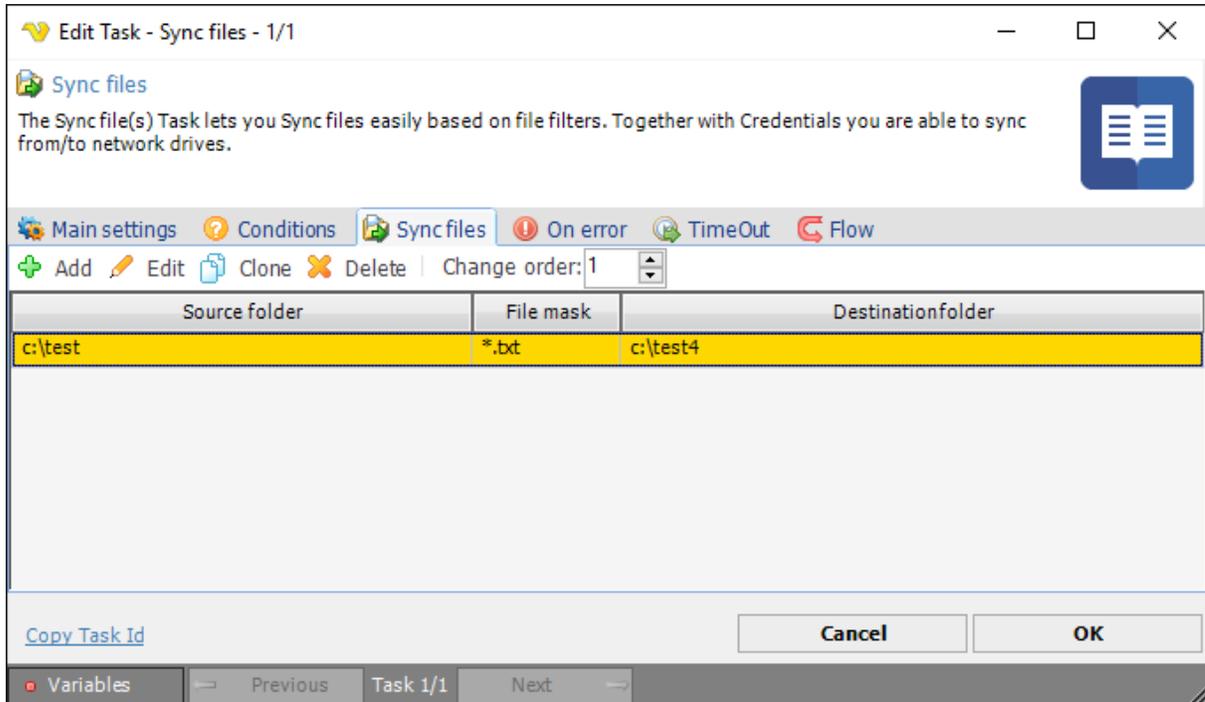
The output has the following format: Source file path TAB -> TAB Destination file path TAB OK/FAILED

Both OK and FAILED files are added to the Task output. To the Task std. error only the failed items are added.

This setting is not default as it adds some extra information to send between the server and the client. Use this option only if you have a high speed connection, connecting locally or have a small amount of files.

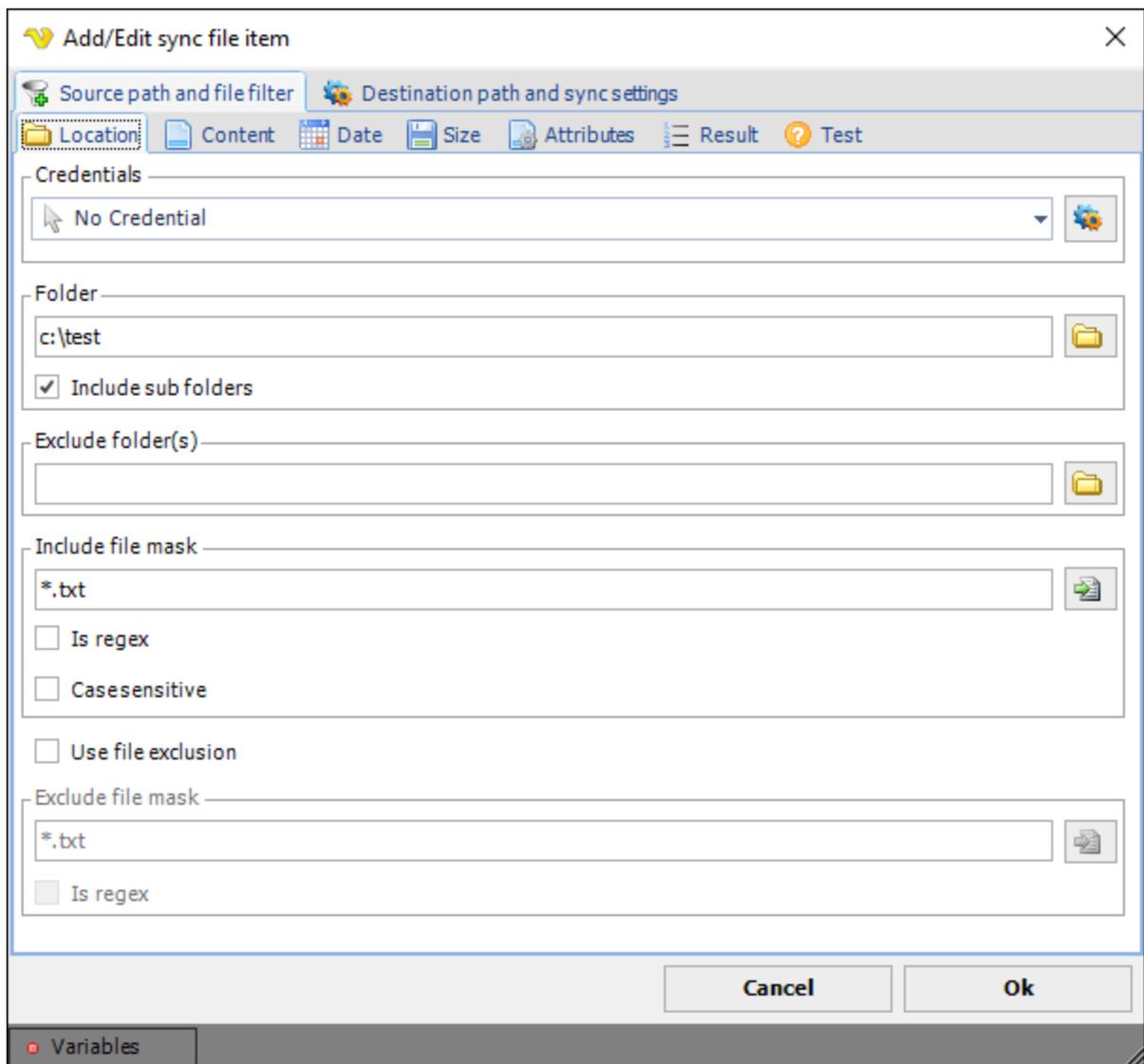
The Task file - Sync files Task lets you sync files between two folders according to some file filters.

Multiple sync file items



You can add one or more file sync items in this Task.

Add file sync item->Source path and file filter tab



Use the regular file filter to filter what kind of files you want to sync.

Add file sync item->Destination path and sync settings tab

The screenshot shows a dialog box titled "Add/Edit sync file item" with a close button (X) in the top right corner. The dialog has two tabs: "Source path and file filter" and "Destination path and sync settings", with the latter being active. Under the "Destination path and sync settings" tab, there is a "Credentials" dropdown menu set to "No Credential". Below that is a "Destination folder:" text box containing "c:\test4" with a folder icon to its right. The dialog has four sub-tabs: "General", "Advanced", "Source Side Options", and "Destination Side Options", with "General" selected. In the "General" sub-tab, there is a "Sync" section with a "Sync type:" dropdown set to "Both sides". Below this is a "Deleted/replaced files" section with several radio button options: "Propagate Deletions" (checked), "To do nothing" (selected), "Save deleted/replaced files to Recycle Bin", "Save deleted/replaced files adding version" (with a "Save this many versions:" text box set to "5"), and "Save deleted/replaced files to specified folder" (with a "Folder name:" text box and folder icon). There are also two "Cleanup folder" options: "Cleanup folder after this many days" (selected, with a text box set to "365") and "Cleanup folder after this many versions, format:" (with a dropdown set to "{file}_{version}" and a text box set to "5"). At the bottom of the "General" sub-tab is a checked checkbox "Log copy result to output". The dialog has "Cancel" and "Ok" buttons at the bottom right. A "Variables" section is visible at the bottom left of the dialog.

Credential

To access a remote computer you may need to use a Credential. Normally that Credential is a remote or AD user with "Local logon" unchecked. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials. This Credential is used to access the destination directory.

Destination folder

Specify an absolute path to the directory you want to sync between.

Destination->General tab

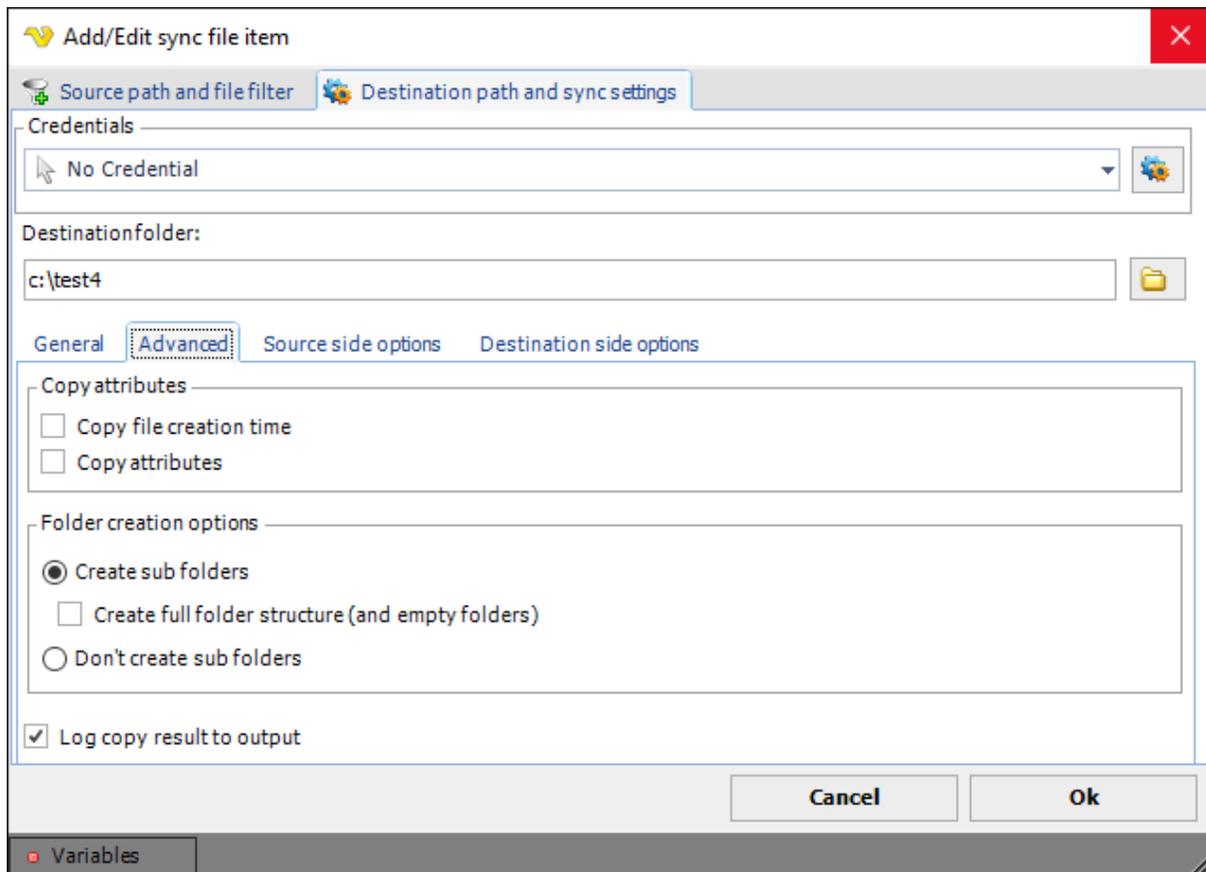
Sync type

Both sides - this option allows mirroring of files against two folders according to the current file filter.

Propagate deletions

If in one side the file is deleted - on the other side:

1. do nothing (the file remains)
2. delete file to trash
3. rename the deleted file by adding the version number to the name, the number of file versions in the directory is controlled
4. move the deleted file to the specified folder, manage the cleaning of the folder by the number of days or by file version numbers, the file rename format is set in the field, the current keywords are " {file} " and " {version} ", the first is replaced by the current name, the second is replaced with the version number, if the number of versions is exceeded, the previous versions of the files are renamed with the lower version number.

Destination->Advanced tab*Copy attributes->Copy file creation time*

If the creation time of the file should be synced over

Copy attributes->Copy attributes

If file attributes should be synced over

Folder creation options->Create sub folders

Create sub folders when needed.

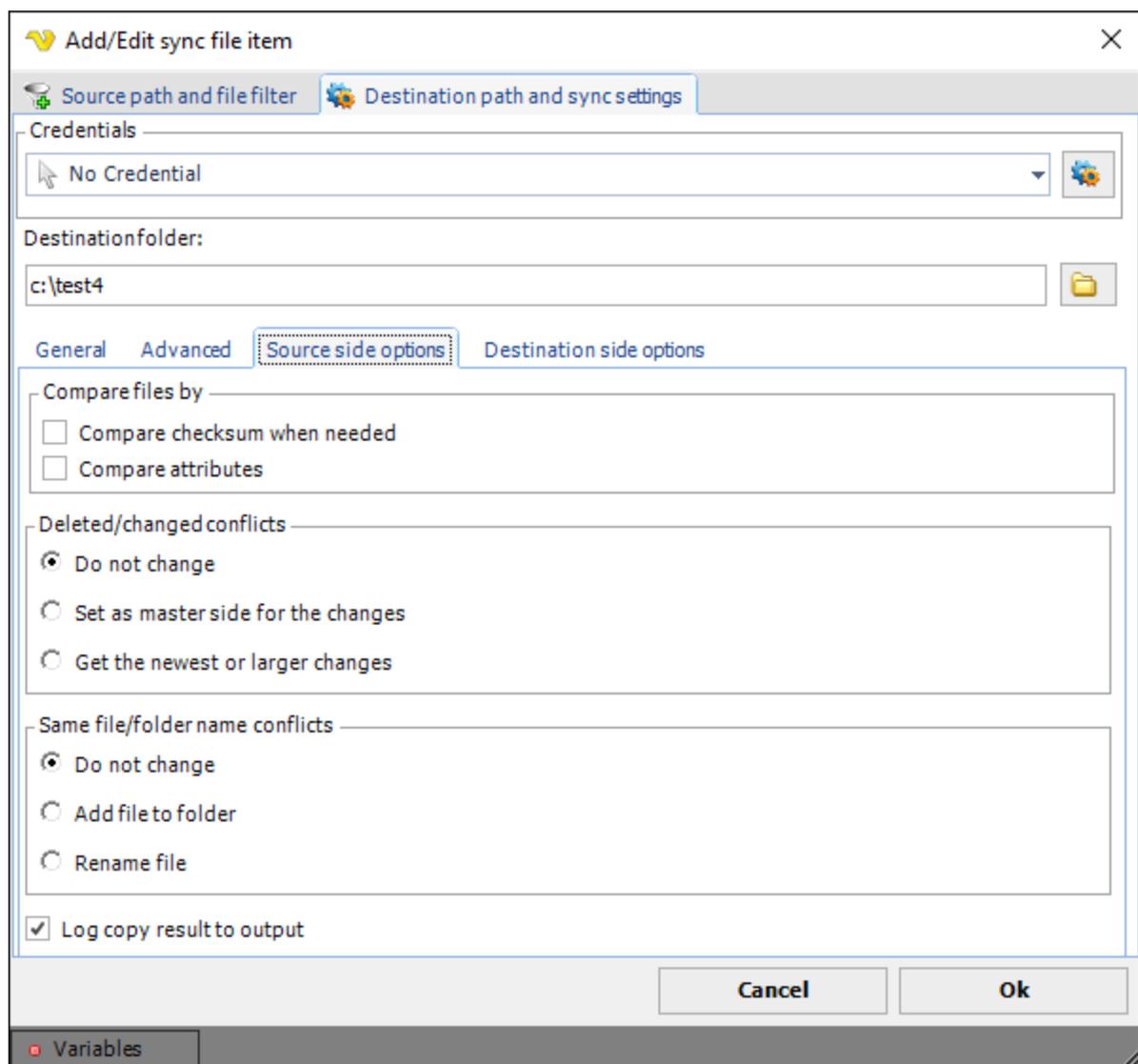
Folder creation options->Create full folder structure

Create full folder structure including empty folders.

Folder creation options->Don't create sub folders

Do not create any sub folders (sync to base folder).

Destination->Source side options tab



Compare files by->Compare checksum when needed

If the files are identical in length and the date of the last change, then compare the checksum of the contents of the files

Compare files by->Compare attributes

If the files are identical in length, modification date and content, then compare attributes

Deleted/changed conflicts->Do not change

Do nothing - do not change the situation.

Deleted/changed conflicts->Set as master side for the changes

When changes are detected on the other side - do not apply changes to this side

Deleted/changed conflicts->Get the newest or larger changes

If changes are detected on the other side, update the files if they are on the other side newer or larger

Same file/folder name conflicts->Do not change

Do not change the situation.

Same file/folder name conflicts->Add file to folder

If a directory on this side is found whose name coincides with the file name on the other hand - copy the file to this directory.

Same file/folder name conflicts->Rename file

When a directory on this side is found whose name matches the file name on the other side - copy the file with a new name.

Destination->Destination side options tab

The screenshot shows a dialog box titled "Add/Edit sync file item" with two tabs: "Source path and file filter" and "Destination path and sync settings". The "Destination path and sync settings" tab is active. It contains a "Credentials" dropdown menu set to "No Credential". Below it is a "Destination folder:" field with the path "c:\test4". The "Destination side options" sub-tab is selected, showing three sections of options:

- Compare files by**:
 - Compare checksum when needed
 - Compare attributes
- Deleted/changed conflicts**:
 - Do not change
 - Set as master side for the changes
 - Get the newest or larger changes
- Same file/folder name conflicts**:
 - Do not change
 - Add file to folder
 - Rename file

At the bottom, there is a checked checkbox for "Log copy result to output". "Cancel" and "Ok" buttons are at the bottom right. A "Variables" button is at the bottom left.

Compare files by->Compare checksum when needed

If the files are identical in length and the date of the last change, then compare the checksum of the contents of the files

Compare files by->Compare attributes

If the files are identical in length, modification date and content, then compare attributes

Deleted/changed conflicts->Do not change

Do nothing - do not change the situation.

Deleted/changed conflicts->Set as master side for the changes

When changes are detected on the other side - do not apply changes to this side

Deleted/changed conflicts->Get the newest or larger changes

If changes are detected on the other side, update the files if they are on the other side newer or larger

Same file/folder name conflicts->Do not change

Do not change the situation.

Same file/folder name conflicts->Add file to folder

If a directory on this side is found whose name coincides with the file name on the other hand - copy the file to this directory.

Same file/folder name conflicts->Rename file

When a directory on this side is found whose name matches the file name on the other side - copy the file with a new name.

Log copy result to output

When this setting is checked, the result, source and destination file is added to the Task output. All files that are copied is added to the output.

The Compress Task is able to compress files with the formats Zip,7z,Xz,Bzip2 Tar,Tar+Gzip and GZip.

The different formats provides different functionality and compatibility across different operating systems. The Tar and GZip formats can be used to read or write archives between Windows and Linux/Unix. The **Zip** format is the most versatile and the most common in Windows workstations. It allows you to encrypt your archive with a password and select a compression level.

VisualCron's **Tar** implementation is fully compatible (reading and creating) with the "USTAR" (Unix Standard TAR) archive format. The implementation is capable of reading, but not writing files with a "posix Tar" or "GNU Tar" format, as long as archive entries do not use the header extensions from either of these formats. If unsupported header extensions are encountered when reading a Tar archive, an exception will be thrown.

The USTAR format has a few limitations, two of which should be emphasized. It should be noted that these are limitations of the USTAR format and not of VisualCron's implementation.

First, the underlying representation (i.e., in the Tar format itself) of the name of an item in a Tar archive is represented by two fields, Name and Prefix (which corresponds roughly to the pathname). These fields are combined and exposed through the FullName property. The combined length of the file and path names cannot exceed 256 characters.

The second limitation is that the maximum size of file that can be archived is 8 GB. This does not mean that the maximum size of a Tar archive is 8 GB; a Tar archive can contain as many 8 GB items as is allowed by the file system of the operating system.

Although Tar and GZip are more commonly used on Unix or Linux platforms, incorporating Xceed's implementations of these file formats into your applications will ensure maximum compatibility with file types.

Tar and **GZip** are usually used together. Tar is an archive; it gathers a collection of files or folders into a single file, while preserving file system information (such as permissions, dates and the folder structure). However, Tar does not compress the files in any way. The GZip format on the other hand is typically used to compress single files (although it is possible for a GZip archive to contain multiple files, see Multi-file operations for details).

Using these two formats together, Tar to create an archive and then compressing it with GZip, can potentially attain greater compression ratios than using a compressing archiver such as ZIP. The ZIP format compresses the individual files and then archives them into a single .zip file. With a GZip Tar file, files are first archived into a .tar file and then the complete archive is compressed. The advantage is that the compression engine searches for similar patterns across the entire archive, rather than just within each individual file, thereby increasing the chances of finding the patterns for this kind of compression. Another advantage in using GZip is that it is currently not encumbered by patents. As a result, there are no additional licensing fees to worry about. When used together, the resulting files typically have a .tar.gz or .tgz extension.

When the *Archive* Task is selected in the Task window you are presented with a set of sub tabs within the Archive tab.

Archive - compress > Archive settings sub tab

Add Task - Archive - compress - 1/1

Archive - compress

The Compress Task is able to compress files with the formats Zip,7z,Xz,Bzip2 Tar,Tar+Gzip and GZip.

Main settings Conditions Archive - compress On error TimeOut Flow

Archive settings Content

Main settings

Archive type:
Zip

Archive path
[Empty field] [Browse]

Use password [Empty field]

Overwrite archive if existing

Append to archive

Compression level
Normal compression

Encryption

Encryption method:
WinZipAES

Encryption strength:
256

Cancel OK

Variables Previous Task 1/1 Next

The archive settings windows controls the main settings including what archiving format you would like to use and the archiving action; if you want to compress to an archive or extract an archive.

Archive type

VisualCron supports the archive types **Zip,7z,Xz,Bzip2 Tar,Tar+Gzip** and **GZip**.

Archive path

The archive path is the full path where your archive should be stored to or extracted from. You can choose any name for your archive but the following names are recommended:

- Zip: myarchive.zip
- Tar: myarchive.tar
- Tar+GZip: myarchive.tar.gz
- 7zip: 7z

Use password

Password protection and encryption is only selectable for the Zip format. When checking this box you first enter a password and then examine the settings in the Compress tab. The zip format supports a light encryption algorithm which uses a string password to encrypt it's data. This type of encryption can resist attacks by amateurs if the password is well chosen and long enough (at least 16 characters, maximum of 80) but it will probably not resist attacks by determined users or experts. Therefore you should use long passwords, and whenever possible, do not solely rely on this encryption system to protect sensitive data.

Compression level

This option is available when the archive type Zip is selected. Set the compression level; higher compression level is slower but makes the file smaller.

Encryption method

This option is available when the archive type Zip is selected and password is used. There are two types of encryption methods available:

Compatible - The traditional ZIP encryption. This is a weak encryption method.

WinZipAES - The WinZip AES encryption method. This is a strong encryption method.

Encryption strength

This option is available when the archive type Zip is selected, password is used and WinZipAES encryption method is selected. Select an integer value representing the encryption strength of this file in bits, 256 is the highest bit setting and security of encryption strength.

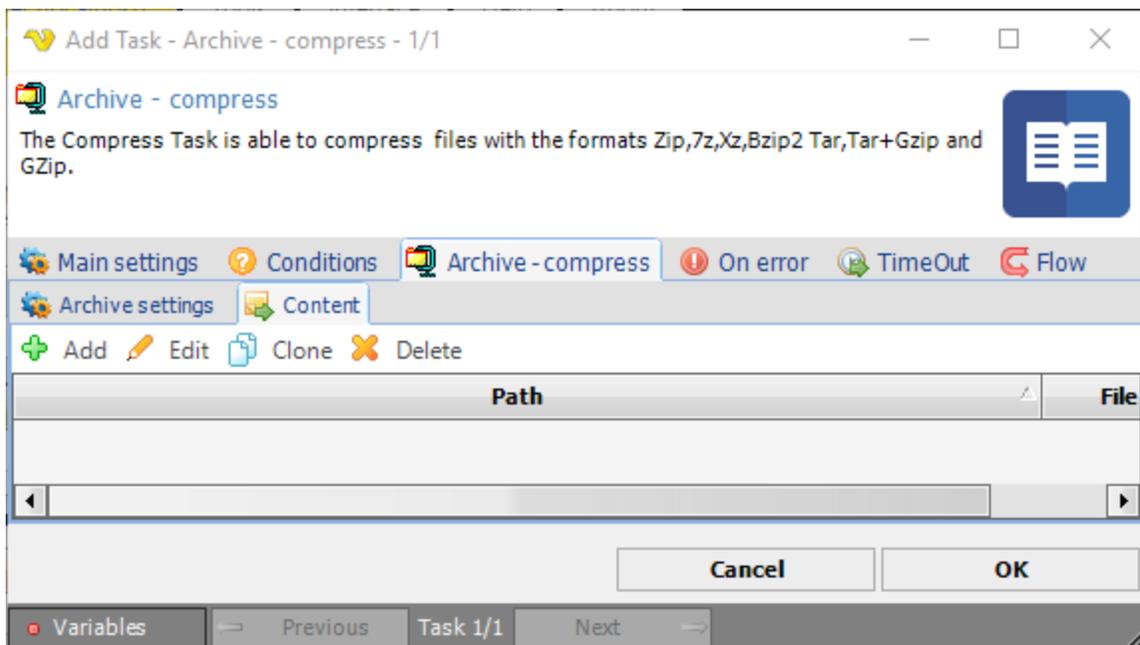
Overwrite to archive if existing

When this option is selected, the archive will be overwritten (if existing).

Append to archive

If the archive exists it will be appended with new items.

Archive - compress > Content sub tab



This sub tab contains a list of items/objects to be compressed. Click on Add to add a new item.

The Archive item dialog is using the standard file filter for selecting one or more file that you want to add to the zip library. Read more about the file filter here.

Note: When you are accessing a network drive (a folder on a remote computer) as source or destination folder you must specify the path in UNC format and not the letter of the logical drive. For example Y: \remotefolder\ must be specified as \\remoteservername\remotefolder\.

The Archive extract Task is able to extract a number of formats like Zip,7z,Xz,Rar, Bzip2,Tar, GZip, ISO and more.

Archive type

Select any of the supported archive types.

Extract to folder

Select which folder you want to extract the zip file(s) to.

Overwrite if existing

If checked, VisualCron will attempt to overwrite any existing files (from the zip folder).

Use password

If checked you are able to specify a password for the zip file.

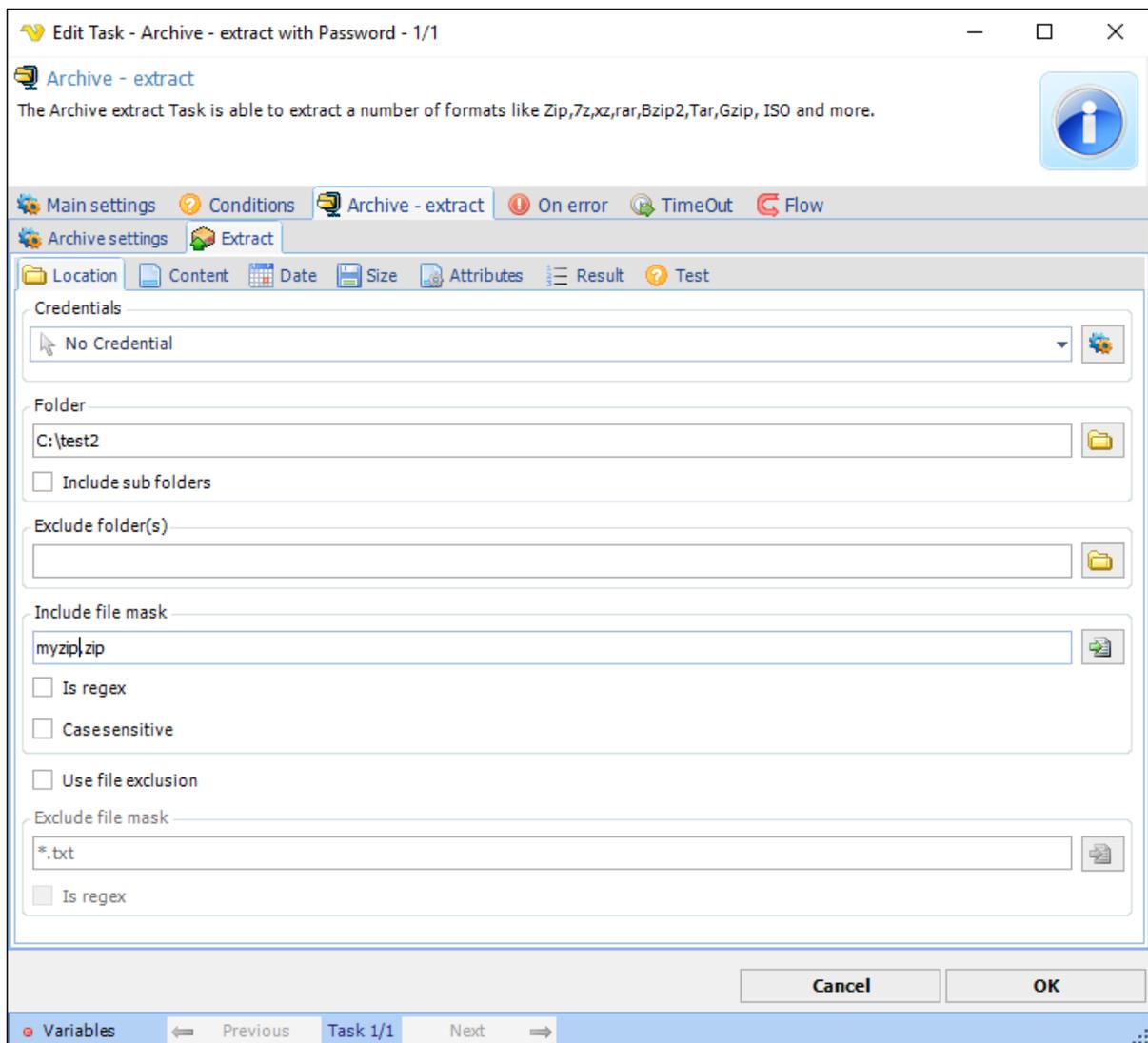
File filter

A string that can include wild cards that control which inner files to extract. Split multiple entries with semicolon.

Case sensitive

If the file filter string should be case sensitive.

Archive - extract > Extract > Location sub tab



The extract tab contains the file filter that is used to find zip files for extraction.

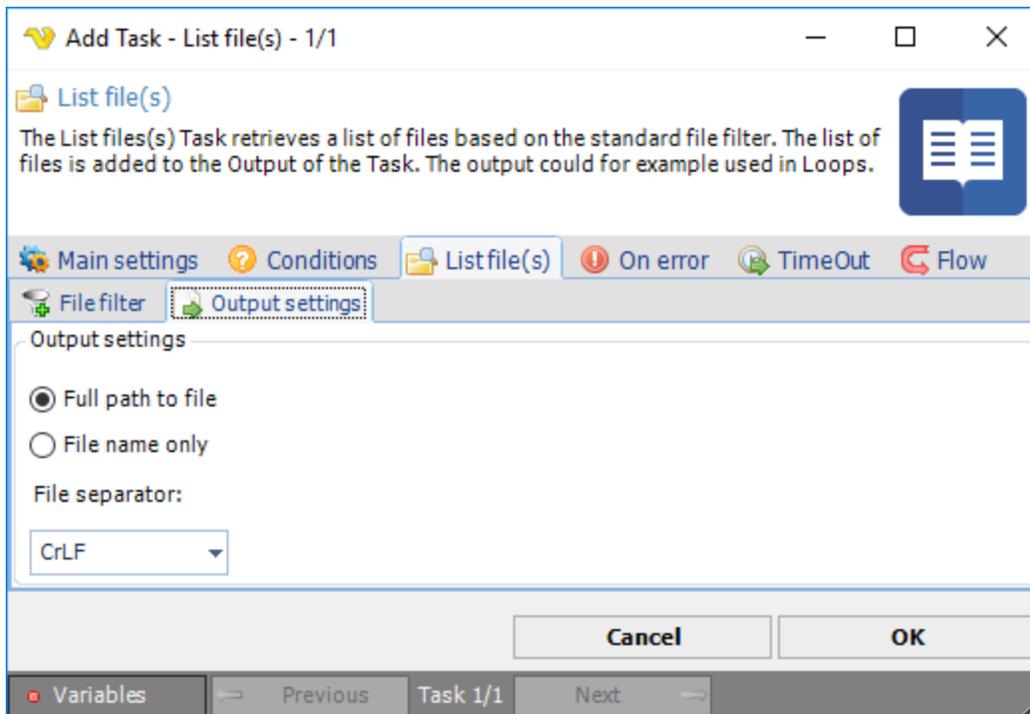
The List files(s) Task retrieves a list of files based on the standard file filter. The list of files is added to the Output of the Task.

The main purpose of this Task is to use it for looping. For example, you could run this Task against a directory first - then use the output in the For Each loop type. The Loop will then iterate through all found files and each file can be accessed through the Loop Variables.

List file(s) > File filter > Location sub tab

The List file(s) Task uses the standard VisualCron File filter to define the properties of the listed files.

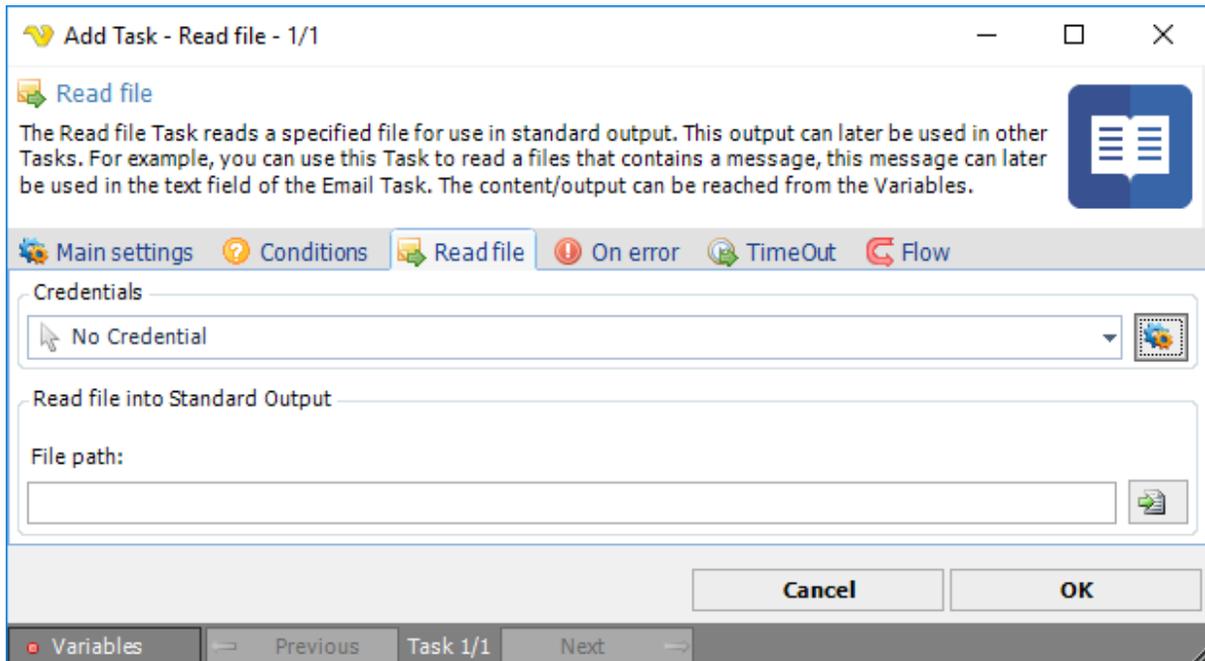
List file(s) > Output settings sub tab



Output settings

List file settings includes path and file separator options.

The Read file Task reads a specified file for use in standard output. This output can later be used in other Tasks. For example, you can use this Task to read a file that contains a message, this message can later be used in the text field of the Email Task. The content/output can be reached from the Variables.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

File path

Select a path to the file you want to read.

Note: The output size is limited in VisualCron by default. To increase or remove the output limit go to the *Server Settings*.

The Write file Task lets you write any string to a file. The string could be a Variable, for example a result from another Task.

The screenshot shows a dialog box titled "Add Task - Write file - 1/1". The main heading is "Write file" with a sub-description: "The Write file Task lets you write any string to a file. The string could be a Variable, for example a result from another Task." Below this is a navigation bar with tabs: "Main settings", "Conditions", "Write file" (selected), "On error", "TimeOut", and "Flow". The "Credentials" section has a dropdown menu currently showing "No Credential" and a settings icon. The "Write value/variable to file" section contains a "File path:" label, an empty text input field with a browse button, and two checked checkboxes: "Include BOM (if UTF8)" and "Append to file". Below these is a "Line break:" dropdown menu set to "CrLf". At the bottom of this section is a "Value:" label and an empty text area. The dialog has "Cancel" and "OK" buttons. At the very bottom, there is a task navigation bar with "Variables", "Previous", "Task 1/1", and "Next" buttons.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

File path

The path to the file you want to write to.

Include BOM (if UTF8)

If checked, the byte order mark character is included in the start of the text stream

Append to file

Check this box if you to add rows to an existing file. If you want to overwrite the file please leave this unchecked.

Add new line

When appending you can check this if you want to add a new line for each string/value you add.

Value

The string/variable that you want to write to the file.

The Touch file Task set the last write time of one or more file(s). The Touch file Task uses the standard file filter to find files that you want to touch.

Add Task - Touch file - 1/1

Touch file
The Touch file Task set the last write time of one or more file(s). The Touch file Task uses the standard file filter to find files that you want to touch.

Main settings | Conditions | **Touch file** | On error | TimeOut | Flow

File filter

Location | Content | Date | Size | Attributes | Result | Test

Credentials
No Credential

Folder
[Empty text box]

Include sub folders

Exclude folder(s)
[Empty text box]

Include file mask
*
 Is regex
 Casesensitive

Use file exclusion

Exclude file mask
*.txt
 Is regex

Cancel OK

Variables | Previous | Task 1/1 | Next

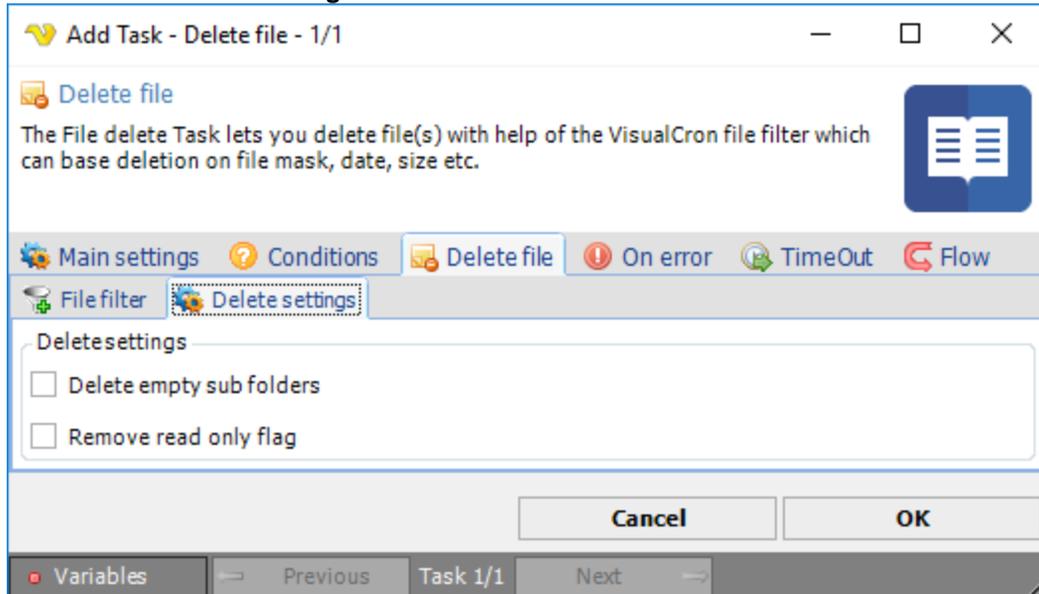
Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

The File delete Task lets you delete file(s) with help of VisualCron file filter which can base deletion on file mask, date, size etc.

Delete file > File filter > Location sub tab

The file filter sub tab contains the standard file filter.

Delete file > Delete settings sub tab*Delete empty sub folders*

If checked, empty sub folders are deleted.

Remove read only flag

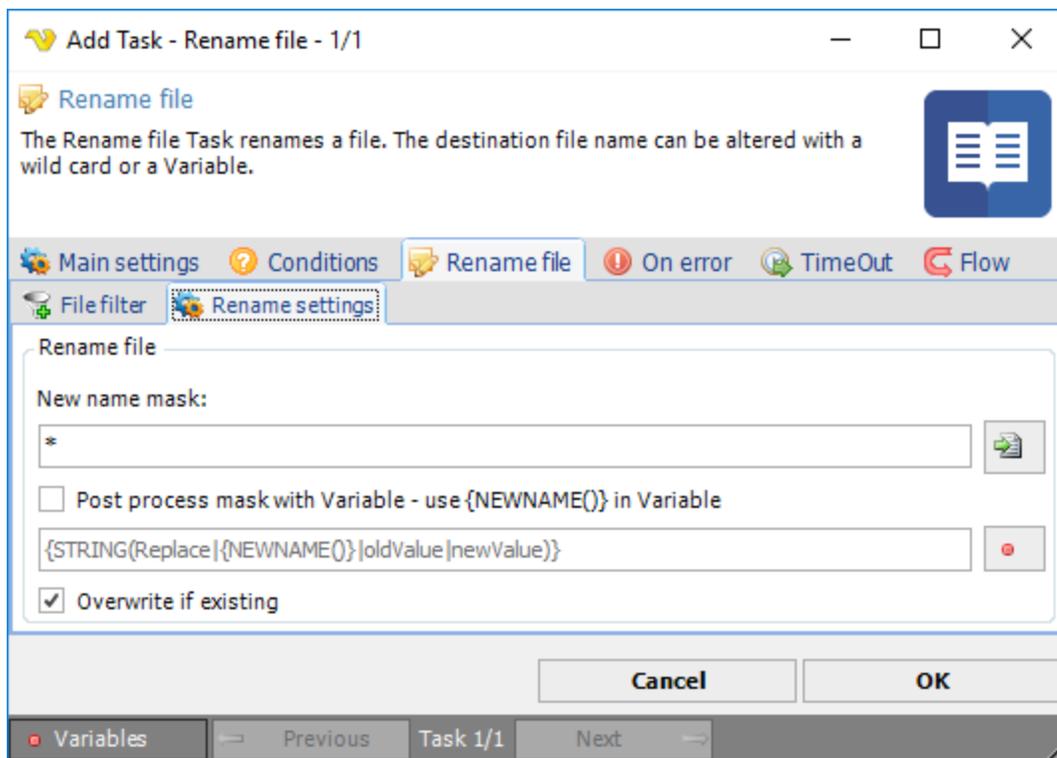
If checked, the read-only folder attribute is removed, allowing delete of a read-only folder.

The Rename file Task renames a file. The destination file name can be altered with a wild card or a Variable.

Rename file > File filter > Location sub tab

In the VisualCron standard file filter tab you set the properties for finding files that you want to rename.

Rename file > Rename settings sub tab



In the rename settings you control the final file name.

New name mask

You can use a wild card to replace the original name. For example *.pdf keeps the original name but changes the extension to "pdf".

Post process mask with Variable

Sometimes you might want to change the name with the help of a Variable. Use default * in the *New name mask* and then check this box to add support for Variable renaming.

The default value shows how to use this property. `{STRING(Replace|{NEWNAME()}|oldValue|newValue)}`. `{NEWNAME()}` is the new name *after* the New name mask has been processed. You need this Variable pointer to find the "current" name you want to rename.

Overwrite if existing

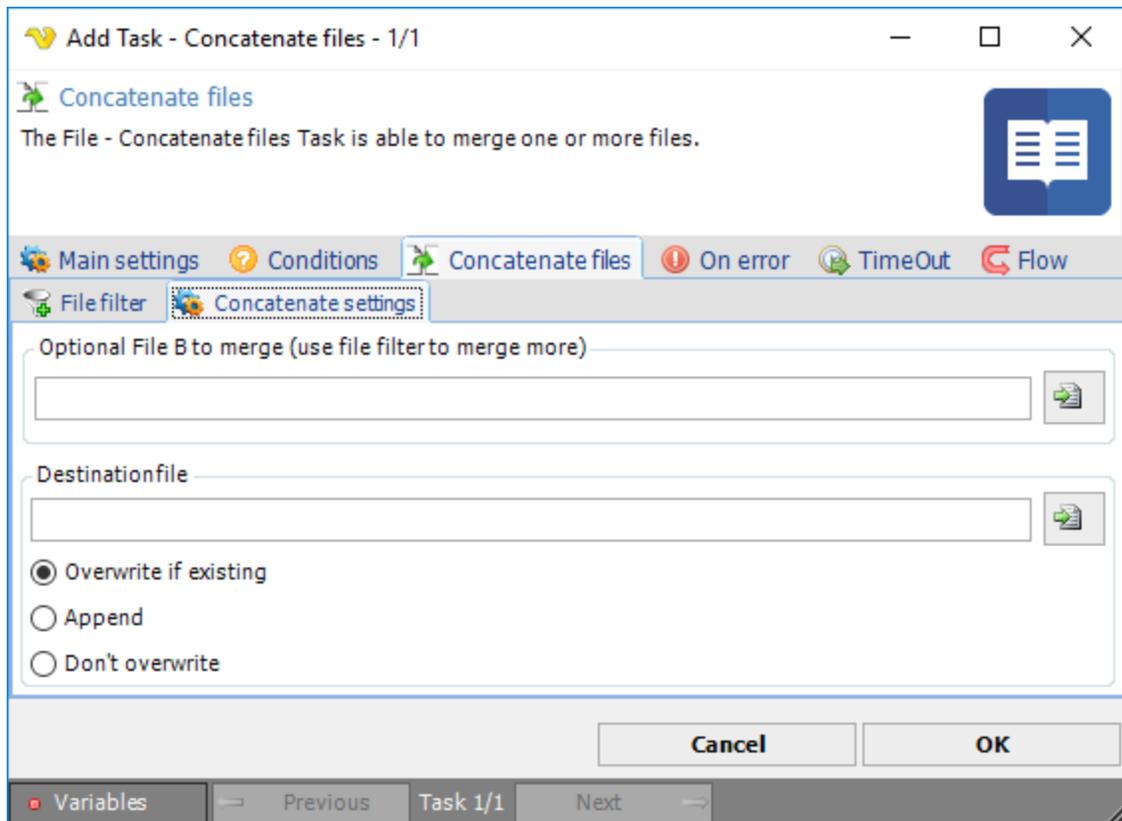
If the destination file already exists it will be overwritten - otherwise an error will be thrown.

The File - Concatenate files Task is able to merge one or more files.

Concatenate files > File filter > Location sub tab

This Task uses the file filter to find one or more files to merge. Optionally, a specific file can be used (File B)

Concatenate files > Concatenate settings sub tab



Optional File B

You use the file filter to merge one or more files. Optionally, another file can be added. Specify the full path here.

Destination file

Enter the full path where the merged file should be saved to

Overwrite settings

You can control what happens if the file already exists:

- Overwrite if existing - overwrites the existing file
- Append - merges the new file with the existing
- Don't overwrite - skips the current operation and lets the current file be

The File - List folder Task lists all folders for the given filter and output format.

Add Task - List folders - 3/3

List folders
The Folder list Task lists all folders for the given filter and output format.

Main settings Conditions List folders On error TimeOut Flow

Folder filter Output settings

Location Date Size Test

Credentials
No Credential

Base folder
[Empty text box] [Folder icon]

Include base folder
 Include sub folders

Include folder mask
* [File icon]

Is regex
 Casesensitive

Use folder exclusion

Exclude folder mask
*.txt [File icon]

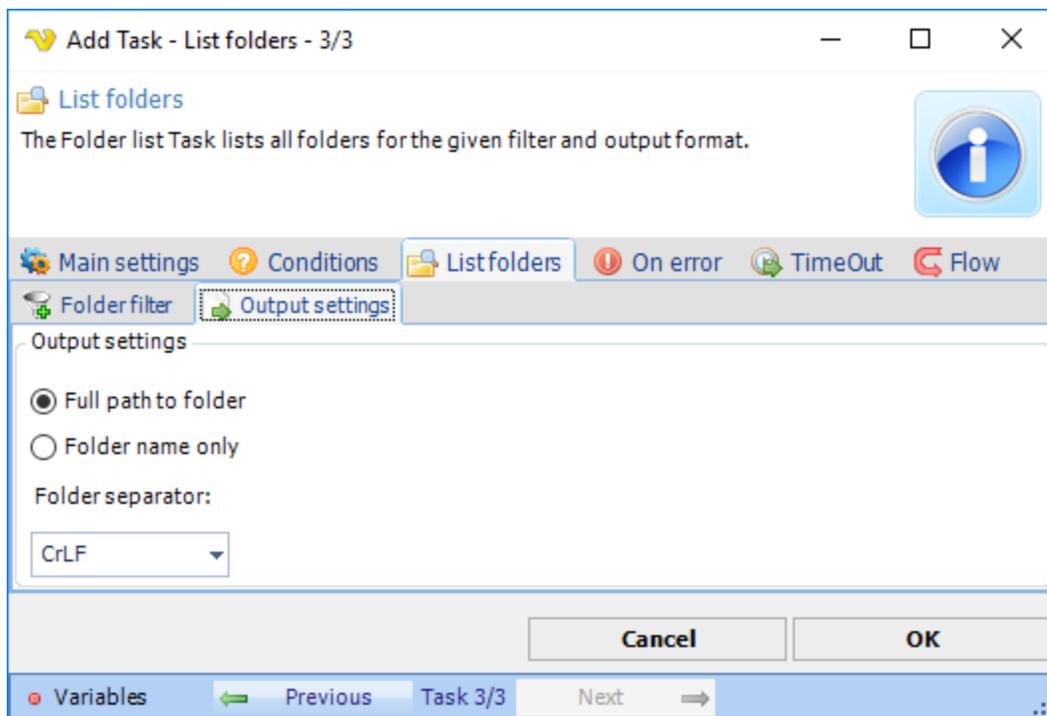
Is regex
 Casesensitive

Cancel OK

Variables Previous Task 3/3 Next

This Task is using the standard VisualCron Folder filter to find one or more folders.

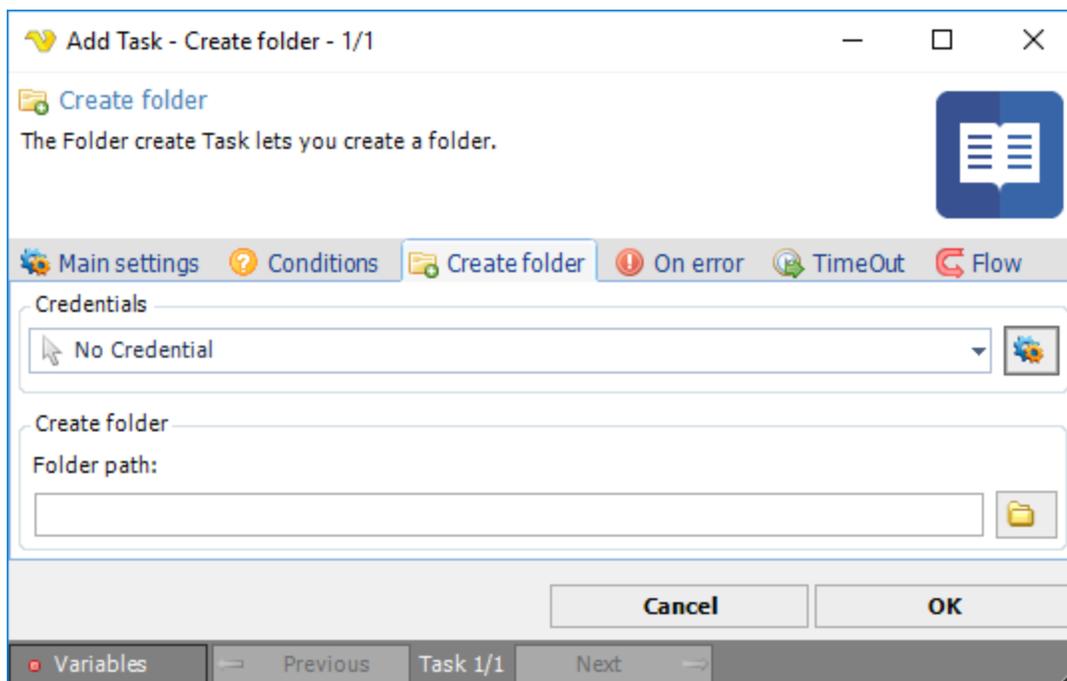
List folders > Output settings sub tab



Output settings

List file settings includes folder path and folder separator options.

The Create folder Task lets you create a folder.



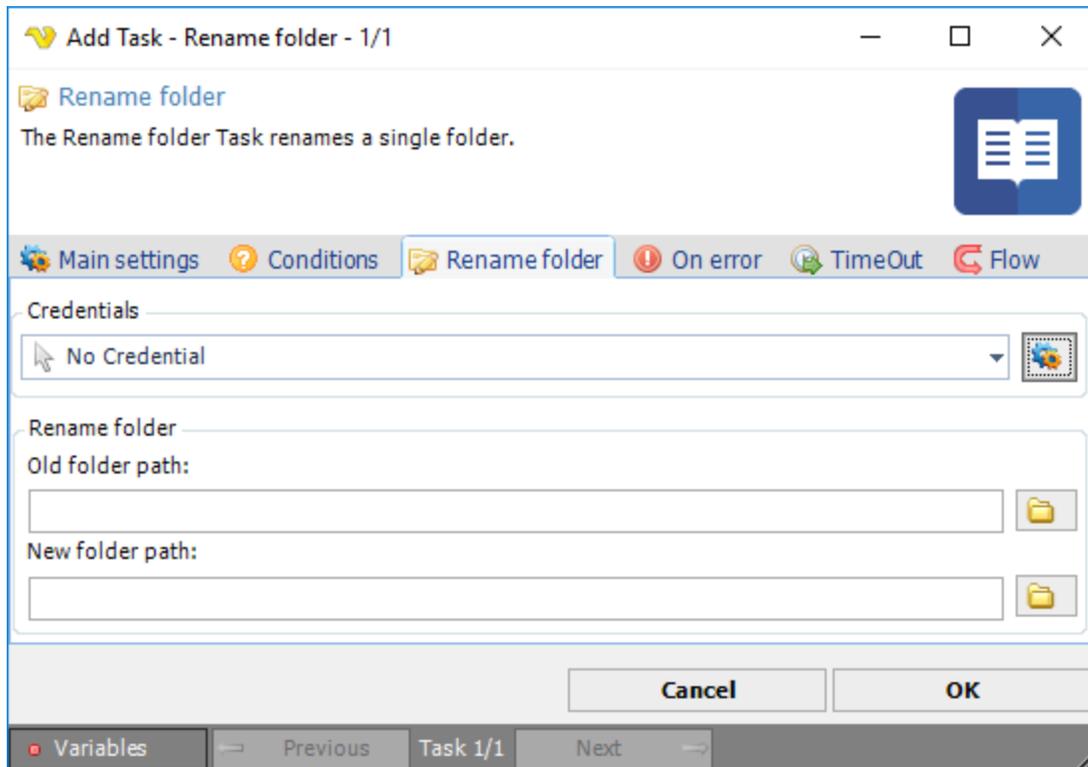
Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Folder path

The path to the folder you want to create.

The Rename folder Task renames a single folder.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

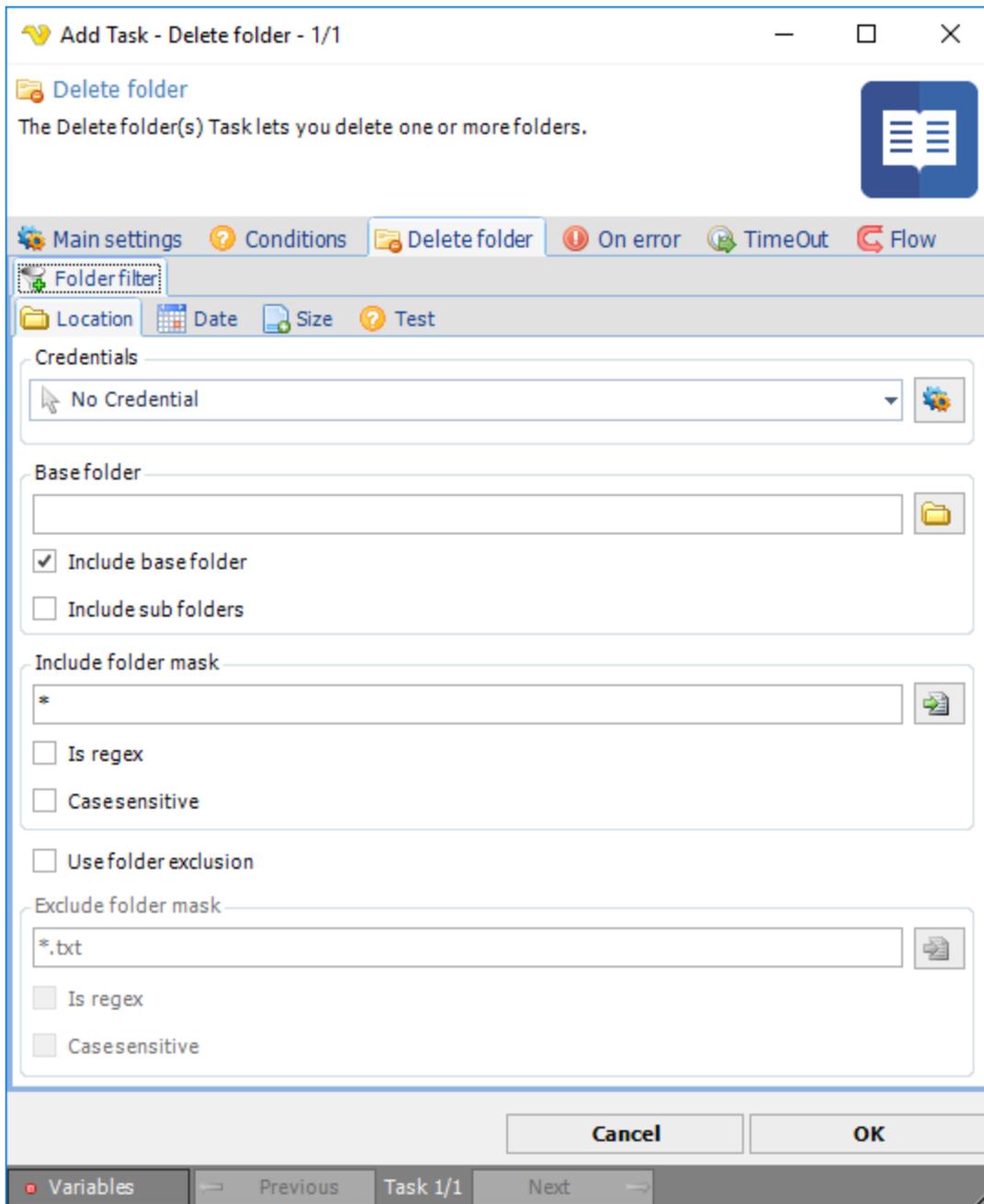
Old folder path

The path to the existing folder.

New folder path

The path to the new folder.

The Delete folder(s) Task lets you delete one or more folders.

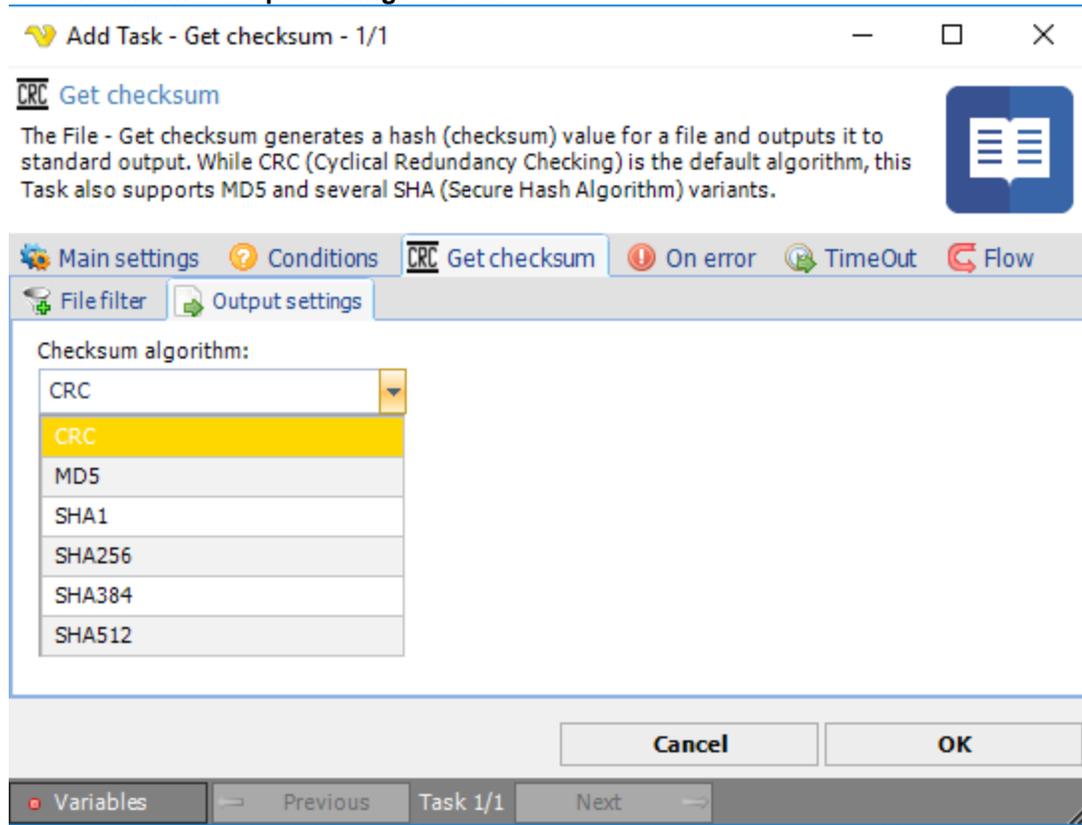


This Task is using the standard VisualCron Folder filter to find one or more folders.

The File - Get checksum generates a hash (checksum) value for a file and outputs it to standard output. While CRC (Cyclical Redundancy Checking) is the default algorithm, this Task also supports MD5 and several SHA (Secure Hash Algorithm) variants.

Get checksum > File filter > Location sub tab

The standard VisualCron File filter is used to specify one or more files you want to retrieve the checksum for.

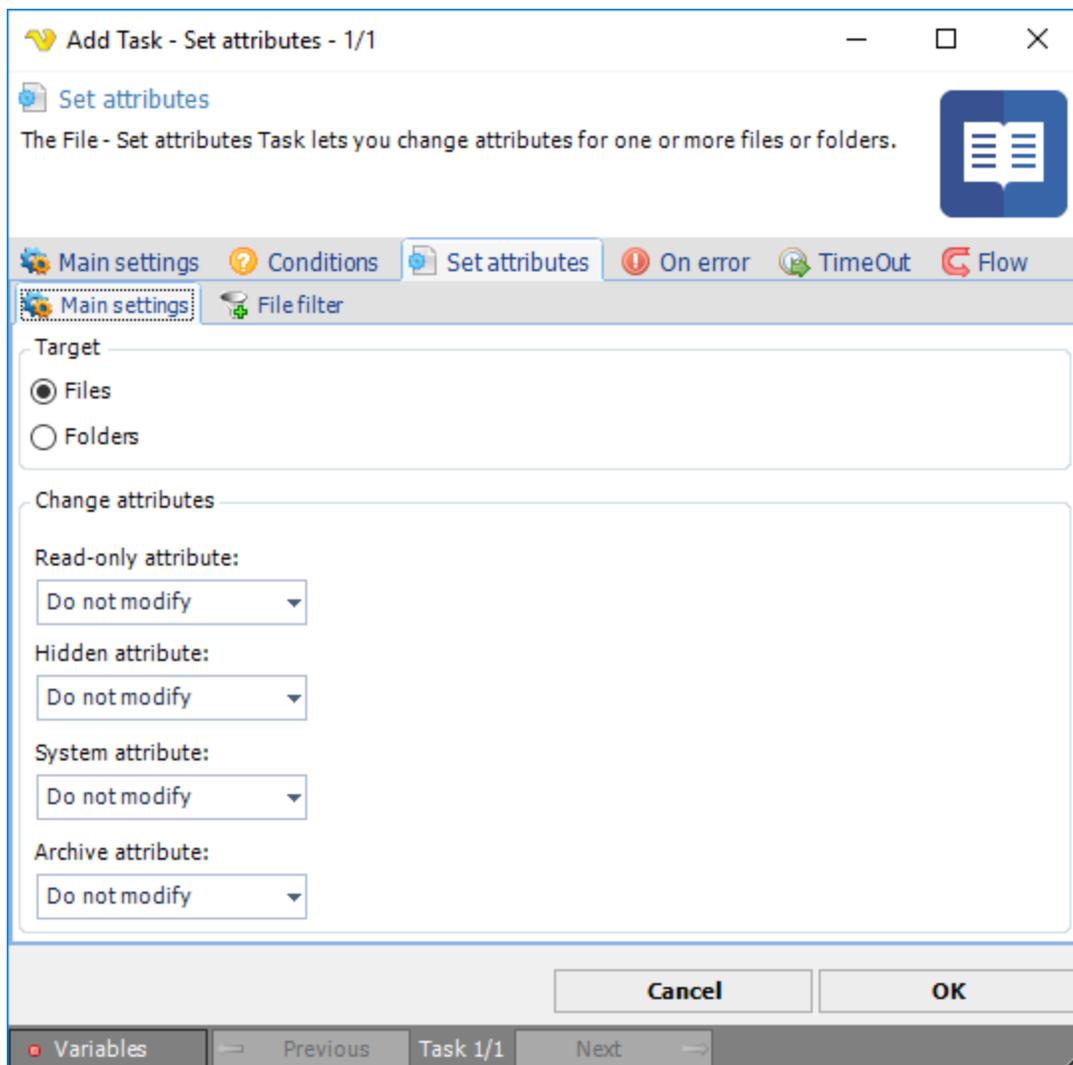
Get Checksum > Output settings sub tab*Checksum algorithm*

Indicates the algorithm to use during calculation. The available options are:

- CRC (default): Cyclical Redundancy Checking. Fastest and least secure.
- MD5: Message Digest 5. Slower and more secure than CRC.
- SHA1: Secure Hash Algorithm-1. Slower and more secure than MD5.
- SHA256: Secure Hash Algorithm-256. Slower and more secure than SHA1.
- SHA384: Secure Hash Algorithm-384. Slower and more secure than SHA256.
- SHA512: Secure Hash Algorithm-512. Slowest and most secure.

The File - Set attributes Task lets you set attributes for one or more folders or files.

Set attributes > Main settings sub tab



Target

Select if you want to target by File or Folder. If you set Folder you use the Folder Filter Dialog and it will use the base folder (and sub folders if you select that). If you select Files you use the File filter dialog.

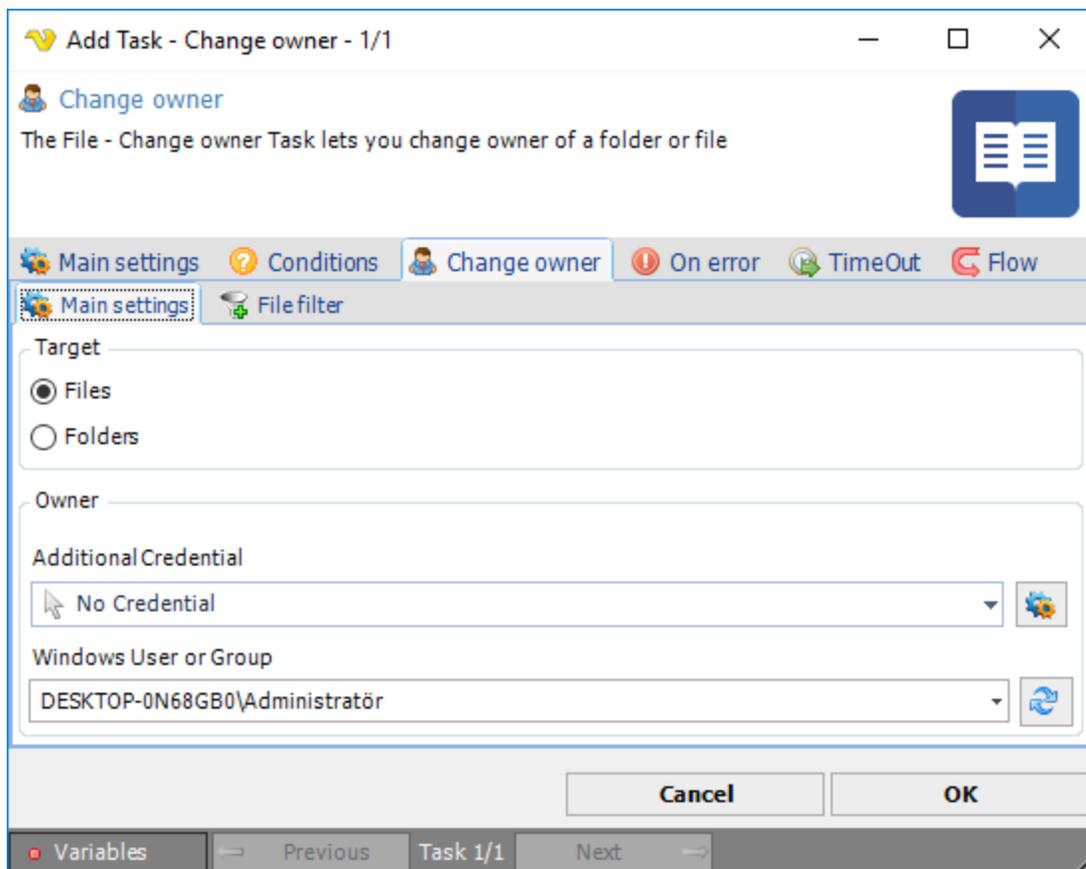
Change attributes

Select an attribute and if you want to turn on or off the attribute based on the files that are found.

Set attributes > File filter > Location sub tab

The standard VisualCron File filter is used to specify one or more files or folders you want to retrieve set attributes for.

The File - Change owner Task lets you change the owner of one or more files or folders.



Target

Select target for the Task, either files or folders. The File filter tab content will change between File filter and Folder filter depending on your selection.

It is important that you use a UNC path to the file/folder. For example F:\test should be written \computername\fs\$\test in source folder.

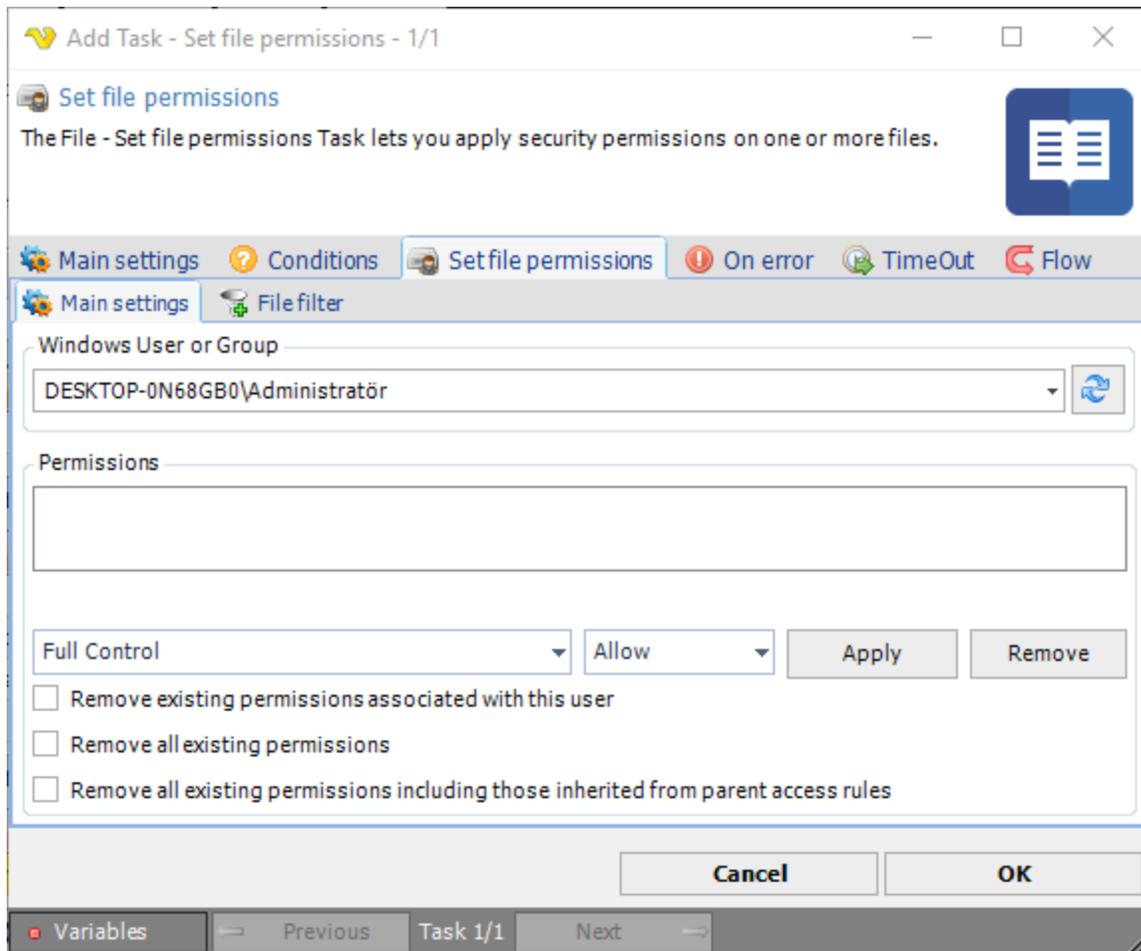
Additional Credential

If you need extended permissions to set owner you can select a Credential here.

Windows User or Group

Controls who the new owner should be. Enter or click Refresh button to fill a list of users and groups.

The File - Set file permissions Task lets you apply security permissions for one or more files.



Windows User or Group

Enter or click Refresh button to fill a list of users and groups.

Permissions

Add permissions you want to set for the files.

Folder processing options

Determines if folder, files or both should be affected by the new permissions.

Remove existing permissions associated with this user

Removes all existing permissions associated with the selected user.

Remove all existing permissions

Removes all existing permissions.

Remove all existing permissions including those inherited from parent access rules

Removes all existing permissions including those inherited from parent access rules.

Set file permissions > File filter > Location sub tab

This Task uses the standard VisualCron File filter to filter out files to set permissions for.

The Folder - Set folder permissions Task lets you apply security permissions on one or more folders.

Add Task - Set folder permissions - 1/1

Set folder permissions
The Folder - Set folder permissions Task lets you apply security permissions on one or more folders.

Main settings Conditions Set folder permissions On error TimeOut Flow

Main settings Folder filter

Windows User or Group
DESKTOP-0N68GB0\Administratör

Permissions

Full Control Allow Apply Remove

Folder processing options:
Folders only

Remove existing permissions associated with this user
 Remove all existing permissions
 Remove all existing permissions including those inherited from parent access rules

Cancel OK

Variables Previous Task 1/1 Next

Windows User or Group

Enter or click Refresh button to fill a list of users and groups.

Permissions

Add permissions you want to set for the folders.

Folder processing options

Determines if folder, files or both should be affected by the new permissions.

Remove existing permissions associated with this user

Removes all existing permissions associated with the selected user.

Remove all existing permissions

Removes all existing permissions.

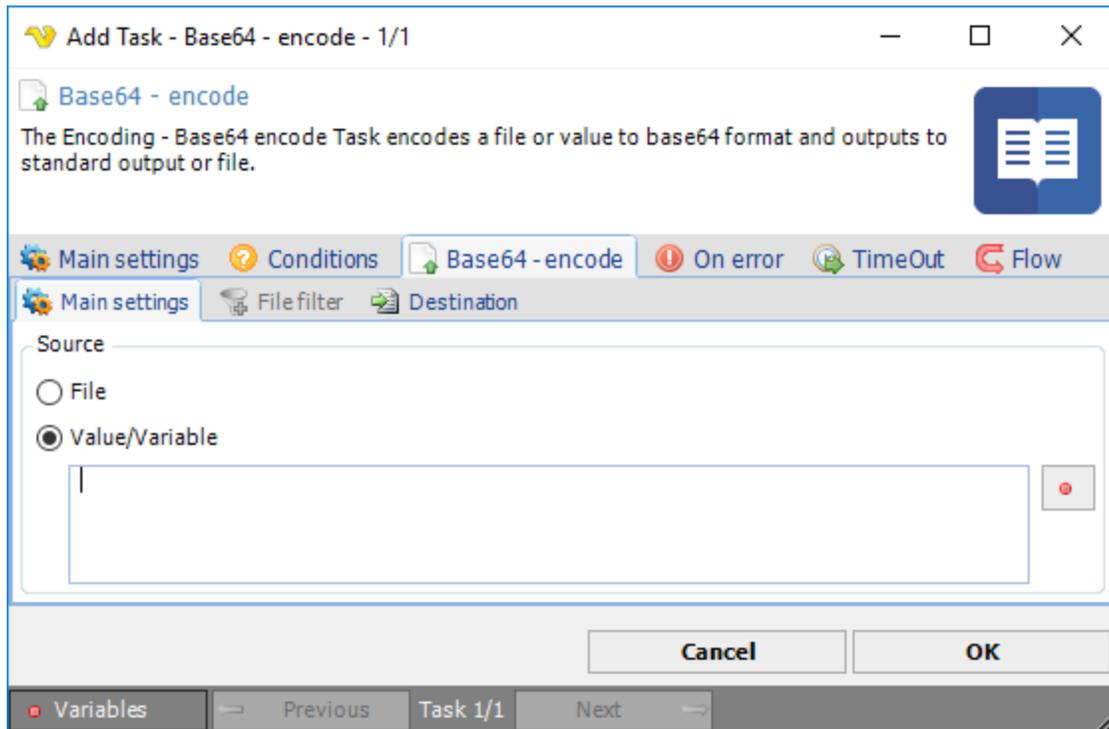
Remove all existing permissions including those inherited from parent access rules

Removes all existing permissions including those inherited from parent access rules.

Set folder permissions > Folder filter > Location sub tab

This Task uses the standard VisualCron Folder filter to filter out folders.

The Encoding - Base 64 encode Task encodes a file or value to Base64 format and outputs to standard output file.

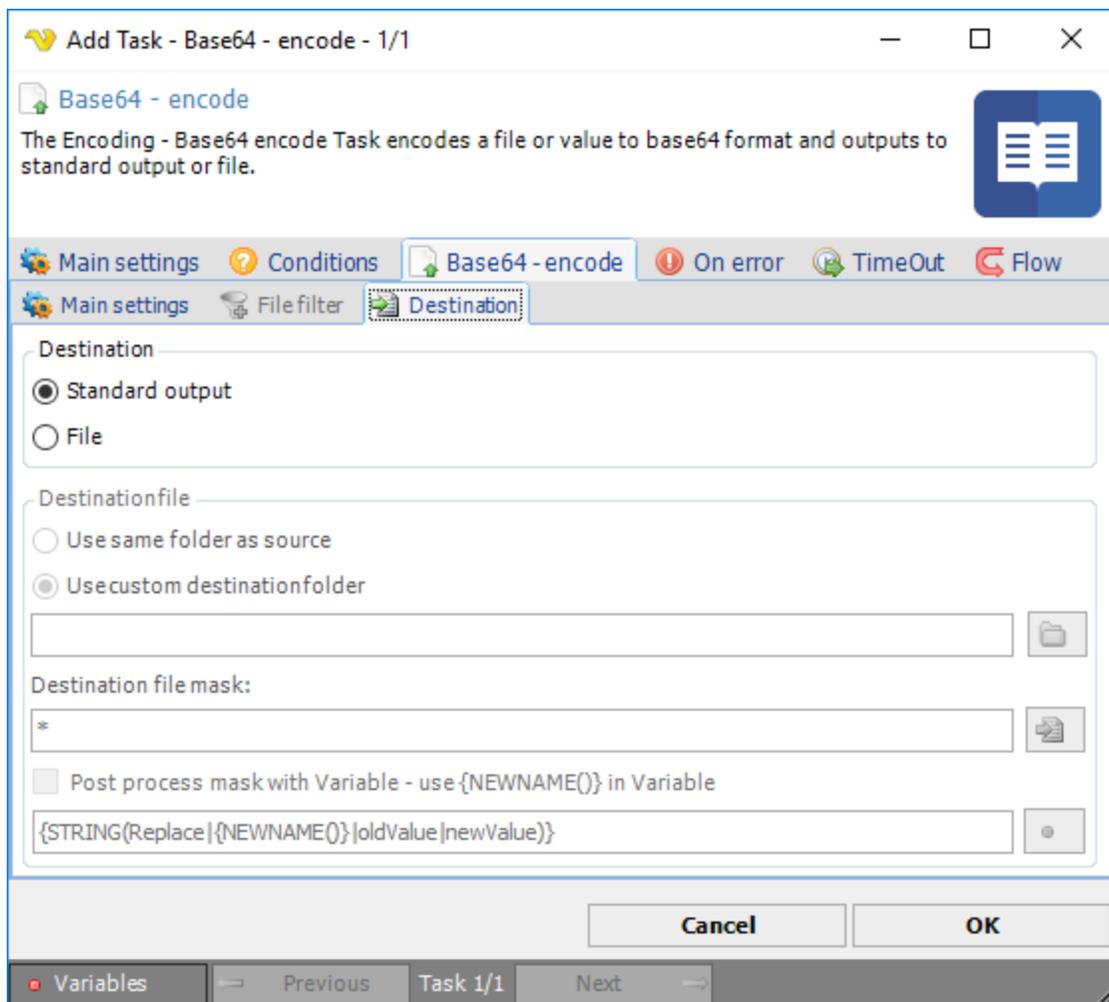
**Source**

Select File if you want to encode an existing file. When selecting File, the standard VisualCron File filter will be enabled. Select Value/Variable to use an existing value or Variable.

Base64 - encode > File filter > Location sub tab

This Task uses the standard VisualCron File filter to filter out files.

Base64 - encode > Destination sub tab



Destination

Select File if you want to save the encoded content to file or select *Standard output* to pass the value to the output of the Task.

Destination file

You can choose to save files to same folder as where the original file was found by selecting *Use same folder as source*. If you select *Use custom destination folder* you are able to select a different destination folder for the saved file than source folder.

Destination file mask

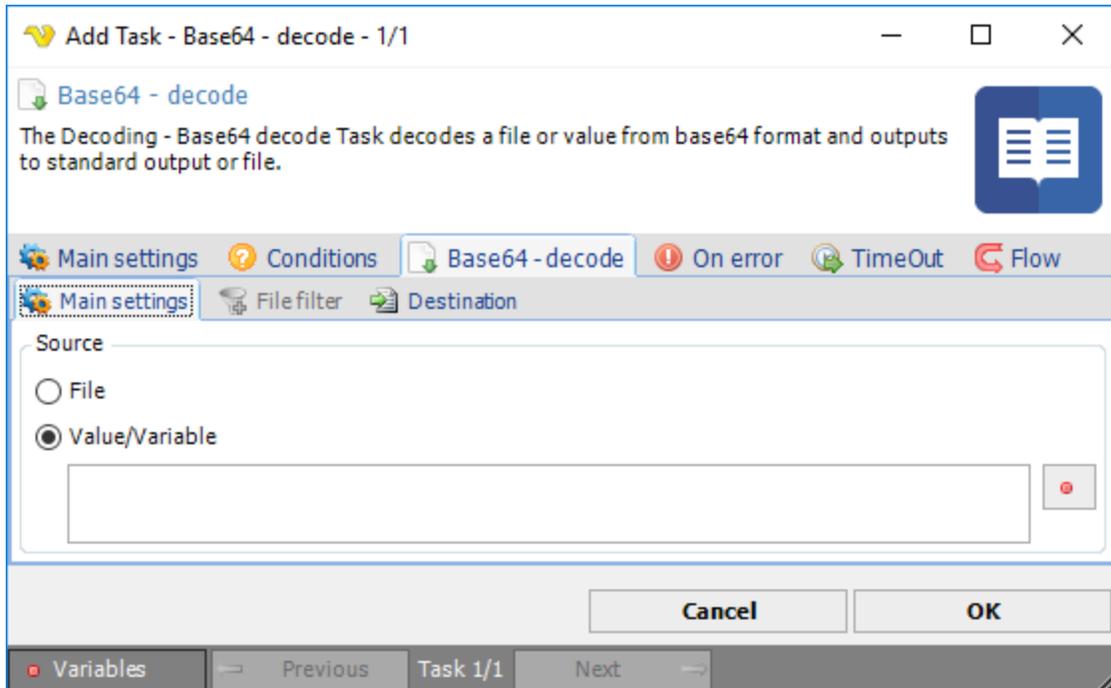
Destination file mask is a quick way to change the file name to something else. By default it is using * which means that the same file name will be used for destination folder. If you are going to use * you need to use another destination folder. If you for example know it is a text file want to change the original extension from ".enc" instead you can change this destination file mask to "*.txt".

Post process mask with Variable

This property gives you more advanced ways to change the file name. We recommend that you use *Destination file mask* with value * when using this property. When checking this property the new name will be stored in a temporary variable {NEWNAME()}. You will be able to use this Variable for processing with other Variable functions. As an example we have provided the default value for this property: {STRING(Replace|{NEWNAME()}|oldValue|newValue)}. The example uses the String.Replace method

from the Variables window. It uses the `{NEWNAME()}` as input Variable with options to set a value that you want to replace from original file name "oldValue" and the new value "newValue".

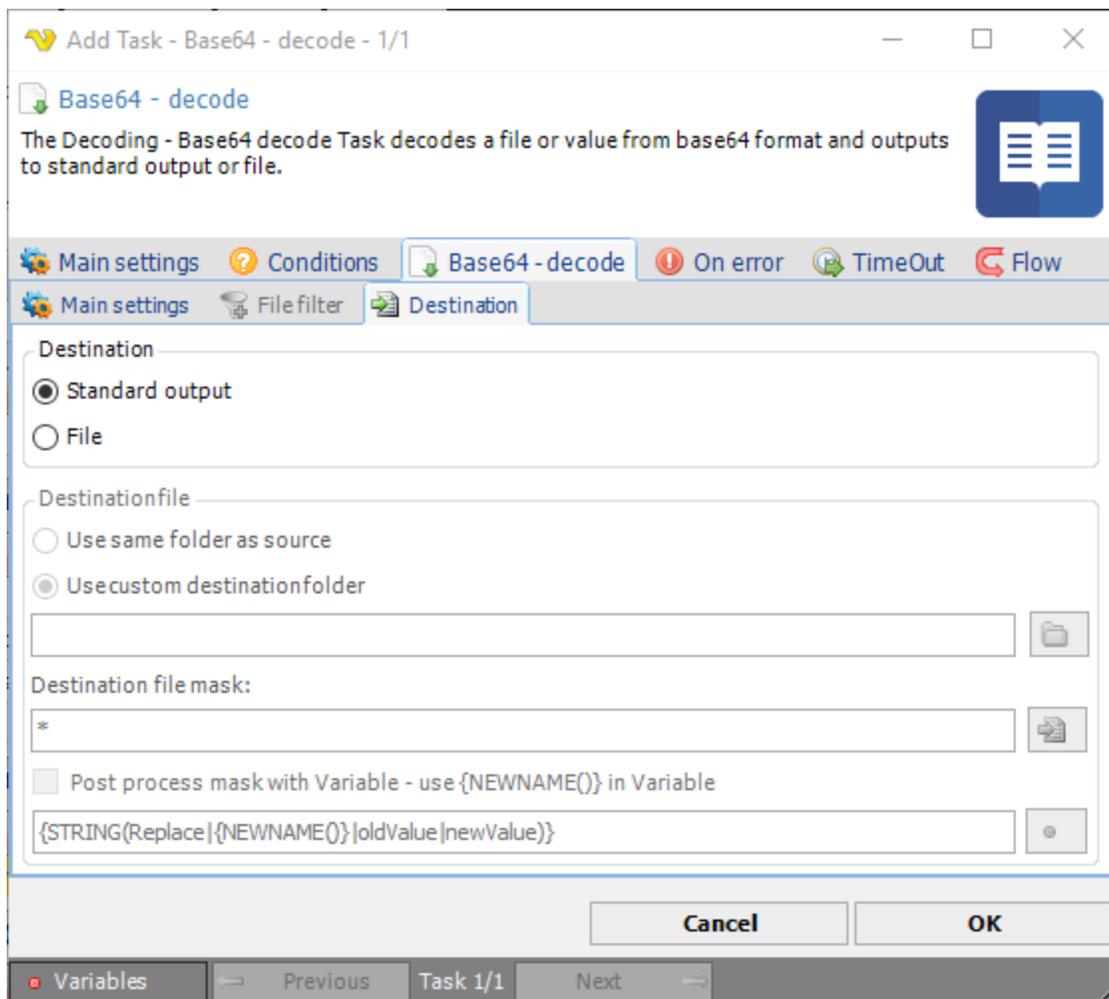
The Decoding - Base 64 - decode Task decodes a file or value from Base64 format and outputs to standard output or file.



Source

Select File if you want to decode an existing file. When selecting File, the standard VisualCron File filter will be enabled. Select Value/Variable to use an existing value or Variable.

Base64 - decode > Destination sub tab



Destination

Select File if you want to save the decoded content to file or select *Standard output* to pass the value to the output of the Task.

Destination file

You can choose to save files to same folder as where the original file was found by selecting *Use same folder as source*. If you select *Use custom destination folder* you are able to select a different destination folder for the saved file than source folder.

Destination file mask

Destination file mask is a quick way to change the file name to something else. By default it is using * which means that the same file name will be used for destination folder. If you are going to use * you need to use another destination folder. If you for example know it is a text file want to change the original extension from ".enc" instead you can change this destination file mask to "*.txt".

Post process mask with Variable

This property gives you more advanced ways to change the file name. We recommend that you use *Destination file mask* with value * when using this property. When checking this property the new name will be stored in a temporary variable `{NEWNAME()}`. You will be able to use this Variable for processing with other Variable functions. As an example we have provided the default value for this property: `{STRING(Replace|{NEWNAME()}|oldValue|newValue)}`. The example uses the String.Replace method

from the Variables window. It uses the `{NEWNAME()}` as input Variable with options to set a value that you want to replace from original file name "oldValue" and the new value "newValue".

The Image adjust Task lets you change colors, brightness and contrast in an existing image.

Image adjust > File filter > Location sub tab

In the File filter tab you define the image file to be adjusted. Read more about file filter here.

Image adjust > Adjust parameters sub tab

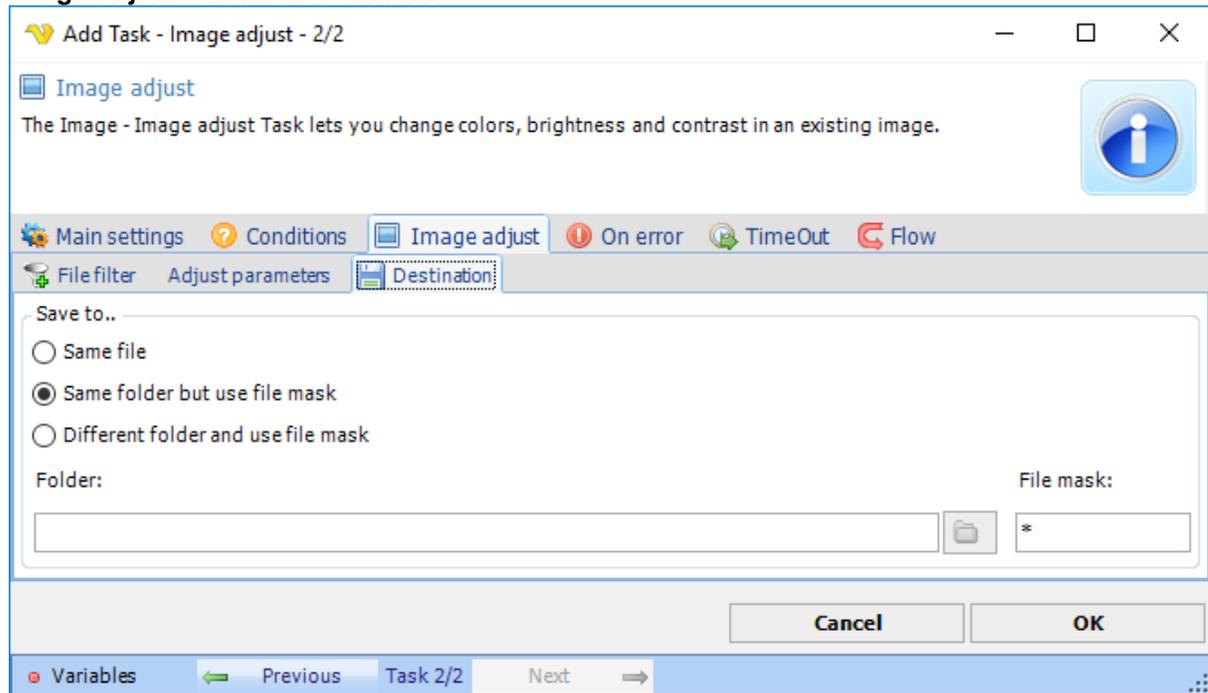
The screenshot shows the 'Image adjust' task configuration window. The 'Adjust parameters' sub-tab is active, showing the following options and input fields:

- Color RGB** (selected): Red: 0, Green: 0, Blue: 0
- Color HSB**: Hue: 0, Saturation: 0, Brightness: 0
- Gamma**: Red: 0, Green: 0, Blue: 0
- Birhtness**: Brightness: 0
- Contrast**: Contrast: 0

The window also features a 'Cancel' button and an 'OK' button. The bottom navigation bar shows 'Variables', 'Previous', 'Task 2/2', and 'Next'.

Adjust to

All image adjust values are set to 0 by default. For RGB and Gamma, select a value between 0 and 255 to intense a red, green or blue color.

Image adjust > Destination sub tab**Save to**

Enter destination file and folder names.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

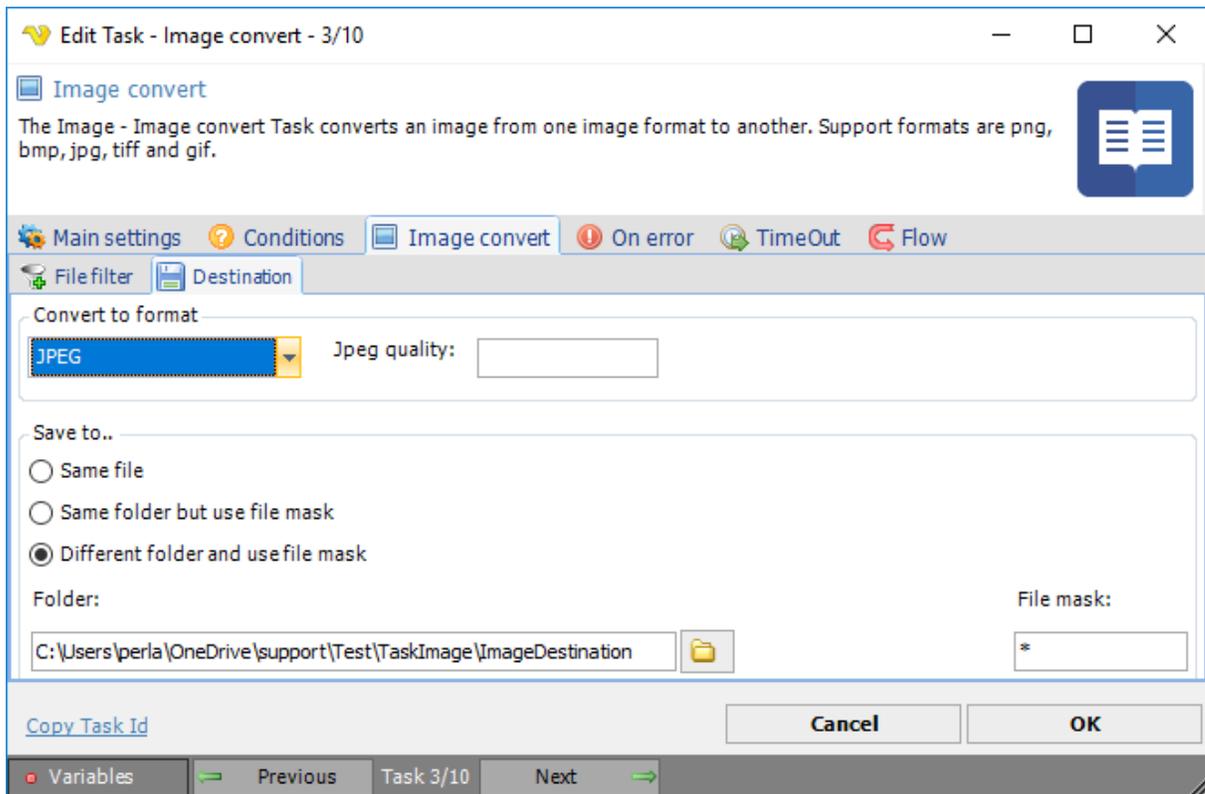
Save file with different name.

The Image convert Task converts an image from one format to another. Supported formats are png, bmp, jpg, tiff and gif.

Image convert > File filter > Location sub tab

In the File filter tab you define the image file to be converted. Read more about file filter here.

Image convert > Destination sub tab



Convert to format

Destination image format. If JPEG, optionally select JPEG quality.

Save to

The destination folder and file mask which the image is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

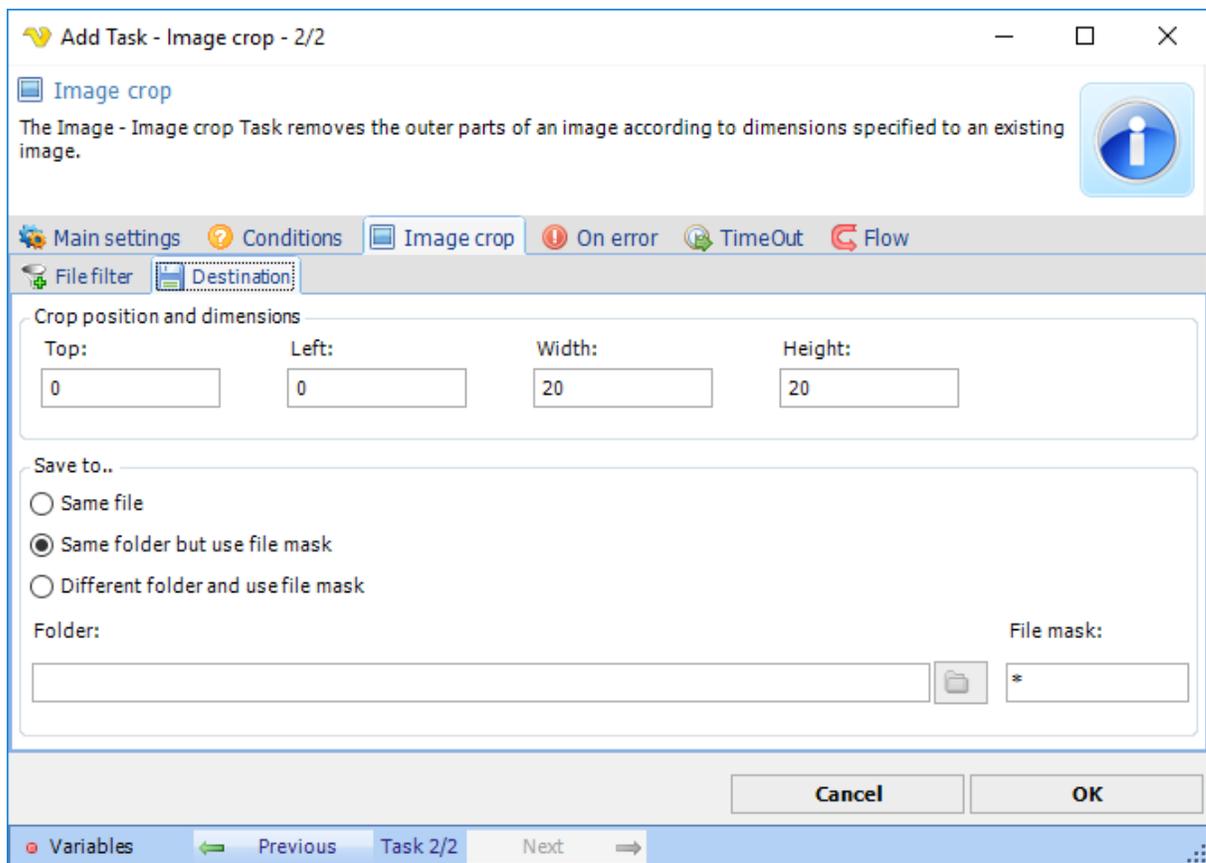
Save file with different name.

The Image crop Task removes the outer parts of an image according to dimensions specified to an existing image.

Image crop > File filter > Location sub tab

In the File filter tab you define the image file to be cropped. Read more about file filter here.

Image crop > Destination sub tab



Crop position and dimensions

Top and Left define the upper left corner of the cropped image.
Width and Height define the size of the cropped image.

Save to

The destination folder and file mask which the image is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

Note about Image Crop:

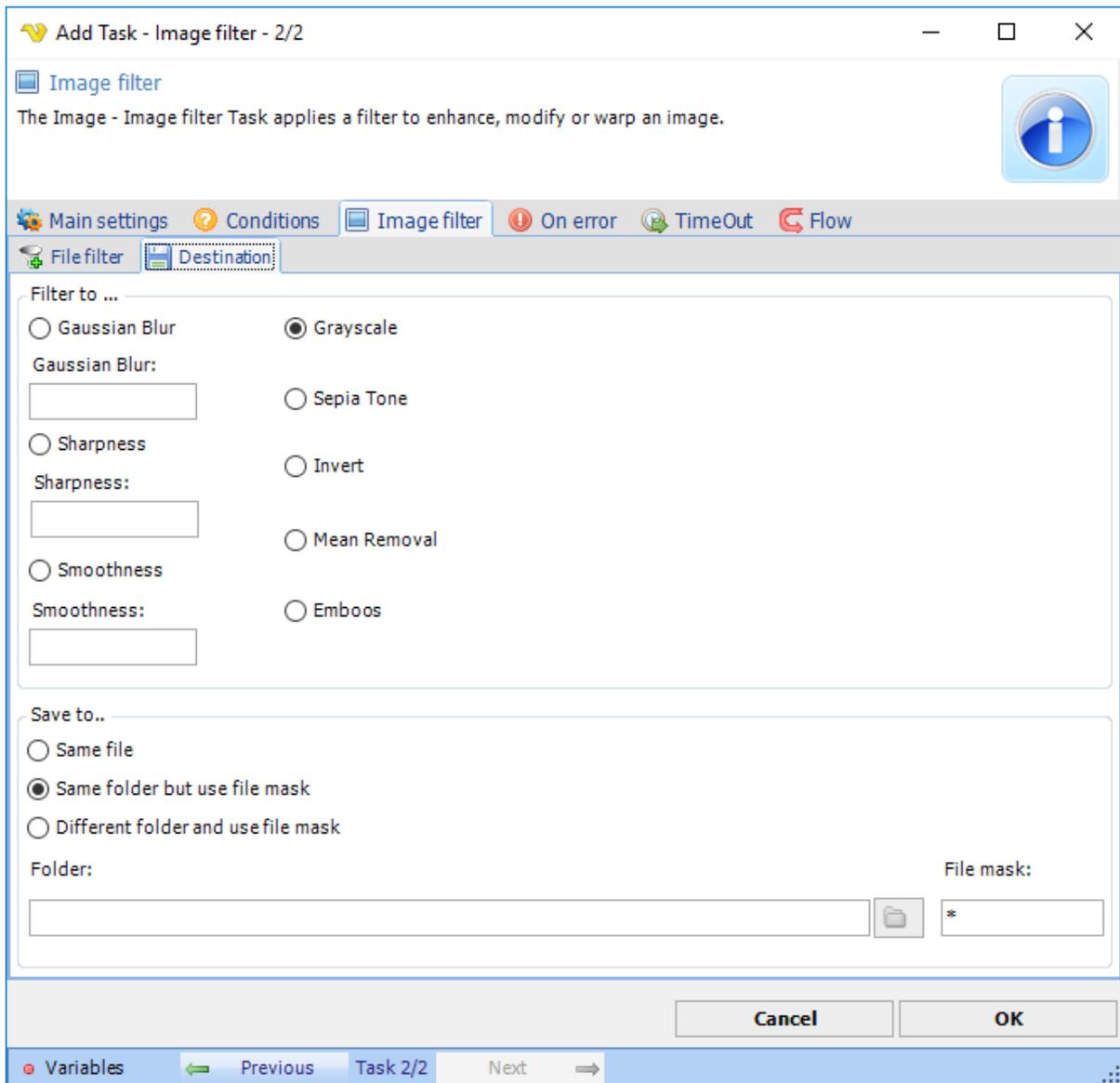
Maximum values of Top and Left are related to the original image pixels.
The Width and Height values are applied to the resulting image after Top and Left modification.
If the Width or Height value is 0, the Width or Height value after Left or Top is used.

The Image filter Task applies a filter to enhance, modify or warp an image.

Image filter > File filter > Location sub tab

In the File filter tab you define which image that should be filtered. Read more about file filter here.

Image filter > Destination sub tab



Filter to

More or less gently modifies the source image to be blurred, sharpened or smoothed. Gaussian blur is the result of blurring an image, typically to reduce image noise and reduce detail.

More aggressive modification of the source image to Grayscale, Sepia Tone, Invert, Mean removal and Emboss

Save to

The destination folder and file mask which the image is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The Image flip Task flips an image horizontally or vertically.

Image flip > File filter > Location sub tab

In the File filter tab you define which image that should be flipped. Read more about file filter here.

Image flip > Destination sub tab

Flip type

Specify Horizontal or Vertical flip.

Save to

The destination folder and file mask which the image is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

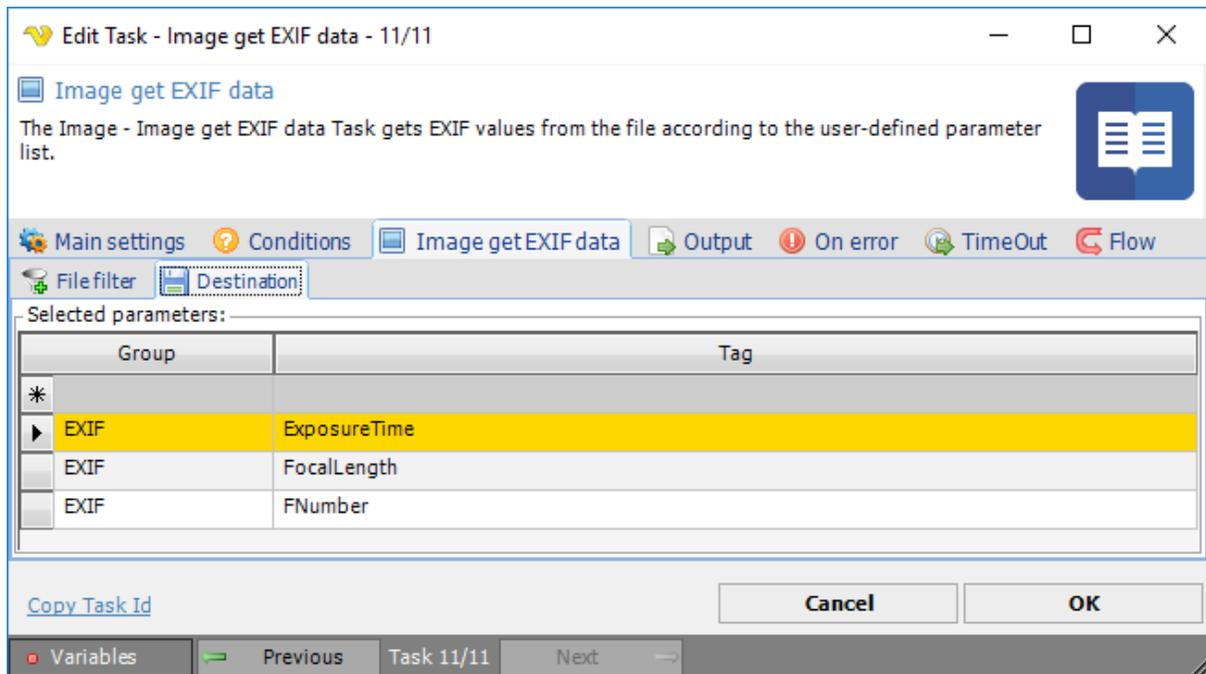
Save file with different name.

The Image get EXIF data Task gets EXIF values from the file according to the user-defined parameter list.

Image get EXIF data > File filter > Location sub tab

In the File filter tab you define the image file to be checked for EXIF data. Read more about file filter here.

Image get EXIF data > Destination sub tab



Click on the "star" icon to add a new parameter row. Then use the drop-down list to select a group and finally the right-most drop-down list to select a tag. A defined parameter line is deleted by marking the line and the press the PC *Del* button.

If the desired tag doesn't exist in the drop-down tag list, it is possible to add a new value using an integer. This solves an issue e.g. based on a new value which has not yet been included the tag list.

The Image join Task joins two images side by side horizontally or top to bottom vertically.

Note about Image join:

There may be restrictions in image property deviations for files to be joined successfully.

Image flip > File filter for file 1/2 > Location sub tab

In the File filter tab you define which images that should be joined. Read more about file filter here.

Image join > Destination sub tab

Add Task - Image join - 2/2

Image join
The Image - Image join Task joins two images side by side horizontally or top to bottom vertically.

Main settings Conditions **Image join** On error TimeOut Flow

File filter for file 1 File filter for file 2 **Destination**

Join mode
Horizontal

Destination
Destination folder:

Use same folder as first file

File name:

Use same file name as first file

Overwrite options:
Overwrite - always if existing Smaller

Cancel OK

Variables Previous **Task 2/2** Next

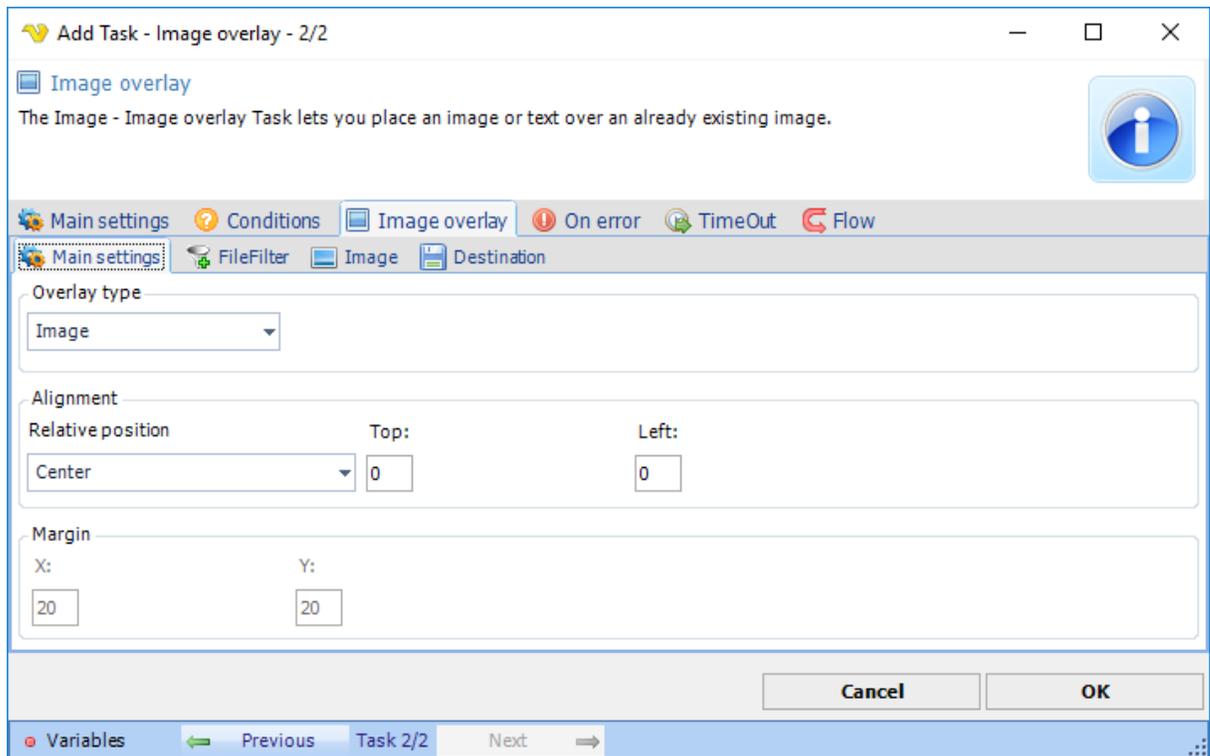
Join mode

Specify Horizontally or Vertically.

File name

Specify name for the joined file

The Image overlay Task lets you place an image or text over an already existing image.



Overlay type

Specify Image or text.

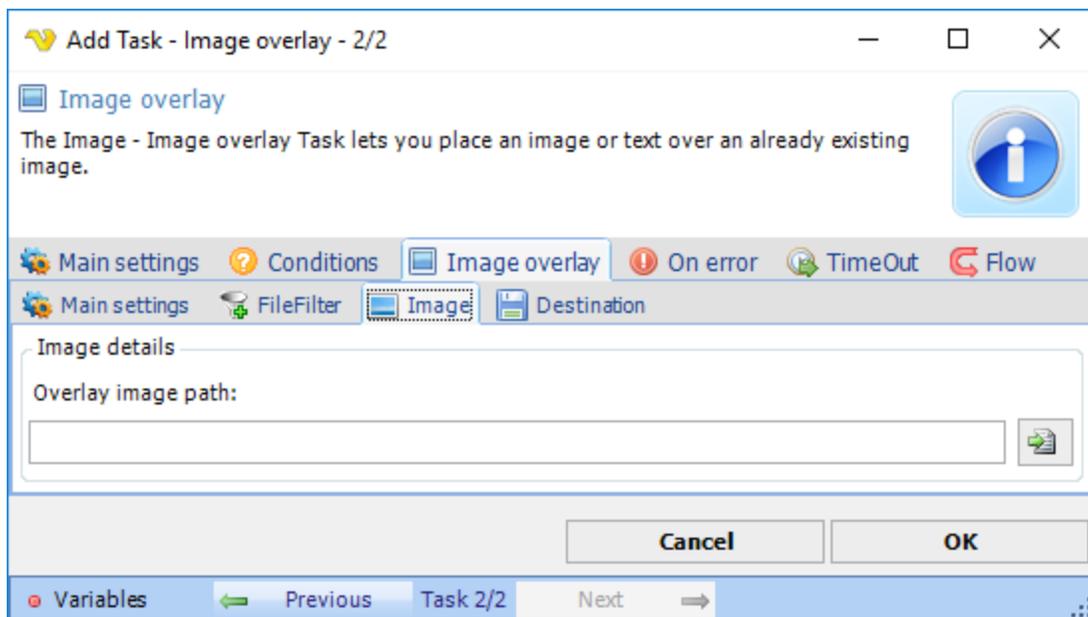
Alignment

Position of the image to overlay.

Image overlay > File filter > Location sub tab

In the File filter tab you define which file to be overlaid. Read more about file filter here.

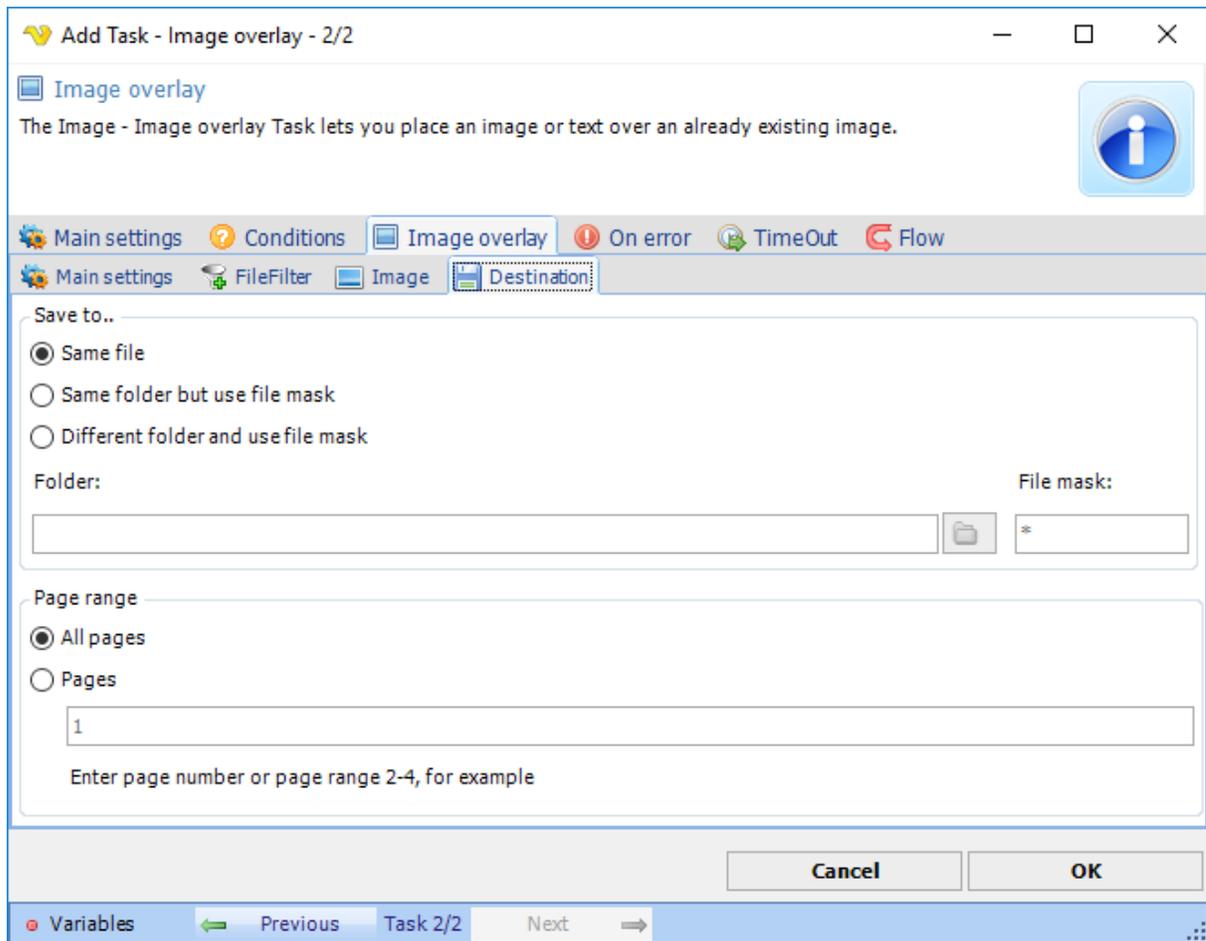
Image overlay > Image sub tab



Overlay image path

Defines the path and file name of the the image to overlay.

Image overlay > Destination sub tab



Save to

Enter destination file and folder names.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

Page range

Defines image pages to be overlaid.

The Image profile conversion Task converts the image from the input color profile to the specified output color profile.

Image profile conversion > File filter > Location sub tab

In the File filter tab you define the image file to change the profile for. Read more about file filter here.

Image profile conversion > Destination sub tab

Add Task - Image profile change - 12/12

Image profile change

The Image - Image profile conversation Task converts the image from the input color profile to the specified output color profile.

Main settings Conditions **Image profile change** On error TimeOut Flow

File filter **Destination**

Profile conversation parameters:

Input profile file:

Output profile file:

Filter string for delete profile(s):

Save to..

Same file

Same folder but use file mask

Different folder and use file mask

Folder: File mask:

Copy Task Id Cancel OK

Variables Previous Task 12/12 Next

Input profile file

The current profile name of the input file.

Output profile file

The profile name to be applied to the output file.

Filter string for delete profile(s)

Text ...

Save to

Enter destination file and folder names.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The Image resize Task resize an image by a percentage of the original size, by height and width (in pixels) or to a specific size.

Image resize > File filter > Location sub tab

In the File filter tab you define which image that should be resized. [Read more about file filter here.](#)

Image resize > Destination sub tab

Edit Task - Image resize - 9/10

Image resize

The Image - Image resize Task resizes an image by a percentage of the original size, by height and width (in pixels) or to a specific file size.

Main settings Conditions **Image resize** On error TimeOut Flow

File filter Destination

Resize to ...

Dimensions

Width: 400 Height: 400

Percentage

Percent: 60

File size

File size (kB): 10

DPI

New DPI: 48 Resample

Save to..

Same file

Same folder but use file mask

Different folder and use file mask

Folder: C:\Users\perla\OneDrive\support\Test\TaskImage\ImageDestination File mask: *

Copy Task Id Cancel OK

Variables Previous Task 9/10 Next

Resize to

Specify for pixel dimensions, pixel percent, file size or DPI image resize.

Resample

Option that determines resizing or resampling the image. Resampling physically changes the number of pixels in the image.

Save to

The destination folder and file mask which the image is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The Image rotate Task rotates an image by 90, 180 or a custom number of degrees. This Task can automatically deskew a skewed image.

Image rotate > File filter > Location sub tab

In the File filter tab you define which image that should be rotated. Read more about file filter here.

Image rotate > Destination sub tab

Rotate to

Select Rotate Right/Left 90 ° or custom value.

Save to

The destination folder and file mask which the image is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The XML Read node(s) Task can read any XML file and pickup a specific node in that XML file, with our without the surrounding XML.

Add Task - Read Node - 1/1

Read Node

The XML Read node(s) Task can read any XML file and pickup a specific node in that XML file, with or without the surrounding XML.

Main settings Conditions Read Node Output On error TimeOut Flow

Credentials

No Credential

File

C:\Program Files(x86)\VisualCron\settings\jobs.xml

Variable/Value

XPath expression:

/ArrayOfJobsClass[1]JobClass[6]/Tasks[1]/TaskClass[1]/Name[1]

Evaluate the specified XPath expression and return the typed result

Attribute (optional):

Select single node

Namespaces

Prefix	URI
xsd	http://www.w3.org/2001/XMLSchema
xsi	http://www.w3.org/2001/XMLSchema-instance

Add Edit Remove Reload

Cancel OK

Variables Previous Task 1/1 Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Source->File

Enter the full path to the file you want to read from.

Source->Variable/Value

Paste any XML code or Variable that contains XML here.

XPath expression

XPath is a query language used for finding a specific object within XML. Enter the query manually or use the XPath browser by clicking the button.

Attribute

Optional. If you want to select a specific Attribute value of that node you can enter the attribute name here.

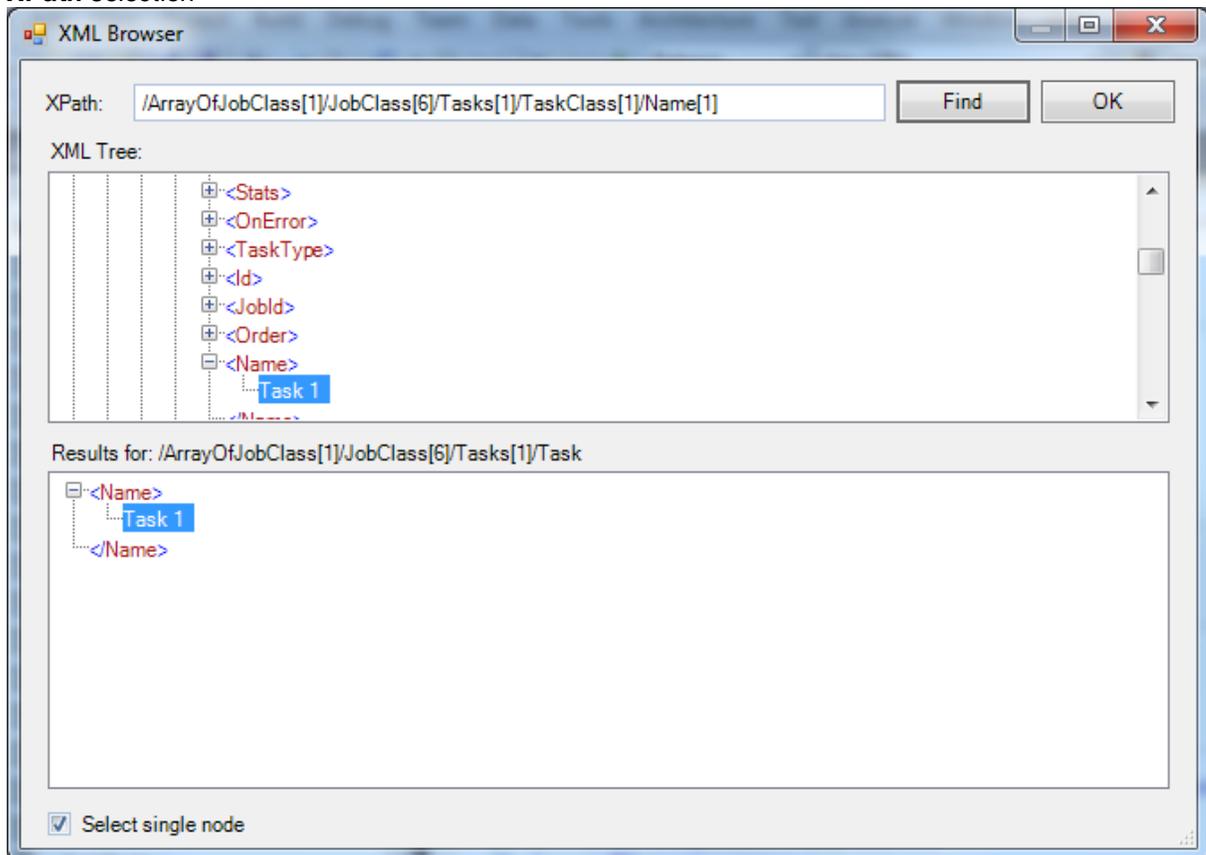
Select single node

If one or nodes should be selected for output

Namespaces

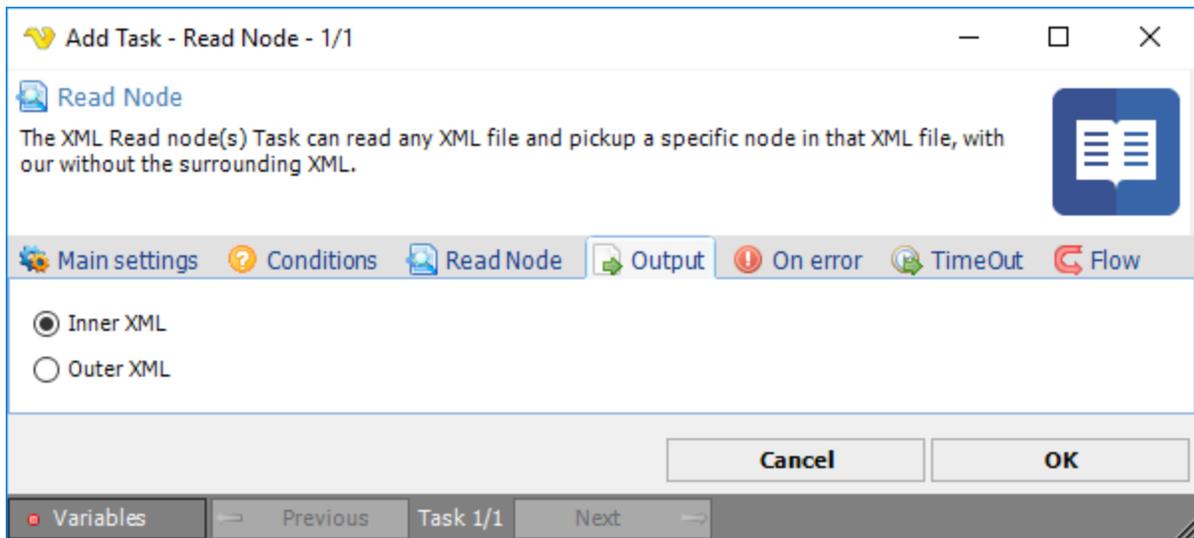
VisualCron tries to load all namespaces that a XML file contains. If you want to Add one namespace manually you can click on Add. If you want to Reload all namespaces you can click on Reload.

XPath selection



The XML Browser lets you select a specific node in your XML file. When selected, you will have an XPath value which will be used during runtime of the Task. Click OK to save the path.

Output tab



In the output control how the output should look like. If you select *Inner XML* it will skip the parent XML tags while *Outer XML* will keep them.

Note:

If you are having problems retrieving a result it could be that you need to reference the namespace in the XPath query. For example:

XML

```
<?xml version="1.0" encoding="UTF-8"?><jobInfo
  xmlns="http://www.force.com/2009/06/asynccapi/dataload">
  <id>750f00000000Fw5AAE</id>
```

XPath

```
/x:jobInfo[1]/x:id[1]
```

The Create Node Task lets you insert a node in an already existing XML file.

Add Task - Create Node - 1/1

Create Node
The Create Node Task lets you insert a node in an already existing XML file.

Main settings Conditions **Create Node** On error TimeOut Flow

General Attributes

Credentials
No Credential

File name:
C:\Program Files (x86)\VisualCron\settings\jobs.xml

XPath expression:
/ArrayOfJobClass[1]/JobClass[1]/CreatedBy[1]

Name:
[Empty field]

Value:
[Empty field]

If node already exists: Fail Namespace (optional): [Empty field] Prefix: [Empty field]

Insert as first child node

Cancel OK

Variables Previous Task 1/1 Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

File name

The full path to the XML file.

XPath expression

XPath is a query language used for finding a specific object within XML. Enter the query manually or use the XPath browser by clicking the button.

Name

The name of the node.

Value

The value in the node.

If node already exists

You are able to control what happens if the node already exists in the document.

Namespace

If the node is in a specific namespace you enter the name here.

Prefix

If a prefix is needed for finding the node then enter it here.

Insert as first child node

If one or more nodes already exist the new node will, by default, be added in the end of the list. If you want it to appear in the beginning then check this check box.

Create Node > Attributes tab

The screenshot shows a software dialog box titled "Add Task - Create Node - 1/1". The main heading is "Create Node" with a sub-description: "The Create Node Task lets you insert a node in an already existing XML file." Below this is a navigation bar with tabs: "Main settings", "Conditions", "Create Node" (selected), "On error", "TimeOut", and "Flow". Underneath, there are sub-tabs: "General" and "Attributes" (selected). The "Attributes" tab contains a table with two columns: "Name" and "Value". The table has one row with the text "Testattribute" and "Testvalue". Below the table are "Add" and "Remove" buttons. At the bottom of the dialog are "Cancel" and "OK" buttons. A footer bar contains "Variables", "Previous", "Task 1/1", and "Next".

Name	Value
Testattribute	Testvalue

If you want to add attributes to the specific node you can enter name and value in the **Attributes** sub tab.

The Edit Node Task lets you change a specific node value or attribute in a XML file.

Add Task - Edit Node - 1/1

Edit Node

The Edit Node Task lets you change a specific node value or attribute in an XML file.

Main settings **Conditions** **Edit Node** **On error** **TimeOut** **Flow**

Credentials

No Credential

File name:

C:\Program Files (x86)\VisualCron\settings\jobs.xml

XPath expression:

/ArrayOfJobClass[1]/JobClass[1]/Name[1]

Attribute (optional):

Value:

Edit node:

First

Cancel **OK**

Variables Previous Task 1/1 Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

File name

The full path to the XML file.

XPath expression

XPath is a query language used for finding a specific object within XML. Enter the query manually or use the XPath browser by clicking the button.

Attribute

If a specific attribute should be edited then set the attribute name here.

Value

The value in the node.

Edit node

If the first found node should be edited or all.

The Delete node Task lets you delete a specific node in a XML file.

Add Task - Delete Node - 1/1

Delete Node
The Delete node Task lets you delete a specific node in an XML file.

Main settings | Conditions | **Delete Node** | On error | TimeOut | Flow

Credentials
No Credential

File name:
C:\Program Files (x86)\VisualCron\settings\jobs.xml

XPath expression:
/ArrayOfJobClass[1]/JobClass[1]/Name[1]

Attribute (optional):
[Empty dropdown]

Namespaces

Prefix	URI

Add
Edit
Remove
Reload

Cancel OK

Variables | Previous | Task 1/1 | Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

File name

The full path to the XML file.

XPath expression

XPath is a query language used for finding a specific object within XML. Enter the query manually or use the XPath browser by clicking the button.

Attribute

If a specific attribute should be deleted then set the attribute name here.

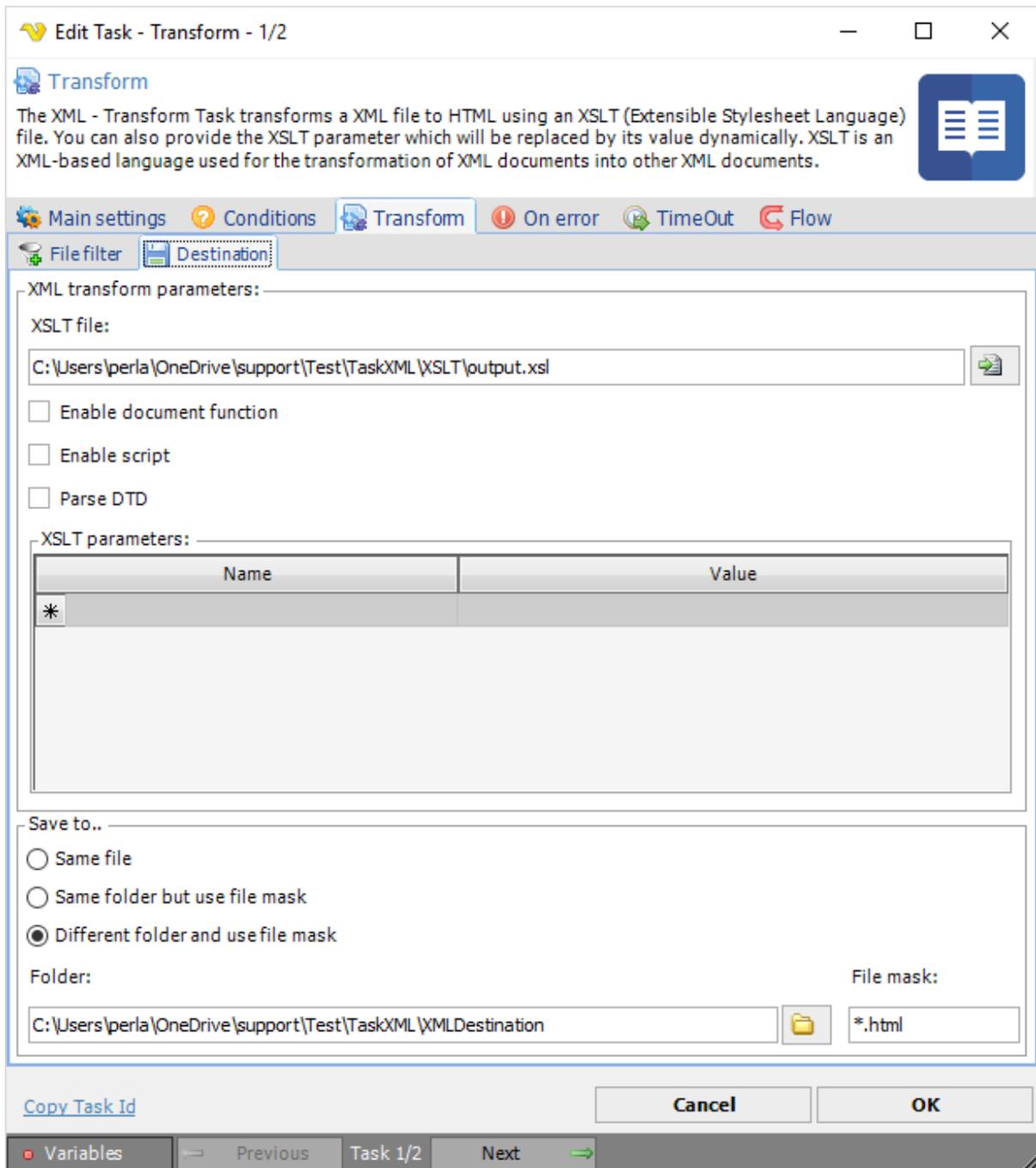
The XML - Transform Task transforms a XML file to HTML using an XSLT (Extensible Stylesheet Language) file. You can also provide the XSLT parameter which will be replaced by its value dynamically. XSLT is an XML-based language used for the transformation of XML documents into other XML documents.

The original document is not changed; rather, a new document is created based on the code of an existing one. The new document can be output to HTML or plain text.

XML Transform > File filter > Location sub tab

The XML Transform Task uses the standard VisualCron File filter to define the properties of the listed files.

XML Transform > Destination sub tab



XSLT file

The path and file name of a XSLT file that resides on the local system which will be used to transform the specified XML file. Click the *Folder* icon to select the XSL folder/file.

Enable document function

If checked, support for the XSLT document function is enabled.

Enable script

If checked, support for embedded script blocks is enabled.

Parse DTD

If checked, the DTD will be parsed. Within an XML document's <!DOCTYPE>, there can be an internal subset of the DTD, or an external DTD can be referenced. In order to fully comply with the XML 1.0 or 1.1 specification, DTD must be parsed.

XLST parameters

Add/edit a XLST parameter using name and value to the parameter list. Select and press the Windows *Del* button to delete a parameter.

Save to

Enter destination file and folder names.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

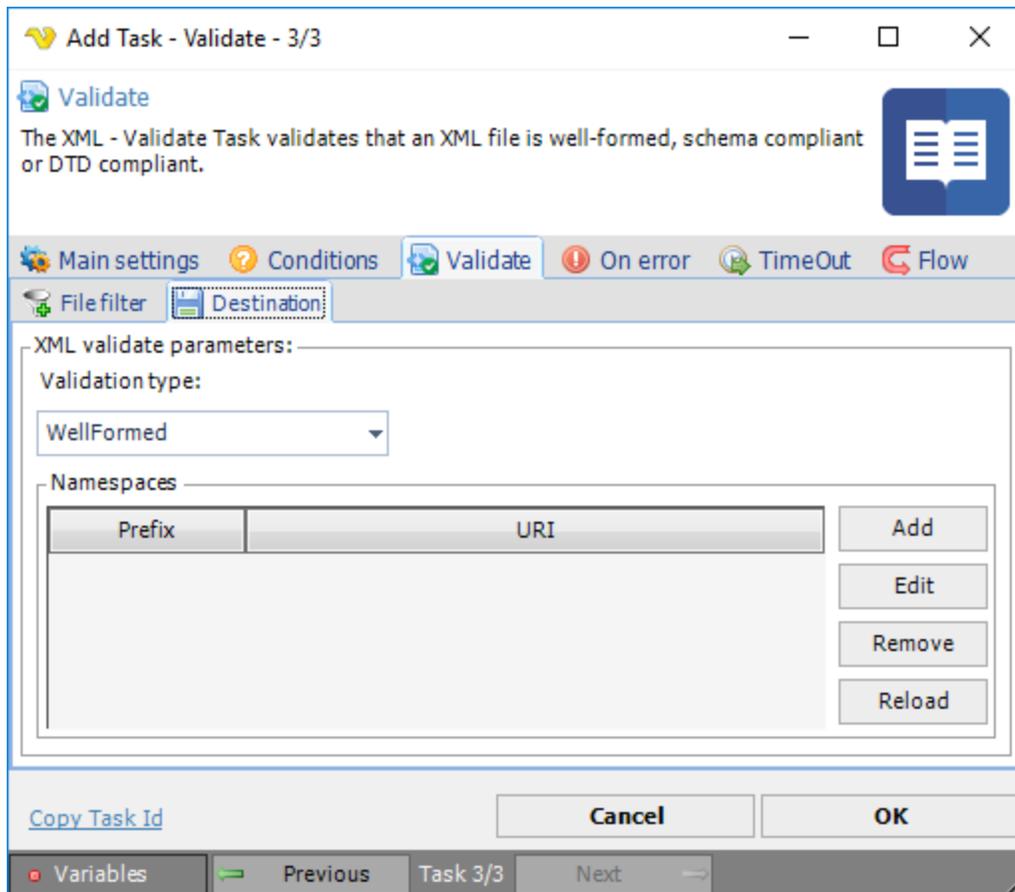
The XML - Validate Task validates that an XML file is well-formed, schema compliant or DTD compliant.

A XML document with correct syntax is called "Well Formed". An XML document validated against a DTD or a Schema is both "Well Formed" and "Valid".

XML Validate > File filter > Location sub tab

The XML Transform Task uses the standard VisualCron File filter to define the properties of the listed files.

XML Validate > Destination sub tab



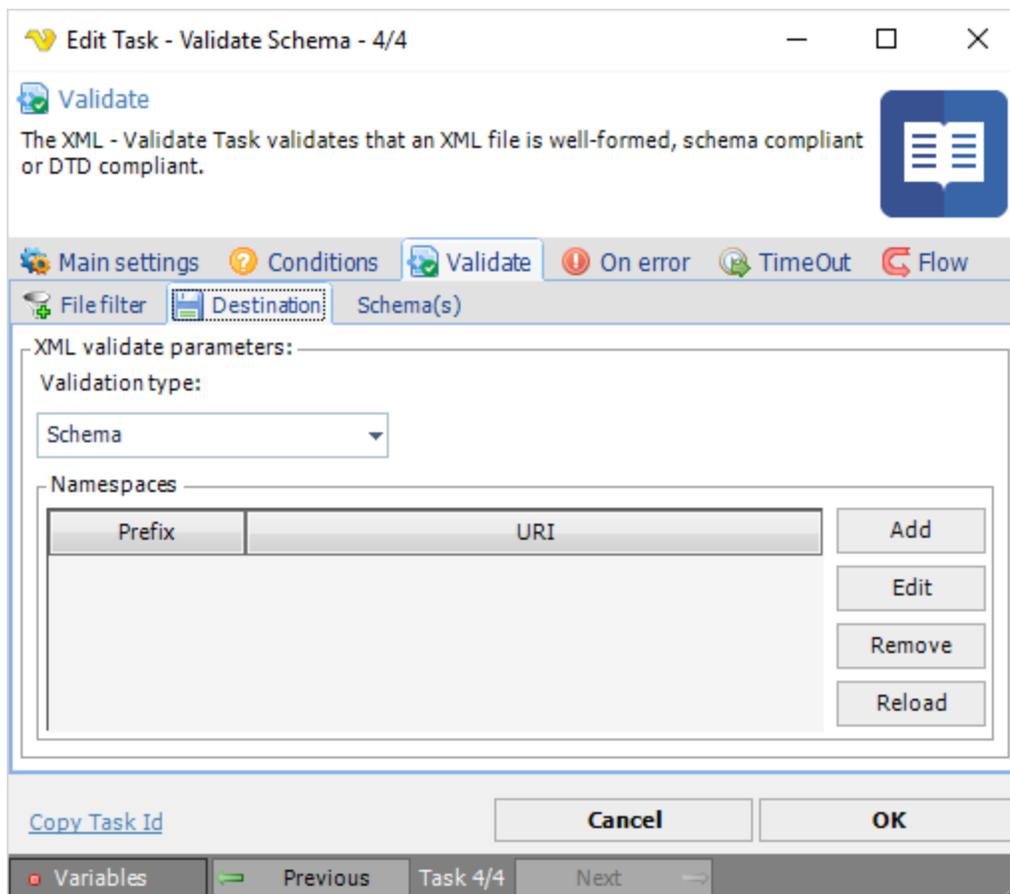
Validation type

A XML document with correct syntax is called "Well Formed". Schema validation uses a schema file (*.xsd), default attributes are expanded from schema and type information is supplied. Document Type Definition (DTD) validation expands default attributes and entities, but general entities are loaded and parsed only if they are used (expanded). No type information is supplied.

Namespaces

A list of namespace prefix/namespace URI items, to uniquely identify an element, to be used for validation.

XML Validate > Destination - Schema sub tab



If *Validation type Schema* is selected, an extra sub tab is added to define the external schema file. The extra **XML Validate > Schema(s) > Location** sub tab has the same layout as the above referred **XML Validate > File filter > Location** sub tab.

The XML - Sign Task signs an XML file with a specified key.

XML Sign > File filter > Location sub tab

The XML Transform Task uses the standard VisualCron File filter to define the properties of the listed files.

XML Sign > Destination sub tab

Add Task - Sign - 3/3

Sign
The XML - Sign Task signs an XML file with a specified key.

Main settings Conditions **Sign** On error TimeOut Flow

File filter Destination

XML sign parameters:

Signature type: Enveloped Canonicalization method: Canonical

Signature method:

HMAC SHA1

Signature RSA SHA1

Certificate

Include public key

Key name:

Save to..

Same file

Same folder but use file mask

Different folder and use file mask

Folder: File mask: *

[Copy Task Id](#) Cancel OK

Variables Previous Task 3/3 Next

Signature type

Select the XML digital signature type to be used.

Canonicalization method

Select method for converting data into a "standard", "normal", or canonical form.

Signature method

The signature method to use for signing the request. This provides a valid hashing algorithm for signature calculation. Select HMAC or Signature main types and the desired sub type.

Certificate

In order to sign you need a certificate that includes a private key. Click the *Settings* icon to open the *Manage Certificates* dialog where a certificate is selected, imported or created.

Include public key

Specifies whether the key itself (its public part) must be included to the signature.

Key name

Enter the public key name to be able to decrypt. The KeyName element contains a string value (in which white space is significant) which may be used by the signer to communicate a key identifier to the recipient. Typically, KeyName contains an identifier related to the key pair used to sign the message, but it may contain other protocol-related information that indirectly identifies a key pair. Common uses of KeyName include simple string names for keys, a key index, a distinguished name (DN), an email address, etc.

Save to

Enter destination file and folder names.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

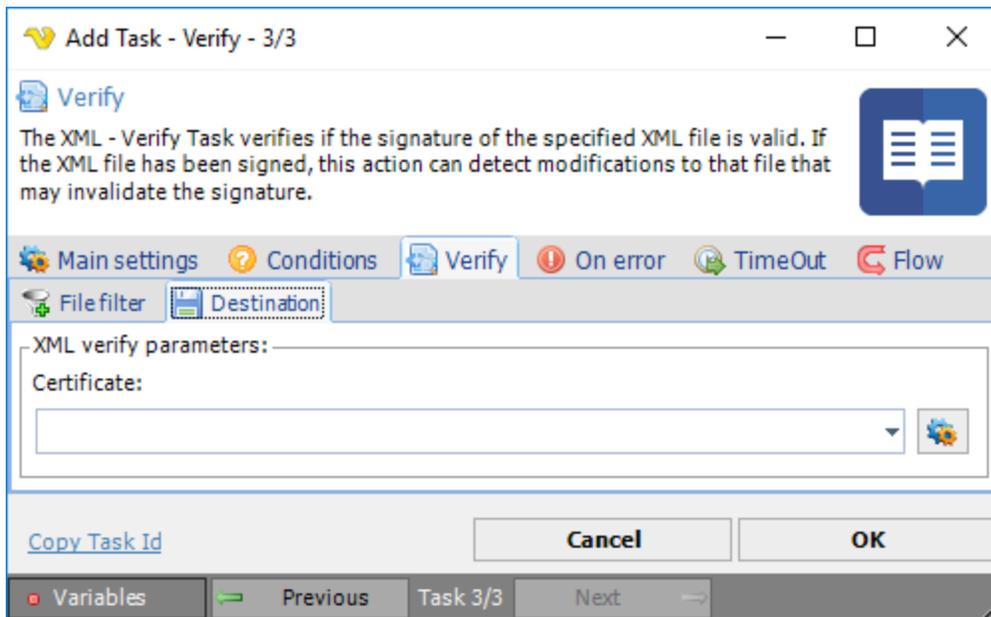
Save file with different name.

The XML - Verify Task verifies if the signature of the specified XML file is valid. If the XML file has been signed, this action can detect modifications to that file that may invalidate the signature.

XML Verify > File filter > Location sub tab

The XML Transform Task uses the standard VisualCron File filter to define the properties of the listed files.

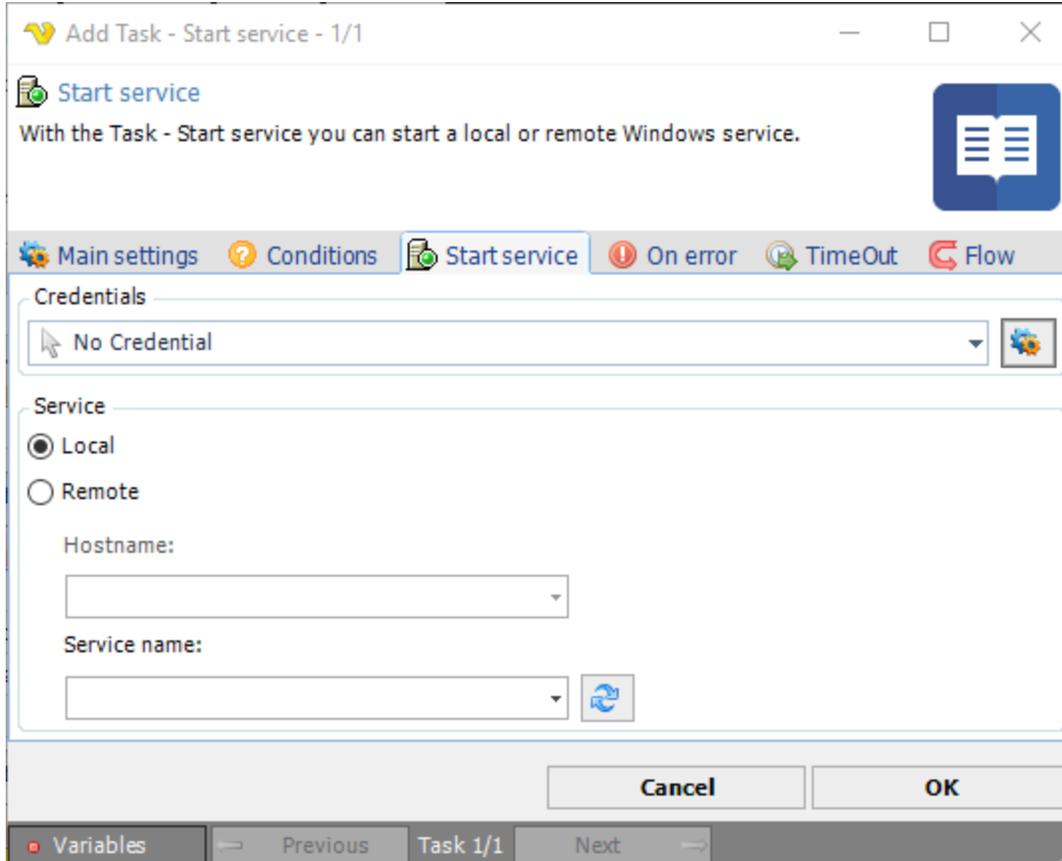
XML Verify > Destination sub tab



Certificate

Click the *Settings* icon to open the *Manage Certificates* dialog where a certificate is selected, imported or created.

With the Task - Start service you can start a local or remote Windows service.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote Select the the *Local* radio button if you want to start a service on the local computer, select the *Remote* radio button if you want to start a service on a remote computer.

Hostname

The name of the remote computer.

Service name

The name of the service.

With the Task - Stop service you can stop a local or remote Windows service.

The screenshot shows a dialog box titled "Add Task - Stop service - 1/1". The main heading is "Stop service" with a sub-heading "With the Task - Stop service you can stop a local or remote Windows service." Below this is a navigation bar with buttons for "Main settings", "Conditions", "Stop service" (highlighted), "On error", "TimeOut", and "Flow". The "Credentials" section has a dropdown menu set to "No Credential" and a "Settings" icon. The "Service" section has two radio buttons: "Local" (selected) and "Remote". Below these are two text boxes: "Hostname:" and "Service name:". The "Service name" box has a refresh icon to its right. At the bottom right are "Cancel" and "OK" buttons. The bottom status bar contains "Variables", "Previous", "Task 1/1", and "Next".

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote Select the the *Local* radio button if you want to stop a service on the local computer, select the *Remote* radio button if you want to stop a service on a remote computer.

Hostname

The name of the remote computer.

Service name

The name of the service.

With VisualCron you can control local or remote Windows services. The Restart service Task tries to stop a service (for 3 minutes) then, when service has stopped, it starts the service again.

The screenshot shows the 'Add Task - Restart service - 1/1' dialog box. At the top, there's a title bar with standard window controls. Below it, the task name 'Restart service' is displayed with a brief description: 'With VisualCron you can control local or remote Windows services. The Restart service Task tries to stop a service (for 3 minutes) then, when service has stopped, it starts the service again.' A blue icon representing a document is on the right. Below the description is a navigation bar with tabs: 'Main settings', 'Conditions', 'Restart service' (active), 'On error', 'TimeOut', and 'Flow'. The 'Credentials' section has a dropdown menu currently set to 'No Credential' and a 'Settings' icon. The 'Service' section has two radio buttons: 'Local' (selected) and 'Remote'. Below these are two input fields: 'Hostname:' and 'Service name:', each with a dropdown arrow and a refresh icon. At the bottom, there are 'Cancel' and 'OK' buttons. A footer bar contains 'Variables', 'Previous', 'Task 1/1', and 'Next' buttons.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote Select the the *Local* radio button if you want to restart a service on the local computer, select the *Remote* radio button if you want to restart a service on a remote computer.

Hostname

The name of the remote computer.

Service name

The name of the service.

The Excel - Get cell Task lets you extract data from certain worksheets, rows and columns.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Select Excel file

Select full path to the Excel file.

Worksheet

Select which worksheet in the workbook to access. Press the Get button to populate the list of existing worksheets.

Cell coordinates

The options for output of cell content.

Select *Cell by position* or *Cell by reference* if you want a single cell result.

Select *Cells by position range* if you want to obtain a *Row to End row* and *Column to End column* result.

Select *Cell by reference range* if you want to obtain a *Cell reference to End cell reference* result.

Select *Get all cells* if you want a result for a number of columns.

The Excel - Set cell Task sets one or more values in an Excel sheet starting on a specific position.

This task is similar to the Excel - Create Task. The difference is that this Task updates an existing document (or multiple documents).

The update is based on a Variable or direct value and the update starts in the cell position/reference and sheet that the user has specified. From that start point VisualCron will create a "table" based on content. The actual content could be a single cell but it can also be a table.

For example if the start position is 2,2 and the value is:

"col1row1","col2row1"

"col1row12","col2row2"

The output will be placed in 2,2 to 3,3:

Excel - Set cell > Source sub tab

The screenshot shows the configuration window for the 'Excel - Set cell' task. The 'Source' sub-tab is selected, displaying the 'Input value' field with the text: `"1";"testcol1", "2";"testcol2"`. Below the input field, the 'Format' section includes three dropdown menus: 'Field separator' (Semicolon), 'Text qualifier' ("), and 'Line break' (Comma). The window also features 'Cancel' and 'OK' buttons at the bottom right, and a status bar at the bottom with 'Variables', 'Previous', 'Task 2/2', and 'Next' indicators.

Input value

The input value can either be hard coded string or Variable. It is important that input value matches format so that lines and columns are split in the right way. Please note that if you need another format than Text format in excel you need to specify column format in "Column format" tab.

Format

You need to adjust format controls so they fit the format of the incoming value. The text qualifier is any surrounding character.

Excel - Set cell > File filter > Location sub tab

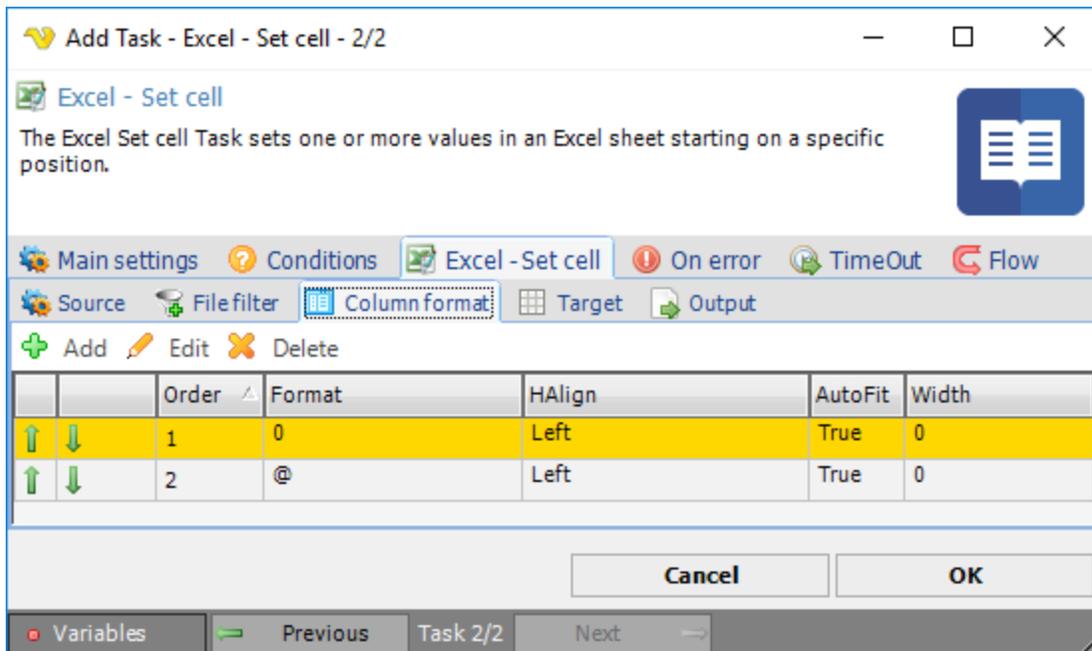
The screenshot shows the configuration window for the 'Excel - Set cell' task. The window title is 'Add Task - Excel - Set cell - 2/2'. The main heading is 'Excel - Set cell' with a description: 'The Excel Set cell Task sets one or more values in an Excel sheet starting on a specific position.' The window has several tabs: 'Main settings', 'Conditions', 'Excel - Set cell' (selected), 'On error', 'TimeOut', and 'Flow'. Below these are sub-tabs: 'Source', 'File filter' (selected), 'Column format', 'Target', and 'Output'. The 'File filter' sub-tab has further sub-tabs: 'Location', 'Content', 'Date', 'Size', 'Attributes', 'Result', and 'Test'. The 'Location' sub-tab is active, showing the following settings:

- Credentials:** A dropdown menu set to 'No Credential'.
- Folder:** A text field containing 'C:\test' with a folder icon to its right.
- Include sub folders
- Exclude folder(s):** An empty text field with a folder icon to its right.
- Include file mask:** A text field containing 'updateme.xlsx' with a file icon to its right.
- Is regex
- Casesensitive
- Use file exclusion
- Exclude file mask:** A text field containing '*.txt' with a file icon to its right.
- Is regex

At the bottom of the window are 'Cancel' and 'OK' buttons. A status bar at the very bottom shows 'Variables', 'Previous', 'Task 2/2', and 'Next'.

If you have selected File as source you are able to set the standard VisualCron File filter values.

Excel - Set cell > Column format sub tab



In the columns tab you can override column format. Default format is @ which is a string. You can see different format options when editing or adding a column.

Add->Format

<http://www.ozgrid.com/Excel/CustomFormats.htm>

Excel - Set cell > Target sub tab

Add Task - Excel - Set cell - 2/2

Excel - Set cell

The Excel Set cell Task sets one or more values in an Excel sheet starting on a specific position.

Main settings Conditions **Excel - Set cell** On error TimeOut Flow

Source File filter Column format Target Output

Worksheet

Use first worksheet

Use specific worksheet: Sheet2

Cell coordinates

Cell by position Cell by reference (i.e. A3)

Row: 1 Column: 1 Cell reference: E19

Cancel OK

Variables Previous Task 2/2 Next

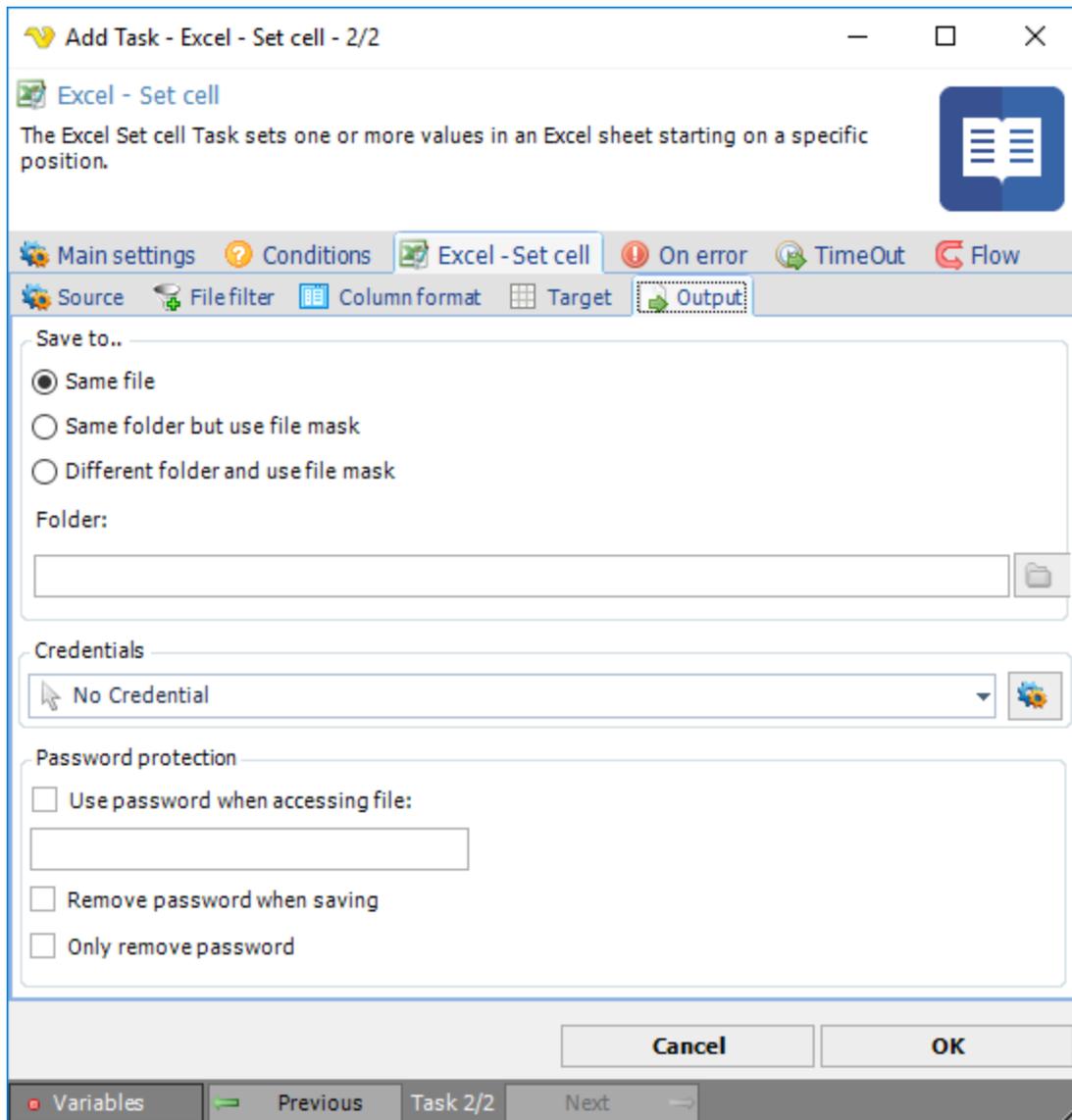
Worksheet

The worksheet to be updated.

Cell coordinates

The relative position the update should start at.

Excel - Set cell > Output sub tab



Save to..

You are able to control if the update should be saved to same file or different file.

Credential

If you are planning to save on a network location you can select a Credential.

Password protection

If you want to protect the file with Excel password authentication you can check this value and enter a password.

Remove password when saving

If you want to remove the password after execution you need to check this. You need to specify password for accessing the file the first time. After writing the "Use password.." option will be unchecked so that the Task does not try to open it with a password anymore.

The Excel - Convert Task is able to convert an Excel file into various Excel formats and text files

Excel - Convert > File filter > Location sub tab

The Excel convert Task uses the standard VisualCron File filter to define the source file to be converted.

Excel - Convert > Convert settings sub tab

The screenshot shows the 'Excel - Convert' task configuration window. The 'Convert settings' sub-tab is selected. The 'Convert to..' dropdown is set to 'TextFile'. Under 'Worksheet', 'Use first worksheet' is selected, and 'Column start' is 1 and 'Column end' is 2. Under 'Save to..', 'Same folder but change extension' is selected. The 'Folder:' and 'File mask:' fields are empty.

Convert to ..

Select the desired format of the destination file.

Worksheet

Specify the source worksheet and the position in that worksheet. Press the Get button to populate the list of existing worksheets.

Save to ..

Enter destination file and folder name.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or folder button

File mask

Save file with different name

The Excel - Get row count Task returns the number of rows for a specific worksheet in an Excel file

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Select Excel file

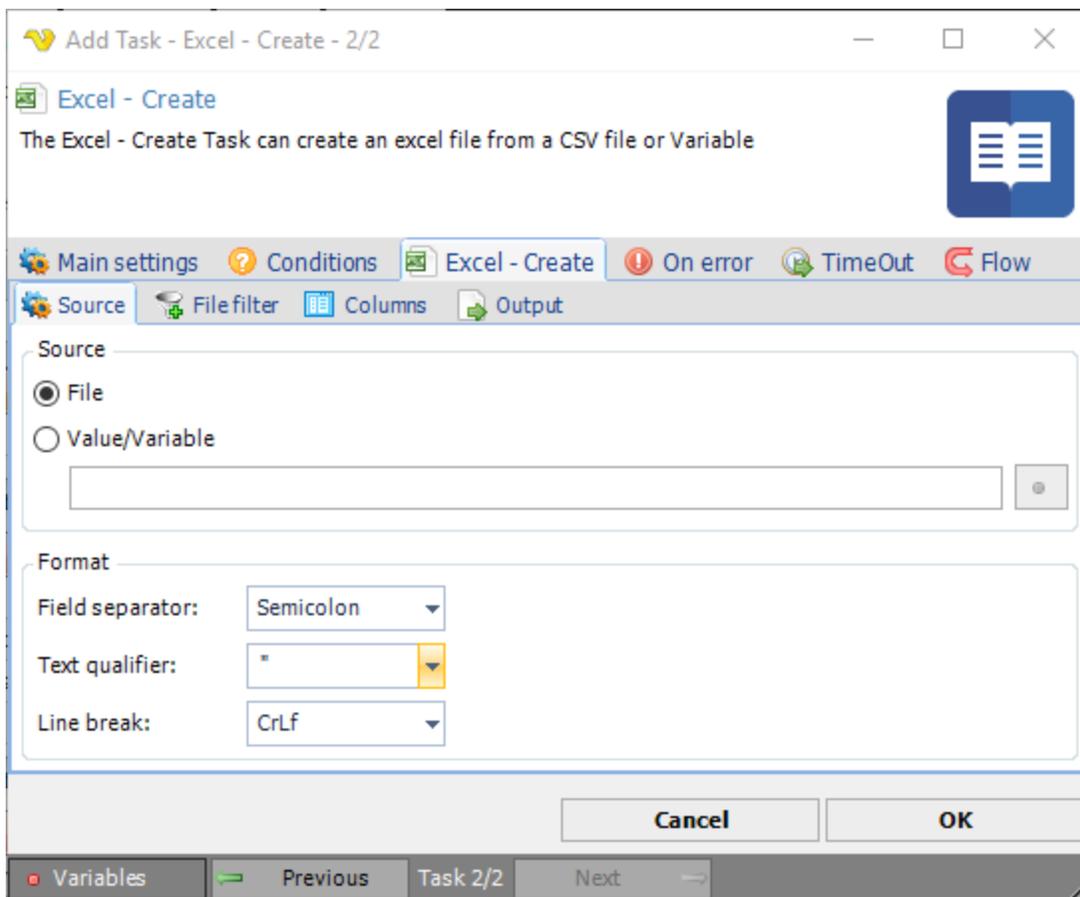
Select full path to the Excel file.

Worksheet

Select which worksheet in the workbook to access. Press the Get button to populate the list of existing worksheets.

The Excel - Create Task can create an Excel file from a CSV file or Variable.

Excel - Create > Source sub tab



Source

You can select File if the source for conversion is one or more files. You can also select Value/Variable if the source comes from a previous Task for example.

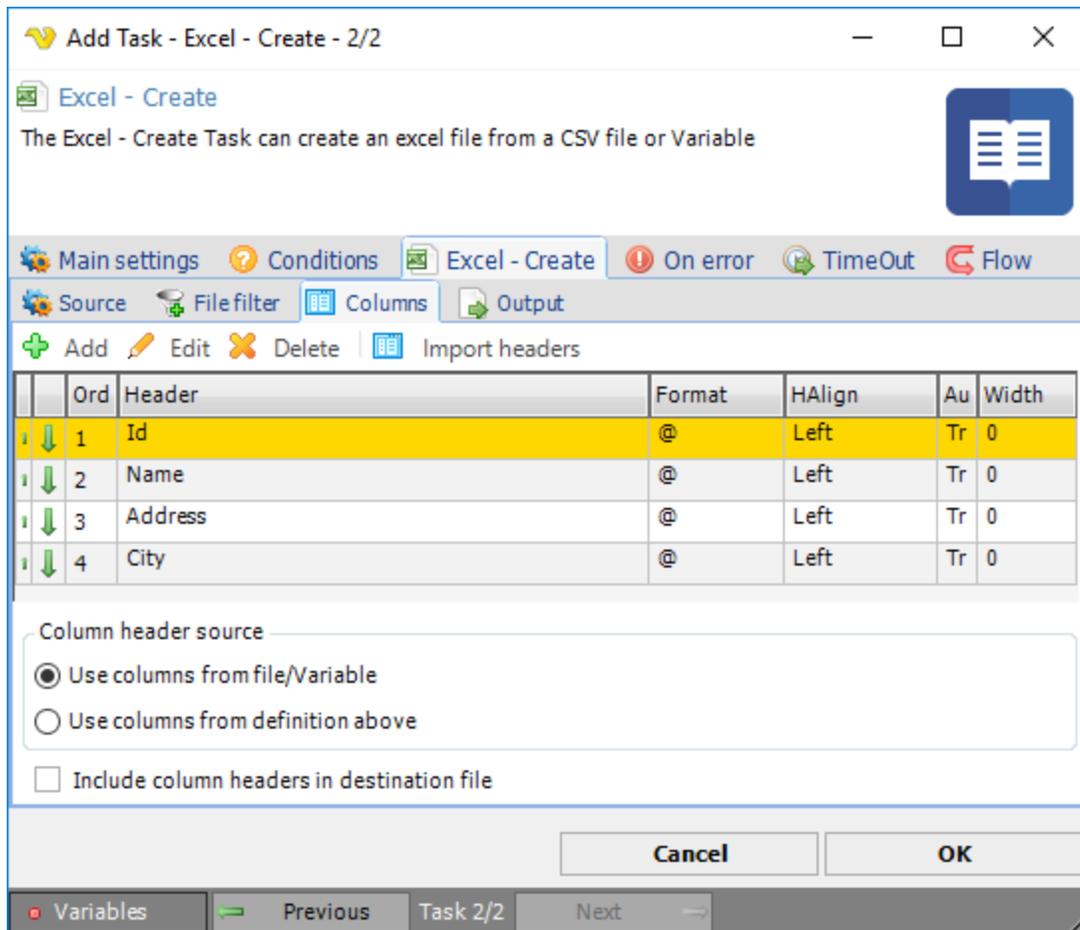
Format

You need to adjust format controls so they fit the format of the incoming file. The text qualifier is any surrounding character.

Excel - Create > File filter > Location sub tab

If you have selected File as source you are able to set the standard VisualCron File filter values.

Excel - Create > Columns sub tab



In the columns tab you can override existing columns or set columns if they do not exist. It is possible to override name and also format of column. Default format is @ which is a string. You can see different format options when editing or adding a column.

For faster addition of new columns we recommend using *Import headers*. This lets you import any existing first row of the document (in the same format you specified in the **Source tab**).

Column header source

You can choose to use the existing columns in the file but then it is not possible to apply formatting. If you add columns manually and select "Use columns from definition above" you are able to control name, width, format and order.

Include column headers in destination file

You can deselect this option if you do not want to include any existing headers in file.

Add->Format

<http://www.ozgrid.com/Excel/CustomFormats.htm>

Excel - Create > Output sub tab

Add Task - Excel - Create - 2/2

Excel - Create
The Excel - Create Task can create an excel file from a CSV file or Variable

Main settings Conditions **Excel - Create** On error TimeOut Flow

Source File filter Columns **Output**

Sheet
Excel2007

Save to..

Same folder but change extension
 Same folder but use file mask
 Different folder and use file mask

Folder: F:\ File mask: test.xlsx

Credentials
No Credential

Password protection
 Password protect file with password:

Sheet
Sheet name:
VisualCron

Cancel OK

Variables Previous Task 2/2 Next

Save to..

Depending on if you have selected File or Variable as source different options are available. If you have selected File all options are available and if you have selected Variable only *Different folder and use file mask* is available. When using Variable option the file mask must be the full name of the file.

Credential

If you are planning to save on a network location you can select a Credential.

Password protection

If you want to protect the file with Excel password authentication you can check this value and enter a password.

Sheet

The created Excel sheet name.

Recalculates an existing Excel function/formula within a document and saves the document afterwards.

Excel - Recalculate > File filter > Location sub tab

In the File filter tab you define which files should be recalculated. Read more about file filter here.

The Office macro Task is able to execute macros located in Excel, PowerPoint, Access or Word. You are also able to specify parameters for the functions and their value types.

Add Task - Office macro - 2/2

Office macro
The Office macro Task is able to execute macros located in Excel, PowerPoint, Access or Word. You are also able to specify parameters for the functions and their value types.

Main settings | Conditions | **Office macro** | On error | TimeOut | Flow

Credentials
No Credential

File
Type: Excel Execute in 32bit mode
Path:
Password:
 Update file after execution
 Visible

Macro name

Parameters

Type	Value

Add Edit Delete

Cancel OK

Variables Previous Task 2/2 Next

Credentials

You must specify a Credential, a remote server name, user name and pass word for a user on the remote server which the command will execute as. Click on the Manage credentials button to add a new Credential.

File type

Select either Excel, PowerPoint, Access or Word.

Execute in 32 bit mode

Set this to 32 bit if your Office is 32 bit - otherwise uncheck it.

File path

This is the full path to the document.

Password

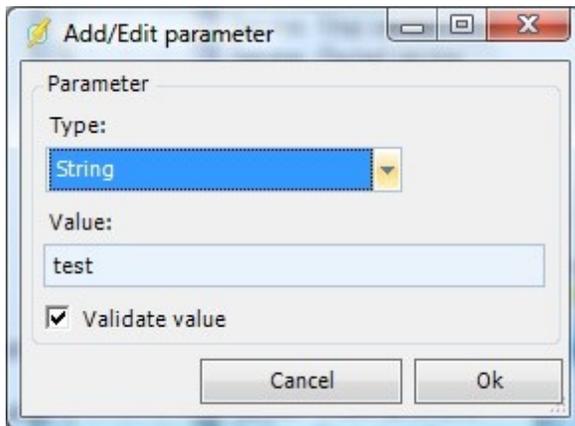
Any password for accessing the document. Leave empty if no password is used.

Update file after execution

This saves the document after execution. Useful if you have performed a calculation on in the document.

Parameters

If a macro function needs parameters you can specify them here by clicking Add.



Choose appropriate *value type* and set the actual *value*. Normally VisualCron validates the value against the data type. If you use a Variable that validation can fail if the value is not set in the Variable. To prevent failure you can uncheck the *Validate value* checkbox.

Errors

Error 1

System.Reflection.TargetInvocationException: Exception has been thrown by the target of an invocation. ---> System.Runtime.InteropServices.COMException (0x800A03EC): Microsoft Excel cannot access the file 'C:\your file.xlsx'. There are several possible reasons:

Solution

1. Create directory "C:\Windows\SysWOW64\config\systemprofile\Desktop " (for 64 bit Windows) or "C:\Windows\System32\config\systemprofile\Desktop" (for 32 bit Windows)
2. Set Full control permissions for directory Desktop (for user "SYSTEM")

Please do this for both 32 and 64 bit folder.

Error 2

System.Runtime.InteropServices.COMException (0x800A07D1): You canceled the previous operation.

Solution

Try running the Task with a Credential that has option "Local logon" and "Load profile" checked.

Error 3

You get the following error:

{System.Runtime.InteropServices.COMException (0x800A03EC): Cannot run the macro Macro1'.
The macro may not be available in this workbook or all macros may be disabled.

Open the document and find the list of macros. Use the full path to the macro, like:

MainModule.CalcSomething

Error 4

Faulting application name: EXCEL.EXE, version: 15.0.4719.1000, time stamp: 0x552cf4af
Faulting module name: VBE7.DLL, version: 0.0.0.0, time stamp: 0x54d16140
Exception code: 0xc0000005
Fault offset: 0x00008c0e
Faulting process id: 0x2914
Faulting application start time: 0x01d0a28e5b929b88
Faulting application path: C:\Program Files\Microsoft Office 15\Root\Office15\EXCEL.EXE
Faulting module path: C:\Program Files (x86)\Common Files\Microsoft Shared\VBA\VBA7.1\VBE7.DLL
Report Id: 9a82692d-0e81-11e5-9bb4-989096a28d27

Try

Method1 - Recompile the Project

1. Open the workbook in Excel. Normally Excel will disable macros in a worksheet until you click a button to enable the macros. Do not enable the macros just yet.
2. Open the VBA editor. You can hit ALT+F11 or on the ribbon click Developer > Visual Basic
3. In the VBA editor double click your module or first module that contains your project. Add a commented line of code such as:

' This is a comment

Then click on the Debug menu at the top and click Compile VBA Project.

Repeat this step for each module in your workbook and then save the workbook.

4. Close the workbook and re-open it and enable the macros and test it.

Method 2 - Disable Compile on Demand

In the VBE Editor in Excel, click on Tools > Options > General tab and click to uncheck "Compile on Demand".

Alternatively you can set the following registry key:

HKEY_CURRENT_USER\Software\Microsoft\VBA\7.0\Common

Type: DWORD

Name: CompileOnDemand

Value: 0

The Crystal Reports Task allows you to output Crystal reports in various formats like PDF, Excel and to printer. With this Task you can specify in-parameters and record filter. The record filter can further narrow down the report query.

This Task requires that you have installed the runtimes for Crystal Reports - .NET 4.0 edition. You can download these here: http://www.businessobjects.com/jump/xi/crvs2010/us2_default.asp

Crystal reports > Main settings sub tab

Crystal reports
Execute reports of type Crystal report to printer and to various formats.

Main settings Conditions Crystal reports On error TimeOut Flow

Main settings Parameters Record filter Printer

Report file
C:\Users\Henrik\Desktop\TestACSPPRDTIDrawComparison.rpt
No Credential

Connection details
localhost - integrated [Henrik]

Destination and output
Destination type: File Output format: PortableDocFormat
Destination file:
C:\Users\Henrik\Desktop\test.pdf
No Credential

[This Task requires the Runtime libraries for Crystal Reports \(.NET 4.0\). Click here to go to download page](#)

Cancel OK

Variables Previous Task 1/3 Next

Report file

This is the path to the report. If located on a network drive you need to specify the Source Credential)

Source Credential

If report file is on network drive you need to select a Credential.

Connection details

Select one or more Connections here depending on how many database connections your report uses.

Destination file type

You can choose to output to file or printer.

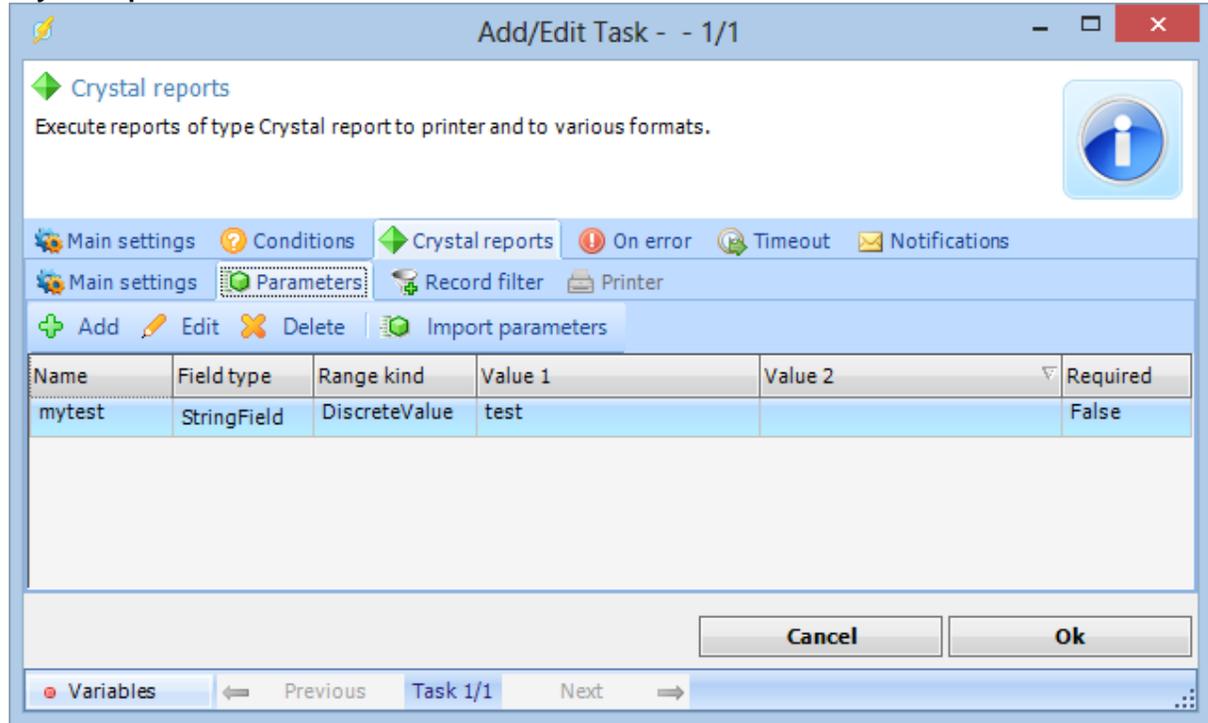
Output format

A range of output formats exist when you select File destination type option.

Destination Credential

If the output file is on a network you need to specify a Credential.

Crystal reports > Parameters sub tab



Your report might include required or optional parameters. If parameters are already defined you can click on "Import parameters". This will import and list your parameters. You can then edit any parameter by double clicking on it (or press Edit). Import parameters button require that you have setup your Connection settings in the Task before pressing - otherwise VisualCron will not be able to query for parameters.

Crystal reports > Record filter sub tab

Add/Edit Task - 1/1

Crystal reports
Execute reports of type Crystal report to printer and to various formats.

Main settings Conditions **Crystal reports** On error Timeout Notifications

Main settings Parameters Record filter Printer

Add record filter

Column:
{visualcron_trade.unlimited} Reload

Condition:
Equal

Value:
Add

Record filter
{trade.tradedate} > CDate('2006-01-01 00:00:00') AND {trade.id} < 400

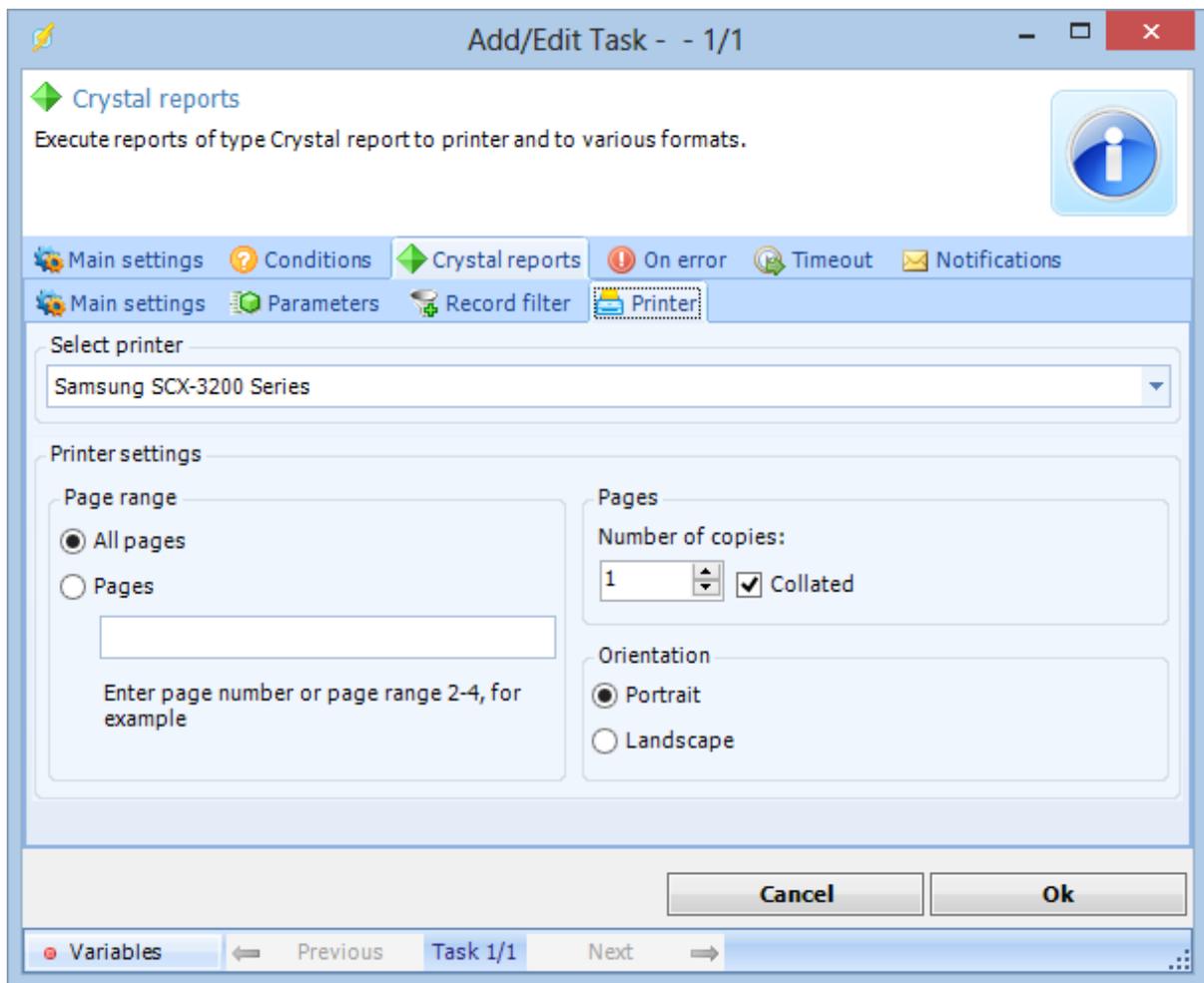
Cancel Ok

Variables Previous Task 1/1 Next

The record filter allows you to choose from existing columns in the report and specify filters - similar like WHERE in a SQL query. This way you can filter the report.

You can manually write the query in the Record filter text box or click "Reload" to load all existing columns, choose a condition, write a value and then press Add.

Crystal reports > Printer sub tab



The printer tab lets you control various printer settings if you have chosen Printer as output type.

The Crystal Reports Connection

The Registry Task can perform various registry actions like read, rename and write values.

Add Task - Registry - 2/2

Registry
The Registry Task can perform various registry actions like read, rename and write values.

Main settings Conditions **Registry** On error TimeOut Flow

Type of Registry task

Read value data Delete value Create key

Create/Change value data Rename Value Delete key

String Rename key

DWORD

Registry key:

Value Name

Value Data

Cancel OK

Variables Previous Task 2/2 Next

There are 7 kinds of registry Tasks:

Read value data

Reads a specific value based on *Registry key* and *Value Name*. Read value is stored in standard output of Task.

Create/Change value data

Creates or changes a value based on a name. You must also specify data type, String or DWORD.

Delete value

Deletes a specified value based on *Registry key* and *Value Name*.

Rename value

Deletes a specified value based on *Registry key* and *Value Name* and *New value name*.

Create key

Creates a Registry key.

Delete key

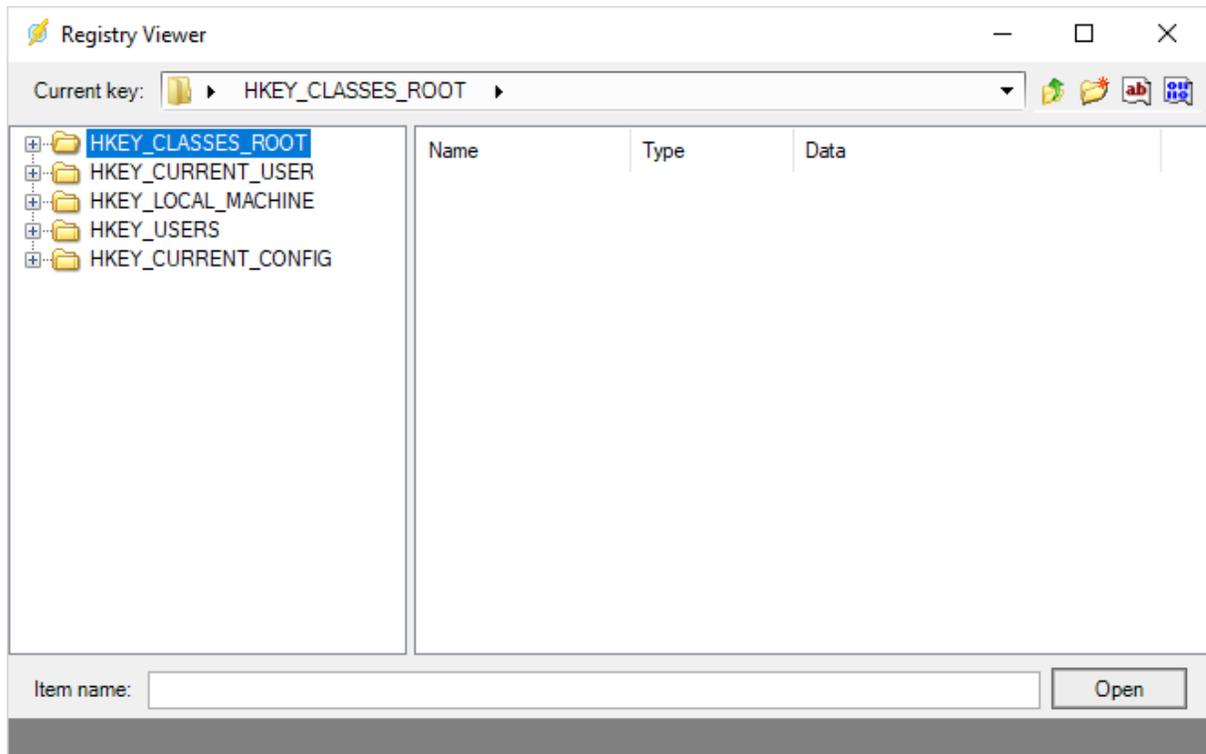
Deletes a Registry key.

Rename key

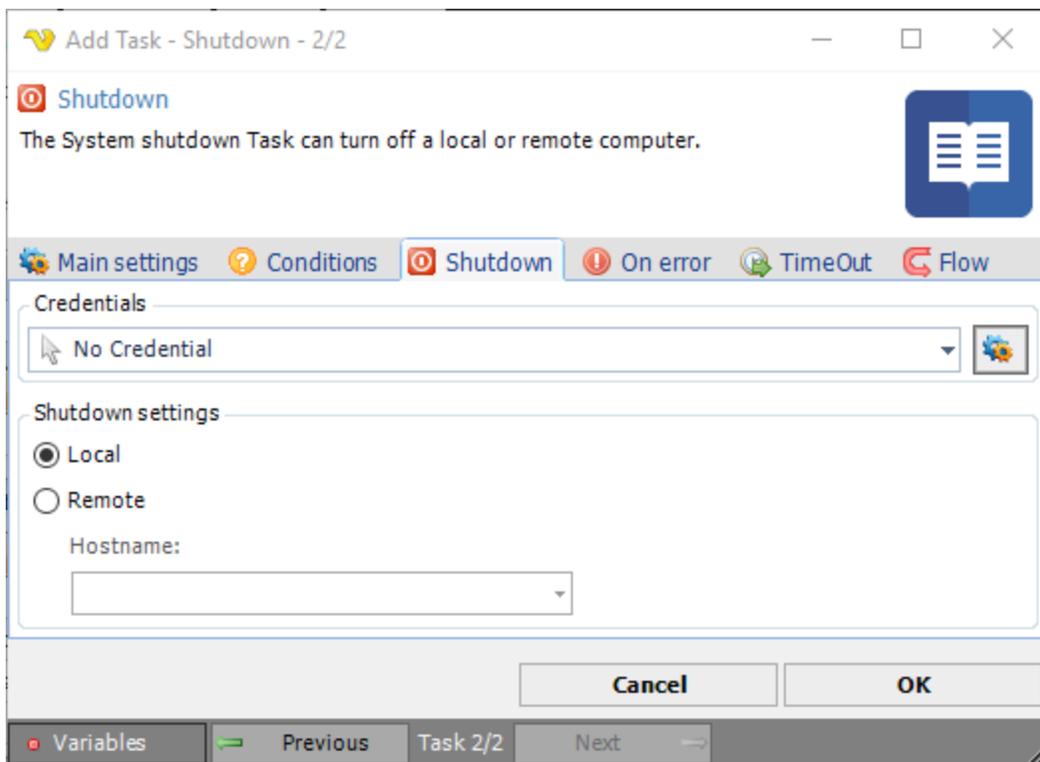
Renames a Registry key.

Browse button

Anytime you can click on the browse button to view or change the registry by yourself.



The System shutdown Task can turn off a local or remote computer.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

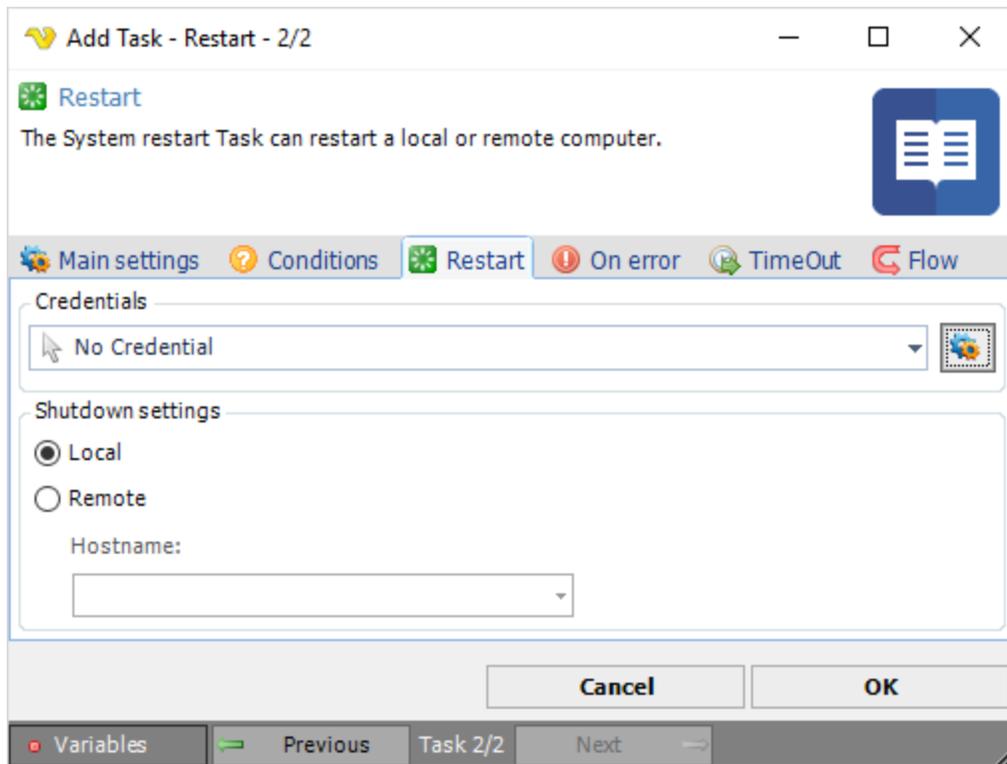
Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

The System restart Task can restart a local or remote computer.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

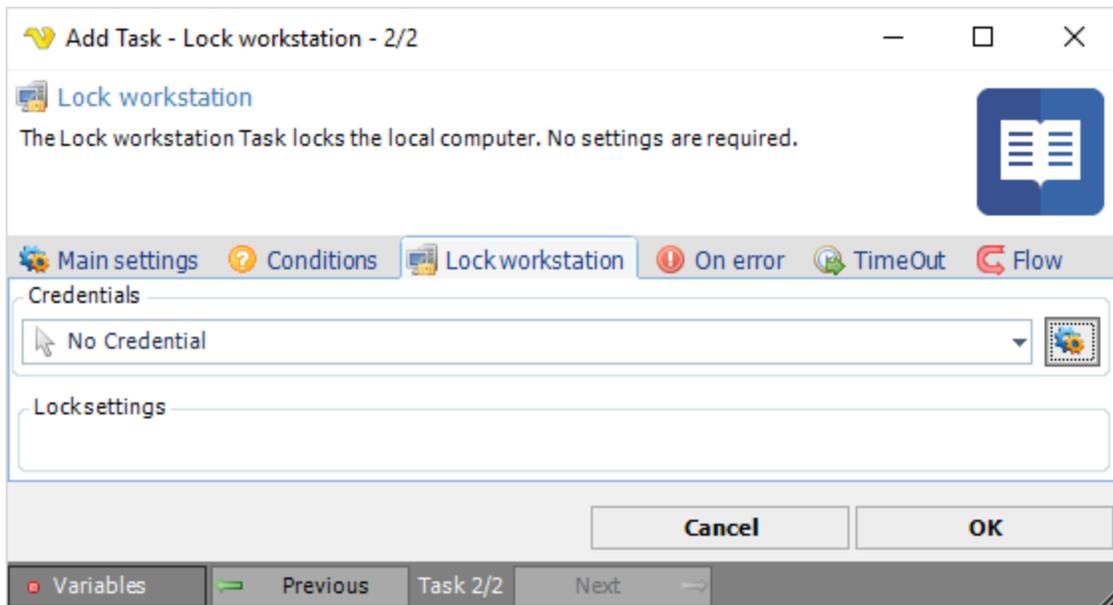
Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

The Lock workstation Task locks the local computer. No settings are required.



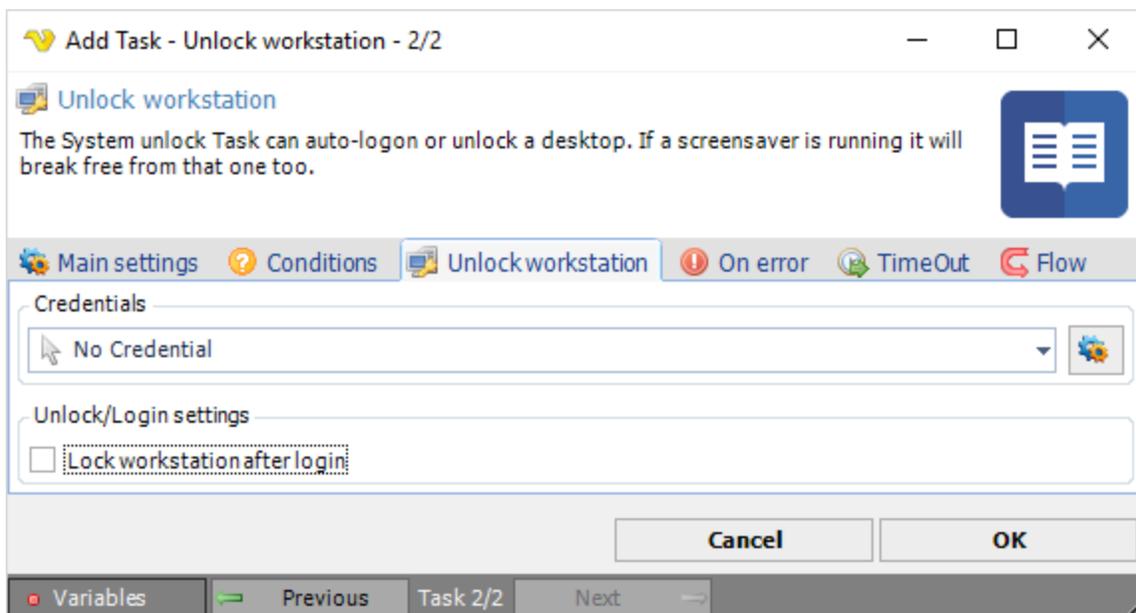
Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Lock settings

Text ...

The System Unlock workstation Task can auto-login or unlock a desktop. If a screen saver is running it will break free from that one too.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Unlock/Login settings

Text ...

Note: For Windows Server 2008 you must enable a setting in Local Security Policy

The Logoff user(s) Task logs off one or more users - locally or remotely.

The screenshot shows the 'Add Task - Logoff - 2/2' dialog box. The title bar includes a yellow shield icon and the text 'Add Task - Logoff - 2/2'. Below the title bar, there is a 'Logoff' icon and the text 'The Logoff user(s) Task logs off one or more users - locally or remotely.' To the right is a blue icon representing a document with lines. Below this is a navigation bar with tabs: 'Main settings', 'Conditions', 'Logoff' (selected), 'On error', 'TimeOut', and 'Flow'. The 'Credentials' section has a dropdown menu set to 'No Credential' and a gear icon for settings. The 'Logoff' section has two radio buttons: 'Local' (selected) and 'Remote'. Below 'Local' is a 'Hostname:' label and an empty text box. Below 'Remote' are two radio buttons: 'Logoff all users' (selected) and 'Logoff a certain user'. Below 'Logoff a certain user' is a 'Username:' label and an empty text box. At the bottom are 'Cancel' and 'OK' buttons. At the very bottom is a task navigation bar with 'Variables', 'Previous', 'Task 2/2', and 'Next' buttons.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

Logoff all users

Logs off all users currently logged on.

Logoff a certain user

Logs off the specified user in the *username* field.

Username

Enter the full username for the user you want to log off.

The Hibernate Task can start Hibernation on a local or remote computer. When doing this on a local computer, it is also possible to wake up the computer at a specific time or after a certain time. A computer in hibernation mode uses 1% of normal power consumption and can be waked up at a certain time or through the LAN with the Wake up on LAN Task.

Hibernate mode writes an image of what you're currently working on to a special file on your hard drive, and then shuts your computer almost completely off. It takes a bit longer than Standby, since the writing process. Hibernate also takes a bit longer to resume, since you must go through essentially the normal boot process, although in Windows XP your computer wakes faster from Hibernate than in previous versions of Windows. The advantage is that you can leave your laptop in Hibernate mode for days without any negative effect. When you restart, you'll see everything exactly as you left it. Hibernate is the perfect mode for shutting down for the night or even the weekend.

Add Task - Hibernate - 2/2

Hibernate

The Hibernate Task can start Hibernation on a local or remote computer. When doing this on a local computer, it is also possible to wake up the computer at a specific time or after a certain time. A computer in hibernation mode uses 1% of normal power consumption and can be waked up at a certain time or through the LAN with the Wake up on LAN Task.

Main settings | **Conditions** | **Hibernate** | **On error** | **TimeOut** | **Flow**

Credentials

No Credential

Hibernate

Local host

Remote host

Force

Wake up

Wake up

At a certain date and time

2017-09-26 10:20:39

At a certain time

10:20:41

After a certain time (hour,minute,second)

0 0 0

Cancel OK

Variables Previous Task 2/2 Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

Force

Force suspend/hibernate = do not send permission request to applications.

Wake up

Turns on or off wake up.

At a certain date and time

Wakes up the computer at the specified year, month, day, hour, minute and second.

At a certain time

Wakes up the computer at the specified hour, minute and second.

After a certain time

Wakes up the computer after a certain time; hour, minute and second.

Remark on Wake Up: Some computers can wake up from standby and not from hibernation, some work for both, and some for none. It all depends on the BIOS and the APM/ACPI capabilities, your motherboard, and your ATX power supply version.

The Standby Task can start Standby/Sleep on a local or remote computer. When doing this on a local computer it is also possible to wake up the computer at a specific time or after a certain time. A computer in standby mode uses approximately 35% of the normal power consumption and can be waked up at a certain time or through the LAN with the Wake up on LAN Task.

In Standby mode, your computer might appear to be turned off but it could automatically restart. So shut down your computer completely when it's not in use e.g. on an airplane. Standby is not appropriate for long term use, on many laptops, overnight is probably pushing it on standby. And it has one important limitation, everything is in memory not saved to the hard drive.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

Force

Force suspend/standby = do not send permission request to applications.

Wake up

Turns on or off wake up.

At a certain date and time

Wakes up the computer at the specified year, month, day, hour, minute and second.

At a certain time

Wakes up the computer at the specified hour, minute and second.

After a certain time

Wakes up the computer after a certain time; hour, minute and second.

Remark on Wake Up: Some computers can wake up from standby and not from hibernation, some work for both, and some for none. It all depends on the BIOS and the APM/ACPI capabilities, your motherboard, and your ATX power supply version.

The Wake up Task prepare a computer for Wake up at a specific time or after a certain time.

At a certain date and time

Wakes up the computer at the specified year, month, day, hour, minute and second.

At a certain time

Wakes up the computer at the specified hour, minute and second.

After a certain time

Wakes up the computer after a certain time; hour, minute and second.

Remark on Wake Up: Some computers can wake up from standby and not from hibernation, some work for both, and some for none. It all depends on the BIOS and the APM/ACPI capabilities, your motherboard, and your ATX power supply version.

The Wake up on LAN Task can wake a remote computer.

Introduction

Wake on LAN (WOL) support is implemented in the motherboard of the computer. The motherboard must have a WAKEUP-LINK header onboard and be connected to the network card via a special 3-pin cable. However, systems supporting the PCI 2.2 standard coupled with a PCI 2.2 compliant network

adapter, typically do not require a WOL cable as the required standby power is relayed through the PCI bus. Most modern mother boards with an embedded Ethernet controller also support WOL.

Wake on LAN must be enabled in the Power Management section of the motherboard's BIOS. It may also be necessary to configure the computer to reserve power for the network card when the system is shut down.

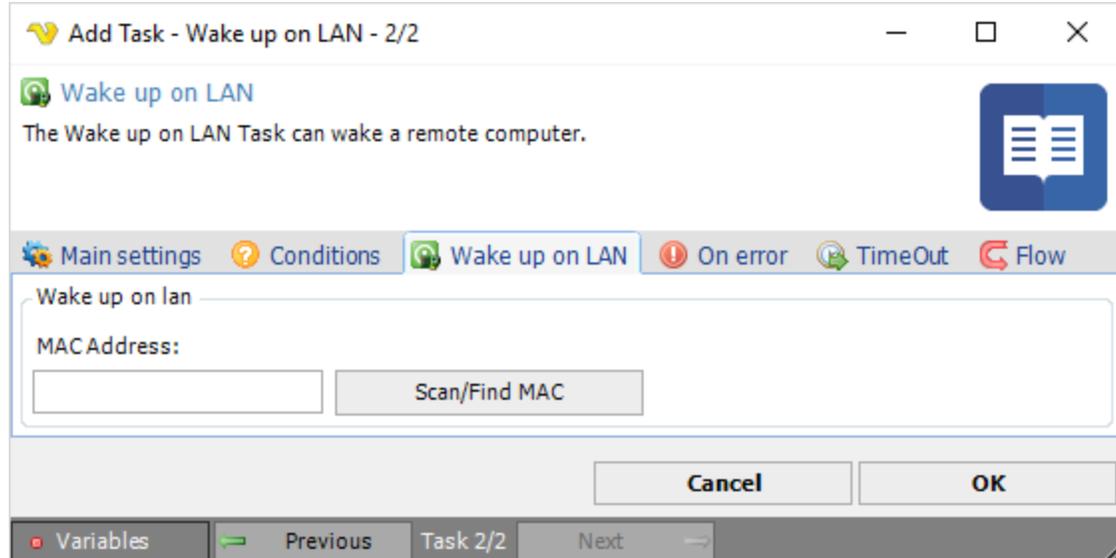
In addition to get WOL to work, it is sometimes required to flash this feature to the card. You can do this in Windows from the properties of the network card in the device manager, on the *Power Management* tab. Check *Only allow management stations to wake up the computer*, to make sure it does not wake up on every single network activity that occurs.

How it works

The general process of waking a computer up remotely in a LAN is: The target computer is shut down, with power reserved only for the network card. The network card listens for a specific packet, called the "Magic Packet". The Magic Packet is broadcast on the broadcast address for a particular subnet or the entire LAN. The listening computer receives this packet, checks it for the correct information, and then boots if the Magic Packet data is matching.

Magic Packet

The Magic Packet is a broadcast frame, transmitted over port 0 (historically the most common port used), 7 or 9 (becoming the most common ports used). It can be sent over a variety of connectionless protocols (UDP, IPX) but UDP is most commonly used. The data that is contained in a Magic Packet is the a constant represented in hexadecimal: FF FF FF FF FF FF, followed by sixteen repetitions of the target computer's MAC address, possibly followed by a four or six byte password.



MAC Address

Enter the MAC address of the remote network card. Click on *Scan/Find MAC* to search for MAC's in your network.

Scan/Find MAC

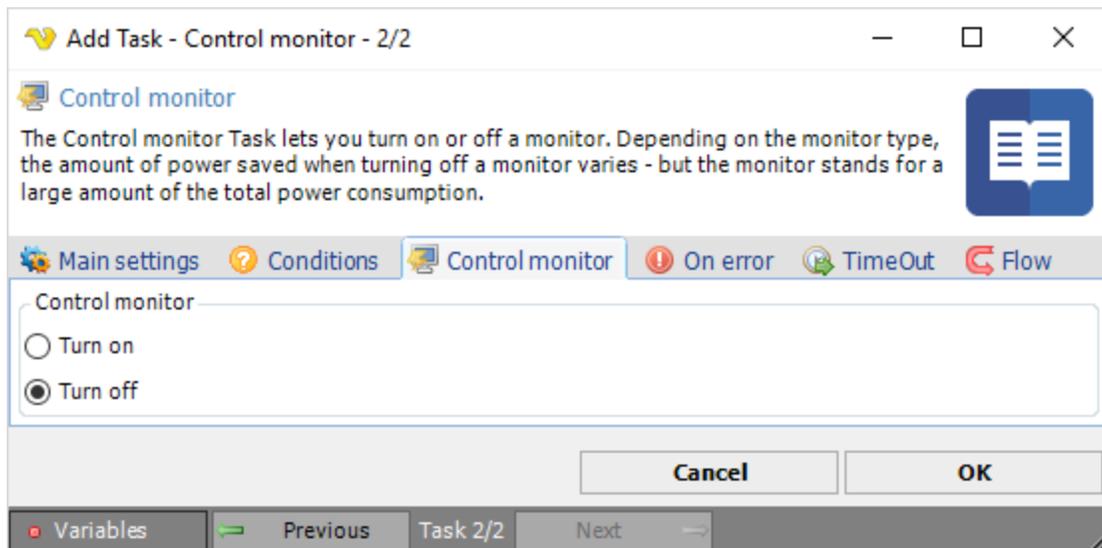
Enter a host name or range like 192.168.1.1 to 192.168.1.100. Click on *Search* to start finding MAC's. Double click on row to use the MAC found.

Remark on Wake Up: Some computers can wake up from standby and not from hibernation, some work for both, and some for none. It all depends on the BIOS and the APM/ACPI capabilities, your motherboard, and your ATX power supply version.

The Control monitor Task lets you turn on or off a monitor. Depending on the monitor type, the amount of power saved when turning off a monitor varies - but the monitor stands for a large amount of the total power consumption.

Some typical power consumption levels (watts) for computer equipment are:

- Desktop computer: 60W
- CRT (Cathode Ray Tube) monitor: 75W
- Flat screen monitor: 25W
- Laser jet printer: 7.2W



Select either *Turn on* or *Turn off* to control monitor power state.

The Print document Task can print a document in number of formats like pdf, Word, images and text.

Print document > File filter > Location sub tab

In the File filter tab you define which file that should be printed. Read more about file filter here.

Print document > Print settings sub tab

Select printer

Select your desired printer here.

Printer settings

You can set some basic printer settings.

Page range

You can either print all pages of the document or select pages.

Pages

You can set the number of copies here.

Orientation

Select either portrait or landscape.

Document

Specify a path to the document you want to print.

Auto detect document type from extension

VisualCron tries to print the document from the extension name. It is important that the extension is correct otherwise you will get printing problems.

Specify document type

Instead of auto detecting, if you know the document type, you can specify it here.

Note

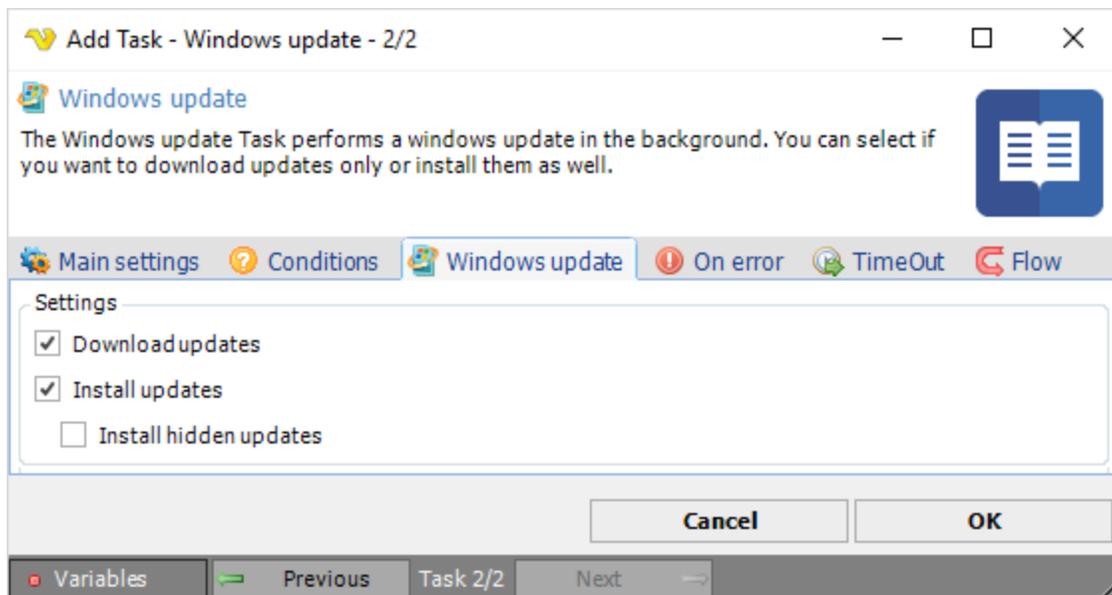
Printing images requires that you have any version of Microsoft Office installed.

Troubleshooting

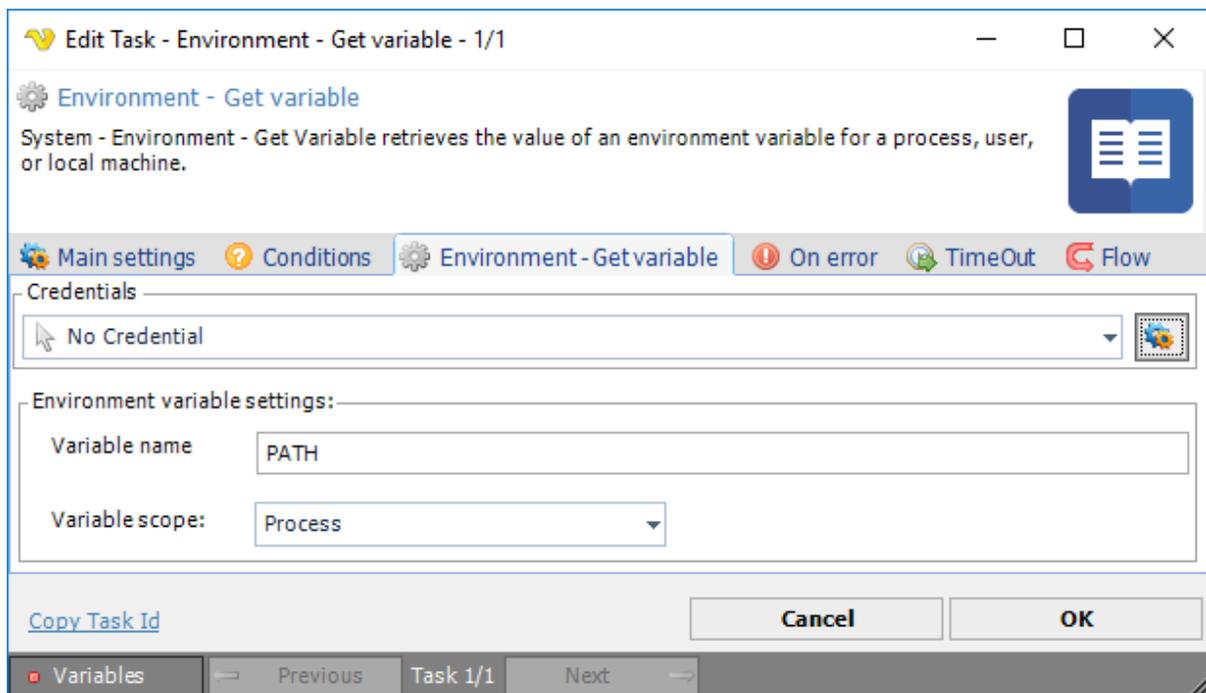
I cannot see my printer

This is probably a permissions problem. Please check the sharing permissions on the printer. By default, the user account that runs the VisualCron service is SYSTEM account and that user needs to have this printer shared to.

The Windows update Task performs a Windows update in the background. You can select if you want to download updates only or install them as well.



System - Environment - Get variable retrieves the value of an environment variable for a process, user or local machine.



Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Variable name

The name of an existing variable contained in the selected scope.

Variable scope

Select Process, User or Machine variable scope. These variable scopes refers, more or less, to Windows 10 Process, User and System variables. The Windows process variables consist of Windows User and System variables.

System - Environment - Set Variable sets the value of an environment variable for a process, user or local machine.

Add Task - Environment - Set variable - 2/2

Environment - Set variable
System - Environment - Set Variable sets the value of an environment variable for a process, user, or local machine.

Main settings | **Conditions** | **Environment - Set variable** | **On error** | **TimeOut** | **Flow**

Credentials
No Credential

Environment variable settings:

Variable name:

New value:

Variable scope:

[Copy Task Id](#) | **Cancel** | **OK**

Variables | Previous | Task 2/2 | Next

Variable name

The name of an existing variable contained in the selected scope.

New value

The new value for the selected variable name.

Variable scope

Select Process, User or Machine variable scope. These variable scopes refer, more or less, to Windows 10 Process, User and System variables. The Windows process variables consist of Windows User and System variables.

System - Environment - Append variable appends a value to an existing environment variable for a process, user or local machine.

Add Task - Environment - Append variable - 2/2

Environment - Append variable
System - Environment - Append Variable appends a value to and existing environment variable for a process, user, or local machine.

Main settings **Conditions** **Environment - Append variable** **On error** **TimeOut** **Flow**

Credentials
No Credential

Environment variable settings:

Variable name:

Text for append:

Variable scope:

[Copy Task Id](#) **Cancel** **OK**

Variables **Previous** **Task 2/2** **Next**

Variable name

The name of a new variable to be appended.

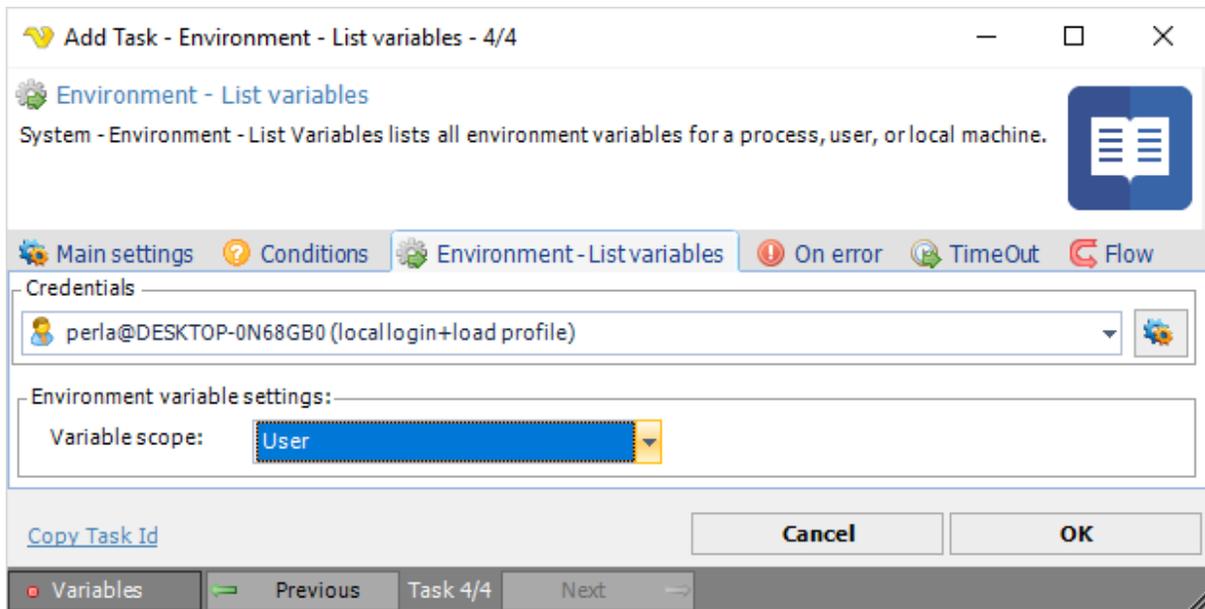
Text for append

The value to be used by the variable name.

Variable scope

Select Process, User or Machine variable scope. These variable scopes refers, more or less, to Windows 10 Process, User and System variables. The Windows process variables consist of Windows User and System variables.

System - Environment - List variables lists all variables for a process, user or local machine.



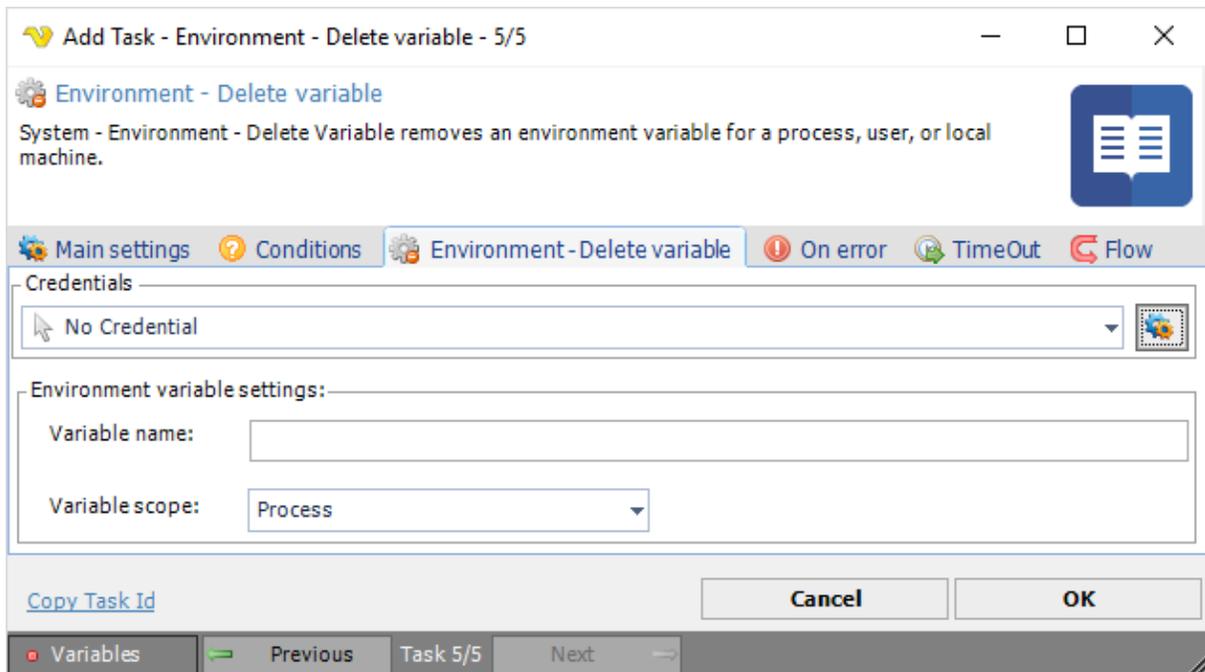
Variable scope

Select Process, User or Machine variable scope. These variable scopes refers, more or less, to Windows 10 Process, User and System variables. The Windows process variables consist of Windows User and System variables.

The Windows 10 **User environment variables** are stored in the registry key below:
HKEY_CURRENT_USER\Environment

The Windows 10 **System environment variables** are stored in the registry key below:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Environment

System - Environment - Delete variable removes an environment variable for a process, user or local machine.



Variable name

The name of an existing variable contained in the selected scope.

Variable scope

Select Process, User or Machine variable scope. These variable scopes refer, more or less, to Windows 10 Process, User and System variables. The Windows process variables consist of Windows User and System variables.

The Windows 10 **User environment variables** are stored in the registry key below:
HKEY_CURRENT_USER\Environment

The Windows 10 **System environment variables** are stored in the registry key below:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Environment

The System restore - Create restore point Task lets you create a restore point (of files and folders).

Add Task - Create restore point - 2/2

Create restore point

The System restore - Create restore point Task lets you create a restore point (of files and folders).

Main settings **Conditions** **Create restore point** **On error** **TimeOut** **Flow**

Credentials

No Credential

Scope

Local

Remote

Hostname:

Create restore point

Description:

Event type:

Begin system change

Restore point type:

Application modification

Cancel OK

Variables Previous Task 2/2 Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote

Select the the *Local* radio button if you want to control the local computer, select the *Remote* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

Description

Short description of the restore point.

Event type

Select applicable type of event related to system change.

Restore point type

Select applicable type of restore point related to application change.

The System restore - Perform system restore Task restores an existing system restore to original state.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote

Select the the *Local* radio button if you want to control the local computer, select the *Remote* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

Sequence number

Text ...

Press the Get list button to populate the Sequence number list with previously created restore points.

The System restore - List system restore points Task returns a list of existing restore points.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote

Select the the *Local* radio button if you want to control the local computer, select the *Remote* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

The Event log Read Task retrieves event log records based on a filter.

Add Task - Event log - read - 2/2

Event log - read

The Event log - Read Task retrieves event log records based on a filter.

Main settings Conditions Event log - read Output On error TimeOut Flow

Scope

Local

Remote

No Credential

Event log entry filter

Event log

Application

Source

Don't check

Entry type

Don't check Information

Category ID

Don't check 0

Category

Don't check

Event ID

Don't check 0

Message

Don't check

Cancel OK

Variables Previous Task 2/2 Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Local or Remote

Select the the *Local* radio button if you want to control the local computer, select the *Remote* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

Event log entry filter

Text ...

The Event log Write Task writes an event log record value based on various parameters.

Add Task - Event log - write - 2/2

Event log - write
The Event log - Write Task writes an a event log record value based on various parameters.

Main settings | **Conditions** | **Event log - write** | **On error** | **TimeOut** | **Flow**

Scope

Local
 Remote

Hostname:

Credential:

Event log entry

Event log:
Source:
Entry type:
Event ID:
Category ID:
Message:

Cancel **OK**

Variables | **Previous** | **Task 2/2** | **Next**

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local or Remote

Select the the *Local* radio button if you want to control the local computer, select the *Remote* radio button if you want to control a remote computer.

Hostname

The name of the remote computer.

Event log entry

Text ...

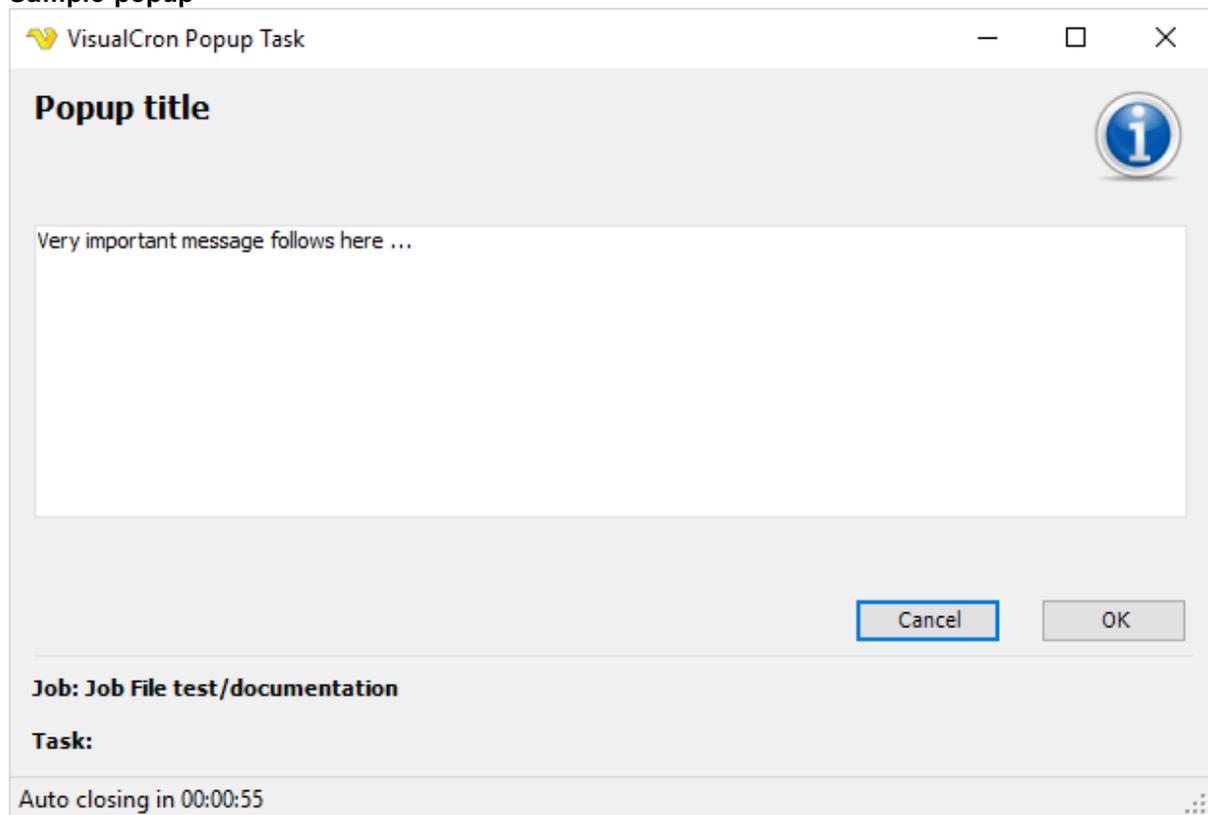
The Popup Task lets you display a message for one or more users. The feedback from the user, button or input, can then be returned back as a result and output for later processing.

The Popup Task has a number of purposes:

- Display a simple message
- Display a message and return input in form of buttons
- Display a message and return input in form of text boxes, radio boxes and other controls

The actual controls can return user defined values and the result of values can control the result of the Task.

Sample popup



Popup > Main settings sub tab

Add Task - Popup - 3/3

Popup

The Popup Task lets you display a message for one or more users. The feedback from the user, button or input, can then be returned back as result and output for later processing.

Main settings | Conditions | **Popup** | On error | TimeOut | Flow

Main settings | Target | Buttons | Input | Result | Output

Popup position:
CenterParent

Icon type: Information | Popup title: Popup title

Popup message:

Show message
 Play sound
 Sound1
 Blink in task bar
 Modal window
 Bring to front
 Auto close after
 60 seconds

Preview popup..

Cancel OK

Variables | Previous | Task 3/3 | Next

Popup position

Where the popup window is displayed.

Icon

The icon that is displayed next to the Message

Title

Title within the popup.

Message

(Optional) - the actual message or description that is shown

Show message

If the message should be displayed.

Play sound

You are able to select among a set of predefined sounds to play when window opens.

Blink in task bar

This makes the item in task bar blinking.

Modal window

This controls if the window should block other windows in the same application.

Bring to front

Display the Window top most.

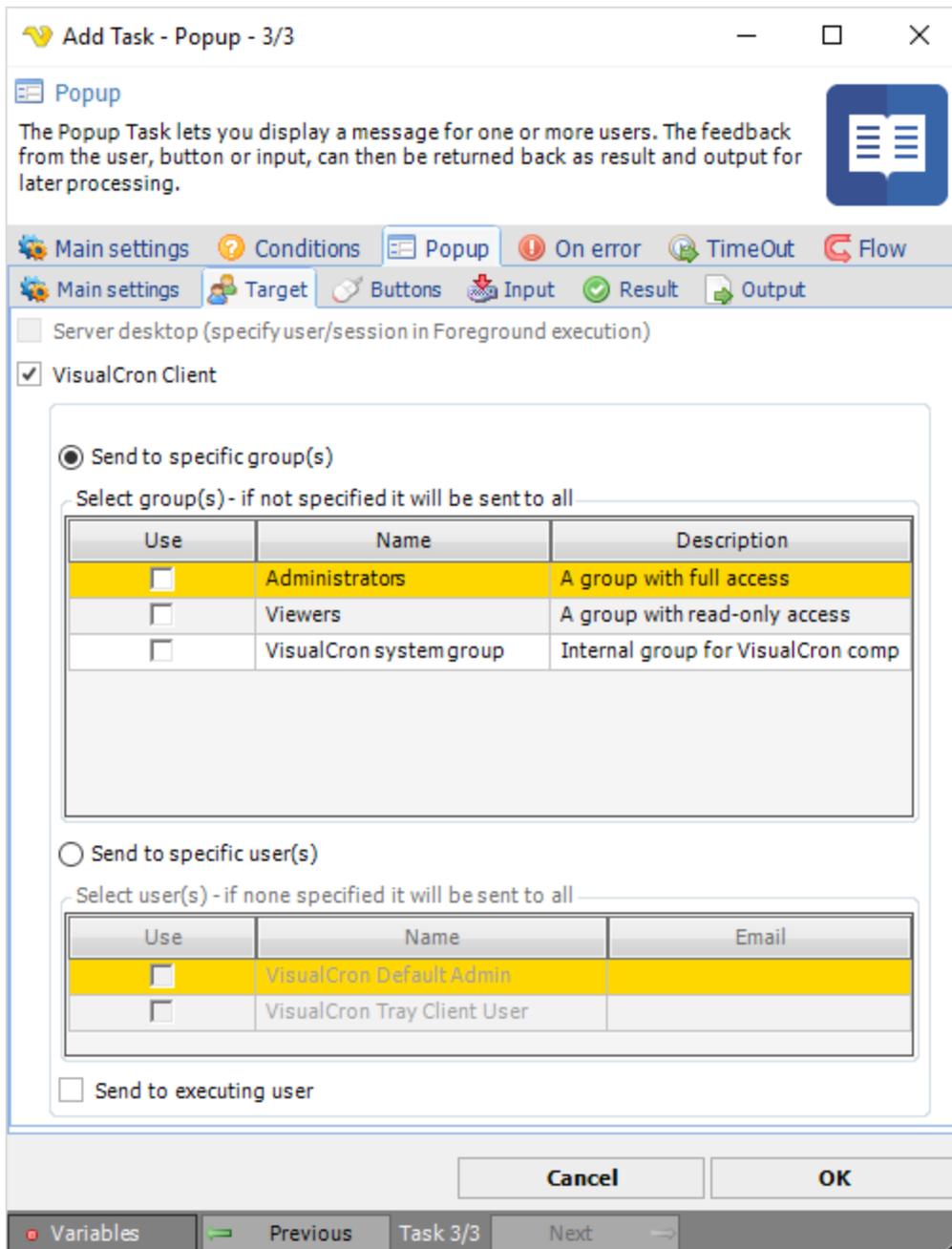
Auto close after

You need to specify a timeout time for this popup message. This controls when the popup is auto-closed. When auto closing the dialog result is "Cancel".

Preview popup

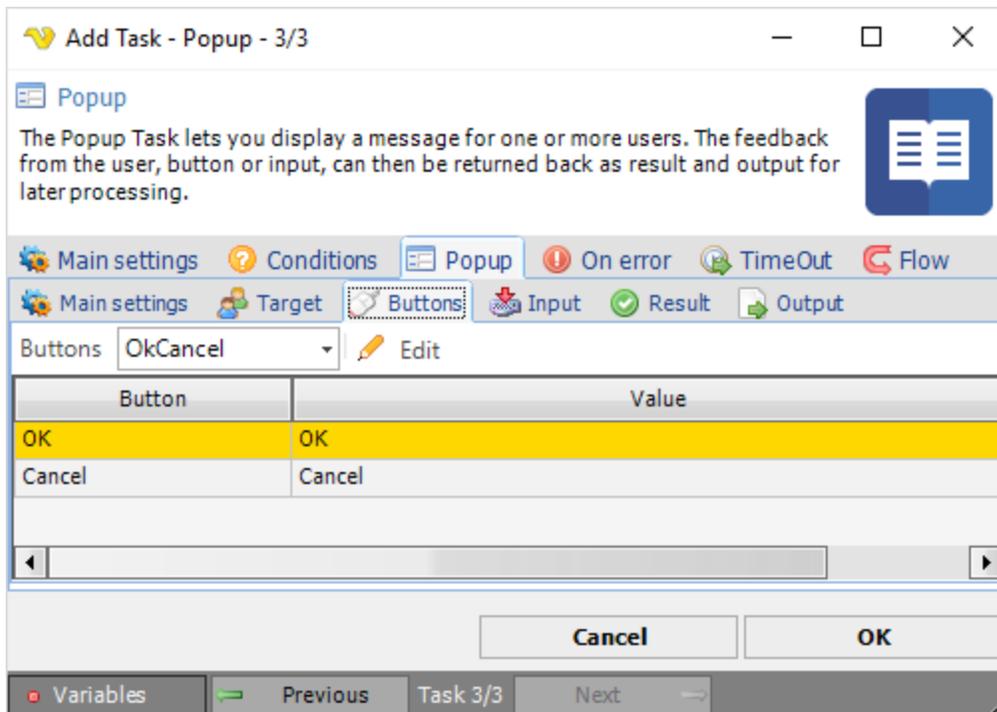
Click this button to test the popup.

Popup > Target sub tab



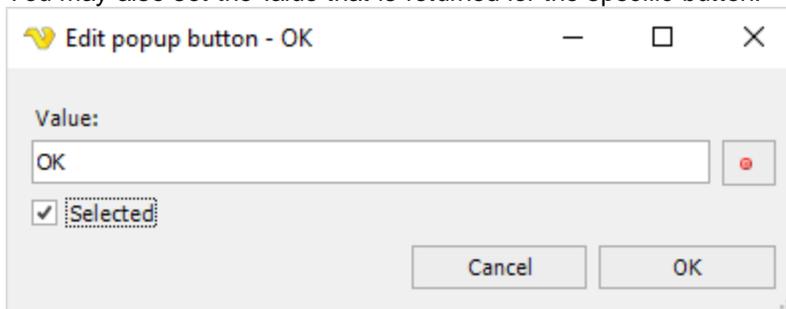
Right now the Popup can be sent to single user(s), specified groups or the user that executes the Task/Job.

Popup > Buttons sub tab



You are able to select among common buttons for the popup. In the Result tab you can control how the press of a specific button affect the result of the Task. In the Output tab you control if the button value should be returned as output or if the Input should be returned.

You may also set the value that is returned for the specific button.



Popup > Input sub tab

The screenshot shows the 'Add Task - Popup - 3/3' dialog box. The 'Input' tab is active, displaying configuration options for the popup's input control. The 'Input type' is set to 'RadioButton'. Under 'Manual source', there is an empty table with columns 'Order', 'Caption', and 'Value'. The 'Variable/value list source' is selected, with 'Caption' set to 'One;Two;Three;Four;Five', 'Value' set to '1;2;3;4;5', and 'Input separator' set to 'Semicolon'. The 'Sort alphabetically' checkbox is checked. At the bottom, there are 'Cancel' and 'OK' buttons, and a navigation bar with 'Variables', 'Previous', 'Task 3/3', and 'Next' buttons.

The Input tab controls optional input control that you can use. For example if you want the user to input text or select a radio button, checkbox or combobox. If you want the output from the input control you need to change behavior in the Output tab.

You can also use a Variable source as input.

Caption

Use any Variable or text that contains a separation according to *input separator*. If you want the caption to be based on the value then check *Use value as caption*.

Value

Use any Variable or text that contains a separation according to *input separator*. The value property is what is returned when selecting an item.

Use value as caption

Value array will be used in caption array. Useful if you cannot or don't want to map caption to array (maybe only once source available).

Input separator

This is the type of character that separates each value.

Mask input

If you want to display textbox that user supplies a password to for example.

Sort alphabetically

If checked, items are sorted alphabetically, otherwise in the order they are supplied.

You can add input controls by pressing the Add button.

Popup > Result sub tab

Input type	Condition	Value	Result
MessageButton	Equal (=)	OK	Success
MessageButton	Equal (=)	Cancel	Failure
AutoClose	Equal (=)	Ok	Failure
Timeout	Equal (=)	Ok	Failure
CloseButton	Equal (=)	Ok	Failure

The Result tab controls the result of the Task (if it should fail or not) depending on what you select, write or click.

When adding or editing a "Popup Result" you are able to control what happens if, for example, the radio button is checked.

Popup > Output sub tab

In the output settings you control what is returned from the Task. By default the Button value is returned (*Dialog result*) but you can also return input values in output (*Input values*). When choosing input option "checkbox" each value will be returned in a new row.

Include caption

The Caption property is put in front of value like "captionvalue=inputvalue" when this option is checked.

The Desktop macro Task lets you automate in a visual way. Desktop macro Task *records* your mouse moves and keystrokes and can *play them back* for you any time. The Task is advanced in many ways. It can interact with any program and restore windows to their original place if they are misplaced before playback.

There are many uses for the Desktop macro Task, for example:

- web automation
- testing
- automate manual Tasks
- excel interaction

The Desktop macro Task is dependent on access to the desktop. Mouse moves and keystrokes must have a desktop to playback onto. To accomplish this, as the VisualCron Server is running as a service the VisualCron Tray Client is used for playback. This means also that the Task can only be run as a foreground Task.

The screenshot shows the 'Add Task - Desktop macro - 3/3' dialog box. The title bar includes standard window controls. Below the title bar, there is a 'Desktop macro' section with a brief description and a blue icon. A navigation bar contains tabs for 'Main settings', 'Conditions', 'Desktop macro', 'On error', 'TimeOut', and 'Flow'. The 'Desktop macro' tab is active, showing three sections: 'Macro info' with an 'Edit' button and 'Length: 0 minute(s), 0 second(s)'; 'Record' with a 'Start Recording' button and the instruction 'Press CTRL + ALT + S to stop', and a checked checkbox for 'Show record stop dialog'; and 'Playback' with checked checkboxes for 'Show playback window', 'Suppress error message boxes', and 'Abort if no window is found', along with a 'Playback speed' dropdown menu set to 'Normal'. At the bottom, there is a 'Copy Task Id' link, 'Cancel' and 'OK' buttons, and a footer bar with 'Variables', 'Previous', 'Task 3/3', and 'Next' buttons.

Edit

This feature is currently unavailable but will let you edit mouse moves, key strokes in detail. Please let us know if you find this an important feature and we will prioritize it.

Length

Displays the playback length of the macro when played back with *normal speed*.

Start Recording

Minimizes the VisualCron windows and starts the recording. You can interrupt this any time by clicking CTRL + ALT + S or if you click on Stop button on Record dialog. During record you perform the steps which you want VisualCron to do later. One tip could be to take things slowly as the time it may take to open a program/window may vary.

Show record stop dialog

If this property is unchecked you will not see the window with the Stop button. To stop recording you must press CTRL + ALT + S.

Show playback window

If this property is unchecked the playback popup will not be shown.

Suppress error message boxes

If this property is checked no message boxes will halt the application if a certain window is not found during playback.

Abort if no window is found

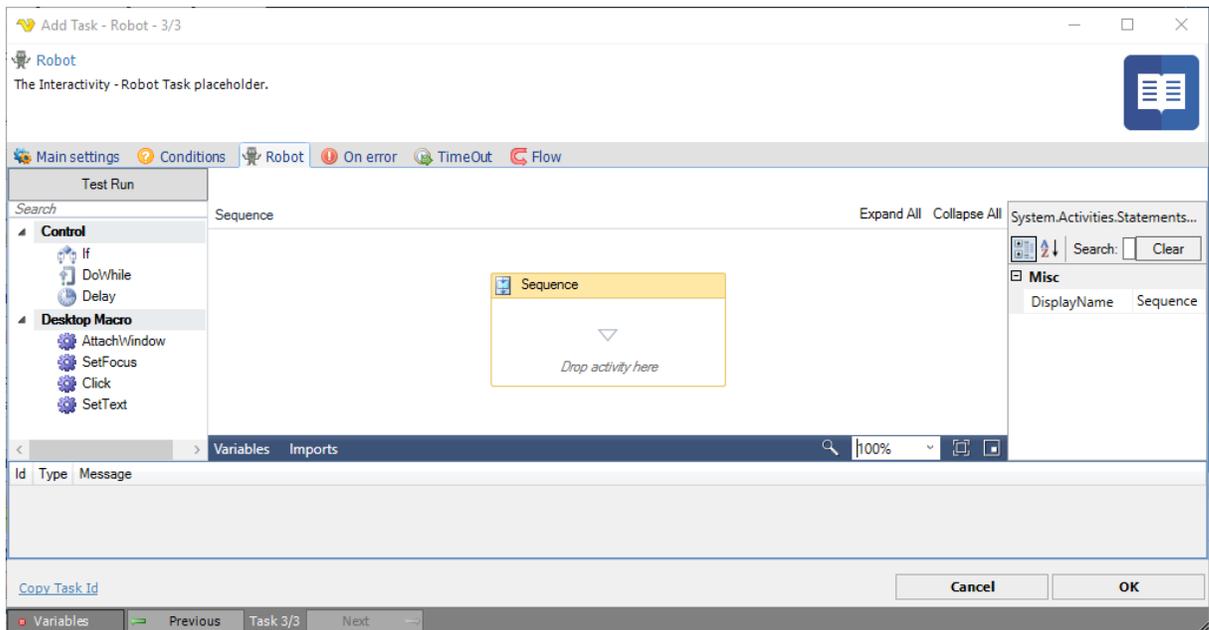
If this property is checked it forces the Task to abort when a certain window is not found.

Playback speed

The Desktop macro Task has 3 playback speeds:

1. Normal - plays back with the same speed as you recorded it
2. High - plays back with the double speed
3. Ultra - plays back with zero waiting time on mouse moves

The Interactivity - Robot Task ...



Control

Text ...

Desktop macro

Text ...

Drop activity here

Text ...

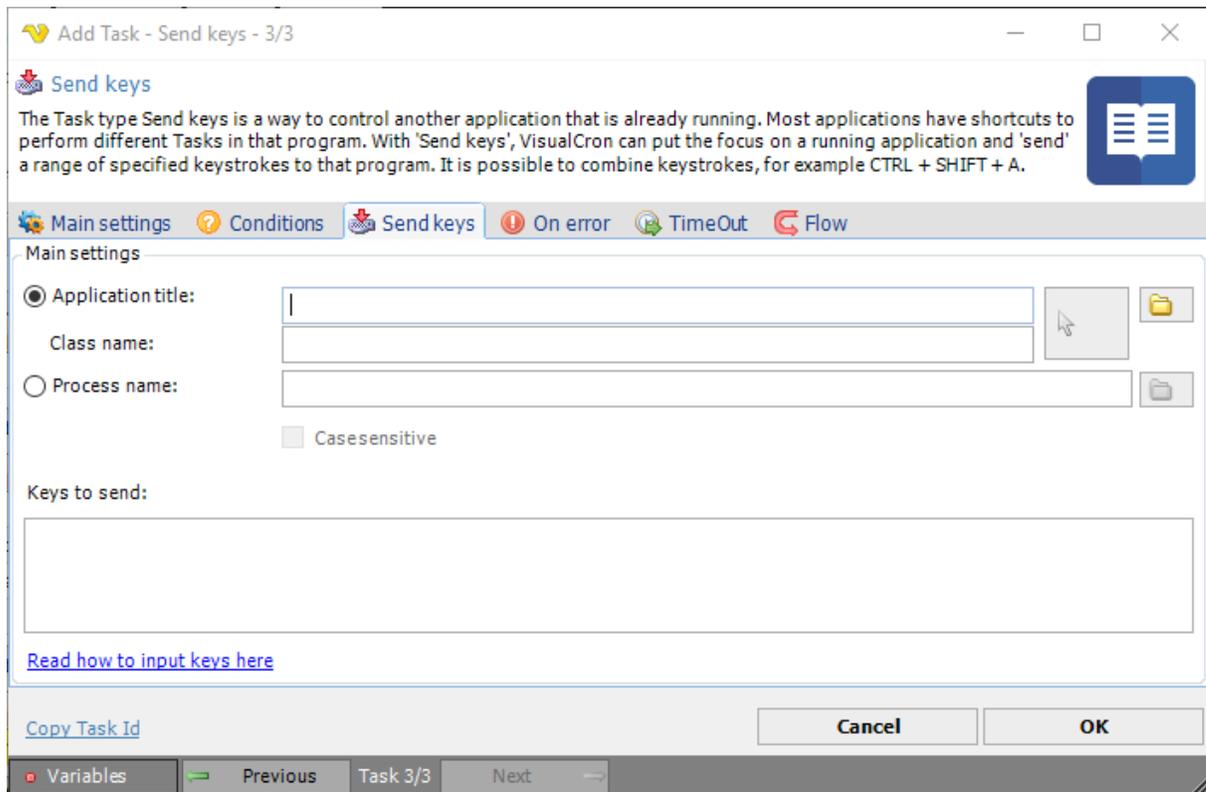
System.Activities.Statements.Sequence

Text ...

Activity list (?)

Text ...

The Task type Send keys is a way to control another application that is already running. Most applications have shortcuts to perform different Tasks in that program. With "Send keys", VisualCron can put the focus on a running application and "send" a range of specified keystrokes to that program. It is possible to combine keystrokes, for example CTRL + SHIFT + A.



Application title

To be able to send keys, VisualCron needs to have the application title or the process name. Enter title name or open *Active window titles* by clicking on the *select*. Note that this retrieves application titles from computer where the server reside. This function does not search child windows. This function does not perform a case-sensitive search. You can also hold drag the *arrow* button over a specific window. Release the button when you have selected the window.

Class name

When dragging the *arrow* button you get more exact information on what window you want to reach - so use the drag functionality when you can. Class name is one of the properties used when sending keys to a window.

Process name

Some programs change their application title and it would then be better to fetch the main window from the process name instead of the application title. Write the process name or click on button ... to retrieve a list from the server.

Case sensitive

If you want your search of processes to be case sensitive the check this option.

Keys to send

These are the keystrokes you want to send. Look below for more information.

Most keyboard characters are represented by a single keystroke. Some keyboard characters are made up of combinations of keystrokes (CTRL+SHIFT+HOME, for example). To send a single keyboard character, send the character itself as the string argument. For example, to send the letter x, send the string argument "x".

Note 1: To send a space, send the string " ".

You can use Send keys to send more than one keystroke at a time. To do this, create a compound string argument that represents a sequence of keystrokes by appending each keystroke in the sequence to the one before it. For example, to send the keystrokes a, b, and c, you would send the string argument "abc".

The Send Keys method uses some characters as modifiers of characters (instead of using their face-values). This set of special characters consists of parentheses, brackets, braces, and the:

- plus - "+"
- caret - "^"
- percent - "%"
- tilde - "~".

Send these characters by enclosing them within braces "{}". For example, to send the plus character, send the string argument "{+}".

Brackets "[]" have no special meaning when used with *SendKeys*, but you must enclose them within braces to accommodate applications that do give them a special meaning (for dynamic data exchange (DDE) for example):

- To send bracket characters, send the string argument "{}" (left bracket) and "{}" (right bracket)
- To send brace characters, send the string argument "{}" (left brace) and "{}" (right brace)

Some keystrokes do not generate characters (such as ENTER and TAB). Some keystrokes represent actions (such as BACKSPACE and BREAK). To send these kinds of keystrokes, send the arguments shown in the following table:

Key	{Argument}
BACKSPACE	{BACKSPACE}, {BS}, or {BKSP}
BREAK	{BREAK}
CAPS LOCK	{CAPSLOCK}
DEL or DELETE	{DELETE} or {DEL}
DOWN ARROW	{DOWN}
END	{END}
ENTER	{ENTER} or ~
ESC	{ESC}
HELP	{HELP}
HOME	{HOME}
INS or INSERT	{INSERT} or {INS}
LEFT ARROW	{LEFT}
NUM LOCK	{NUMLOCK}
PAGE DOWN	{PGDN}
PAGE UP	{PGUP}
PRINT SCREEN	{PRTSC}
RIGHT ARROW	{RIGHT}
SCROLL LOCK	{SCROLLLOCK}
TAB	{TAB}
UP ARROW	{UP}
F1	{F1}
F2	{F2}
F3	{F3}
F4	{F4}
F5	{F5}
F6	{F6}

F7	{F7}
F8	{F8}
F9	{F9}
F10	{F10}
F11	{F11}
F12	{F12}
F13	{F13}
F14	{F14}
F15	{F15}
F16	{F16}

To send keyboard characters that are comprised of a regular keystroke in combination with a SHIFT, CTRL, or ALT, create a compound string argument that represents the keystroke combination. You do this by preceding the regular keystroke with one or more of the following special characters:

Key	Special Character
SHIFT	+
CTRL	^
ALT	%

Note 2: When used this way, these special characters are not enclosed within a set of braces.

To specify that a combination of SHIFT, CTRL, and ALT should be held down while several other keys are pressed, create a compound string argument with the modified keystrokes enclosed in parentheses. For example, to send the keystroke combination that specifies that the SHIFT key is held down while:

- e and c are pressed, send the string argument "+(ec)"
- e is pressed, followed by a lone c (with no SHIFT), send the string argument "+ec"

You can use the *SendKeys* method to send a pattern of keystrokes that consists of a single keystroke pressed several times in a row. To do this, create a compound string argument that specifies the keystroke you want to repeat, followed by the number of times you want it repeated. You do this using a compound string argument of the form {keystroke number}. For example, to send the letter "x" ten times, you would send the string argument "{x 10}". Be sure to include a space between keystroke and number.

Note 3: The only keystroke pattern you can send is the kind that is comprised of a single keystroke pressed several times. For example, you can send "x" ten times, but you cannot do the same for "Ctrl+x".

Note 4: You cannot send the PRINT SCREEN key {PRTSC} to an application.

The Wait Task lets you insert a pause of any length.

Add Task - Wait - 3/3

Wait
The Wait Task lets you insert a pause of any length.

Main settings | Conditions | **Wait** | On error | TimeOut | Flow

Wait/Sleep

0 days
0 hours
0 minutes
0 seconds
0 milliseconds

[Copy Task Id](#) | **Cancel** | **OK**

Variables | Previous | Task 3/3 | Next

Wait/sleep the specified days/hours/minutes/seconds/milliseconds before next Task is run.

The Play sound Task can play any sound file that the Media player can play. If you can't play a certain codec you need to install it so Media player can run it first.

Add Task - Play sound - 3/3

Play sound
The Play sound Task can play any sound file that the Media player can play. If you can't play a certain codec you need to install it so Media player can run it first.

Main settings | Conditions | **Play sound** | On error | TimeOut | Flow

Credentials
No Credential

Play sound
File path:

[Copy Task Id](#) | **Cancel** | **OK**

Variables | Previous | Task 3/3 | Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

File path

Select the path to the file. Use variables if needed.

The Job/Task control can change/control status of a Job or Task. With this Task you are also able to start a Job or Task on a remote VisualCron Server.

The VisualCron Task uses the VisualCron Connection when you want to control a remote server.

Add Task - Job/Task control - 3/3

Job/Task control

The Job/Task control Task can change/control status of a Job or Task. With this Task you are also able to start a Job or Task on a remote VisualCron Server.

Main settings **Conditions** **Job/Task control** **On error** **TimeOut** **Flow**

Control Job or Task

Action

Task - Run Task

Run synchronous (wait for completion)

Inherit exit code from child Job/Task

Inherit output from child Task

VisualCron Server location

Local VisualCron Server

Remote VisualCron Server

Choose connection

Job

No job selected **Reload**

Job Variables..

Translate Variables before sending

Update Job Variables

Trigger

All **Reload**

Tasks

No task selected **Reload**

[Copy Task Id](#) **Cancel** **OK**

Variables Previous Task 3/3 Next

Action

Select the appropriate Action. The following actions exist:

- *Run Job* - Starts a Job
- *Stop Job* - Stops a running Job
- *Activate Job* - Sets a Job to Active
- *Inactivate Job* - Inactivates a Job
- *Run Task* - Starts a Task
- *Stop Task* - Stops a Task

- *Activate Task* - Sets a Task to Active
- *Inactivate Task* - Sets a Task to Inactive

Run synchronous

Waits for Job or Task completion before continuing to next Task.

Inherit exit code from child Job/Task

By default the result from the Job/Task is inherited (sent back) to this Task. So, if the Task or Job you are trying to run fail with another exit code than zero then that exit code will be inherited by this Task - and also fail.

Inherit output from child Task

By default, output from the Task you want to run will not be send back to this Task. But if you want it to be sent back you can check this box.

Local/Remote server

You are able to execute a Job/Task located on a remote Server (where VisualCron is installed). To do that you select *Remote server* and then choose a *VisualCron Connection*.

Reload (Jobs)

Press this button to populate the Job list.

Job Variables

Job Variables are covered here. In this Task you can pass values at execution. If the keys are the same as the existing in the Job they existing Job Variables will be overwritten. One difference in the Job Variables window is that you have the option to refresh/load existing Job Variables. Click on the *Get current Variables* button and they will be refreshed (any existing Variables with same keys in the Task will be overwritten).

Translate Variables before sending

Checking this produces the same behavior as when you check similar on Set Variable Task - the Variable becomes a constant.

Update Job Variables

When enabled, the target Job Variables will be updated with the Variables supplied here.

Reload (Triggers)

Press this button to populate the Trigger list.

Reload (Tasks)

Press this button to populate the Task list.

Note about timeout

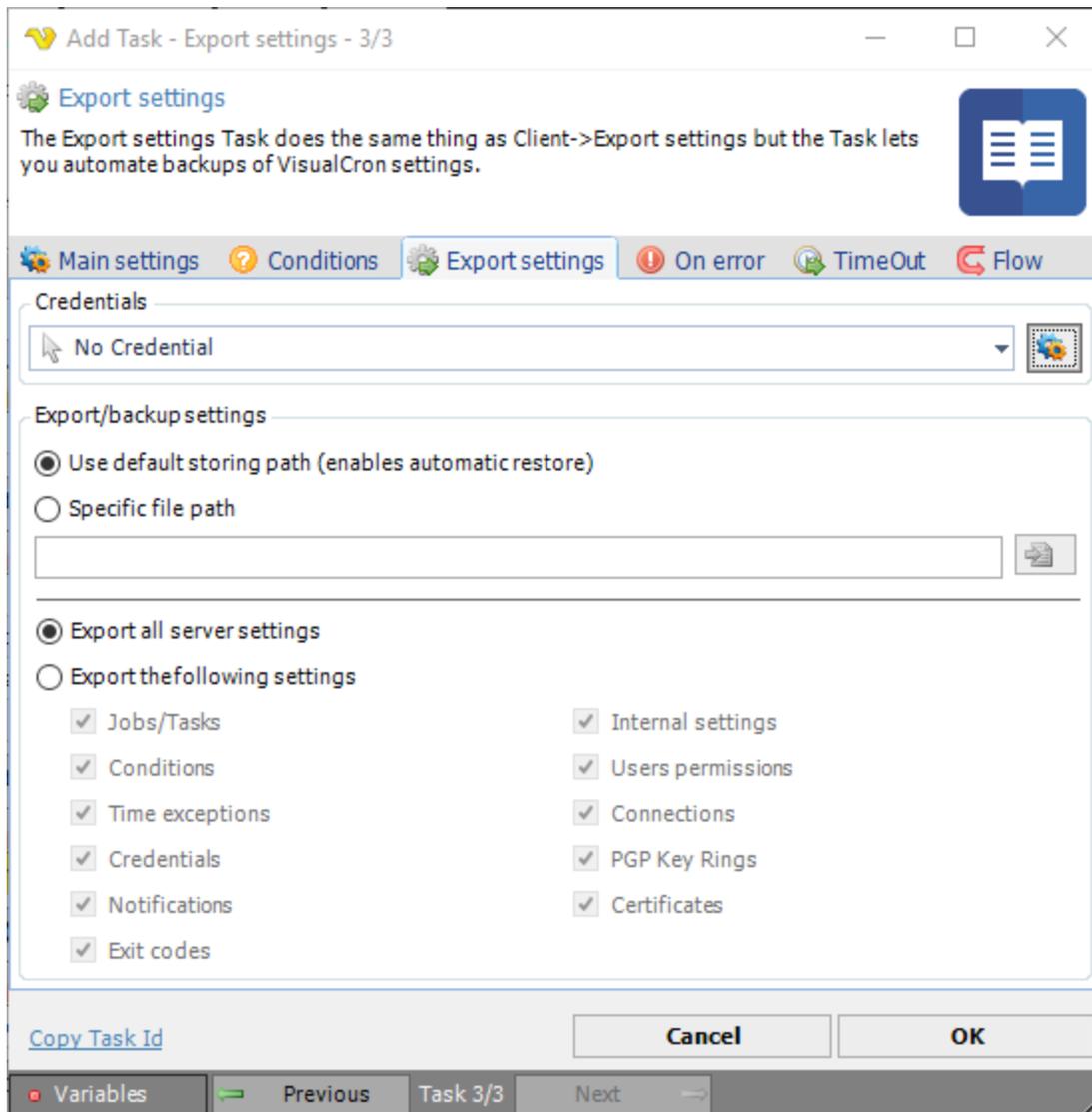
The execution timeout of this Task is determined first by settings in the **Timeout** tab. If no settings are used, the timeout on the Connection (in this case VisualCron Connection) is used.

The Export settings Task does the same thing as Client **File > Import/Export > Export settings** but this Task lets automatically backup the VisualCron settings.

VisualCron uses a number of XML files to store settings, these are located in the VisualCron settings folder (by default installation: C:\Program Files (x86)\VisualCron\settings). Export/backup is performed by the VisualCron Server that you are currently connected to. You may Export settings across the Internet.

It is recommended to perform regular backups/exports to this file. If a setting error occurs and a backup exists in the default backup file path, VisualCron will use the backup file and automatically restore settings. It is a recommendation that you keep a backup file both in the default folder and in another place.

VisualCron is automatically adding a Job with the *Export settings* Task and it is a recommendation to keep this Task in your Job list.



Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Use default storing path

The default file for Export is C:\Program Files\VisualCron\backup\VC-Settings.zip.

Specific file path

If you want to store your backup file in another place or with another name, then enter the full file path here.

Export all server settings

It is recommended that you backup all settings. Check this radio button to backup all settings. This option is default.

Export the following settings

This option lets you select which settings to export.

The Set Variable Task allows you to create or update a Variable. Variables can be used and reached throughout the whole application. You can use this to store static or dynamic values.

A Job variable is related to a job, thus when that specific job is exported, the Job variable is included.

Job

List of defined jobs.

Name/Unique key

The name you set on the Variable is also the unique key for the Variable. Wherever you want to use your defined Variable you use this Variable key: {USERVAR(variablename)}

Value

Set the requested value of the Variable here

Translate value to constant in Variable when running

Optional. If you, for example, use a Date Variable in the "Variable value" text box it will be converted to a string when the Variable runs the first time. For example, if you use the current date as a Variable it will always show the current date when running the Task. If this is checked, it will show the current date once and then display the same date in each execution.

The Set Variable Task allows you to create or update a Variable. Variables can be used and reached throughout the whole application. You can use this to store static or dynamic variables.

A User Variable is only global, which enables use anywhere in the application.

Add Task - Set User Variable - 2/2

Set User Variable

The Set Variable Task allows you to create or update a Variable. Variables can be used and reached throughout the whole application. You can use this to store static or dynamic values.

Main settings **Conditions** **Set User Variable** **On error** **TimeOut** **Flow**

Variable settings

Name/Unique key:

Translate value to constant in Variable when running

Description:

Variable type:

String

Variable value

Validate value when saving

Cancel **OK**

Variables **Previous** **Task 2/2** **Next**

Name/Unique key

The name you set on the Variable is also the unique key for the Variable. Wherever you want to use your defined Variable you use this Variable key: {USERVAR(variablename)}

Translate value to constant in Variable when running

Optional. If you, for example, use a Date Variable in the "Variable value" text box it will be converted to a string when the Variable runs the first time. For example, if you use the current date as a Variable it will always show the current date when running the Task. If this is checked, it will show the current date once and then display the same date in each execution.

Description

Optional. If you want to distinguish your Variable further you can add a description.

Variable type

Currently, 3 Variable types exist. String, Int32 and Double. Note that the Variable type may be interested to set correctly if you want to compare/calculate/validate correctly.

Variable value

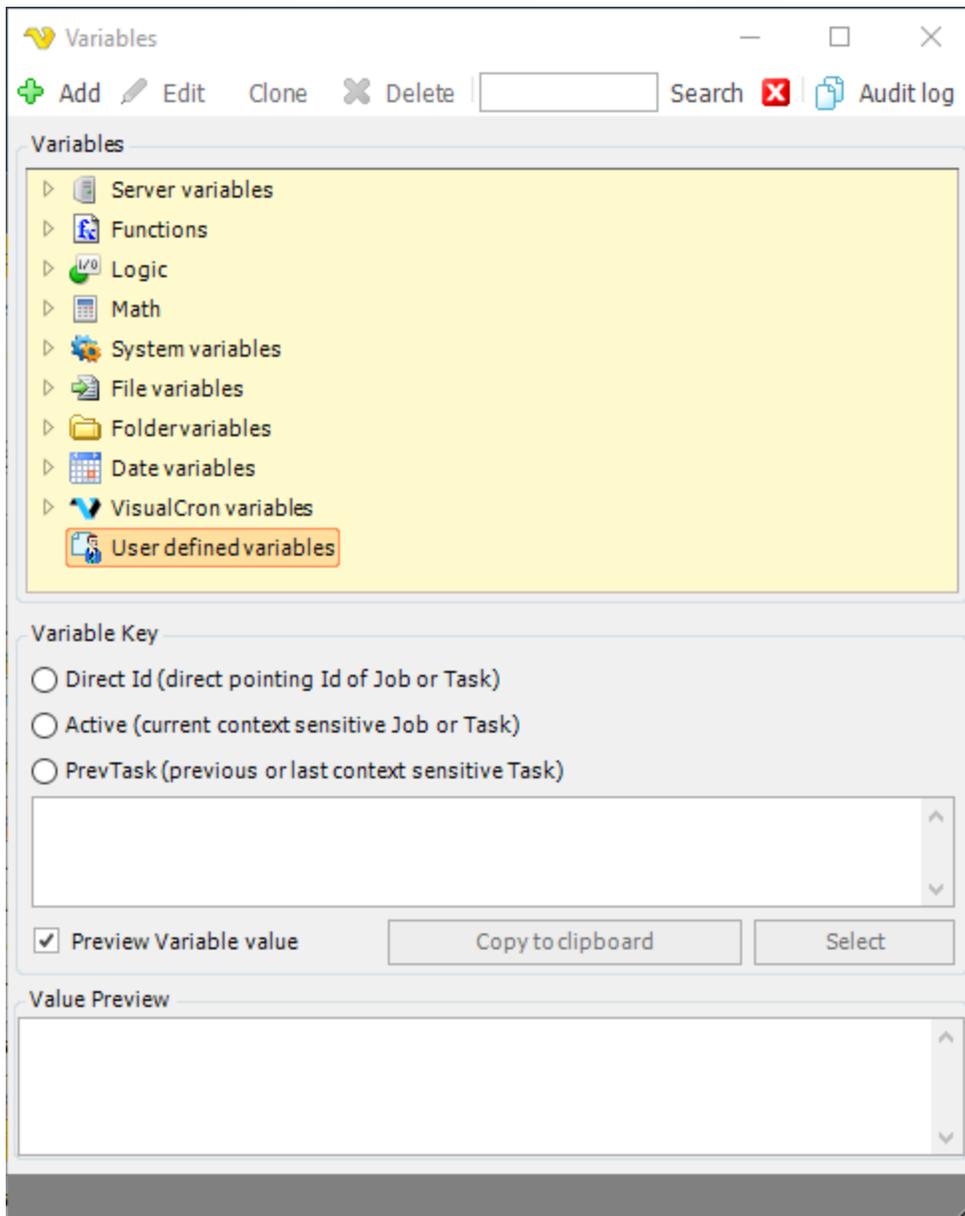
Set the requested value of the Variable here.

Validate value when saving

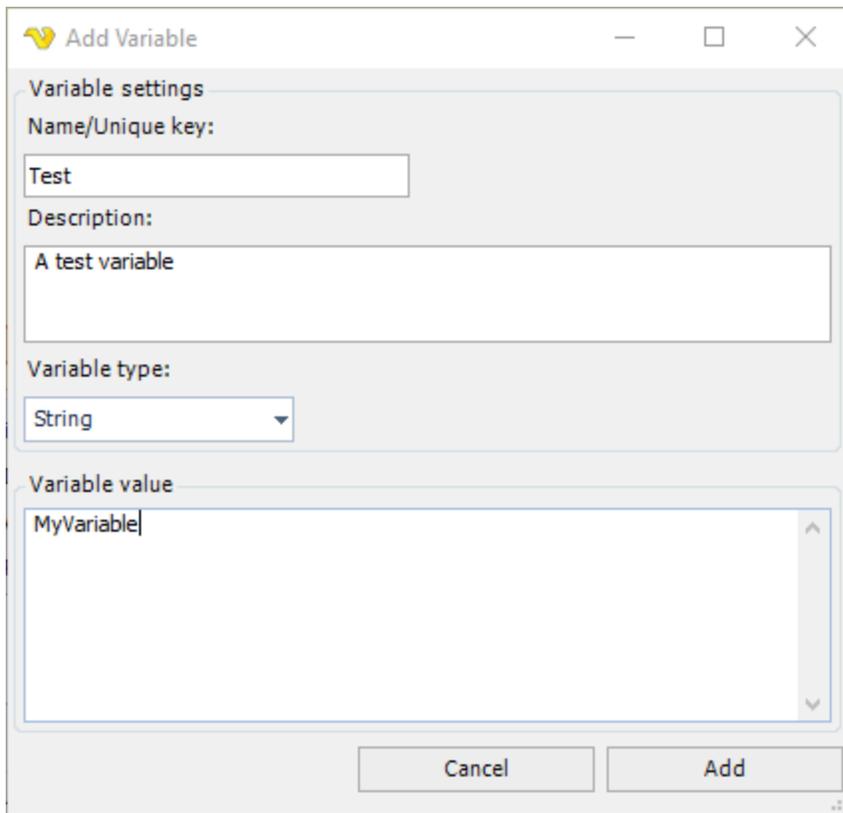
If checked, VisualCron will validate the value with the value type. Leave not checked if you are using a Variable as value and the Variable is not yet set.

Set a user defined Variable

1. Click on the Variables key in the Set Job Variable window.



2. Select User defined variables and click on Add.



The screenshot shows a dialog box titled "Add Variable". It contains the following fields and controls:

- Variable settings:**
 - Name/Unique key:** A text box containing "Test".
 - Description:** A text box containing "A test variable".
- Variable type:** A dropdown menu with "String" selected.
- Variable value:** A text area containing "MyVariable".
- Buttons:** "Cancel" and "Add" buttons at the bottom.

3. After entering data, press the Add key

Name/Unique key

The name you set on the Variable is also the unique key for the Variable. Wherever you want to use your defined Variable you use this Variable key: {USERVAR(*variablename*)}

Description

Optional. If you want to distinguish your Variable further you can add a description.

Variable type

Currently, 3 Variable types exist. String, Int32 and Double. Note that the Variable type may be interested to set correctly if you want to compare/calculate/validate correctly.

Variable value

Set the requested value of the Variable here.

The Calculate Variable Task lets you use different kind of math operations to modify and existing Variable.

Edit Task - Calculate Variable - 4/5

Calculate Variable

The Calculate Variable Task lets you use different kind of math operations to modify an existing Variable.

Main settings Conditions Calculate Variable On error TimeOut Flow

Store value in Variable...
Number
= 74

Left hand value
 Existing variable
Number
 Other value
Int32

Operation
Addition (+)

Right hand value
 Existing variable
Number
 Other value
Int32 3

Validate value when saving

Copy Task Id Cancel OK

Variables Previous Task 4/5 Next

Store value in Variable...

First you select an existing Variable to store the new value in.

Result box

Here you can preview the future value of the next calculation.

Left and right hand value

You can choose to either work with the current Variable, one or two other Variables or just two other values. By combining different settings you have the following choices:

- VariableX = VariableY (math operation) VariableZ
- VariableX = VariableX (math operation) Value1
- VariableX = VariableY (math operation) Value1
- VariableX = Value1 (math operation) VariableX
- VariableX = Value1 (math operation) VariableY
- VariableX = Value1 (math operation) Value2

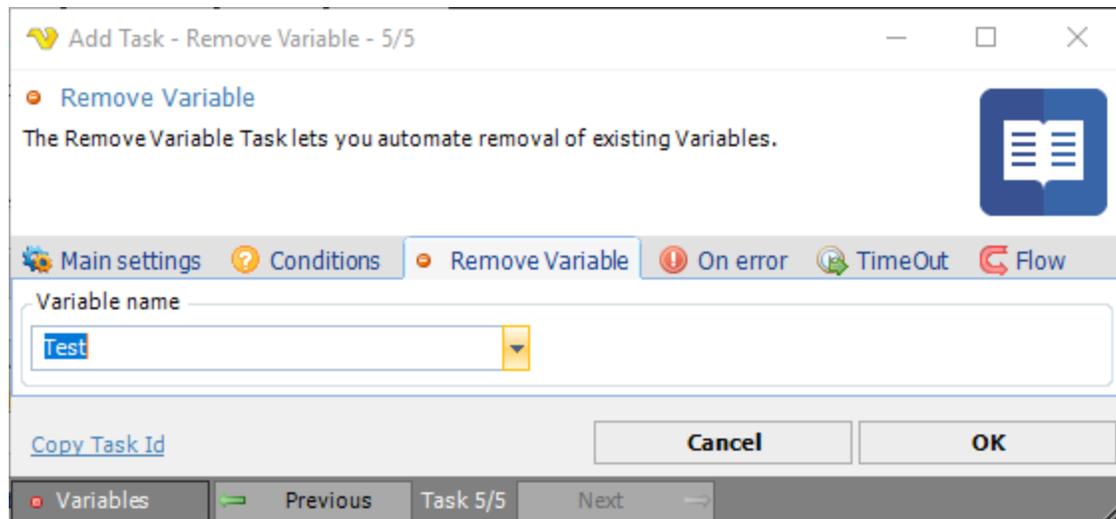
Operation

The following math operations are available: Addition, Subtraction, Multiplication and Division

Validate value when saving

If checked, VisualCron will validate the value with the value type. Leave not checked if you are using a Variable as value and the Variable is not yet set.

The Remove Variable Task lets you automate removal of existing Variables.

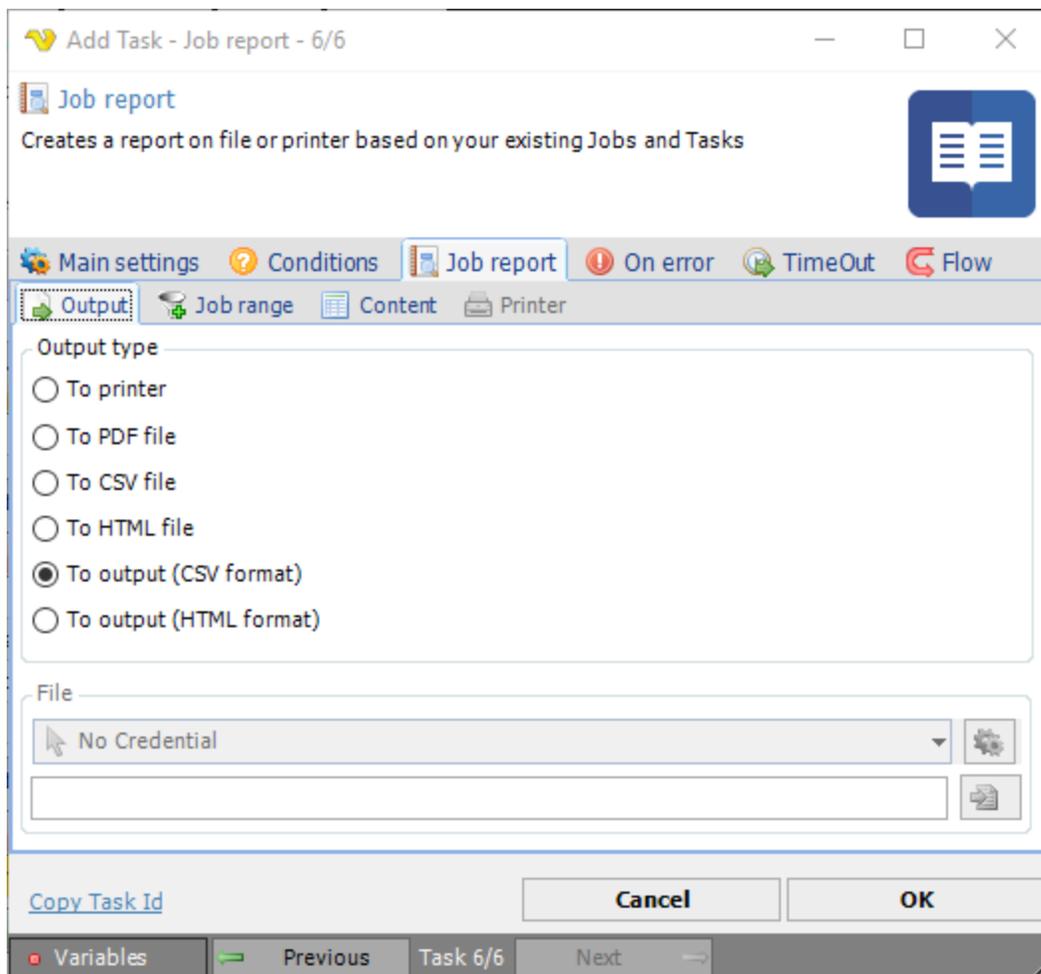


Variable name

Select the Variable name to remove.

The Task Internal - Job report Task creates a report on file or printer based on your existing Jobs and Tasks.

Job report > Output sub tab



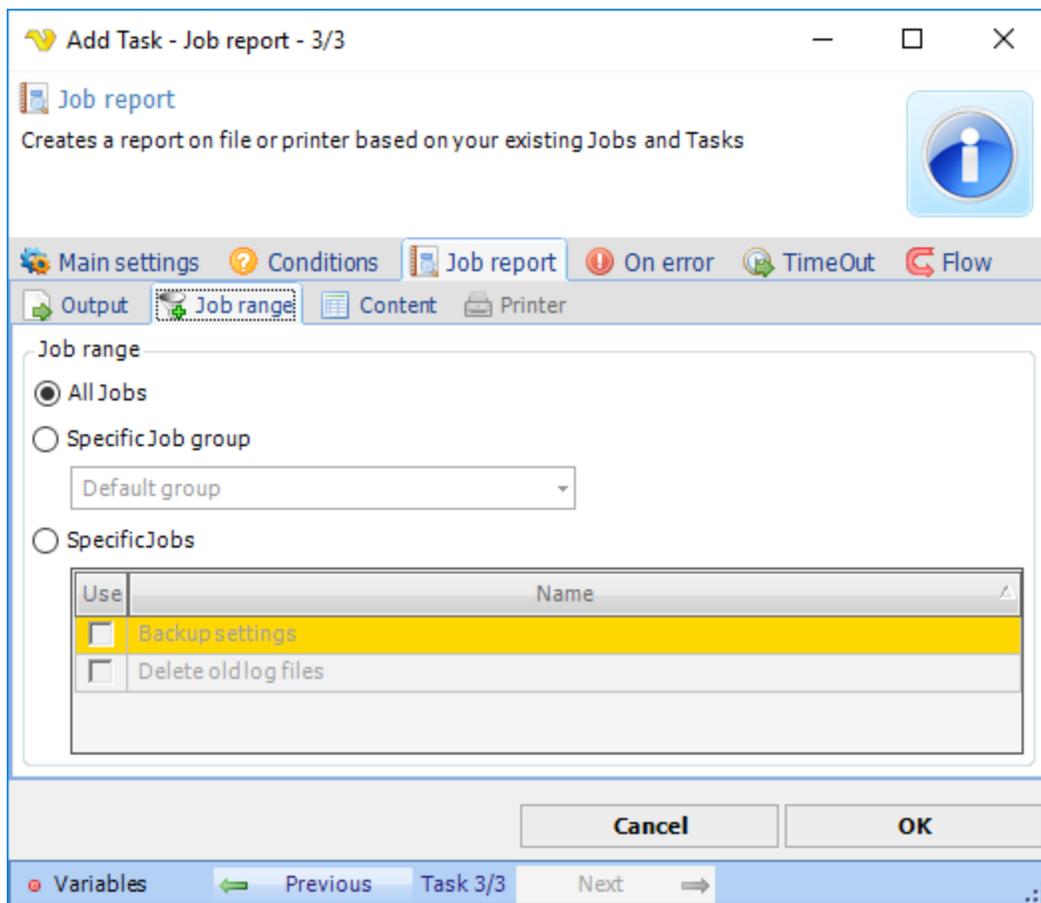
Output type

Select output to printer, to file or standard (Task) output.

File

If output to file, select Credentials and output folder.

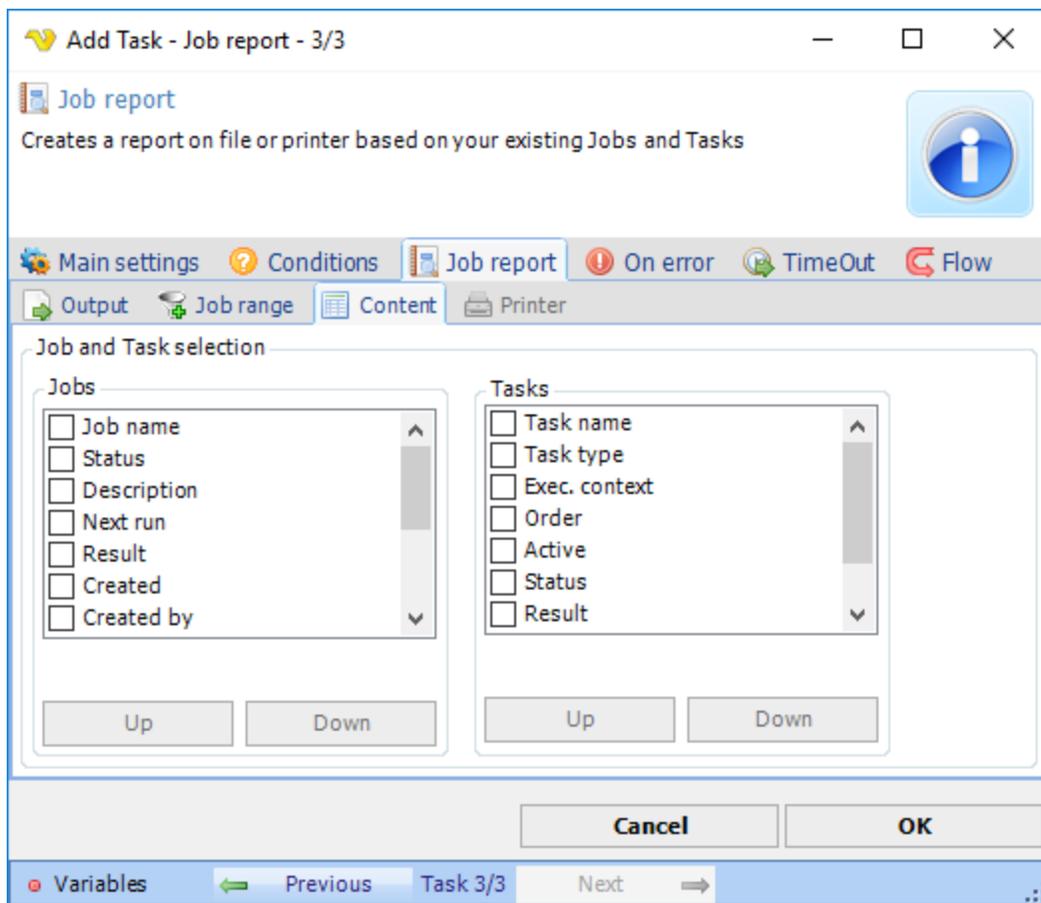
Internal > Job report > Job range sub tab



Job range

Select output of all Jobs or narrow down to specific Jobs.

Internal > Job report > Content sub tab



Job and Task selection

Select which properties of a Job and Task that will appear in the Job report.

Internal > Job report > Printer sub tab

Add Task - Job report - 6/6

Job report
Creates a report on file or printer based on your existing Jobs and Tasks

Main settings Conditions Job report On error TimeOut Flow

Output Job range Content Printer

Select printer

Printer settings

Page range

All pages
 Pages

Enter page number or page range 2-4, for example

Pages

Number of copies: 1

Orientation

Portrait
 Landscape

[Copy Task Id](#) Cancel OK

Variables Previous Task 6/6 Next

If output to printer is selected in the **Job report > Output** sub tab, select printer settings.

Creates a new Active Directory Group in the specified parent container. Groups are Active Directory (or local computer) objects that can contain users, contacts, computers and other groups that can be managed as a single unit.

Add Task - Create AD Group - 6/6

Create AD Group

Creates a new Active Directory Group in the specified parent container. Groups are Active Directory (or local computer) objects that can contain users, contacts, computers, and other groups that can be managed as a single unit.

Main settings **Conditions** **Create AD Group** **On error** **TimeOut** **Flow**

Credentials

No Credential

Create group

Parent path:

Select container

Name: **Display name:**

Description:

Group type: Security **Group scope:** Domain Local Group

[Copy Task Id](#) **Cancel** **OK**

Variables Previous Task 6/6 Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select container* button to select an existing Active Directory container.

Name

The name of the Active Directory group to be created.

Display name

The display name of the Active Directory group to be created.

Description

The description of the Active Directory group to be created.

Group type

An e-mail sent to a Security or Distribution group type sends the message to all members of the group.

A Security group manages user and computer access to shared resources and group policy settings. This allows setting permissions once on multiple computers in order to be able to easily change the group membership. The groups can also be used as e-mail distribution lists.

A Distribution group is used only for e-mail distribution lists in e-mail applications such as Microsoft Exchange or Outlook.

Group scope

Usually describe which type of users that a group consists of.

The Domain Local Group grant permissions to domain resources that are located in the same domain in which you created the domain local group. Membership of this group makes it possible to add members as user accounts, universal and global groups from any domain.

The Global Group contains users with similar function and can be given permission to access e.g. a printer or shared folder available in a local or another domain in same forest.

The Universal Group are used for e-mail distribution and can be granted access to resources in all trusted domains as a security principal in a Windows 2000 native or Windows server 2003 domain.

Creates an Active Directory object of the specified type and name (i.e. computer, organizational unit).

Add Task - Create AD Object - 6/6

Create AD Object
Creates an Active Directory object of the specified type and name (i.e. computer, organizational unit).

Main settings **Conditions** **Create AD Object** **On error** **TimeOut** **Flow**

Credentials
No Credential

Create group
Parent path:
[Text Field] **Select container**

Type:
Computer

Name:
[Text Field]

[Copy Task Id](#) **Cancel** **OK**

Variables Previous **Task 6/6** Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select container* button to select an existing Active Directory container.

Type

The Computer or Organizational Unit type of Active Directory object to be created.

Name

The name of the Active Directory group to be created.

Creates a new user at the specified Active Directory location.

Create AD User > General sub tab

The screenshot shows a dialog box titled "Add Task - Create AD User - 6/6". The main heading is "Create AD User" with a sub-description: "Creates a new user at the specified Active Directory location." The dialog has a toolbar with tabs: "Main settings", "Conditions", "Create AD User" (selected), "On error", "TimeOut", and "Flow". Below the toolbar is a "Credentials" section with a dropdown menu set to "No Credential" and a "Settings" icon. The "General" sub-tab is active, showing fields for "Parent path:" (with a "Select container" button), "First name:", "Middle name:", "Last name:", and "Full name:". There are also "Initials:" and "Login details" tabs. At the bottom, there are "Copy Task Id", "Cancel", and "OK" buttons. The footer shows "Variables", "Previous", "Task 6/6", and "Next" buttons.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select container* button to select an existing Active Directory container.

First/Initials/Middle/Last name

The user's different name parts.

Full name

First, Middle/Initial and Last Name parameters combined.

User logon name (@domain is allowed)

The logon name of the Active Directory user to be created.

User logon name (pre-Windows 2000)

The Pre-Windows 2000 logon name of the Active Directory user to be created. This defaults to the data entered in the User Logon Name property minus the @domain parameter (if applicable).

Password

The logon password of the Active Directory user to be created.

E-mail

The e-mail address of the Active Directory user to be created.

User must change password at next logon

If checked the user must modify the assigned password at next logon.

User cannot change password

If checked the user cannot change the assigned password. Only applicable only if the *User must change password at next logon* parameter is unchecked.

Password never expires

If checked the assigned password never expires.

Account is disabled

If checked the account to be created is in a disabled state.

Deletes an explicit Active Directory object (i.e. user, computer, printer, etc.) at the specified path.

The screenshot shows a window titled "Add Task - Delete AD Object - 6/6". The main heading is "Delete AD Object" with a sub-description: "Deletes an explicit Active Directory object (i.e. user, computer, printer, etc.) at the specified path." Below this is a navigation bar with tabs: "Main settings", "Conditions", "Delete AD Object" (selected), "On error", "TimeOut", and "Flow". The "Credentials" section has a dropdown menu set to "No Credential" and a "Settings" icon. The "Delete object" section has a "Parent path:" label and an empty text input field. Below the input field are two buttons: "Select object" and "Select container". At the bottom of the window are "Copy Task Id", "Cancel", and "OK" buttons. A footer bar contains "Variables", "Previous", "Task 6/6", and "Next" buttons.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select*

object button to select an existing Active Directory object. Click the *Select container* button to select an existing Active Directory container.

Retrieves a list of group members in the Active directory to the output.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select group* button to select an existing Active Directory group.

Populates the output with the LDAP (Lightweight Directory Access Protocol) path of the specified Active Directory object (i.e. user, computer, OU, etc.).

Add Task - Get AD Object path - 3/3

Get AD Object path
Populates the output with the LDAP (Lightweight Directory Access Protocol) path of the specified Active Directory object (i.e. user, computer, OU, etc.).

Main settings | Conditions | **Get AD Object path** | On error | TimeOut | Flow

Credentials
No Credential

Get object path
Parent path:
 Select container

Object type:
User

Name:

[Copy Task Id](#) **Cancel** **OK**

Variables | Previous | Task 3/3 | Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select container* button to select an existing Active Directory container.

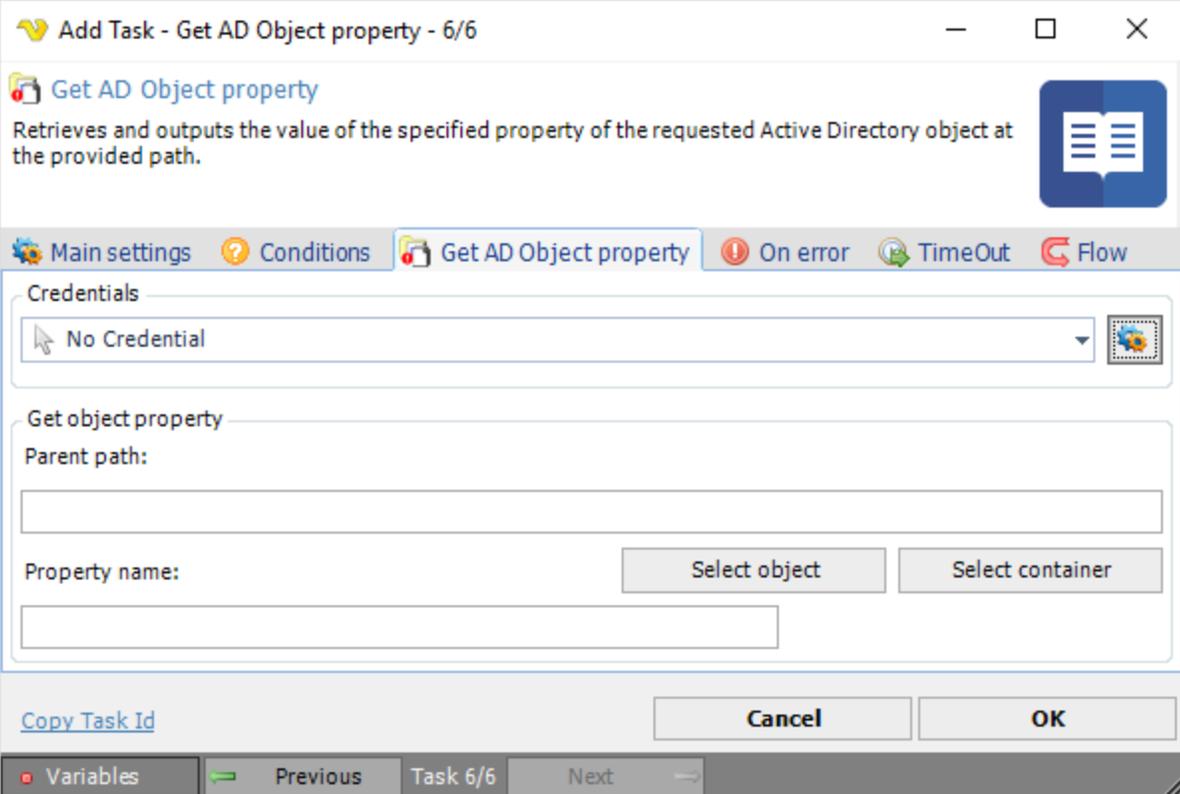
Object type

The Active Directory object type in which to retrieve the path from. The options are: User, Computer, Group, Organizational unit and Printer.

Name

The name of an existing variable to be populated with the first object's LDAP path found in the Active Directory matching the name.

Retrieves and outputs the value of the specified property of the requested Active Directory object at the provided path.



Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select object* button to select an existing Active Directory object. Click the *Select container* button to select an existing Active Directory container.

Property name

The property name of the Active Directory object in which to retrieve its value from (i.e. CN, CommonName, DN, DistinguishedName, etc.).

Retrieves a list of the paths for all the Active Directory objects (i.e.computers, users, groups, etc.) at and below the specified path and populates a data set with resulting values. Results can be filtered by object type and/or a filter string.

Add Task - List AD Object paths - 6/6

List AD Object paths
Retrieves a list of the paths for all the Active Directory objects (i.e. computers, users, groups, etc.) at and below the specified path and populates a dataset with resulting values. Results can be filtered by object type and/or a filter string.

Main settings Conditions ListAD Object paths On error TimeOut Flow

Credentials
No Credential

List object paths
Simple filter
Parent path:
Select container

Object type: User Filter:

Copy Task Id Cancel OK

Variables Previous Task 6/6 Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Filter options

How to retrieve the Active Directory object's LDAP paths. Options are: Simple filter, Custom filter and ADO Query (SQL or LDAP syntax)

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select container* button to select an existing Active Directory container.

Object type

The Active Directory object type in which to retrieve the path from. The options are: User, Computer, Group, Organizational unit and Printer.

Filter

Provides a filter string to search for specific Active Directory objects.

Allows an administrator to rename or delete an existing Active Directory group, as well as add users to, or delete users from a specific Active Directory group.

Modify AD Group > General tab

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Path

The LDAP path of the Active Directory group to modify. Click *Select Group* to select an existing group.

Action

The action to perform on the Active Directory group. The options are: Add user, Remove user, Rename group and Delete group.

Modify AD Group > Users tab

Add Task - Modify AD Group - 6/6

Modify AD Group
Allows an administrator to rename or delete an existing Active Directory group, as well as add users to, or delete users from a specific Active Directory group.

Main settings Conditions **Modify AD Group** On error TimeOut Flow

Credentials
No Credential

General **Users**

User's LDAP Path

Please enter each user LDAP DNs, also any valid user's common name (CN) is acceptable **Add User(s)**

user's

Add Modify Remove

[Copy Task Id](#) Cancel OK

Variables Previous Task 6/6 Next

Add User's

Click the *Add User(s)* button and enter the property name of the Active Directory object (i.e. CN, CommonName, DN, DistinguishedName, etc.).

Enables, disables, deletes or renames an existing Active directory user. The action can also be used to change or reset the password of an Active Directory user.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Path

The LDAP path of the Active Directory user to modify. Click *Select User* to select an existing user.

Action

The action to be performed on the Active Directory user. The options are: Enable, Disable, Delete, Rename and Reset password.

Moves the specific Active Directory object to the selected parent container.

Add Task - Move AD Object - 6/6

Move AD Object
Moves the specified Active Directory object to the selected parent container.

Main settings **Conditions** **Move AD Object** **On error** **TimeOut** **Flow**

Credentials
No Credential

Move object
Parent path:

Move to this container:

[Copy Task Id](#)

Variables Previous Task 6/6 Next

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select object* button to select an existing Active Directory object. Click the *Select container* button to select an existing Active Directory container.

Move to this container

The LDAP path of the destination Active Directory container. Click the *Select container* button to select an existing destination Active Directory container.

Renames the Active Directory object at the specified path to the provided name.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select object* button to select an existing Active Directory object. Click the *Select container* button to select an existing Active Directory container.

New name

The desired new name of the Active Directory object.

Sets the specified property of the selected Active Directory object to the specified name.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Parent path

The Lightweight Directory Access Protocol (LDAP) path of the parent Active Directory container. This is usually the top most container or the root of the directory data tree on a directory server. Click the *Select object* button to select an existing Active Directory object. Click the *Select container* button to select an existing Active Directory container.

Property name

The Active Directory object's property name.

Property value

The Active Directory object's property value.

Issues a GETNEXT message to an SNMP agent in order to inspect the value of the next variable. SNMP (Simple Network Management Protocol) is an UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

SNMP Get > General tab

Add Task - SNMP Get - 6/6

SNMP Get

Issues a GETNEXT message to an SNMP agent in order to inspect the value of the next variable. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

Main settings Conditions **SNMP Get** On error TimeOut Flow

General Advanced Data

Agent IP Address:

Variable Name: (ex: 1.3.6.1.2.1.1.1.0 or system.sysDescr...)

Community

public

Copy Task Id Cancel OK

Variables Previous Task 6/6 Next

Agent IP Address
Text ...

Variable name
Text ...

Community
Text ...

SNMP Get > Advanced tab

Add Task - SNMP Get - 6/6

SNMP Get

Issues a GETNEXT message to an SNMP agent in order to inspect the value of the next variable. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

Main settings Conditions **SNMP Get** On error TimeOut Flow

General **Advanced** Data

Remote Port:

Time out after:

Broadcast delay:

SNMP version:

[Copy Task Id](#)

Variables Previous Task 6/6 Next

Remote Port

Text ...

Time out after

Text ...

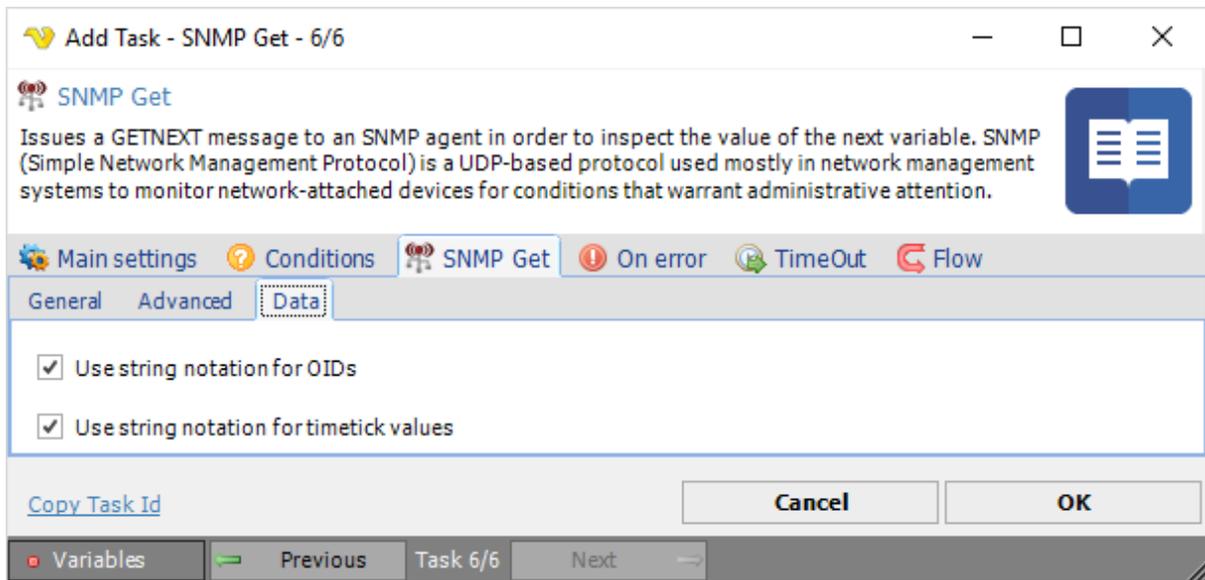
Broadcast delay

Text ...

SNMP version

Text ...

SNMP Get > Data tab



Use string notation for OIDs

Text ...

Use string notation for timetick values

Text ...

Issues a GETNEXT message to an SNMP agent in order to inspect the value of the next variable. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

SNMP Get Next > General tab

Add Task - SNMP Get Next - 6/6

SNMP Get Next

Issues a GETNEXT message to an SNMP agent in order to inspect the value of the next variable. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

Main settings Conditions **SNMP Get Next** On error TimeOut Flow

General **Advanced** Data

Agent IP Address:

Variable Name: (ex: 1.3.6.1.2.1.1.1.0 or system.sysDescr...)
 Translate

Community

[Copy Task Id](#) Cancel OK

Variables Previous Task 6/6 Next

Agent IP Address
Text ...

Variable name
Text ...

Community
Text ...

SNMP Get Next > Advanced tab

Add Task - SNMP Get Next - 6/6

SNMP Get Next

Issues a GETNEXT message to an SNMP agent in order to inspect the value of the next variable. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

Main settings Conditions **SNMP Get Next** On error TimeOut Flow

General **Advanced** Data

Remote Port:
162

Time out after:
30 seconds

Broadcast delay:
3 seconds

SNMP version:
SNMPv1

Copy Task Id Cancel OK

Variables Previous Task 6/6 Next

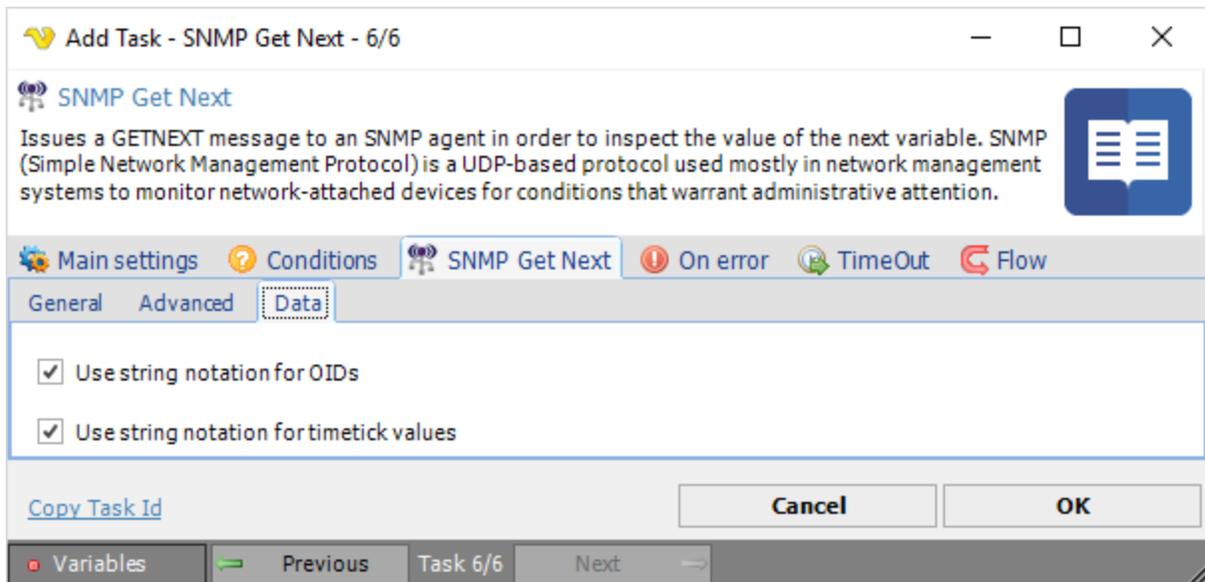
Remote Port
Text ...

Time out after
Text ...

Broadcast delay
Text ...

SNMP version
Text ...

SNMP Get Next > Data tab



Use string notation for OIDs

Text ...

Use string notation for timetick values

Text ...

Issues a GETBULK message to an SNMP agent in order to inspect a group of variables in a single transaction. This action is particularly useful for retrieving large tables. The GETBULK operation performs a GETNEXT operation for the first number of variable bindings in the request and performs a GETNEXT operation (continuous) for each of the remaining variable bindings in the request list. Note that the SNMP GETBULK command is not supported on devices using SNMPv1.

SNMP Get Bulk > General tab

Add Task - SNMP Get Bulk - 6/6

SNMP Get Bulk

Issues a GETBULK message to an SNMP agent in order to inspect a group of variables in a single transaction. This action is particularly useful for retrieving large tables. The GETBULK operation performs a GETNEXT operation for the first number of variable bindings in the request and performs a GETNEXT operation (continuous) for each of the remaining variable bindings in the request list. Note that the SNMP GETBULK command is not supported on devices using SNMPv1.

Main settings Conditions **SNMP Get Bulk** On error TimeOut Flow

General **Advanced** Data Bindings

Agent IP Address:

Return variable for the first:
 variable bindings

Max number of variables to be returned for the rest of the variable bindings:

Community

[Copy Task Id](#)

Variables Previous Task 6/6 Next

Agent IP Address

Text ...

Return variable name for the first

Text ...

Community

Text ...

SNMP Get Bulk > Advanced tab

Add Task - SNMP Get Bulk - 6/6

SNMP Get Bulk

Issues a GETBULK message to an SNMP agent in order to inspect a group of variables in a single transaction. This action is particularly useful for retrieving large tables. The GETBULK operation performs a GETNEXT operation for the first number of variable bindings in the request and performs a GETNEXT operation (continuous) for each of the remaining variable bindings in the request list. Note that the SNMP GETBULK command is not supported on devices using SNMPv1.

Main settings Conditions **SNMP Get Bulk** On error TimeOut Flow

General **Advanced** Data Bindings

Remote Port:

Time out after:

Broadcast delay:

SNMP version:

[Copy Task Id](#)

Variables Previous Task 6/6 Next

Remote Port

Text ...

Time out after

Text ...

Broadcast delay

Text ...

SNMP version

Text ...

SNMP Get Bulk > Data bindings tab

Add Task - SNMP Get Bulk - 6/6

SNMP Get Bulk

Issues a GETBULK message to an SNMP agent in order to inspect a group of variables in a single transaction. This action is particularly useful for retrieving large tables. The GETBULK operation performs a GETNEXT operation for the first number of variable bindings in the request and performs a GETNEXT operation (continuous) for each of the remaining variable bindings in the request list. Note that the SNMP GETBULK command is not supported on devices using SNMPv1.

Main settings Conditions SNMP Get Bulk On error TimeOut Flow

General Advanced Data Bindings

Variable Name

Add...
Edit...
Delete

Use string notation for OIDs
 Use string notation for timetick values

Copy Task Id Cancel OK

Variables Previous Task 6/6 Next

Variable name

Text ...

Use string notation for OIDs

Text ...

Use string notation for timetick values

Text ...

Issues a Walk message to an SNMP agent in order to inspect a group of variables. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

SNMP Walk > General tab

Add Task - SNMP Walk - 6/6

SNMP Walk

Issues a WALK message to an SNMP agent in order to inspect a group of variables. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

Main settings Conditions **SNMP Walk** On error TimeOut Flow

General Advanced Data

Agent IP Address:

Variable Name: (ex: 1.3.6.1.1 or system) Translate

Community public

Copy Task Id Cancel OK

Variables Previous Task 6/6 Next

Agent IP Address
Text ...

Variable name
Text ...

Community
Text ...

SNMP Walk > Advanced tab

Add Task - SNMP Walk - 6/6

SNMP Walk

Issues a WALK message to an SNMP agent in order to inspect a group of variables. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

Main settings Conditions **SNMP Walk** On error TimeOut Flow

General Advanced **Data**

Remote Port:
162

Time out after:
30 seconds

Broadcast delay:
3 seconds

SNMP version:
SNMPv1

[Copy Task Id](#) Cancel OK

Variables Previous Task 6/6 Next

Remote Port

Text ...

Time out after

Text ...

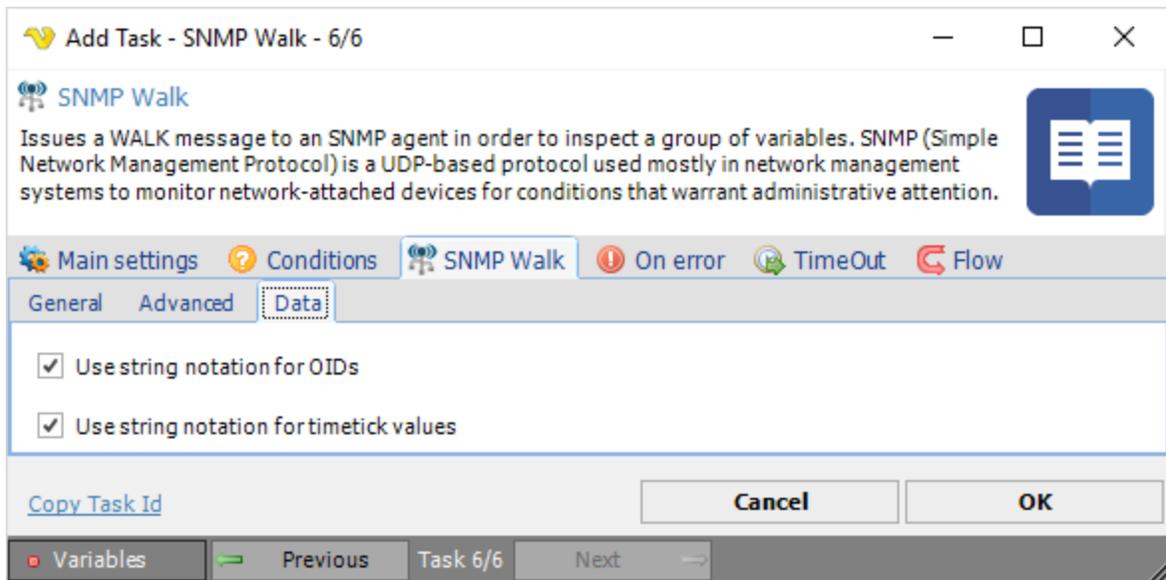
Broadcast delay

Text ...

SNMP version

Text ...

SNMP Walk > Data tab



Use string notation for OIDs

Text ...

Use string notation for timetick values

Text ...

Issues a SNMP SET message to an SNMP agent in order to alter the value of the variable. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

SNMP Set > General tab

Add Task - SNMP Set - 6/6

SNMP Set

Issues an SNMP SET message to an SNMP agent in order to alter the value of a variable. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

Main settings Conditions **SNMP Set** On error TimeOut Flow

General Advanced

Agent IP Address:

Variable Name: (ex: 1.3.6.1.2.1.1.4.0 or system.sysContact.0)

Community

Variable syntax: Variable value:

Copy Task Id Cancel OK

Variables Previous Task 6/6 Next

Agent IP Address
Text ...

Variable name
Text ...

Community
Text ...

Variable
Text ...

SNMP Set > Advanced tab

Add Task - SNMP Set - 6/6

SNMP Set
Issues an SNMP SET message to an SNMP agent in order to alter the value of a variable. SNMP (Simple Network Management Protocol) is a UDP-based protocol used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

Main settings Conditions **SNMP Set** On error TimeOut Flow

General **Advanced**

Remote Port:
162

Time out after:
30 seconds

Broadcast delay:
3 seconds

SNMP version:
SNMPv1

[Copy Task Id](#) Cancel OK

Variables Previous Task 6/6 Next

Remote Port

Text ...

Time out after

Text ...

Broadcast delay

Text ...

SNMP version

Text ...

Microsoft Exchange Server är en e-postserver och en grupprogramvara.

Creates a new Exchange object, such as an appointment, task or contact.

Mailbox URL

Should have the following format: `http://servername/exchange/recipient@company.com`

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Use Forms-based authentication

If not Windows Forms-based authentication is used, then Windows authentication is used.

Exchange object type and properties

Select the appropriate Exchange object in the list: Appointment, Contact or Task. Press the Add button to add a property to be defined. In the list of defined objects, mark and select: Remove, Move up and Move Down.

Retrieves information regarding one or more Exchange objects and places the result in the output.

Mailbox URL

Should have the following format: `http://servername/exchange/recipient@company.com`

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Use Forms-based authentication

If not Windows Forms-based authentication is used, then Windows authentication is used.

Exchange object type and properties

Select the appropriate Exchange object in the list: Appointment, Contact or Task. Press the Add button to add a property to be defined. In the list of defined objects, mark and select: Remove, Move up and Move Down.

Modifies specific properties of an individual Exchange object.

Mailbox URL

Should have the following format: `http://servername/exchange/recipient@company.com`

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Use Forms-based authentication

If not Windows Forms-based authentication is used, then Windows authentication is used.

Exchange Object Address

Text ...

Exchange object type and properties

Select the appropriate Exchange object in the list: Appointment, Contact or Task. Press the Add button to add a property to be defined. In the list of defined objects, mark and select: Remove, Move up and Move Down.

Deletes a single Exchange object. This activity uses the Exchange object ID of a specific object in order to delete it.

Mailbox URL

Should have the following format: `http://servername/exchange/recipient@company.com`

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Use Forms-based authentication

If not Windows Forms-based authentication is used, then Windows authentication is used.

Exchange Object Address

Text ...

Deletes one or more Exchange objects, such as appointment, contact, email or task.

Add Task - Delete Exchange objects - 6/6

Delete Exchange objects
Deletes one or more Exchange objects, such as an appointment, contact, email or task.

Main settings | Conditions | **Delete Exchange objects** | On error | TimeOut | Flow

Mail box URL

Credentials
No Credential

Use Forms-based authentication

Exchange object type and filter properties
Appointment

Property Name	Property Value

Up | Down | Add | Remove

Copy Task Id | Cancel | OK

Variables | Previous | Task 6/6 | Next

Mailbox URL

Should have the following format: `http://servername/exchange/recipient@company.com`

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Use Forms-based authentication

If not Windows Forms-based authentication is used, then Windows authentication is used.

Exchange object type and filter properties

Select the appropriate Exchange object in the list: Appointment, Contact or Task. Press the Add button to add a property to be defined. In the list of defined objects, mark and select: Remove, Move up and Move Down.

Microsoft SharePoint is a web-based, collaborative platform that integrates with Microsoft Office. It is primarily sold as a document management and storage system, but the product is highly configurable and usage varies substantially between organizations.

The SharePoint - Create List Task creates a List in the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online

Add Task - Create list - 3/3

Create list
The SharePoint - Create List Task creates a List in the SharePoint library.

Main settings | Conditions | **Create list** | On error | TimeOut | Flow

Choose connection

Title:

Description:

Template type:

Quick launch:

Enable attachments

Enable versioning

Enable folder creation

Columns

SchemaXML	DefaultView

[Copy Task Id](#)

Variables | Previous | Task 3/3 | Next

Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Title

The title of the group to create.

Description

A user defined description of the group to create.

Template type

Specifies a list template. Click the drop-down list and select an item from the list of available templates.

Quick launch

Specifies whether the list should be a quick launch item. The available options are:

- On
- Off
- DefaultValue

Enable attachments

If checked, specifies that list item attachments are enabled for the list. This parameter is unchecked by default.

Enable versioning

If checked, specifies that historical versions of list items and documents can be created in the list. This parameter is unchecked by default.

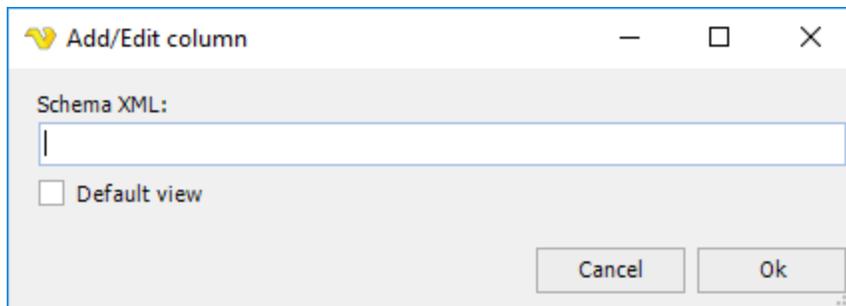
Enable folder creation

If checked, specifies that new list folders can be added to the list. This parameter is unchecked by default.

Columns

Columns are created by clicking the Add button using a Microsoft xml format.

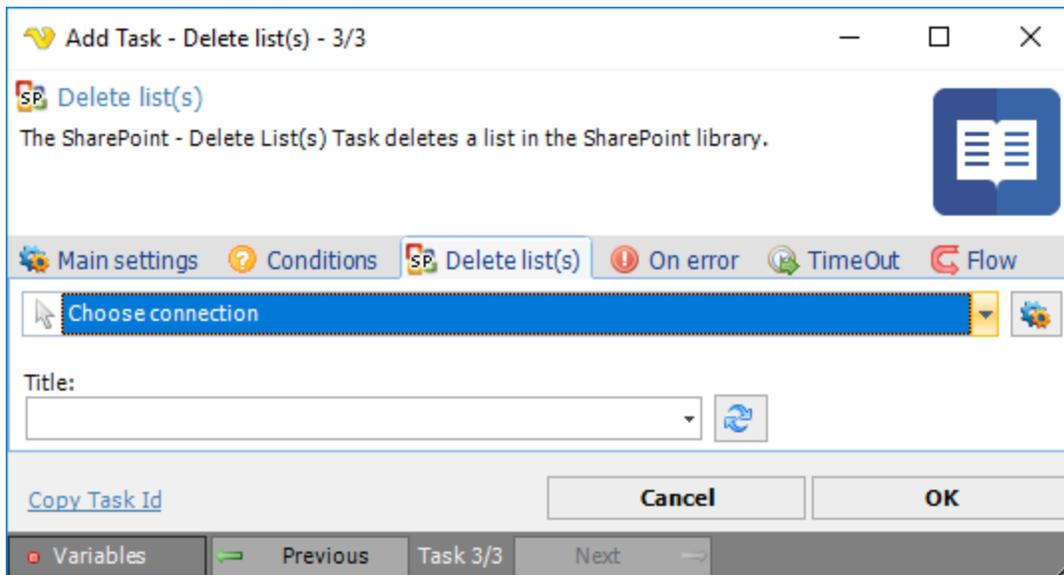
Read more here: <http://msdn.microsoft.com/en-us/library/office/ms457586.aspx>



The SharePoint - Delete List(s) Task deletes a list in the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online



Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

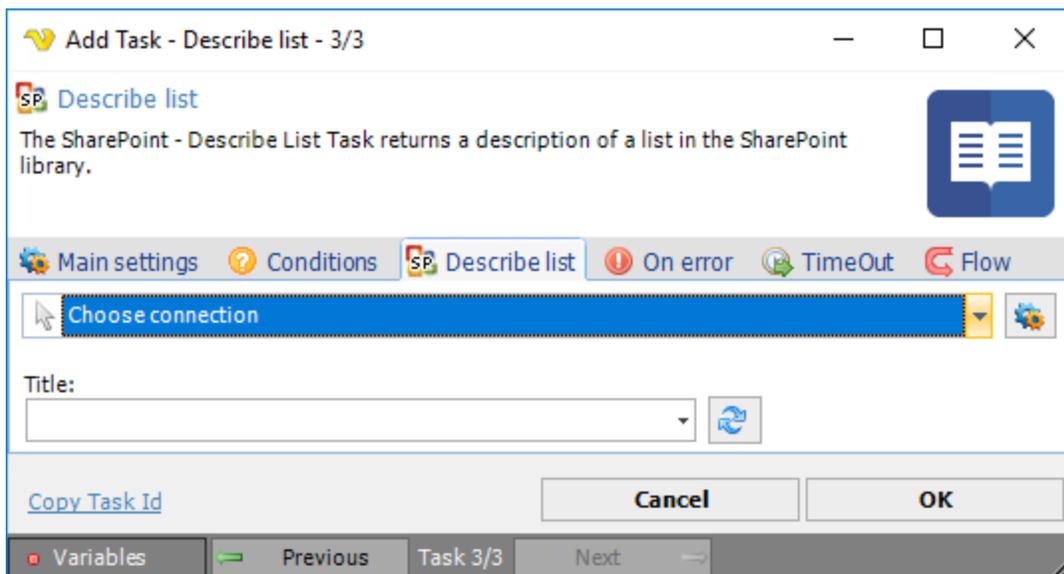
Title

The title of the List to delete. This combobox supports wild cards for deleting one or more Lists. Click the *Refresh* icon to list available Lists.

The SharePoint - Describe List Task returns a description of a list in the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online



Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

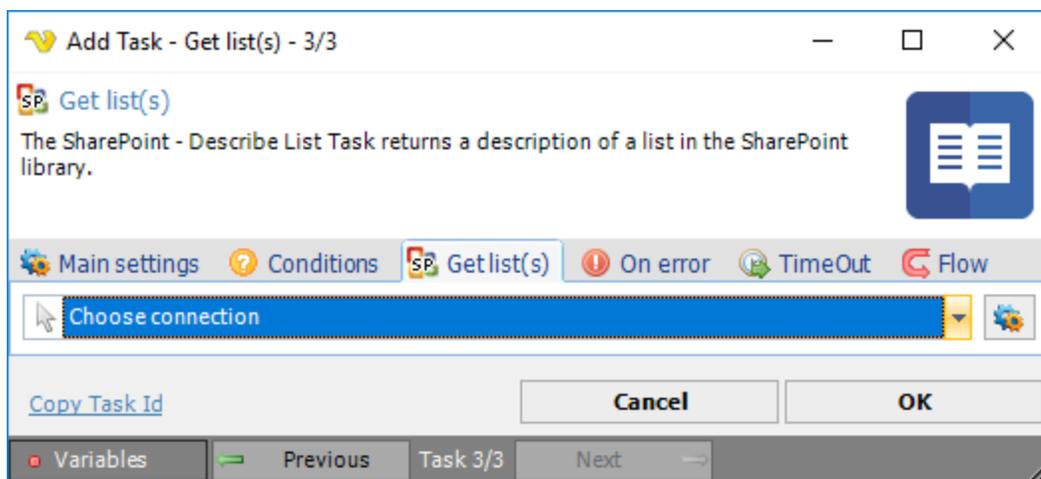
Title

The title of the List to describe. Click the *Refresh* icon to list available Lists.

The SharePoint - Get List Task retrieves a list of Lists from the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online



Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

The SharePoint - Update List Task updates a List in the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online

Add Task - Update list - 3/3

Update list
The SharePoint - Update List Task updates a List in the SharePoint library.

Main settings | Conditions | **Update list** | On error | TimeOut | Flow

Choose connection

Title:

New title:

Description:

Template type: DocumentLibrary

Quick launch: On

Enable attachments

Enable versioning

Enable folder creation

Columns

SchemaXML	DefaultView

Buttons: Add, Edit, Remove

[Copy Task Id](#) | Cancel | OK

Variables | Previous | Task 3/3 | Next

Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Title

The existing title of a list to update.

New title

The new title of the list to update.

Description

A user defined description of the list to update.

Template type

Specifies a list template. Click the drop-down list and select from the list of available templates.

Quick launch

Specifies whether the list should be a quick launch item. The available options are:

- On
- Off
- DefaultValue

Enable attachments

If checked, specifies that list item attachments are enabled for the list. This parameter is unchecked by default.

Enable versioning

If checked, specifies that historical versions of list items and documents can be created in the list. This parameter is unchecked by default.

Enable folder creation

If checked, specifies that new list folders can be added to the list. This parameter is unchecked by default.

Columns

Columns are created by clicking the Add button using a Microsoft xml format.

Read more here: <http://msdn.microsoft.com/en-us/library/office/ms457586.aspx>

Adds an item to an existing list on a SharePoint Services site. Lists usually appear in a multi-column/multi-row table of information which are basic building blocks of Web pages on a Windows SharePoint Services site. The columns represent lists and the rows represent items in those lists. If the specified list (column) does not exist, it will be created during runtime along with its associated value. If the column already exists, the specified value will be added to the next available row in that column.

The SharePoint - Update List Task updates a List in the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online

Add Task - Add list item - 3/3

Add list item

Adds an item to an existing list on a SharePoint Services site. Lists usually appear in a multi-column/multi-row table of information which are basic building blocks of Web pages on a Windows SharePoint Services site. The columns represent lists and the rows represent items in those lists. If the specified list (column) does not exist, it will be created during runtime along with its associated value. If the column already exists, the specified value will be added to the next available row in that column.

Main settings Conditions Add list item On error TimeOut Flow

Choose connection

Title:

Field(s):

Use	Name	Value

Refresh fields

Copy Task Id

Cancel OK

Variables Previous Task 3/3 Next

Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Title

The title of an exiting list to be added.

Field(s)

Text ...

Click the *Refresh fields* button to update all available fields.

The SharePoint - Update List Task updates a List in the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online

Add Task - Update list item - 3/3

Update list item
Updates an existing list item.

Main settings ? Conditions Update list item ! On error TimeOut Flow

Choose connection

List item Id (full path):

Field(s):

Use	Name	Value

Refresh fields

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

List item Id (full path)

The title of the list to be updated. Click the *Folder* icon to browse a SharePoint site in order to view or select a specific item.

Field(s)

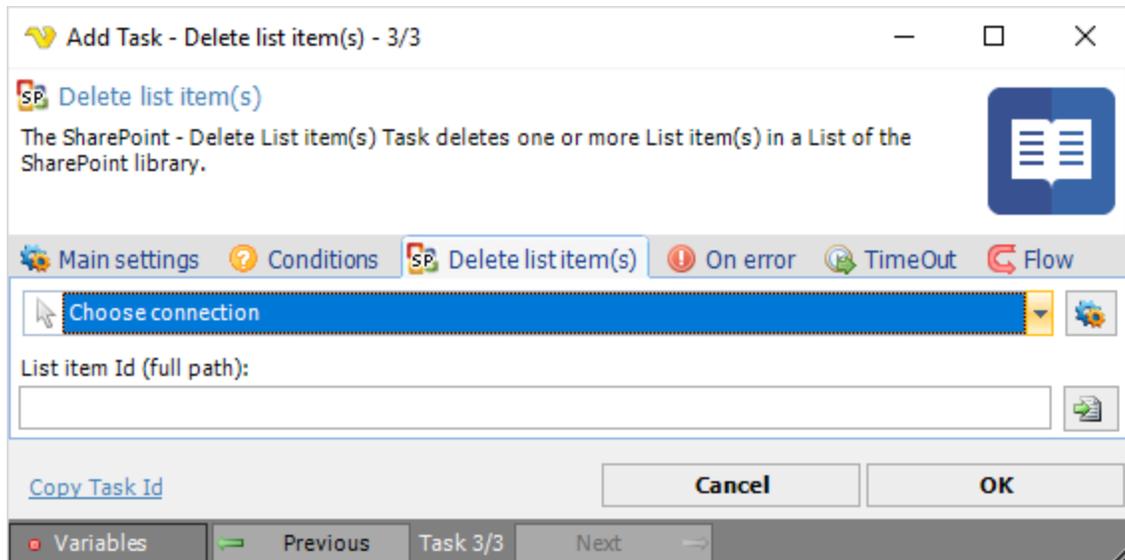
Text ...

Click the *Refresh fields* button to update all available fields.

The SharePoint - Delete List item(s) Task deletes one or more List item(s) in a List of the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online



Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

List item id

The Id of the list item. Click the *Folder* icon to select.

The SharePoint - Get List item(s) Task retrieves a list of list items from a specific List in the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online

Add Task - Get list item(s) - 3/3

Get list item(s)
The SharePoint - Get List item(s) Task retrieves a list of list items from a specific List in the SharePoint library.

Main settings | Conditions | **Get list item(s)** | Output | On error | TimeOut | Flow

Choose connection

Title:

CAML Query:

Field(s):

Use	Name

[Copy Task Id](#)

Variables | Previous | Task 3/3 | Next

Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Title

The displayed title for the list. Click the refresh button to list all available titles.

CAML Query

The query in CAML format to select one or more List items.

Field(s)

Text ...

Click the *Refresh fields* button to update all available fields.

The SharePoint - Upload file(s) Task uploads one or more files to the SharePoint library.

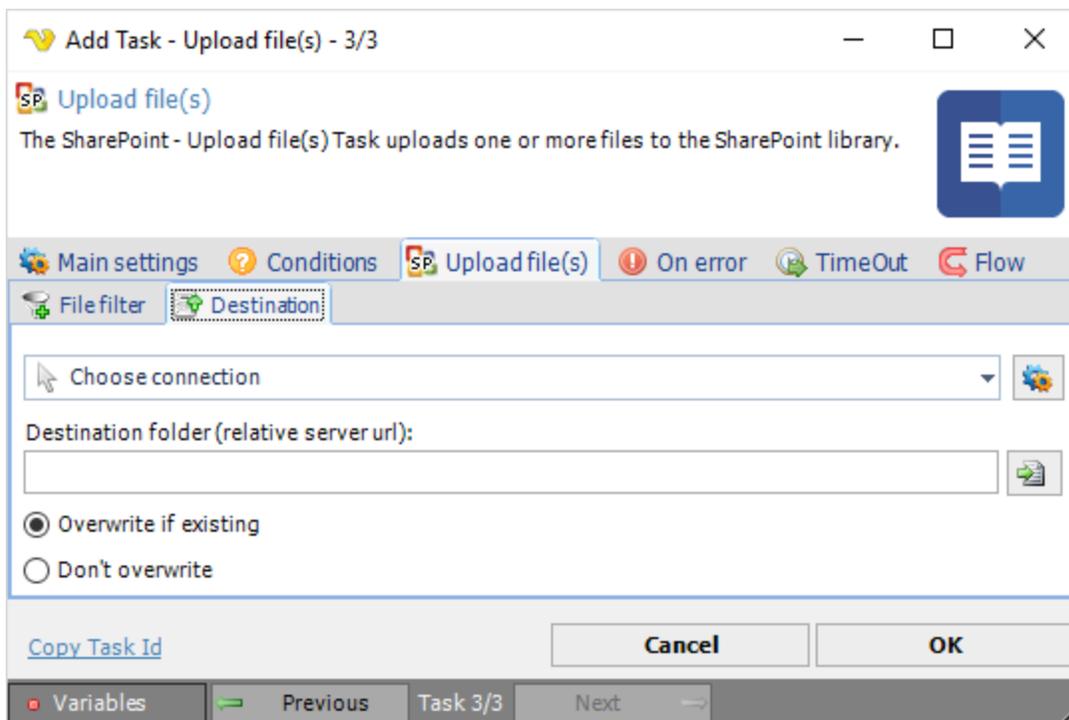
The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online

Upload file(s) > File filter > Location sub tab

The List file(s) Task uses the standard VisualCron File filter to define the properties of the listed files.

Upload file(s) > Destination sub tab



Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Destination folder

The destination folder for the files. Click the *Folder* icon to browse a SharePoint site in order to view or select a specific folder.

Overwrite

Optionally you can choose if you want to overwrite any existing file(s). If *Don't overwrite* is selected, this task fails if files with the same name are found in the destination.

The SharePoint - Download file(s) Task downloads one or more files from the SharePoint library.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online

Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Source folder

The source URL of the file to download. Click the *Folder* icon to use the SharePoint Browser in order to view or select a specific contents such as files, folders and attachments.

File mask

Use wild cards to find and delete one or more files.

Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Destination folder

The folder that you want to save the files in. Click on the folder icon to select folder.

Overwrite options

Optionally you can choose if you want to overwrite any existing file(s) based on if existing or date. If *Don't overwrite* is selected, this task fails if files with the same name are found in the destination.

The SharePoint - List file(s) Task retrieves a list of existing files from List in the SharePoint library based on a CAML query.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online

Add Task - List file(s) - 3/3

List file(s)
The SharePoint - List file(s) Task retrieves a list of existing files from List in the SharePoint library based on a CAML query.

Main settings | Conditions | **List file(s)** | On error | TimeOut | Flow

Choose connection

Title:

CAML Query:
<View><Query></Query></View>

Copy Task Id | Cancel | OK

Variables | Previous | Task 3/3 | Next

Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Title

The displayed title for the list. Click the *Refresh* icon to list all available lists.

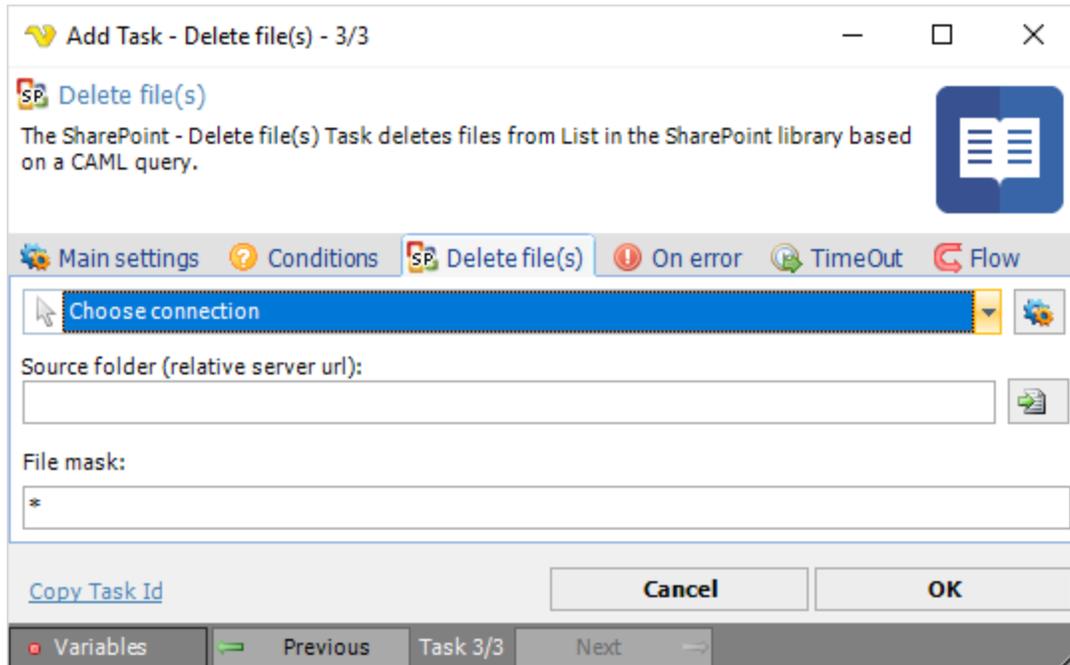
CAML Query

The query in CAML format to select one or more files.

The SharePoint - Delete file(s) Task deletes files from List in the SharePoint library based on a CAML query.

The SharePoint Tasks supports the following versions:

- SharePoint 2010
- SharePoint 2013
- SharePoint Online



Connection

To use SharePoint Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Source folder

The source folder for the files. Click the *Folder* icon to browse a SharePoint site in order to view or select a specific folder.

File mask

Use wild cards to find and delete one or more files.

Microsoft Virtual Server was a virtualization solution that facilitated the creation of virtual machines on the Windows XP, Windows Vista and Windows Server 2003 operating systems. Virtual Server has been discontinued and replaced by Hyper-V.

The Virtual Server - Start VM Task starts a specific virtual machine.

Add Task - Start VM - 3/3

Start VM
The Virtual Server - Start VM Task starts a specific virtual machine

Main settings | Conditions | **Start VM** | On error | TimeOut | Flow

Server location

Local server
 Remote server

Server name:

Credential:

Virtual Machine Name

Options

Wait for completion
 Resume paused machine

[Copy Task Id](#)

Variables | Previous | Task 3/3 | Next

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

The name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Virtual Machine Name

The host name of the virtual machine, Click the *Refresh* button to populate connected virtual machine names.

Wait for completion

Text ...

Resume paused machine

Text ...

The Virtual Server - Pause VM Task puts a specific virtual machine in pause mode.

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

The name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Virtual Machine Name

The host name of the virtual machine, Click the *Refresh* button to populate connected virtual machine names.

Options

Text ...

The Virtual Server - Reset VM Task resets a specific virtual machine.

Add Task - Reset VM - 3/3

Reset VM
The Virtual Server - Reset VM Task resets a specific virtual machine

Main settings Conditions **Reset VM** On error TimeOut Flow

Server location

Local server
 Remote server

Server name:

Credential:

Virtual Machine Name Refresh

Options

Start Virtual machine if turned off

[Copy Task Id](#) Cancel OK

Variables Previous Task 3/3 Next

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

The name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Virtual Machine Name

The host name of the virtual machine, Click the *Refresh* button to populate connected virtual machine names.

Start Virtual machine if turned off

Text ...

The Virtual Server - Turn off VM Task turns off a specific virtual machine.

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

The name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Virtual Machine Name

The host name of the virtual machine, Click the *Refresh* button to populate connected virtual machine names.

Options

Text ...

The Virtual Server - Save VM state Task saves the current state of a specific virtual machine.

Add Task - Save VM state - 3/3

Save VM state
The Virtual Server - Save VM state Task saves the current state of a specific virtual machine

Main settings **Conditions** **Save VM state** **On error** **TimeOut** **Flow**

Server location

Local server
 Remote server

Server name:

Credential:

Virtual Machine Name

Options

Wait for completion

[Copy Task Id](#)

Variables **Task 3/3**

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

The name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Virtual Machine Name

The host name of the virtual machine, Click the *Refresh* button to populate connected virtual machine names.

Wait for completion

Text ...

The Virtual Server - Check VM status Task retrieves the status of a specific virtual machine.

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

The name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Virtual Machine Name

The host name of the virtual machine, Click the *Refresh* button to populate connected virtual machine names.

If VM status is in transient state - wait for evaluation

Text ...

The Virtual Server - List VM machines Task retrieves a list of all virtual machines on a specific virtual machine.

Add Task - List VM machines - 3/3

List VM machines
The Virtual Server - List VM Task retrieves a list off all virtual machines on a specific server

Main settings Conditions **List VM machines** On error TimeOut Flow

Server location

Local server
 Remote server

Server name:

Credential:

Options

Running
 Turned off (guest saved)
 Turned off (guest unsaved)
 Paused
 Other (includes all transient states)
 Invalid

[Copy Task Id](#) **Cancel** **OK**

Variables Previous Task 3/3 Next

Local or Remote

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

The name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Running

Text ...

Turned off (guest saved)

Text ...

Turned off (guest unsaved)

Text ...

Paused

Text ...

Other (includes all transient states)

Text ...

Invalid

Text ...

Microsoft Dynamics CRM is a customer relationship management software package developed by Microsoft. The product focuses mainly on Sales, Marketing, and Service (help desk). It is part of the Microsoft Dynamics family of business applications.

The following versions of Dynamics CRM are supported:

- Dynamics CRM 2010
- Dynamics CRM 2013
- Dynamics CRM 2015
- Dynamics CRM 2016
- Dynamics CRM Online

The Dynamics CRM - Get Entity Task retrieves an Entity object from Dynamics CRM.

Add Task - Get entity - 3/3

Get entity
The Dynamics CRM - Get Entity Task retrieves an Entity from Dynamics CRM.

Main settings Conditions **Get entity** On error TimeOut Flow

Connection details
Choose connection

Entity
Entity name:
Entity ID:

Attribute name
Attribute name:

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

Entity Id

Click the *Fill* button to list existing Entity Id's based on the selected Entity.

Attribute name

Click the *Fill* button to list existing attribute names to select the attribute you want to retrieve the value from.

The Dynamics CRM - Create Entity Task creates an Entity in Dynamics CRM.

Add Task - Create entity - 3/3

Create entity
The Dynamics CRM - Create Entity Task creates an Entity in Dynamics CRM.

Main settings ? Conditions Create entity ! On error TimeOut Flow

Connection details

Choose connection

Entity

Entity name:

Fill

Entity data

Attribute name	Attribute value

Fill attributes

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

Entity data

Click the *Fill attributes* button when you have selected an Entity and the related attributes will be listed. Type in the attribute value. Any attribute with blank values will be ignored (not created).

The Dynamics CRM - Update Entity Task updates a specific Entity object in Dynamics CRM.

Add Task - Update entity - 3/3

Update entity
The Dynamics CRM - update Entity Task updates an Entity in Dynamics CRM.

Main settings Conditions **Update entity** On error TimeOut Flow

Connection details
Choose connection

Entity
Entity name:
Entity ID:

Entity data

Attribute name	Attribute value

Fill attributes

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the settings icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

Entity Id

Click the *Fill* button to list existing Entity Id's based on the selected Entity.

Entity data

Click the *Fill attributes* button when you have selected an Entity and the related attributes will be listed. Type in the attribute value. Any attribute with blank values will be ignored (not created).

The Dynamics CRM - Delete Entity Task deletes an Entity in Dynamics CRM instance.

Add Task - Delete entity - 3/3

Delete entity
The Dynamics CRM - Delete Entity Task deletes an Entity in Dynamics CRM.

Main settings | Conditions | **Delete entity** | On error | TimeOut | Flow

Connection details
Choose connection

Entity
Entity name:
Entity ID:

Fill
Fill

Copy Task Id | Cancel | OK

Variables | Previous | Task 3/3 | Next

Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

Entity Id

Click the *Fill* button to list existing Entity Id's based on the selected Entity.

The Dynamics CRM - List Entity Task lists entities in Dynamics CRM.

This Task is similar to Get entity but lists the values of a specific attribute on all objects within an entity.

Add Task - List entity - 3/3

List entity
The Dynamics CRM - List Entity Task lists Entities in Dynamics CRM.

Main settings Conditions **List entity** On error TimeOut Flow

Connection details
Choose connection

Entity
Entity name:
Fill

Attribute name
Attribute name:
ID Fill

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

Attribute name

Click the *Fill* button to list existing attribute names to select the attribute you want to retrieve the value from.

The Dynamics CRM - Get audit data Task retrieves auditing information from Dynamics CRM instance.

The audit data it will return a string containing list of changes made from the moment you have enabled audit.

Add Task - Get audit data - 3/3

Get audit data
The Dynamics CRM - Get audit data Task retrieves auditing information from Dynamics CRM.

Main settings | Conditions | **Get audit data** | On error | TimeOut | Flow

Connection details
Choose connection

Entity
Entity name:
[Dropdown] [Fill]
Entity ID:
[Dropdown] [Fill]

[Copy Task Id](#) [Cancel] [OK]

Variables | Previous | Task 3/3 | Next

Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

Entity Id

Click the *Fill* button to list existing Entity Id's based on the selected Entity.

The Dynamics CRM - Set audit data Task changes auditing status on a specific Entity in a Dynamics CRM instance.

The audit data it will return a string containing list of changes made from the moment you have enabled audit.

Add Task - Set audit status - 3/3

Set audit status
The Dynamics CRM - Set audit status updates auditing information in Dynamics CRM.

Main settings | Conditions | **Set audit status** | On error | TimeOut | Flow

Connection details
Choose connection

Entity
Entity name:
[Dropdown] [Fill]

Audit settings
Action type:
 Auditing for organization
 Auditing for entity

Copy Task Id | Cancel | OK

Variables | Previous | Task 3/3 | Next

Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

Auditing for organization

Enables/disables auditing for organization.

Auditing for entity

Enables/disables auditing for entity.

Note: If auditing is not enabled at the organization level, auditing of entities and attributes, even if it is enabled, does not occur. By default, auditing is enabled on all auditable entity attributes but is disabled at the entity and organization level.

The Dynamics CRM - Start workflow Task starts an existing work flow in Dynamics CRM.

Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

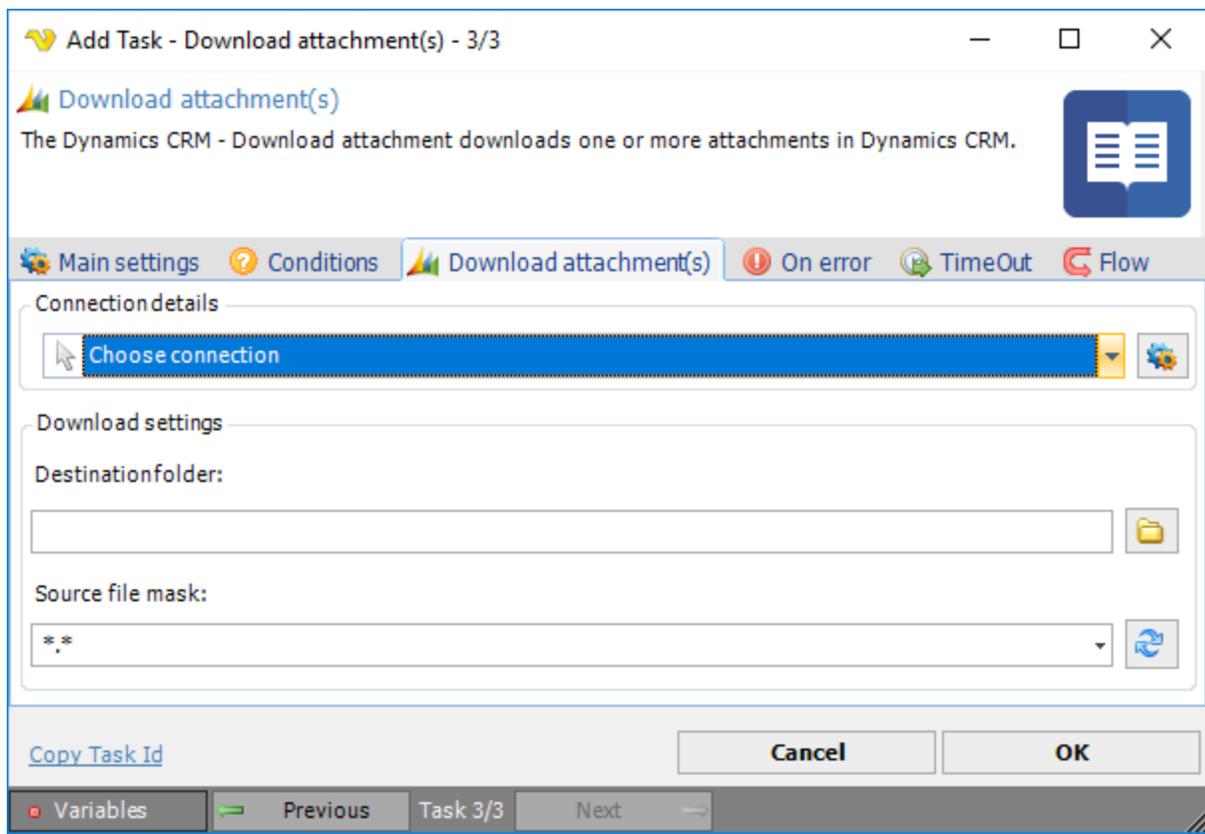
Entity Id

Click the *Fill* button to list existing Entity Id's based on the selected Entity.

Workflow

Click the *Fill* button to list existing work flows and select the one you want to run. Please note that the work flow needs to be of the type "on demand".

The Dynamics CRM - Download attachment Task downloads one or more attachments a from Dynamics CRM instance.



Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Destination folder

Local destination folder where the downloaded files should be stored. Click the *Folder* icon to browse and select a specific Dynamics CRM folder.

Source file mask

File mask for filtering out attachments in Dynamics CRM instance.

The Dynamics CRM - Upload attachment Task uploads one or more attachments to a Dynamics CRM instance.

Upload attachment > Main settings tab

Connection

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

Entity Id

Click the *Fill* button to list existing Entity Id's based on the selected Entity.

Mime type

Enter the mime type of the file(s) you are uploading if the *Auto detect* option does not work for you.

Upload attachment > File filter > Location sub tab

This Task uses the standard VisualCron File filter to define the properties of the listed files.

The Dynamics CRM - Delete attachment Task deletes one or more attachments from a Dynamics CRM instance.

Add Task - Delete attachment - 3/3

Delete attachment

The Dynamics CRM - delete attachment Task deletes one or more attachments in Dynamics CRM.

Main settings Conditions **Delete attachment** On error TimeOut Flow

Connection details

Choose connection

Entity

Entity name:

Entity ID:

Filter

*

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

Connection details

To use Dynamics CRM Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Entity name

The logical name of the entity to get information from. Click the *Fill* button to list existing Entities in the Dynamics CRM instance.

Entity Id

Click the *Fill* button to list existing Entity Id's based on the selected Entity.

Filter

File filter for the attachments.

Cloud storage is a model of data storage in which the digital data is stored in logical pools, the physical storage spans multiple servers (and often locations), and the physical environment is typically owned and managed by a hosting company.

The Cloud Tasks in VisualCron currently supports the following cloud services:

- Amazon S3
- Box
- DropBox

- Google Drive
- Microsoft Azure
- OneDrive

Different Connections are used depending on the different cloud service providers.

The same interface is shared for the different cloud services.

In order to simplify and unify common parameters, the standard VisualCron Cloud remote file filter is used in the below list of Cloud Tasks:

- List item(s)
- Download file(s)
- Delete item(s)

The Cloud - Upload file(s) Task let's you upload files to a cloud service like Amazon S3, Box, Dropbox, Google Drive, Microsoft Azure and OneDrive.

Upload file(s) > Main settings sub tab

Connection

To use a specific cloud service you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Bucket/Container

This property refers to "Container" in Windows Azure and "Bucket" in Amazon S3. For other cloud services this property is disabled. Click the *Folder* icon to list all available Buckets/Containers.

Destination folder

This is destination folder in the cloud - where the files should be uploaded to. Click the *Folder* icon to list folders from the cloud.

Keep modified/created date

If checked don't change the modified/created date of the file.

Upload file(s) > File filter > Location sub tab

This Task uses the standard VisualCron File filter to define the properties of the listed files.

The Cloud - List item(s) Task is able to list files or folders in Cloud services like Amazon S3, Box, Dropbox, Google Drive, Microsoft Azure and OneDrive.

The screenshot shows a dialog box titled "Add Task - List item(s) - 3/3". The main heading is "List item(s)". Below the heading, it states: "The Cloud - list items(s) Task is able to list files or folders in Cloud services like Google Docs, Amazon S3, Azure and Microsoft SkyDrive." The dialog has several tabs: "Main settings", "Conditions", "List item(s)" (which is active), "On error", "TimeOut", and "Flow". Under the "List item(s)" tab, there are sub-tabs: "Location" (active), "Date", "Size", "Result", and "Test". The "Location" sub-tab contains a "Connection" dropdown menu with the text "Choose connection". Below this is the "Source" section with three input fields: "Bucket/Container:", "Source folder:", and "Item mask:". The "Item mask" field contains an asterisk (*). Below the "Item mask" field is a dropdown menu set to "Files". At the bottom of the "Source" section is the "Filter:" section with two checkboxes: "Casesensitive" and "Include sub folders", both of which are unchecked. At the bottom of the dialog, there is a "Copy Task Id" link, a "Cancel" button, and an "OK" button. The "OK" button is highlighted. At the very bottom of the dialog, there is a navigation bar with "Variables", "Previous", "Task 3/3", and "Next" buttons.

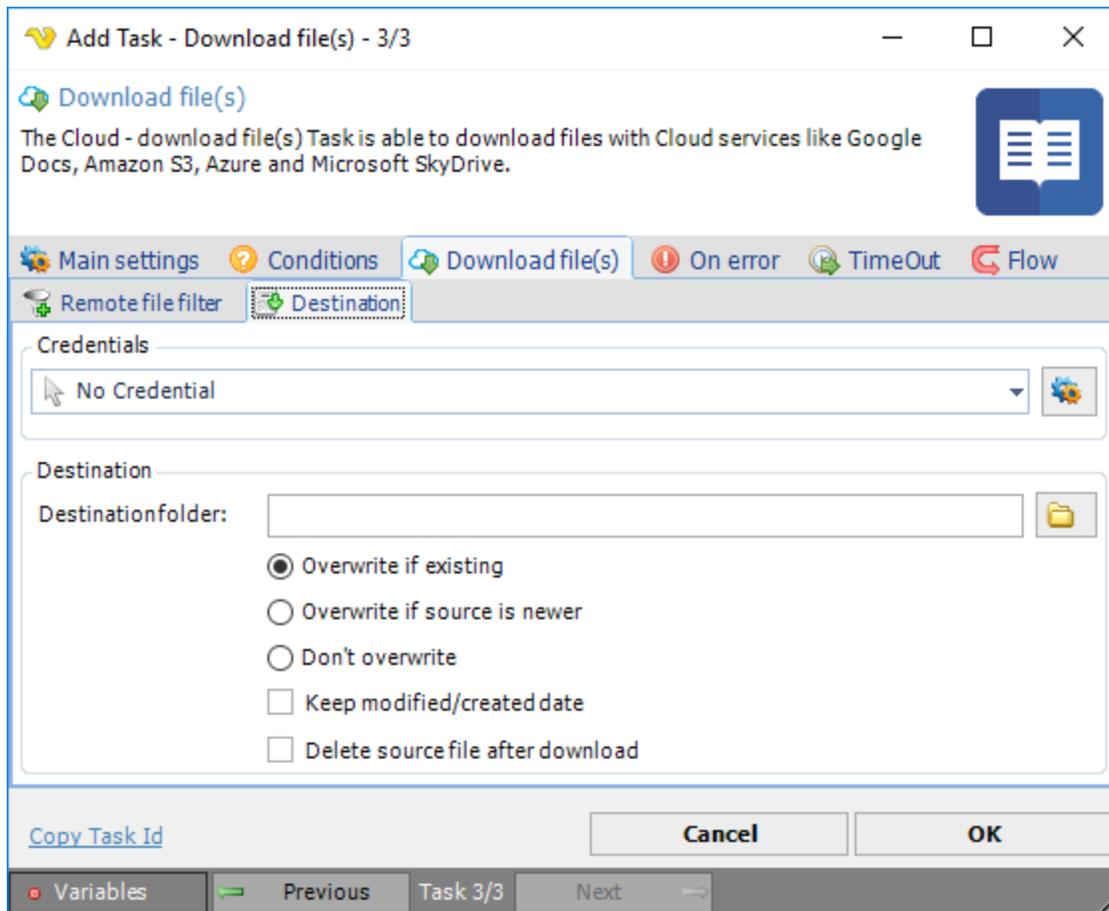
This Task uses the Cloud Remote file filter for settings.

The Cloud - Download file(s) Task is able to download files with Cloud services like Amazon S3, Box, Dropbox, Google Drive, Microsoft Azure and OneDrive.

Download file(s) > Remote file filter sub tab

This Task uses the Cloud Remote file filter for settings.

Download file(s) > Destination sub tab



Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and pass word of the user that you want to login. Click on *Manage credentials* to add or edit Credentials. Select a Credential in the combo box.

Destination folder

The folder where you want to store the files. Click the *Folder* icon to list folders from the cloud.

Overwrite options

If the file is already existing you can choose to overwrite, only if newer or not overwrite.

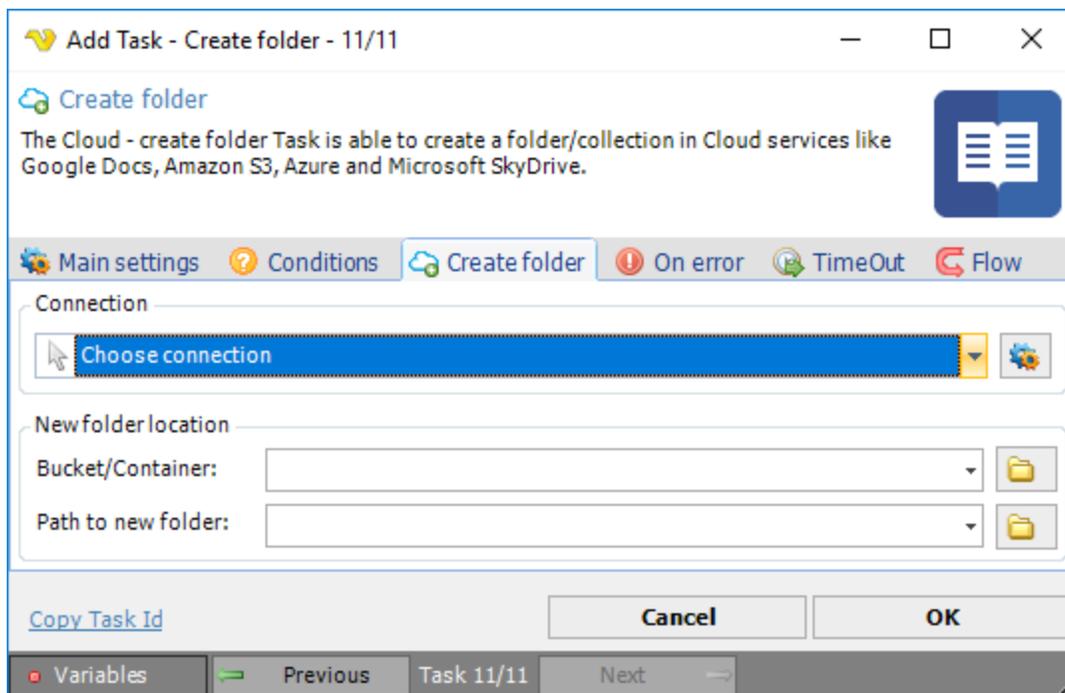
Keep modified/created date

This take the modified/created dates from the downloaded file(s).

Delete source file after download

When download has been completed the source file in the cloud is deleted.

The Cloud - Create folder Task is able to create a folder with Cloud services like Amazon S3, Box, Dropbox, Google Drive, Microsoft Azure and OneDrive.



Connection

To use a specific cloud service you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

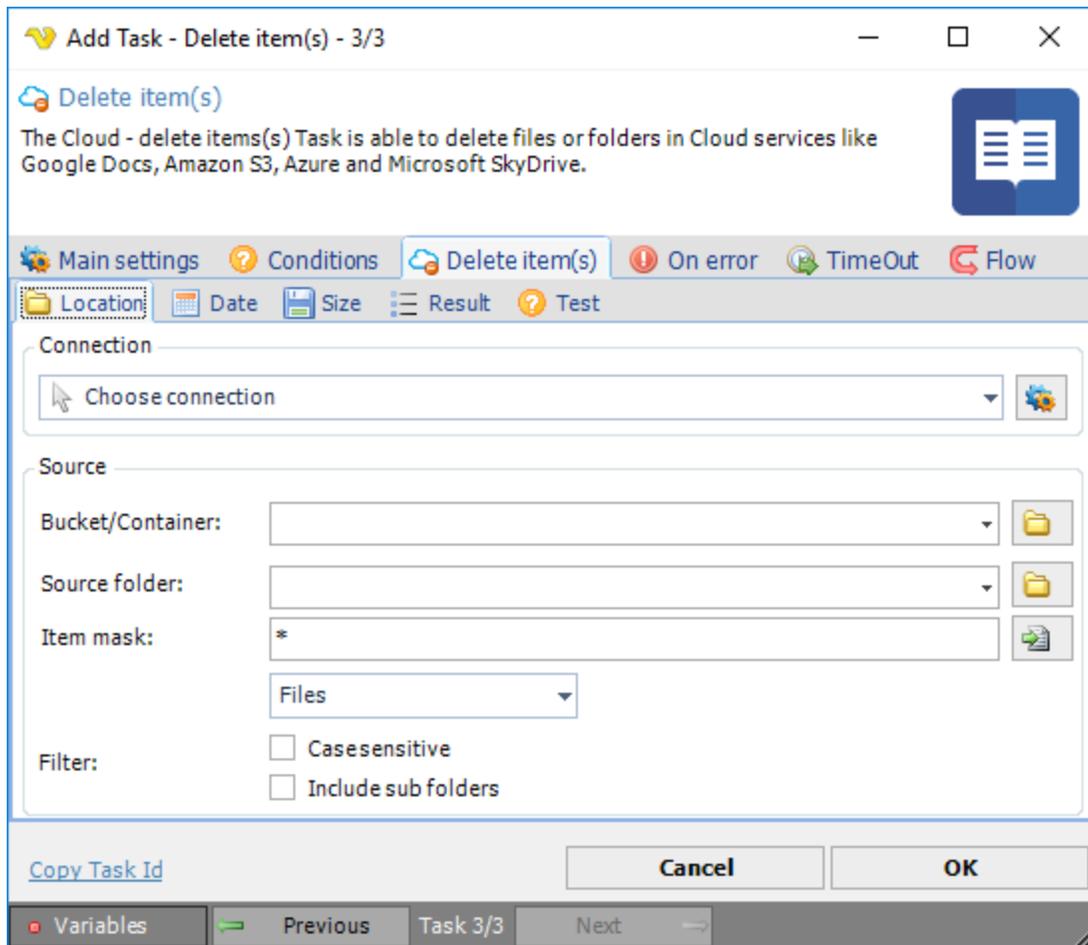
Bucket/Container

This property refers to "Container" in Windows Azure and "Bucket" in Amazon S3. For other cloud services this property is disabled. Click the *Folder* icon to list all available Buckets/Containers.

Path to new folder

The full path to the new folder.

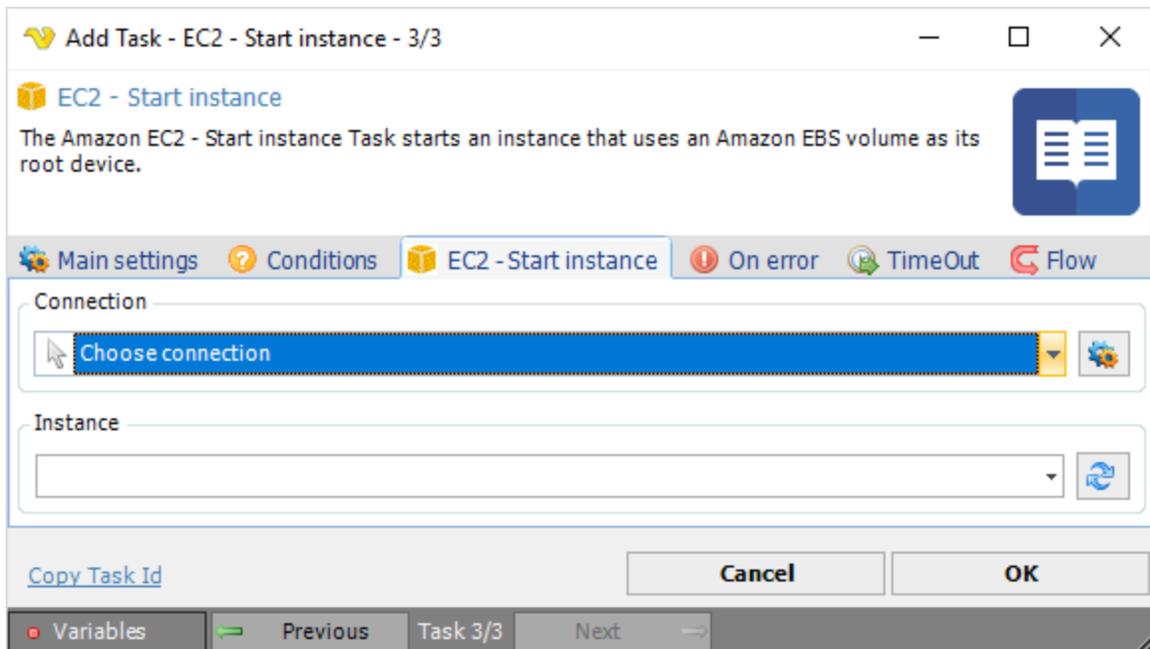
The Cloud - Create folder Task is able to delete items (files and folders) from a Cloud services like Amazon S3, Box, Dropbox, Google Drive, Microsoft Azure and OneDrive.



This Task uses the Cloud Remote file filter for settings.

Amazon Elastic Compute Cloud (EC2) forms a central part of Amazon.com's cloud-computing platform, Amazon Web Services (AWS), by allowing users to rent virtual computers on which to run their own computer applications.

The Amazon EC2 - Start instance Task starts instance that uses an Amazon EBS volume as its root device.



Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Instance

The instance ID to start. Click the *Refresh* icon to populate the drop-down instance ID list.

The Amazon EC2 - Launch instance Task launches the specified number of instances using an AMI for which you have permissions.

Add Task - EC2 - Launch instance - 3/3

EC2 - Launch instance
The Amazon EC2 - Launch instance Task launches the specified number of instances using an AMI for which you have permissions

Main settings Conditions **EC2 - Launch instance** On error TimeOut Flow

Connection
Choose connection

Key pair name:
[Dropdown] Refresh

Image Id:
[Dropdown] Refresh

Instance type:
[Dropdown] Refresh

Subnet Id:
[Dropdown] Refresh

Availability Zone:
[Dropdown] Refresh

Number of instances to launch:
1

[Copy Task Id](#) Cancel OK

Variables Previous Task 3/3 Next

Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Key pair name

The name of the key pair (Example: -k websvr-keypair). Click the *Refresh* icon to populate the drop-down Key pair name list.

Image Id

The unique ID of a machine image. Click the *Refresh* icon to populate the drop-down Image ID list.

Instance type

The size of the instance to launch. Click the *Refresh* icon to populate the drop-down Instance type list.

Subnet Id

Specify the CIDR block for the subnet (a subset of the VPC CIDR block) in the Availability Zone. Click the *Refresh* icon to populate the drop-down Subnet ID list.

Availability Zone

The zone in which to launch the instance(s). Click the *Refresh* icon to populate the drop-down Availability Zone list.

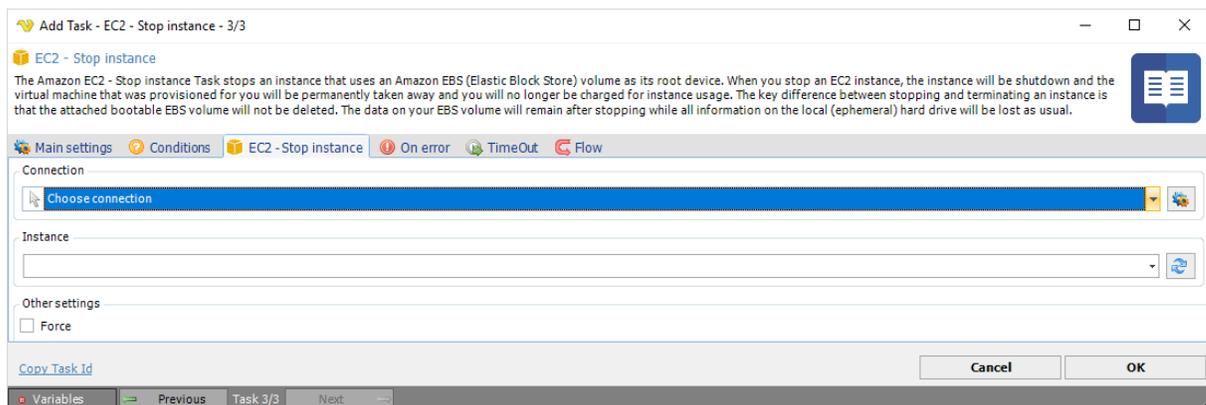
Number of instances to launch

The number of instances based on the selected AMI to launch.

Note about xxx:

Text ...

The Amazon EC2 - Stop instance Task stops an instance that uses an Amazon EBS (Elastic Block Store) volume as its root device. When you stop an EC2 instance, the instance will be shutdown and the virtual machine that was provisioned for you will be permanently taken away and you will no longer be charged for the instance usage. The key difference between stopping and terminating an instance is that the attached bootable EBS volume will not be deleted. The data on your EBS volume will remain after stopping while all information on the local (ephemeral) hard drive will be lost as usual.



Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

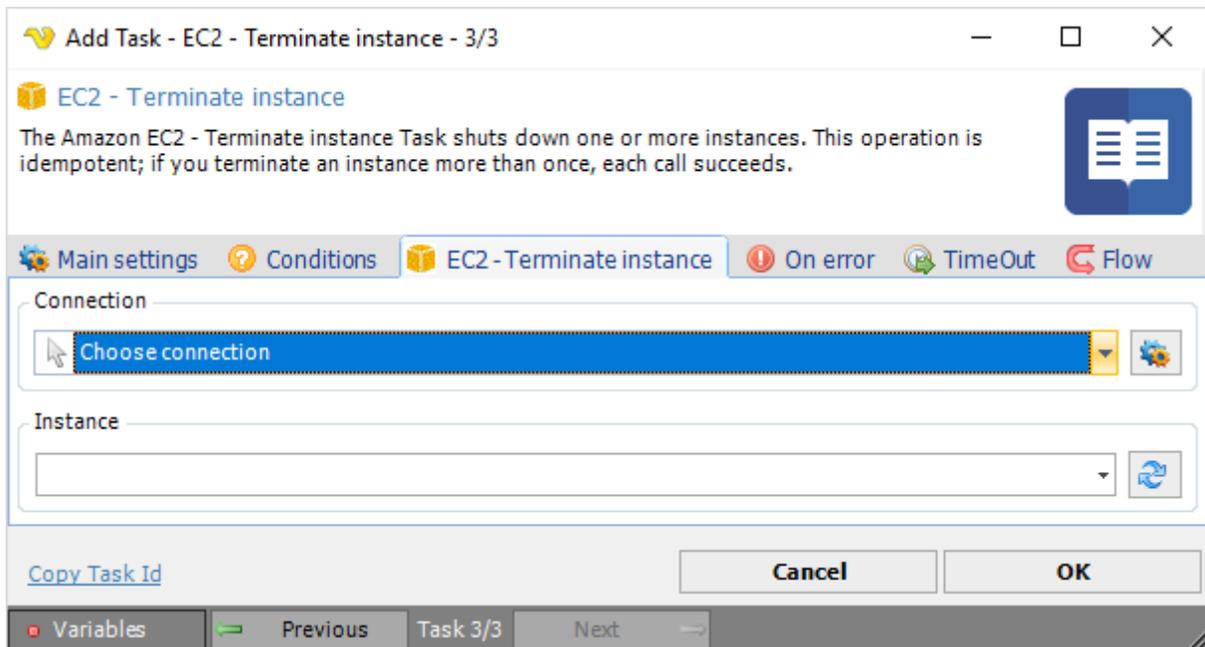
Instance

The instance ID to start. Click the *Refresh* icon to populate the drop-down instance ID list.

Force

If checked, the instance will be forced to stop. This may cause file system problems and is not recommended for Windows instances.

The Amazon EC2 - Terminate instance Task shuts down one or more instances. This operation is idempotent; if you terminate more than once, each call succeeds.



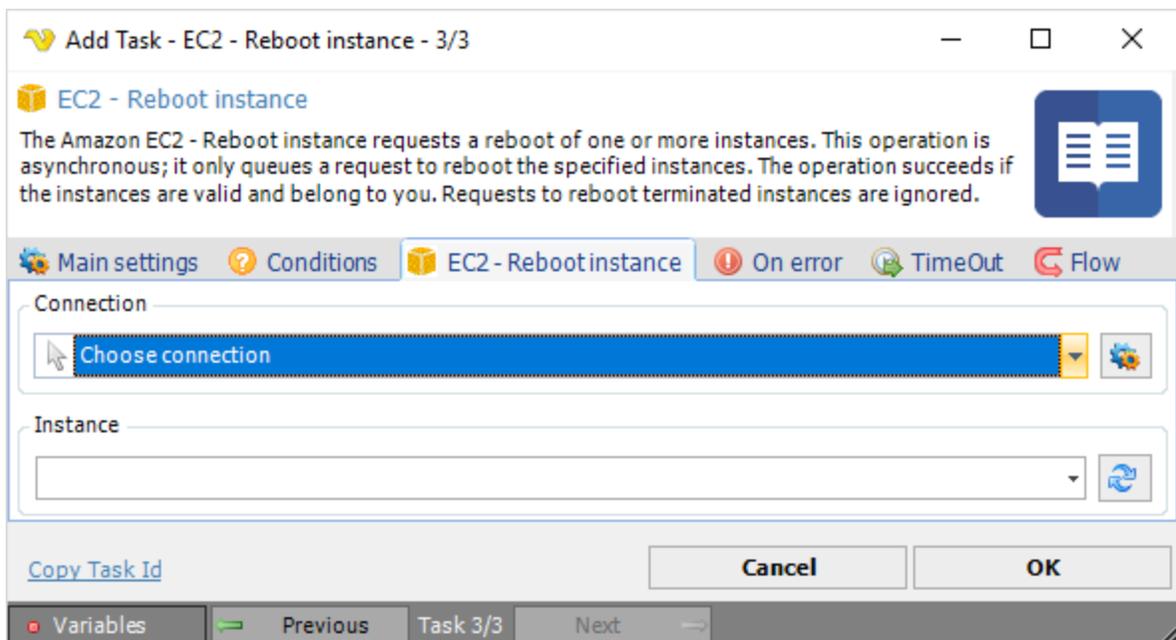
Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Instance

The instance ID to start. Click the *Refresh* icon to populate the drop-down instance ID list.

The Amazon EC2 - Reboot instance requests a boot of one or more instances. This operation is asynchronous; it only queues a request to reboot the specified instances. The operation succeeds if the instances are valid and belong to you. Requests to reboot terminated instances are ignored.



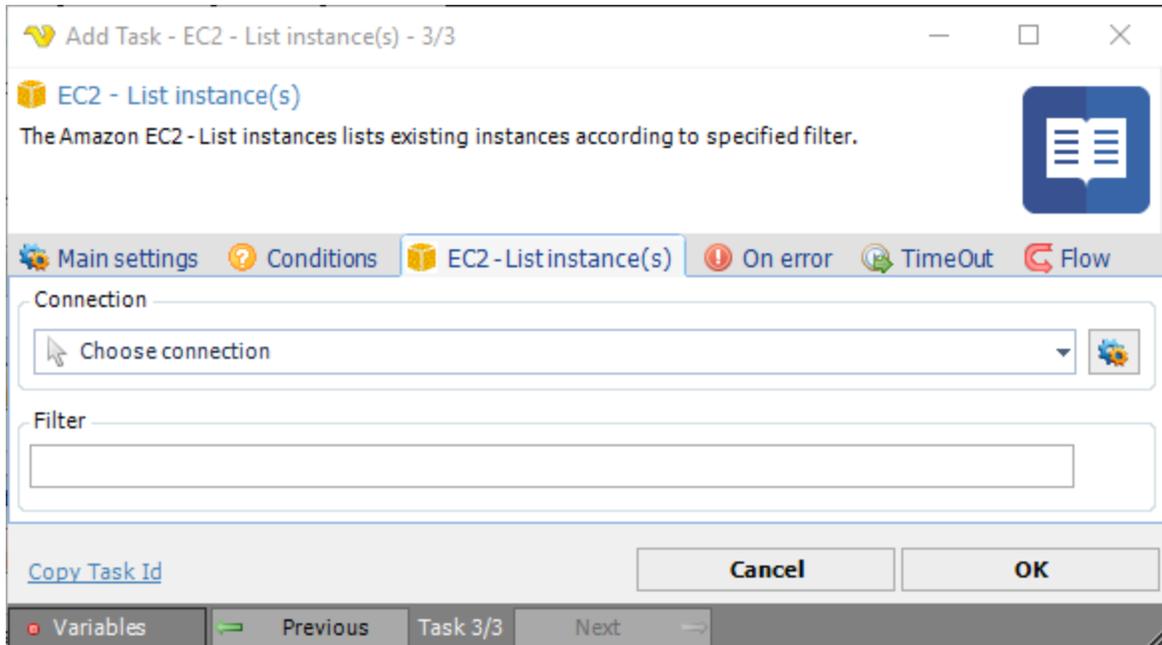
Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Instance

The instance ID to start. Click the *Refresh* icon to populate the drop-down instance ID list.

The Amazon EC2 - List instances lists existing instances according to the specified filter.



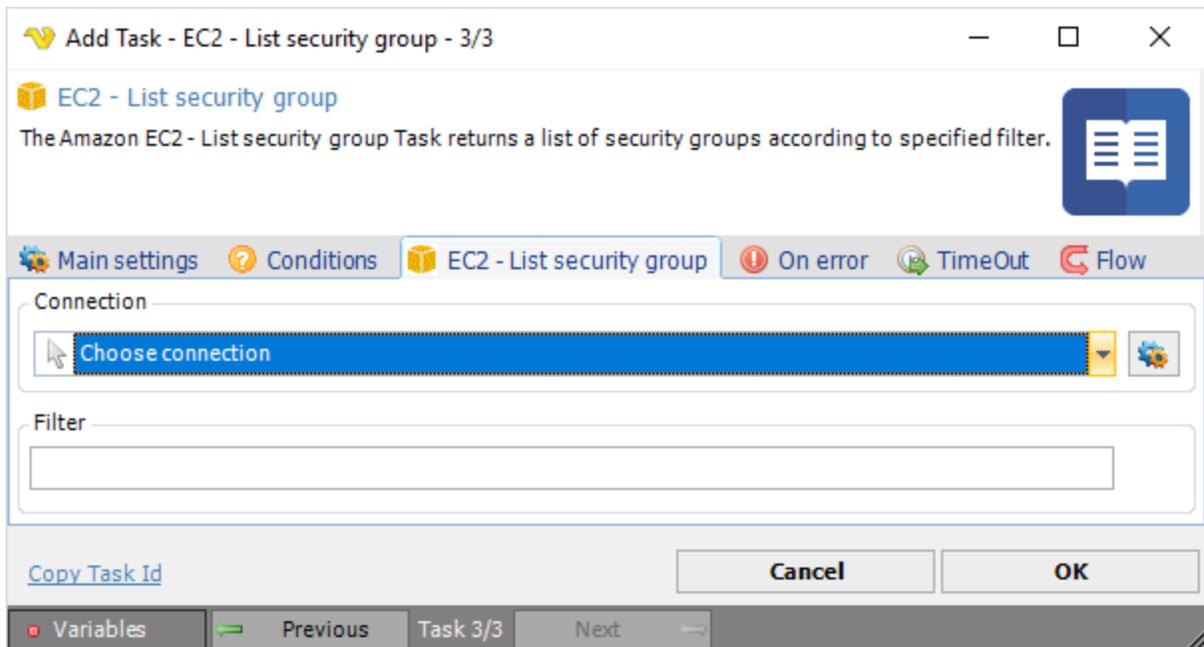
Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Filter

Filter for instances. Example: {"Name": "instance-type", "Values": ["t2.micro", "m1.medium"]}

The Amazon EC2 - List security group Task returns a list of security groups according to the specified filter.



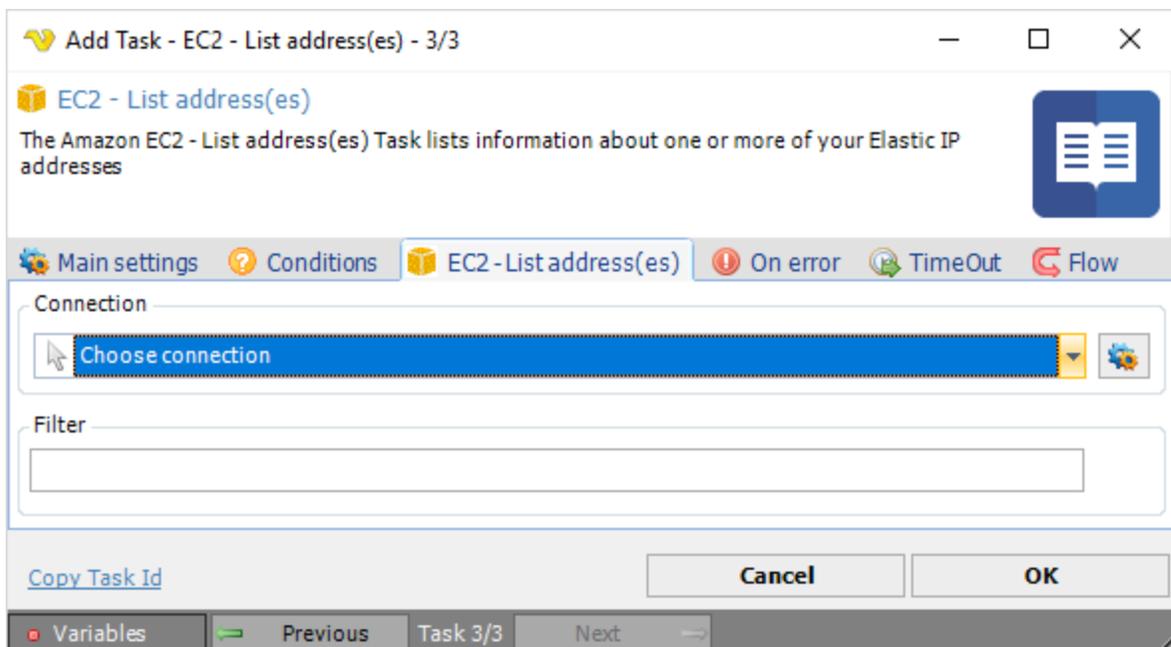
Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Filter

Filter for security groups. Example: `{"Name": "instance-type", "Values": ["t2.micro", "m1.medium"]}`

The Amazon EC2 - List address(es) Task lists information about one or more of your Elastic IP addresses.



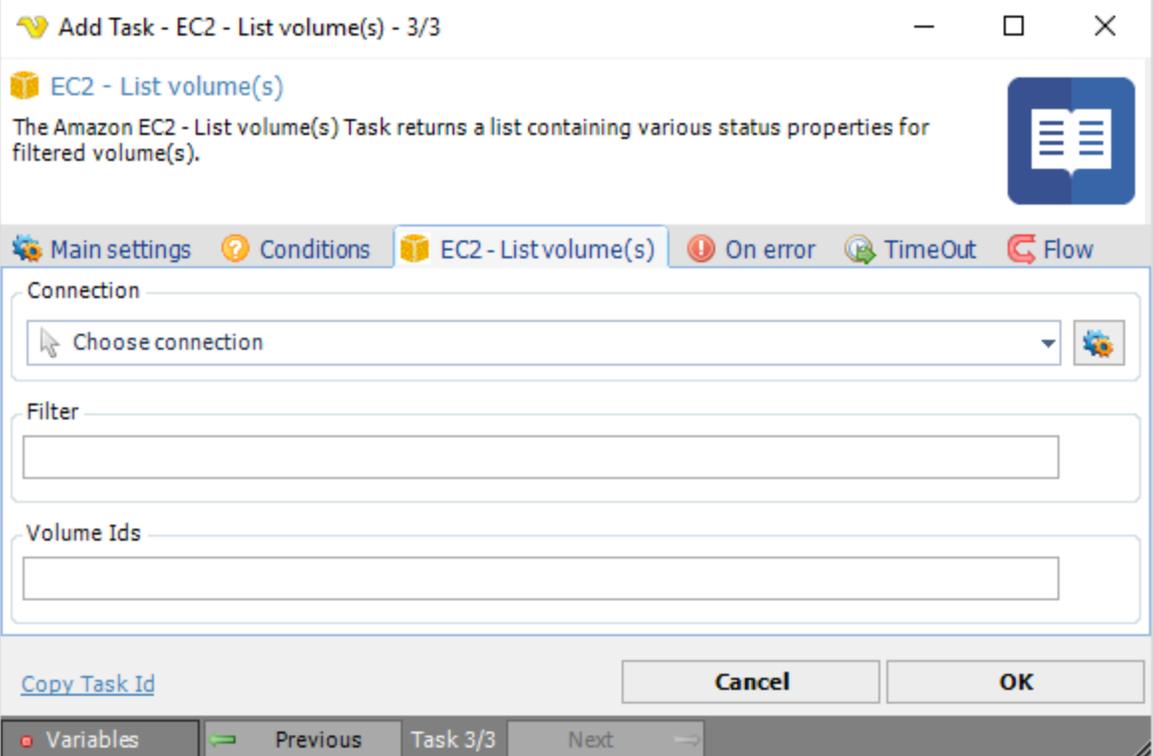
Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Filter

Filter for elastic IP addresses. Example: {"Name": "instance-type", "Values": ["t2.micro", "m1.medium"]}

The Amazon EC2 - List volume(s) Task returns a list containing various status properties for filtered volume(s).



Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

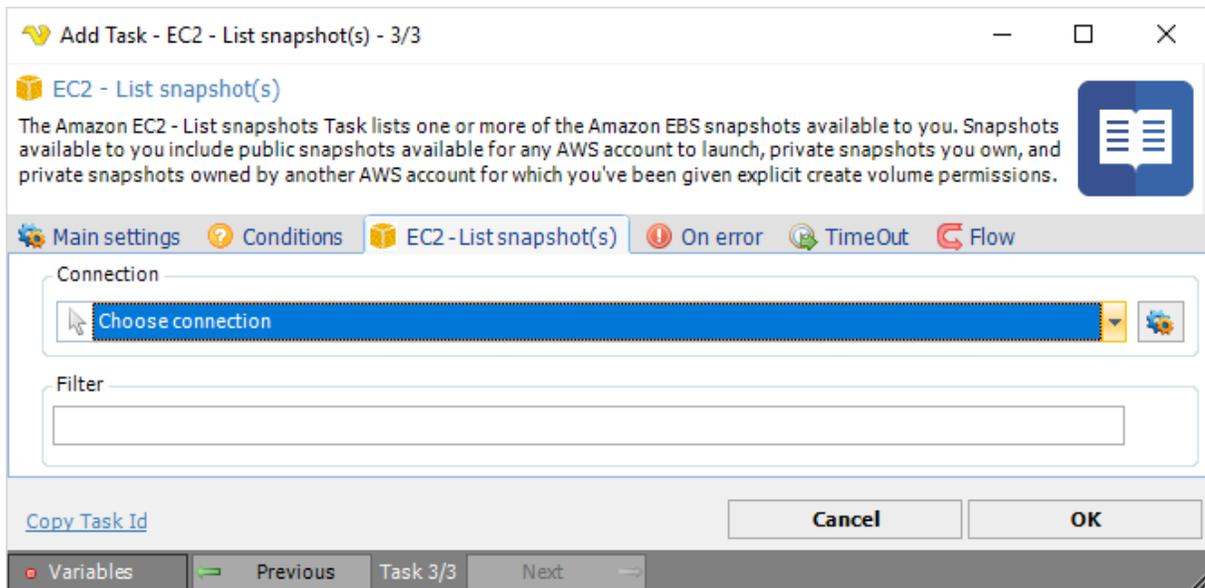
Filter

Filter for volumes. Example: {"Name": "instance-type", "Values": ["t2.micro", "m1.medium"]}

Volume IDs

The ID of the volume to list.

The Amazon EC2 - List snapshots Task lists one or more of the Amazon EBS snapshots available to you. Snapshots available to you include public snapshots available for any AWS account to launch, private snapshots you own and private snapshots owned by another AWS account for which you've been given explicit create volume permissions.



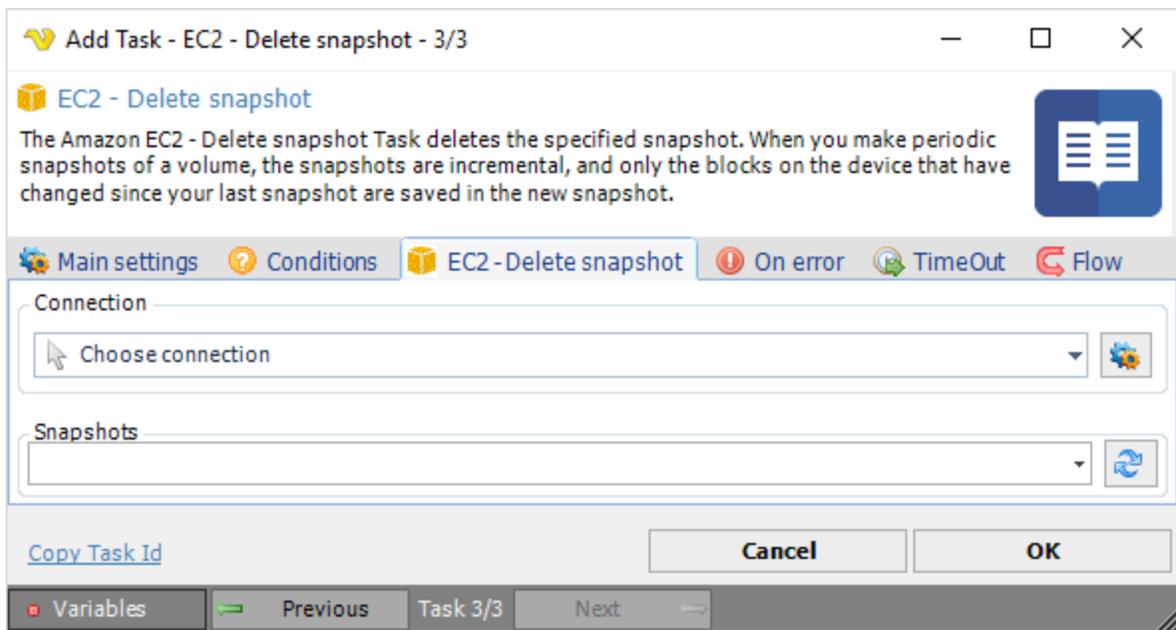
Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Filter

Filter for snapshots. Example: {"Name": "instance-type", "Values": ["t2.micro", "m1.medium"]}

The Amazon EC2 - Delete snapshot Task deletes the specified snapshot. When you make periodic snapshots of a volume, the snapshots are incremental and only the blocks on the device that have been changed since your last snapshot are saved in the new snapshot.



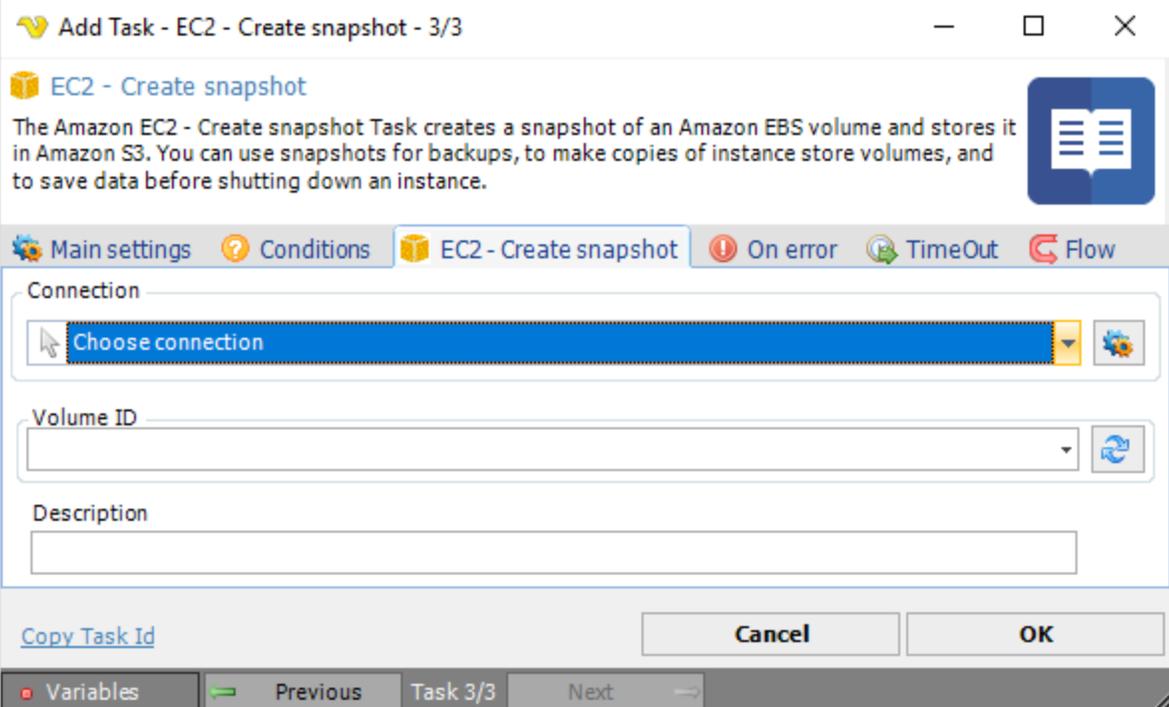
Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Snapshots

The snapshot to be deleted. Click the *Refresh* icon to populate the drop-down snapshot list.

The Amazon EC2 - Create snapshot Task creates a snapshot of an Amazon EBS volume and stores it in Amazon S3. You can use snapshots for backups, to make copies of instance store volumes and to save data before shutting down an instance.



Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

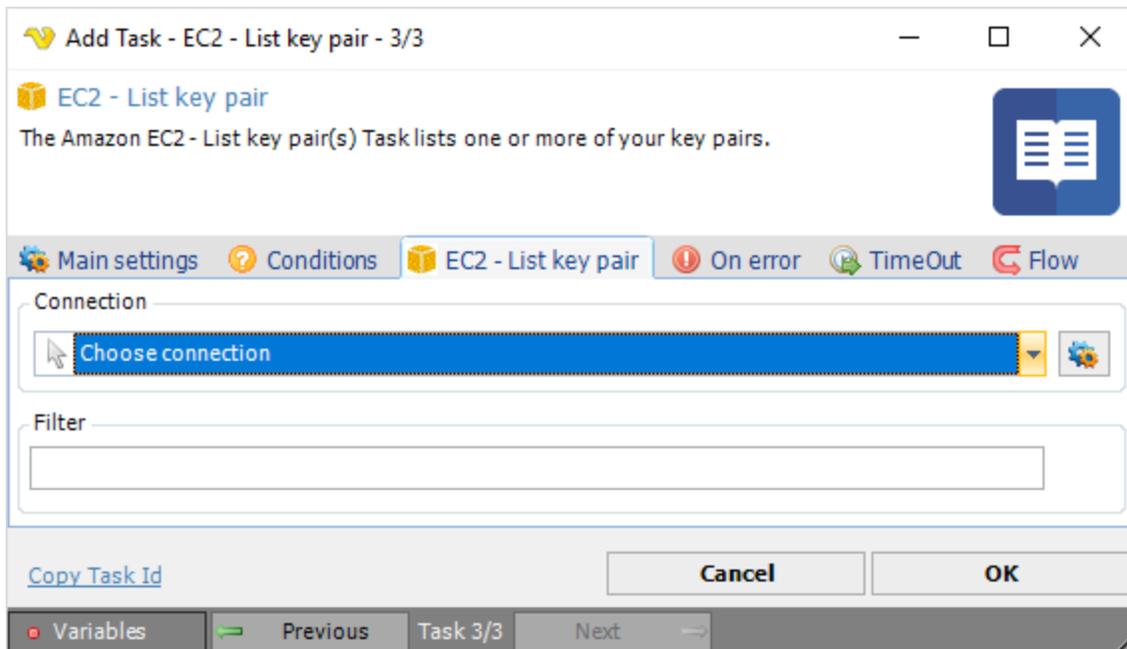
Volume ID

The volume ID of the Amazon EBS volume.

Description

Descriptive text for the snapshot.

The Amazon EC2 - List key pair(s) Task lists one or more of your key pairs.



Connection

To use Amazon EC2 Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

Filter

Filter for key pairs. Example: {"Name": "instance-type", "Values": ["t2.micro", "m1.medium"]}

Microsoft Azure (formerly Windows Azure) is a cloud computing service created by Microsoft for building, testing, deploying, and managing applications and services through a global network of Microsoft-managed data centers.

The Azure - Start VM Task starts an existing virtual machine in the Azure cloud.

Add Task - Azure - Stop VM - 3/3

Azure - Stop VM
The Azure - Stop VM Task stops an existing virtual machine in the Azure cloud.

Main settings Conditions **Azure - Stop VM** On error TimeOut Flow

Connection
Choose connection

Virtual machine
VM name: [dropdown] Refresh
Service name: [dropdown] Refresh

Deallocate

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

Connection

To use Azure Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

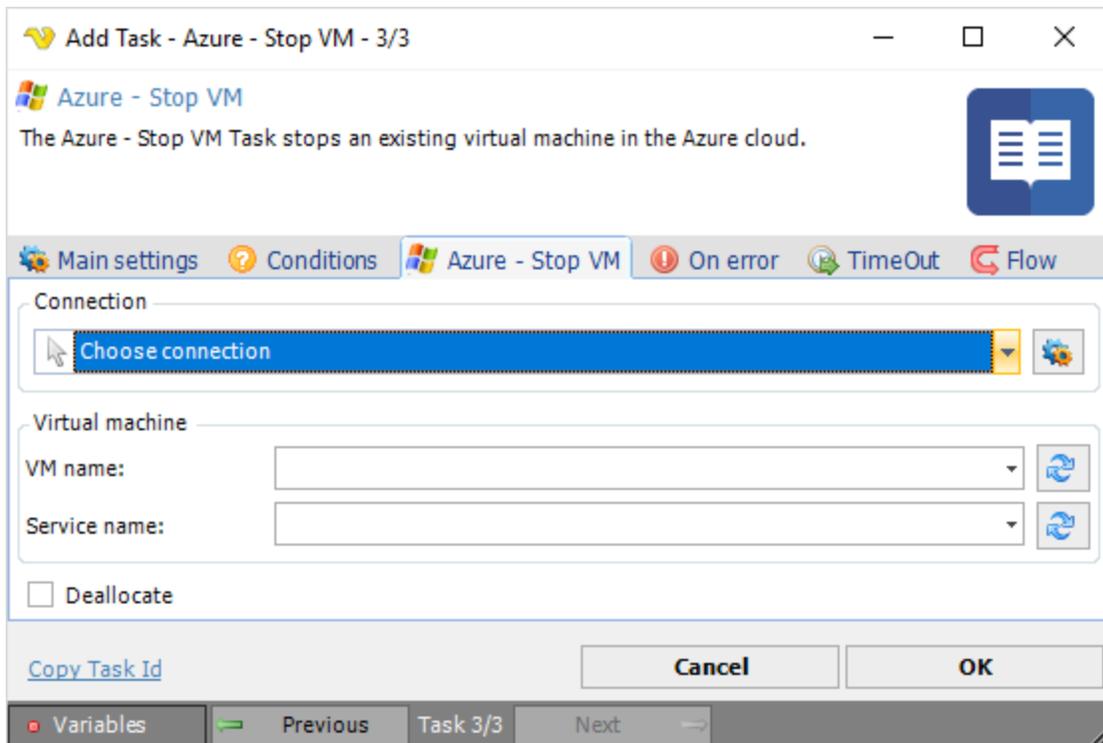
VM name

The Azure virtual machine name. Click the *Refresh* icon to populate the drop-down VM name list.

Service name

The Azure service name. Click the *Refresh* icon to populate the drop-down service name list.

The Azure - Stop VM Task stops an existing virtual machine in the Azure cloud.



Connection

To use Azure Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

VM name

The Azure virtual machine name. Click the *Refresh* icon to populate the drop-down VM name list.

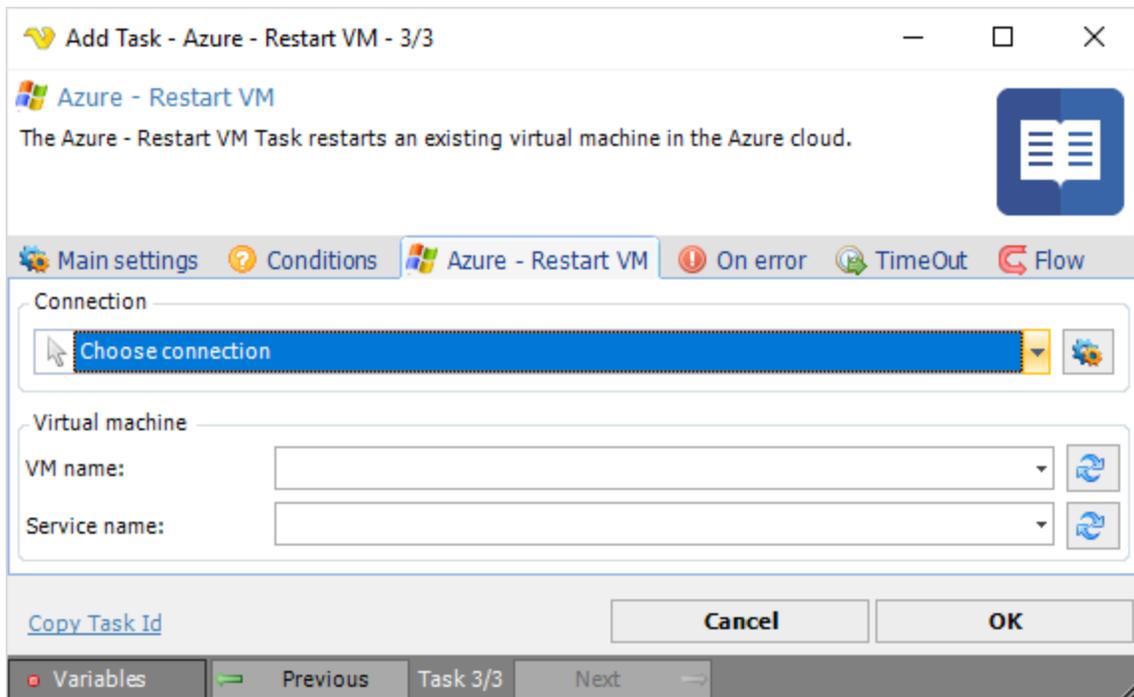
Service name

The Azure service name. Click the *Refresh* icon to populate the drop-down service name list.

Deallocate

In the stopped (deallocated) state, there is no continues to bill for resources.

The Azure - Restart VM Task restarts an existing virtual machine in the Azure cloud.



Connection

To use Azure Tasks you need to create a Connection first. Click the *Settings* icon to open the *Manage Connections* dialog.

VM name

The Azure virtual machine name. Click the *Refresh* icon to populate the drop-down VM name list.

Service name

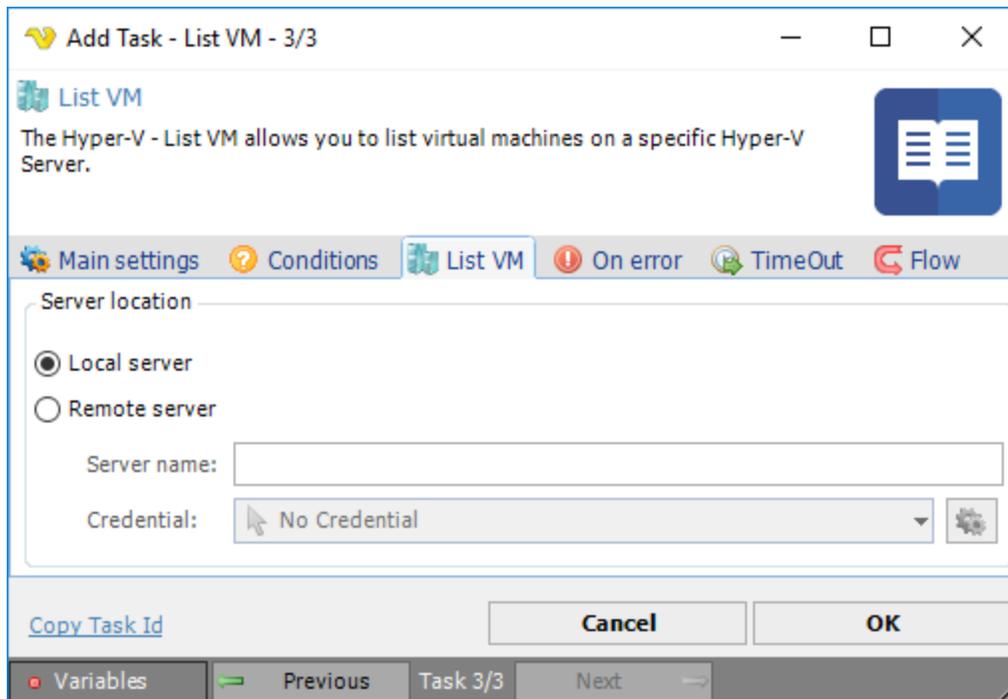
The Azure service name. Click the *Refresh* icon to populate the drop-down service name list.

Microsoft Hyper-V, formerly known as Windows Server Virtualization, is a native hypervisor; it can create virtual machines on x86-64 systems running Windows.

Remote Hyper-V Tasks uses PowerShell. For more information how to configure PowerShell for remote access please look at this page:

<http://www.howtogeek.com/117192/how-to-run-powershell-commands-on-remote-computers/>

The Hyper-V - List VM Task allows you to list virtual machines hosted on a specific, local or remote, Hyper-V Management Server.



Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

The Hyper-V - Start VM Task allows you to start a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Add Task - Start VM - 3/3

Start VM
The Hyper-V - Start VM allows you to start a virtual machine that is hosted on a Hyper-V Management Server.

Main settings **Conditions** **Start VM** **On error** **TimeOut** **Flow**

Server location

Local server
 Remote server

Server name:

Credential:

Virtual machine

[Copy Task Id](#)

Task 3/3

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

The Hyper-V - Stop VM Task allows you to stop a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

The Hyper-V - Pause VM Task allows you to pause a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Add Task - Pause VM - 3/3

Pause VM

The Hyper-V - Start VM allows you to pause a virtual machine that is hosted on a Hyper-V Management Server.

Main settings **Conditions** **Pause VM** **On error** **TimeOut** **Flow**

Server location

Local server
 Remote server

Server name:

Credential:

Virtual machine

[Copy Task Id](#)

Task 3/3

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

The Hyper-V - Suspend VM Task allows you to suspend a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

The Hyper-V - Resume VM Task allows you to resume a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Add Task - Resume VM - 3/3

Resume VM

The Hyper-V - Start VM allows you to resume a virtual machine that is hosted on a Hyper-V Management Server.

Main settings **Conditions** **Resume VM** **On error** **TimeOut** **Flow**

Server location

Local server

Remote server

Server name:

Credential:

Virtual machine

[Copy Task Id](#)

Task 3/3

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

The Hyper-V - Check VM Task allows you to determine the state of a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

The Hyper-V - Reset VM Task allows you to reset a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credentials in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

The Hyper-V - Create snapshot Task allows you to create a system snapshot of a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

Snapshot name

Enter the name of the snapshot. Click the *Refresh* icon to populate the drop-down list with available snapshots.

The Hyper-V - Apply snapshot Task allows you to apply an existing snapshot to a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Add Task - Apply snapshot - 3/3

Apply snapshot

The Hyper-V - Start VM allows you to apply a system snapshot of a virtual machine that is hosted on a Hyper-V Management Server.

Main settings | **Conditions** | **Apply snapshot** | **On error** | **TimeOut** | **Flow**

Server location

Local server
 Remote server

Server name:

Credential:

Virtual machine

Options

Snapshot name:

[Copy Task Id](#)

Variables | **Previous** | **Task 3/3** | **Next**

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

Snapshot name

Enter the name of the snapshot. Click the *Refresh* icon to populate the drop-down list with available snapshots.

The Hyper-V - Delete snapshot Task allows you to delete a system snapshot to a specific virtual machine hosted on a local or remote, Hyper-V Management Server.

Local/Remote server

Select the the *Local server* radio button if you want to control the local computer, select the *Remote server* radio button if you want to control a remote computer.

Server name

Host name of the remote server.

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Virtual machine

Enter the name of the virtual machine. Click the *Refresh* icon to populate the drop-down list with available virtual machines.

Snapshot name

Enter the name of the snapshot. Click the *Refresh* icon to populate the drop-down list with available snapshots.

A VMWare guest task is used for an individual guest operating system or numerous guest operating systems running on multiple virtual machines.

External library

The VMWare Tasks require download and install of the VMWare VIX API on the VisualCron server:

https://my.vmware.com/web/vmware/free#desktop_end_user_computing/vmware_player/5_0

In the VMWare Tasks you can connect to VMWare Workstation or Server depending on Task type. The Connection settings window is the same for all VMWare Task types.

The VMWare - Start VM Task starts (power on) a virtual machine.

Start VM > Connection sub tab

Add Task - Start VM - 3/3

Start VM
The VMWare - Start VM Task starts (power on) a virtual machine.

Main settings Conditions **Start VM** On error TimeOut Flow

Connection **VM Task settings**

Remote VMWare server

Connection
Choose connection

Server VMX path

Local VMWare workstation

Local VMX path

Guest OS Credentials
No Credential

Timeout in seconds (Timeout tab overrides)
180

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

Remote VMWare server

Press this radio button if you want to connect to a remote VMWare server like vSphere.

Connection

When connecting to a VMWare server you need to setup a VMWare Connection. Click the *Settings* icon to open the *Manage Connections* dialog.

Server VMX path

Path to the VMX file on the server. Click on the refresh button to reload the list with server VMX paths. Click the *Refresh* icon to populate the drop-down Server VMX path list.

Local VMWare workstation

Press this radio button if you want to connect to a local VMWare workstation.

Local VMX path

Select the local file VMX path to the local VMWare server. Click the *Folder* icon to display the folder of the server.

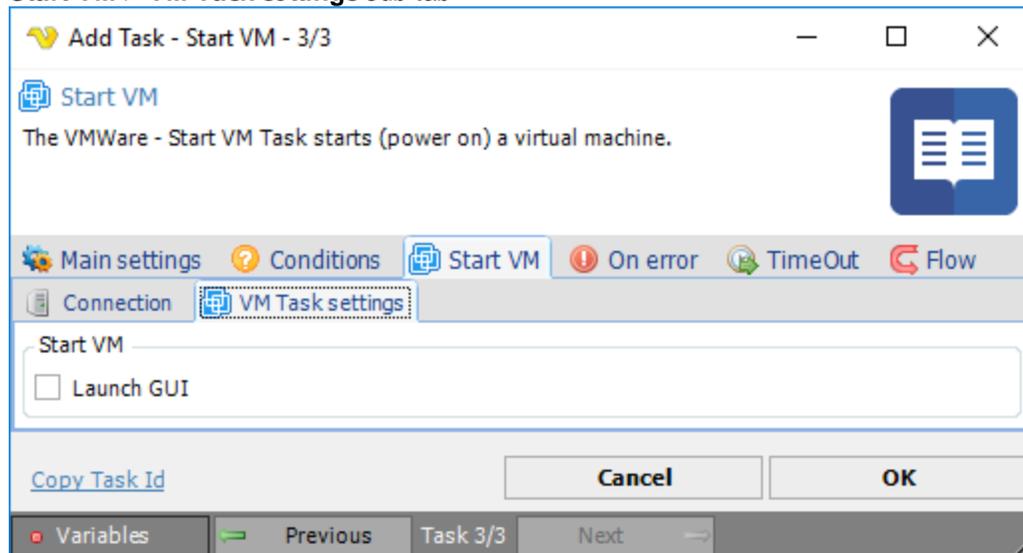
Guest OS Credentials

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Timeout in seconds

The number of seconds this Task will use to perform the Task. If you have a value in the Timeout tab of the Task it will override this value.

Start VM > VM Task settings sub tab



Launch GUI

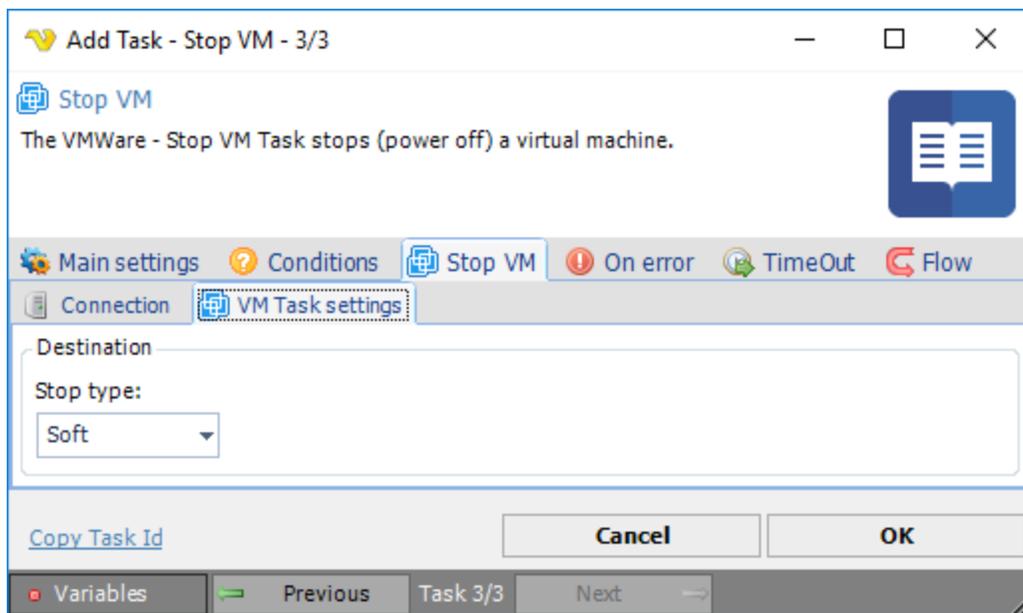
Displays the interface of the virtual machine in the VMWare workstation application.

The VMWare - Stop VM Task stops (power off) a virtual machine.

Stop VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Stop VM > VM Task settings sub tab



Stop type

Hard, soft or trysoft specifies the behavior of the power operation.

The VMWare - suspend VM Task suspends a virtual machine.

Suspend VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Suspend VM > VM Task settings sub tab

No specific settings.

The VMWare - Pause VM Task puts a virtual machine in pause mode.

Pause VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Pause VM > VM Task settings sub tab

No specific settings.

The VMWare - Resume VM Task resumes a paused virtual machine.

Resume VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Resume VM > VM Task settings sub tab

No specific settings.

The VMWare - Reset VM Task resets a virtual machine.

Reset VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Reset VM > VM Task settings sub tab*Stop type*

Hard, soft or trysoft specifies the behavior of the power operation.

The VMWare - Get VM status Task returns the current state of the virtual machine.

Get VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Get VM > VM Task settings sub tab

No specific settings.

The VMWare - Create VM snapshot Task creates a snapshot from the current state of the virtual machine.

Create snapshot > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Create snapshot > VM Task settings sub tab

Name

The name of the snapshot.

Description

The description of the snapshot.

Include memory

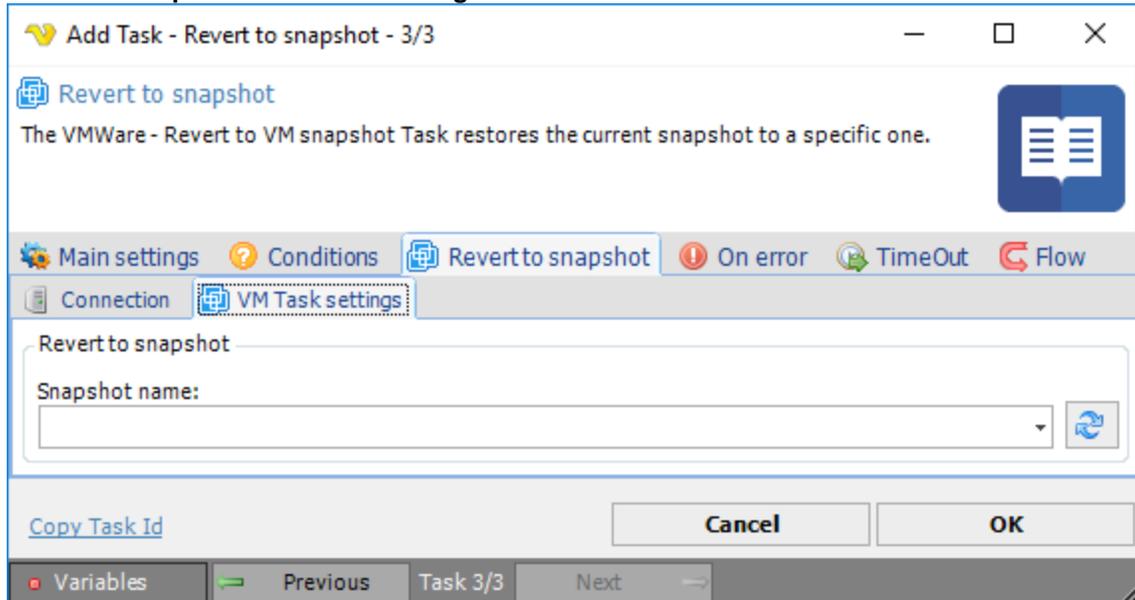
Captures the full state of a running virtual machine, including the memory.

The VMWare - Revert to VM snapshot Task restores the current snapshot to a specific one.

Revert to snapshot > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Revert to snapshot > VM Task settings sub tab



Snapshot name

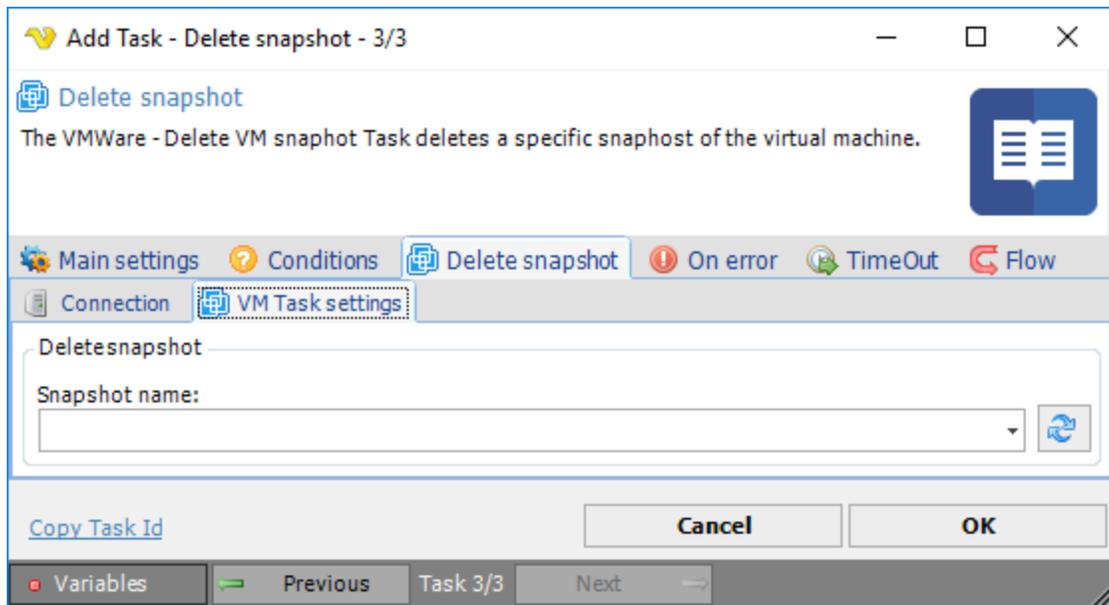
The name of the snapshot. Click the *Refresh* icon to populate the drop-down snapshot list.

The VMWare - Delete VM snapshot Task deletes a specific snapshot of the virtual machine.

Delete snapshot > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Delete snapshot > VM Task settings sub tab



Snapshot name

The name of the snapshot. Click the *Refresh* icon to populate the drop-down snapshot list.

The VMWare - List VM snapshots returns a list of existing snapshots of a virtual machine.

List snapshots > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

List snapshots > VM Task settings sub tab

No specific settings.

The VMWare - Delete VM Task lets you delete a virtual machine.

Delete VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Delete VM > VM Task settings sub tab

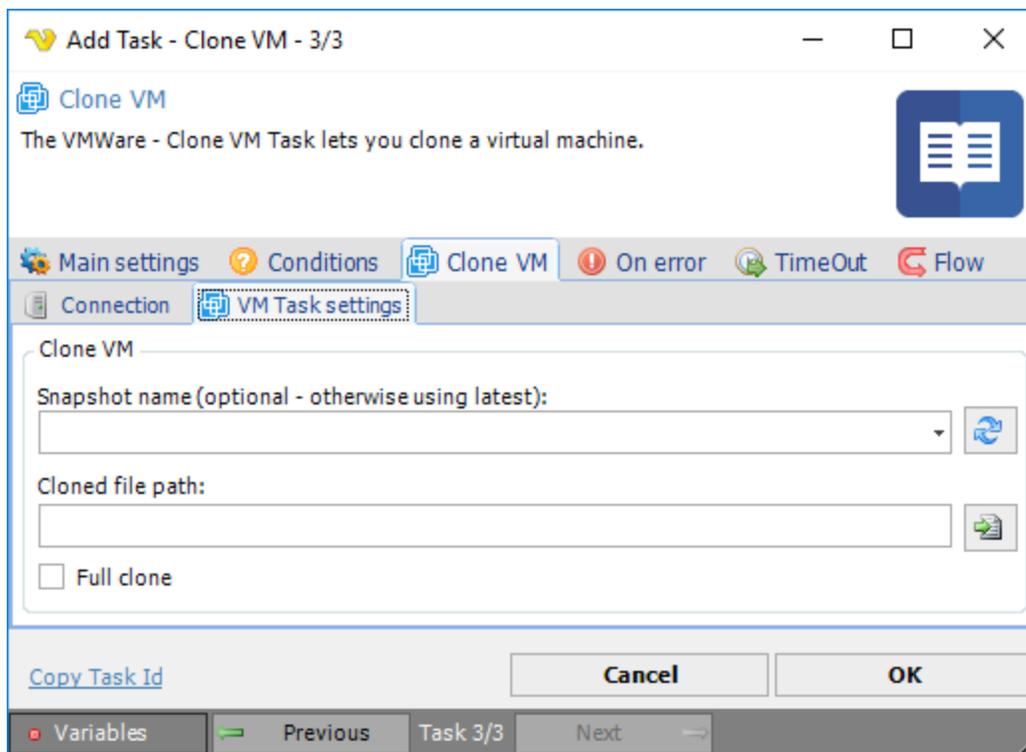
No specific settings.

The VMWare - Clone VM Task lets you clone a virtual machine.

Clone VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Clone VM > VM Task settings sub tab



Snapshot name

The name of the snapshot - if none specified the latest will be used. Click the *Refresh* icon to populate the drop-down snapshot name list.

Cloned file path

The path where the cloned file should be placed. Click the *Folder* icon to set folder for the cloned file.

Full clone

Full clone checked - creates a full, independent clone of the virtual machine.

Full clone unchecked - creates a linked clone, which is a copy of a virtual machine that shares virtual disks with the parent virtual machine in an ongoing manner. This conserves disk space as long as the parent and clone do not change too much from their original state.

The VMWare - Install tools Task installs the tools for the virtual machine.

Install tools > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Install tools > VM Task settings sub tab

No specific settings.

The VMWare - Register VM Task lets you register a virtual machine in the VMWare Server.

Register VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Register VM > VM Task settings sub tab

No specific settings.

The VMWare - Unregister VM Task lets you unregister a virtual machine in the VMWare Server.

Unregister VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

Unregister VM > VM Task settings sub tab

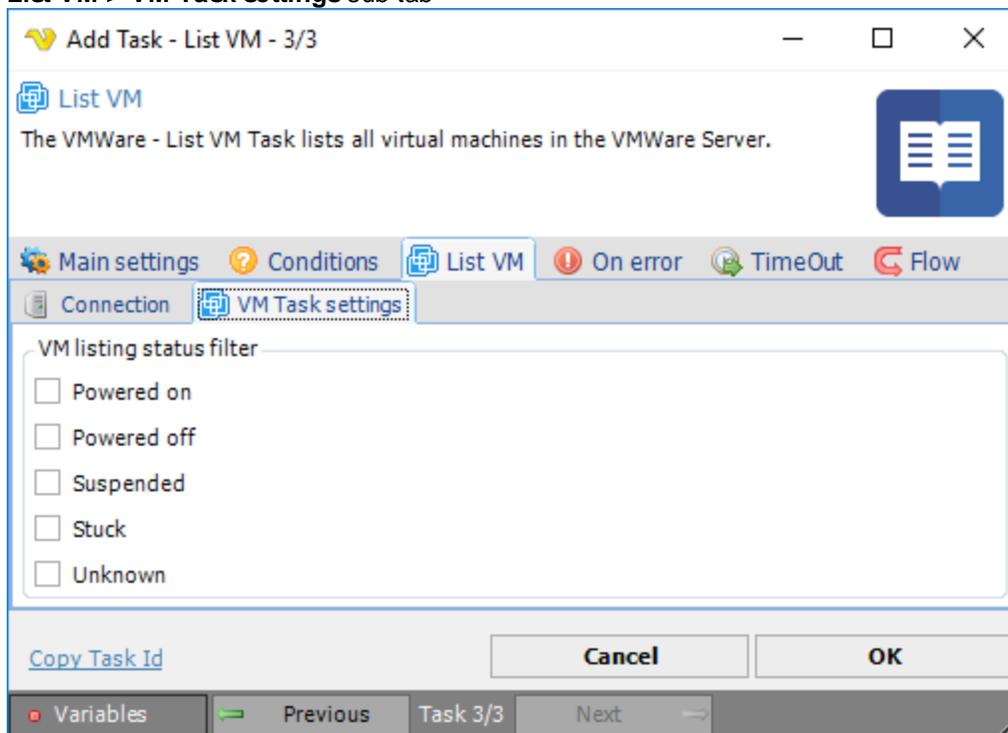
No specific settings.

The VMWare - List VM Task lists all virtual machines in the VMWare Server.

List VM > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

List VM > VM Task settings sub tab



VM listing status filter

Check applicable boxes for the desired filtered result.

The VMWare - Capture screen Task lets you take a screenshot in the guest operating system.

[Guest] Capture screen > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Capture screen > VM Task settings sub tab

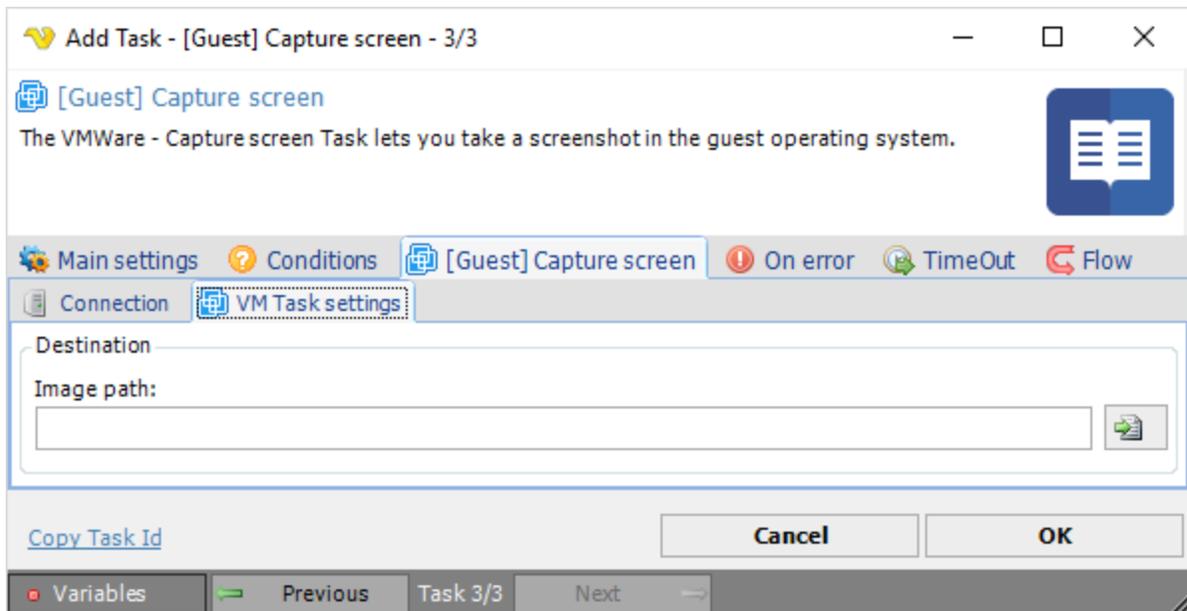


Image path

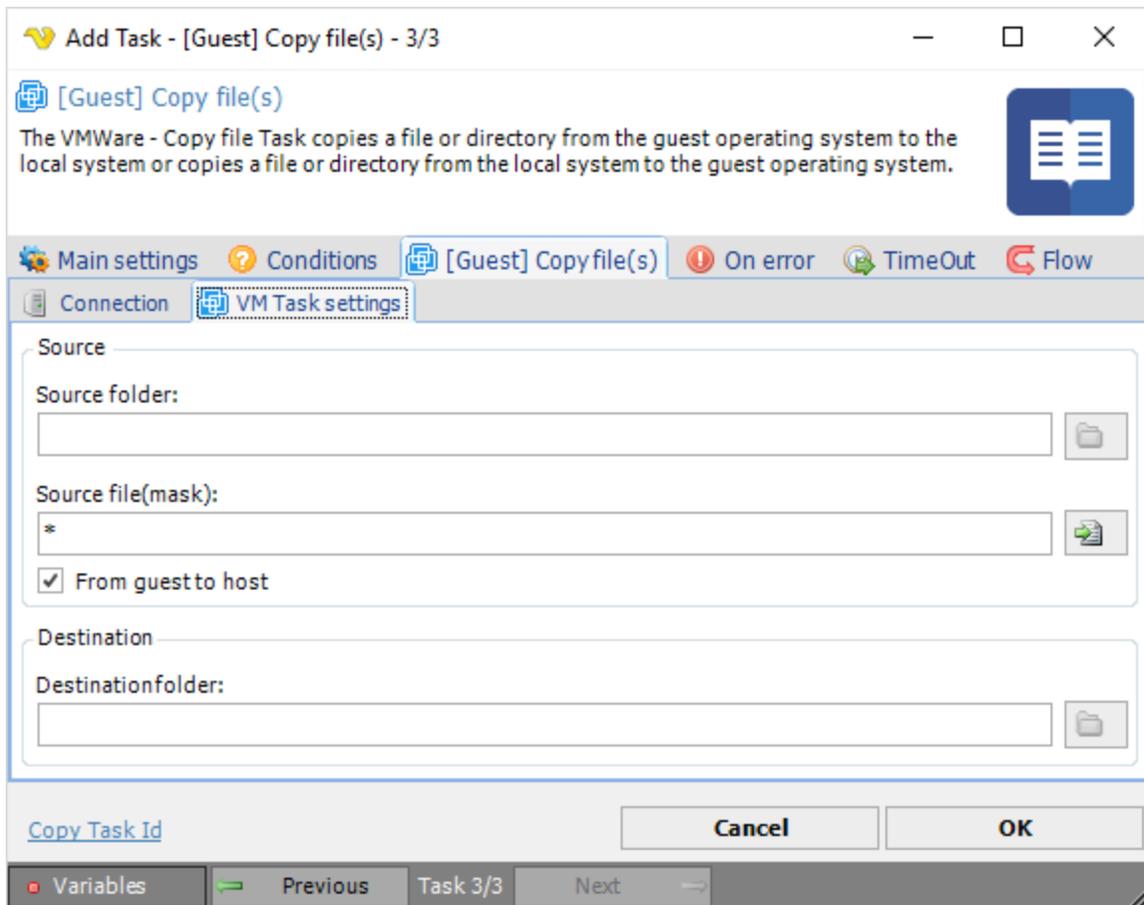
Full path to the image (png) file where the captured screen should be saved to. Click the *Folder* icon to browse folders and select a folder.

The VMWare - Copy file Task copies a file or directory from the guest operating system to the local system or copies a file or a directory from the local system to the guest operating system.

[Guest] Copy file(s) > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Copy file(s) > VM Task settings sub tab



Source folder

The folder you want to copy files from. Click the *Folder* icon to browse folders and select a folder.

Source file (mask)

File mask or name of file you want to copy. Click the *File* icon to browse file according to file mask and select a file.

From guest to host

Which direction the file should be copied. By default it is copying from the guest to host.

Destination folder

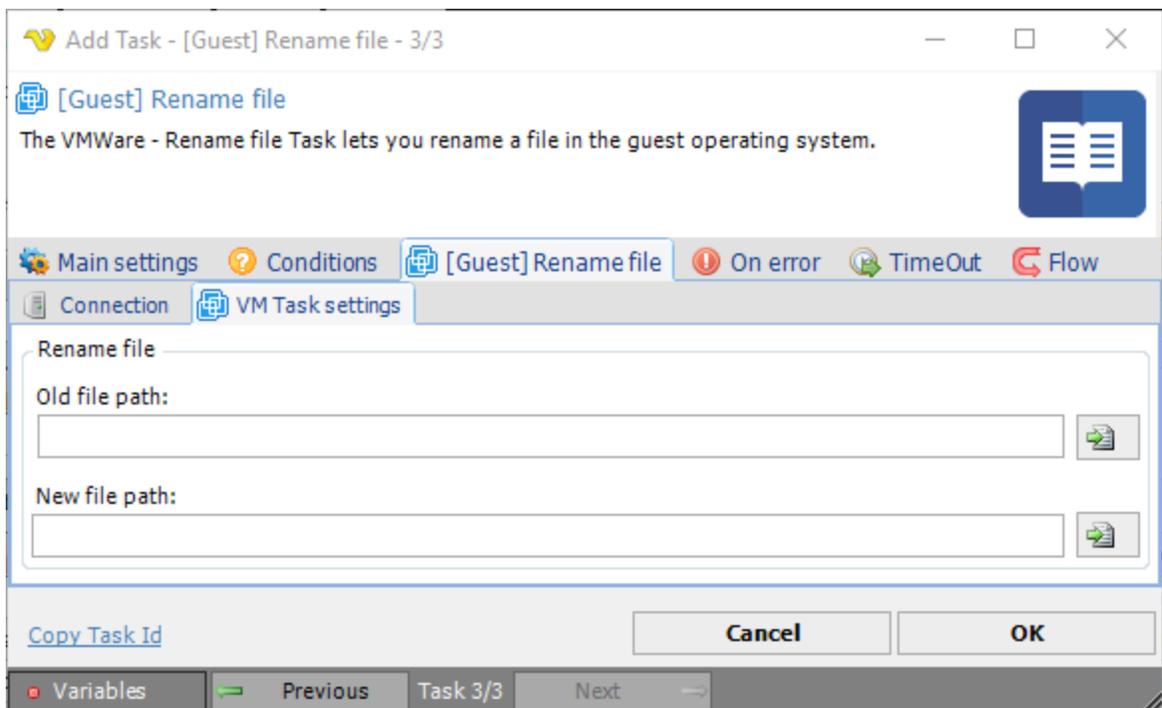
The folder you want to copy files to. Click the *Folder* icon to browse folders and select a folder.

The VMWare - Rename file Task lets you rename a file in the guest operating system.

[Guest] Rename file > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Rename file > VM Task settings sub tab



Old file path

Old full path of file you want to rename. Click the *File* icon to browse and select an old file.

New file path

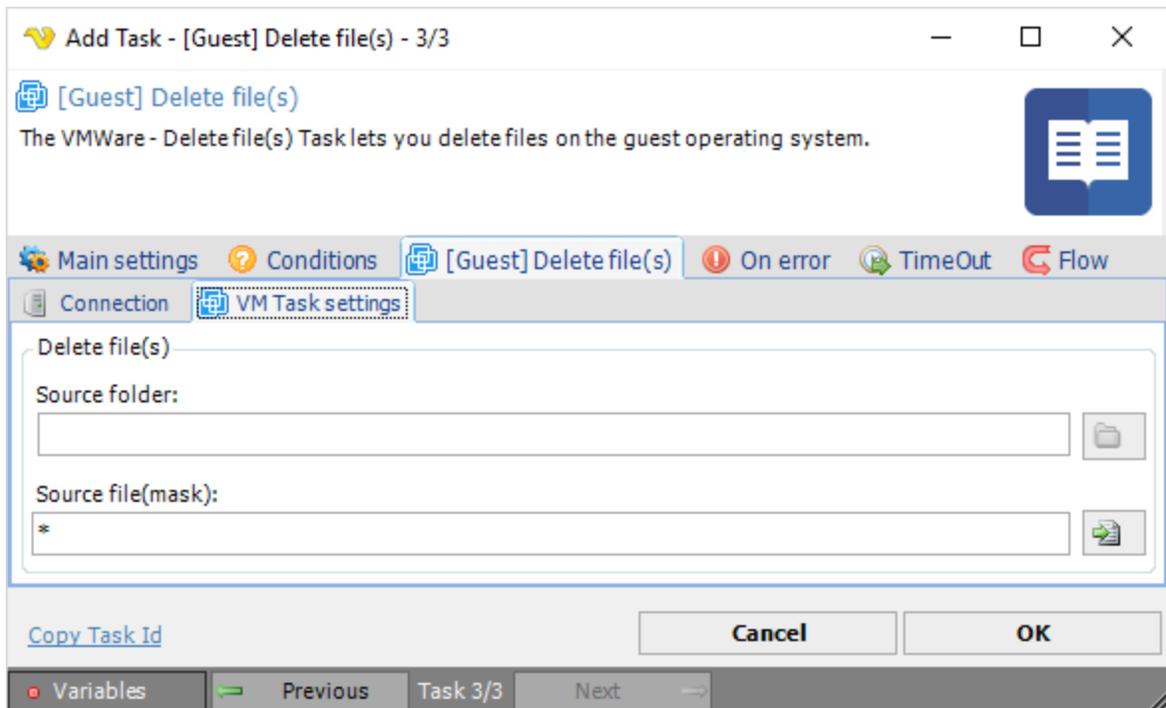
New full path of file you want to rename. Click the *File* icon to browse and save with a new file name.

The VMWare - Delete file(s) Task lets you delete files on the guest operating system.

[Guest] Delete file(s) > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Delete file(s) > VM Task settings sub tab



Source folder

The folder you want to delete files from. Click the *Folder* icon to browse folders.

Source file (mask)

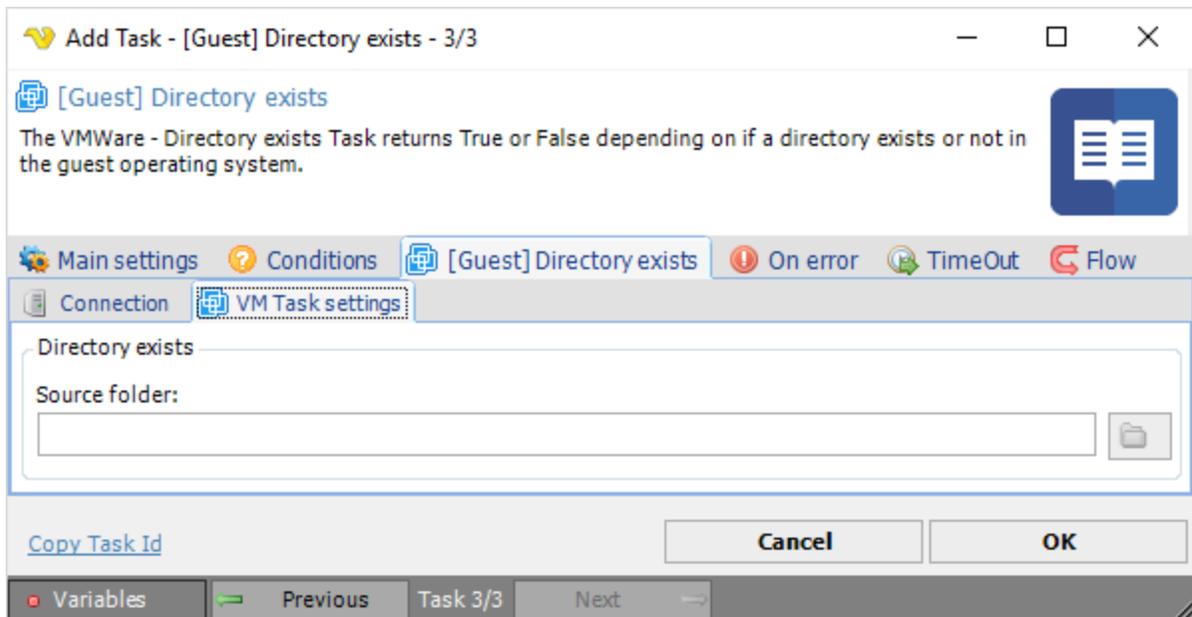
File mask or name of file you want to delete. Click the *File* icon to browse files according to file mask and select file(s) to be deleted.

The VMWare - Directory exists Task returns True or False depending on if a directory exists or not in the guest operating system.

[Guest] Directory exists > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Directory exists > VM Task settings sub tab



Source folder

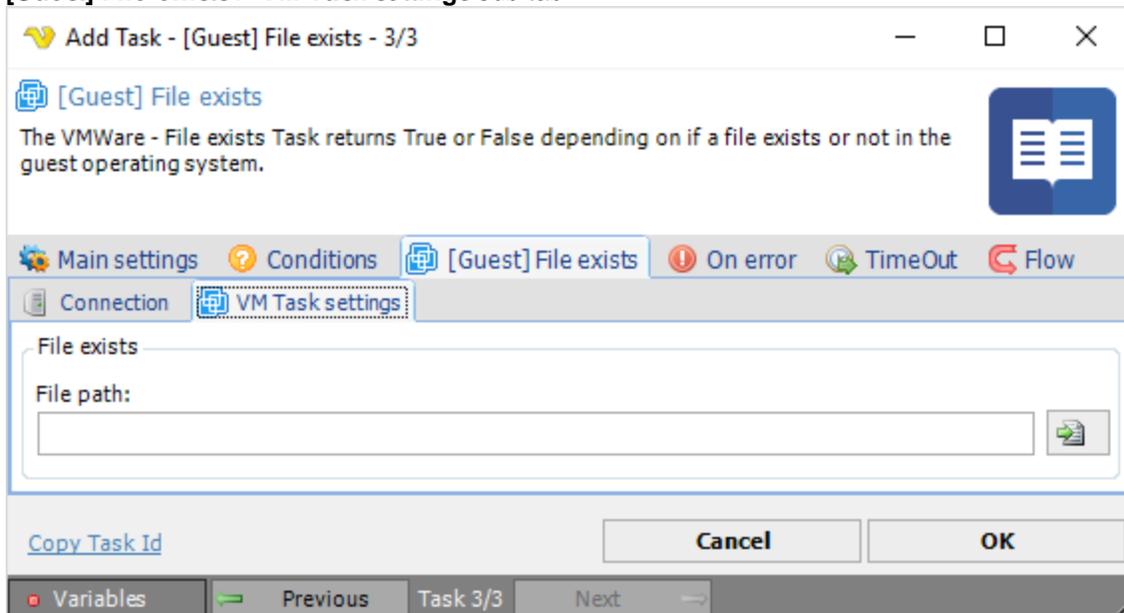
The folder you want to check if existing. Click the *Folder* icon to browse folders.

The VMWare - File exists Task returns True or False depending on if a file exists or not in the guest operating system.

[Guest] File exists > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] File exists > VM Task settings sub tab



File path

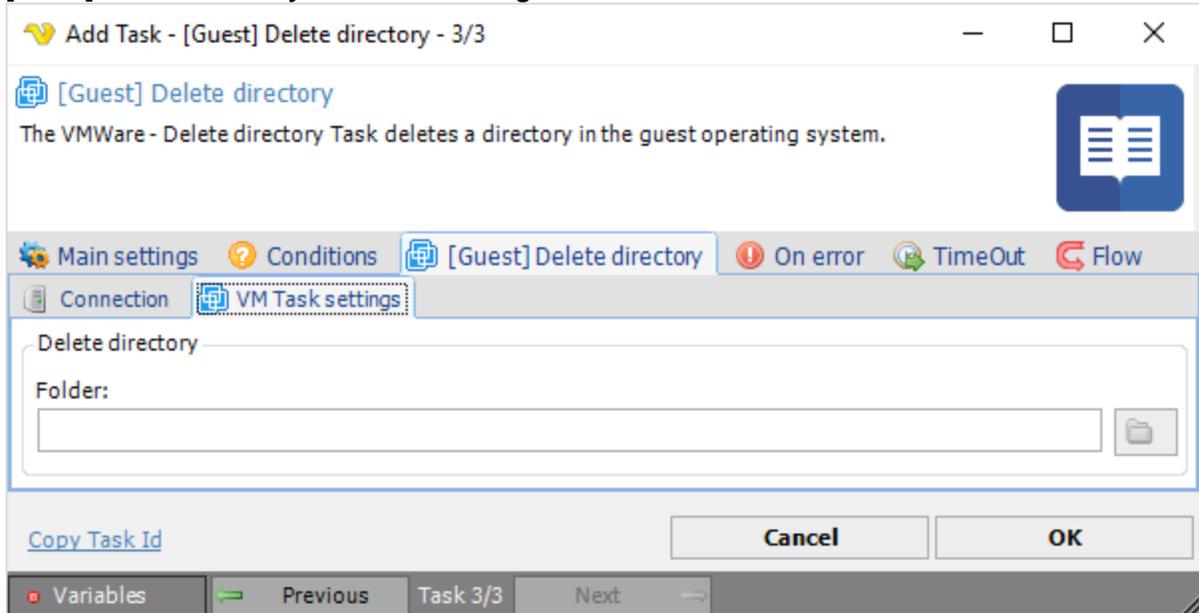
The full path to file you want to check if existing. Click the *File* icon to browse files.

The VMWare - Delete directory Task deletes a directory in the guest operating system.

[Guest] Delete directory > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Delete directory > VM Task settings sub tab



Folder

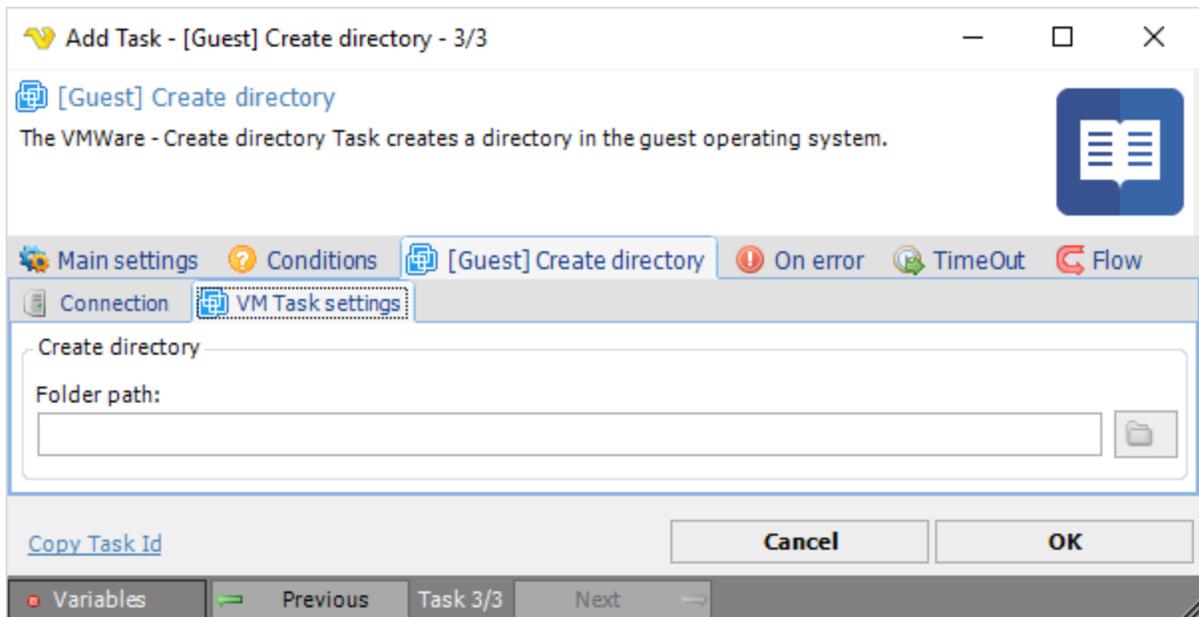
The folder you want to delete. Click the *Folder* icon to browse folders.

The VMWare - Create directory Task creates a directory in the guest operating system.

[Guest] Create directory > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Create directory > VM Task settings sub tab



Folder

The folder you want to create. Click the *Folder* icon to browse folders.

The VMWare - Create temp file Task creates a temporary file in the guest operating system and returns the full file path to the Task output.

[Guest] Create temp file > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Create temp file > VM Task settings sub tab

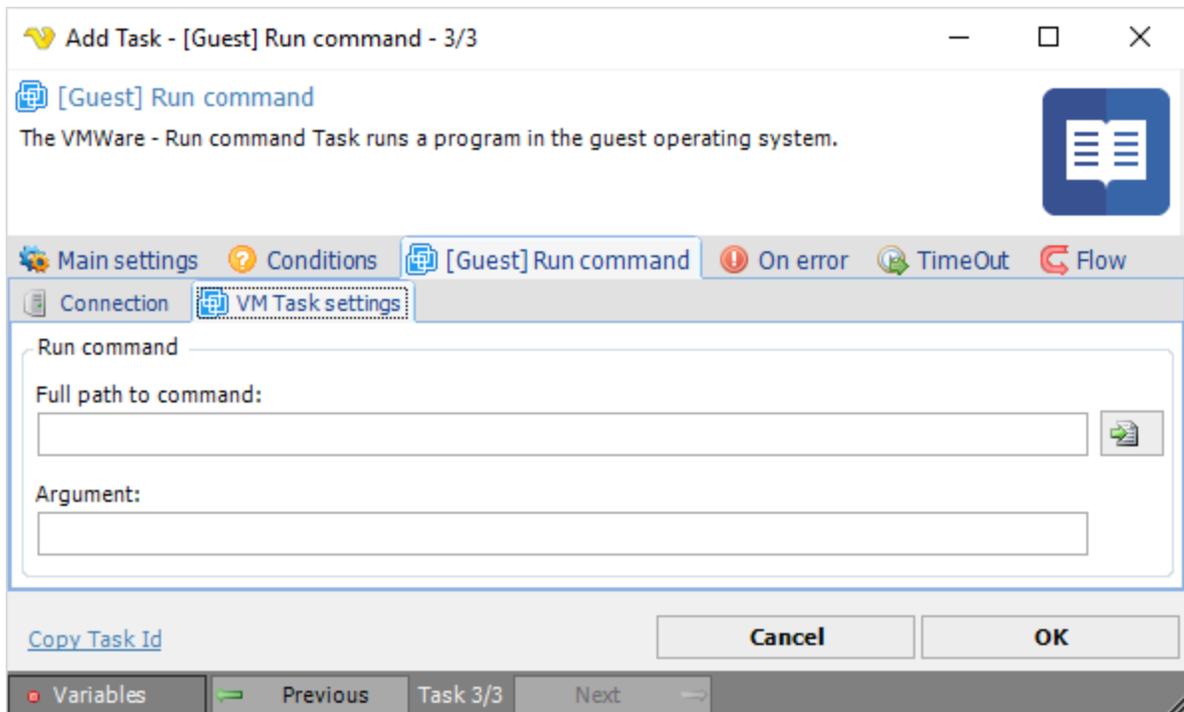
No specific settings.

The VMWare - Run command Task runs a program in the guest operating system.

[Guest] Run command > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Run command > VM Task settings sub tab



Full path to command

The full path to executable/batch file/etc. Click the *File* icon to browse files and select a command file.

Argument

The argument for the command.

The VMWare - Open URL Task opens an URL on the guest operating system.

[Guest] Open URL > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Open URL > VM Task settings sub tab

Add Task - [Guest] Open URL - 3/3

[Guest] Open URL

The VMWare - Open URL Task opens an URL on the guest operating system.

Main settings Conditions **[Guest] Open URL** On error TimeOut Flow

Connection **VM Task settings**

Open URL

URL:

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

URL

The URL you want to open.

The VMWare - Kill process Task lets you kill processes in the guest operating system.

[Guest] Kill process(es) > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] Kill process(es) > VM Task settings sub tab

Add Task - [Guest] Kill process(es) - 3/3

[Guest] Kill process(es)

The VMWare - Kill process Task lets you kill processes on the guest operating system.

Main settings Conditions **[Guest] Kill process(es)** On error TimeOut Flow

Connection **VM Task settings**

Kill process(es)

Process name:

Process Id:

Copy Task Id Cancel OK

Variables Previous Task 3/3 Next

Process name

The name of the process you want to kill. Click the *Refresh* icon to populate the drop-down list with active process names.

Process Id

The process id of the process you want to kill. Click the *Refresh* icon to populate the drop-down list with active process IDs.

The VMWare - List process(es) Task lets you list processes in the guest operating system and returns the process list to the Task output.

[Guest] List process(es) > Connection sub tab

The Connection settings window is the same for all VMWare Task types. See Start VM for details.

[Guest] List process(es) > VM Task settings sub tab

No specific settings.

Microsoft Message Queuing or MSMQ is a message queue implementation developed by Microsoft and deployed in its Windows Server operating systems since Windows NT 4 and Windows 95. Windows Server 2016 and Windows 10 also includes this component.

The MSMQ - Send message Task sends a message to the specified queue.

Add Task - MSMQ - Send message - 3/3

MSMQ - Send message
The MSMQ - MSMQ Send Task sends a message to the specified queue.

Main settings **Conditions** **MSMQ - Send message** **On error** **TimeOut** **Flow**

Scope

Credential:
No Credential

Local MSMQ
 Remote MSMQ

Host name:

Queue

Message

Label:

Message:

[Copy Task Id](#) **Cancel** **OK**

Variables **Previous** **Task 3/3** **Next**

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local MSMQ

Select this radio button if the activity will be performed on the local computer.

Remote MSMQ

Select this radio button if the activity will be performed on the remote computer.

Host name

The host name or IP address of the remote computer.

Queue

The name of the queue to retrieve the message from. Click the *Refresh* icon to populate the drop-down list of message queue names.

Label

The label of the text message to be sent.

Message

The text message to be sent.

The MSMQ - Delete message Task deletes messages from a specified queue.

The screenshot shows a dialog box titled "Add Task - MSMQ - Delete message(s) - 3/3". The main title is "MSMQ - Delete message(s)" with a description: "The MSMQ - MSMQ Send Task deletes messages from a specified queue." The dialog has several tabs: "Main settings", "Conditions", "MSMQ - Delete message(s)", "On error", "TimeOut", and "Flow".

Scope

- Credential: [gear icon]
- Local MSMQ
- Remote MSMQ
- Host name:

Queue

- [refresh icon]

Filters

- Label filter
 - Equal (=) [red dot]
- Messagefilter
 - Equal (=) [red dot]
- Date filter
 - Smaller than (<) [red dot]
- Limit and sort direction of date
 - Ascending [red dot]

Buttons: [Copy Task Id](#), **Cancel**, **OK**

Footer: Variables, Previous, Task 3/3, Next

Credential

To control a remote computer you may need to use a Credential. The Credential must match the user name and password of the user that you want to login for. Select a Credential in the combo box or click the *Settings* icon to open *Manage credentials* in order to add or edit Credentials.

Local MSMQ

Select this radio button if the activity will be performed on the local computer.

Remote MSMQ

Select this radio button if the activity will be performed on a remote computer.

Host name

The host name or IP address of the remote computer.

Queue

The name of the queue to retrieve the message from. Click the *Refresh* icon to populate the drop-down list of message queue names.

Filters

The filter settings for label, message text, date and sort direction of date to be used for deletion. Click on the *Variables* icons to select appropriate variables for the filter.

The Portable Document Format (PDF) is a file format used to present documents in a manner independent of application software, hardware, and operating systems.

The PDF - Add footer/header Task lets you add an object like image or text in footer or header to a new or existing PDF file.

Add footer/header > Main settings sub tab

Add Task - PDF - Add footer/header - 3/3

PDF - Add footer/header

The PDF - Add header/footer Task lets you an object like image or text in header or footer of new or existing PDF file.

Main settings Conditions PDF - Add footer/header On error TimeOut Flow

Main settings File filter Text

PDF location

Existing file
 New file

Password:

Vertical alignment

Footer Is background

Content type

Text

Page range

All pages
 Pages

Enter page number or page range 2-4, for example

Save to..

Same file
 Same folder but use file mask
 Different folder and use file mask

Folder:

File mask:

[Copy Task Id](#) **Cancel** **OK**

Variables Previous Task 3/3 Next

Existing/New file

Select *Existing* or *New* PDF file to operate upon, if new file enter file name. Click the *File* icon to browse location and file name for the PDF file.

Password

If the file is or will be password protected, enter password.

Vertical alignment

Select Header, Footer or Center vertical alignment of the image or text to be added. The *Is background* puts the image or text in the background of the document.

Content type

Select the *Text* or *Image* type

Page range

Set the operation to be performed on *All pages* or a range of pages.

Save to

The destination folder and file mask which the image is saved to.

Folder

If *Different folder and use file mask* is selected, click the *Folder* icon to browse and select folder.

File mask

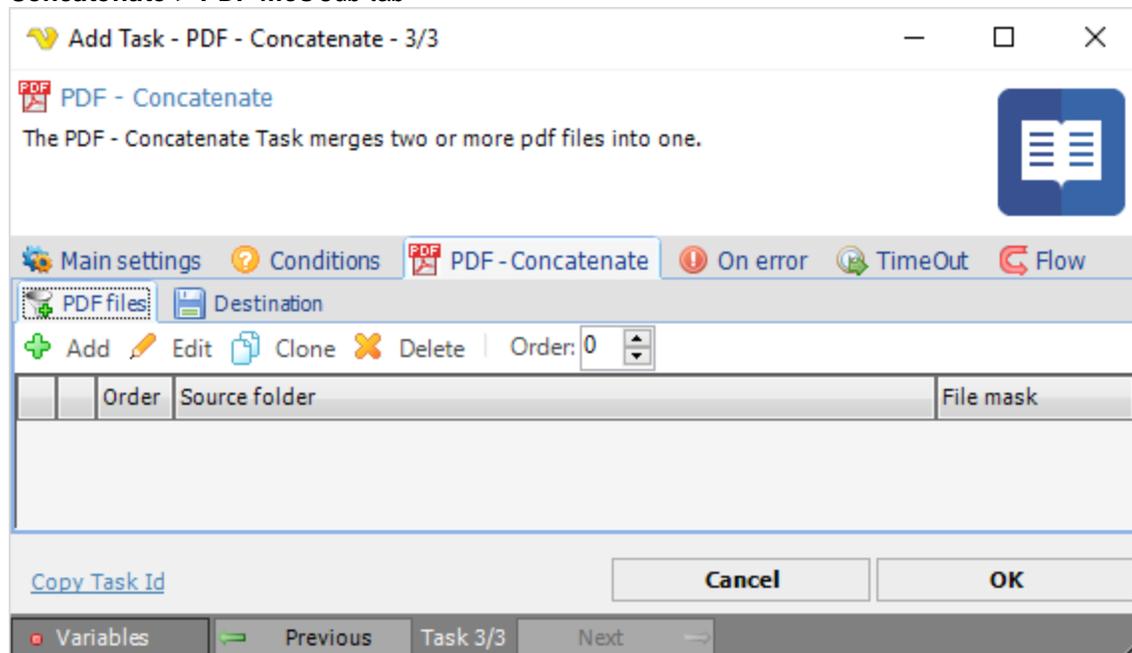
Save file with different name.

Add footer/header > File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

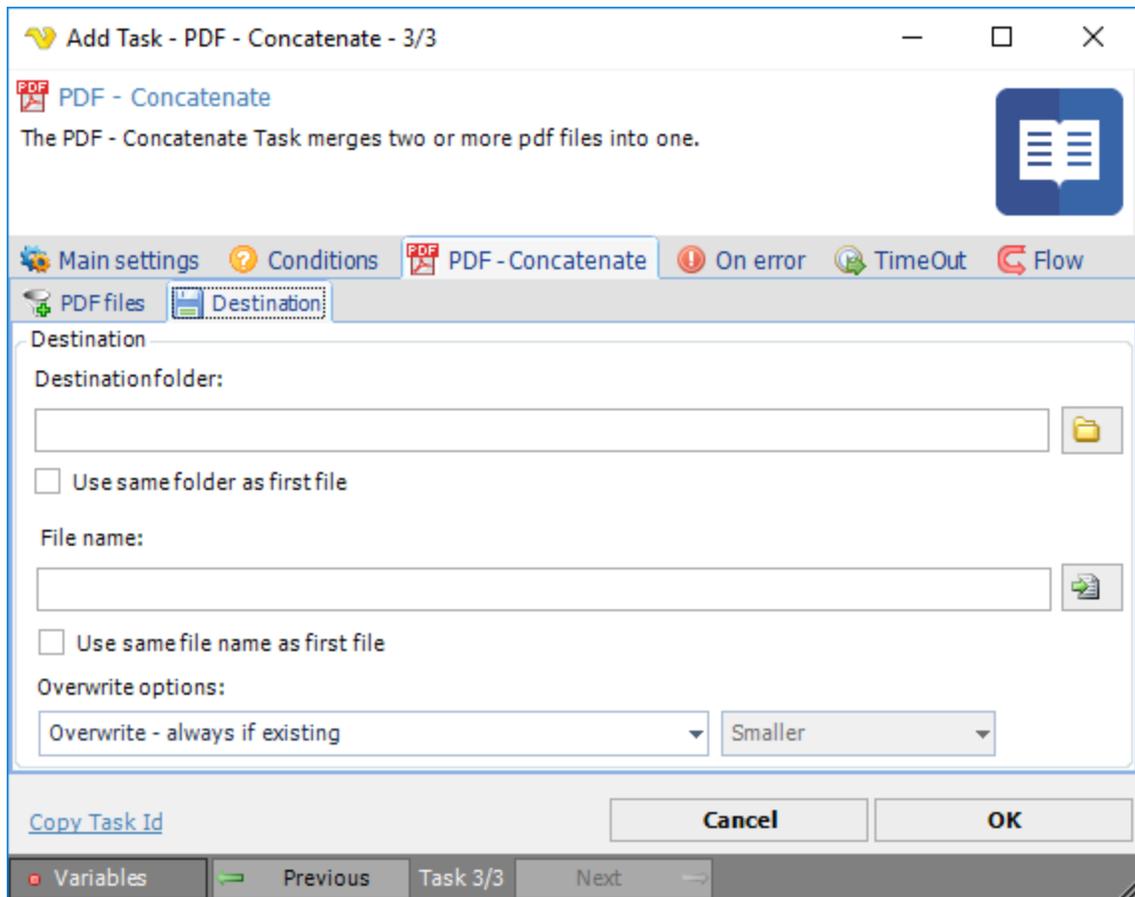
The PDF - Concatenate Task merges two or more files into one.

Concatenate > PDF files sub tab



In the PDF files tab you control which pdf files you want to concatenate and which order they should be added. Click the *Add* icon to select files using multiple File filters.

Concatenate > Destination sub tab



Destination folder

The folder the new file should be stored in. Can be overridden by option *Use same folder as first file*. Click the *Folder* icon to browse and select a folder.

Use same folder as first file

When checking this you use the folder from the first file that was found (in File filter - item 1).

File name

Name of the concatenated file - can be overridden by option *Use same file name as first file*.

Use same file name as first file

When checking this you use the file name from the first file that was found (in File filter - item 1).

Overwrite options

If a file exists you can choose Overwrite based on various criteria.

The PDF - Split Task is able to split a PDF document in half, at a specific page or per specific pages or into even/odd pages.

Split > Main settings sub tab

Add Task - PDF - Split - 1/1

PDF - Split
The PDF - Split Task splits pdf file into separate files by page.

Main settings | Conditions | PDF - Split | On error | TimeOut | Flow

Main settings | File filter | Destination

Split ...

Split type: **Page**

Page number: 2

Page name format: -Page {#}

Password for file(s)

Page range

All pages
 Pages

1

Enter page number or page range 2-4, for example

[Copy Task Id](#) Cancel OK

Variables | Previous | Task 1/1 | Next

Split type

How the pages should be split. The available options are:

Half - The document will be split in half (or as close to half as possible) determined by the total number of pages in the document. The output files will consist of the original filename followed by the range of pages that were split enclosed in parenthesis (i.e. myDocument (1-4).pdf, myDocument (5-7).pdf)

Page (default) - The document will be split into individual pages. The output files will consist of the original filename followed by an underscore and page number (i.e. myDocument - Page 1.pdf, myDocument - Page 2.pdf, myDocument - Page 3.pdf, etc).

Even / Odd - The document will be split into even and odd pages. The output files will consist of the original filename followed by the page type, either even or odd (i.e. myDocument_Even_Pages.pdf and myDocument_Odd_Pages.pdf).

At - The document will be split at the page specified. The output files will consist of the original filename followed by the range of pages that were split enclosed in parenthesis (i.e. myDocument (1-2).pdf, myDocument (3-6).pdf).

Page number

The page number the actual split should occur on. This property is only used if the *Split type* is of type *Split at*.

Page name format

How the output files should be named. Variable {#} contains the page number.

Password for file(s)

If any of the specified PDF files contains a password it should be entered here.

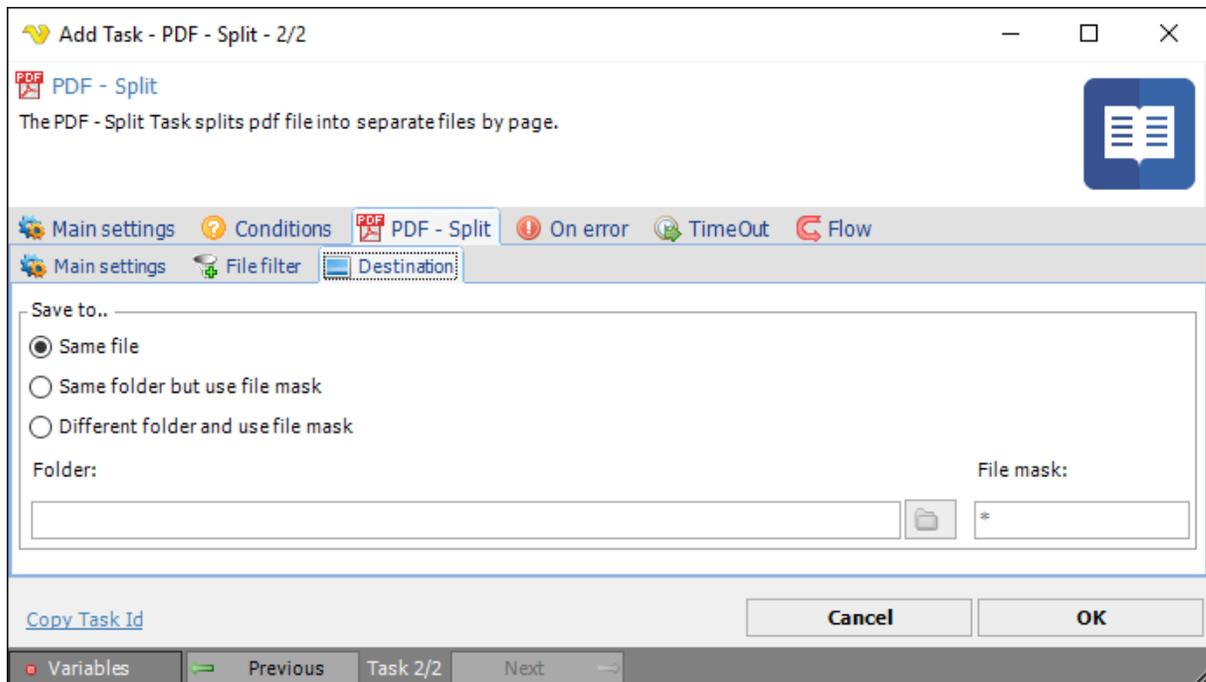
Page range

All pages - cover split functionality on all pages

Pages - cover split functionality on specified page

Split > File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

Split > Destination sub tab*Save to*

The destination folder and file mask which the document is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The PDF - Remove page(s) Task deletes one or more specified pages from a PDF document.

Remove page(s) > Main settings sub tab

Add Task - PDF - Remove page(s) - 2/2

PDF - Remove page(s)
The PDF - Remove pages Task deletes the pages from a pdf file.

Main settings | **Conditions** | **PDF - Remove page(s)** | **On error** | **TimeOut** | **Flow**

Main settings | **File filter** | **Destination**

Password for file(s)

Page range

Enter page number or page range 2-4, for example

[Copy Task Id](#) **Cancel** **OK**

Variables Previous Task 2/2 Next

Password for file(s)

If any of the specified PDF files contains a password it should be entered here.

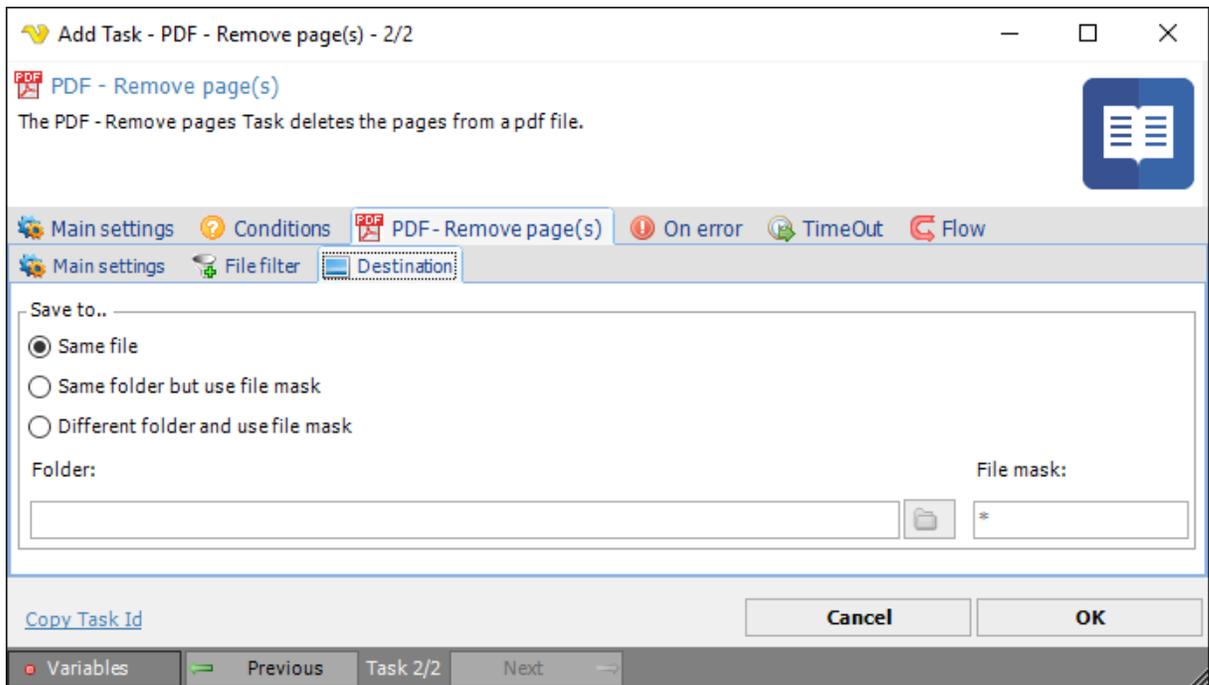
Page range

The pages that should be removed. Specify a range like 2-4 or specific pages 1,3,5-6.

Remove page(s) > File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

Remove page(s) > Destination sub tab



Save to

The destination folder and file mask which the document is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The PDF - Get information Task retrieves PDF information in a specified format.

Get information > Main settings sub tab

The screenshot shows the 'Add Task - PDF - Get information - 2/2' dialog box. The title bar includes a yellow bird icon, the text 'Add Task - PDF - Get information - 2/2', and standard window controls. Below the title bar, there is a PDF icon and the text 'PDF - Get information' and 'The PDF - Get Information Task gets information a pdf file.' A blue icon of an open book is on the right. A horizontal menu contains 'Main settings', 'Conditions', 'PDF - Get information', 'Output', 'On error', 'TimeOut', and 'Flow'. Below this, a sub-menu shows 'Main settings' and 'File filter'. A text input field is labeled 'Password for file(s)'. At the bottom, there is a 'Copy Task Id' link, 'Cancel' and 'OK' buttons, and a navigation bar with 'Variables', 'Previous', 'Task 2/2', and 'Next'.

Password for file(s)

If any of the specified PDF files contains a password it should be entered here

Get information > File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

Output tab

The screenshot shows the 'Add Task - PDF - Get information - 2/2' dialog box, now on the 'Output' tab. The title bar and top section are identical to the previous screenshot. The horizontal menu now has 'Output' selected. The sub-menu shows 'Main settings' and 'File filter'. The 'Output settings' section contains: an unchecked checkbox for 'Include field names'; 'Field separator:' with a dropdown menu set to 'Tab'; 'Text qualifier:' with an empty dropdown menu; 'Line break:' with a dropdown menu set to 'CrLf'; and 'Show information:' with a dropdown menu showing 'CreationDate,ModificationDate,Producer,Subject,Author,Title,PagesCount,Version'. At the bottom, there is a 'Copy Task Id' link, 'Cancel' and 'OK' buttons, and a navigation bar with 'Variables', 'Previous', 'Task 2/2', and 'Next'.

Include field names

If the columns should be included in the output or not.

Field separator

Here you can control what separates each field.

Text qualifier

The text qualifier is the parts surrounding a field. Normally nothing which is default.

Line break

Controls what type of line break should be used.

Show information

The data from the document you want to include in output of Task.

The PDF - Convert Task can convert between different file formats and the PDF format.

Main settings sub tab

To PDF->From

Currently this Task can convert **_to_** PDF from the following formats;

- XPS
- PCL

- SVG
- EPUB
- MHT
- HTML
- TeX
- TXT
- CGM
- XML
- IMAGE (various formats)

From PDF->To

Currently this Task can convert **_from_** PDF to the following formats;

- PDF (various formats)
- HTML
- DOC
- XLS
- PPT
- XPS
- XML
- TeX
- TXT
- SVG
- EPUB
- IMAGE (various formats)

Password for file(s)

If any of the specified PDF files contains a password it should be entered here

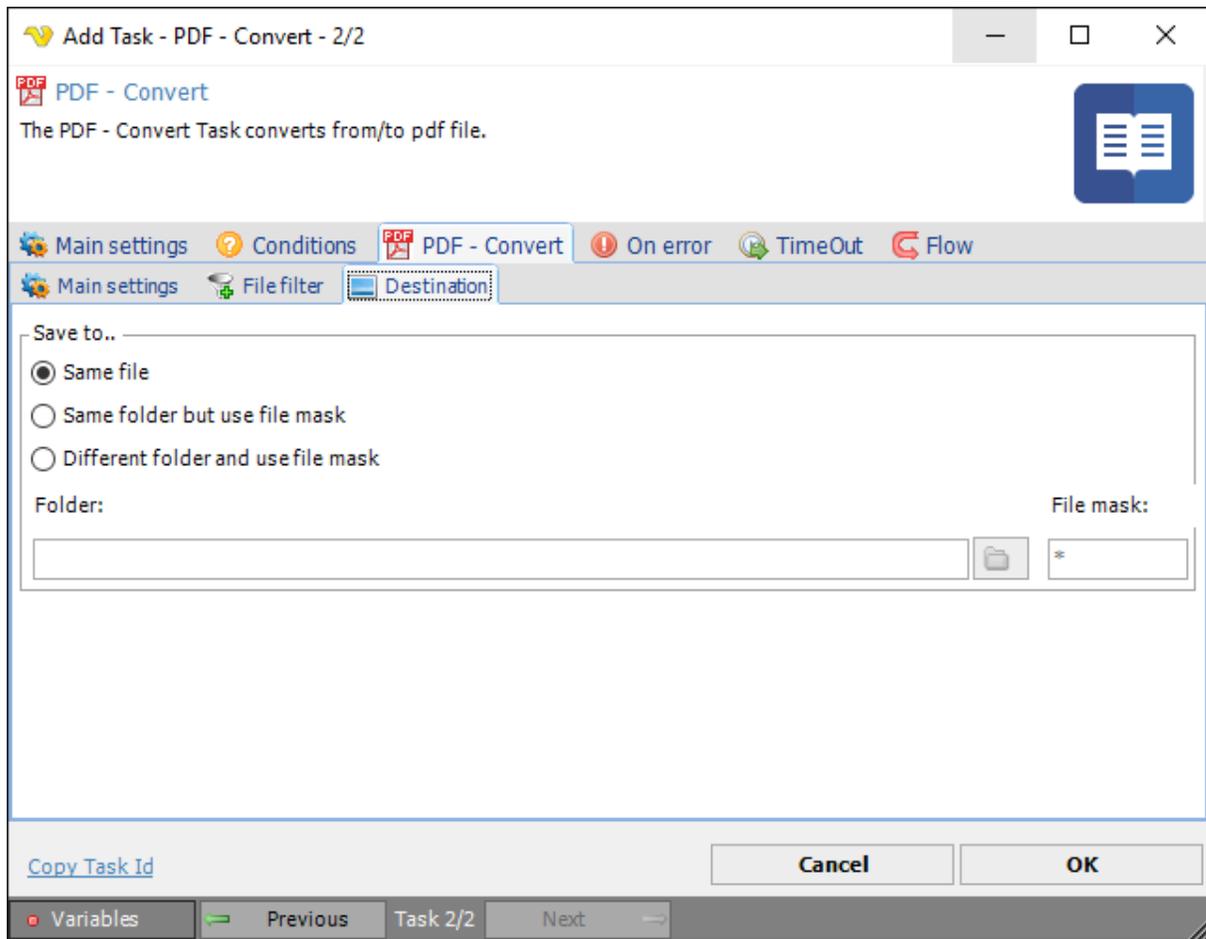
Page range

The pages that should be converted. Specify a range like 2-4 or specific pages 1,3,5-6.

File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

Destination sub tab



Save to

The destination folder and file mask which the document is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The PDF - Get field(s) Task returns value(s) from a PDF document based on field name(s).

Main settings sub tab

Fields grid

Enter the name of the fields you want to retrieve. In the Output tab you control which value(s) of the field you want to retrieve. To delete a field select a row and press the Delete button.

Get field names

You are able to retrieve existing field names from one or more documents according to the file filter. Be sure to specify the document(s) in the file filter.

Password for file(s)

If any of the specified PDF files contains a password it should be entered here

Page range

The pages that should be processed. Specify a range like 2-4 or specific pages 1,3,5-6.

File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

Output tab

Add Task - PDF - Get field(s) - 2/2

PDF - Get field(s)
The PDF - Get Field(s) Task gets the form field infos in a pdf file.

Main settings Conditions PDF - Get field(s) **Output** On error TimeOut Flow

Output settings

Include field names

Field separator: Tab

Text qualifier:

Line break: CrLf

Show field infos: Name,Type,PageNumber,Left,Top,Width,Height,Length,Value,ReadOnly,Required

[Copy Task Id](#) Cancel OK

Variables Previous Task 2/2 Next

Include field names

If the columns should be included in the output or not.

Field separator

Here you can control what separates each field.

Text qualifier

The text qualifier is the parts surrounding a field. Normally nothing which is default.

Line break

Controls what type of line break should be used.

Show information

The data from the document you want to include in output of Task.

The PDF - Set field(s) Task set field value(s) in one or more PDF documents.

Main settings sub tab

Add Task - PDF - Set field(s) - 3/3

PDF - Set field(s)
The PDF - Set Field(s) Task enters a value into one or more form fields in a pdf file.

Main settings Conditions PDF - Set field(s) On error TimeOut Flow

Main settings File filter Destination

Field values ...

Name	Value
* [Dropdown: Address 1 Text Box (Text)]	Long Road 11
Address 2 Text Box (Text)	
City Text Box (Text)	
Country Combo Box (ComboBox)	
Driving License Check Box (CheckBox)	
Family Name Text Box (Text)	
Favourite Colour List Box (ComboBox)	
Gender List Box (ComboBox)	

Page range

All pages
 Pages

Enter page number or page range 2-4, for example

[Copy Task Id](#) Cancel OK

Variables Previous Task 3/3 Next

Fields grid

Enter the name of the fields and their values you want to set here. You can retrieve all existing fields by pressing *Get field names*. To delete a field select a row and press the Delete button.

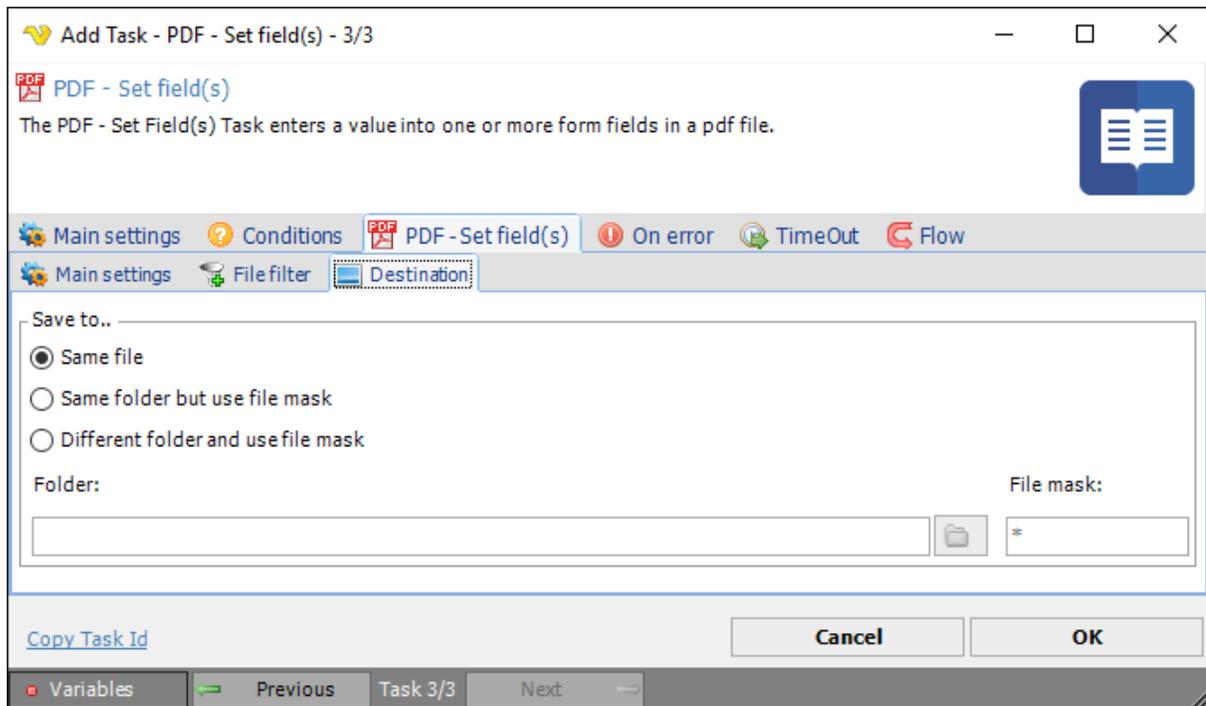
Password for file(s)

If any of the specified PDF files contains a password it should be entered here

Page range

The pages that should be processed. Specify a range like 2-4 or specific pages 1,3,5-6.

Destination sub tab



Save to

The destination folder and file mask which the document is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The PDF - Encrypt Task encrypts existing PDF files with a password or a Certificate.

Encrypt > Main settings sub tab

Add Task - PDF - Encrypt - 3/3

PDF - Encrypt
The PDF - Encrypt Task encrypts pdf file

Main settings | Conditions | PDF - Encrypt | On error | TimeOut | Flow

Main settings | File filter | Destination

Encrypt by ...

Certificate

Certificate: [Dropdown] [Settings]

Password

Owner password: [Text Field]

Userpassword: [Text Field]

Permissions: [Dropdown: Annotations, Assemble, Extract, ExtractAcc, FillInForms, HighQualityPrint, LowQualityPrint, Modify]

Encrypt algorithm: [Dropdown: AES/256 bits (Acrobat X)]

Encrypt metadata

[Copy Task Id](#) [Cancel] [OK]

Variables | Previous | Task 3/3 | Next

Certificate

Select an existing Certificate you have created/imported in Certificates manager.

Password->Owner password

Use this property to specify owner password.

Password->User password

Use this property to specify user password.

Password->Permissions

Use this property to specify user rights (permissions). User rights define, what actions can be performed when user's password is used for access.

Encryption algorithm

The encryption algorithm that will be used for encrypting the document. The following algorithms are available:

- AES/256 (Acrobat X)
- AES/256 (Acrobat 9)
- AES/128 (Acrobat 6,7)
- RC4/128 (Acrobat 5)
- RC4/40 (Acrobat 4)

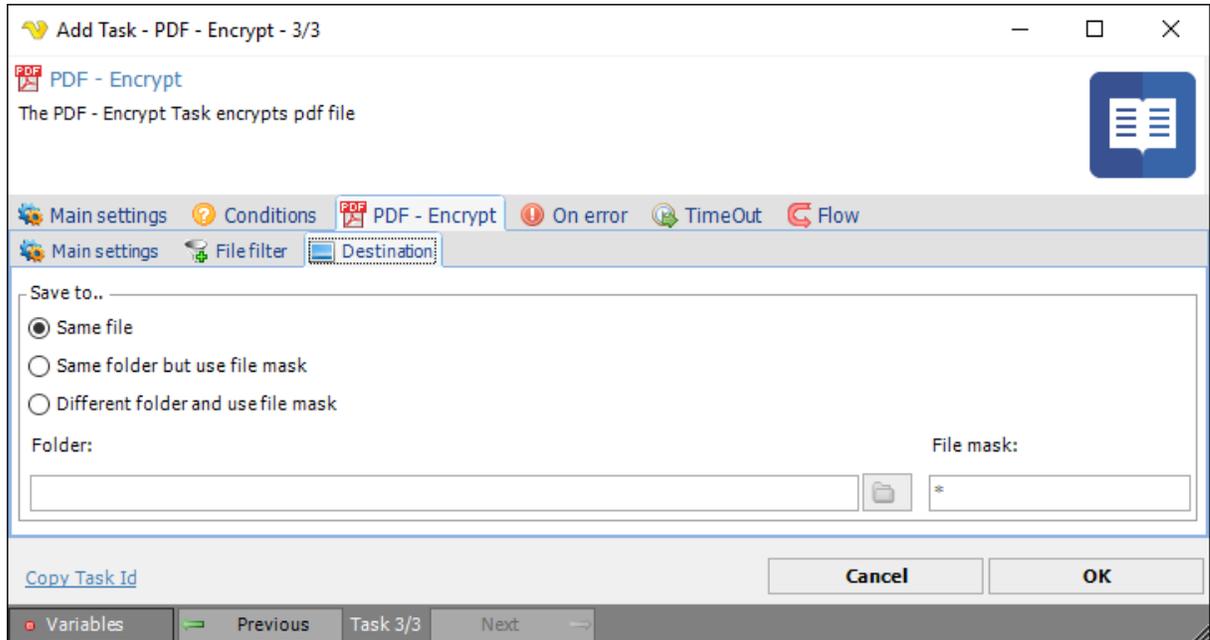
Encrypt metadata

Use this property to specify if metadata are encrypted. Metadata contains some additional information about document such as its name, authors, etc. If value is True metadata will be encrypted.

Encrypt > File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

Encrypt > Destination sub tab



Save to

The destination folder and file mask which the document is saved to.

Folder

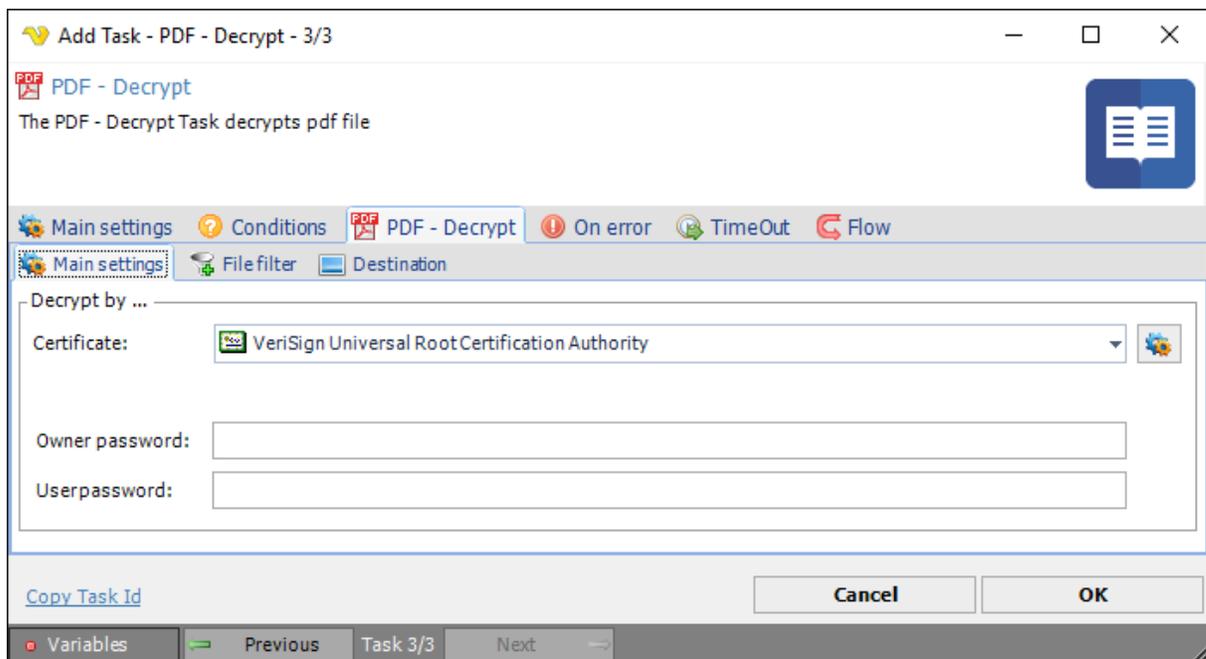
If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The PDF - Decrypt Task decrypts existing PDF files with a password or a Certificate.

Decrypt > Main settings sub tab



Certificate

Select an existing Certificate you have created/imported in Certificates manager.

Password->Owner password

Use this property to specify owner password.

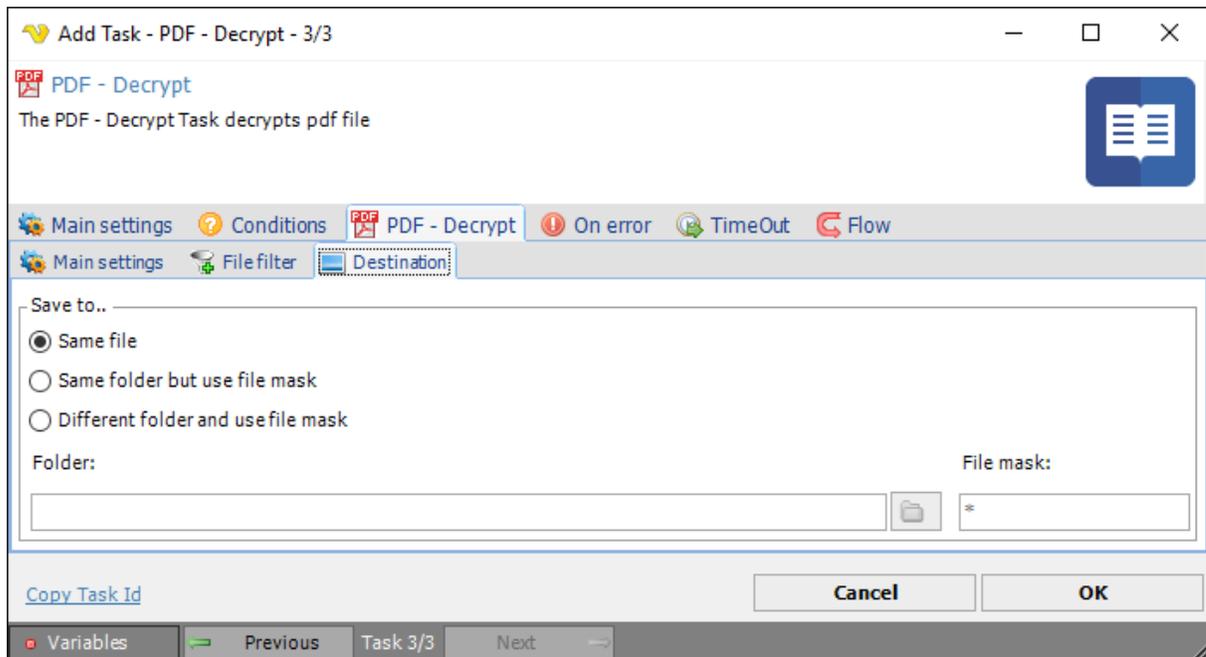
Password->User password

Use this property to specify user password.

Decrypt > File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

Decrypt > Destination sub tab



Save to

The destination folder and file mask which the document is saved to.

Folder

If *Different folder and use file mask* is selected, use manual folder specification or click the *Folder* icon.

File mask

Save file with different name.

The PDF - Sign Task signs existing PDF files with a Certificate and optionally adds a watermark image with details about the Certificate.

Main settings sub tab

Add Task - PDF - Sign - 3/3

PDF - Sign
The PDF - Sign Task signs pdf file

Main settings Conditions PDF - Sign On error TimeOut Flow

Main settings File filter Destination Signature widget

Sign ...

Certificate: VeriSign Universal Root Certification Authority

Show signature widget

Signature type: Pkcs1

Author:

Reason:

Contact info:

Location:

Password for file(s):

[Copy Task Id](#) Cancel OK

Variables Previous Task 3/3 Next

Certificate

Select an existing Certificate you have created/imported in Certificates manager.

Show signature widget

If a watermark should be added or not to the document.

Signature type

What type of signature

Author

Author property for the widget.

Reason

Reason property for the widget.

Contact info

Contact info property for the widget.

Location

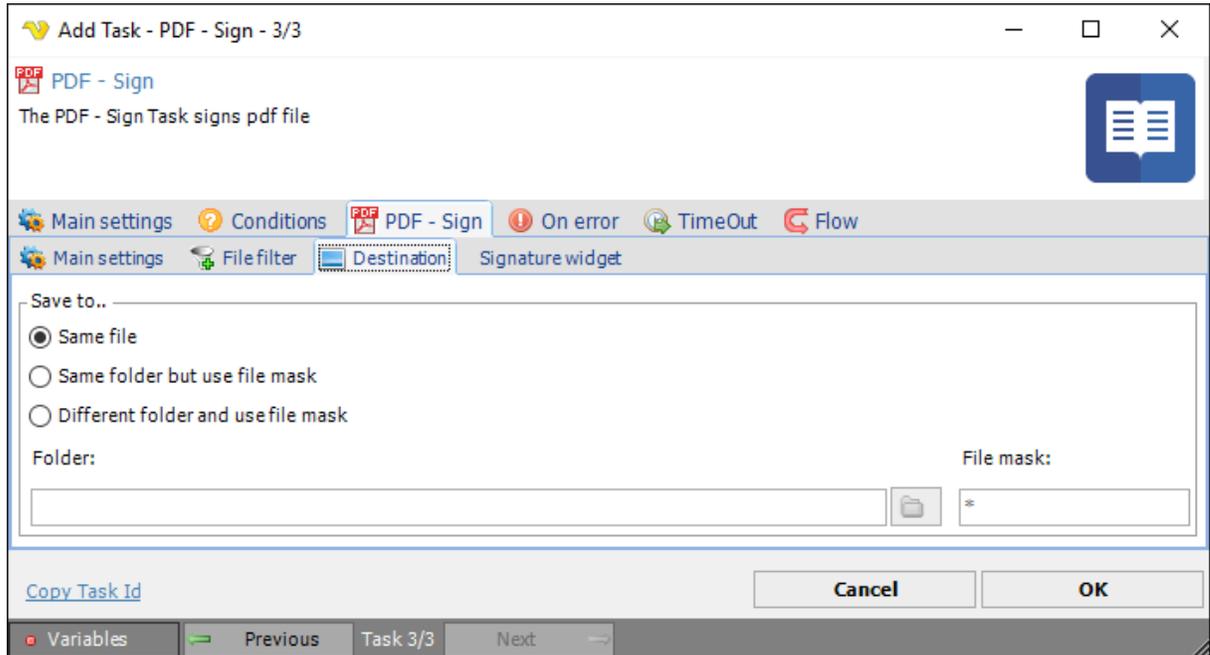
Location property for the widget.

Password for file(s)

If any of the specified PDF files contains a password it should be entered here

Sign > File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

Sign > Destination sub tab**Sign > Signature widget** sub tab

Add Task - PDF - Sign - 3/3

PDF - Sign
The PDF - Sign Task signs pdf file

Main settings Conditions PDF - Sign On error TimeOut Flow

Main settings File filter Destination **Signature widget**

Signature widget info

Properties

No rotate No zoom Print Locked Locked contents ReadOnly No view Toggle no view

Signature widget background image:

Auto stretch background Stretch width: Stretch height:

Signature position and dimension

AutoPos Left: Top:

AutoSize Width: Height:

Show signature in page range

All pages

Pages Enter page number or page range 2-4, for example

Default text Custom texts

AutoText Show timestamp Header:

Algorithm caption: Algorithm info:

Signer caption: Signer info:

Hide default text

AutoFontSize Font name:

Title font size: Timestamp font size: Section title font size: Section text font size:

[Copy Task Id](#)

Variables Previous Task 3/3 Next

This option is only available if you have checked *Show signature widget*.

Properties->No rotate

If this property value is checked signature widget will not be rotated when document is rotated in browser.

Properties->No zoom

If this property is checked signature widget size will not be changed during zooming.

Properties->Print

If this property is checked the signature widget will be printed on paper.

Properties->Locked

If this property is checked signature widget can't be moved by the user.

Properties->Locked contents

Set this property to checked if widget's contents should be locked.

Properties->ReadOnly

If this property is checked the signature widget will not interact with the user (will not react on mouse, etc.)

Properties->No view

If this property is checked signature widget will not be displayed when document is viewed.

Properties->Toggle no view

If this property is checked the signature widget will be displayed only when user is moving mouse over it.

Properties->Signature widget background image

This image should be in jpeg format and will be displayed as a background image.

Properties->Auto stretch background

If this property is checked the background picture will be automatically stretched to fit the signature widget.

Properties->Stretch width

Specify the horizontal size of the stretched background picture.

Properties->Stretch height

Specify the vertical size of the stretched background picture.

Signature position and dimensions->AutoPos

If this property is checked signature widget will be placed to the upper right corner. If not checked Left and Top properties will be used as widget coordinates (from bottom left corner).

Signature position and dimensions->AutoSize

The signature will be auto-sized if checked. If not checked please set the Width/Height properties.

Show signature in page range->All pages

The signature stamp will be added to all pages.

Show signature in page range->Pages

The signature stamp will be added to the specified range of pages. Specify a range like 2-4 or specific pages 1,3,5-6.

Default text

This tab contains the properties that set the texts inside the widget

Default text->Auto text

If this property is checked texts to be displayed on the signature widget will be generated automatically on the grounds of information from the certificate. Otherwise texts will be taken from Algorithm caption, Algorithm Info, Signer caption, Signer Info and Header properties.

Default text->Hide default text

Set this property to checked to hide the default text of the signature widget (signature algorithm, signing time, etc.).

Default text->AutoFontSize

If this property is checked then the following values will be assigned to different font sizes: Title font size = 8.77, Timestamp font size = 4.89, Section title font size = 7, Section text font size = 5. Otherwise values will be used from defined values.

Default text->Font name

Add font name to use in widget

Custom texts

Use this property to specify any custom text to be added to the widget.

Custom texts->Text

The text to be added.

Custom texts->Left

Horizontal offset of the displayed text.

Custom texts->Top

Vertical offset of the displayed text.

Custom texts->FontSize

The font size of the text

The PDF - Clear signature(s) Task removes all or specific signatures within a PDF document.

Main settings sub tab

The screenshot shows a dialog box titled "Add Task - PDF - Clear signature(s) - 4/4". The main content area has a sub-tab "Main settings" selected. Below the sub-tab, there are three sections: "Remove signature(s)" with radio buttons for "All signatures" (selected) and "Signature filters" (with an empty text field below it and the instruction "Enter comma separated words for filter signature n"); "Password for file(s)" with an empty text field; and "Copy Task Id" with a link. At the bottom right are "Cancel" and "OK" buttons. The bottom status bar shows "Variables", "Previous", "Task 4/4", and "Next".

All signatures

Removes all signatures in the document.

Signature filters

Removes signatures based on comma separated like search.

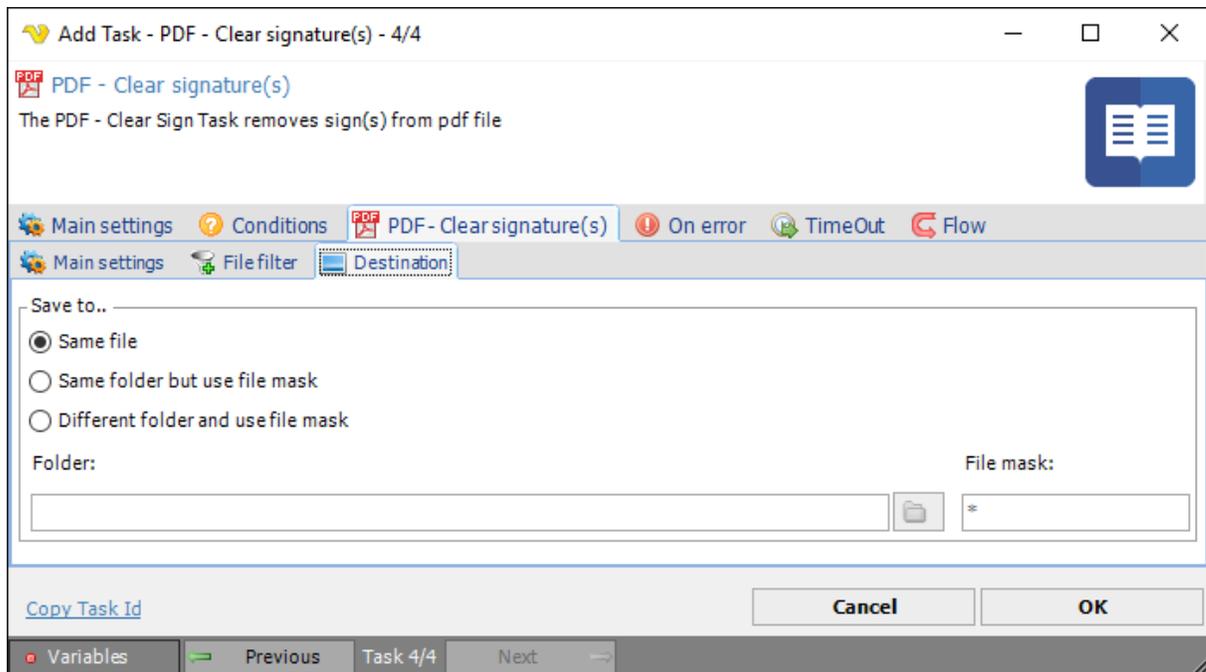
Password for file(s)

If any of the specified PDF files contains a password it should be entered here

File filter sub tab

This tab uses the common file filter to filter out the documents that should be processed in the Task.

Destination sub tab



SAP R/3 is the former name of the enterprise resource planning software produced by the German corporation SAP AG (now SAP SE). It is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business processes such as order fulfillment, billing, human resource management, and production planning.

Remote Function Call is the proprietary SAP SE interface. Remote Function Call (RFC) is the standard SAP interface for communication between SAP systems. The RFC calls a function to be executed in a remote system. Remote function calls may be associated with SAP software and ABAP programming and provide a way for an external program to use data returned from the server.

ABAP (Advanced Business Application Programming) is a high-level programming language created by the German software company SAP SE. It is currently positioned, alongside Java, as the language for programming the SAP Application Server,

The SAP - RFC Task lets you execute ABAP, external programs and external commands for use with SAP ERP.

SAP - R/3 Job Execute > Main settings sub tab

Connection

When connecting to a SAP server you need to setup a SAP Connection. Click the *Settings* icon to open the *Manage Connections* dialog.

Job

Text ...

Delete Job when complete

Text ...

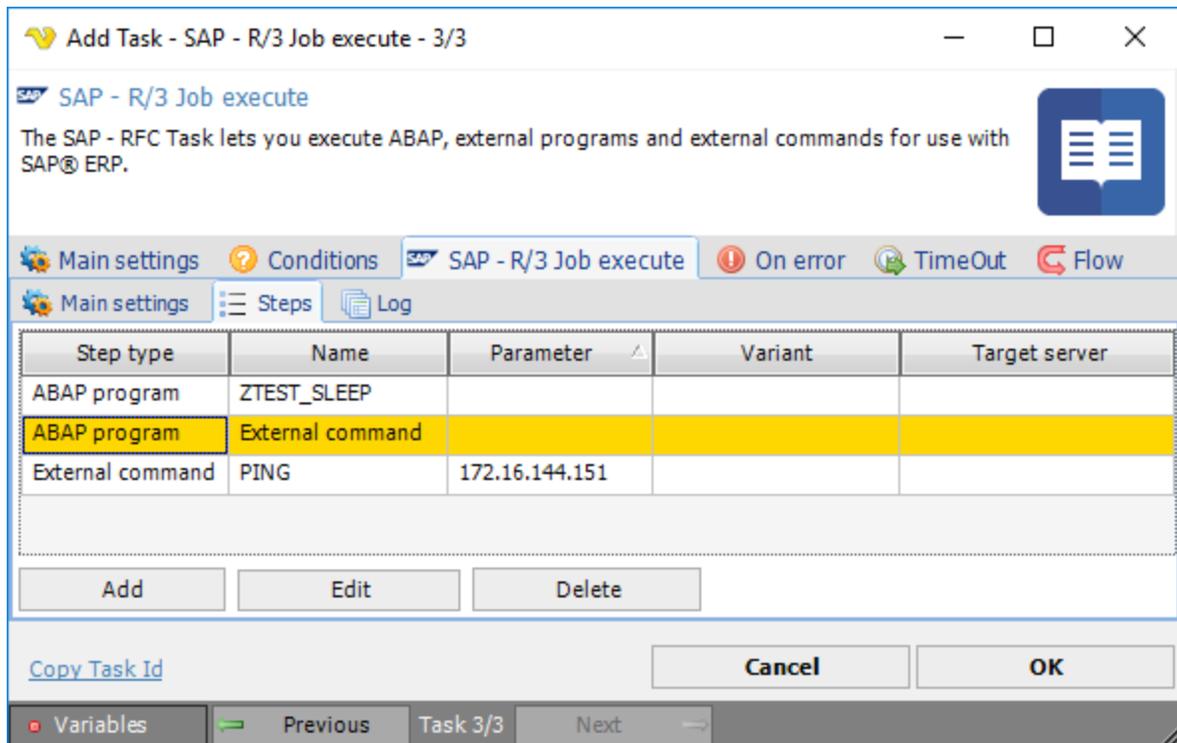
Job steps

The work unit of the background processing system is the background job, each of which consists of one or more job steps.

Background Job			
Job Step 1: ABAP Program Name: R3/NG232 Variant: SBT0	Job Step 2: External Command Name: Generic_Backup Parameter: /S Operating system: Windows NT Target computer: Ros II	Job Step 3: External Program Name: Path and command Parameter: /S Target computer: Ros II	Job Step 4: ABAP Program Name: ... Variant: ...

In VisualCron the steps can be edited in the grid below:

SAP - R/3 Job Execute > Step sub tab



Jobs and job steps enable you to treat complex tasks as single units. That is, you can schedule several programs needed to complete a particular task as steps within a single job, with the advantage of the job being single logical container for all the steps needed to complete the task.

Example

Assume that a particular data transfer with batch input requires that you start two programs, an external program to prepare the batch-input session and an internal program to process the session. Creating a job made up of two steps lets you handle the two programs as a single unit. Scheduling that one job schedules both programs. The results of each program's run can be seen in the job log.

Some background processing attributes apply to entire jobs and, therefore, to all job steps within a job. For example, the earliest possible start time for any job steps will be the start time for the job.

Step language

If your SAP System runs with an Arabic, Cyrillic, or Asian character set, then you may need to change the language specified in the standard background jobs listed above. Languages are assigned to jobs based on job steps. Be sure that the language specified in the job step definition in each of these jobs is set to English (EN).

This change is required because not all languages are available with all code pages. If the job's specified language is not available, the job will not run.

Step types

The background processing system makes a distinction between external commands for normal users and external programs for system administrators. You can see this distinction when scheduling a job from Transaction SM36, with separate fields for external commands and external programs. You can also call ABAP programs.

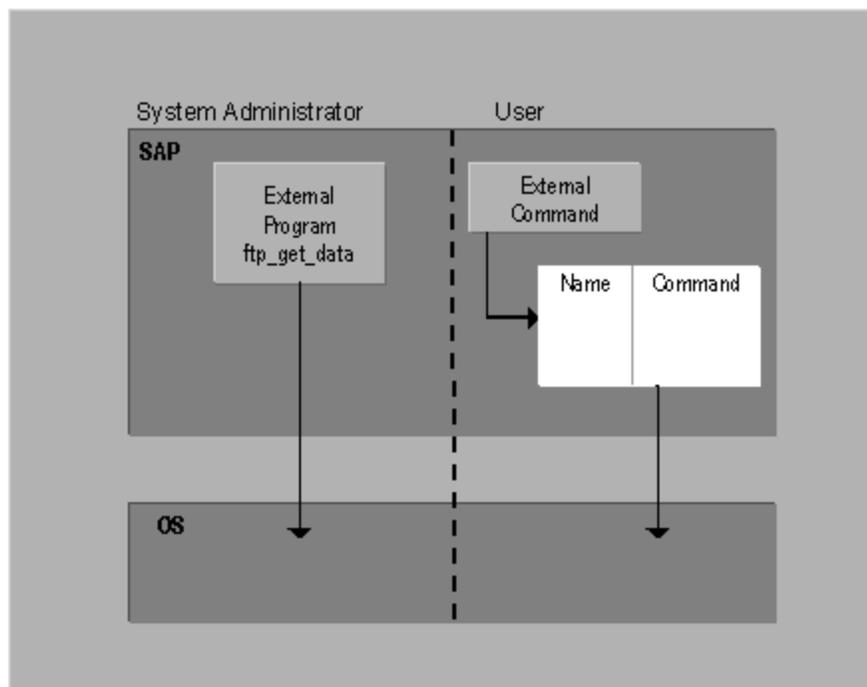
External commands are predefined, authorization-protected commands for end users. External programs are unrestricted, directly entered commands reserved for system administrators.

The type of external command and external program is unrestricted, meaning that you can use either compiled programs or scripts. Such programs can be run on any computer that can be reached from the SAP System. Parameter passing to non-SAP programs is completely unrestricted except by the predefinition mechanism for external commands.

Output of non-SAP programs, particularly error messages, is included in the job's log file.

Specifications required for an external command or program are:

- External command + Type of operating system + (Parameters) + Target host system
- External program + Parameters + Target host system



ABAP programs

ABAP programs can be used as job steps. Module pools and function groups, which are collections of ABAP modules, are not allowed. The specifications required for an ABAP job step are:

ABAP program + Variant + Print and archiving parameters + Language

External commands

External commands are predefined commands for end users. They are operating-system independent and are protected by authorizations, so that normal end users can schedule only those commands that the system administrator permits them to.

With an external command, an ordinary end user—any user without background processing administrator authorization—may run a host system command or program that has been pre-defined by the administrator in the SAP System. The user who schedules the external command must have the authorization required for the external command.

External commands let you control what your users do outside the SAP System. End users can run only the commands and arguments that you specify in external command definitions. And you can control access to external commands with SAP authorizations.

For additional security, external command definitions are operating-system specific. For example, you can define variants of a command for UNIX and Windows NT hosts. A user who schedules an external command must specify the type of operating system in which the command is to run. The system then automatically selects the correct operating system variant or issues an error if the required variant has not been defined.

External programs

External programs are unrestricted commands that are neither pre-defined or restricted by authorizations. A user with administrator authorization can enter any of these in a job step.

With an external program, a system administrator can enter any desired host operating system command or program in a job step. No SAP authorizations test is carried out before executing the command.

External programs give an administrator—a user with the background processing administration authorization (authorization object S_BTCH_ADM Batch processing: Batch Administrator)—the flexibility to run any required host system command without any administrative preparation in the SAP System.

The purpose of this distinction is to let system administrators execute any required external program while restricting normal users to authorizations-tested external commands.

SAP - R/3 Job Execute > Log sub tab

The screenshot displays the SAP - R/3 Job Execute > Log sub tab interface. The window title is "Add Task - SAP - R/3 Job execute - 3/3". The main content area shows "SAP - R/3 Job execute" with a description: "The SAP - RFC Task lets you execute ABAP, external programs and external commands for use with SAP ERP." Below this is a navigation bar with tabs for "Main settings", "Conditions", "SAP - R/3 Job execute", "On error", "TimeOut", and "Flow". Underneath, there are sub-tabs for "Main settings", "Steps", and "Log". The "Log" sub-tab is active, showing a "Job:" field with a dropdown menu and a "Show log" button. Below the job field is a table with columns "Event date" and "Text". At the bottom, there are buttons for "Copy Task Id", "Cancel", and "OK". The footer bar contains "Variables", "Previous", "Task 3/3", and "Next".

Job
Text ...

5.1.2.5.5.7 Task - Main Settings - Execution Context

The execution context sets in what environment/context the Task should be run. VisualCron offers two different kind of execution contexts, background or foreground execution.

Background execution (default)

Background execution is default. When a Task executes in the background it is run from the VisualCron Server service. This allows execution when no one is logged on to the computer. This option is the most efficient way of executing in VisualCron. The problems you may face with this option are that some Tasks require certain Credentials, access environment variables, drive mappings or desktop access (can't access or wrong desktop).

Credentials. To solve the problem where a certain user is needed to run a Task, we use Credentials in VisualCron. Almost anywhere you can use Credentials for accessing a file or executing a Task as a certain user.

Environment variables. Environment variables are loaded when you load a user profile. If you want to access those you need to specify a Credential in an Execute Task and then select option Load profile.

Network drives. Normally, you should use UNC (\\servername\path\file) paths together with Credentials instead of mapping network drives. Network drives are not shared across users and since VisualCron is running as SYSTEM it can't see the drives mapped by a certain user. By specifying a UNC path instead you are sure that a logical drive is not removed etc. If you really need to work with Network drives you should use the mapping utility within VisualCron. It allows you to map the same network drives in SYSTEM context that you have in your USER context.

Desktop access. Starting with Windows Vista, security has changed. For example, services are no longer allowed to launch applications with Interactive content (a window). The reason for this is that you can break the application anytime and get Administrator access. This is correct from a security perspective and to handle this you can launch your applications in hidden mode (hidden property in Execute Task). If you for some reason need to interact with other windows you can use the Foreground execution.

Foreground execution

Foreground execution is handled by the VisualCron Tray Client.

When using foreground execution you use a selected session to execute as. This means, that you are able to get access to the desktop and same variables, network drives etc. as when you normally run a command from the DOS prompt. Use foreground execution when you want to access a specific window.

This feature is implemented in the following Task(s):

- Process - Execute
- System - Control monitor
- Interactivity - Desktop macro
- Interactivity - Robot
- Interactivity - Send keys

Instead of executing a file from the Windows service VisualCronService.exe we are executing through the VisualCron Tray Client. This requires that the proper Tray Client session that you specify in the Execution Context window is connected to the VisualCron service. The Tray Client is automatically started when a user logs in.

If a specified Tray Client session is logged in, the VisualCron Server sends a command to the Tray Client. The Tray Client then executes and reports back to the Service which in turn reports back to all connected VisualCron clients.

In the Execution context window (which you reach from main Task window) you set the execution context parameters.

Task > Main settings > Execution context

Execution context

VisualCron Server location

Local VisualCron Server

Remote VisualCron Server

Choose connection

Execution context

Background execution

Foreground execution

Foreground execution - execution target

Execute on same user session as unlock Credential

Execute on any desktop session

Execute on specified desktop session

perla@session8 Select Select current

User name: perla

Session ID: 8 Use any session

Before execution

Logon/Unlock using Credential [Required security settings](#)

Credentials

No Credential

If other user has an active session:

Do nothing if target user is connected (otherwise Disconnect)

Disconnect othersession

Lock othersession

Logoff other session

After logon/unlock

Lock

After execution

Lockworkstation

Logoff user

Do nothing

Cancel OK

VisualCron Server location

Some Tasks (currently only Execute Task) allows execution on the local machine but also remote VisualCron Server. Select a VisualCron Connection to execute the Task on a remote VisualCron Server. Please note that VisualCron needs to be installed in the remote location.

Background/Foreground execution

Background execution is default and requires no logged in Tray Client. When choosing Foreground execution you get a set of extra parameters.

Execution target

You can choose to *Execute on any desktop sessions* - this executes on the first available session. By default you can *Execute on same user session as unlock Credential* - this means that VisualCron will launch the process on the same user that is set in *Before execution*.

You can also choose to Execute on specified desktop session. You can choose from the list of connected sessions and click *Select*. If you are locally connected you can also click on *Select current* which retrieves information about your session.

User name

The user that you want to execute as / use the session from.

Session ID

One user can be connected to several sessions. You can either accept to *Use any session* or specify a selected session.

Note 1: If you are not executing on the same user and session as you have selected you will not see interface/window of the process you started.

Note 2: For Windows 2008 you must enable a setting in Local Security Policy

Before execution

Note that the VisualCron Tray Client needs to be running in order to execute a *foreground Task*. If no one is logged in the desktop is not active and no Tray Client is started. There is also a scenario when the computer may be locked. This prevents Tasks that need access to desktop (for example the Desktop Macro Task) to be able to run. The solution to that is to tell VisualCron to perform a logon/unlock. If the computer is locked VisualCron will try to unlock. If no user is logged in VisualCron will logon. You need to check *Logon/Unlock using Credential* and specify a Credential. Note that the Credential must match the desktop session (if you are not using *Execute on any desktop session*).

If multiple users are logged in at the same time you need to handle this as only one user can be active. There are 3 options for this:

1. Disconnect - disconnects the session for other user
2. Lock - locks the computer of the active session (however only the person who locked can unlock)
3. Logoff - signs out the other user (current applications will be closed)

After logon/unlock

You can choose that VisualCron should automatically lock after logon. This could be interesting if you want access to the desktop environment but to keep security (desktop locked). When checking *Lock* VisualCron will lock after a successful login.

After execution

You may want to "close" after yourself. Lock or logoff current user. Select *Do nothing* if you want to keep the desktop open.

5.1.2.5.5.8 Task - Conditions

Condition sets and the included conditions for Jobs and Tasks are managed in the same way, see Global - Conditions for details.

5.1.2.5.5.9 Task - <Task type>

Based on the selected *Task type* in the **Task > Main settings** tab, this tab reflects the current Task type selection and provides additional specific Task type settings. See the specific Task type under the Task - Main settings chapter for more details.

Add Task - Execute - 4/4

Execute

The Execute Task lets you start a command or executable with arguments. Optionally you can run the process as a certain user with the help of Credentials

Main settings | Conditions | Execute | On error | TimeOut | Flow

Main settings

Task type: Search Task type.. **Execute**

Name: Execute

Description:

Encoding: Windows-1252

Execution context

Execution context: Background execution Change ?

Output

Store standard output

Store standard error

Extra Task debugging

[Copy Task Id](#) Cancel OK

Variables Previous Task 4/4 Next

5.1.2.5.5.10 Task - On error

The **On error** tab in the Task window controls *what is causing* an error in VisualCron. Compare this with Task Flow which controls *what happens* when a Task completes.

Add/Edit Task > On error tab

Error causes

Different Task types have different reasons to fail. The goal is that you should be able to control what actually is considered an error by you - for all kinds of Tasks. We have not implemented handling for all kinds of errors but if you request handling for a specific error, in our request forum, we will add that.

Error cause categories

VisualCron evaluates a set of different error categories that will trigger the Task into error state:

- "All errors" - all kinds of errors raise a Task error
- "Only selected errors" - only items that you select in the list raises a Task error

- "All except selected" - only items that you have not select in the list raises a Task error

Exit code collection

Exit codes controls the result of the Task. By default we are using the Windows exit code scheme which basically means that 0 is success and the rest are errors defined in Windows by Microsoft. It is possible to create your own collection of exit codes and control which exit code is success or not and its description. Read more about this here.

Output/Variable error handling

It is possible to control if the Task should raise an error based on output, output (err) and any Variable/value that matches a certain condition at runtime. It is also possible to do the opposite, override an error based on these conditions.

Raise error

Not set - Default setting which means that there will be no other error handling than the "Error cause" on top of **On error** tab.

Raise error - this means that if the conditions below match any success of Task will be overridden with an error and specified exit code.

Do not raise error - this means that if the conditions below match any failure of Task will be overridden with success and the specified exit code.

Exit code

This exit code overrides the current exit code when the condition is matched. The default value is 77777.

Check type

You can choose to check output (std), output (err) or evaluate a Variable/value in real time. When evaluating a Variable/value use both the first and second text field.

Type

This controls with what data type the comparison is made.

Condition

This is the type of condition that it is trying to match on; Equal, Contains, Not equal etc.

Value/Variable

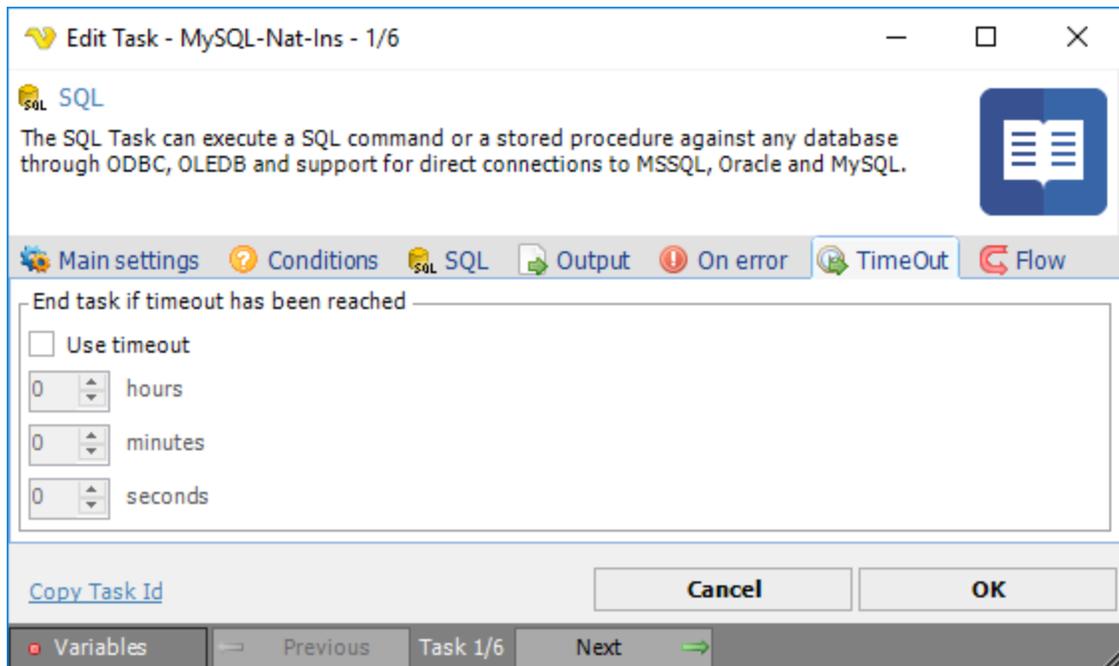
This is the field where you enter the value you want to match the condition with. Click the *Variables* icon to open the Variables list.

5.1.2.5.5.11 Task - Timeout

Timeout is a way to abort an action that didn't run as expected, typically a connection or a response that doesn't happen within a reasonable time interval.

The timeout value can be set both at Task and Job level.

Add/Edit Task > Timeout tab



When the timeout is activated, all processes related the current Task will be terminated.

5.1.2.5.5.12 Task - Notifications

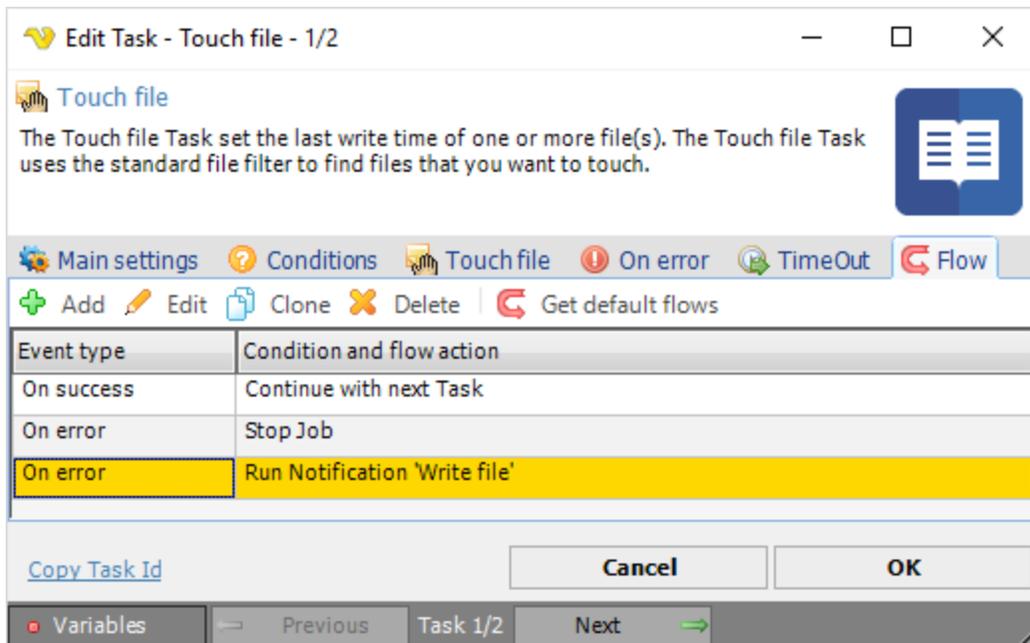
Notifications for Jobs and Tasks are managed in the same way, see Global - Notifications for more information.

5.1.2.5.5.13 Task - Flow

The Task Flow controls what happens at start, complete, success and failure of a Task with additional conditions based on output, exit code etc. One or more Flows can be created depending on how you want to control the Flow in various situations.

This feature was introduced with version 7.0.0 and replaced existing Notifications tab.

Add/Edit Task > Flow tab



The main listing above contains a verbose description of when (On error/On success/On complete) and what happens - the flow action.

If a new default flow is also desired for a previously defined Task, you need to click the *Get default flows* icon for each Task flow you want the default flow for. For more information about Default flows, see **Server > Settings > Default flows**.

Add/Edit Task > Flow > Add/Edit tab

Task Flow

Task Condition

⚡ On complete Edit timeout ? Always

Type: String Condition: Equal (=)

Value/Variable:

Task flow control

Stop Job

Continue to next Task in order

Wait 0 m 1 s and retry Task 3 times

If finally failing, go to Task

Go to Task

No task selected Run following Tasks in order

Stop Job and run specified Job

No job selected Run asynchronous

Run Notification

No Notification selected

Deactivate Task

Deactivate Job

Cancel Ok

The Task Flow window is divided into two parts:

- Task Condition
- Task flow control

Task Condition

The Task Condition controls when and with what conditions the flow should be started.

Event type

- On start - performs the action at start (before Task is running)
- On error - performs the action when the Task has failed
- On success - performs the action when the Task returns success result
- On complete - performs the action when the Task completes - regardless of result
- On running longer than - performs the action if the Task runs longer than specified time

On running longer than

This option lets you control what happens if the Task run longer than a specified time. Click on the Edit timeout to specify the time.

Event condition

Event conditions contains some basic conditions that are optionally evaluated when the event type is matched. If you do not want to use any conditions you set it to the "Always" which means that the flow will continue whenever the event has been raised.

- Always - will continue without evaluating any condition
- If output - matches a value you enter with output of the Task
- If error output - matches a value you enter with output (err) of the Task
- If other value - If other value/Variable - matches any two values - could be two Variables or a mix. Click the Variables icon to open the Variables list.
- If exit code - matches a value with the exit code of the Task

Type/Condition

When you have selected an event condition you decide how to match this condition - with what value and data type. As for the condition, you can select from Equal, Not equal, Contains and Not contains.

Value/Variable

Enter a value or click the *Variables* icon to open the Variables list.

Task Flow control

The flow control group controls the action when the Task Condition has been matched with event and condition.

(Before version 7.0.0. these settings were presented in the **On error** tab)

Stop Job

Stops the Job execution immediately. No further Tasks will be run.

Continue to next Task in order

Ignores the error and continue to the following Task.

Wait and retry

Waits a specified time and then try to run the Task again. You can choose how many times VisualCron will try to do this before stopping the Job completely. Optionally you can check "If finally failing - goto Task" to set it to continue with other Task if it has failed for all specified retry times.

Go to Task

Runs a specified Task in the same Job. You also have option to continue running the following Tasks in order - after that Task.

Run following Tasks in order

The default behavior which means that it will run all Tasks defined after this Task. If you only want it to run the specified Task then uncheck this option.

Stop Job and run specified Job

Stops the current Job and executes another Job.

Run Notification

Runs the specified Notification. Click the *Settings* icon to populate the drop-down list of existing Notifications.

Deactivate Task

Deactivates the current Task.

Deactivate Job

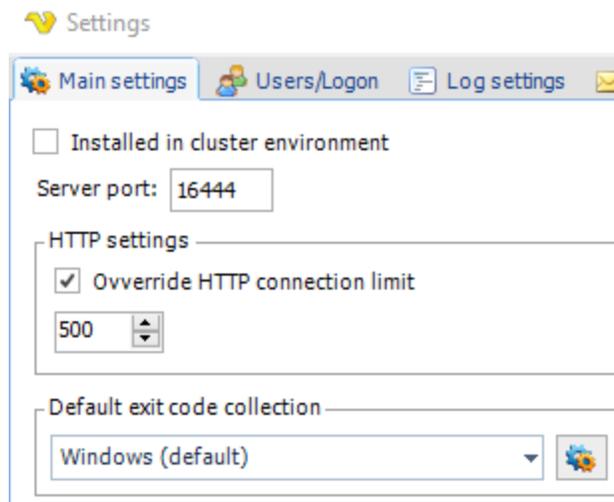
Deactivates the current Job.

5.1.2.5.5.14 Task - Exit code collection

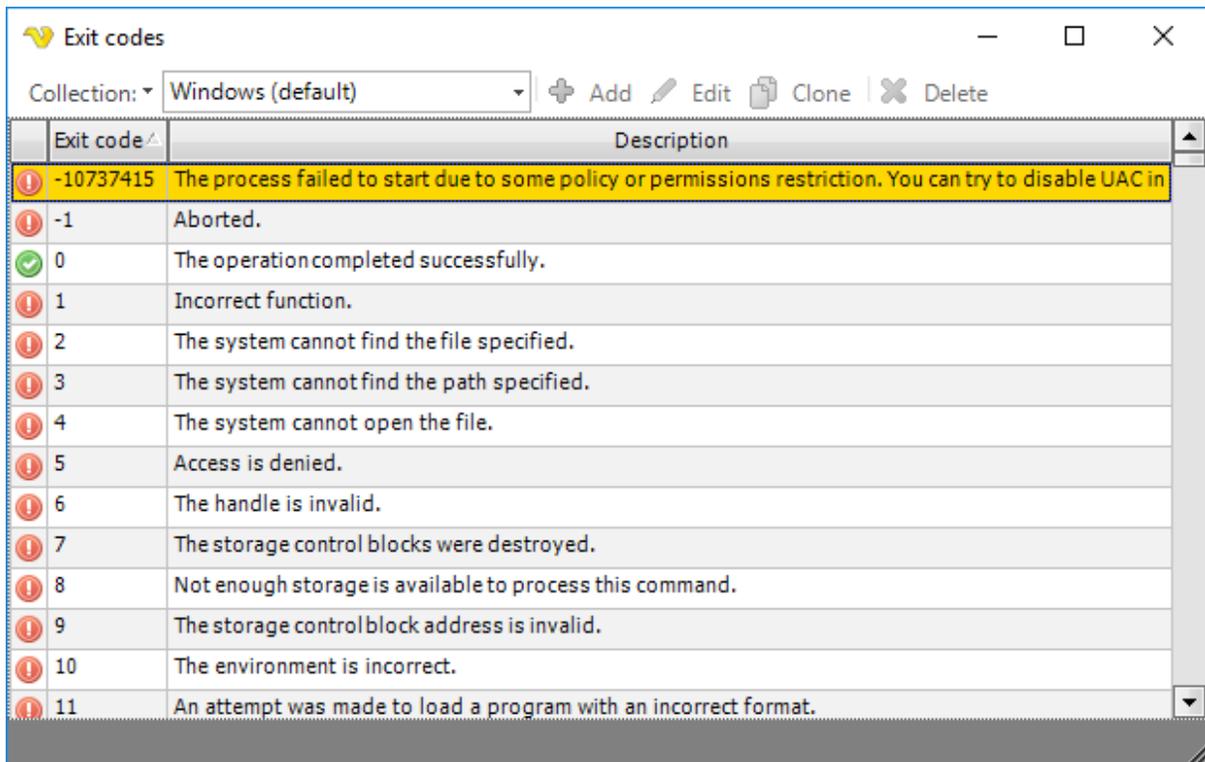
Exit codes controls the result of the Task. By default, the Windows exit code scheme is used which basically means that 0 is success and the rest are errors defined in Windows by Microsoft. It is possible to create your own collection of exit codes/descriptions thus controlling which exit code is success or not.

There are a couple of settings that affects exit code collections:

1. **Task > On error** tab. Here you select which exit code collection should be used in the specific Task. Clicking on the button results in opening the specific exit code collection (see note 3 below).
2. **Server > Main settings** tab. Here you can control which exit code collection that should be used for new Tasks. Click the *Setting* icon to open the specific exit code collection (see note 3 below).



3. **Server > Main settings > Default exit code collection > Settings** icon. Editing exit code collections. Here you can switch between existing collections and create, edit, clone and delete exit codes. You can also edit individual exit codes by double clicking on a row.

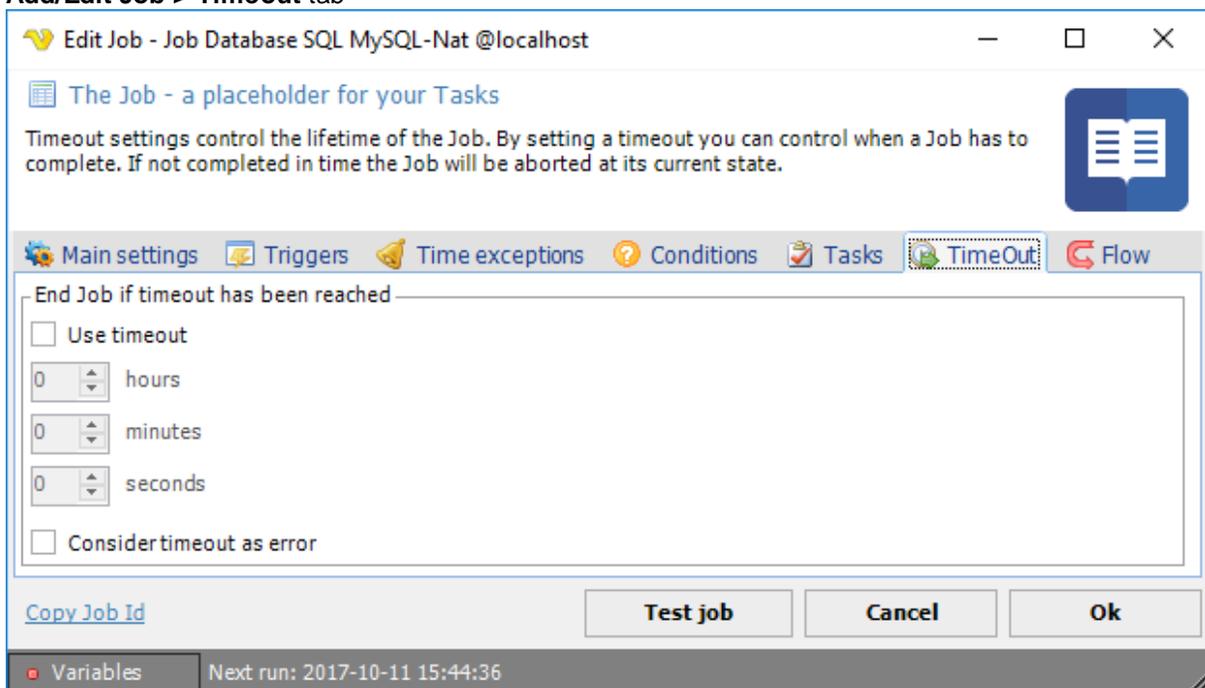


Exit code	Description
-10737415	The process failed to start due to some policy or permissions restriction. You can try to disable UAC in
-1	Aborted.
0	The operation completed successfully.
1	Incorrect function.
2	The system cannot find the file specified.
3	The system cannot find the path specified.
4	The system cannot open the file.
5	Access is denied.
6	The handle is invalid.
7	The storage control blocks were destroyed.
8	Not enough storage is available to process this command.
9	The storage control block address is invalid.
10	The environment is incorrect.
11	An attempt was made to load a program with an incorrect format.

5.1.2.5.6 Job - Timeout

The timeout value can be set both at Job and Task level, for Task level see Task - Timeout for more information.

Add/Edit Job > Timeout tab



Edit Job - Job Database SQL MySQL-Nat @localhost

The Job - a placeholder for your Tasks

Timeout settings control the lifetime of the Job. By setting a timeout you can control when a Job has to complete. If not completed in time the Job will be aborted at its current state.

Main settings Triggers Time exceptions Conditions Tasks TimeOut Flow

End Job if timeout has been reached

Use timeout

0 hours

0 minutes

0 seconds

Consider timeout as error

Copy Job Id Test job Cancel Ok

Variables Next run: 2017-10-11 15:44:36

When the timeout is activated, all processes related the current Job will be terminated.

5.1.2.5.7 Job - Notifications

Notifications for Jobs and Tasks are managed in the same way, see Global - Notifications for more information.

5.1.2.5.8 Job - Flow

The Flow can be set both at Job and Task level, for Task level see Task - Flow for more information.

History

"Flow" was introduced from VisualCron version 7.0.0. Basically we took parts from **On error** handling, added specific **Condition** handling and then merged handling of **Notifications** in it. The goal was to make it easier to control flow of Job and Tasks and adding more basic Condition functionality.

Job Flow

Job Flow has its own tab in the Job window. Job Flow adds controls what happens at different events:

- Job start
- Job complete
- Job fails
- Job success
- Job runs longer than

For example, upon failure you can choose to wait a couple of seconds and the retry the Job. Another thing you can do is to send you a Notification when the Job has failed. Besides the event you can add a condition that needs to be matched before continuing with the action in the flow.

Add/Edit Job > Flow tab

Edit Job - Default flow @localhost

The Job - a placeholder for your Tasks

A Job is a place holder for one or more Tasks. Triggers, either based on time or an event start a Job. By default, if any Task fails - the Job will fail. In Flow you can set Notifications to be sent to you upon success and/or failure.

Main settings Triggers Time exceptions Conditions Tasks TimeOut **Flow**

+ Add Edit Clone Delete Get default flows

Event type	Condition and flow action
On error	Wait 00:00:05 and retry Job
On error	Run Notification 'Write file'

Copy Job Id Test job Cancel Ok

Variables Next run: No Trigger specified

The list of "flows" are shown in the **Flow** tab. You can see the event, in this case "On error" and the action "Wait and retry Job". You can Add, Edit, Clone and Delete Flows in this tab.

If a new default flow is also desired for a previously defined Job, you need to click the *Get default flows* icon for each Job flow you want the default flow for. For more information about Default flows, see **Server > Settings > Default flows**.

Add/Edit Job > Flow > Add/Edit window

The Job Flow window are divided in two parts:

- Job Condition
- Job flow control /action

Job Condition

The Job Condition controls when and with what conditions the flow should be started.

Event type

- On start - performs the action at start (before Job is running)
- On error - performs the action when the Job has failed
- On success - performs the action when the Job returns success result
- On complete - performs the action when the Job completes - regardless of result
- On running longer than - performs the action if the Job runs longer than specified time

On running longer than

This option lets you control what happens if the Job run longer than a specified time. Click on the *Edit timeout* button to specify the time.

Event condition

Event conditions contains some basic conditions that are optionally evaluated when the event type is matched. If you do not want to use any conditions you set it to the "Always" which means that the flow will continue whenever the event has been raised.

- Always - will continue without evaluating any condition
- If other value/Variable - matches any two values - could be two Variables or a mix. Click the Variables icon to open the Variables list.
- If exit code - matches a value with the exit code of the Job

Type/Condition

When you have selected an event condition you decide how to match this condition - with what value and data type. As for the condition, you can select from Equal, Not equal, Contains and Not contains.

Value/Variable

Enter a value or click the *Variables* icon to open the Variables list.

Task Flow control

The flow control group controls what happens when the Job Condition has been matched with event and condition.

Wait and retry

Waits a specified time and then try to run the Job again. You can choose how many times VisualCron will try to do this before stopping the Job completely.

Run Job

Runs another Job (asynchronous or synchronous).

Run Notification

Runs the specified Notification (this replaces previous Notifications). Click the *Settings* icon to populate the drop-down list of existing Notifications.

Deactivate Job

Deactivates the current Job.

5.1.2.6 Jobs - Failed Jobs

In the main menu **Server > Jobs > Failed Jobs** dialog, the Failed Jobs list displays the failed Job with its failing Task since last run.

Jobs > Failed Jobs

Event time	Name	Exit code	Execution time
2017-10-10 15:44:36	Job Database SQL MySQL-Nat	77777	00:00:00.4

Last run	Name	Exit code	Execution time	Output	Output (stderr)
2017-10-10 15:44:36	MySQL-Nat-Ins	0	00:00:00.1	No output	No output
2017-10-10 15:44:36	MySQL-Nat-Sel	0	00:00:00.0	Double click for o	No output
2017-10-10 15:44:36	MySQL-Nat-SPIO	0	00:00:00.0	No output	No output
2017-10-10 15:44:36	Pup-MySQL-Nat-SPIO	77777	00:00:00.0	No output	Double click for output

5.1.2.7 Jobs - Running Jobs

The VisualCron processes are monitored and ended from the main menu **Server > Jobs > Running Jobs** dialog. With this dialog all VisualCron processes are viewed, even those not visible in Windows Task Manager (e.g. a web request).

All processes that are started by VisualCron can be handled by the VisualCron client application.

Jobs > Running Jobs

Id	Name	Started	Runtime
55	Job Database SQ	2017-10-17 14:32	00:00:00

Id	Windows PID	Name	Started	Runtime
1011	0	SQL	2017-10-17 14:32	00:00:00

Job process

When a Job is run by VisualCron a Job Process is started. A Job Process is a temporary working version of a Job. There can only exist one unique Job but many Job Processes derived from that Job, for example, many Jobs running at the same time.

The Job Process:

- keeps track of all Tasks that should be run
- checks conditions
- sends notifications
- updates the client with new status for a Task

Task process

A Task Process is created when a Task is run. The Task Process:

- notifies the client when a Task is started and completed
- performs the action, for example runs a command or POST to a website

The Task Process has an Id which enables control of the actual Task Process. A Task Process is a temporary version of a Task. There can only exist one unique Task but many Task Processes derived from that Task. This occurs when many Job Processes are running at the same time.

The Process Manager

In the process manager you can see all active processes. You are also able to Stop these processes in different ways. The result of pressing the *Stop* button is dependent on currently selected row and *ViewStyle*.

The selectable view styles changes the way VisualCron presents the hierarchy of the processes and also affects how the *Stop* button will work.

When you click on *Stop* on a:

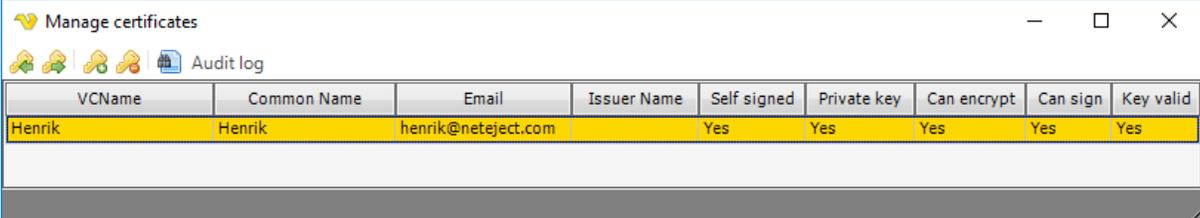
- Job row - all Job Processes and its Task Process will be stopped
- Task row - all Task Processes that are spawned from the Task will be stopped
- Job Process - the Job Process and its Task Processes will be stopped
- Task Process - a single Task Process will be stopped

5.1.2.8 Global - Certificates

A certificate is a digitally signed statement from one entity (person, company, etc.) that states that the public key of another entity has a particular value. Trusting the certificate's signature implies that you trust that the association in the certificate between the specified public key and the other entity are authentic.

VisualCron can handle standard X509 certificates. These can be stored at the server location and be available for reuse in Tasks like the Email Task. The Manage certificates dialog is available in the main menu **Server > Global objects > Certificates**.

Global > Certificates



VCName	Common Name	Email	Issuer Name	Self signed	Private key	Can encrypt	Can sign	Key valid
Henrik	Henrik	henrik@neteject.com		Yes	Yes	Yes	Yes	Yes

The Manage certificates window lets you view currently stored Certificates and their properties.

Import certificate

You can currently import certificates from files with the following format:

- PFX
- CER/DER/KEY
- PEM
- SPC/PVK

You import certificates by clicking the *Import certificate* icon. Remember to change the file filter to see your particular certificate file format.

Export certificate

You can export in the following formats:

- PFX
- PEM

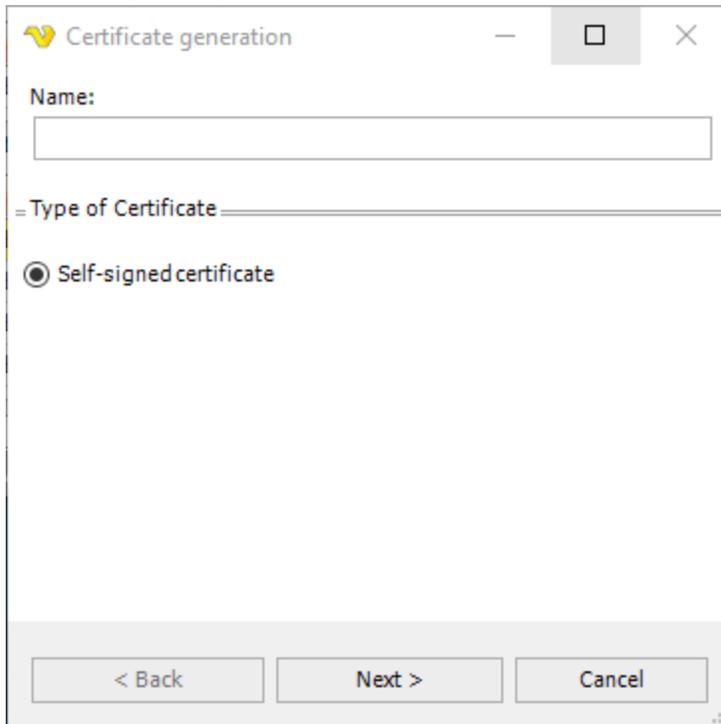
- CER/KEY

You export certificates by clicking the *Export certificate* icon. Change file filter to change file saving format.

Create certificate

To start the Generate certificate wizard click on the *Create certificate* icon.

Global > Certificates > Create



Certificate generation

Name:

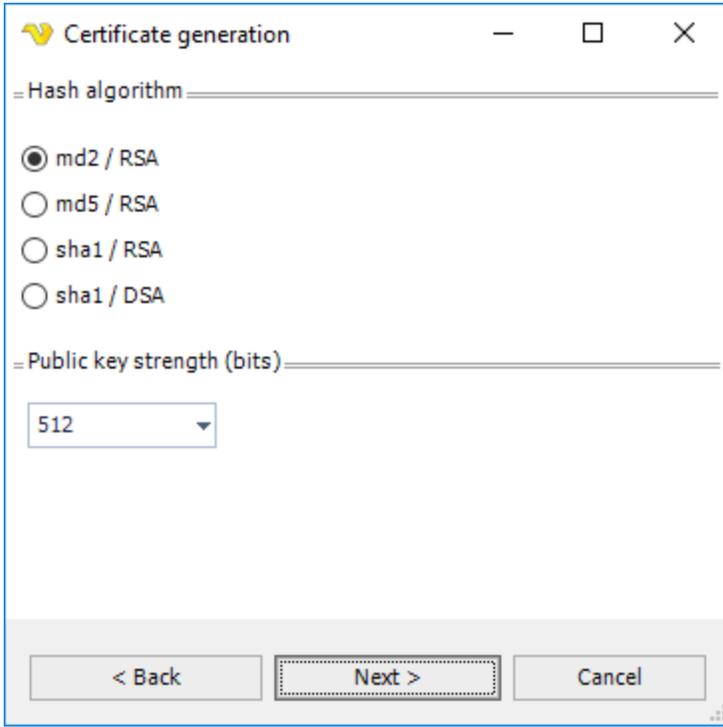
= Type of Certificate

Self-signed certificate

< Back Next > Cancel

Select type of certificate (currently only Self-signed certificate).

Global > Certificates > Create 2



Certificate generation

= Hash algorithm _____

md2 / RSA
 md5 / RSA
 sha1 / RSA
 sha1 / DSA

= Public key strength (bits) _____

512 ▾

< Back **Next >** Cancel

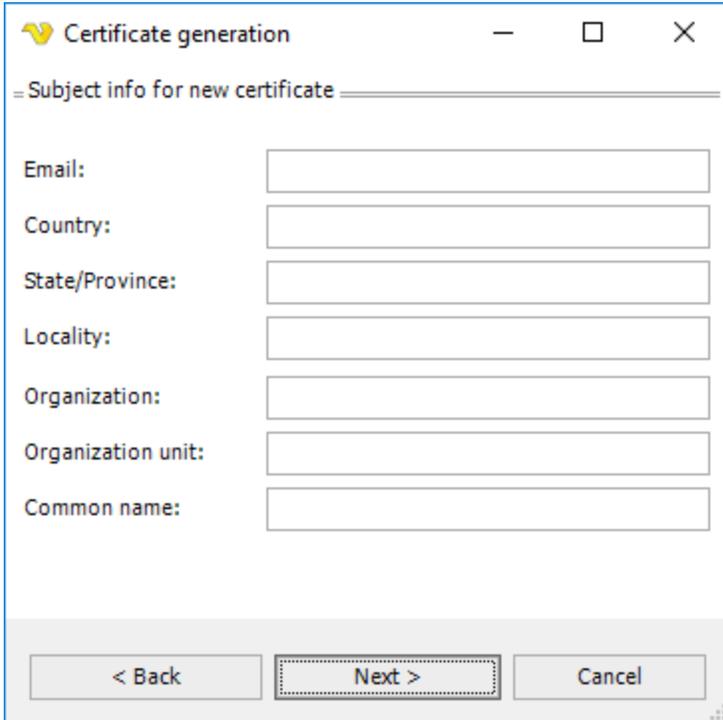
Hash algorithm

Use this property to get or set algorithm that will be used for hash calculation.

Public key strength

Use this property to control the strength of the public key in bits.

Global > Certificates > Create 3



Certificate generation

= Subject info for new certificate _____

Email:

Country:

State/Province:

Locality:

Organization:

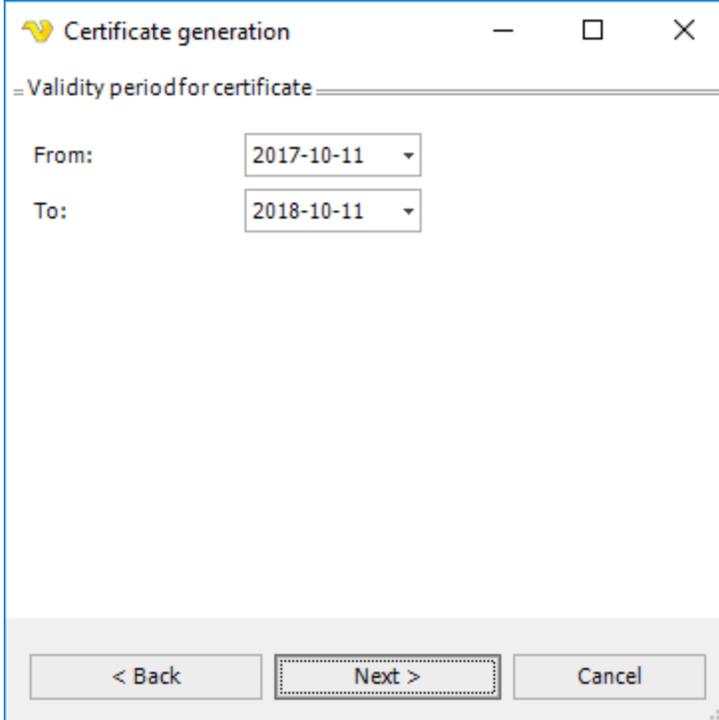
Organization unit:

Common name:

< Back **Next >** Cancel

Enter subject info for the certificate. Remember to set the Email property if you are going to use the Certificate in the Email Task.

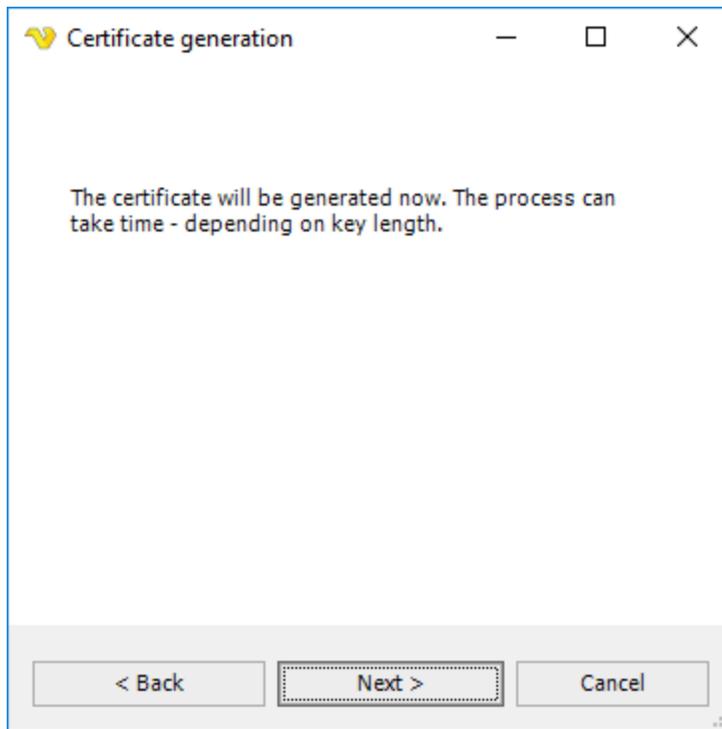
Global > Certificates > Create 4



The screenshot shows a dialog box titled "Certificate generation" with a yellow checkmark icon. Below the title bar, there is a label "= Validity period for certificate" followed by a horizontal line. Underneath, there are two date selection fields: "From:" with a dropdown menu showing "2017-10-11" and "To:" with a dropdown menu showing "2018-10-11". At the bottom of the dialog, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

Enter validity period for the certificate.

Global > Certificates > Create 5



Last step. Click on Next to generate Certificate.

Delete certificate

Select a certificate row and click on the *Delete certificate* icon.

Certificate file formats supported by VisualCron

PFX (PKCS#12): Binary file format, which allows storing of one or more certificates and associated private keys in one file in encrypted form. The keys are encrypted with password. Microsoft's implementation of PFX loader doesn't support TripleDES encryption, so you need to care about this issue when you save the certificate for further use with Microsoft software.

PEM: Certificate and private key format, which includes base64-encoded DER data and optional text headers, enclosed into special begin and end marks. Private keys can be encrypted using DES (tripleDES) algorithm. Certificate and key can be saved to one file. The file can even contain several certificates and keys. PEM format is used by OpenSSL package.

SPC: Binary file format, which allows storing of certificates only (no private keys). Several certificates can be saved in one file. Private keys are usually saved to a separate file in DER or PVK format. Some implementations encode the PKCS#7 format to base64 text encoding (and sometimes even with UTF16), but this is not standard-compliant.

PVK: Binary file format for storing private keys with password-based encryption.

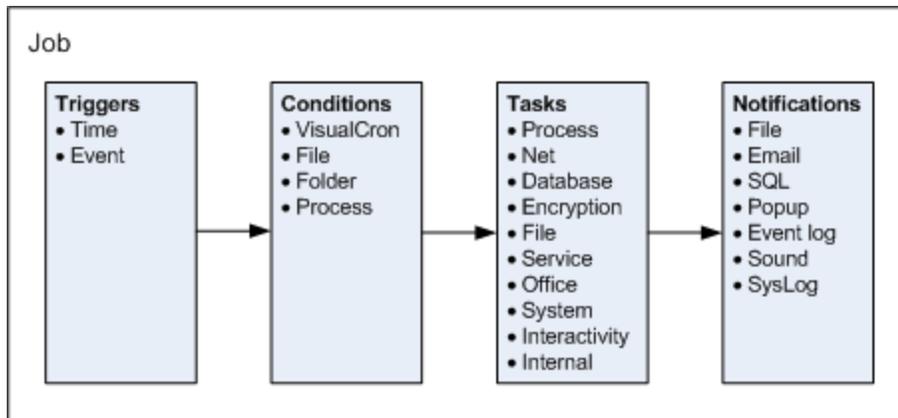
CER/DER/KEY: Basic certificate and key format, which represents pure certificate and key data in binary ASN.1 notation. Certificates and keys are stored separately. Some implementations encode the DER format to base64 text encoding (and sometimes even with UTF16), but this is not standard-compliant.

5.1.2.9 Global - Conditions

Condition sets and the included conditions are "global", which means that once a condition set is defined, it can be selected by one or more Jobs and/or Tasks. However, a Job or a Task can only include one condition set. A condition set is defined either from the main menu **Server > Global objects > Conditions** dialog or the *Add/Edit Job* or the *Add/Edit Task* dialogs.

With conditions, the internal flow of Tasks included in a Job or the Job itself, can be controlled. Conditions are different kinds of "checks" which are evaluated before a Job or a Task is launched. One common condition could be if the previous Task returns an error based on the exit code. The outcome of the condition evaluation results in an action. The action could be to exit the Job because of the previous "failure".

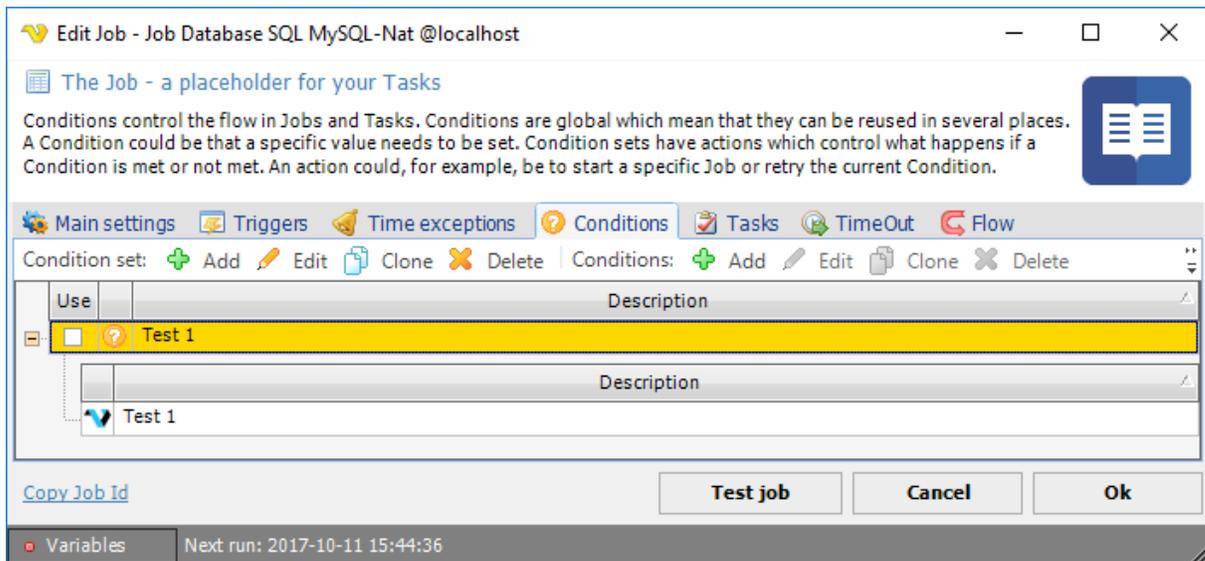
Conditions are also evaluated before *Notifications*. If a condition check returns false then neither the Job/Task nor the notification is run. Thus the basic Job flow now looks like:



A condition set may include several conditions and these conditions can be of several types. The condition set criteria determine how the results of all included conditions are evaluated. The evaluation of a condition set can only result in one action, which affects the current or following Task or Job.

In the *Add/Edit Job* or the *Add/Edit Task* windows, click on the **Conditions** tab and you will see the currently defined condition set list.

Edit Job > Conditions tab



The condition set list consists of two bands, where the parent row is the condition set and the child rows are the conditions within the condition set.

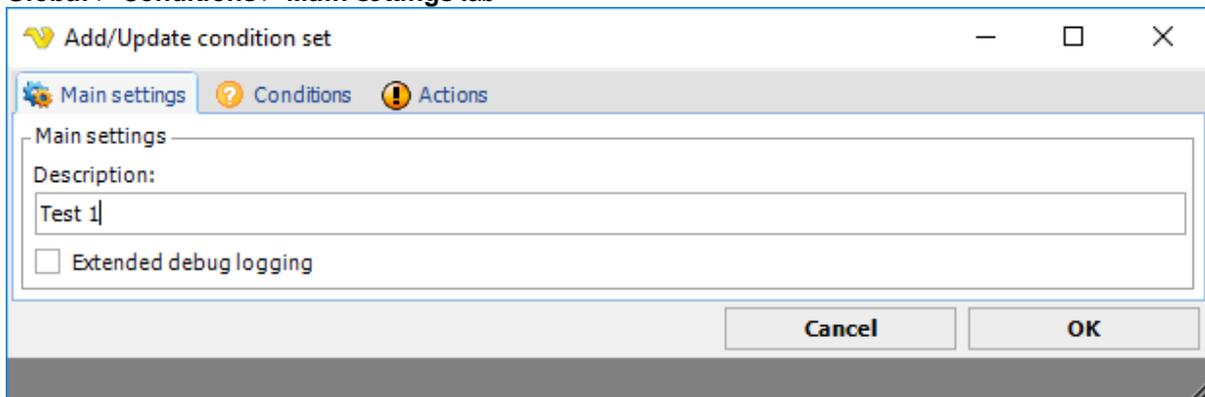
Use

A condition can, by itself, be active or inactive. Check the *Use* box to the left of each condition set for each set you want to activate for your Job or Task. If inactive, the condition will be ignored.

5.1.2.9.1 Conditions - Main settings

When clicking on *Add*, *Edit* or *Clone* or mouse right-click on a Condition Set row in a Condition Set window, the *Add/Edit condition set* window is opened.

Global > Conditions > Main settings tab



Description

A description of the Condition Set which appears in the Condition Set list.

Extended debug logging

Check this box if you want extra information about how the Condition Set moves from result to action. If you have problems with your conditions and want to find out why a Job or Task is/is not being run then use this option.

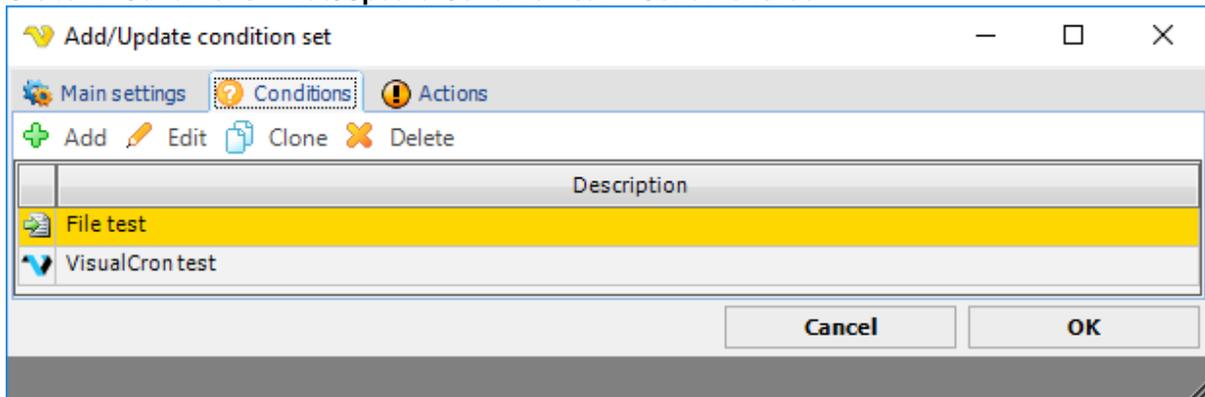
5.1.2.9.2 Conditions - Conditions

A condition set is defined from the main menu **Global > Conditions** dialog.

Global > Conditions > Add/Update Condition set > Main settings tab

See Conditions Main settings for details.

Global > Conditions > Add/Update Condition set > Conditions tab

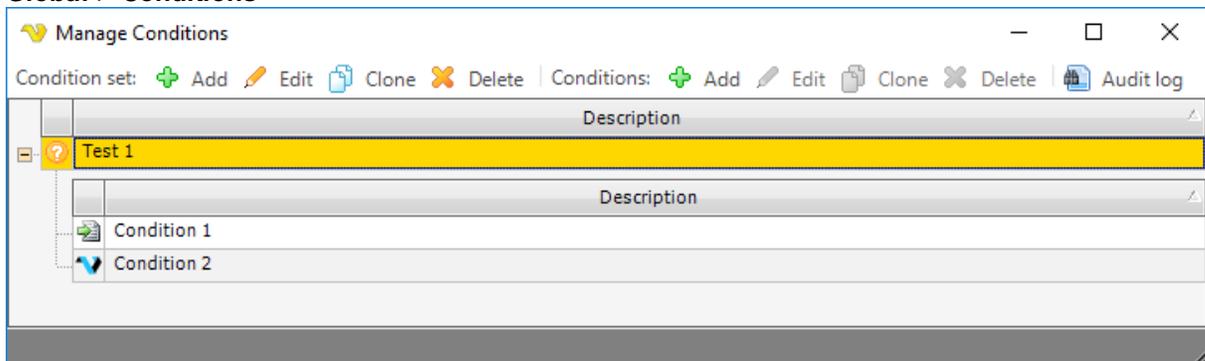


Use *Conditions > Add* to include conditions in the current condition set.

Global > Conditions > Add/Update Condition set > Actions tab

See Conditions Actions for details.

Global > Conditions



By clicking on the *Conditions* toolbar or by mouse right-click on a condition set, you are able to *Add/Edit/Clone* or *Delete* a condition set. In the *Add/Edit condition set* -> **Conditions** tab, the condition set and condition settings are handled.

The condition set includes the following settings:

- Description
- A set of conditions
- Actions based on different condition matching options

A condition uses the following settings:

- Condition type
- Description
- Condition Active
- Condition type parameters (dependent of the selected condition type)

Each condition type uses specific associated parameters. The following condition types exist:

- VisualCron
- File
- Folder
- Process
- Variable
- .NET

5.1.2.9.2.1 Condition - VisualCron

The *VisualCron* condition lets you check internal values within VisualCron.

Global > Conditions > Condition set Add > Conditions Add > VisualCron select > VisualCron tab

The screenshot shows the 'Add/Edit condition' dialog box with the 'VisualCron' tab selected. The 'Condition check object' section has 'Auto (previous task or job)' selected. The 'Job name' and 'Task name' dropdowns are both set to 'No job selected' and 'No task selected' respectively. The 'Match' section is divided into 'Job' and 'Task' sub-sections. Under 'Job', 'Exit code' is set to 'Is' with a value of '0', and 'Is running' is set to 'True'. Under 'Task', 'Exit code' is selected with 'Is not' and a value of '0', 'Output' is set to 'Is' with an empty text box, 'Output (stderr)' is set to 'Is' with an empty text box, and 'Is running' is set to 'True'. At the bottom, there are 'Cancel' and 'OK' buttons, and a 'Variables' button on the left.

First you have to select a Task or a Job that you want to check. Remember that conditions needs the setting *Run Task in order* if you want to check a Task.

Auto

VisualCron will check the previous Task values. This is only applicable for Tasks that have an internal relation within a Job contrary to Jobs which are independent on each other.

Specific

Use this setting to check a Task from another Job.

Match

The following match types exist:

- *Job Exit code* - A successful run of a Job returns exit code 0. If any of the Tasks return a non-zero value, the Job exit code will be inherited by the failing Task exit code.
- *Job Is running* - If the selected Job is currently running.
- *Task Exit code* - A successful run of a Task returns exit code 0. So, if you only want to run the next Task if the previous Task returned "Success" you select "Task exit code" - "Is" - "0". In the condition set where this condition belong, you select "Continue" in "MatchAll" and "Exit" in "MatchNone". Thus, if the exit code is "0" you will have one match and the action for "MatchAll" will be run. The action was continue which runs the Task it was supposed to run. If the exit code is not "0" (failure) it will not match your condition and therefore the action of "MatchNone" will be run. The action you specified was "Exit", which will terminate the current run of your Job.
- *Task Output* - This match type will check an output of a Task. The ordinary standard output for a Task is used and stored at a Task level. You can watch the previous output by double-click at the Task output row in the main window of VisualCron. In this condition you can compare the output in three ways. Exact match "Is" or "Is not" or if it "Contains" a certain string or character. Enter the desired match value in the text box to the right.
- *Task Is running* - If the selected Task is currently running.

5.1.2.9.2.2 Condition - File

The *File* condition lets you check information about a certain file before running your Task or Job.

Global > Conditions > Condition set Add > Conditions Add > File select > File tab

File path

First you have to select a file. Write the full UNC path to the file, or select it by clicking on the *File* browser icon to the right.

Credentials

If your file is located at a network resource or any other protected area, it may require some "credentials" to access that file. Select a credential from the list. The credentials are stored globally, which lets you create new credentials that can be accessed in different levels and functions in VisualCron. Click on *Manage credentials* to add a credential that you may require.

File exists

Checks whether a file exists or not. Select true or false.

File content

This check type tries to read the content of a file and compare it, depending on your match type "Is", "Is not", "Contains", to the string you specify in the text box to the right.

5.1.2.9.2.3 Condition - Folder

The *Folder* condition lets you check information about a certain folder before running your Task or Job.

Global > Conditions > Condition set Add > Conditions Add > Folder select > Folder tab

The screenshot shows the 'Add/Edit condition' dialog box with the 'Folder' tab selected. The 'Folder information' section includes a text field for 'Folder path:' with a folder browser icon to its right. Below this is a 'Credentials:' dropdown menu set to 'No Credential' and a 'Manage credentials' button. The 'Match' section has a radio button selected for 'Folderexists' and a dropdown menu set to 'True'. At the bottom right are 'Cancel' and 'OK' buttons. A 'Variables' tab is visible at the bottom left.

Folder path

First you have to select a folder. Write the full UNC path to the folder or select it by clicking on the *Folder* browser icon to the right.

Credentials

If your folder is located at a network resource or any other protected area it may require some "credentials" to access that folder. Select a credential from the list. The credentials are stored globally which lets you create new credentials that can be accessed in different levels and function of VisualCron. Click on *Manage credentials* to add a credential that you may require.

Folder exists

This checks whether a folder exists or not. Select True or False.

5.1.2.9.2.4 Condition - Process

The *Process* condition lets you check information about a certain process before running your Task or Job.

Global > Conditions > Condition set Add > Conditions Add > Process select > Process tab

The screenshot shows a window titled "Add/Edit condition" with a "Process" tab selected. The "Process information" section includes a text input for "Process name:" and a "Select" button. The "Match" section has a radio button for "Is running" (selected) and a dropdown menu set to "True". The window has "Cancel" and "OK" buttons at the bottom right, and a "Variables" button at the bottom left.

Process name

Enter the process name or select the process from a list by clicking on the *Select* process button. Note that the check is case sensitive and that processes spawned from the VisualCron server may be in upper case. A good way to find the right process name, is to first start the Task Manager at the server from VisualCron and then select the process from the list.

Is running

This checks whether a process is running or not. Select True or False.

5.1.2.9.2.5 Condition - Variable

The Variable Condition is able to compare two Variables or values. The values are compared differently depending which data type you select.

Global > Conditions > Condition set Add > Conditions Add > Variable select > Variable tab

Value 1

This is the first value you want to compare. Click the *Variables* icon to open up the Variable browser.

Type

The data type of the values. Values are converted and compared against the selected data type.

Condition

How the values should be compared. This affects the result of the Condition and Action in Condition set.

Value 2

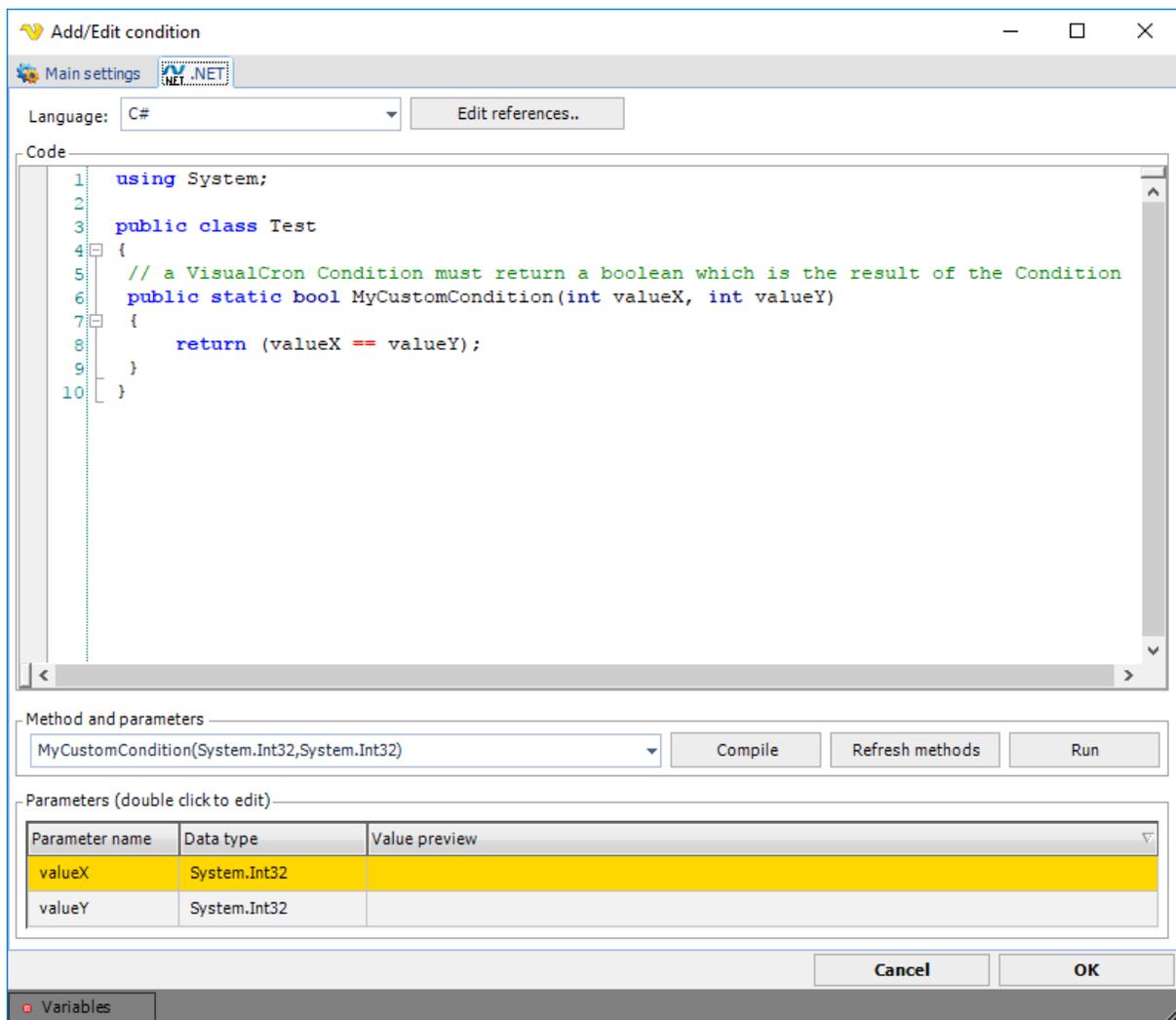
The second value you want to compare. Click the *Variables* icon to open up the Variable browser.

5.1.2.9.2.6 Condition - .NET

The .NET Condition was created to provide a Condition with almost no limits at all. The idea is that you create a method in the .NET languages c# or VB.NET. This method must:

- Be located within a class
- Be static
- Return a boolean

Global > Conditions > Condition set Add > Conditions Add > .NET select > .NET tab



Language

Select either C# or VB.NET language. The syntax editor and compile methods will alter depending on selected language.

Edit references..

Add/remove any dll that you want to use as a reference to make our code work or be more compact.

Code

In this text box you insert your code. It is important that:

- The code exists in a class
- That you use static/shared methods only

Any return value will be converted to string.

Method selection

Select the method you want to use. After you have added new code, press the *Refresh methods* button.

Compile

This button tests if the code can compile and will return a popup message with error if not.

Refresh methods

This button compiles the codes and add all existing static methods into the method combo box.

Run

This button compiles and runs the code so you can test it.

Parameters

If the selected method contains any parameter, you can double click on the row to add your own parameter value.

5.1.2.9.3 Conditions - Actions

The condition set actions controls what will happen depending on the results of the conditions within the condition set. All results are calculated to one final result.

Global > Conditions > Add/Update Condition set > Actions tab

The screenshot shows the 'Add/Update condition set' dialog box with the 'Actions' tab selected. The dialog is titled 'Add/Update condition set' and has three tabs: 'Main settings', 'Conditions', and 'Actions'. The 'Actions' tab is active, showing four sections for different match criteria: 'On Match All', 'On Match Any', 'On Match None', and 'On Match Error'. Each section contains a dropdown menu for the match type (e.g., 'Don't wait', 'Continue', 'Exit'), a dropdown menu for the action (e.g., 'Continue', 'Exit'), and three spinners for 'Hours', 'Minutes', and 'Seconds'. The 'No job selected' and 'No task selected' dropdowns are currently empty. At the bottom, there are 'Cancel' and 'OK' buttons.

The condition set criteria determine how the results of all included conditions in a condition set are evaluated. The following condition set criteria are valid:

- *On Match All* - all conditions returned a "match"
- *On Match Any* - one or more conditions returned a "match"
- *On Match None* - none of the conditions returned a "match"
- *On Match Error* - the condition check failed in some way, i.e. if an "access denied" occurred while checking a file condition

For each condition set criteria, a set of actions available:

- *Wait* - wait a specified time (always available)
- *Continue* - Run Task or Job if match (default value for *On Match All* and *On Match Any*)
- *Next* - Run next Task in queue (skip current)
- *Retry* - Wait specified time and re-run current Task
- *Exit* - Exit current Job (default value for *On Match None* and *On Match Error*)
- *Run Job* - Run specified Job (exits existing Job, runs specified Job)
- *Run Task* - Run specified Task **in current** Job, after completion it continues with next in order

Wait notes: The wait for each action is a pause between the actual condition check and the action. It can be used in several ways but is most commonly used with the "Retry" action. For example, you want to check if a file exists, but the condition check fails to find the file and thus the result is "Match None". With this result you want to Retry (check again if the file exists) and by the wait parameter you add a pause between each check.

The Wait action is not used at the first check when using the "Retry" action. This means that it won't pause before the first check, but on the following retries. For other action types, the "Wait" action is always used independent on if it is the first time or not.

Run Task notes: When Run Task is used, VisualCron tries to find the specified Task within the current Job. If found it runs that Task and Tasks that may follow, in order. When the Task does not reside within the current Job VisualCron only runs the Task alone and no following Tasks.

How the Actions affect Jobs and Tasks

The actions has different effects on Jobs and Tasks. The simple reason for that is that Jobs by themselves have no connection to each other like the Tasks, which are internally connected within a Job.

Actions affecting a Job condition:

- *Continue* - continues running Job
- *Next* - exits Job
- *Retry* - wait and recheck condition
- *Exit* - exits Job
- *Run Job* - exits Job try to run other Job
- *Run Task* - exits Job, runs single Task

Actions affecting a Task condition:

- *Continue* - continues running Task
- *Next* - runs next Task (if existing)
- *Retry* - wait and recheck condition
- *Exit* - exits Job
- *Run Job* - exits Job and runs Job x
- *Run Task* - if Job is the same as this current Job then it tries to run the Task within the Job process else it starts a new Job and runs the specified Task there

Handling of errors

By default, all errors that occur in the condition check leads to the "Exit" action. Example of errors the can occur:

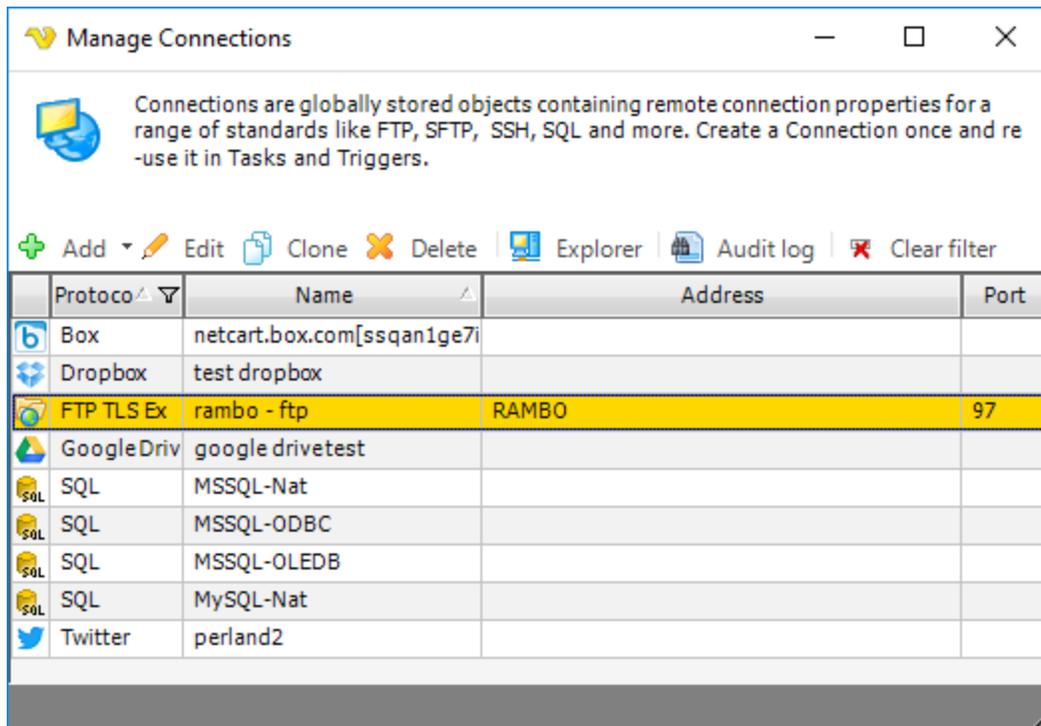
- The condition points to a Job or Task that doesn't exist
- An error occurs in a condition check
- "Access denied" on file or folders

Task notes: Task flow only makes sense when using *Run Tasks in order*. Task conditions are only checked on Jobs which has the setting *Run Tasks in order* on.

5.1.2.10 Global - Connections

Based on the nature of some Jobs, Tasks or Notifications, a Connection is an essential part of the settings for that entity. Connections are global which means they are centrally stored and can be accessed by related Tasks and Triggers. Connections are used to specify to where and how VisualCron should connect to various instances like FTP servers, SQL servers etc. If a password to a FTP server has changed you only need to updated that in the Connection - not every Task it is used in.

Connections are viewed and updated in the **Server > Global objects > Connections** window. The connections may also be managed by *Add/Edit Job -> Tasks -> Add/Edit -> Task type*. Connections are global, thus if you change a connection definition, this will affect all entities using this connection.



Explorer

Many connections use some kind of explorer to test and navigate with the selected Connection, for example; SQL Explorer, Connection Explorer. Select a Connection and click on Explorer button.

Audit log

Click this button to view the Audit log for Connections.

Clear filter

When you open *Manage Connections* from a Task only the related protocols are visible. Click *Clear filter* to view all.

Currently the following Connection protocols exist:

- FTP
- FTP SSL Implicit
- FTP TLS Implicit
- FTP SSL Explicit
- FTP TLS Explicit
- SFTP

- SCP
- SSH
- SMTP
- POP3
- IMAP
- Exchange EWS
- Exchange WebDAV
- WebDAV
- SQL
- SSRS
- Amazon
- Microsoft Azure
- Dropbox
- Google Drive
- OneDrive
- Box
- VisualCron
- SharePoint
- IM
- XendApp
- Pushbullet
- Telegram
- Twitter
- Crystal reports
- VMWare
- Dynamics CRM
- AS/400
- SAP

Click on protocol link above to read more information and connection setting specifics of that protocol.

5.1.2.10.1 Connection - FTP

The FTP Connection stores connect and logon properties for normal and secure FTP server connections.

About FTP

File Transfer Protocol (FTP) is a standard network protocol used to transfer files from one host to another host over a TCP-based network, such as the Internet.

FTP is built on a client-server architecture and uses separate control and data connections between the client and the server. FTP users may authenticate themselves using a clear-text sign-in protocol, normally in the form of a username and password, but can connect anonymously if the server is configured to allow it. For secure transmission that hides (encrypts) the username and password, and encrypts the content, FTP is often secured with SSL/TLS ("FTPS"). SSH File Transfer Protocol ("SFTP") is sometimes also used instead, but is technologically different.

The first FTP client applications were command-line applications developed before operating systems had graphical user interfaces, and are still shipped with most Windows, Unix, and Linux operating systems. Dozens of FTP clients and automation utilities have since been developed for desktops, servers, mobile devices, and hardware, and FTP has been incorporated into hundreds of productivity applications, such as Web page editors.

"Implicit SSL" versus "explicit SSL" (per RFC 2228)

Connecting securely and authenticating are two distinct methods of establishing a secure connection with a FTP server. In the first case, the Secure FTP server may first require a SSL connection to be established, before the initial welcome message is sent. This is called an implicit SSL connection. In the second case, the connection is established in clear text and a special FTP command must be sent to the Secure FTP server to change the connection into a secure connection. This is called an explicit SSL connection.

In most cases, FTP servers that support SSL authentication will accept a normal connection on port 21. Once the connection is established, it is necessary to authenticate before logging in, using the Authenticate method. When explicitly securing the connection, it is also possible to secure data connections using the overload of the Authenticate method which requires a DataChannelProtection ENUM as a parameter.

Servers that require an implicit SSL connection usually listen on port 990 rather than 21

Protocol variants

- FTP
- FTP SSL Explicit
- FTP SSL Implicit
- FTP TLS Explicit
- FTP TLS Implicit

The FTP Connection stores connect and logon properties for normal and secure FTP server connections.

Manage Connections > Add > FTP > Main settings tab

The screenshot shows the 'Add/Edit Connection' dialog box with the 'Main settings' tab selected. The dialog has a title bar with a yellow icon and the text 'Add/Edit Connection'. Below the title bar, there is a header area with an 'FTP' icon and the text 'The FTP Connection stores connect and logon properties for normal and secure FTP server connections.' To the right of this text is a blue icon of an open book. Below the header is a tabbed interface with five tabs: 'Main settings' (selected), 'Authentication', 'Encryption', 'Extra settings', and 'Log'. The 'Main settings' tab contains the following fields:

- Protocol:** A dropdown menu set to 'FTP' with a 'Brute force test' button to its right.
- Server:** A section containing several fields:
 - Name:** A text box containing '192.168.1.110'.
 - Address:** A dropdown menu set to '192.168.1.110'.
 - Port:** A spinner box set to '21'.
 - Timeout:** A spinner box set to '60'.
 - Code page:** A dropdown menu set to 'Windows-1252'.

At the bottom of the dialog are two buttons: 'Cancel' and 'OK'.

Protocol type

VisualCron is able to connect using regular FTP and FTPS (with implicit and explicit encryption). Regular FTP offer no security and information is not encrypted. VisualCron supports both SSL 3.0 and TLS (SSL 3.1). SSL and TLS are protocols layered above connection protocols (such as TCP/IP) but beneath application protocols (such as FTP) that provide encrypted, authenticated communications between a client and a server.

Brute force test

When using FTP and you are unsure of connection properties you can use the Brute force test tool to test all connection combinations. Note, brute force test option is only available for FTP protocol.

Name

This is a descriptive name of the connection to distinguish from other connections.

Address

This is the host address to the server. It could be a DNS name or IP number.

Port

This is the remote connection port. Default port for regular FTP is 21. Default port for Implicit FTPS is 990.

Timeout

The connection timeout in seconds. Connection will fail after this time is passed.

Code page

The table of values that describes the desired character set.

Manage Connections > Add > FTP > Authentication tab

The screenshot shows the 'Add/Edit Connection' dialog box for FTP. The title bar reads 'Add/Edit Connection'. Below the title bar, there is a section for 'FTP' with a description: 'The FTP Connection stores connect and logon properties for normal and secure FTP server connections.' To the right of this text is a blue icon of an open book. Below the description is a tabbed interface with five tabs: 'Main settings', 'Authentication' (which is selected), 'Encryption', 'Extra settings', and 'Proxy'. Below the tabs is a 'Credential' section with the following fields:

Authentication type:	Password
	<input type="checkbox"/> Anonymous
Username:	Test
Password:	*****
ACCT:	

At the bottom of the dialog box are two buttons: 'Cancel' and 'OK'.

Authentication type

Authentication type can either be *Password* or *Public key*. For the FTP protocol only password authentication is available. When using SFTP together with public key authentication you have to specify a path to a private key file.

Anonymous

If your connection does not require a user name and password this box should be checked.

Username

The user name for the connection.

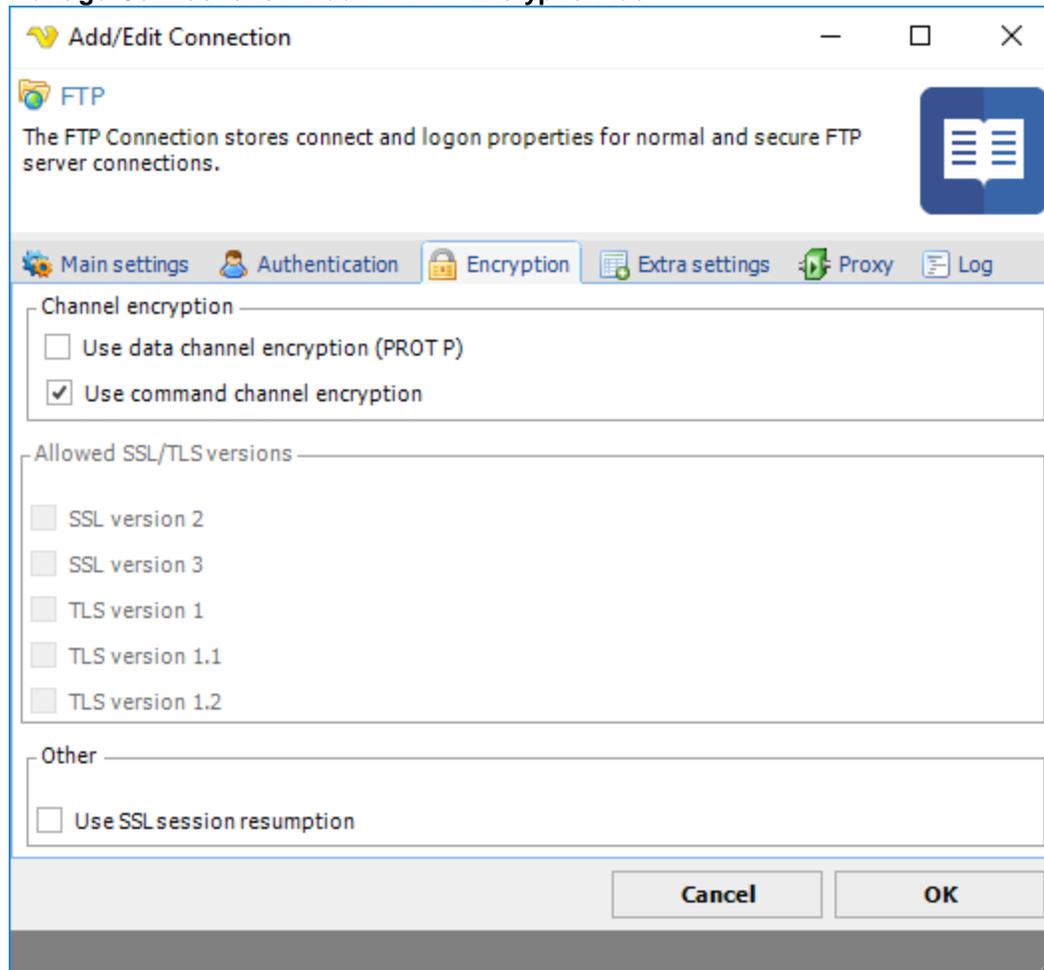
Password

The password for the connection.

ACCT

This property is only for some proxies that require ACCT value. FTP protocol only.

Manage Connections > Add > FTP > Encryption tab



Use data channel encryption (PROT P)

If this property value is True the channel used for data transfer (files, directory listings) will be encrypted, otherwise only command channel will be encrypted.

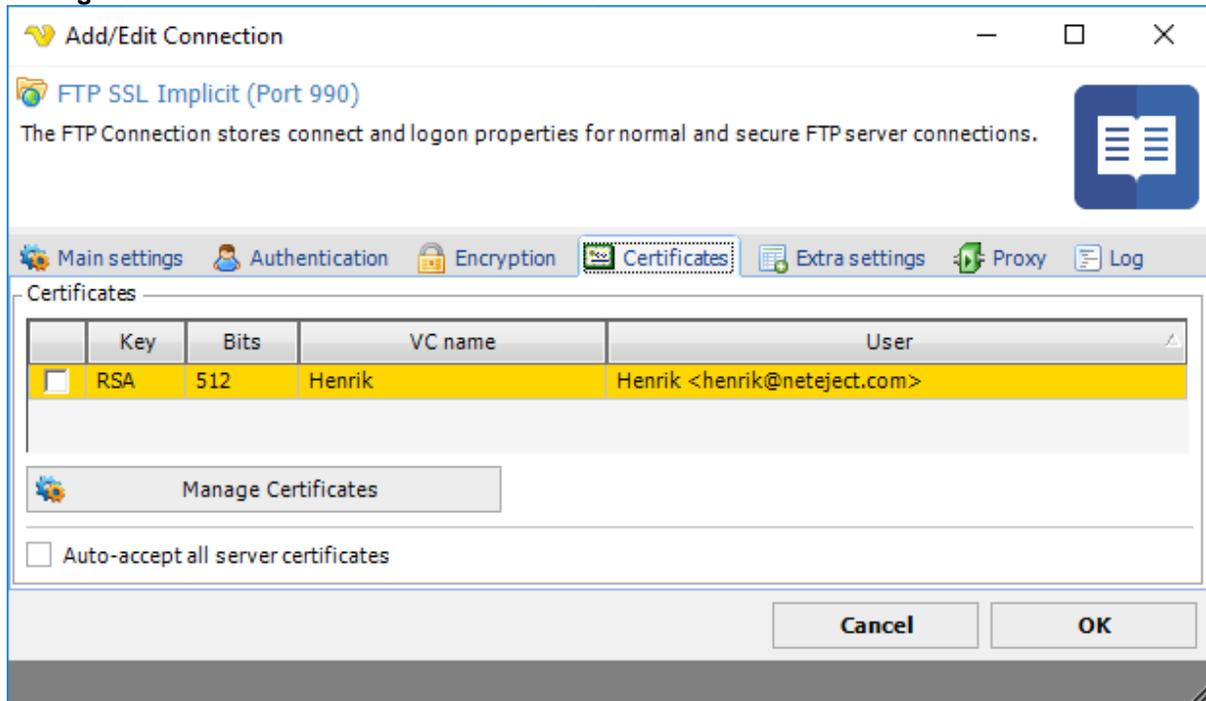
Use command channel encryption

If this property value is True the command channel will be encrypted.

Use SSL session resumption

Text ...

For the FTP SSL/TLS connection types, an extra **Certificates** tab is provided.

Manage Connections > Add > FTP SSL/TLS > Certificates tab*Client certificates*

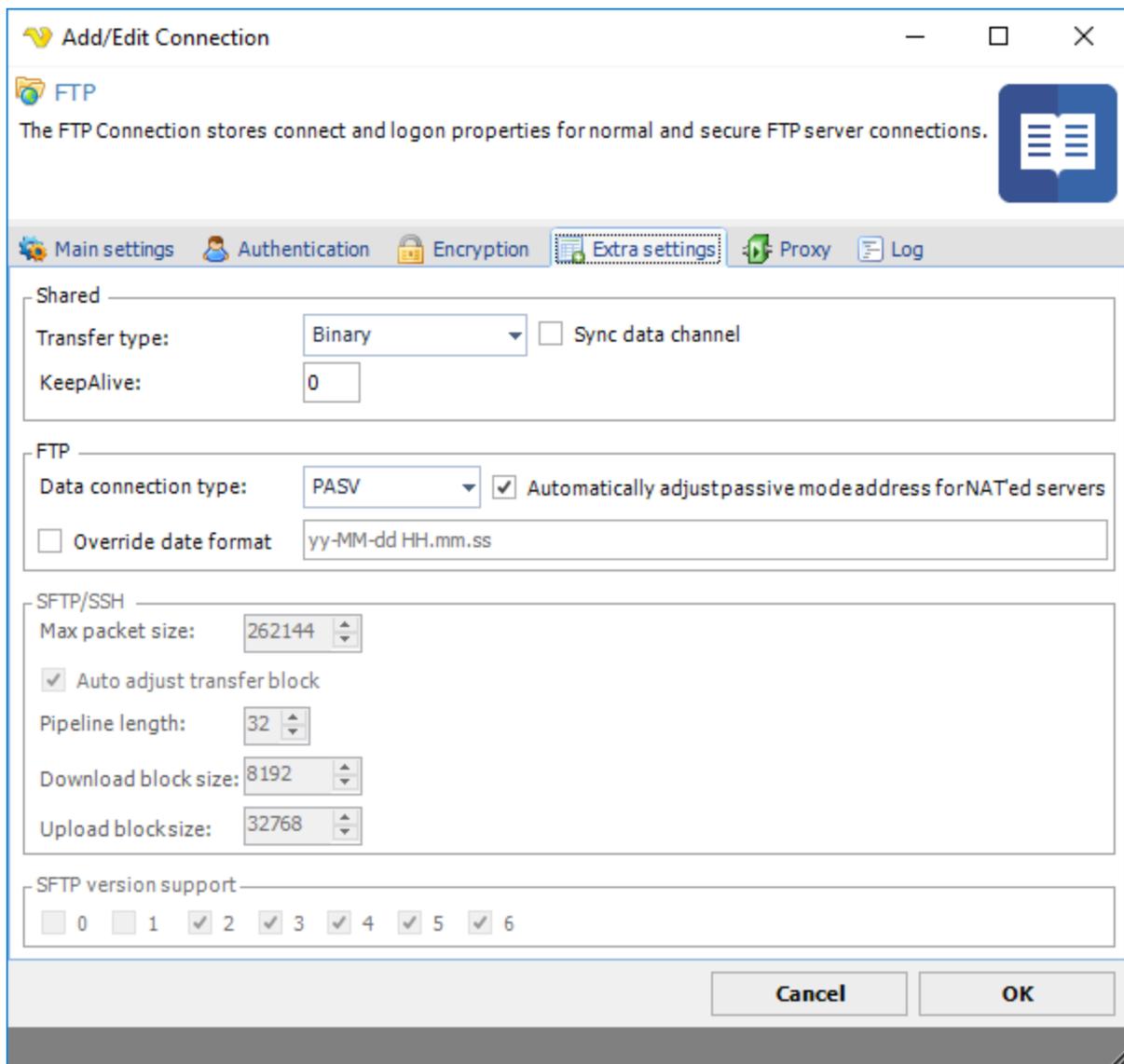
Client certificates can be sent to the FTP server when connecting (implicit SSL) or when authenticating (explicit SSL). If the client certificate should be rejected by the server, an exception will be issued and the Task can not continue.

To add a client certificate, you need to click on Global Certificates. VisualCron is able to store certificates within itself. These certificates can be created by VisualCron or imported from other source. When you have create a Certificate you need to select it in the list of Certificates in the Certificates tab of the Connection properties.

Server certificates

The certificate that is received from the FTP server is verified against the VerificationFlags provided at connection or authentication. By default, if a certificate received from an FTP server contains anomalies, it will be rejected. If no anomalies are detected, it will be accepted. This behavior can be overridden by checking the *Auto-accept server certificates* checkbox. If not checked and a certificate anomaly is detected, a popup will be shown (if the client is logged in). The popup message will show why the server certificate was initially connected. You can choose to "Accept" or "Deny" the certificate. If accepted, it will be saved and you will not be asked again unless the server certificate has changed.

Manage Connections > Add > FTP > Extra settings tab



Transfer type

Select if you want to transfer through binary (default) or ASCII mode.

Sync data channel

This option specifies whether to synchronize data channel. Switch it on if component hangs when trying to establish data connection, i.e., on using commands list, upload, download.

Data connection type

This value is indicating if the FTP client should initiate the data connection rather than the FTP server.

If set to PASV, the PASV command will be sent to the FTP server rather than the PORT command. This results in that the FTP server will listen on a data port (other than its default) and wait for a data connection to be established by the FTP client. The reply to the PASV command includes the host and port address the FTP server is listening on.

If set to PORT, the PORT command will be sent and the FTP client will listen for an incoming data connection.

The FTP server will establish the data connection upon receipt of a transfer command.

Note: If you are having problems with connecting or sending/receiving files to/from a server, try the PASV setting.

Automatically adjust passive mode address for NAT'ed servers

If this property is set to True, in passive mode data transfer, VisualCron will automatically set the address of the remote host to that from the control connection.

Override date format

VisualCron is trying to interpret the dateformat of files when listing files. In some situations there is a compatibility or a FTP server not behaving according to standard. In these cases you will see an error in the log file which contains the incoming date format. By overriding and using the same format as in the log you will force VisualCron to use this specific date format.

Proxy tab

Proxy servers allow a client to make indirect network connections. The client connects to the proxy, makes a request for a connection, file, etc. The proxy server then provides this resource by getting it from the requested address or by retrieving it from its cache. The advantages of using a proxy server can include filtering, connection sharing, increased speed and decreased bandwidth use. HTTP proxy servers are web servers that relay requests from a client to an external FTP server.

Manage Connections > Add > FTP > Proxy tab

The screenshot shows the 'Add/Edit Connection' dialog box for an FTP connection, specifically the Proxy tab. The dialog has a title bar with a yellow heart icon and the text 'Add/Edit Connection'. Below the title bar, there is a folder icon and the text 'FTP'. A description reads: 'The FTP Connection stores connect and logon properties for normal and secure FTP server connections.' To the right of the description is a blue icon of an open book. Below the description is a tabbed interface with the following tabs: 'Main settings', 'Authentication', 'Encryption', 'Extra settings', 'Proxy' (selected), and 'Log'. The 'Proxy' tab contains the following fields and controls:

- Proxy type:** A dropdown menu with 'HTTP Proxy' selected.
- Address:** A text input field.
- Port:** A numeric input field with '0' entered and a spinner control.
- Use credentials**
- Domain:** A text input field.
- Username:** A text input field.
- Password:** A text input field.
- Use proxy for data channel**

At the bottom of the dialog are two buttons: 'Cancel' and 'OK'.

Proxy type

Select the proxy type to be used. The FTP implementation supports the HTTP proxy type and the SFTP implementation supports the SOCKS4 and SOCKS5 proxy types.

Address

The host name or IP address of the proxy server.

Port

The port of the proxy server.

Use credentials

Text ...

Domain

The name of the domain to be created.

Username

The user name to access the proxy server.

Password

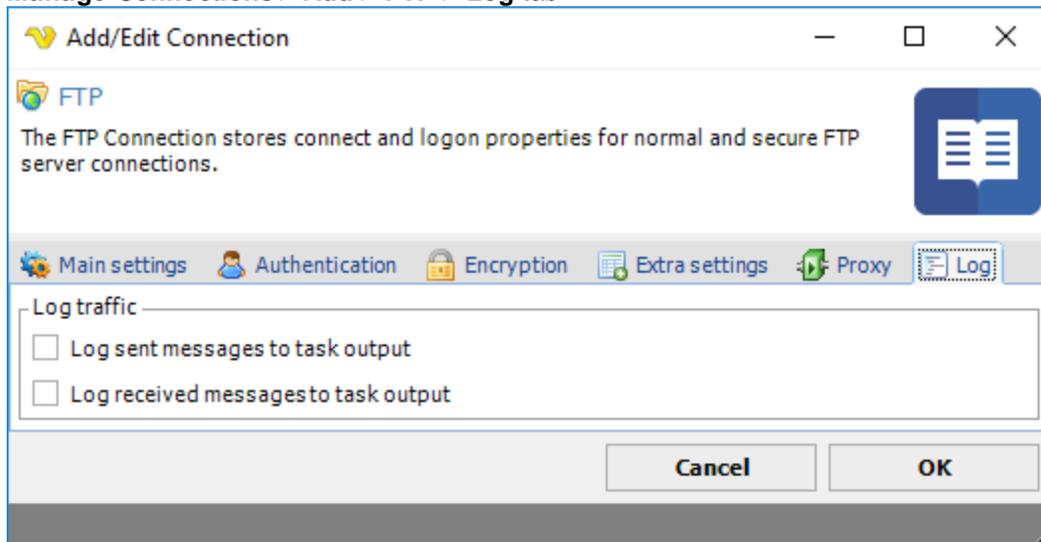
The password to access the proxy server.

Use proxy for data channel

By default, proxy is used for the data (sending channel). Uncheck this to circumvent proxy.

Log tab

This tab is not applicable for the email related (SMTP, POP3 and IMAP4) or SQL connection types.

Manage Connections > Add > FTP > Log tab*Log outgoing messages to Task output*

All messages sent from VisualCron to the FTP server is logged and stored in the Task output.

Log incoming messages to Task output

All messages received from VisualCron to the FTP server is logged and stored in the Task output.

Troubleshooting

1. Control channel transfer error (error code is 10053)

Try checking "Auto accept all server certificates" in Certificates tab.

2. Server cannot perform SSL/TLS negotiation

FTP server either does not support TLS or SSL. Try switching between those.

5.1.2.10.2 Connection - FTP SSL Implicit (Port 990)

See Connection FTP for details.

5.1.2.10.3 Connection - FTP TLS Implicit (Port 990)

See Connection FTP for details.

5.1.2.10.4 Connection - FTP SSL Explicit (AUTH SSL)

See Connection FTP for details.

5.1.2.10.5 Connection - FTP TLS Explicit (AUTH TLS)

See Connection FTP for details.

5.1.2.10.6 Connection - SFTP

The SFTP Connection stores connect and logon properties for the transfer protocol SSH File Transfer Protocol (SFTP).

About SFTP

SFTP (SSH File Transfer Protocol, often called Secure File Transfer Protocol) is a protocol that lets you transfer files securely over a SSH connection. SFTP is not compatible with FTP (File Transfer Protocol), which has its own security enhancements such as FTPS, FTP over SSL. SFTP is built on top of SSH connection. SSH supports various authentication schemes such as password-based and public key. Public key authentication requires a private key which can be linked to from the Security tab. The VisualCron implementation supports 3-5 of SFTP protocol (versions 1, 2 are outdated and not used anywhere). Default port for SFTP is 22.

Manage Connections > Add > SFTP > Authentication tab

Authentication type

Authentication type can either be *Password* or *Public key*. For the FTP protocol only password authentication is available. When using SFTP together with public key authentication you have to specify a path to a private key file.

Username

The user name for the connection.

Password

The password for the connection.

Public key vs password authentication

Public key authentication means that you specify the private key and any password for that key. Private keys can be loaded in SSH1, OpenSSH, Binary, Putty, IETF (Putty and IETF use different formats here) formats.

Private key group

These options are only used when using *Public key* authentication.

Private key path

This is the private key you have received from server administrator. Click the *File* icon to browse for the private key.

Password

The password for the public key.

Override authentication

By authentication, normally both Password and Keyboard authentication are suggested. Some servers do not support the VisualCron *Auto authentication*. Uncheck this and check the specified type of authentication you want to use.

Manage Connections > Add > SFTP > Extra settings tab

The screenshot shows the 'Add/Edit Connection' dialog box for SFTP (SSH - Secure Shell). The dialog has a title bar with standard window controls and a toolbar with icons for Main settings, Authentication, Encryption, Extra settings (selected), Proxy, and Log. The main content area is divided into several sections:

- Shared:** Transfer type: Binary (dropdown), Sync data channel (checkbox), KeepAlive: 0 (text input).
- FTP:** Data connection type: (dropdown), Automatically adjust passive mode address for NAT'ed servers (checkbox), Override date format: yy-MM-dd HH.mm.ss (checkbox and text input).
- SFTP/SSH:** Max packet size: 262144 (spin box), Auto adjust transfer block (checkbox), Pipeline length: 32 (spin box), Download block size: 8192 (spin box), Upload block size: 32768 (spin box).
- SFTP version support:** Checkboxes for versions 0, 1, 2, 3, 4, 5, 6. Versions 2, 3, 4, 5, and 6 are checked.

At the bottom right, there are 'Cancel' and 'OK' buttons.

Transfer type

Select if you want to transfer through binary (default) or ASCII mode.

Sync data channel

Text ...

Data connection type

FTP only option.

Max packet size

Use this property to specify the maximal length of packet in bytes. The default value is 262144, i.e., 256 KBytes.

Auto adjust transfer block

Use this property to enable or disable automatic adjustment of pipeline length and block sizes. By default automatic adjustment is enabled, and normally you don't need to disable it.

Pipeline length

Use this property to specify the number of upload or download requests sent before waiting for all requests to complete. The more requests are sent, the faster the transfer is. However, in case of error, all requests are discarded. Also, more pending requests means more memory used, so if speed is not critical and memory consumption is, set PipelineLength to 1. Default value is 10.

Download block size

Use this property to control the size of the single download request. The servers don't limit download request size, however the buffer is allocated to store the requests, so the larger the value is, the memory block is needed.

SFTP version support

Some SFTP servers do not support connections with specific SFTP versions. You can control in details what SFTP client versions that should be supported.

http://en.wikipedia.org/wiki/SSH_File_Transfer_Protocol

Troubleshooting

Authentication types:

2 - public key authentication

4 - password authentication

16 - keyboard-interactive authentication

Authentication type 16 failed along with error 114

Try unchecking "Auto authentication" along with unchecking "Password authentication". The problem could also be that password or username is wrong.

Authentication type 4 failed along with error 114

Try unchecking "Auto authentication" along with unchecking "Keyboard authentication". The problem could also be that password or username is wrong.

Authentication type 2 failed along with error 114

Public key authentication is failing - maybe you are using the wrong private key or server uses password authentication.

Authentication failed for type 16 and 4 along with error 114

Currently you are using password authentication but it seems like the server requires public key authentication.

SFTP error 7 in combination with error 10058

Try unchecking Auto adjust MAC algorithms in Connection->Encryption.

SFTP error 11 in combination with error 10058

Try these solutions, one at a time:

1. open Authentication tab of Connection and uncheck "Auto authentication" and uncheck "Keyboard authentication".
2. open Encryption tab of Connection and uncheck "Auto adjust ciphers"

Other error codes

https://www.eldos.com/documentation/sbb/documentation/ref_err_sftperrorcodes.html

Failed to retrieve file list: SFTP component not connected

Could be that your SFTP server does not support all SFTP versions. Try unchecking the higher ones at "Extra settings" tab.

Public key errors

3329 (0x0D01) *Public key is invalid - usually indicate that there is something wrong with the format of the file*

3330 (0x0D02) *Private key is invalid - usually indicate that there is something wrong with the format of the file*

3331 (0x0D03) *Error of reading from file*

3332 (0x0D04) *Error of writing to file*

3333 (0x0D05) *Algorithm is unsupported*

3334 (0x0D06) *Internal error*

3335 (0x0D07) *Buffer is too small*

3336 (0x0D08) *There is no private key*

3337 (0x0D09) *Wrong password for private key*

3338 (0x0D0A) *PEM algorithm is unsupported*

SFTP component not connected

Try changing the SFTP version in the Connection.

5.1.2.10.7 Connection - SCP

The SCP Connection stores connect and logon properties for the Secure Copy (SCP) protocol. The SCP protocol is a network protocol, based on the BSD RCP protocol, which supports file transfers between hosts on a network.

SCP uses Secure Shell (SSH) for data transfer and uses the same mechanisms for authentication, thereby ensuring the authenticity and confidentiality of the data in transit. A client can send (upload) files to a server, optionally including their basic attributes (permissions, timestamps). Clients can also request files or directories from a server (download). SCP runs over TCP port 22 by default. Like RCP, there is no RFC that defines the specifics of the protocol.

In VisualCron, the SCP Connection is used in the Net - FTP/FTPS/SFTP/SCP Task.

Manage Connections > Add > SCP > Main settings tab

The screenshot shows a window titled "Add/Edit Connection" with a yellow heart icon. Below the title bar, there is a header for "SCP" with a house icon and a blue document icon. A descriptive text block explains that the SCP Connection stores connect and logon properties for the Secure copy (SCP) protocol, which is based on the BSD RCP protocol. Below this, there are two tabs: "Main settings" (selected) and "Authentication". The "Main settings" tab contains several fields: "Protocol type" is a dropdown menu set to "SCP"; "Server Name" is an empty text box; "Address" is a dropdown menu; "Port" is a spinner box set to "22"; "Timeout" is a spinner box set to "60"; and "Code page" is a dropdown menu set to "Windows-1252". At the bottom right of the dialog are "Cancel" and "OK" buttons.

Name

This is a descriptive name of the connection to distinguish from other connections.

Address

This is the host address to the server. It could be a DNS name or IP number.

Port

This is the remote connection port.

Timeout

The connection timeout in seconds. Connection will fail after this time is passed.

Code page

The table of values that describes the desired character set. Currently this is overridden by the code page in the Task.

Manage Connections > Add > SCP > Authentication tab

Add/Edit Connection

SCP

The SCP Connection stores connect and logon properties for Secure copy (SCP) protocol. The SCP protocol is a network protocol, based on the BSD RCP protocol, which supports file transfers between hosts on a network.

Main settings | Authentication

Credential

Username:

Password:

Cancel OK

Username

The user name for the connection.

Password

The password for the connection.

5.1.2.10.8 Connection - SSH

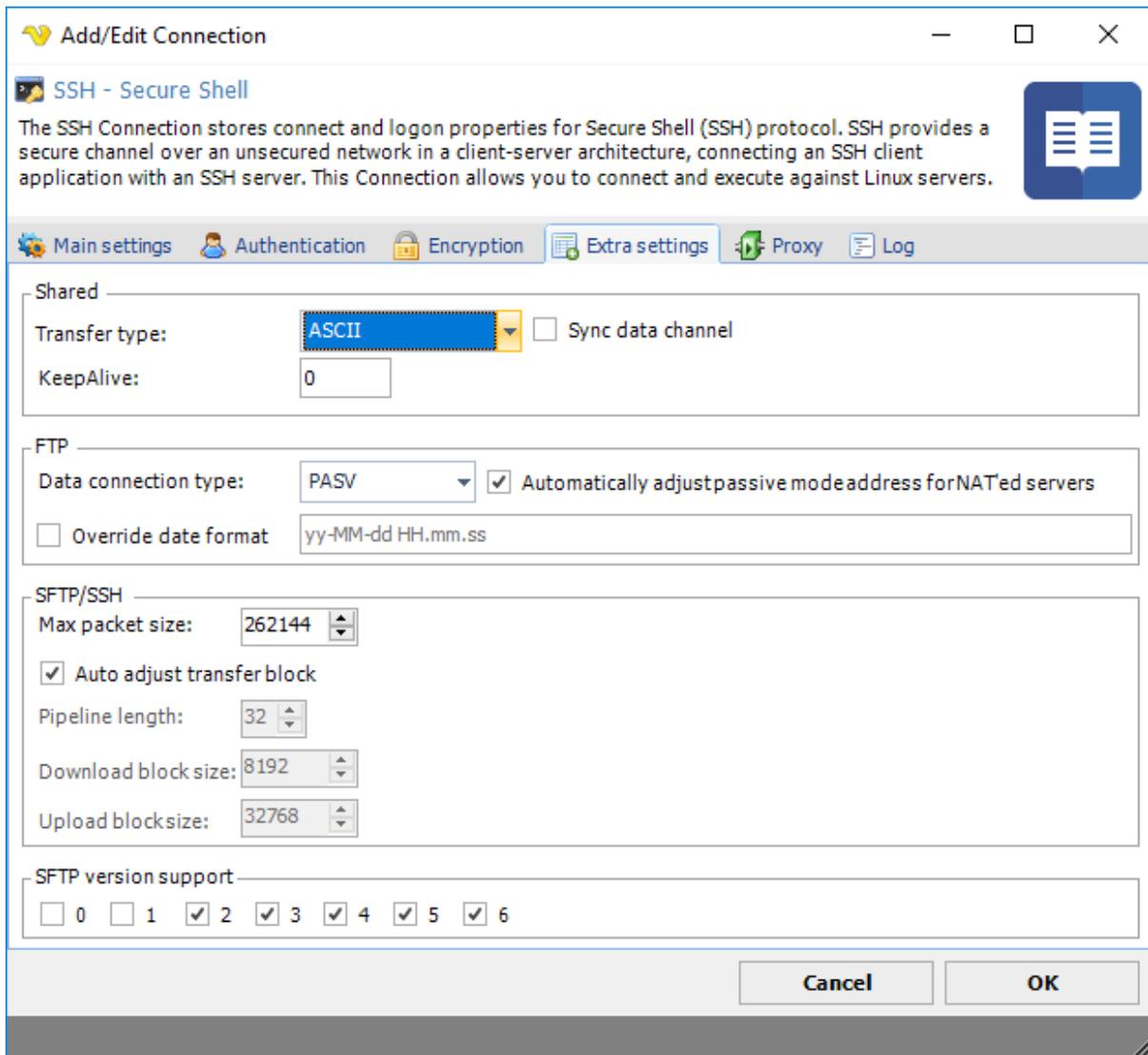
The SSH Connection stores connect and logon properties for the Secure Shell (SSH) protocol. SSH provides a secure channel over an unsecured network in a client-server architecture, connecting a SSH client application with a SSH server. This connection allows you to connect and execute commands against Linux servers.

About SSH

Secure Shell (SSH) is a cryptographic network protocol for secure data communication, remote command-line login, remote command execution, and other secure network services between two networked computers that connects, via a secure channel over an insecure network, a server and a client (running SSH server and SSH client programs, respectively). The protocol specification distinguishes between two major versions that are referred to as SSH-1 and SSH-2.

The best-known application of the protocol is for access to shell accounts on Unix-like operating systems, but it can also be used in a similar fashion for accounts on Windows. It was designed as a replacement for Telnet and other insecure remote shell protocols such as the Berkeley rsh and rexec protocols, which send information, notably passwords, in plain text, rendering them susceptible to interception and disclosure using packet analysis. The encryption used by SSH is intended to provide confidentiality and integrity of data over an unsecured network, such as the Internet.

Manage Connections > Add > SSH - Secure Shell > Extra settings tab



Transfer type
FTP/SFTP only.

Data connection type
FTP only option.

Max packet size
Use this property to specify the maximal length of packet in bytes. The default value is 262144, i.e., 256 KBytes.

Auto adjust transfer block
Use this property to enable or disable automatic adjustment of pipeline length and block sizes. By default automatic adjustment is enabled, and normally you don't need to disable it.

Pipeline length
Use this property to specify the number of upload or download requests sent before waiting for all requests to complete. The more requests are sent, the faster the transfer is. However, in case of error, all

requests are discarded. Also, more pending requests means more memory used, so if speed is not critical and memory consumption is, set Pipeline Length to 1. Default value is 10.

Download block size

Use this property to control the size of the single download request. The servers don't limit download request size, however the buffer is allocated to store the requests, so the larger the value is, the memory block is needed.

SFTP version support

SFTP only.

Troubleshooting

Other error codes

https://www.eldos.com/documentation/sbb/documentation/ref_err_ssherrorcodes.html

5.1.2.10.9 Connection - SMTP

The SMTP Connection stores connect and logon properties for Simple Mail Transfer Protocol (SMTP). SMTP is used for sending email.

About SMTP

Simple Mail Transfer Protocol (SMTP) is an Internet standard for electronic mail (e-mail) transmission across Internet Protocol (IP) networks. SMTP was first defined by RFC 821 (1982, eventually declared STD 10), and last updated by RFC 5321 (2008) which includes the Extended SMTP (ESMTP) additions, and is the protocol in widespread use today. It is an Application Layer protocol in the OSI reference model.

SMTP uses TCP port 25. The protocol for new submissions (MSA) is effectively the same as SMTP, but it uses port 587 instead. SMTP connections secured by SSL are known by the shorthand SMTPS on TCP port 465, though SMTPS is not a protocol in its own right.

While electronic mail servers and other mail transfer agents use SMTP to send and receive mail messages, user-level client mail applications typically use SMTP only for sending messages to a mail server for relaying. For receiving messages, client applications usually use either the Post Office Protocol (POP) or the Internet Message Access Protocol (IMAP) or a proprietary system (such as Microsoft Exchange or Lotus Notes/Domino) to access their mail box accounts on a mail server.

Manage Connections > Add > SMTP > Main settings tab

Test

It is possible to test the connection once you have set all settings. Click the *Test* button to start the test.

Name

The unique name for the Connection.

Address

The DNS name or IP address of the SMTP server.

Port

The port used by the SMTP server. Please note that it should match the port of the encryption. Normally encrypted connections uses port 465 or 587 while SMTP servers with no encryption uses port 25.

Timeout

The connection timeout in seconds. Connection will fail after this time is passed.

Code page

The table of values that describes the desired character set. Currently this is overridden by the code page in the Task.

Default settings for some servers:

Exchange

Main settings

Address: yourservername

Port: 587

Encryption
Cryptographic protocol: TLS
Security Mode: Implicit

Office 365

Main settings
Address: smtp.office365.com
Port: 587

Encryption
Cryptographic protocol: SSL
Security Mode: Explicit

Gmail

Main settings
Address: smtp.gmail.com
Port: 465

Encryption
Cryptographic protocol: TLS
Security Mode: Implicit

Amazon SES

Address: email-smtp.us-east-1.amazonaws.com
Port: 465
Cryptographic Protocol: TLS
Security Mode: Implicit

Manage Connections > Add > SMTP > Authentication tab

The screenshot shows a dialog box titled "Add/Edit Connection" with a yellow heart icon. The main heading is "SMTP" with a blue folder icon. Below the heading is a descriptive text: "The SMTP Connection stores connect and logon properties for Simple Mail Transfer Protocol (SMTP). SMTP is used for sending email." To the right of this text is a blue icon of an open book. Below the text is a tabbed interface with four tabs: "Main settings" (gear icon), "Authentication" (person icon, currently selected), "Encryption" (lock icon), and "Proxy" (server icon). The "Authentication" tab contains a "Credential" section with a large text area. Below this is a checkbox labeled "Anonymous". Underneath are two input fields: "Username:" and "Password:". At the bottom of the dialog are "Cancel" and "OK" buttons.

Anonymous

Check this if you want to logon without providing user name and password.

Username

The user name for the email account.

Password

The password for the email account.

Manage Connections > Add > SMTP > Encryption tab

The screenshot shows the 'Add/Edit Connection' dialog box with the 'Encryption' tab selected. The dialog has a title bar with a yellow icon and the text 'Add/Edit Connection'. Below the title bar is a header section with an 'SMTP' icon and the text: 'The SMTP Connection stores connect and logon properties for Simple Mail Transfer Protocol (SMTP). SMTP is used for sending email.' To the right of this text is a blue icon of an open book. Below the header is a tabbed interface with four tabs: 'Main settings', 'Authentication', 'Encryption' (which is selected and highlighted with a dashed border), and 'Proxy'. The 'Encryption' tab contains three sections: 'SSL/TLS' with two dropdown menus for 'Cryptographic protocol' (set to 'No encryption') and 'Security mode' (set to 'Explicit'); 'Allowed SSL/TLS versions' with five checked checkboxes for 'SSL version 2', 'SSL version 3', 'TLS version 1', 'TLS version 1.1', and 'TLS version 1.2'; and 'SASL Mechanisms' with three checked checkboxes for 'NTLM', 'DIGEST-MD5', and 'CRAM-MD5'. At the bottom of the dialog are 'Cancel' and 'OK' buttons.

Cryptographic protocol

Encryption protocol to use; No encryption, SSL or TLS.

Security mode

Explicit or Implicit encryption.

Allowed SSL/TLS versions

Some SMTP servers require certain versions of SSL/TLS. Check the versions that are allowed. Sometimes it is necessary to specify the specific allowed version.

Manage Connections > Add > SMTP > Proxy tab

The screenshot shows a window titled "Add/Edit Connection" with a yellow heart icon. The main title is "SMTP". Below the title is a description: "The SMTP Connection stores connect and logon properties for Simple Mail Transfer Protocol (SMTP). SMTP is used for sending email." To the right is a blue icon of an open book. Below the description is a tabbed interface with four tabs: "Main settings" (gear icon), "Authentication" (person icon), "Encryption" (lock icon), and "Proxy" (green proxy icon). The "Proxy" tab is active. It contains the following fields:

- Proxy type:** A dropdown menu with "No proxy" selected.
- Address:** An empty text input field.
- Port:** A spinner box with "0" selected.
- Use credentials:** A checked checkbox.
- Domain:** An empty text input field.
- Username:** An empty text input field.
- Password:** An empty text input field.

At the bottom of the dialog are two buttons: "Cancel" and "OK".

Proxy type

Select the proxy type to be used.

Address

The host name or IP address of the proxy server.

Port

The port of the proxy server.

Use credentials

Text ...

Domain

The name of the domain to be created.

Username

The user name to access the proxy server.

Password

The password to access the proxy server.

5.1.2.10.10 Connection - POP3

The POP3 Connection stores connect and logon properties for the email server protocol POP3. The POP3 protocol is used to receive emails. Later it has been superseded by IMAP but still used in some places. The POP3 Connection is used in the Email Trigger.

Connection > POP3 > Main settings tab

See **Connection > SMTP > Main settings** for more details.

Connection > POP3 > Authentication tab

See **Connection > SMTP > Authentication** for more details.

Default settings for some servers:

Office 365

<https://support.office.com/en-nz/article/Settings-for-POP-and-IMAP-access-for-Office-365-for-business-or-Microsoft-Exchange-accounts-7fc677eb-2491-4cbc-8153-8e7113525f6c>

Main settings

Address: outlook.office365.com

Port: 995

Encryption

Cryptographic protocol: SSL

5.1.2.10.11 Connection - IMAP4

The IMAP Connection stores connect and logon properties for the email server protocol IMAP4. The IMAP4 protocol is used to receive email. The IMAP Connection is used in the Email Trigger.

Manage Connections > Add > IMAP4 > Main settings tab

Add/Edit Connection

IMAP4

The IMAP4 Connection stores connect and logon properties for email server protocol IMAP4. IMAP4 protocol is used to receive emails.

Main settings | Authentication | Encryption | Proxy

Protocol

Protocol type: IMAP4 [Test]

Server

Name: []

Address: []

Port: 143 []

Timeout: 60 []

Code page: Windows-1252 []

[Cancel] [OK]

Test

It is possible to test the connection once you have set all settings. Click the *Test* button to start the test.

Name

The unique name for the Connection.

Address

The DNS name or IP address of the email server.

Port

The port used by the email server. Please note that it should match the port of the encryption. Normally encrypted connections uses port 993 while email servers with no encryption uses port 143.

Timeout

The connection timeout in seconds. Connection will fail after this time is passed.

Code page

The table of values that describes the desired character set. Currently this is overridden by the code page in the Task.

Default settings for some servers:

Office 365

<https://support.office.com/en-nz/article/Settings-for-POP-and-IMAP-access-for-Office-365-for-business-or-Microsoft-Exchange-accounts-7fc677eb-2491-4cbc-8153-8e7113525f6c>

Main settings

Address: outlook.office365.com
Port: 993

Encryption
Cryptographic protocol: SSL

Gmail

Address: imap.gmail.com
Port: 993

Encryption
Cryptographic protocol: SSL
SSL Version: 3

Manage Connections > Add > IMAP4 > Authentication tab

The screenshot shows a dialog box titled "Add/Edit Connection" with a yellow checkmark icon. The main heading is "IMAP4" with a blue folder icon. Below the heading, it states: "The IMAP4 Connection stores connect and logon properties for email server protocol IMAP4. IMAP4 protocol is used to receive emails." To the right is a blue icon of an open book. Below this is a tabbed interface with four tabs: "Main settings" (gear icon), "Authentication" (person icon, currently selected), "Encryption" (lock icon), and "Proxy" (server icon). The "Authentication" tab contains a "Credential" section with two input fields: "Username:" and "Password:". At the bottom right of the dialog are "Cancel" and "OK" buttons.

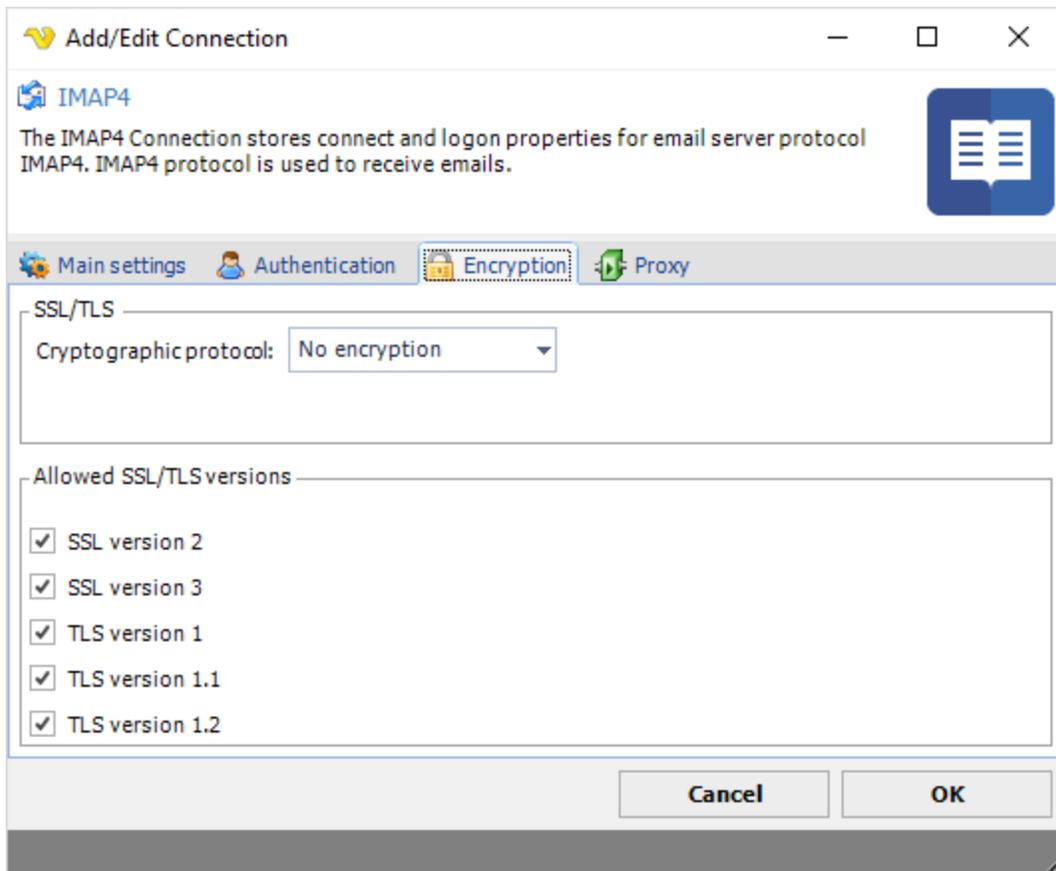
Username

The user name for the email account.

Password

The password for the email account.

Manage Connections > Add > IMAP4 > Encryption tab



Cryptographic protocol

Encryption protocol to use; No encryption, SSL or TLS.

Security mode

Explicit or Implicit encryption.

Allowed SSL/TLS versions

Some IMAP4 servers require certain versions of SSL/TLS. Check the versions that are allowed. Sometimes it is necessary to specify the specific allowed version.

Manage Connections > Add > IMAP4 > Proxy tab

Add/Edit Connection

IMAP4

The IMAP4 Connection stores connect and logon properties for email server protocol IMAP4. IMAP4 protocol is used to receive emails.

Main settings Authentication Encryption **Proxy**

Proxy type: No proxy

Address:

Port: 0

Use credentials

Domain:

Username:

Password:

Cancel OK

Proxy type

Select the proxy type to be used.

Address

The host name or IP address of the proxy server.

Port

The port of the proxy server.

Use credentials

Text ...

Domain

The name of the domain to be created.

Username

The user name to access the proxy server.

Password

The password to access the proxy server.

5.1.2.10.12 Connection - Exchange EWS

The Exchange EWS Connection uses the Exchange Web Service protocol which is similar to the IMAP protocol - but have more Exchange options in general. Select this protocol if it is implemented by the Exchange server.

Manage Connections > Add > Exchange EWS > Main settings tab

The screenshot shows a window titled "Add/Edit Connection" with a close button (X) in the top right corner. Below the title bar, there is a header for "Exchange EWS" with a blue icon and a descriptive paragraph: "The Exchange EWS Connection uses the Exchange Web Service protocol which is similar to IMAP protocol - but have more Exchange options in general. Select this protocol if it is implemented by the Exchange Server." To the right of the text is a blue icon of an open book. Below the header is a tabbed interface with four tabs: "Main settings" (selected), "Authentication", "Encryption", and "Proxy". The "Main settings" tab contains the following fields:

- Protocol:** A dropdown menu set to "Exchange EWS" with a "Test" button to its right.
- Server:** A section containing:
 - Name:** An empty text input field.
 - Address:** An empty dropdown menu.
 - Timeout:** A spinner box set to "60".
 - Code page:** A dropdown menu set to "Windows-1252".

At the bottom of the dialog are "Cancel" and "OK" buttons.

Test

It is possible to test the connection once you have set all settings. Click the *Test* button to start the test.

Name

The unique name for the Connection.

Address

The DNS name or IP address of the email server.

Timeout

The connection timeout in seconds. Connection will fail after this time is passed.

Code page

The table of values that describes the desired character set. Currently this is overridden by the code page in the Task.

Manage Connections > Add > Exchange EWS > Authentication tab

Add/Edit Connection

Exchange EWS

The Exchange EWS Connection uses the Exchange Web Service protocol which is similar to IMAP protocol - but have more Exchange options in general. Select this protocol if it is implemented by the Exchange Server.

Main settings | **Authentication** | Encryption | Proxy

Credential

Username:

Password:

Alias:

Cancel OK

Username

The user name for the email account.

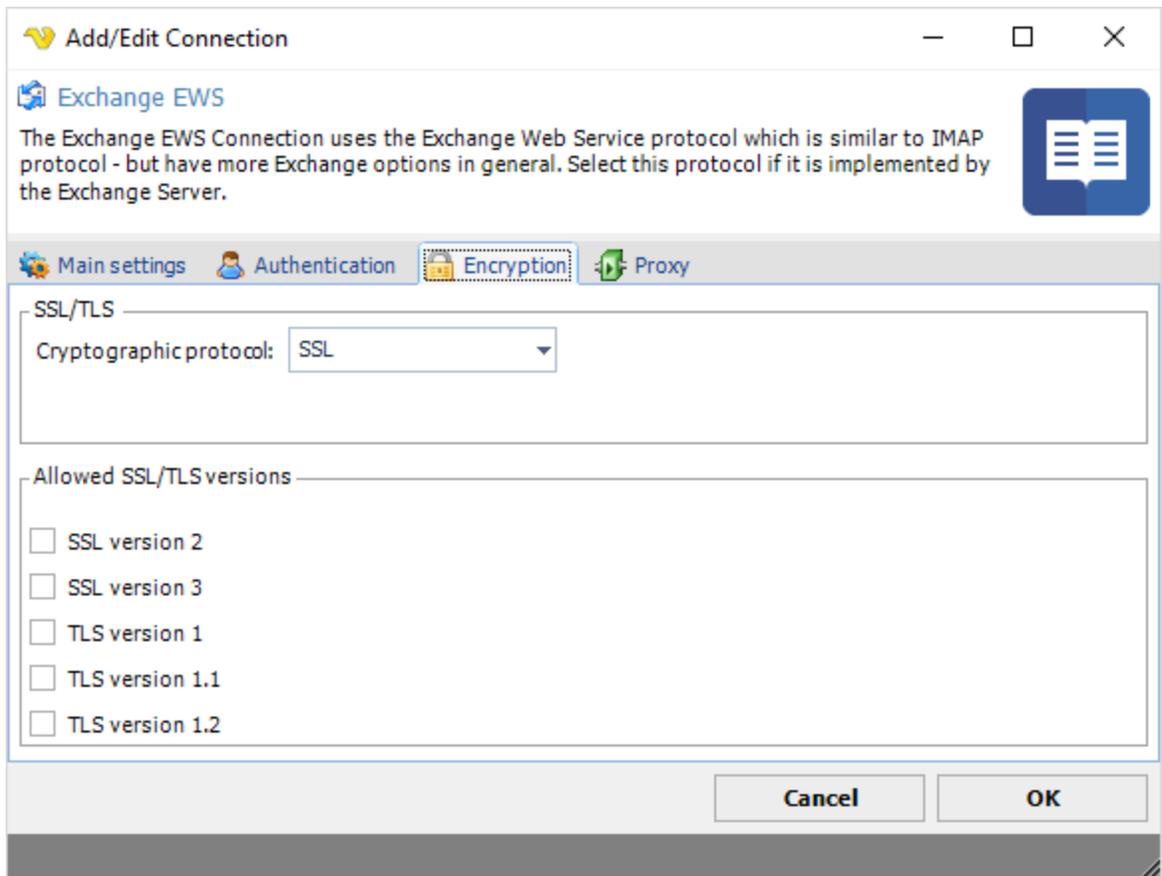
Password

The password for the email account.

Alias

Text ...

Manage Connections > Add > Exchange EWS > Encryption tab



Cryptographic protocol

Encryption protocol to use; No encryption, SSL or TLS.

Allowed SSL/TLS versions

Some Exchange EWS servers require certain versions of SSL/TLS. Check the versions that are allowed. Sometimes it is necessary to specify the specific allowed version.

Manage Connections > Add > Exchange EWS > Proxy tab

Proxy type

Select the proxy type to be used.

Address

The host name or IP address of the proxy server.

Port

The port of the proxy server.

Use credentials

Text ...

Domain

The name of the domain to be created.

Username

The user name to access the proxy server.

Password

The password to access the proxy server.

5.1.2.10.13 Connection - Exchange WebDAV

The Exchange WebDAV Connection uses the Exchange WebDAV protocol which is similar to the IMAP protocol - but have more Exchange options in general. Select this protocol if it is implemented by the Exchange Server.

For MS Exchange interoperability, WebDAV can be used for reading/updating/deleting items in a mailbox or public folder. WebDAV for Exchange has been extended by Microsoft to accommodate working with messaging data. Exchange Server version 2000, 2003, and 2007 support WebDAV. However, WebDAV support has been discontinued in Exchange 2010 in favor of Exchange Web Services (EWS), a SOAP/XML based API.

Manage Connections > Add > Exchange WebDAV > Main settings tab

The screenshot shows a dialog box titled "Add/Edit Connection" with a yellow heart icon. The main heading is "Exchange WebDAV". Below the heading is a descriptive text: "The Exchange WebDAV Connection uses the Exchange WebDAV protocol which is similar to IMAP protocol - but have more Exchange options in general. Select this protocol if it is implemented by the Exchange Server." To the right of this text is a blue icon of an open book. Below the text is a tabbed interface with four tabs: "Main settings" (selected), "Authentication", "Encryption", and "Proxy". The "Main settings" tab contains the following fields:

- Protocol:** A section with a "Protocol type:" label, a dropdown menu set to "Exchange WebDAV", and a "Test" button.
- Server:** A section with "Name:" and "Address:" labels, each followed by an empty text input field.
- Timeout:** A label followed by a spin box set to "60".
- Code page:** A label followed by a dropdown menu set to "Windows-1252".

At the bottom of the dialog are "Cancel" and "OK" buttons.

Test

It is possible to test the connection once you have set all settings. Click the *Test* button to start the test.

Name

The unique name for the Connection.

Address

The DNS name or IP address of the email server.

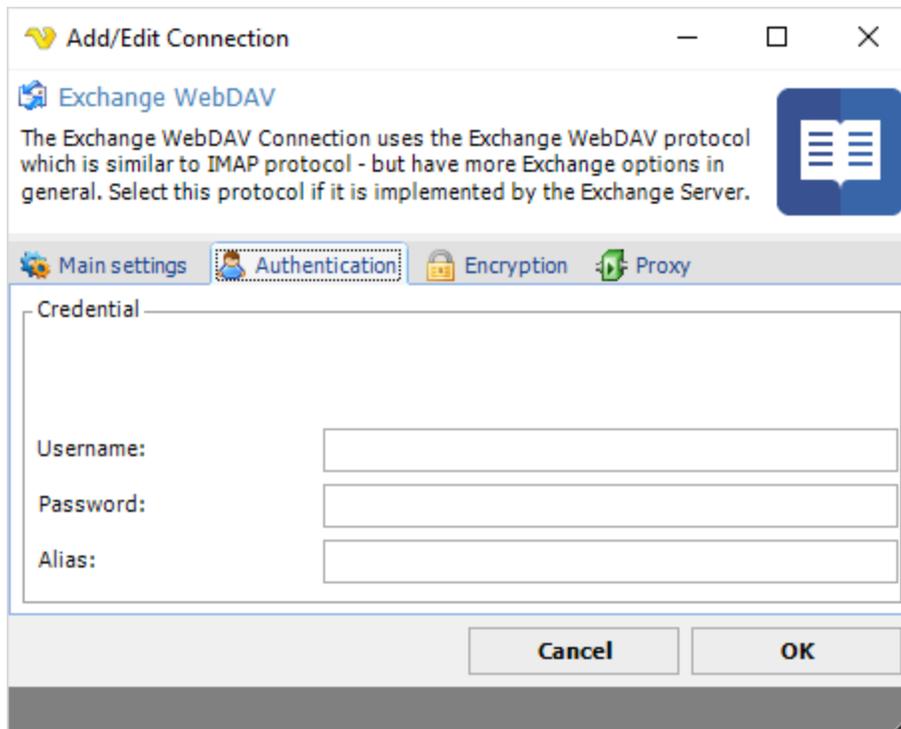
Timeout

The connection timeout in seconds. Connection will fail after this time is passed.

Code page

The table of values that describes the desired character set. Currently this is overridden by the code page in the Task.

Manage Connections > Add > Exchange WebDAV > Authentication tab



Username

The user name for the email account.

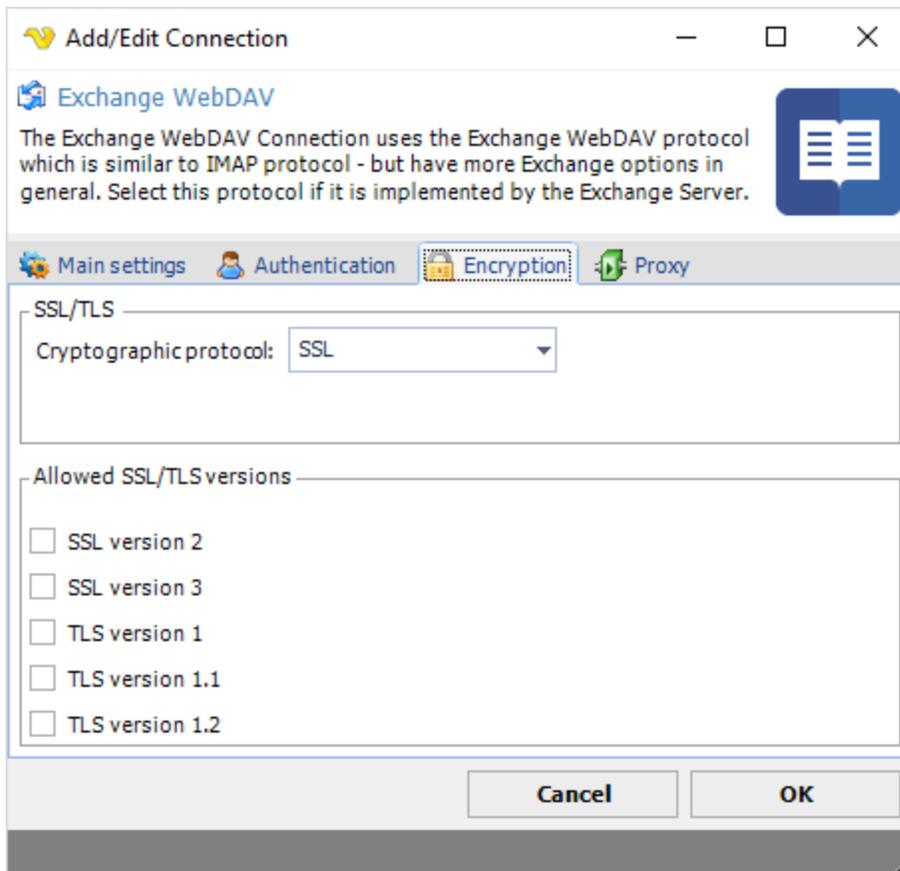
Password

The password for the email account.

Alias

Text ...

Manage Connections > Add > Exchange WebDAV > Encryption tab



Cryptographic protocol

Encryption protocol to use; No encryption, SSL or TLS.

Allowed SSL/TLS versions

Some Exchange WebDAV servers require certain versions of SSL/TLS. Check the versions that are allowed. Sometimes it is necessary to specify the specific allowed version.

Manage Connections > Add > Exchange WebDAV > Proxy tab

The screenshot shows a window titled "Add/Edit Connection" with a yellow checkmark icon. The main heading is "Exchange WebDAV". Below the heading is a descriptive text: "The Exchange WebDAV Connection uses the Exchange WebDAV protocol which is similar to IMAP protocol - but have more Exchange options in general. Select this protocol if it is implemented by the Exchange Server." To the right of this text is a blue icon of an open book. Below the text is a tabbed interface with four tabs: "Main settings", "Authentication", "Encryption", and "Proxy". The "Proxy" tab is selected and highlighted. The "Proxy" tab contains the following fields: "Proxy type:" with a dropdown menu set to "No proxy"; "Address:" with an empty text box; "Port:" with a spinner box set to "0"; a checked checkbox labeled "Use credentials"; "Domain:" with an empty text box; "Username:" with an empty text box; and "Password:" with an empty text box. At the bottom of the dialog are "Cancel" and "OK" buttons.

Proxy type

Select the proxy type to be used.

Address

The host name or IP address of the proxy server.

Port

The port of the proxy server.

Use credentials

Text ...

Domain

The name of the domain to be created.

Username

The user name to access the proxy server.

Password

The password to access the proxy server.

5.1.2.10.14 Connection - WebDAV

The WebDAV Connection stores connect and logon properties for HTTP servers supporting the WebDAV protocol.

The WebDAV Connection is used by the following WebDAV Tasks:

- Net - WebDAV - Download
- Net - WebDAV - Upload
- Net - WebDAV - Copy files
- Net - WebDAV - Delete
- Net - WebDAV - Create folder

Web Distributed Authoring and Versioning (WebDAV) is an extension of the Hypertext Transfer Protocol (HTTP) that allows clients to perform remote Web content authoring operations. A working group of the Internet Engineering Task Force (IETF) defined WebDAV in RFC 4918.

The WebDAV protocol makes the Web a readable and writable medium.[1] It provides a framework for users to create, change and move documents on a server, typically a web server or web share. The most important features of the WebDAV protocol include the maintenance of properties about an author or modification date, namespace management, collections, and overwrite protection. Maintenance of properties includes such things as the creation, removal, and querying of file information. Namespace management deals with the ability to copy and move web pages within a server's namespace. Collections deal with the creation, removal, and listing of various resources. Lastly, overwrite protection handles aspects related to locking of files.

Manage Connections > Add > WebDAV > Main settings tab

Add/Edit Connection

WebDAV
The WebDAV Connection stores connect and logon properties for http servers supporting the WebDAV protocol.

Main settings | Authentication | Encryption | Proxy

Protocol
Protocol type: WebDAV

Server
Name: https://mywebserver.com/weddav/
Address: https://mywebserver.com/weddav/

Timeout: 60

Code page: Windows-1252

Cancel OK

Name

The unique name for the Connection

Address

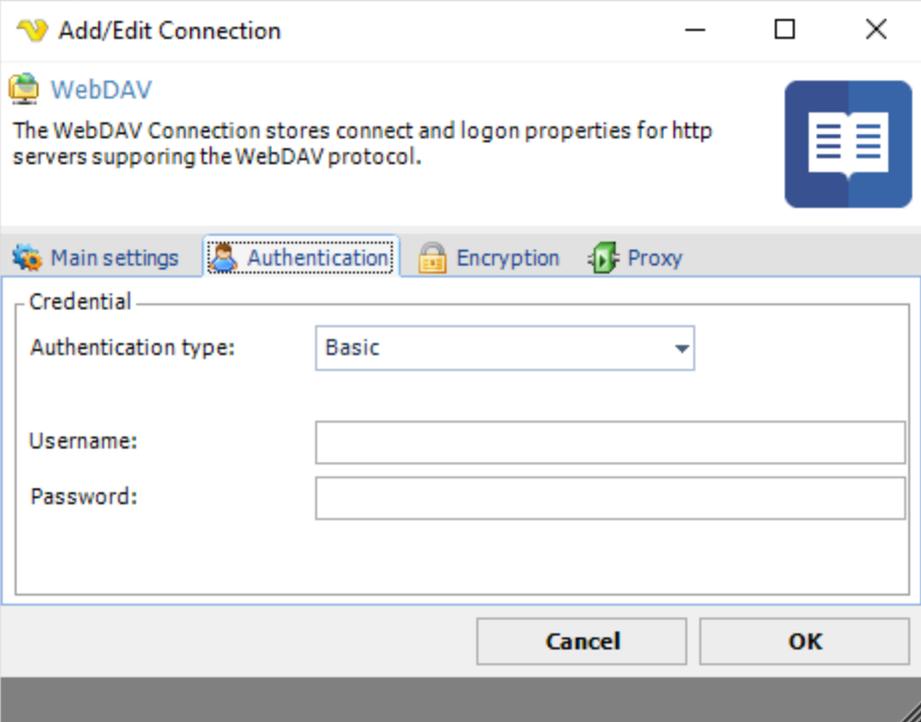
The DNS name or IP address of the server.

Timeout

The connection timeout in seconds. Connection will fail after this time is passed.

Code page

The table of values that describes the desired character set. Currently this is overridden by the code page in the Task.

Manage Connections > Add WebDAV > Authentication tab

The screenshot shows a Windows-style dialog box titled "Add/Edit Connection". The main heading is "WebDAV" with a sub-description: "The WebDAV Connection stores connect and logon properties for http servers supporting the WebDAV protocol." Below this is a tabbed interface with four tabs: "Main settings", "Authentication" (which is selected and highlighted with a dotted border), "Encryption", and "Proxy". Under the "Authentication" tab, there is a section labeled "Credential" containing a dropdown menu for "Authentication type" set to "Basic", and two text input fields for "Username:" and "Password:". At the bottom of the dialog are "Cancel" and "OK" buttons.

Authentication type

Select authentication type required for server; Basic, Digest or NTLM (Windows authentication).

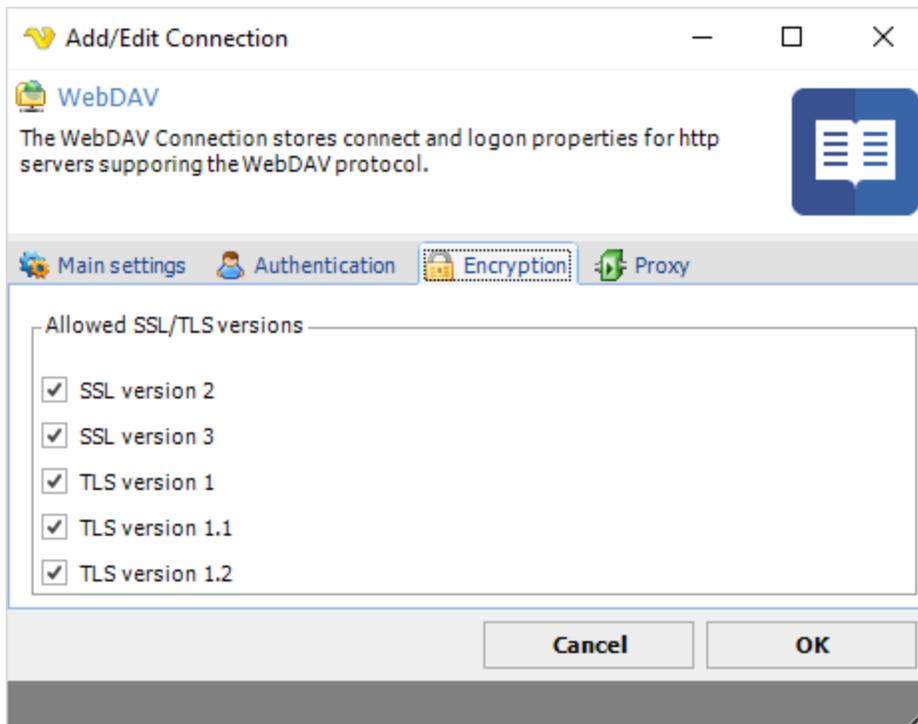
Username

The user name for the WebDAV account.

Password

The password for the WebDAV account.

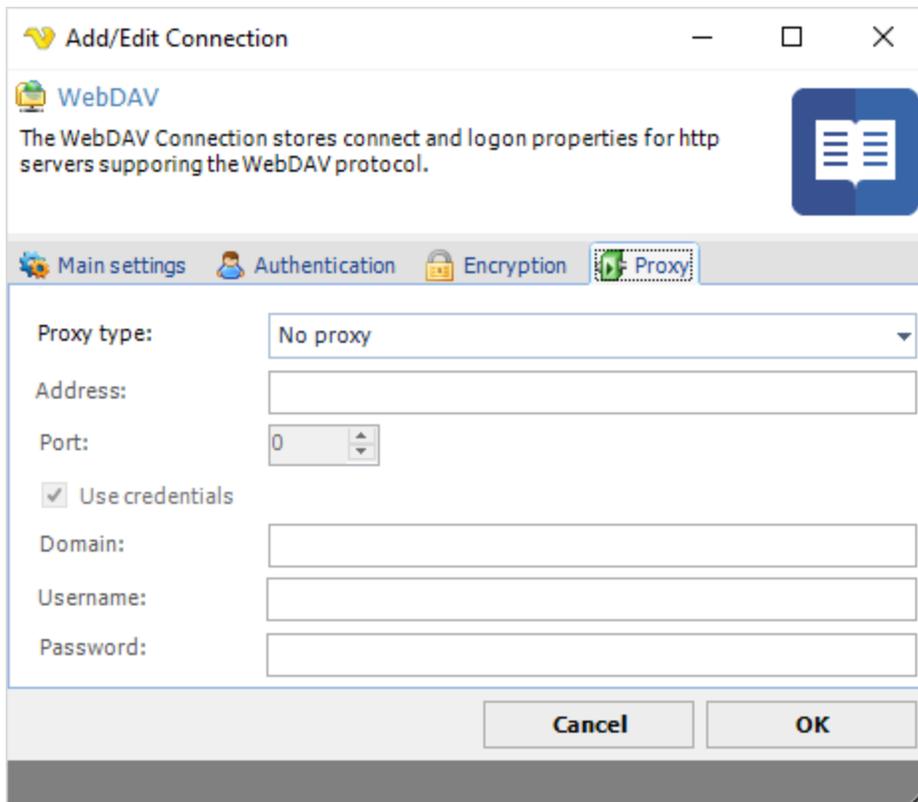
Manage Connections > Add > WebDAV > Encryption tab



Allowed SSL/TLS versions

Some servers require certain versions of SSL/TLS. Check the versions that are allowed. Sometimes it is necessary to specify the specific allowed version.

Manage Connections > Add > WebDAV > Proxy tab



Proxy type

Select the proxy type to be used.

Address

The host name or IP address of the proxy server.

Port

The port of the proxy server.

Use credentials

Text ...

Domain

The name of the domain to be created.

Username

The user name to access the proxy server.

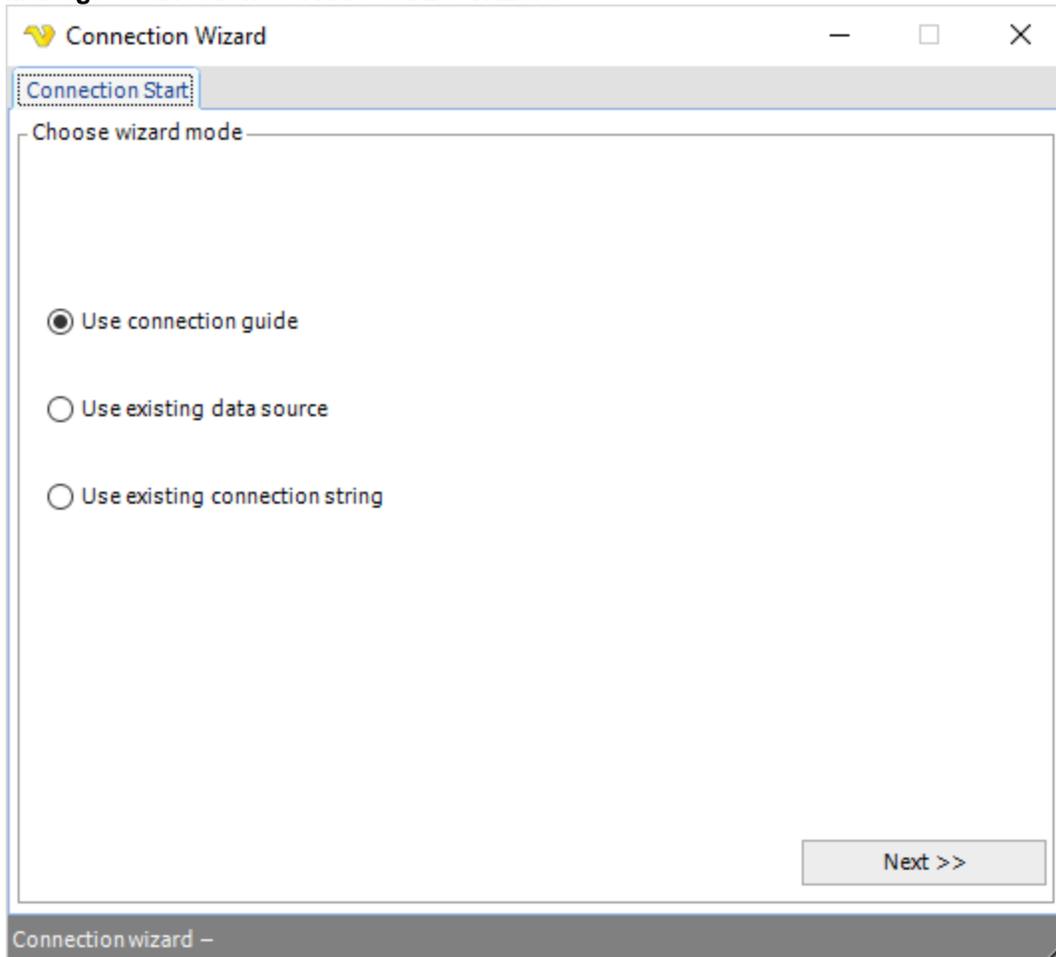
Password

The password to access the proxy server.

5.1.2.10.15 Connection - SQL

The SQL Connection is used in the Database - SQL Task and the Event trigger - SQL Trigger.

Use Connection guide wizard

Manage Connections > Add > SQL > Wizard*Use connection guide*

This starts the wizard which suggests connection strings depending on database and connection type.

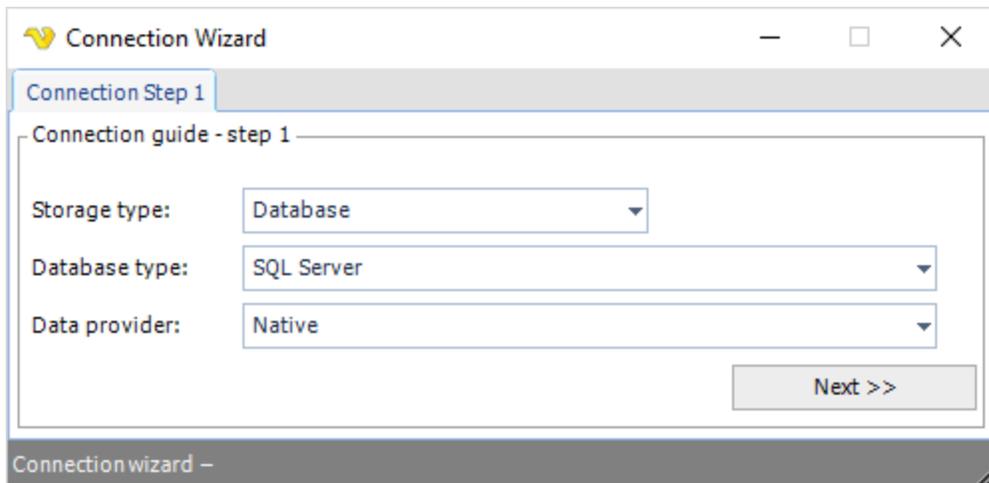
Use existing data source

This option lets you choose from existing ODBC data sources within the System DSN.

Use existing connection string

This lets you specify a plain connection string - if you have one from before.

Manage Connections > Add > SQL > Guide 1 - Step 1



Storage type

Normally a database, but you can also use file and other.

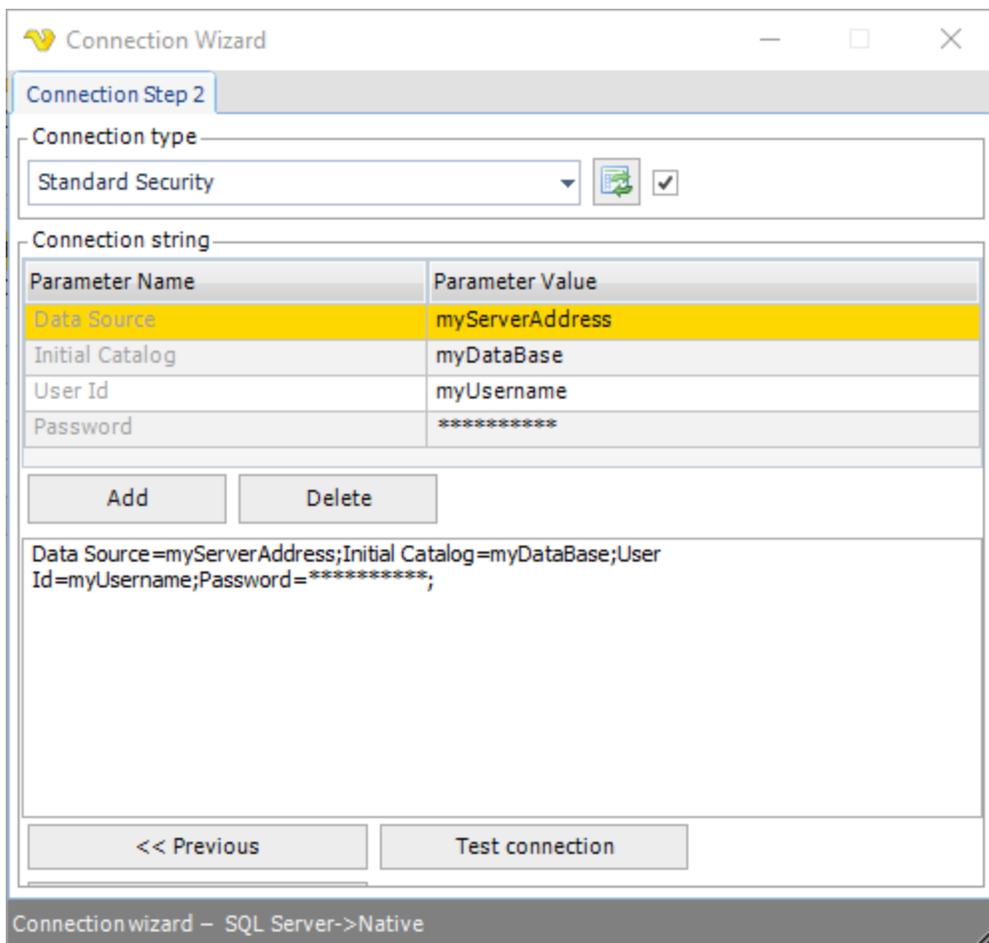
Database type

Select if it is an Oracle, MySQL, MSSQL or other database type.

Data provider

Different data providers exist for different database types. For Oracle, MySQL and MSSQL VisualCron provides direct connection and ODBC/OLEDB. For other database types you have to use either ODBC or OLEDB. A direct connection is faster than using ODBC or OLEDB.

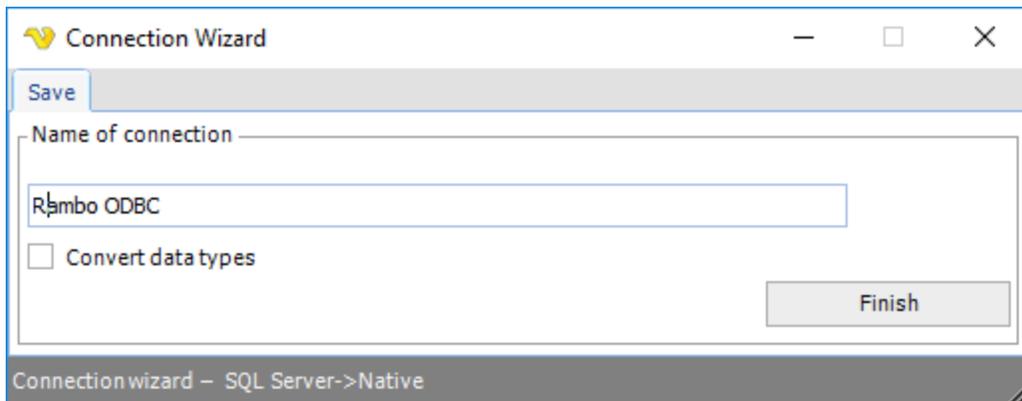
Manage Connections > Add > SQL > Guide 1 - Step 2



In step 2 you select the connection type. In the *Connection type* select box there is a list of predefined connection strings. Choose the appropriate one and the connection string grid will be filled with connection parameters. Edit the parameter value to set username, password etc. The connection string is update in realtime in the connection string text box. Click the *Refresh* icon to refresh the parameters. When you are done you can test the connection by clicking on *Test connection*.

Note: To use trusted connection you may have to select a Credential in your final SQL Task. If you connect now you are using the user you are logged in as. When the actual SQL Task is being run it is normally run as SYSTEM. That is why you may need a Credential at a later stage - in the SQL Task.

Manage Connections > Add > SQL > Guide 1 - Step 3



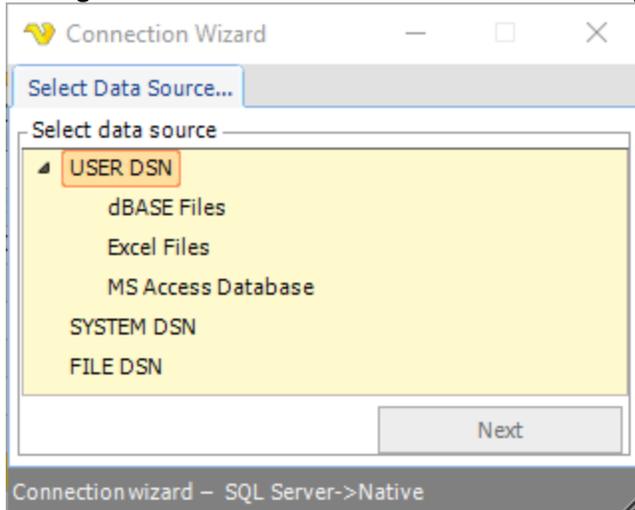
At step 3 you save the actual connection by giving it a name.

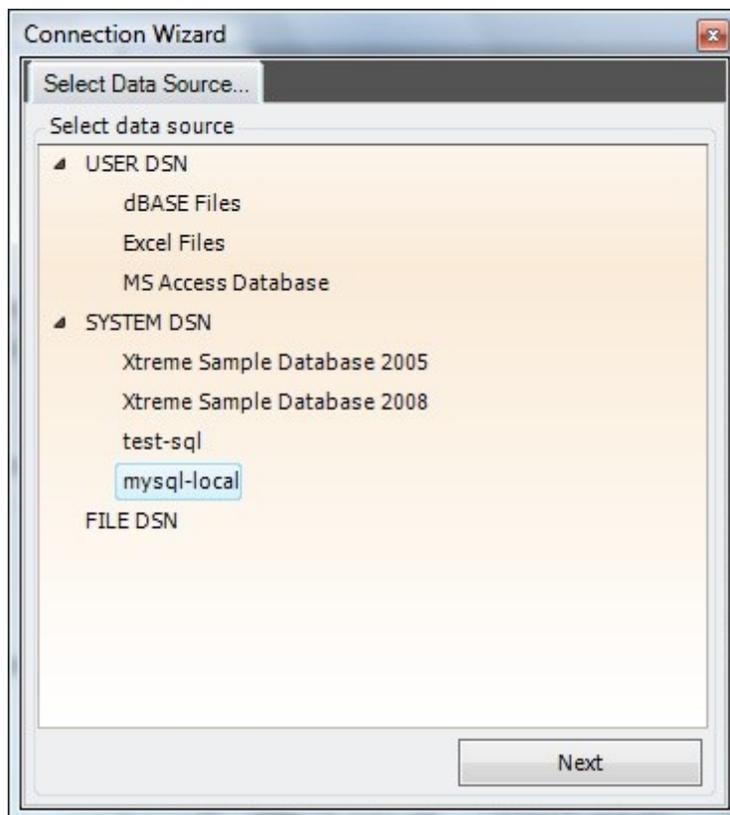
Convert data types

When checked and using Stored procedures in combination with OLEDB/ODBC, VisualCron will try to convert values to their specified format. Normally this is only needed and should only be used for certain databases like SYBASE/SAP.

Use existing data source wizard

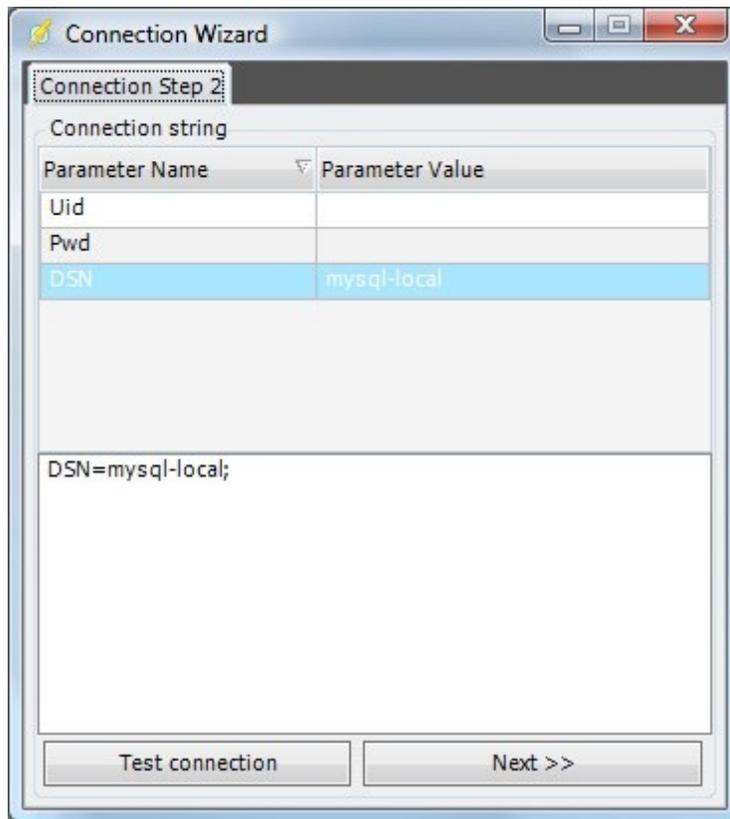
Manage Connections > Add > SQL > Guide 2 - Step 1





Please select the System DSN you want to use.

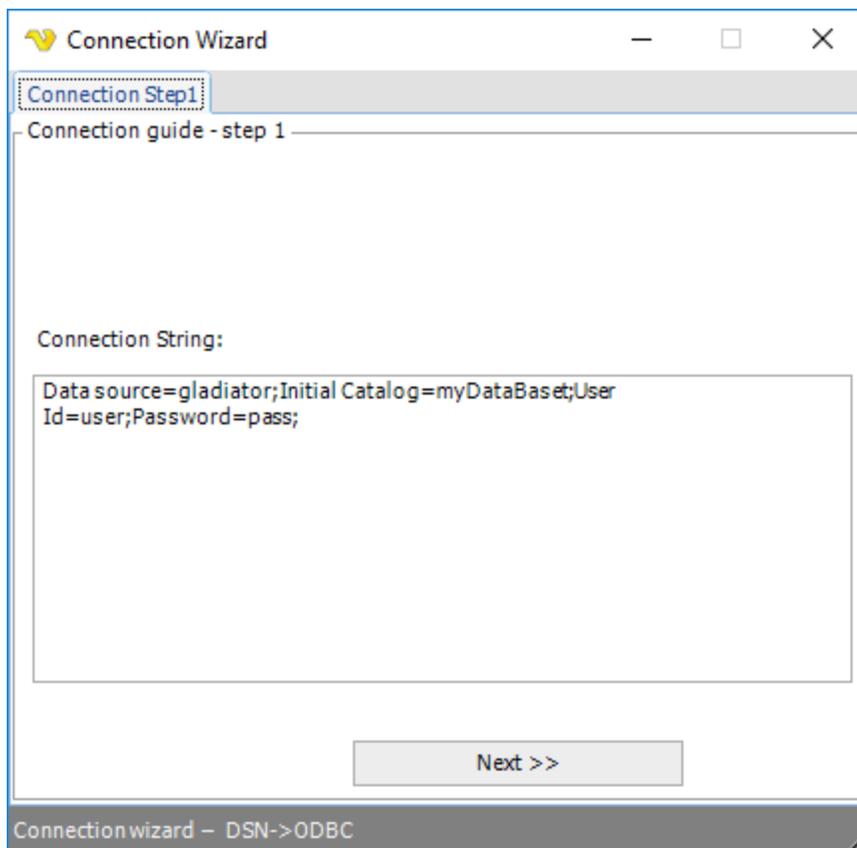
Manage Connections > Add > SQL > Guide 2 - Step 2



Edit DSN parameters if needed.

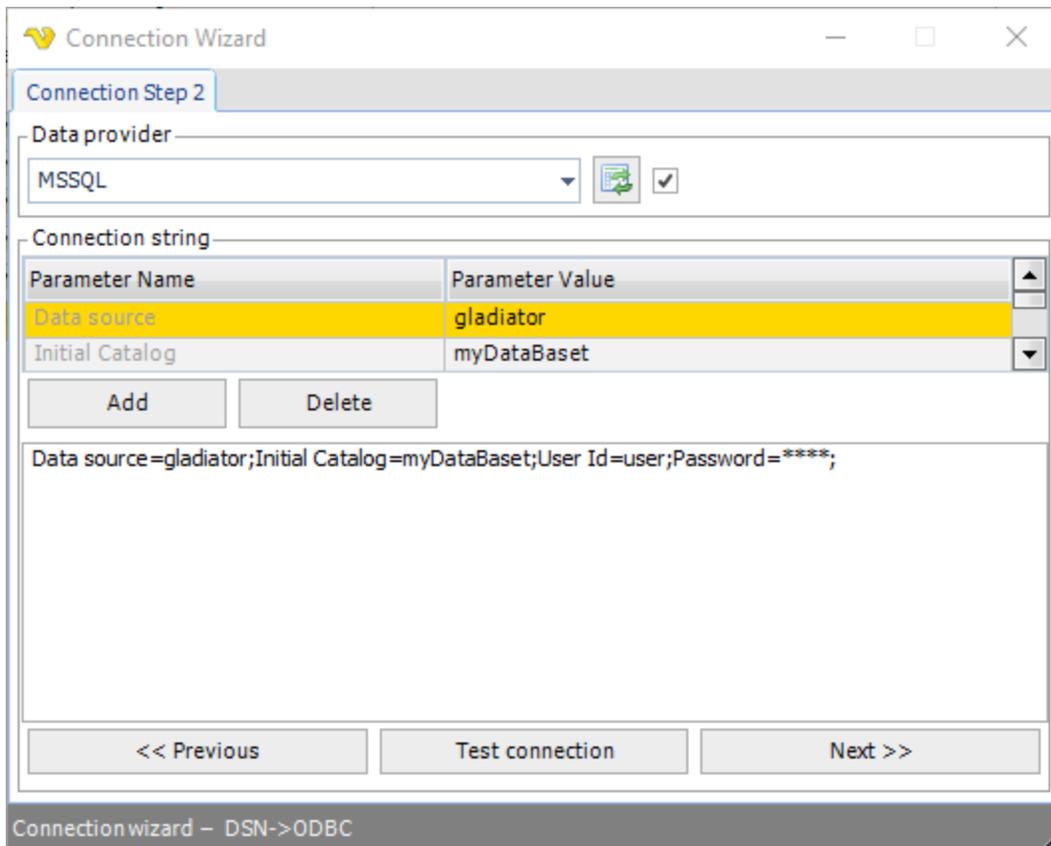
Use existing connection string wizard

Manage Connections > Add > SQL > Guide 3 - Step 1



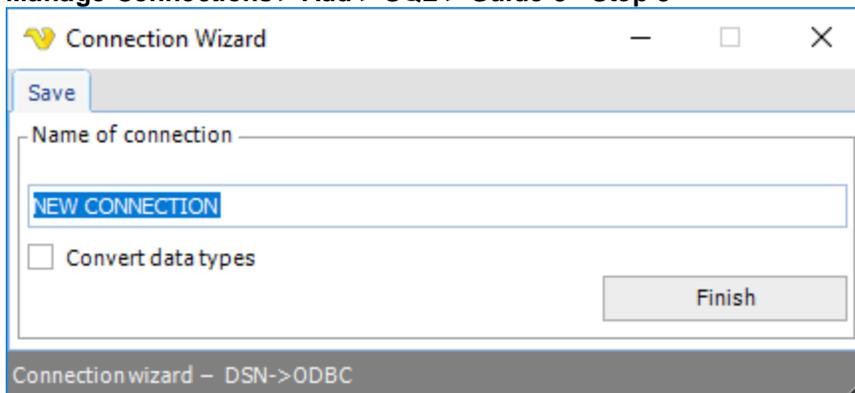
Enter the connection string.

Manage Connections > Add > SQL > Guide 3 - Step 2



Choose the data provider (ODBC, OLEDB, MSSQL, MySQL, Oracle).

Manage Connections > Add > SQL > Guide 3 - Step 3



Enter the name of the Connection.

Convert data types

Text ...

5.1.2.10.16 Connection - SSRS

The SSRS Connection stores connect and logon properties for the Reporting Services (SSRS).

The SSRS Connection is used in the Database - SSRS Task. The Task is used to execute reports through SQL Server Reporting Services (SSRS).

Manage Connections > Add > SSRS > Main settings tab

The screenshot shows the 'Add/Edit Connection' dialog box for SSRS. The title bar reads 'Add/Edit Connection'. Below the title bar, there is a subtitle 'SSRS' and a description: 'The SSRS Connection stores connect and logon properties for Reporting Services (SSRS)'. There are three tabs: 'Main settings' (selected), 'Authentication', and 'Proxy'. The 'Main settings' tab contains the following fields: 'Protocol type' (dropdown menu showing 'SSRS'), 'Server Name' (text box with 'Surface3'), 'Server Address' (dropdown menu showing 'Surface3'), 'Timeout' (spin box with '60'), and 'Code page' (dropdown menu showing 'Windows-1252'). At the bottom are 'Cancel' and 'OK' buttons.

Name

The unique name for the Connection.

Address

The IP or DNS name to the SSRS server. Do not use http prefix or full folder address.

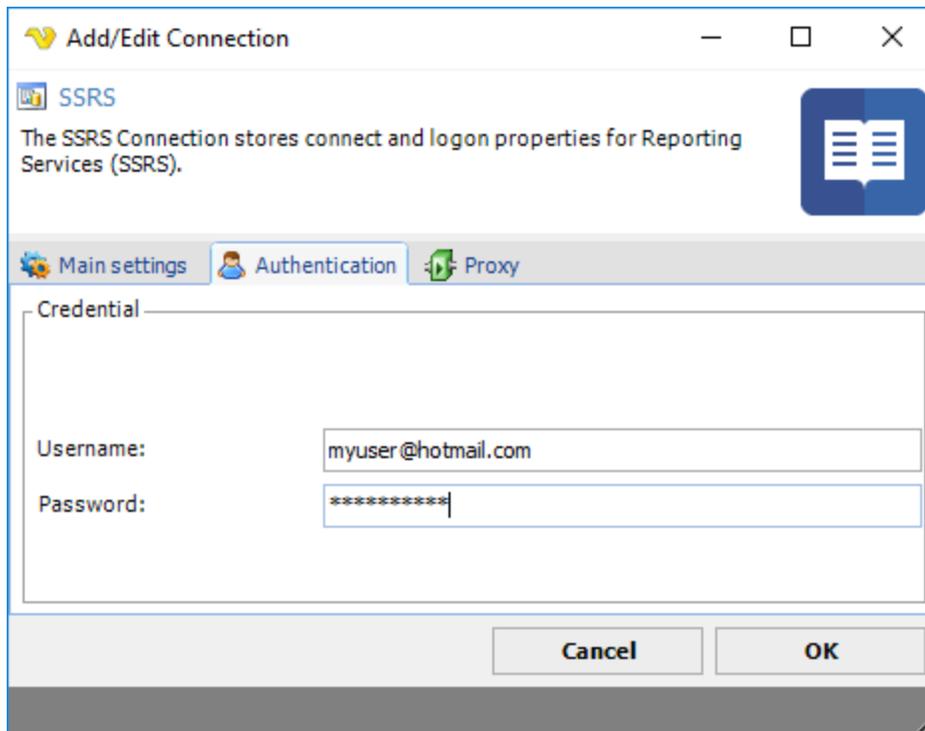
Timeout

The connection timeout in seconds. Connection will fail after this time is passed.

Code page

The table of values that describes the desired character set.

Manage Connections > Add > SSRS > Authentication tab



Username

Username for the SSRS server.

Password

Password for the SSRS server.

5.1.2.10.17 Connection - Amazon

The Amazon Connection stores connect and logon properties for the Amazon cloud services.

The Amazon Connection is currently used in the Cloud (S3) and Amazon EC2 Tasks that are accessing the Amazon Cloud services.

The Amazon Connection is used in the following Cloud Tasks:

- Cloud - Upload file(s)
- Cloud - List item(s)
- Cloud - Download file(s)
- Cloud - Create folder
- Cloud - Delete item(s)

Manage Connections > Add > Amazon > Main settings tab

Add/Edit Connection

Amazon
The Amazon Connection stores connect and logon properties for the Amazon cloud services.

Main settings | Authentication | Amazon | Proxy

Protocol
Protocol type: Amazon

Server
Name:

Timeout: 60

Code page: Windows-1252

Cancel OK

Name

The unique name for the Connection

Address

This field is not used.

Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > Amazon > Authentication tab

Add/Edit Connection

Amazon
The Amazon Connection stores connect and logon properties for the Amazon cloud services.

Main settings | Authentication | Amazon | Proxy

Credential

Authentication type: Public key

Access Key ID:

Secret Access Key:

Private key

Private key path:

Password:

Cancel OK

Authentication type

Select password or public key authentication.

Access Key ID

The *Access Key ID* for the account.

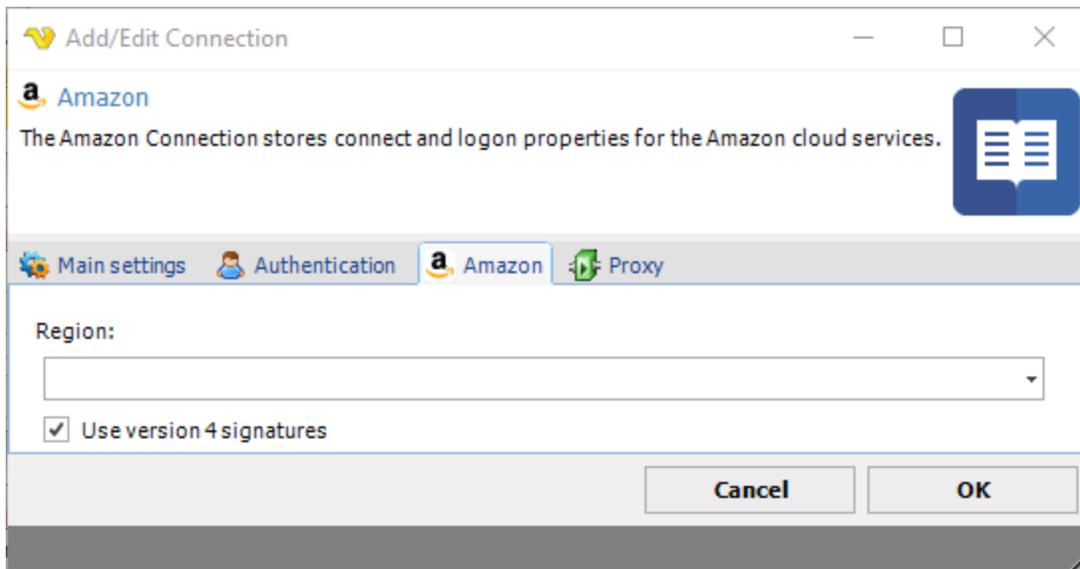
Secret Access key

The *Secret Access key* for the account.

Private key

If public key authentication has been selected the select the path to the private key file and any password if used.

Manage Connections > Add > Amazon > Amazon tab



Region

Once authentication details have been filled you can click the refresh button to list available regions.

Use version 4 signatures

Signature Version 4 is the process to add authentication information to Amazon Web Services requests.

Troubleshooting:

Connection lost (error code is 100353). Most likely a proxy error. You need to define a Proxy in the Proxy tab of the Connection.

5.1.2.10.18 Connection - Microsoft Azure

The Microsoft Azure Connection stores connect and logon properties for Microsoft Azure cloud services.

The Microsoft Azure Connection is used in the following Cloud Tasks:

- Cloud - Upload file(s)
- Cloud - List item(s)
- Cloud - Download file(s)
- Cloud - Create folder
- Cloud - Delete item(s)

Manage Connections > Add > Windows Azure > Main settings tab

The screenshot shows a dialog box titled "Add/Edit Connection" with a Windows Azure logo and a description: "The Windows Azure Connection stores connect and logon properties for Microsoft Azure cloud services." The dialog has two tabs: "Main settings" and "Authentication". The "Authentication" tab is active, showing the following fields:

- Protocol:** A dropdown menu with "Windows Azure" selected.
- Server Name:** An empty text input field.
- Timeout:** A spinner box set to "60".
- Code page:** A dropdown menu with "Windows-1252" selected.

At the bottom of the dialog are "Cancel" and "OK" buttons.

Name

The unique name for the Connection

Address

This field is not used.

Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > Windows Azure > Authentication tab

Add/Edit Connection

Windows Azure

The Windows Azure Connection stores connect and logon properties for Microsoft Azure cloud services.

Main settings | **Authentication**

Credential

Authentication type: Password

Account name:

Account key:

PublishSettings file

PublishSettings file path:

Cancel OK

Account name

The Account name for the account.

Account key

The *Account key* for the account.

Troubleshooting:

1. *HTTP request failed with code 400, message is The value for one of the HTTP headers is not in the correct format.*

This probably means that you are using Blobs or "cold" storage - we do not support that at the moment.

2. *ResourceNotFound: No deployments were found.* You need to select the right AzureSubscription.

<https://stackoverflow.com/questions/35077602/why-does-new-azurereservedip-return-resourcenotfound-no-deployments-were-found>

5.1.2.10.19 Connection - Dropbox

The Dropbox Connection stores connect and login properties for the Dropbox cloud services.

Dropbox is a file hosting service. Dropbox allows users to create a special folder on their computers, which Dropbox then synchronizes so that it appears to be the same folder (with the same contents) regardless of which device is used to view it. Files placed in this folder are also accessible via the Dropbox website and mobile apps. Dropbox uses a freemium business model, wherein users are offered a free account with a set storage size and paid subscriptions for accounts with more capacity

The Dropbox Connection is used in the following Cloud Tasks:

- Cloud - Upload file(s)
- Cloud - List item(s)
- Cloud - Download file(s)
- Cloud - Create folder
- Cloud - Delete item(s)

Manage Connections > Add > Dropbox > Main settings tab

Add/Edit Connection

Dropbox
The Dropbox Connection stores connect and logon properties for the Dropbox cloud services.

Main settings | Authentication | Proxy | Extra settings

Protocol
Protocol type: **Dropbox**

Server
Name:

Timeout:

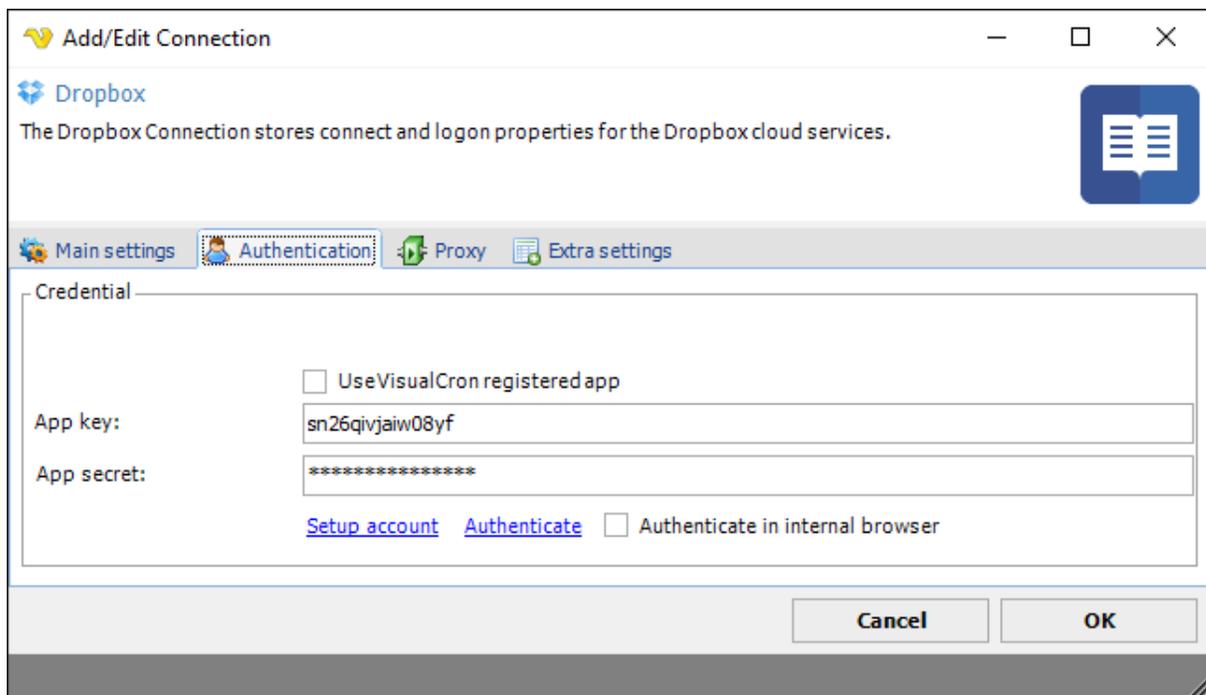
Code page: **Windows-1252**

Cancel **OK**

Name

The name of the Connection to uniquely identifying it.

Manage Connections > Add > Dropbox > Authentication tab



Use VisualCron registered app

If you use your own application, you need to uncheck the *Use VisualCron registered app* box (checked as default). If you want to use your own app, then click the *Setup account* link to create or enter in your own *App key* and *App secret* information.

App key

App key which you gets when registering application at Dropbox.

App secret

App secret which you gets when registering application at Dropbox.

How to create a connection using the VisualCron app

Check the *Use VisualCron registered app* box. Proceed to the **How to connect your account to an app (Authentication)** chapter below.

How to create a connection using your own Dropbox app

If you e.g. want your own logo and/or use your own permissions, you may choose to use your own app.

1. If you have not yet created your own app then click *Setup account* or go to:

<https://www.dropbox.com/developers/apps>

2. Set and verify Redirect URI. When setting up Redirect URI you also need to match the Redirect URL in the **Extra settings** tab. The Redirect URI is used for authentication.

OAuth 2

Redirect URIs

<http://localhost> ×

<http://localhost:9999> ×

3. Insert the *App key* and *App secret* data in the **Authentication** tab.

How to connect your account to an app (Authentication)

1. You can choose to authenticate in your own browser or external by checking the *Authenticate in internal browser* box. Click on the *Authenticate* link.



Sign in to Dropbox to link with VisualCron



Sign in with Google

or

[Forgot your password?](#)

Sign in

[New to Dropbox? Create an account](#)

2. Enter your Dropbox login credentials in order to allow the use of the VisualCron application to handle files in your Dropbox account.

Manage Connections > Add > Dropbox > Proxy tab

Add/Edit Connection

Dropbox
The Dropbox Connection stores connect and logon properties for the Dropbox cloud services.

Main settings Authentication **Proxy** Extra settings

Proxy type: No proxy

Address:

Port: 0

Use credentials

Domain:

Username:

Password:

Cancel OK

Proxy type

Select the proxy type to be used.

Address

The host name or IP address of the proxy server.

Port

The port of the proxy server.

Use credentials

Text ...

Domain

The name of the domain to be created.

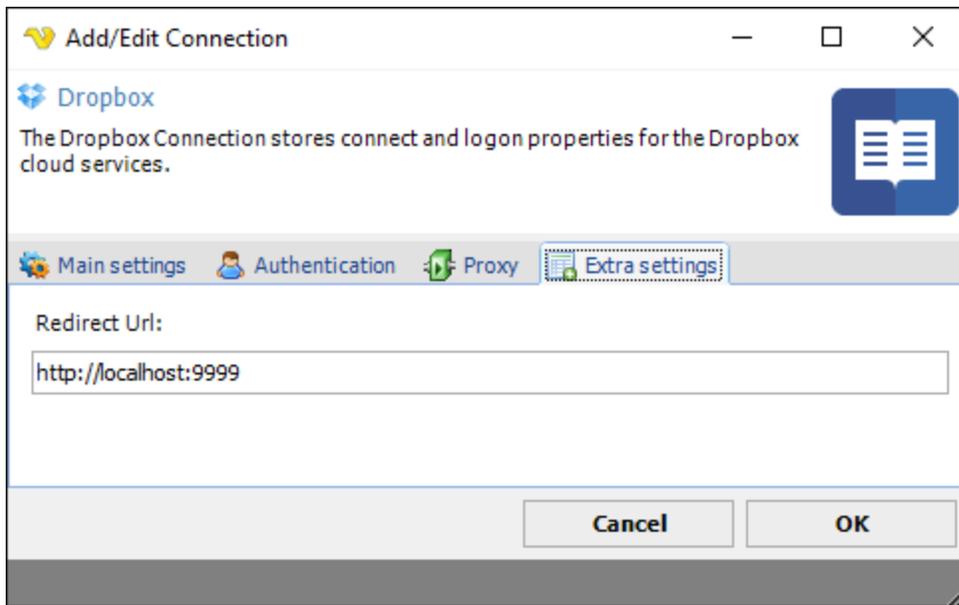
Username

The user name to access the proxy server.

Password

The password to access the proxy server.

Manage Connections > Add > Dropbox > Extra settings tab



Troubleshooting

400 Invalid Redirect URI

Please use `http://localhost` and `http://localhost:9999` for your redirect URI in your app on Dropbox.

5.1.2.10.20 Connection - Google Drive

The Google Drive Connection stores connect and login properties for the Google cloud service Google Drive.

Google Drive is a cloud service from Google. You can use VisualCron to sync files between that service and a local folder.

The Google Drive Connection is used in the following Cloud Tasks:

- Cloud - Upload file(s)
- Cloud - List item(s)
- Cloud - Download file(s)
- Cloud - Create folder
- Cloud - Delete item(s)

Manage Connections > Add > Google Drive > Main settings tab

Add/Edit Connection

Google Drive
The GoogleDrive Connection stores connect and logon properties for the Google cloud service GoogleDrive.

Main settings | Authentication | Proxy

Protocol
Protocol type:

Server
Name:

Timeout:

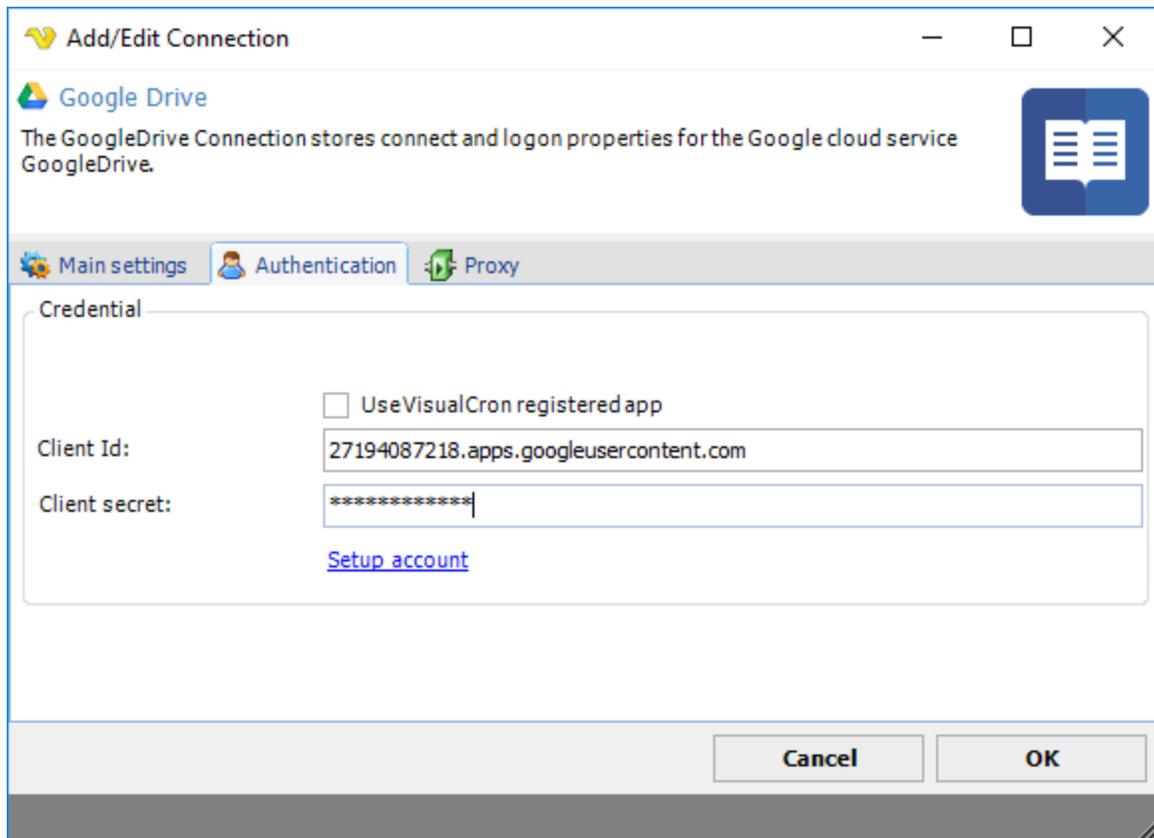
Code page:

Cancel **OK**

Name

The name of the Connection to uniquely identifying it.

Manage Connections > Add > Google Drive > Authentication tab



Use VisualCron registered app

If you use your own application, you need to uncheck the *Use VisualCron registered app* box (checked as default). If you want to use your own app, then click the *Setup account* link to create or enter in your own *Client Id* and *Client secret* information.

Client Id

Client Id which you gets when registering the application at Google Drive.

Client secret

Client secret which you gets when registering the application at Google Drive.

How to create a connection using your own Google Drive app

If you e.g. want your own logo and/or use your own permissions, you may choose to use your own app. If you use your own application you need to uncheck *Use VisualCron registered app* in the **Google Drive > Authentication** tab then click *Setup account* or go to:
<https://console.developers.google.com/apis>

How to create a connection using the VisualCron app

In the **Google Drive > Authentication** tab, the *Use VisualCron registered app* box shall be checked (default).

1. Check that the *Authenticate in internal browser* box is checked (default)
2. Click the *Authenticate* link. In the Google authentication window, enter your Google login credentials or approve handling (if you are already logged in to Google) of files in Google Drive.



Sign in with your Google Account



Enter your email

Next

[Find my account](#)

One Google Account for everything Google



3. Once the authentication is performed, click OK to save the connection
4. The connection can be tested by right-click and select *Explorer* in the **Server > Global objects > Connections** tab

Manage Connections

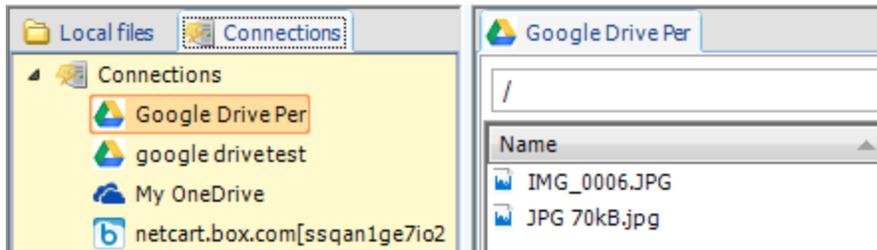
Connections are globally stored objects containing remote connection properties for a range of standards like FTP, SFTP, SSH, SQL and more. Create a Connection once and re-use it in Tasks and Triggers.

+ Add | Edit | Clone | Delete | Explorer | Audit log | Clear filter

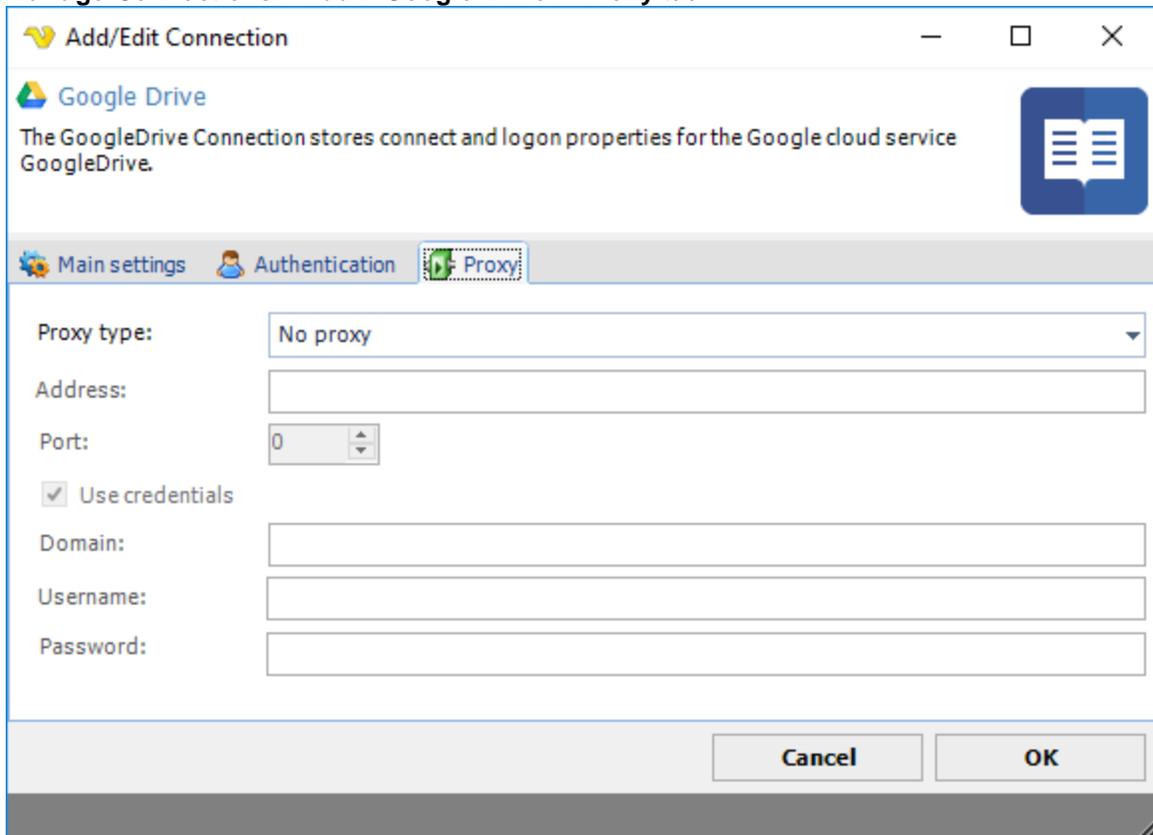
Protocol	Name	Address	Port
FTP TLS Expl	rambo - ftp	RAMBO	97
GoogleDrive	google drivetest		
Twitter	perland2		

5. Double-click on the Google Drive Connection in the **Tools > Explore > Connection Explorer > Connections** window to verify the current files in your Google Drive folder or in <https://drive.google.com/drive/my-drive>.

👉 Connection Explorer



Manage Connections > Add > Google Drive > Proxy tab



Proxy type

Select the proxy type to be used.

Address

The host name or IP address of the proxy server.

Port

The port of the proxy server.

Use credentials

Text ...

Domain

The name of the domain to be created.

Username

The user name to access the proxy server.

Password

The password to access the proxy server.

5.1.2.10.21 Connection - OneDrive

The OneDrive Connection stores connect and logon properties for the Microsoft cloud service OneDrive.

You can use VisualCron to sync files between the OneDrive service and a local folder.

The OneDrive Connection is used in the Cloud Tasks:

- Cloud - Upload file(s)
- Cloud - List item(s)
- Cloud - Download file(s)
- Cloud - Create folder
- Cloud - Delete item(s)

Manage Connections > Add > OneDrive > Main settings tab

Add/Edit Connection

OneDrive
The OneDrive Connection stores connect and logon properties for the Microsoft cloud service OneDrive.

Main settings | Authentication | Proxy | Extra settings

Protocol
Protocol type: OneDrive

Server
Name: onedrive test

Timeout: 60

Code page: Windows-1252

Cancel OK

Name

The name of the Connection to uniquely identifying it.

Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > OneDrive > Authentication tab

Use VisualCron registered app

If you use your own application, you need to uncheck the *Use VisualCron registered app* box (checked as default). If you want to use your own app, then click the *Setup account* link to create or enter in your own *Application Id* and *Application password* information.

Application Id

Application Id which you gets when registering application at OneDrive.

Application password

Application password which you gets when registering application at OneDrive.

Setup app

In order to connect authentication to an account, an app has to be created at the cloud provider. See <https://account.live.com/developers/applications/index>

Authenticate

Click on the *Authenticate* link to start authentication.

Authenticate in internal browser

You can choose to authenticate in your own browser or externally by checking the *Authenticate in internal browser* box. Click on the *Authenticate* link.

How to create a connection using the VisualCron app

In the **OneDrive > Authentication** tab, the *Use VisualCron registered app* box shall be checked (default).

1. Check that the *Authenticate in internal browser* box is checked (default)
2. Click the *Authenticate* link. In the Microsoft authentication window, login using your Microsoft account

VisualCron

Work or school, or personal Microsoft account

 Keep me signed in

How to create a connection using your own OneDrive app

If you e.g. want your own logo and/or use your own permissions, you may choose to use your own app. First, uncheck the *Use VisualCron registered app* box.

You can create the Microsoft OneDrive app either by click on the *Setup app* link or by sign in to the Microsoft Application Registration Portal: <https://apps.dev.microsoft.com/?mkt=en-US#/appList>

1. In the Microsoft Register your application page, click the *Add an app* button
2. Enter *Application Name* for the app, i.e. "VisualCron", check the *Guided Setup* box and press the *Create* button
3. Select type *Mobile and Desktop App*



Mobile and Desktop App

i.e. Windows, iOS, or Android

4. Select technology *Windows Desktop (.NET)*

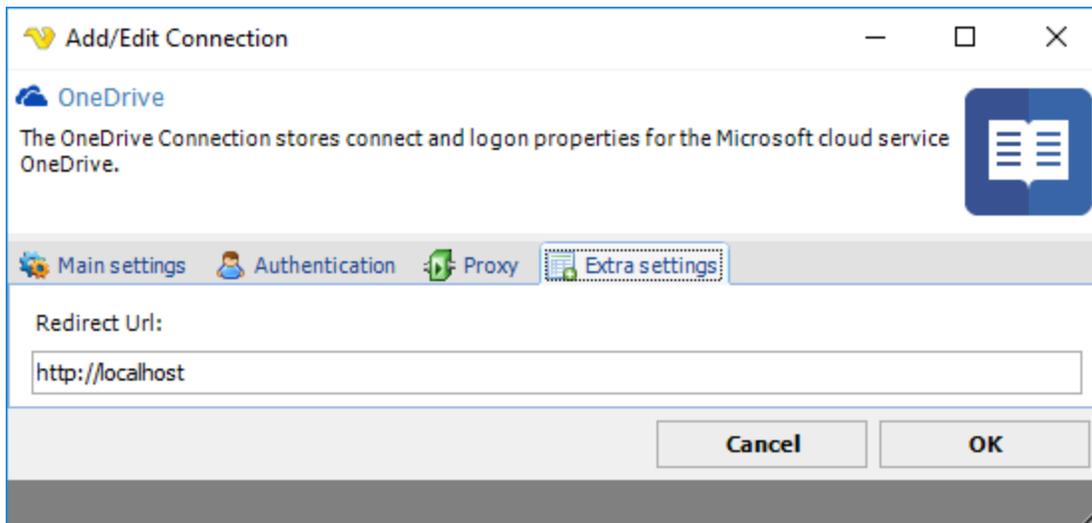


Windows Desktop (.NET)

[Start Guided Setup](#)

5. Go directly to *Test & Validate*. Scroll down to the bottom and click the *View app registration* button
6. Copy the Microsoft Application ID to **OneDrive > Authentication** tab *Application ID* field
7. In the Microsoft application, click the *Generate New Password* button
8. Copy the generated password to **OneDrive > Authentication** tab *Application password* field
9. In the Microsoft application, check the Redirect URL and, if necessary, update the **OneDrive > Extra settings > Redirect URL** information accordingly
10. Click the *Save* button in the Microsoft application
11. In the **OneDrive > Authentication** tab, check the *Authenticate in internal browser* box and click on the *Authenticate* link to test the authentication. In the Microsoft authentication window, login using your Microsoft account

Manage Connections > Add > OneDrive > Extra settings tab



Create a OneDrive session (if not step 11, Authentication, above) is performed

Before you can use the Connection in Tasks and Triggers you need to create a session and connect your OneDrive account to the Application you created. You do this by opening the Connection Explorer and double click on the OneDrive Connection. Enter the OneDrive account details and give the Application the permissions. You are now ready to use the Connection in Tasks and Triggers.

5.1.2.10.22 Connection - Box

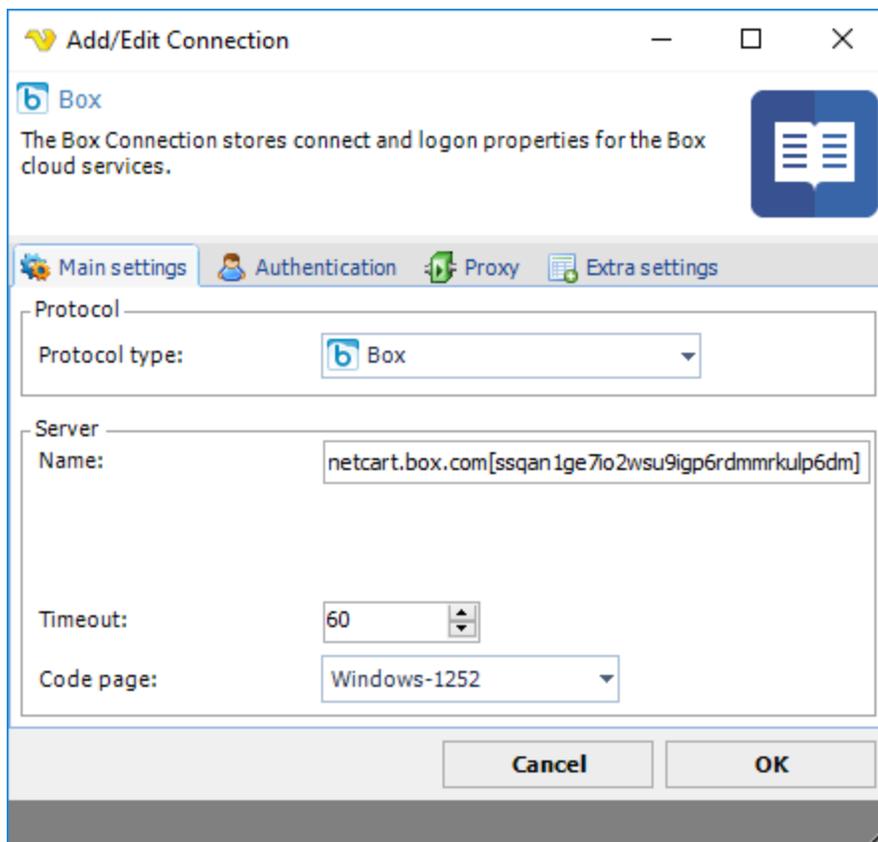
The Box Connection stores connect and logon properties for the Box cloud services.

Box is a cloud service from Google that you have to pay for. You can use VisualCron to sync files between that service and a local folder.

The GoogleDrive Connection is used in the Cloud Tasks:

- Cloud - Upload file(s)
- Cloud - List item(s)
- Cloud - Download file(s)
- Cloud - Create folder
- Cloud - Delete item(s)

Manage Connections > Add > Box > Main settings tab



Name

The name of the Connection to uniquely identifying it.

Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > Box > Authentication tab

Add/Edit Connection

Box
The Box Connection stores connect and logon properties for the Box cloud services.

Main settings | **Authentication** | Proxy | Extra settings

Credential

Client Id:

Client secret:

[Authenticate](#) Authenticate in internal browser

Cancel OK

Client Id

Client Id which you gets when registering application at Box.

Client secret

Client secret which you gets when registering application at Box.

Authenticate

Click on the *Authenticate* link to start authentication.

Authenticate in internal browser

You can choose to authenticate in your own browser or externally by checking the *Authenticate in internal browser* box (default). Click the *Authenticate* link.

5.1.2.10.23 Connection - VisualCron

The VisualCron Connection stores connect and logon properties for connecting internally between Clients and Servers. This is used to control Jobs/Tasks on other servers.

The VisualCron Connection is used in the Internal - Job/Task control Task and the Event trigger - VisualCron Trigger. The Connection is used to connect to a local or remote VisualCron Server instance.

Manage Connections > Add > VisualCron > Main settings tab

Add/Edit Connection

VisualCron

The VisualCron Connection stores connect and logon properties for connecting internally between Clients and Servers. This is used to control Jobs/Tasks on other Servers.

Main settings | Authentication | Proxy

Protocol

Protocol type: VisualCron

Server

Name:

Address:

Port: 16444

Timeout: 60

Code page: Windows-1252

Cancel OK

Name

The unique name for the Connection.

Address

The DNS name or IP of the VisualCron server.

Port

The port used by VisualCron - default 16444.

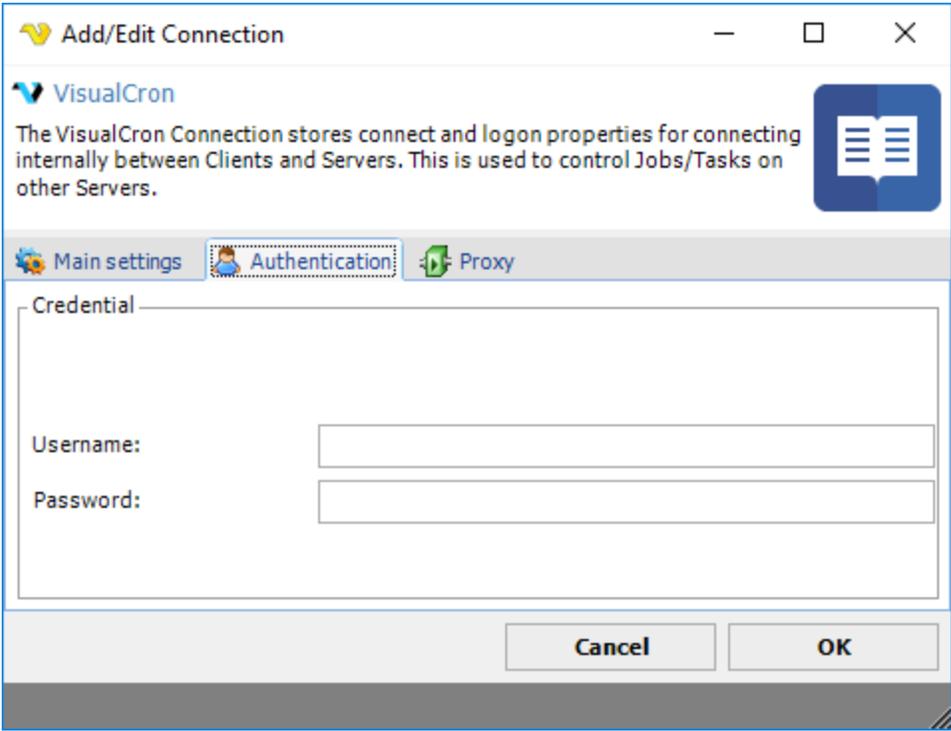
Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Not used.

Manage Connections > Add > VisualCron > Authentication tab



Add/Edit Connection

VisualCron

The VisualCron Connection stores connect and logon properties for connecting internally between Clients and Servers. This is used to control Jobs/Tasks on other Servers.

Main settings | **Authentication** | **Proxy**

Credential

Username:

Password:

Cancel **OK**

Username

The username for the user in the VisualCron Server.

Password

The password for the user in the VisualCron Server.

Manage Connections > Add > VisualCron > Proxy tab

Add/Edit Connection

VisualCron

The VisualCron Connection stores connect and logon properties for connecting internally between Clients and Servers. This is used to control Jobs/Tasks on other Servers.

Main settings Authentication Proxy

Proxy type: No proxy

Address:

Port: 0

Use credentials

Domain:

Username:

Password:

Cancel OK

Proxy type

The FTP implementation supports the HTTP proxy type and the SFTP implementation supports the SOCKS4 and SOCKS5 proxy types.

Address

Host name or IP number of the proxy server.

Port

Port of the proxy server.

Use credentials

Text ...

Username

A username to access the proxy server.

Password

A password to access the proxy server.

5.1.2.10.24 Connection - Sharepoint

The SharePoint Connection stores connect and logon properties for local SharePoint instances or the SharePoint online cloud service from Microsoft.

The SharePoint Connection is used for the SharePoint Tasks:

- SharePoint - Create list

- SharePoint - Delete list(s)
- SharePoint - Describe list
- SharePoint - Get list(s)
- SharePoint - Update list
- SharePoint - Add list item
- SharePoint - Update list item
- SharePoint - Delete list item(s)
- SharePoint - Get list item(s)
- SharePoint - Upload file(s)
- SharePoint - Download file(s)
- SharePoint - List file(s)
- SharePoint - Delete file(s)

Manage Connections > Add > SharePoint > Main settings tab

Add/Edit Connection

Sharepoint

The Sharepoint Connection stores connect and logon properties for local Sharepoint instances or the Sharepoint online cloud service from Microsoft.

Main settings | Sharepoint | Authentication | Certificates

Protocol

Protocol type: **Sharepoint**

Server

Name:

Address:

Timeout:

Code page: **Windows-1252**

Cancel **OK**

Name

The unique name for the Connection

Address

The address to the SharePoint server.

Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > SharePoint > Sharepoint tab

Add/Edit Connection

Sharepoint
The Sharepoint Connection stores connect and logon properties for local Sharepoint instances or the Sharepoint online cloud service from Microsoft.

Main settings | **Sharepoint** | Authentication | Certificates

Sharepoint version:
Sharepoint Online

Cancel OK

SharePoint version

Select between SharePoint Online or a local installation (SharePoint 2010/2013)

Manage Connections > Add > SharePoint > Authentication tab

Add/Edit Connection

Sharepoint
The Sharepoint Connection stores connect and logon properties for local Sharepoint instances or the Sharepoint online cloud service from Microsoft.

Main settings | Sharepoint | **Authentication** | Certificates

Credential

Authentication type: Default

Username:

Password:

Cancel OK

Authentication type

Select type of authentication on the SharePoint server. Default (Windows), Basic, Anonymous or Forms.

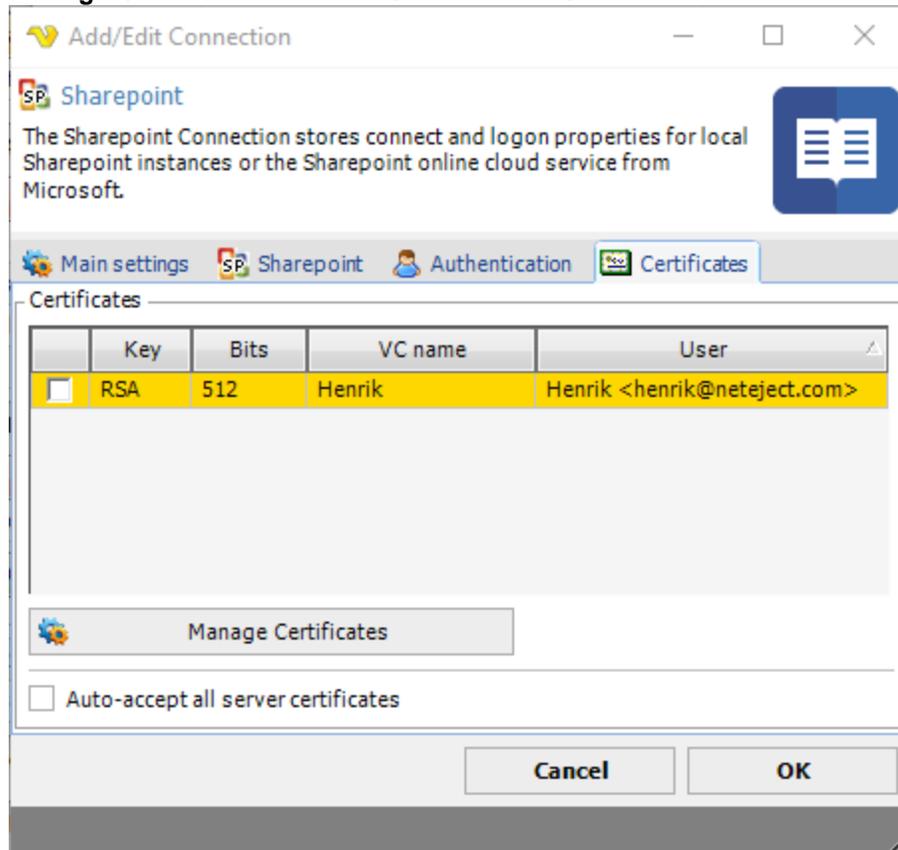
Username

The username for the server.

Password

The password for the server.

Manage Connections > Add > SharePoint > Certificates tab



Client certificate

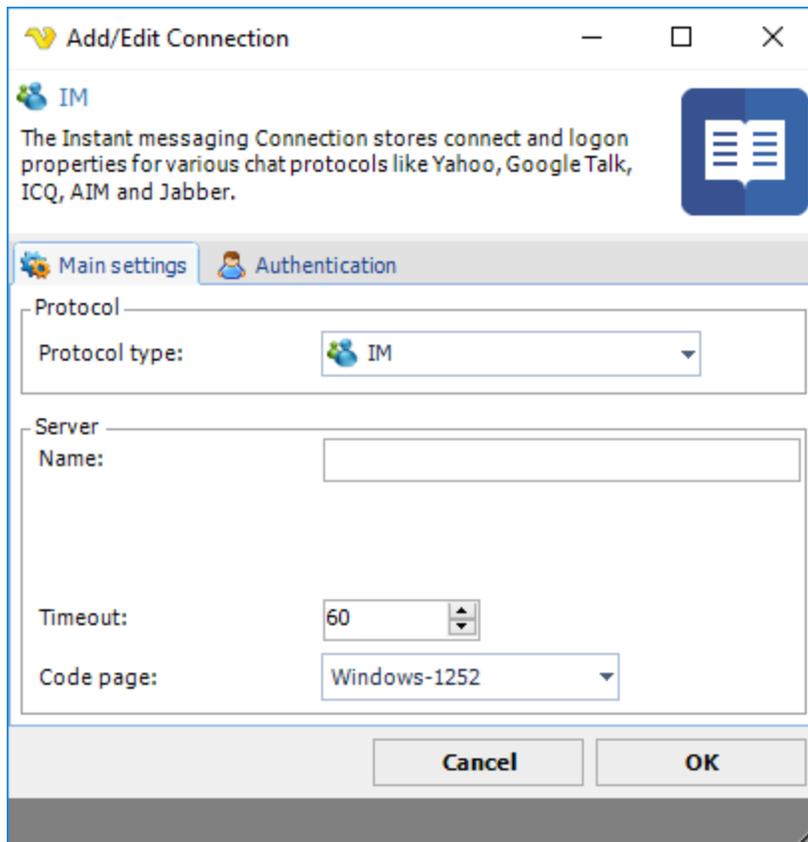
If the SharePoint server requires a client certificate, click the *Manage Certificates* button to select and import a certificate.

5.1.2.10.25 Connection - IM

The Instant Messaging Connection stores connect and logon properties for various chat protocols like Yahoo, Google Talk, ICQ, AIM and Jabber.

The IM Connection is used in the Instant Messaging Task.

Manage Connections > Add > IM > Main settings tab



Name

The unique name for the Connection

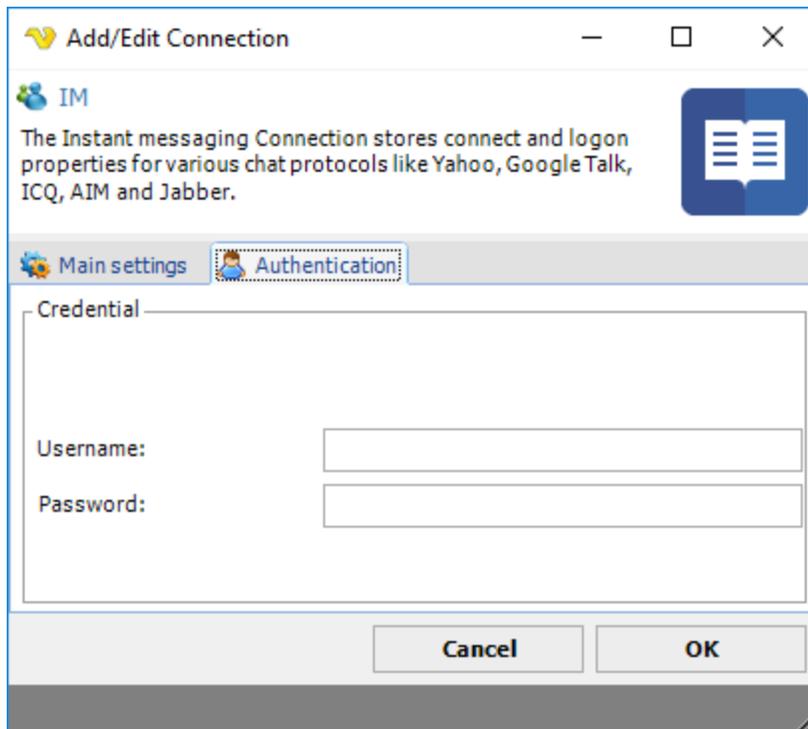
Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > IM > Authentication tab



Username

The username for the messaging account. When using GTalk, the user name is just the user, for example if the email is visualcron@gmail.com you should just use "visualcron".

Password

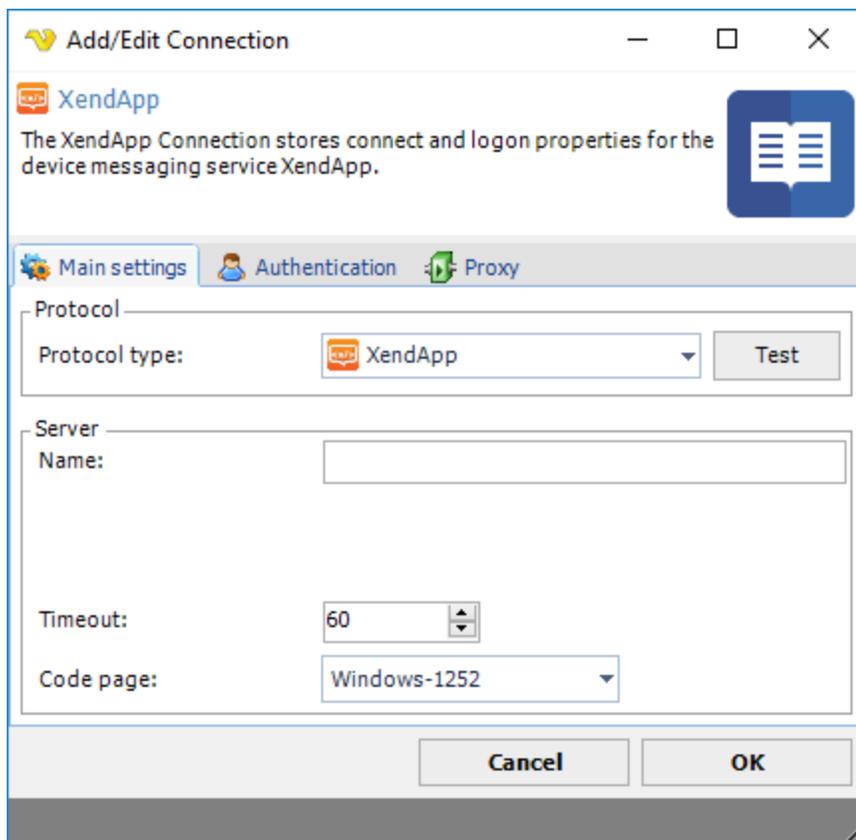
The password for the messaging account.

5.1.2.10.26 Connection - XendApp

The XendApp Connection stores connect and logon properties for the device messaging service XendApp.

XendApp is a platform for delivering instant messages to any device (phone/tablet). It is a free service which uses notification services to deliver a message. Registration is done here.

Manage Connections > Add > XendApp > Main settings tab



Test

It is possible to test the connection once you have set all settings. Click the *Test* button to start the test.

Name

The unique name for the Connection.

Address

This field is not used.

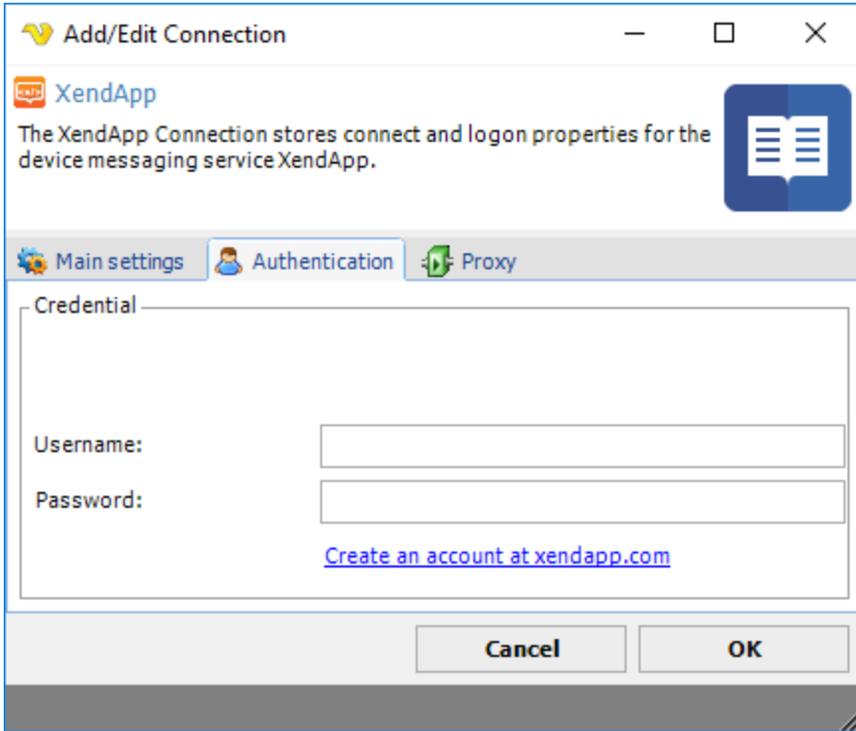
Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > XendApp > Authentication tab



Add/Edit Connection

XendApp
The XendApp Connection stores connect and logon properties for the device messaging service XendApp.

Main settings | **Authentication** | Proxy

Credential

Username:

Password:

[Create an account at xendapp.com](https://xendapp.com)

Cancel OK

Username

The username for the registered XendApp account. Register here for free.

Password

The password for the registered XendApp account. Register here for free.

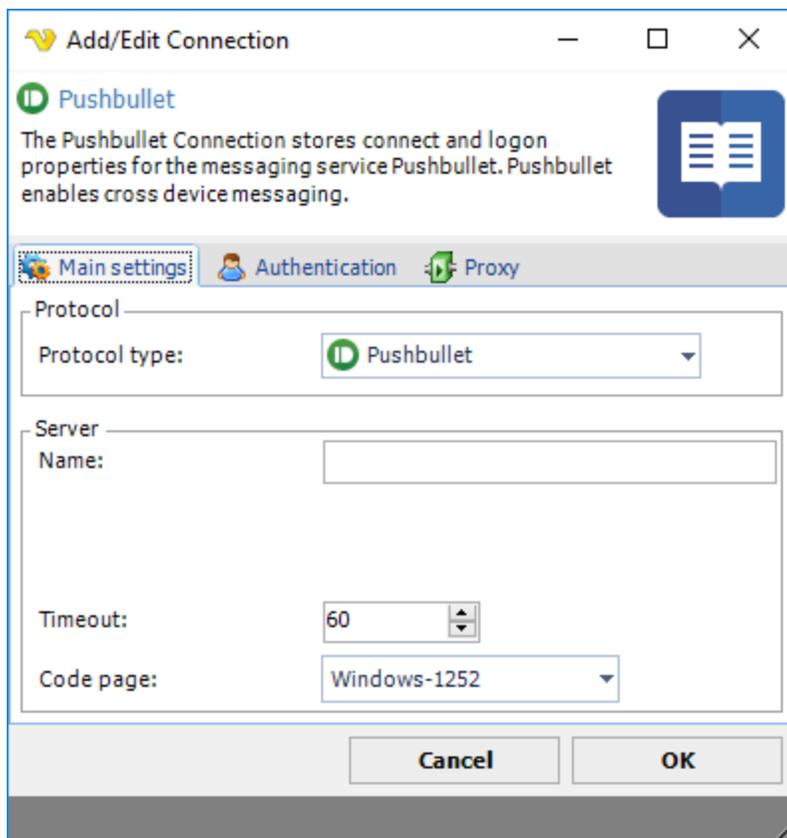
5.1.2.10.27 Connection - Pushbullet

The Pushbullet Connection is used with the free service from Pushbullet to send messages, files or SMS to any device.

The Pushbullet Connection is used in the following Tasks:

- Pushbullet - Send message
- Pushbullet - Send SMS
- Pushbullet - Send link
- Pushbullet - Send file
- Pushbullet - Upload file

Manage Connections > Add > Pushbullet > Main settings tab



Name

The name of the Connection to uniquely identifying it.

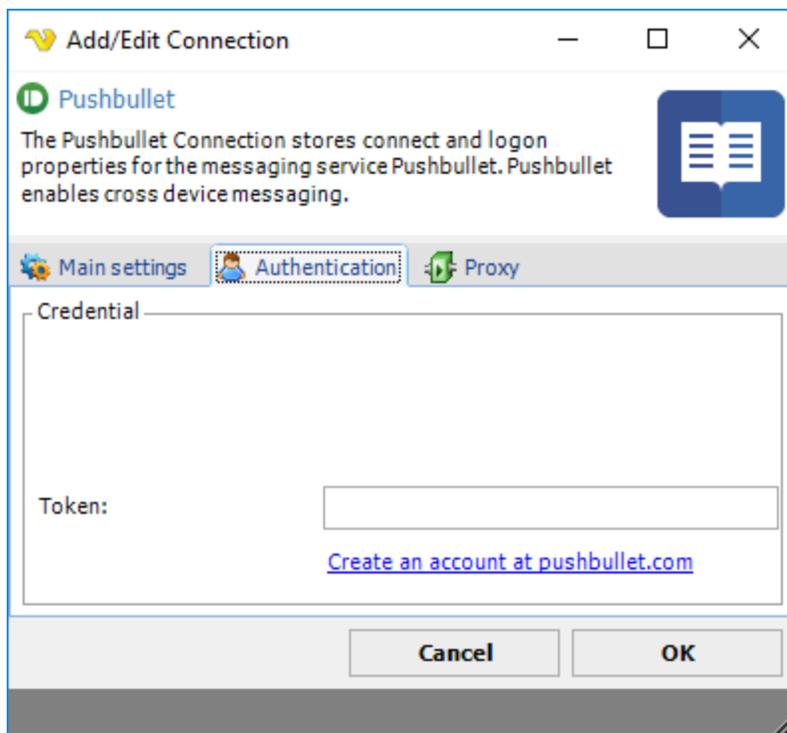
Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > Pushbullet > Authentication tab



Token

A string token you get when you create an account at pushbullet.com.

5.1.2.10.28 Connection - Telegram

The Telegram Connection uses the free, cloud-based instant messaging service Telegram. Telegram client apps exist for Android, iOS, Windows Phone, Windows NT, macOS and Linux. Users can send messages and exchange photos, videos, stickers, audio and files of any type. Telegram also provides optional end-to-end encrypted messaging.

The Telegram Connection is used in the following Task:

- Telegram - User Send message

Setting up a Telegram application

In VisualCron you have the option, in the authentication tab, to use the existing Telegram app "VisualCron". If you for some reason, want to use your own app, you need to create one here and then enter *App app_id* and *App api_hash* in authentication tab.

Once you have created your app or selected to use the default one for VisualCron you enter your *phone* number and click on *Request code*. Use the code you obtain in your Telegram Client in VisualCron *Code* field.

Manage Connections > Add > Telegram > Main settings tab

Add/Edit Connection

Telegram

The Telegram Connection uses the free, cloud-based instant messaging service Telegram. Telegram client apps exist for Android, iOS, Windows Phone, Windows NT, macOS and Linux. Users can send messages and exchange photos, videos, stickers, audio, and files of any type. Telegram also provides optional end-to-end-encrypted messaging.

Main settings | **Authentication**

Protocol

Protocol type: Telegram Request code

Phone

Number:

Cancel OK

Request code

Click this to receive a code to authorize VisualCron for sending messages. You need to enter *Phone* number for this to work.

Phone

Enter phone number including country code, i.e. +1888555222.

Manage Connections > Add > Telegram > Authentication tab

Add/Edit Connection

Telegram

The Telegram Connection uses the free, cloud-based instant messaging service Telegram. Telegram client apps exist for Android, iOS, Windows Phone, Windows NT, macOS and Linux. Users can send messages and exchange photos, videos, stickers, audio, and files of any type. Telegram also provides optional end-to-end-encrypted messaging.

Main settings | **Authentication**

Credential

Use VisualCron registered app

App app_id:

App api_hash:

[Create an app in my.telegram.org](https://my.telegram.org)

Login code

Code:

Cancel OK

Use VisualCron registered app

See setup in top of documentation. Check this if you want to use the default VisualCron app.

App app_id

If you want to use your own app then copy this information from the settings of the app online.

App api_hash

If you want to use your own app then copy this information from settings of the app online.

Code

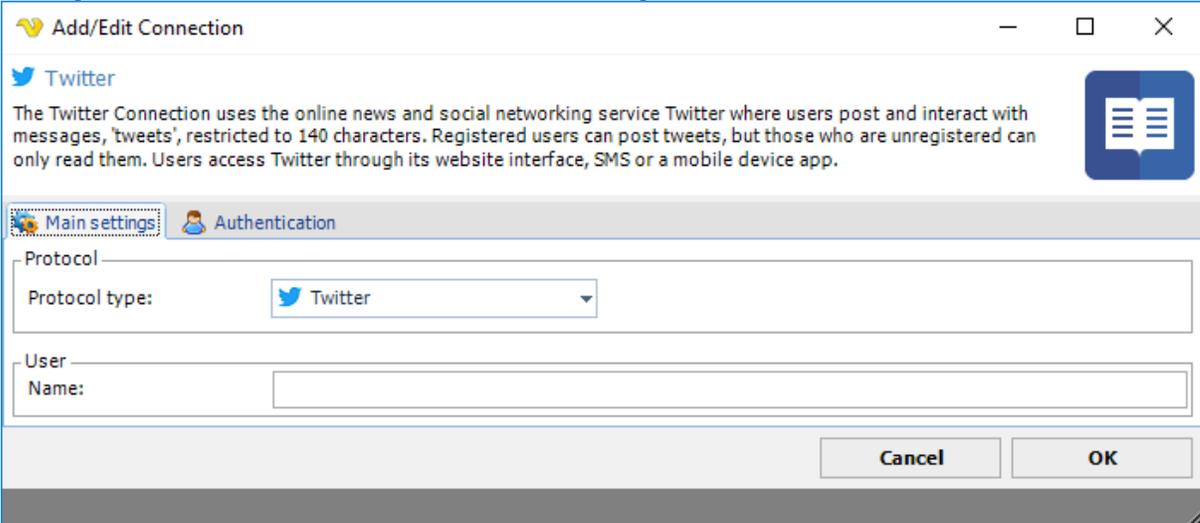
Once you have clicked *Request code* in main settings tab you will receive a code in your Telegram Client. Paste this here.

5.1.2.10.29 Connection - Twitter

The Twitter connection uses the online news and networking service Twitter where users post and interact with messages, "tweets", restricted to 40 characters. Registered users can post tweets, but those who are unregistered can only read them. Users access Twitter through its website interface, SMS or a mobile device app.

The Twitter Connection is used in the Twitter Tasks.

Manage Connections > Add > Twitter > Main settings tab



The screenshot shows a window titled "Add/Edit Connection" with a Twitter icon. The main heading is "Twitter". Below it, a text block explains: "The Twitter Connection uses the online news and social networking service Twitter where users post and interact with messages, 'tweets', restricted to 140 characters. Registered users can post tweets, but those who are unregistered can only read them. Users access Twitter through its website interface, SMS or a mobile device app." To the right is a blue icon of a document with lines. Below the text are two tabs: "Main settings" (selected) and "Authentication". Under "Main settings", there is a "Protocol" section with a dropdown menu set to "Twitter". Below that is a "User Name:" label followed by an empty text input field. At the bottom right are "Cancel" and "OK" buttons.

Name

This field will be filled by VisualCron once the PIN has been authenticated.

Manage Connections > Add > Twitter > Authentication tab

Use VisualCron registered app

When creating a Twitter Connection you have the option to use the registered VisualCron Twitter app or use your own app. If you have your own app you need to fill *Consumer Key* and *Consumer Secret* from Twitter web page - Application settings.

Get PIN

Click on Get PIN to start authorization against the VisualCron app or your own app.

Authorization of VisualCron to perform Twitter Tasks

To create a Connection you first need to authorize VisualCron to perform Twitter Tasks. This is done by retrieving a PIN through a Consumer key and Secret.

Use the VisualCron app

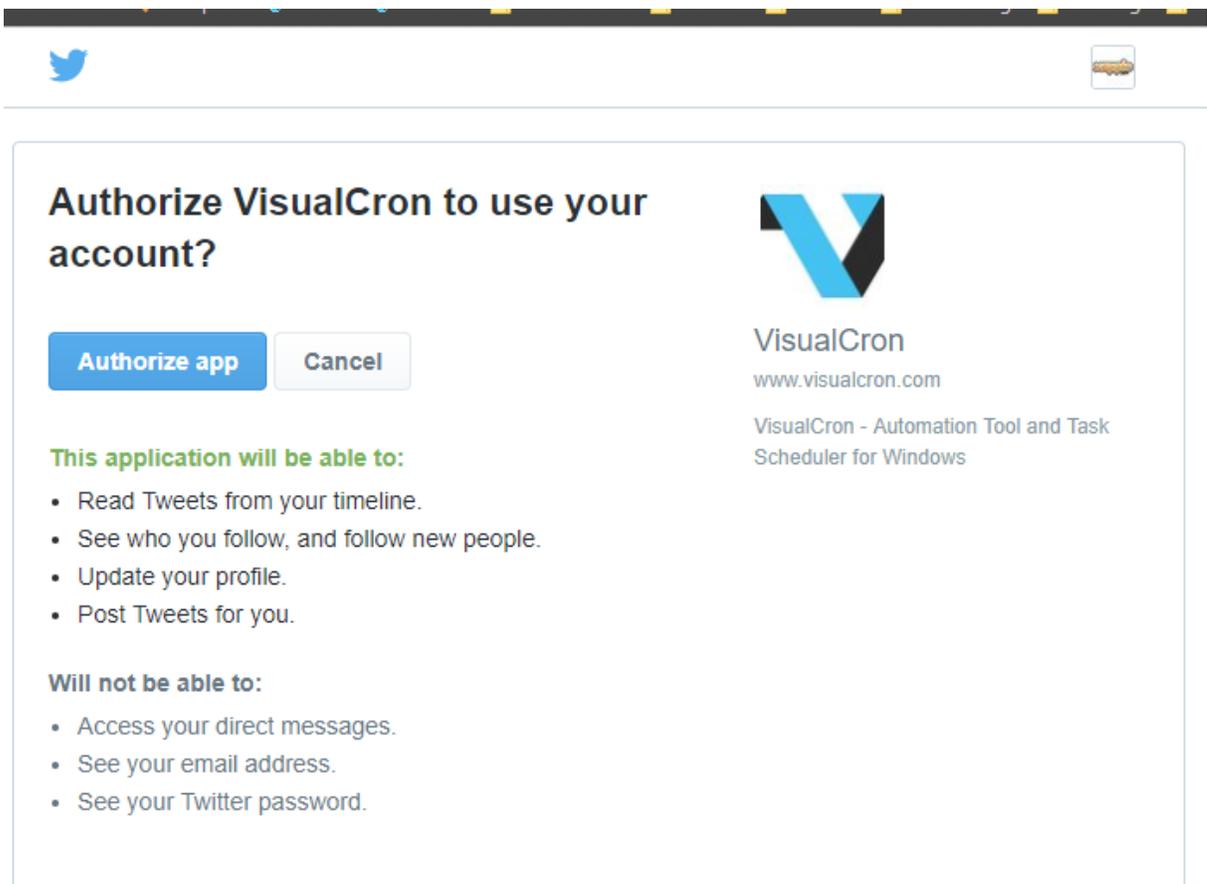
1. Click on *Get PIN* button in VisualCron.
2. Authorize the VisualCron app in the Twitter web page and you will receive a PIN.
3. Paste the PIN in the *Get PIN* field and click on *Authenticate PIN*.

Use your own app

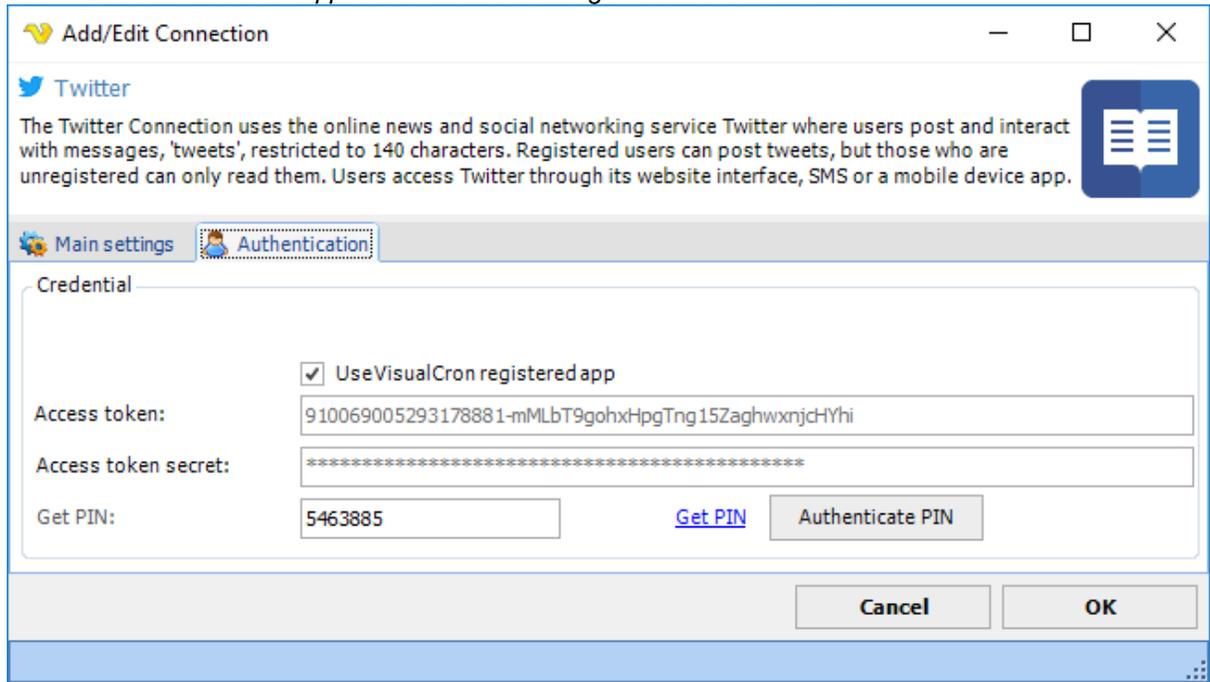
If you want to use your own app (e.g. if you/your company already have an app or if you need special permissions) you need to:

1. Create your own app in Twitter if you have not done that
2. Uncheck *Use VisualCron app registered app* in Authentication page
3. Fill in the *Consumer key* and the *Consumer secret* from Twitter web page.
4. Click on *Get PIN* button in VisualCron.
5. Authorize VisualCron in the web page and you will receive a PIN.
6. Paste the PIN in VisualCron and click on *Authenticate PIN*.

Authorize the VisualCron app in browser



Authorize the VisualCron app in browser - Access granted - PIN received



Authorize use your own app in browser - Access granted - PIN received

Use VisualCron registered app

When creating a Twitter Connection you have the option to use the registered VisualCron Twitter app or use your own app. If you have your own app you need to fill *Consumer Key* and *Consumer Secret* from Twitter web page - Application settings.

Access token

Access token is retrieved and filled once you have authorized the app.

Access secret

Access secret is retrieved and filled once you have authorized the app.

PIN

After pressing Get PIN and you have authorized the app you need to copy/paste the PIN here. Then press *Authenticate PIN*.

Authenticate PIN

Click this button once you have retrieved and filled a *PIN* in the *PIN field* (after authorization).

5.1.2.10.30 Connection - Crystal reports

The Crystal reports Connection stores connect and logon properties for database connections to Crystal reports.

The Crystal reports Connection is used in Crystal reports Tasks. In the Task, one or more Connections can be selected depending on how many database connections your report uses.

Runtime binaries

Please note that in order to use the Crystal reports Task from a machine where VisualCron is installed you need to download and install the runtime for Crystal reports. Select the appropriate and latest version below depending on if you have a 32 or 64 bit machine.

<http://scn.sap.com/docs/DOC-7824>

Manage Connections > Add > Crystal reports > Main settings tab

The screenshot shows a dialog box titled 'Add/Edit Connection' with a yellow heart icon. The main heading is 'Crystal reports' with a green diamond icon. Below the heading is a description: 'The Crystal reports Connection stores connect and logon properties for database connections to Crystal reports.' There is a blue icon of an open book on the right. The dialog has two tabs: 'Main settings' (selected) and 'Authentication'. Under 'Main settings', there are four sections: 'Protocol' with a dropdown menu set to 'Crystal reports'; 'Server' with 'Name:' and 'Address:' text boxes; 'Timeout:' with a spinner box set to '60'; and 'Code page:' with a dropdown menu set to 'Windows-1252'. At the bottom are 'Cancel' and 'OK' buttons.

Name

Use any name you like to identify this Connection among other Connections

Address

This must match the exact name of the ODBC/OLEDB connection name in ODBC administration window. Please note that this ODBC/OLEDB DSN name must exist in the System DSN tab as these are the only DSNs available across users. If your report uses connections from the User DSN you need to copy those to the System DSN. The database that you use is specified in the ODBC/OLEDB DSN.

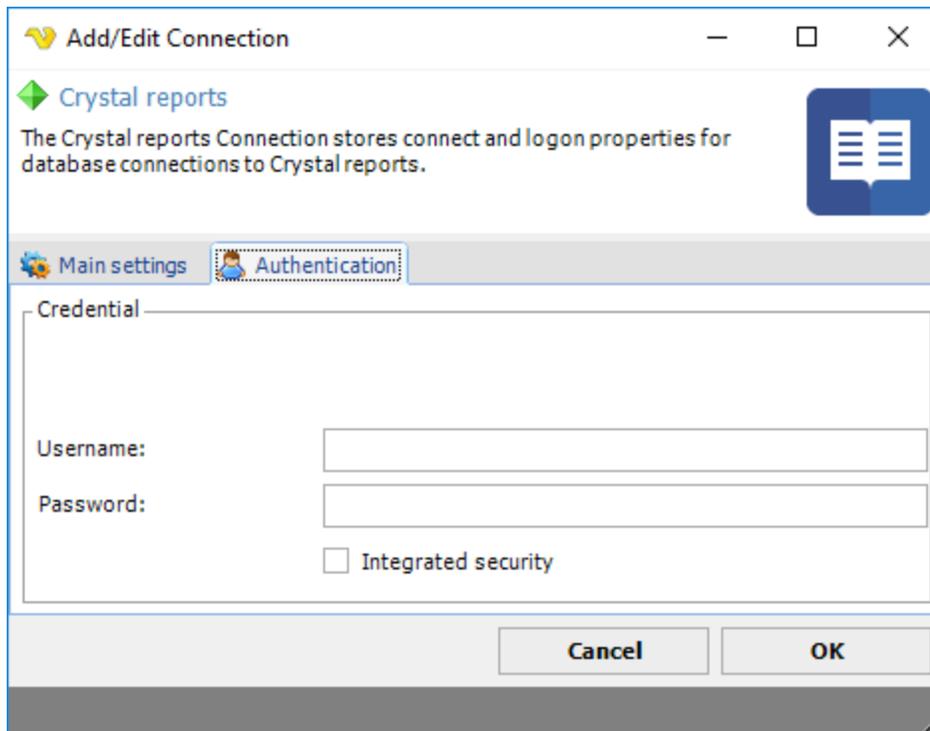
Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > Crystal reports > Authentication tab



Username

The username must match the same user that you use in the ODBC/OLEDB administration window.

Password

You need to set the password of the ODBC/OLEDB DSN.

Integrated security

Check this if you want to use Windows authentication against the database. For username and password use the Windows user.

Debugging

If you turn on Extended debugging in Server settings->Log you will be able to look at the log after execution and see what went wrong. Usually, it is one of the following problems:

1. the Address property does not match the name in System DSN
2. the ODBC/OLEDB DSN has only been created in user DSN and not the required System DSN
3. the Crystal reports document has not been updated to use the System DSN (but only uses User DSN)
4. the username or password do not match the one for the database
5. one or more Connections are missing in VC (if the Crystal report uses more than one)

Troubleshooting

Could not load file or assembly 'CrystalDecisions.ReportAppServer.ClientDoc, Version=13.0.2000.0'

In the IIS Manager on the server - set the application pool for my web application to not allow 32-bit assemblies or run the following script: `C:\inetpub\AdminScripts\adsutil.vbs SET w3svc/AppPools/Enable32bitAppOnWin64 0` -

5.1.2.10.31 Connection - VMWare

The VMWare Connection stores connect and logon properties for guest and remote VMWare instances.

The VMWare Connection is used for connecting to remote VMWare instances in the following Tasks:

- VMWare - Start VM
- VMWare - Stop VM
- VMWare - Suspend VM
- VMWare - Pause VM
- VMWare - Resume VM
- VMWare - Reset VM
- VMWare - Get VM status
- VMWare - Create VM snapshot
- VMWare - Revert to VM snapshot
- VMWare - Delete VM snapshot
- VMWare - List VM snapshots
- VMWare - Delete VM
- VMWare - Clone VM
- VMWare - Install tools
- VMWare - Register VM
- VMWare - Unregister VM
- VMWare - List VM
- VMWare - Capture screen (guest)
- VMWare - Copy files (guest)
- VMWare - Rename file (guest)
- VMWare - Delete files (guest)
- VMWare - Directory exists (guest)
- VMWare - File exists (guest)
- VMWare - Delete directory (guest)
- VMWare - Create directory (guest)
- VMWare - Create temp file (guest)
- VMWare - Run command (guest)
- VMWare - Open URL (guest)
- VMWare - Kill processes (guest)
- VMWare - List processes (guest)

Manage Connections > Add > VMWare > Main settings tab

Add/Edit Connection

VMWare
The VMWare Connection stores connect and logon properties for guest and remote VMWare instances.

Main settings | **Authentication**

Protocol
Protocol type: **VMWare** [Test]

Server
Name:
Address:

Timeout: 60 [up/down arrows]
Code page: **Windows-1252**

[Cancel] [OK]

Name

The unique name for the Connection

Address

The address to the VMWare server.

Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > VMWare > Authentication tab

Add/Edit Connection

VMWare
The VMWare Connection stores connect and logon properties for guest and remote VMWare instances.

Main settings | **Authentication**

Credential

Username:

Password:

Cancel **OK**

Username

The username for the server.

Password

The password for the server.

5.1.2.10.32 Connection - Dynamics CRM

The Dynamics CRM Connection stores connect and logon properties for a Dynamics CRM instance.

The Dynamics CRM Connection is used in the Dynamics CRM Tasks:

- Dynamics CRM - Get entity
- Dynamics CRM - Create entity
- Dynamics CRM - Update entity
- Dynamics CRM - Delete entity
- Dynamics CRM - List entity
- Dynamics CRM - Get audit data
- Dynamics CRM - Set audit status
- Dynamics CRM - Start work flow
- Dynamics CRM - Download attachment
- Dynamics CRM - Upload attachment

Manage Connections > Add > Dynamics CRM > Main settings tab

Add/Edit Connection

Dynamics CRM
The Dynamics CRM Connection stores connect and logon properties for a Dynamics CRM instance.

Main settings | **Authentication**

Protocol
Protocol type: Dynamics CRM

Server
Name:
Address:

Timeout: 60
Code page: Windows-1252

Cancel **OK**

Name

The unique name for the Connection

Address

The address to the Dynamics CRM server.

Timeout

The connection timeout in seconds. Connection will fail after this time period.

Code page

Code page being used.

Manage Connections > Add > Dynamics CRM > Authentication tab

The screenshot shows a Windows-style dialog box titled "Add/Edit Connection". The dialog features the Dynamics CRM logo and a description: "The Dynamics CRM Connection stores connect and logon properties for a Dynamics CRM instance." It has two tabs: "Main settings" and "Authentication". The "Authentication" tab is active and contains a "Credential" section with a large text area, and "Username:" and "Password:" labels with corresponding input fields. At the bottom are "Cancel" and "OK" buttons.

Username

The username for the server.

Password

The password for the server.

5.1.2.10.33 Connection - AS/400

The AS/400 Connection stores connect and logon properties for the AS/400 operating system.

The AS/400 Connection is used in the AS/400 Task:

- Process - AS/400 Command.

Manage Connections > Add > AS/400 > Main settings tab

Add/Edit Connection

AS/400
The AS/400 Connection stores connect and logon properties for the S/400 operating system.

Main settings | **Authentication**

Protocol
Protocol type: **AS/400**

Server
Name:
Address:

Timeout:
Code page: **Windows-1252**

Cancel **OK**

Name

The unique name for the Connection

Address

The address to the AS/400 server.

Timeout

The connection timeout in seconds. Connection will fail after this time period.

Codepage

Code page being used.

Manage Connections > Add > AS/400 > Authentication tab

Add/Edit Connection

AS/400
The AS/400 Connection stores connect and logon properties for the S/400 operating system.

Main settings | **Authentication**

Credential

Username:

Password:

Cancel **OK**

Username

The username for the server.

Password

The password for the server.

5.1.2.10.34 Connection - SAP

The SAP Connection stores connect and logon properties for SAP R/3 instances.

The SAP Connection is used in the SAP Task:

- SAP - R/3 Job execute

Manage Connections > Add > SAP > Main settings tab

Add/Edit Connection

SAP

The SAP Connection stores connect and logon properties to SAP R/3 instances.

Main settings | **Authentication** | **Extra settings**

Protocol

Protocol type:

Server

Name:

Address:

Timeout:

Code page:

Cancel **OK**

Name

The unique name for the Connection

Address

The IP or DNS name to SAP server.

Manage Connections > Add > SAP > Authentication tab

The screenshot shows a window titled "Add/Edit Connection" with the SAP logo. Below the title bar, there is a description: "The SAP Connection stores connect and logon properties to SAP R/3 instances." To the right of this text is a blue icon of an open book. Below the description are three tabs: "Main settings", "Authentication", and "Extra settings". The "Authentication" tab is selected. Inside this tab, there is a "Credential" section. It contains two input fields: "Username:" with the value "testuser" and "Password:" with the value "*****". At the bottom of the dialog are two buttons: "Cancel" and "OK".

Username

User name for the SAP instance.

Password

Password for the SAP instance.

Manage Connections > Add > SAP > Extra settings tab

The screenshot shows a Windows-style dialog box titled "Add/Edit Connection". At the top left is the SAP logo and the text "The SAP Connection stores connect and logon properties to SAP R/3 instances." Below this is a tabbed interface with three tabs: "Main settings" (active), "Authentication", and "Extra settings". The "Main settings" tab contains the following fields:

- System ID: E7D
- System number: 00
- Client: 200
- External user name: Test
- Language: EN
- Pool size: 5

At the bottom of the dialog are "Cancel" and "OK" buttons.

System ID

The SAP System Identifier (sapsid) is a unique identification of a SAP System Instance. Within a SAP Customer Landscape it is essential to have each SAP instance

System number

The SAP server system number. This is mandatory if no value is supplied for Optional RFC Connection Parameters.

Client

The Client is a 'Customer'. We can say that each customer maps to one client. Within one SAP instance, a number of Clients can be created. No need to install separate software's for each and every customer. It provides isolation, one client cannot see the data of other client..

External user name

The name of the user in the external system who caused the method call. The entry is of a documentary nature and should verify who made the call.

Language

The language ISO identifier to be used by the adapter. Default English.

Pool size

Max number of connections.

5.1.2.11 Global - Credentials

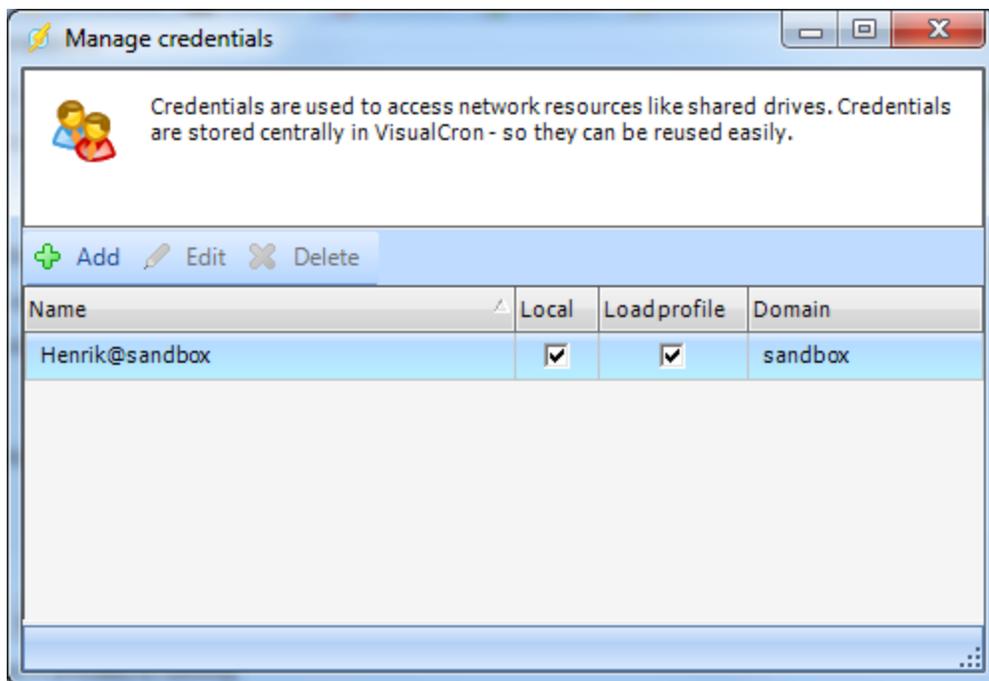
Credentials are centrally stored in VisualCron for re-usage. Credentials might be needed in some of the following cases:

- Your Execute Task requires to run as a certain user to access certain rights
- You need to run an SQL with a trusted connection
- You need to do some kind of authentication against a web server
- Other permission request

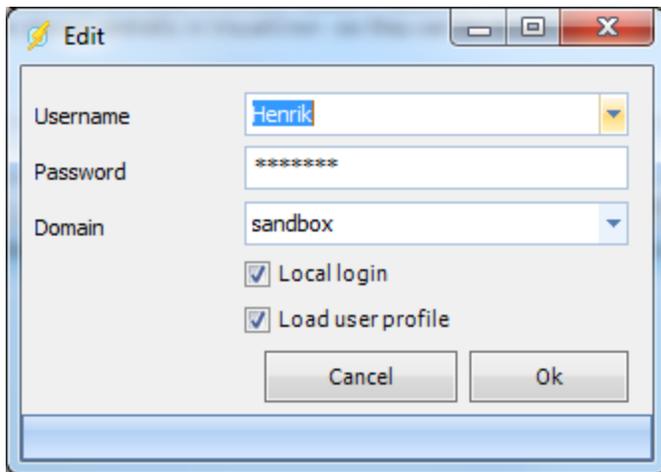
Normally, all Tasks are launched from the VisualCron Server which runs as a service with LOCALSYSTEM account. That account may not have access to your network drives, certain folders etc. - that is why you need to use a Credential some times.

Credentials are encrypted when stored.

The Manage credentials window can be reached either from the main menu **Server > Global objects > Credentials** option.



Editing a Credential



Username

Username for the user you want to logon.

Password

Password for the user you want to logon.

Domain

Domain or computer name/IP where you want to logon.

Local login

This tells VisualCron to perform a local logon. This checkbox should be unchecked if you are using Credentials to gain access to a network drive (using a user/domain on another server as Credential).

Load profile

This is used on local accounts that are on the same server as VisualCron is installed. This option is only available if *Local login* is checked.

When checked, the following steps are taken:

Log on, then load the user profile in the "HKEY_USERS" registry key. The function returns after the profile is loaded. Loading the profile can be time-consuming, so it is best to use this value only if you must access the information in the "HKEY_CURRENT_USER" registry key or you have to access network resources. Windows Server 2003 and Windows 2000: The profile is unloaded after the new process is terminated, whether or not it has created child processes. Windows XP: The profile is unloaded after the new process and all child processes it has created are terminated.

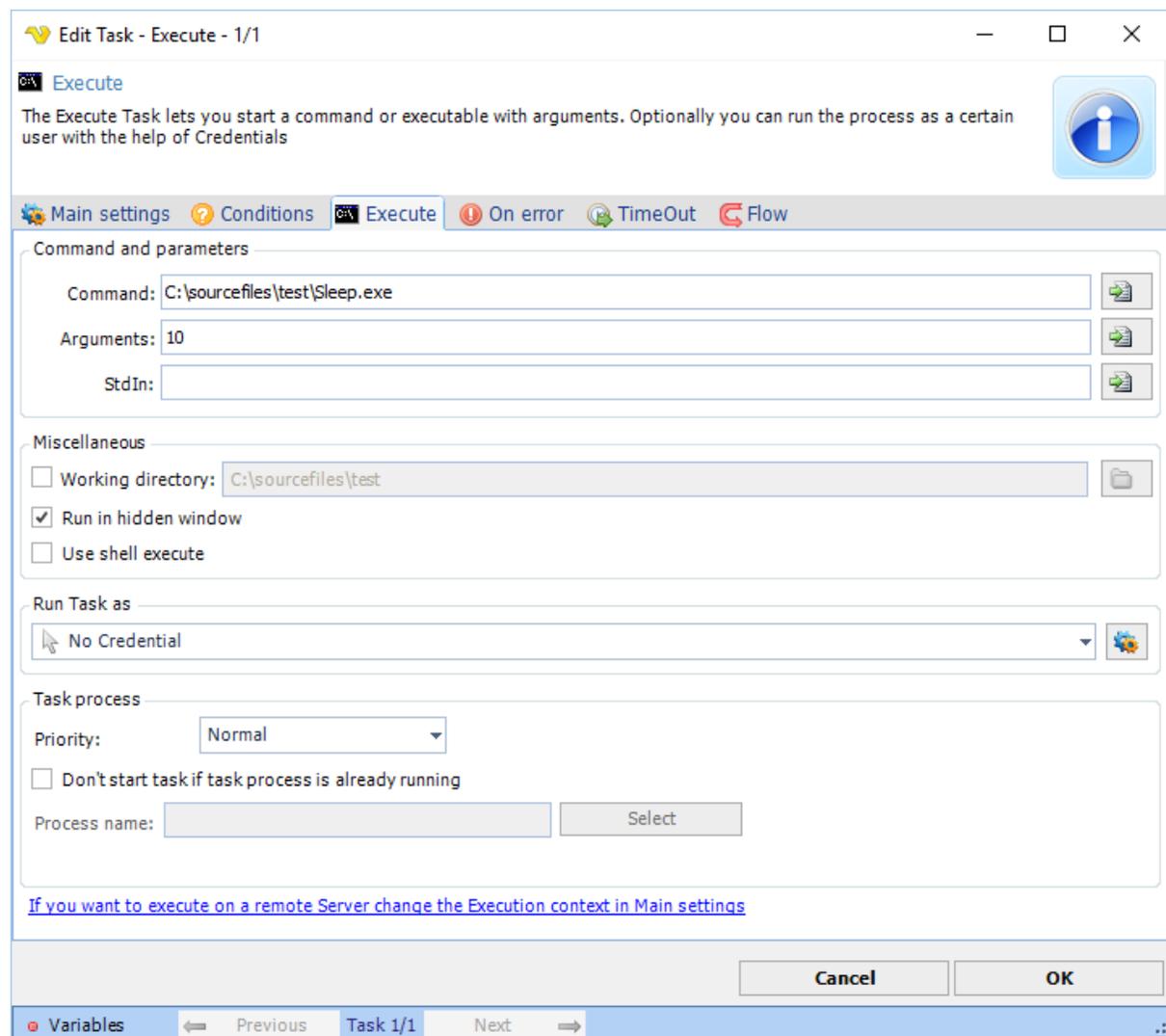
When not checked, the following steps are taken:

Log on, but use the specified credentials on the network only. The new process uses the same token as the caller, but the system creates a new logon session within LSA, and the process uses the specified credentials as the default credentials. This value can be used to create a process that uses a different set of credentials locally than it does remotely. This is useful in inter-domain scenarios where there is no

trust relationship. The system does not validate the specified credentials. Therefore, the process can start, but it may not have access to network resources. **If you just want to access a network drive** then you should specify the username, password and domain of the remote computer and use it with option "Network credentials only". To access network resources (from a local account) you have to use logon type: "With Profile". When you can - use "Network credentials only" as it is faster and takes less system resources. You must specify the UNC path. For example, you can't use the drive letter "Y:\yourfile.bat", you must use the path "\\server\folder\yourfile.bat".

Using and selecting a Credential

When you open the window, your current user name is written along with the name of your current computer/domain. Click on Add to create a centrally stored Credential. After adding the Credential it is available in all places where you can use Credentials. In those places you need to select the Credential you want to use like this:



Troubleshooting

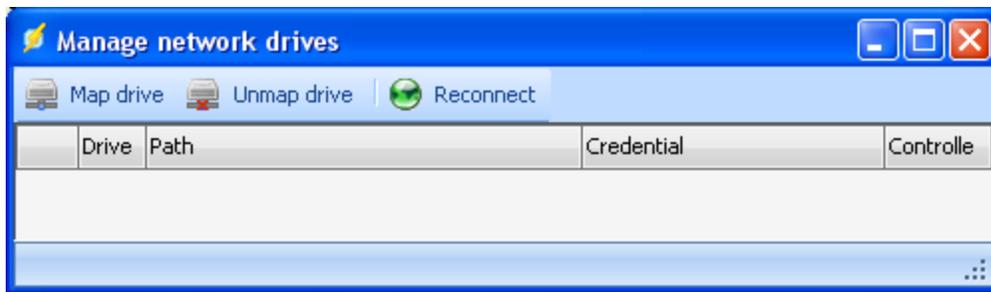
Error -1073741502
See Execute Task

5.1.2.12 Global - Network Drives

VisualCron is by default running as the SYSTEM account. One problem you may face is that you can't see/access your network drives. This is a restriction in Windows - that network drives are not shared between accounts.

To handle this, a way to control network drives from the system account is implemented. This enables map/disconnect network drives directly from VisualCron.

In the main menu, click on **Server > Global objects > Network drives** to access the interface for mapping/disconnecting.



Map drive

When mapping a drive you need to specify a Credential, a user that has access to the network drives, that is either a domain user or a user on the remote server. Specify a wanted drive name and path. Path should be entered in UNC format like this: "\\servernameORip\folder\"

Click on *Map drive* to map it. It is now controlled by VisualCron and each time VisualCron is started it tries to re-map the drives so these can be accessed after a server reboot.

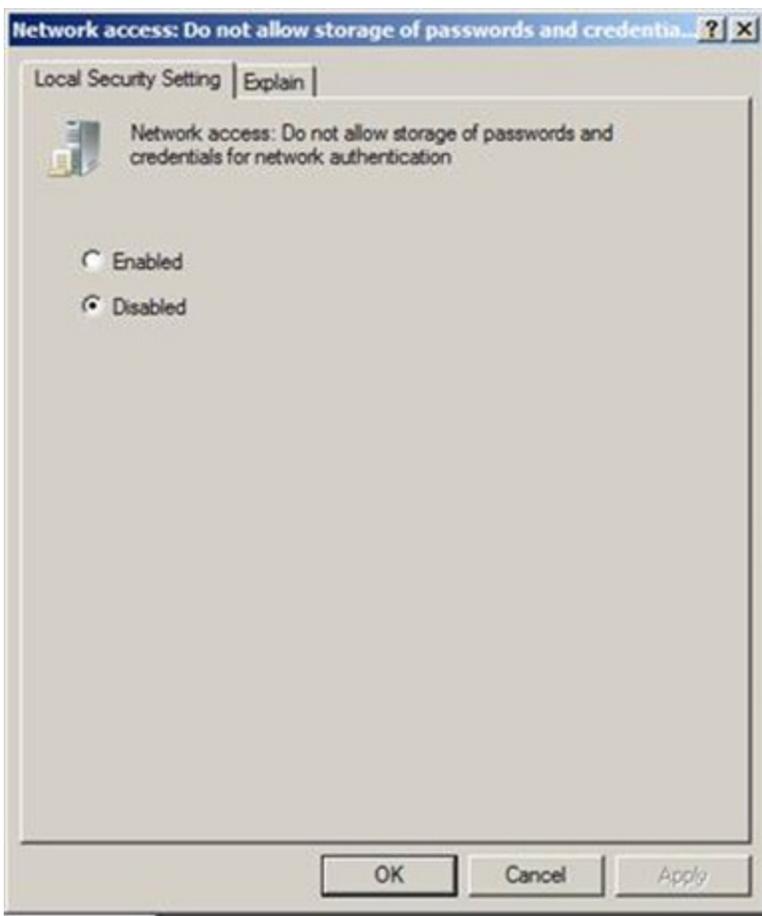
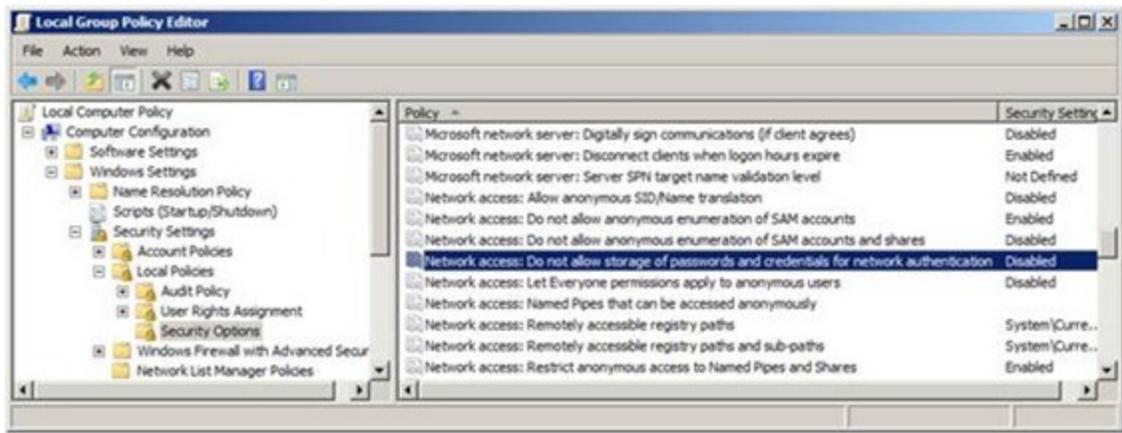
Reconnect

If a drive has been disconnected during a VisualCron session you can reconnect it here.

Troubleshooting

A specified logon session does not exist

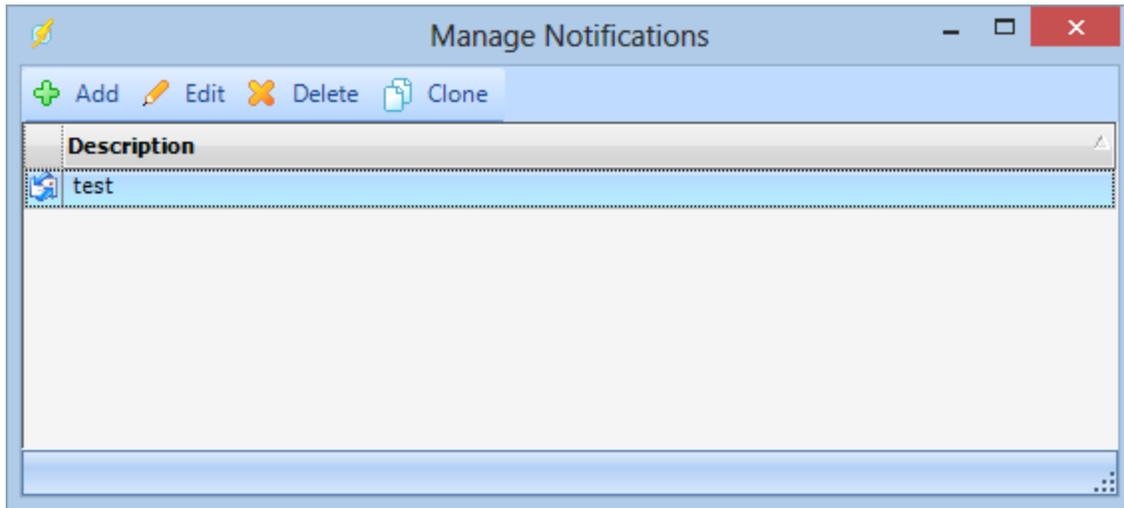
Try disabling this policy:



5.1.2.13 Global - Notifications

Notifications are since version 7.0.0 a way to create global, independent Tasks. The Notifications are stored centrally and are called from Job Flow or Task Flow. Any Task can be used as a Notification. The purpose of Notifications was originally to create, e.g. an Email Task once and then be able to re-use it in Job and Task Flow whenever you wanted to receive a Job or Task email with output or similar.

A notification is defined either from the main menu **Server > Global objects > Notifications** dialog or from the Job Flow or Task Flow.



You can Add, Edit, Clone and Delete Notifications.

To get specific instructions for each Task Notification please visit the help page for the relevant Task.

Below is a screenshot from Task Flow of a Task which, On error, also sends a Notification 'test'.

Task Condition

On error Always

Type: String Condition: Equal (=)

Value/Variable

Task flow control

Stop Job

Continue to next Task in order

Wait 0 m 1 s and retry Task 3 times

Go to Task

No task selected

Stop Job and run specified Job

No job selected Run asynchronous

Run Notification

test

Deactivate Task

Deactivate Job

Cancel Ok

Variables

As usual you can use any Variable in any field within VisualCron.

View additional variable information.

Note: All variables are not available at all times. The variables are highly dependant on when you choose to notify. For example, specific Task variables are only available when you choose to *Notify on start* or *Notify on complete*. Also, if you choose to the variable *Output* you will get the output of the previous run when using when a Task has completed. The current output is not available until "when a Task has completed".

5.1.2.14 Global - PGP Key Rings

What is PGP?

Pretty Good Privacy (PGP) is a strong encryption program used to encrypt files and e-mail. PGP is similar to PKI (Public Key Infrastructure) and is based on asymmetric (open-key) cryptography. The OpenPGP standard was originally derived from PGP.

How PGP encryption works

PGP encryption uses public-key cryptography and includes a system which binds the public keys to user identities. PGP message encryption uses asymmetric key encryption algorithms that use the public portion of a recipient's linked key pair, a public key, and a private key. The sender uses the recipient's public key to encrypt a shared key (a.k.a. a secret key or conventional key) for a symmetric cipher algorithm. That key is used, finally, to encrypt the plaintext of a message. Many PGP users' public keys are available to all from the many PGP key servers around the world which act as mirror sites for each other.

The recipient of a PGP encrypted email message decrypts it using the session key for a symmetric algorithm. That session key is included in the message in encrypted form and was itself decrypted using the recipient's private key. Use of two ciphers in this way is sensible because of the very considerable difference in operating speed between asymmetric key and symmetric key ciphers (the differences are often 1000+ times). This operation is completely automated in current PGP desktop client products.

The VisualCron implementation of PGP

In VisualCron you are able to encrypt/decrypt PGP files using the OpenPGP standard. Encryption and decryption is part of the PGP Task. You are also able to sign your files and manage public and private keys.

Manage PGP Key Rings

The PGP key rings are managed in the main menu **Server > Global objects > PGP Key Rings** dialog. Instead of pointing to public or private key files, VisualCron lets you generate or import this data and then centrally store it in VisualCron. A key ring is a set of keys, public or private. VisualCron wraps key rings in the manager. At a later stage, when you want to encrypt a file, you first select a VisualCron key ring and then the recipients or signers key from the same key ring.



Name/Description of VisualCron key ring

Choose a proper name for the VisualCron key ring so you later can distinguish it from other.

Create a key ring

You can either create an empty key ring or create a key ring from already existing public or private key ring files.

Import key(s) Mark the key ring and click on the *Import key(s)* icon to select a path to a key ring file.

Create key

Mark the key ring and click on the *Create key* icon.

Select encryption. Currently you can select "RSA" or "Elgamal/DSS" encryption. Contact us if you are interested in other encryption algorithms.

Strength

Select bit strength.

Username

Enter your name.

Email

Enter your email address.

Password

Enter password.

Click *OK* to generate the key.

Signing and revoking Mark a user in the key and click on either *Sign selected* or *Revoke selected*.

Select a private key and then your password to continue signing/revoking.

5.1.2.15 Global - Time exceptions

Time exceptions is a way to skip execution of a Job at a certain time or interval. A time exception collection is a package of one or more time exceptions. For example, a time exception collection may be "American Holidays" and one time exception could be the 4th of July. If you, for example, have a Job that runs every day and you want to skip running that Job on "American holidays", you check the time exception collection "American holidays" for this Job.

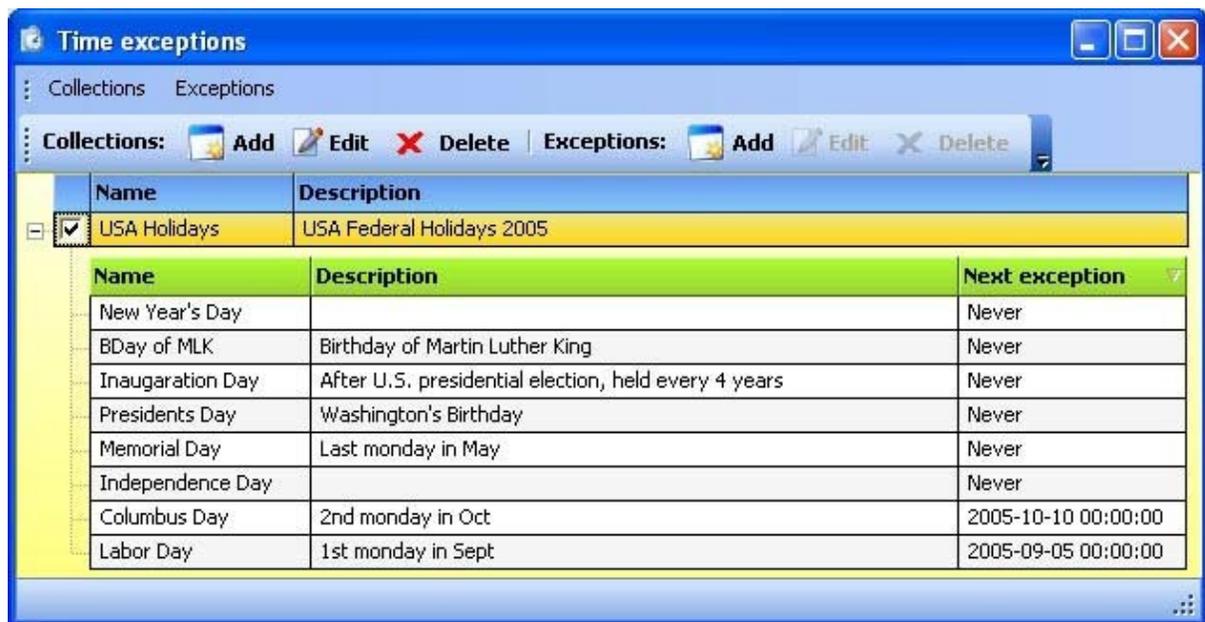
Collections with time exceptions are managed either from the main menu **Server > Global objects > Time exceptions** dialog or from the *Add Job/Edit Job* menu under the **Time exceptions** tab. When adding a collection, you can specify a name and an appropriate description. When a collection has been created, time exceptions can be added. Each collection is expandable, and when expanded, the underlying time exceptions are displayed. Setting of time exceptions work the same way as time settings for a Job. Collections and exceptions are managed (add, edit and delete) by mouse right-click in the collection/time exception list. During changes in the time settings, the *Next exception* time will be calculated at the status bar.

Note: Remember that a change of a collection affects all Jobs that use that specific collection.

The time exception settings are stored by VisualCron in the "timeexceptions.xml" file, by default stored in the "C:\Program Files\VisualCron\settings" folder.

An important feature is the import function, *Time exceptions -> Collections -> Import*. The import function can import collections that you or another person has created. If a collection already exists you'll be asked if you want to replace or skip the import of that collection.

Download time exceptions
US Federal Holidays 2009



5.1.2.16 Global - Variables

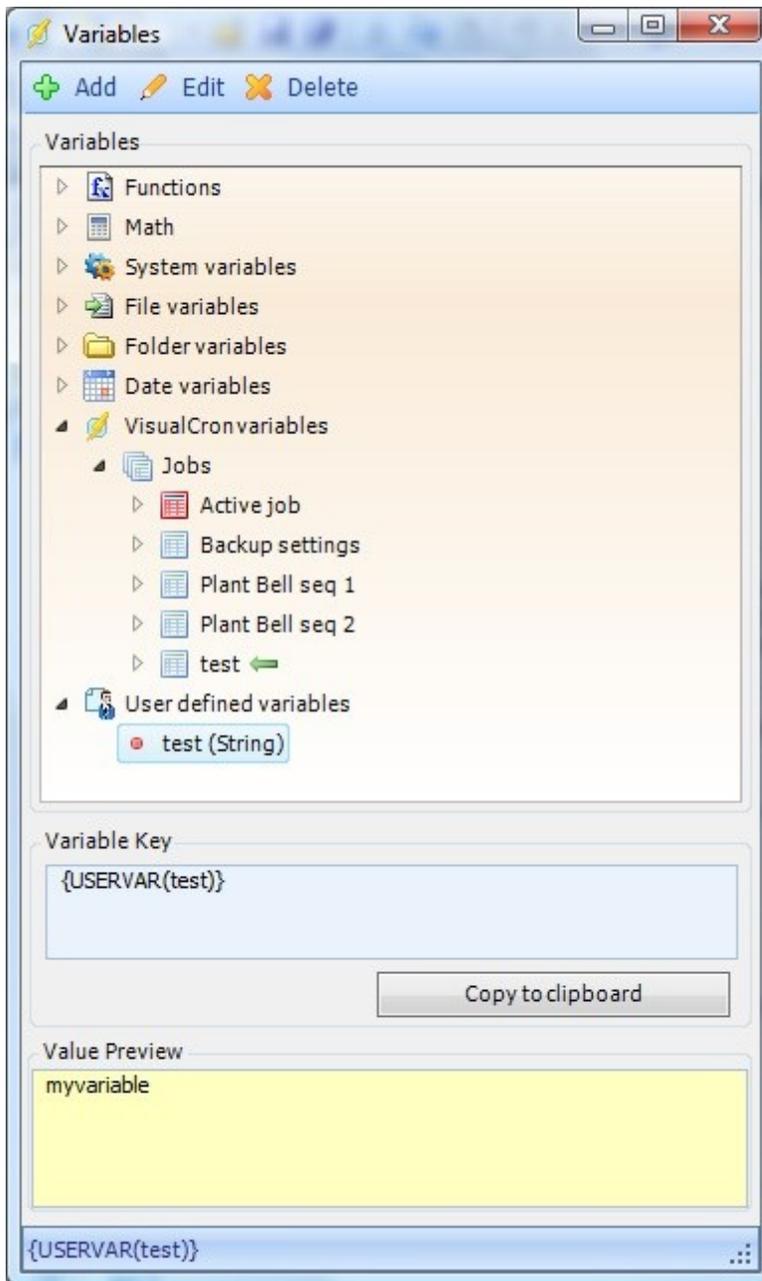
Introduction

From VisualCron version 4, the handling of variables has been changed. In previous versions, variable handling was only reached from Notifications. Now, variables can be reached from almost any place in the client application at any time. Also, the new variable handling offers greater customization possibilities. For example, when presenting a date variable, the format of the date can be totally customized.

Using variables

The variables are accessed from the main menu **Server > Global objects > Variables** window or at the status bar of each window that is able to use variables. Those windows have a *Variables* button in the status bar.

Almost all fields in the windows that have the *Variables* button can use variables. You can check if a field is able to receive variables if you try to drag and drop a variable to that field. If yes, the text field will go light blue while hovering over the field and a drop will be possible. If no, no drop will be possible.



The tree view is a hierarchy of variables. When opening at the (bottom) *VisualCron variables* -> *Jobs* item, you will see that your current Job is noted with a green arrow and its Tasks are reflected in the tree. Each Job can be browsed to show the Triggers, Tasks and variables connected to it.

The *Variable Key* text box

When a variable is selected in the tree view, the key name is automatically added to the *Variable Key* text box. At the same time, VisualCron tries to show the current value in the *Value Preview* text box. The *Variable Key* text box can be manually changed by you. For example, you may want to control the format of a date. The preview is updated in real time.

Hierarchy of variables

VisualCron is presenting different kind of variables. The tree, especially for the VisualCron variables root is built up as a hierarchy. In the root there are Jobs. When entering a Job, you can reach its triggers, Tasks etc. A trigger in turn may have a result object which can be browsed.

Parameter delimiters

By default, the parameters supplied to a Variables is using pipe (|) or comma (,). If you have these in the string already you might want to use an alternate parameter delimiter. You can do this by starting the parameters with the character you want to split with. For example, if you want to use @ as parameter delimiter you can create a Variable like this: {FILE(@Content@c:\textfile.txt)}

The root variables

Functions

Functions contains a set of string and path functions that can be useful for editing/changing text.

System variables

These are values collected from the current computer/server, such as Environment and Memory variables and system uptime.

Date variables

The current date, can be formatted in your way. There are also some preformatted variables. See here for more date/time variable details.

File variables

Variables related to files. For example, the Content argument gives the text content of a file.

Folder variables

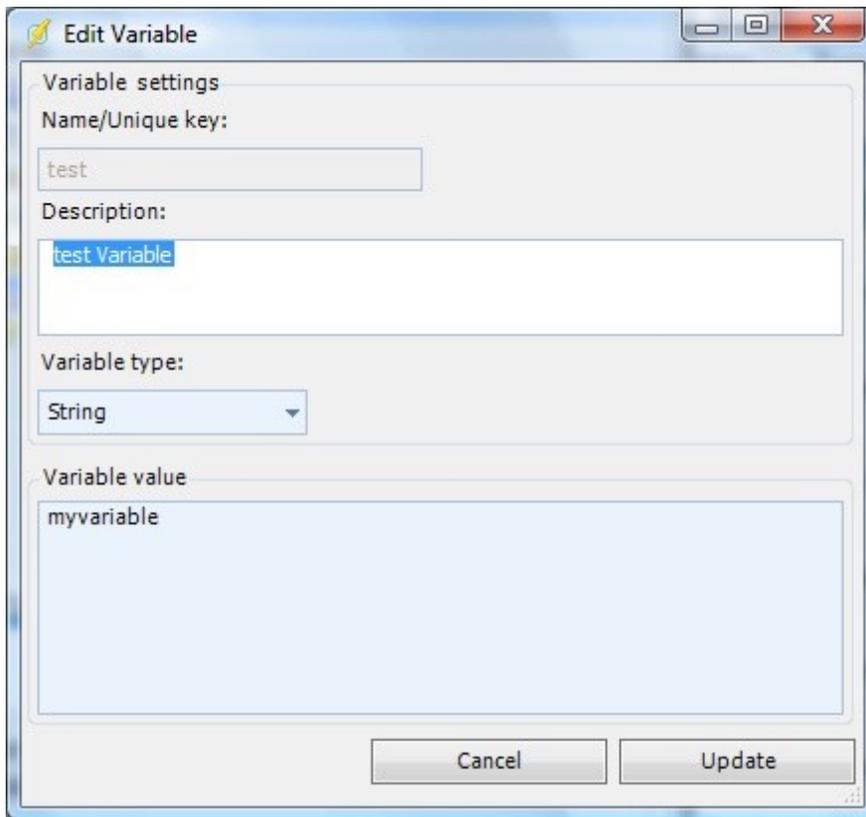
Variables concerning folders. Currently this group contains paths to the current and system folder.

VisualCron variables

These are the most powerful variables which let you access a large part of your VisualCron Job and Task data.

User defined variables

You are able to create your own static or dynamic Variables - with different value types. To Add/Edit/Remove a Variable you can either click at the *Add/Edit/Delete* buttons or create Tasks (Set Variable, Remove Variable, Calculate Variable) that does this.



The format of a variable

The below text is an example of a variable key. The first part begins with an "{" and the following text what kind of root variable to look for. In this case a Task. In the Manage variables window you can see, once you have selected a variable, the format of the variable in the status bar. In this case: {TASK (TaskId,Name)}. The parts within the parenthesis are the arguments. The first argument is the id of the Task. This id is generated by VisualCron once the Task has been created. The second argument "Name" tells us that once we have found the Task from it's id, we want to get its name.

Variable Key example: {TASK(7b9a0b42-ec36-482e-bd04-93ef8b655108,Name)}

Drag'n drop

By holding down your left mouse button on a variable a drag and drop action will start. While holding it down you can drag the variable to a field where you want to use it. Not all fields can receive variables. You can see if a field supports variables by moving it over a field. If a drop symbol becomes visible and the color of the field turns light blue you are able to release the mouse and the variable will be placed into the field.

Value preview

When clicking on a variable, VisualCron will try to obtain the value of the variable in real time. This value will be shown in the yellow *Value Preview* text box.

Active Job/Task vs specific Job/Task

In the Job list you will see a Job listed as "Active Job" with a red Job icon. An active Job could be any Job or Task that VisualCron currently is processing. All Jobs you have created are listed below the active Job. The Jobs that are listed below that active Job points to a specific Job or Task. For example, when using the Job.Name variable you will always get the same name (unless the name is changed) for that

particular Job. When using the Active Job you will get the name of the Job that is currently processed when the variable is replaced.

The advantage of using "Active Job" is that you can prepare a Notification for example with Active Job or Task parameters. In the report from the Notification you will get different results, depending on the Job or Task that is being run. In that way Notifications can be reused.

The advantage of using a variable from a Job defined by you is that you know exactly which variable you get. You will always get that variable from that particular Job or Task.

Current Job/Task

The current Job or Task is the Job or Task that you currently are editing. It is marked by a green arrow to the right of the Job or Task name. It is there to help you find the Job or Task currently being edited. Note that the Job or Task is not available in the tree view until you have added it.

Previous Task

You can always refer to the last run Task by using the *PrevTask* Identifier, like this:

```
{TASK(PrevTask,Name)}
```

Triggers

The trigger is the part of the Job that makes a Job run. You are able to get information from that trigger.

Last Trigger and Specific trigger

The last trigger always exist as a part of the trigger tree. It represents the last trigger that executed your Job. Remember that you may have several triggers for one Job. By using the last trigger you can automatically get information about the last trigger without explicitly pointing to a specific trigger.

There are some things to consider about Last Trigger. If you use different kinds of triggers, for example one Event trigger and one Time trigger you can reach the generic variables like name, last run etc. What you can't always get is specific variables, like if you are pointing to a file name of the File event. That variable will not exist in the Last Trigger if the last trigger was a time trigger.

If you want to be sure that you always get specific trigger information you must point out a specific trigger in the tree view.

Trigger result variables

Some variables exist when a trigger has been added, for example a trigger name. Other variables are result variables and are created/updated when a trigger has been run. For example, when using a File event trigger you are watching a folder. You have a folder name and a file mask. These variables are available instantly.

Now, let's say you are monitoring for changes in *.txt files. Since you are using a file mask you may not know exactly which file that was changed. Now, with trigger result variables you are able to get that information. This information is stored after the trigger has been run and is instantly available for usage before the actual Job has been started.

Especially Event triggers have many variables that are available for usage when they have been triggered. Below is a description of what those variables contain.

Note that result variables are stored and always available once created. If your Job was triggered once you have the result variables. If you now go and change the actual trigger, the field values of the trigger will be changed but the actual result will remain until the trigger is being triggered again.

File event result variables:*Folder path*

The folder path that the event is watching.

File mask

The file mask that was used when watching.

Type of change

Gets the type of folder event that occurred.

Path

Gets the fully qualified path of the affected file or folder.

Name

Gets the name of the affected file or folder.

More information:

Microsoft file system event arguments

EventLog event result variables:*Host*

Name of the computer that generated this event.

Category

Translation of the subcategory, the translation is source specific.

Event code

Value of the lower 16-bits of the EventIdentifier property. It is present to match the value displayed in the Windows NT Event Viewer. Note that two events from the same source may have the same value for this property, but may have different severity and EventIdentifier values.

Event id

Identifier of the event. This is specific to the source that generated the event log entry and is used together with SourceName, to uniquely identify a Windows NT event type.

Event type

Windows Server 2003, Windows 2000, and Windows XP: Type of event in a number representation. See Type for string representation.

Value Meaning:

- | | |
|---|------------------------|
| 1 | Error |
| 2 | Warning |
| 3 | Information |
| 4 | Security audit success |
| 5 | Security audit failure |

Date created

The time the Source generated the event.

Log file

Name of Windows NT event log file. This is used together with RecordNumber to uniquely identify an instance of this class.

Message

Event message as it appears in the Windows NT event log. This is a standard message with zero or more insertion strings supplied by the source of the Windows NT event. The insertion strings are inserted into the standard message in a predefined format. If there are no insertion strings or there is a problem inserting the insertion strings, only the standard message will be present in this field.

Record number

Identifies the event within the Windows NT event log file. This is specific to the log file and is used together with the log file name to uniquely identify an instance of this class.

Source

Name of the source (application, service, driver or subsystem) that generated the entry. It is used, together with EventIdentifier to uniquely identify an Windows NT event type.

User name

User name of the logged-on user when the event occurred. If the user name cannot be determined, this value will be NULL.

Type

Type of event. This is an enumerated string. It is preferable to use the EventType property rather than the Type property.

Value Meaning

1	Error
2	Warning
4	Information
8	Security audit success
16	Security audit failure

More information:

Microsoft log events

Process event result variables:

Process name

Name of the process that was started/stopped.

Description

Description of an object.

Created date

Date the process began executing.

Path

Full path to the executable file of the process. Example: C:\WINDOWS\explorer.exe.

Command line

The command line that started a specific process, if applicable.

Process id

Global process identifier that you can use to identify a process.

More information:
Microsoft process info

Service event result variables:

Name

Unique identifier of the service that provides an indication of the functionality that is managed.

Display name

Display name of the service.

Path

Full path to the service binary file that implements the service.

State

Current state of the base service.

Values are:

- "Stopped"
- "Start Pending"
- "Stop Pending"
- "Running"
- "Continue Pending"
- "Pause Pending"
- "Paused"
- "Unknown"

Status

Current status of the object. Various operational and non-operational statuses can be defined.

Operational statuses include: "OK", "Degraded", and "Pred Fail" (an element, such as a SMART-enabled hard drive, may be functioning properly but predicting a failure in the near future). Non-operational statuses include: "Error", "Starting", "Stopping", and "Service". The latter, "Service", could apply during mirror-resilvering of a disk, reload of a user permissions list, or other administrative work. Not all such work is on-line, yet the managed element is neither "OK" nor in one of the other states.

Values are the following:

- "OK"
- "Error"
- "Degraded"
- "Unknown"
- "Pred Fail"
- "Starting"
- "Stopping"
- "Service"

Exit code

Windows error code that defines errors encountered in starting or stopping the service. This property is set to `ERROR_SERVICE_SPECIFIC_ERROR` (1066) when the error is unique to the service represented by this class, and information about the error is available in the `ServiceSpecificExitCode` property. The service sets this value to `NO_ERROR` when running, and again upon normal termination.

Service specific exit code

Service specific error code for errors that occur while the service is either starting or stopping. The exit codes are defined by the service represented by this class. This value is only set when the `ExitCode` property value is `ERROR_SERVICE_SPECIFIC_ERROR` (1066).

More information:

[Microsoft service info](#)

Registry event result variables:

Hive

Name of the hive (subtree) that contains the key (or keys) that is changed. For example, HKEY_LOCAL_MACHINE.

Registry key path

Path to the registry key. For example, "SOFTWARE\Microsoft\WBEM\Scripting".

Registry value name

Name of the value in the registry key. For example, in the registry key HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\WBEM\Scripting you can detect changes in the value Default Namespace.

Value

Value of the specific specific key. Only available when using Registry Value Change event.

More information:

[Microsoft registry info](#)

Custom event result variables:

Currently no result variables exist for this event type.

Missing a variable or field where you want to use a variable? If you feel that you could have usage of a certain variable in a certain place that currently not exists, please send a mail to support@visualcron.com. We will try to extend this functionality in the way you want it.

Limitations

Current state of tree view

The tree view shows the current state. The available variables are those that exist by the time you open the variables window. Variables added after this are not added to the tree view until you open it the next time. Also, a Job is not available until it has been added to the server.

Local previewing

When previewing the variables at the client, File variables like content, are based on files in the client. If you get a message that a file does not exist, the file may exist in the server hosted at another location.

2 levels of variable replacing

There is a limitation how deep VisualCron will go when searching for variables to replace. The reason for this is performance and also that there must be an end in searching for variables sometime. For example, let say you have a variable in your Name field of your first Job. The text in the Name field is: "Job {DATE (Week)}". When using the name variable of this first Job you will get the text "Job" and the current week number. Now, suppose you have a second Job. For some reason you want to use the value of the Name field of the first Job in the Name of your second Job. Now you add a specific variable pointing to the first Job in the Name field, for example "{JOB(id,Name)}". When executing the second Job, VisualCron will first try to reach the name of the first Job (level 1) and then when reaching that Job it finds that it contains the variable week. It will replace that variable too (level 2). This is the end of the search and VisualCron would not have continued if the first Job pointed to another Job that used another variable.

Old variables supported for a limited time

Variables created in VisualCron 4 may exist in your Notifications. Currently, VisualCron interprets those variables, but the support for those variables will be withdrawn for two reasons; 1 - the less flexibility in those variables and 2 - for performance reasons. Support for those variables will be withdrawn during the end of this year (2006) so please replace those with newer variables.

It is not possible to use a variable as argument

You can not enter a variable in another variables argument.

5.1.2.16.1 Date/Time Variables

The following date/time field variables are used:

d	08/17/2000
D	Thursday, August 17, 2000
f	Thursday, August 17, 2000 16:32
F	Thursday, August 17, 2000 16:32:32
g	08/17/2000 16:32
G	08/17/2000 16:32:32
m	August 17
r	Thu, 17 Aug 2000 23:32:32 GMT
s	2000-08-17T16:32:32
t	16:32
T	16:32:32
u	2000-08-17 23:32:32Z
U	Thursday, August 17, 2000 23:32:32
y	August, 2000
d, dd, ddd, dddd	Current day of the month d, dd=numeric, ddd=abbreviation (ie, "Wed"), dddd=spelled out.
f, ff, fff, ffff, fffff	Fractions of a second, varying numbers of digits
h, hh Hours	12 hour format
H, HH Hours	24 hour format
m, mm:	Minutes
M, MM, MMM, MMMM	Month. MM = 2 digit, MMM = abbreviation (ie, "Jan"), MMMM=spelled out
s, ss	Seconds
t, tt	AM/PM indicator
y, yy, yyyy	Year
z, zz, zzz	Time zone offset from GMT. Time separator
/	Date separator
Any other character	Other characters

Examples:

dddd, MMMM dd yyyy	Thursday, August 17 2000
ddd, MMM d ""yy	Thu, Aug 17 '00
dddd, MMMM dd	Thursday, August 17
M/yy	8/00
dd-MM-yy	17-08-00

Other time span options:

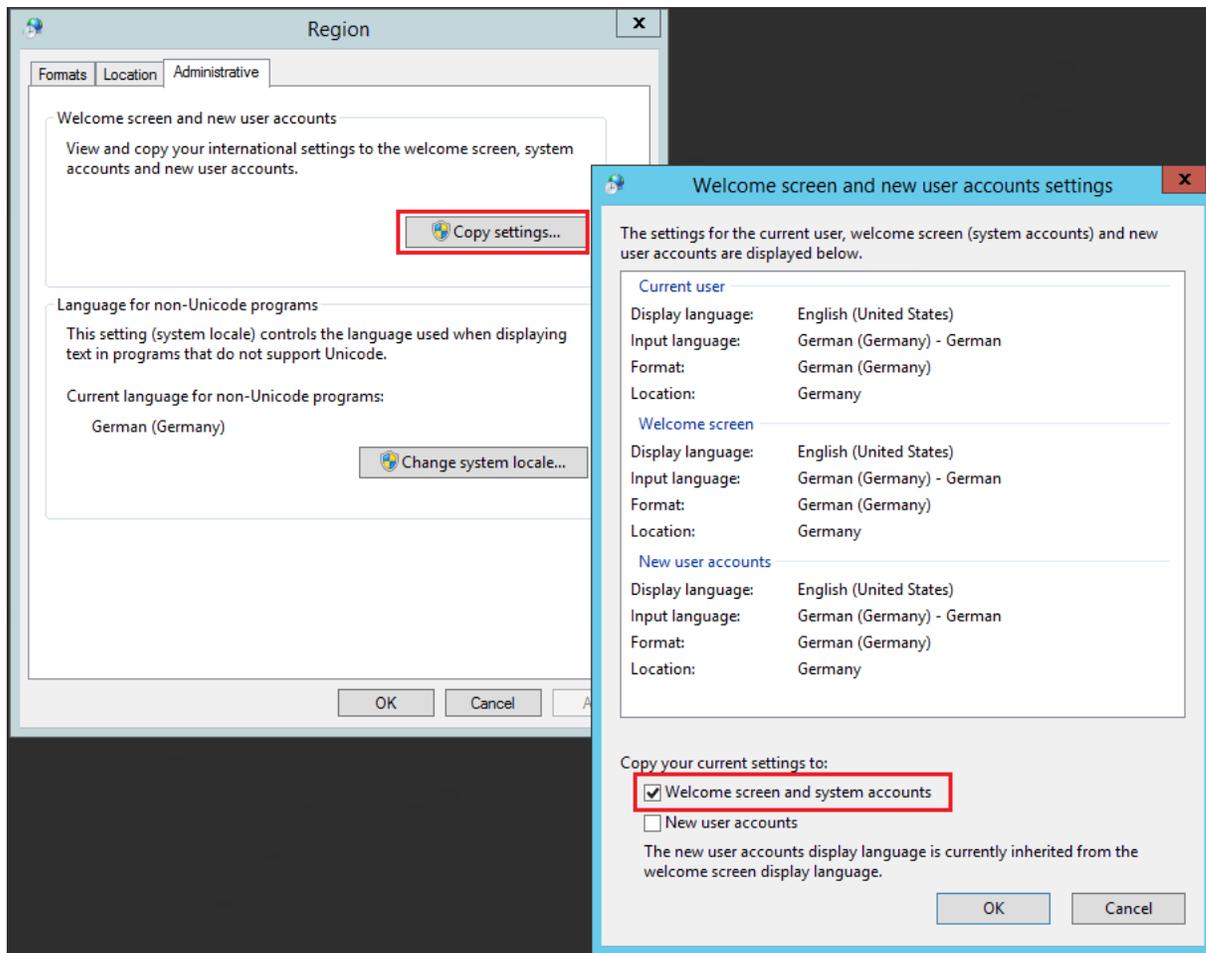
totalmilliseconds
 totalseconds
 totalminutes
 totalhours

totaldays

More information:

Microsoft date time strings

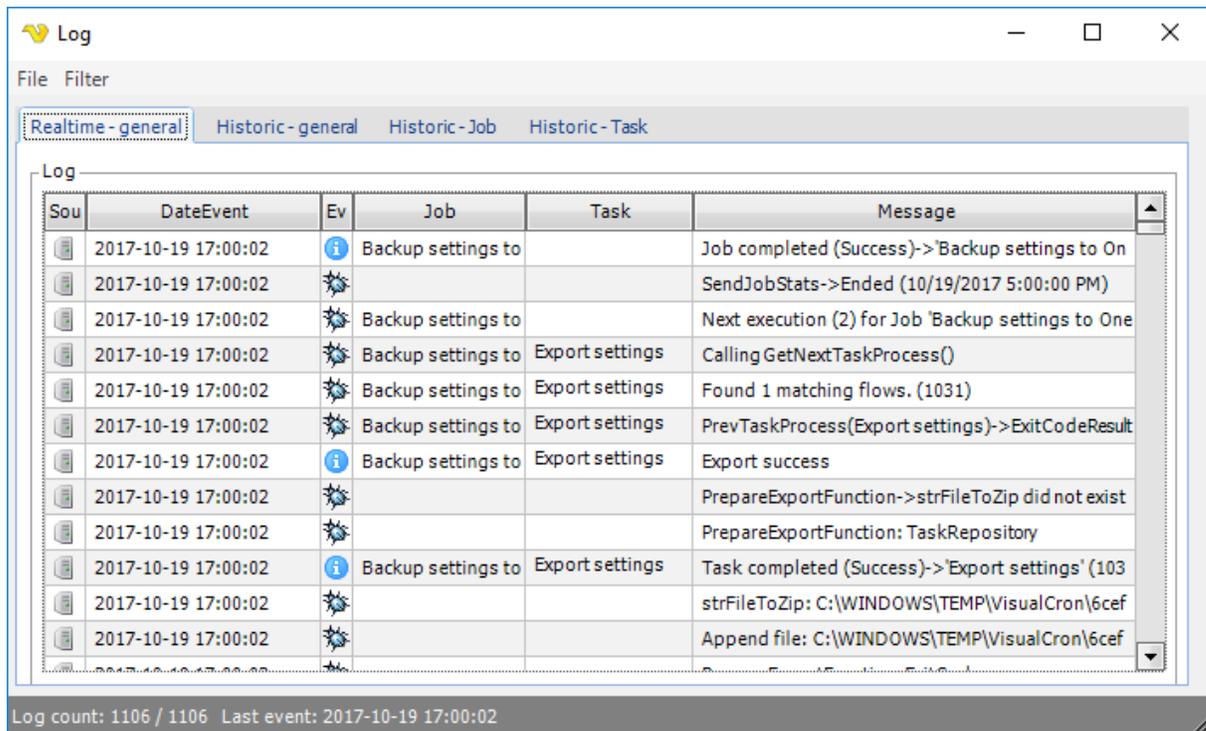
If you have a problem with Variables displaying other format than system it might be because you need to check the following below:



5.1.2.17 Information - Log

In the main menu **Server > Information > Log** you can list events from the client and the server without saving and reading a log text file. By default, the server is sending all log events to the client. All the log window settings are controlled from the main menu **Server > Settings > Log settings** dialog.

Server > Information > Log



Menu File > Export

The log can be exported in Microsoft Excel format. Choose path, enter log file name and click on save.

Menu Filter

Filters are controlling what you see in the log window, not what is logged in the log files. The main filters control the log listing of log event types and are set by clicking on a specific filter in the *Filters* menu. When the icon is grayed out, the filter is active which means that the corresponding event type is not shown in the log listing.

In the Log area, the log listing is divided in a set of columns:

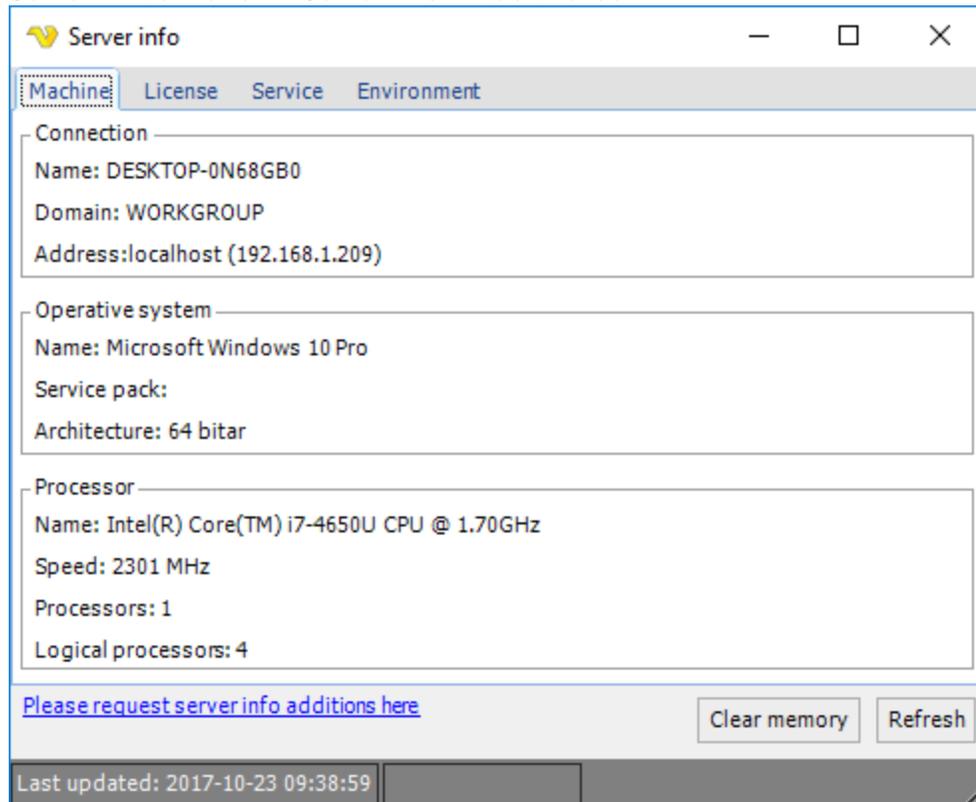
- *Source* - The origin of the event, either the server (a computer) or the client (a computer with a screen)
- *DateEvent* -The time when the event happened. Remember that the server time may differ from the client time if you are remotely connected
- *Event type* - An icon representing the event type which also corresponds to the one of the icons in the *Filters* menu
- *Job* - When a Job is connected to a certain event that Job name will be shown in this column
- *Task* - When a Task is connected to a certain event that Task name will be shown in this column
- *Message* - The verbose description of the event

The Status bar

The log window bottom status bar displays the number of shown log events / total log events and the when the last event was added to the log.

5.1.2.18 Information - Server Info

The main menu **Server > Information > Server info** option shows some details related to the computer where the VisualCron server is installed, the current license status and information about the VisualCron server service.

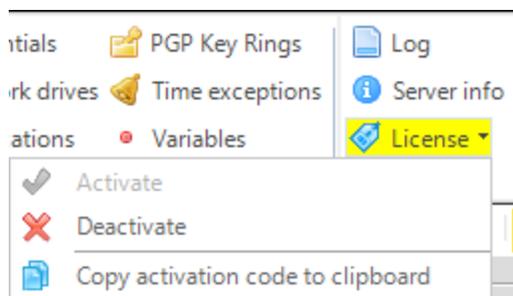
Server > Information > Server info > Machine tab**Server > Information > Server info > License tab**

This tab also shows:

- Activation code
- Server ID

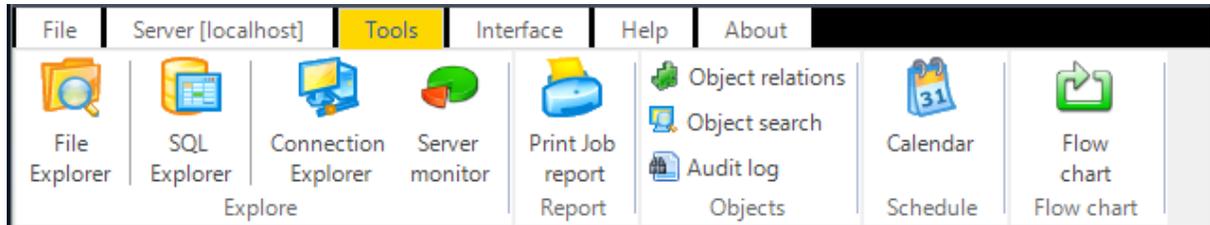
5.1.2.19 Information - License

The main menu **Server > Information > License** option manages activation and deactivation of the VisualCron license.



5.1.3 Tools

The **Tools** tab is a part of the main menu.



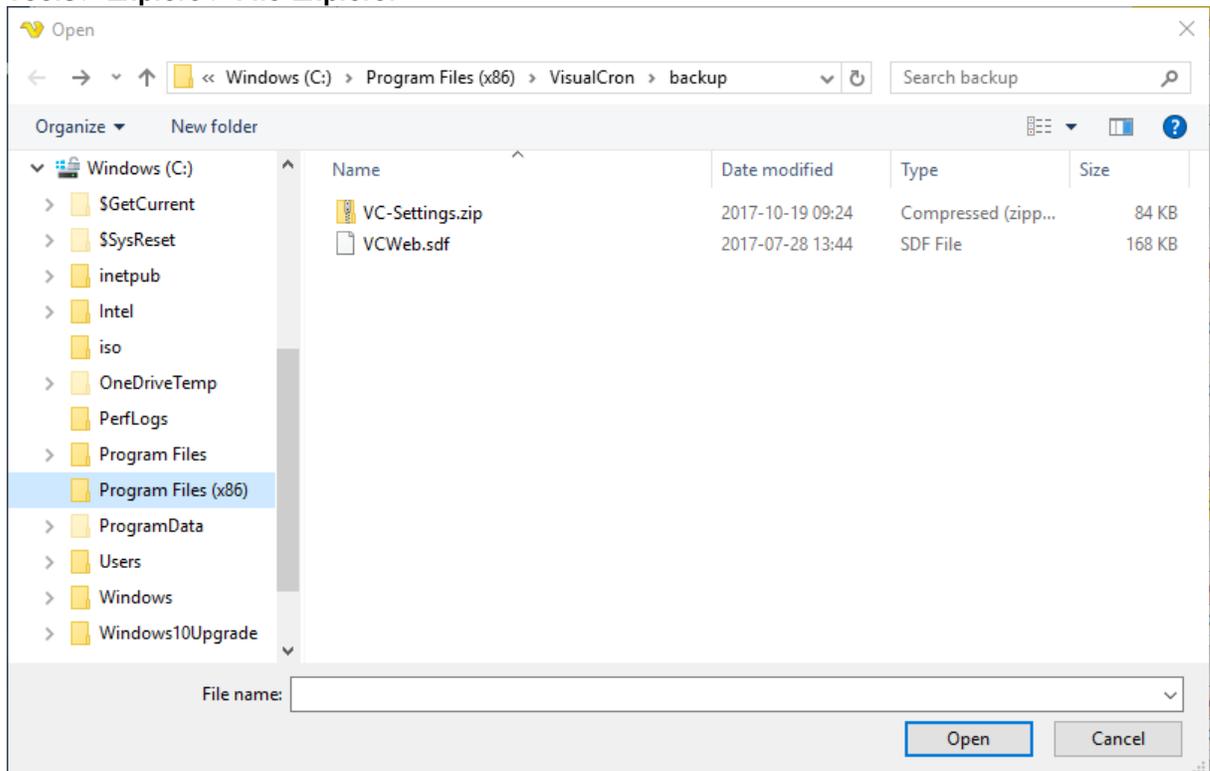
5.1.3.1 Explore - File Explorer

With the main menu **Tools > Explore > File Explorer** option, you can view folders and files. The File Explorer behaves differently depending on if you are locally or remotely connected.

When you are remotely connected a different dialog will show that allows you to:

- Copy/Paste files and folders
- Upload a local file or folder to a remote folder
- Delete files and folders
- Rename files and folders
- Search for files remotely

Tools > Explore > File Explorer



Upload files and folders

Drag a file or a folder from a local folder into the File Explorer to copy a file/folder.

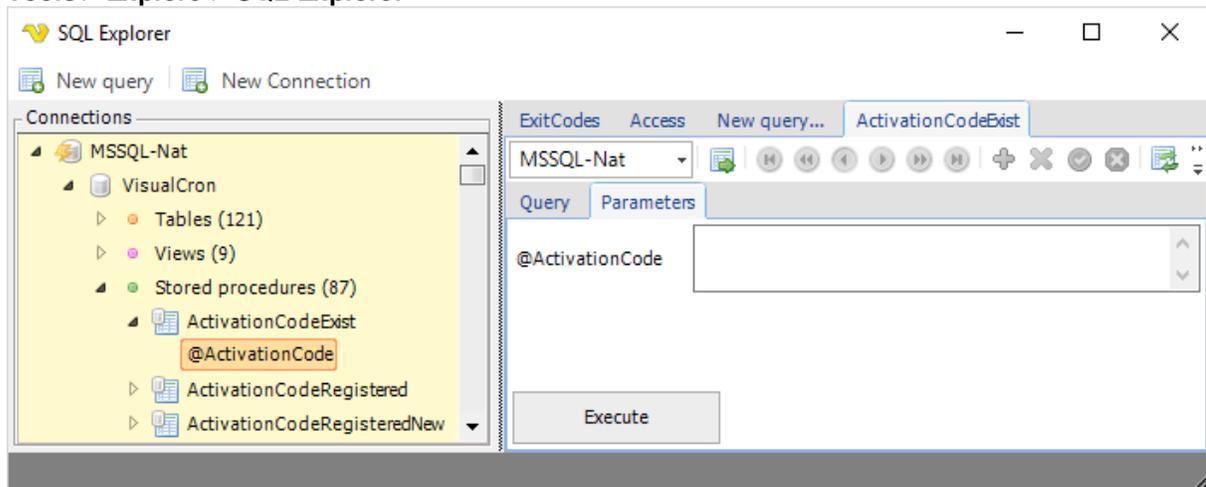
Search files

To search files use the field to the upper right and enter a value and press enter or search button. Press the search field X icon to clear a search result and revert back to original listing. Please note that we do not recommend searching a very large folder as it make take a long time and that the user interface will be blocked during that time.

5.1.3.2 Explore - SQL Explorer

With the main menu **Tools > Explore > SQL Explorer** option, you can use your existing SQL Connection or create new SQL Connections with the wizard to browse databases, tables and perform queries.

Tools > Explore > SQL Explorer



Connections tree and connecting

The connections tree shows the same Connections you see in the Connections window (if there is any SQL Connection).

There are 5 levels in the Connections tree:

- Connection name
- - Database name
- - - Tables
- - - - list of tables
- - - Views
- - - - list of vies
- - - Stored procedures
- - - - list of stored procedures
- - - - - Arguments to stored procedures

You will access these sub items by either double clicking on a Connection or right click and select Connect.

When connected you can:

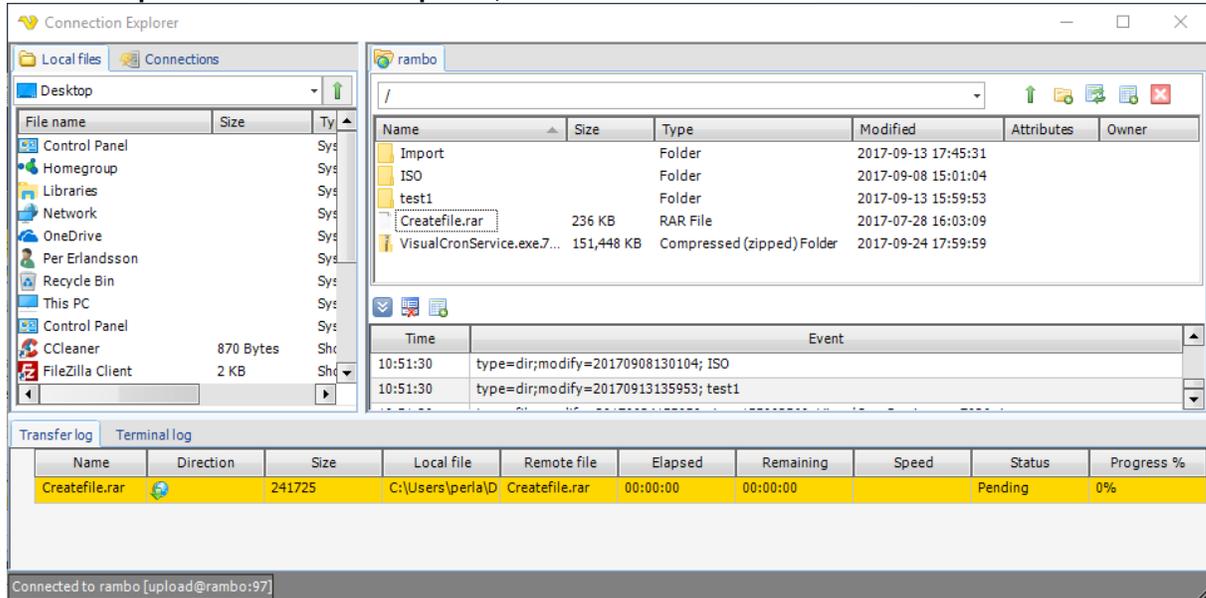
- Open and edit a table by double clicking on a table
- Perform edit in form and grid view
- Delete rows
- Scroll through rows

- Filter rows
- Click on new query button to perform your own SQL query against any open connection
- Execute any stored procedure with parameters

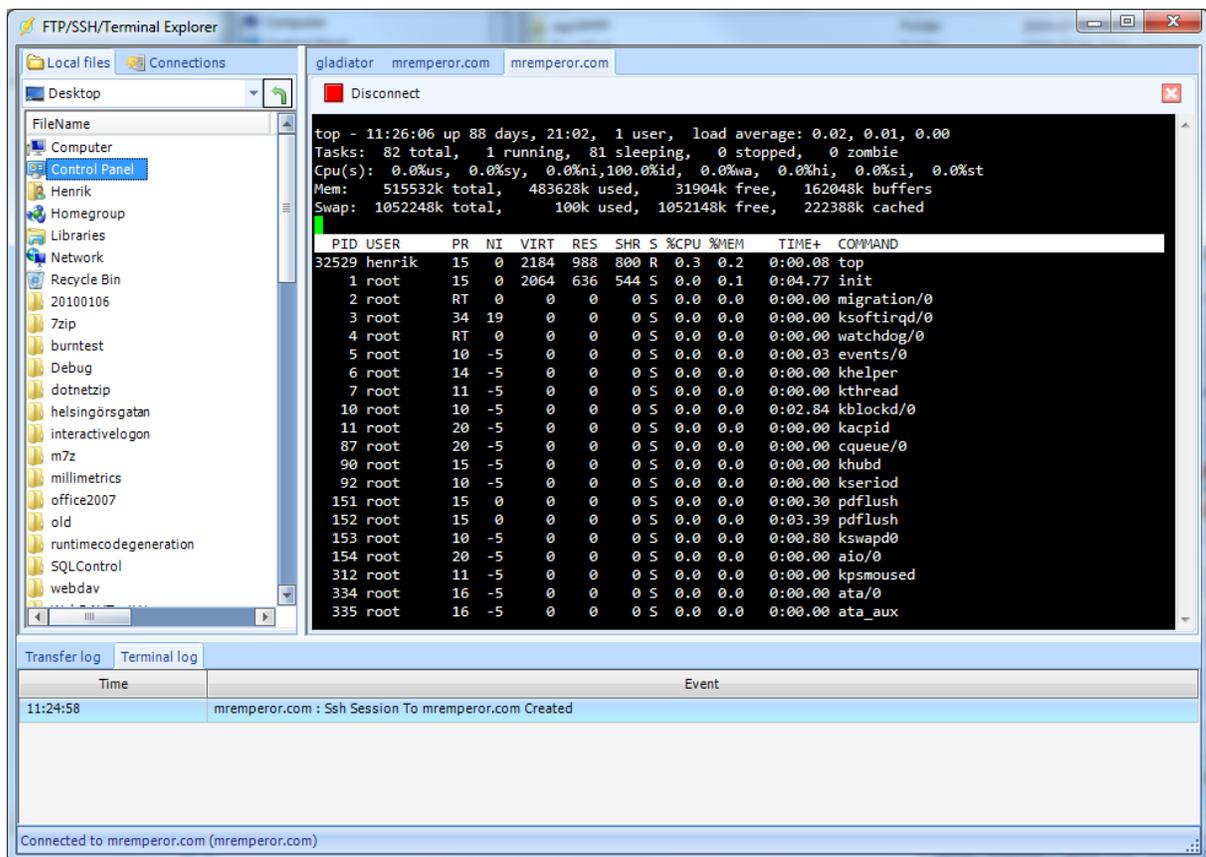
5.1.3.3 Explore - Connection Explorer

With the main menu **Tools > Explore > Connection Explorer** option, there is one way to view your remote files, delete and transfer files - on your existing Connections. It is also a way of testing existing Connections and retrieve correct path for download or upload folders.

Tools > Explore > Connection Explorer, FTP Connection



Tools > Explore > Connection Explorer, SSH Connection

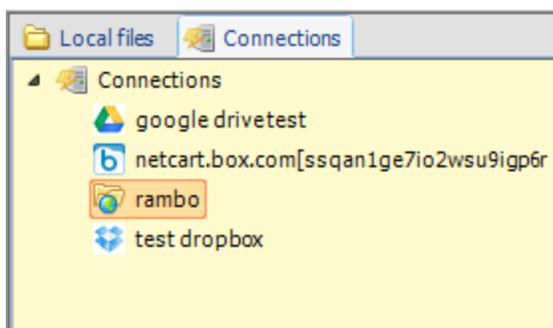


The Connections list

The Connection list shows all Connection types that are viewable by this Explorer. You can view FTP, SFTP, Terminal and SSH. You can right click on any connection and choose to set Properties or Connect.

Tools > Explore > Connection Explorer, Connection list

Connection Explorer



Drag and drop support

When connecting through FTP or SFTP you are able to drag and drop folders or files between source and destination.

Right click menu

Right click on a file or folder to:

- create a new folder
- delete a file or folder
- view (download and show with default application)
- rename a file or folder
- cut/copy/paste file or folder
- get properties of file or folder

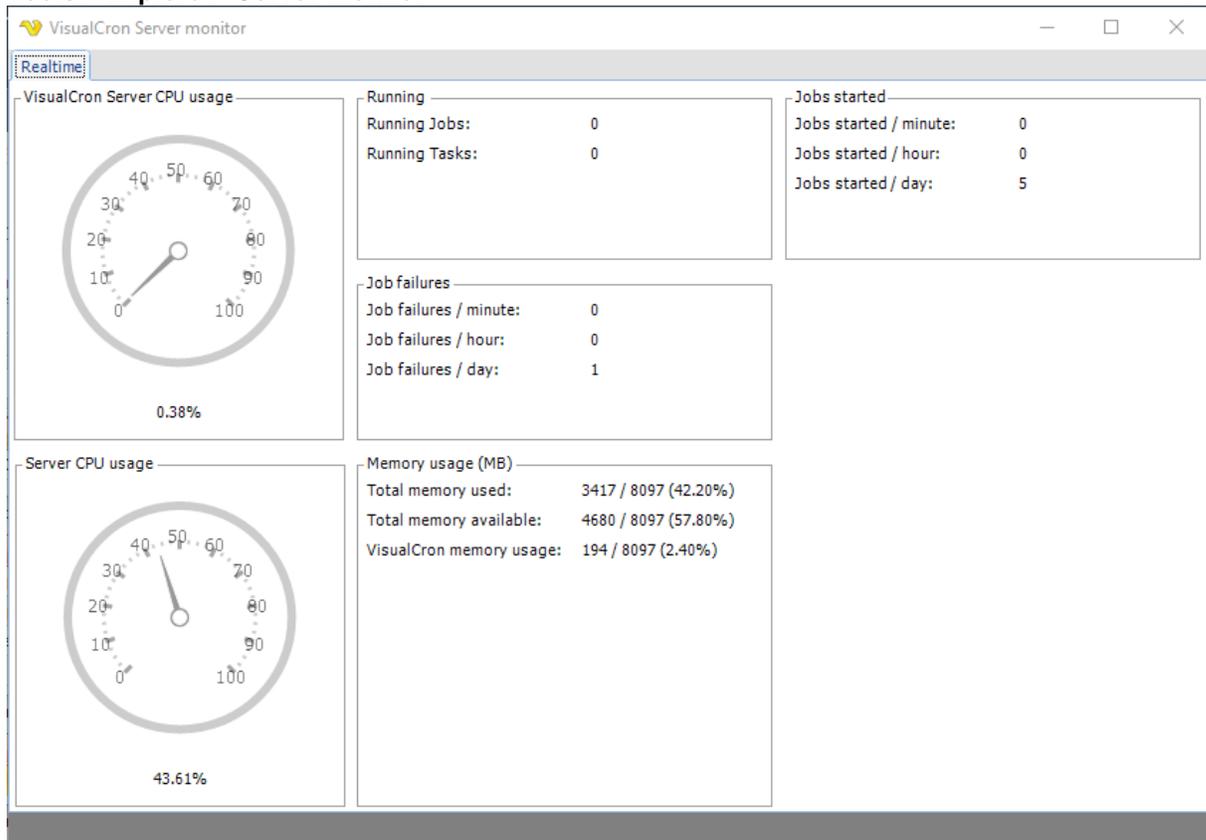
Limitations

Some FTP servers require special parsing due to non-standard output. These may not work in the Client but work in the Tasks.

5.1.3.4 Explore - Server Monitor

The main menu **Tools > Explore > Server monitor** option shows some server performance parameters and Jobs information.

Tools > Explore > Server monitor



5.1.3.5 Report - Print Job report

The main menu **Tools > Report > Print job report** option allows you to print or create documents which contains settings from Jobs and Tasks.

Tools > Report > Print job report

The screenshot shows the 'Report Printer' application window. It features several sections for configuring a report:

- Job and Task selection:** Two lists of columns to include in the report. The 'Jobs' list includes Job name, Status, Description, Next run, Result, Created, and Created by. The 'Tasks' list includes Task name, Task type, Exec. context, Order, Active, Status, and Result. Both lists have 'Up' and 'Down' buttons for reordering.
- Report styling:** A section for configuring the report's appearance.
- Printer settings:** A section for configuring printer-related options.
- Generate and Print:** A section with buttons for 'Generate', 'Print preview', 'Save as PDF', 'Save as HTML', and 'Print'.
- Preview:** A section showing a sample report titled 'VisualCron Job Report from: DESKTOP-0N68GB0'. The report contains three tables of job data.

VisualCron Job Report from: DESKTOP-0N68GB0

Job name	Status	Description	Next run	Result	Created																		
Backup settings	Active	Makes a daily backup of the server settings	2017-10-19 23:00:00	Success	2017-09-08 17:00:00																		
<table border="1"> <thead> <tr> <th>Task name</th> <th>Task type</th> <th>Exec. context</th> <th>Order</th> <th>Active</th> <th>Status</th> <th>Result</th> <th>Last execution</th> <th>Exec. time</th> </tr> </thead> <tbody> <tr> <td>Backup settings</td> <td>Export settings</td> <td>Background</td> <td>1</td> <td>Active</td> <td>Waiting</td> <td>Success</td> <td>2017-10-19 09:24:37</td> <td>2.541</td> </tr> </tbody> </table>						Task name	Task type	Exec. context	Order	Active	Status	Result	Last execution	Exec. time	Backup settings	Export settings	Background	1	Active	Waiting	Success	2017-10-19 09:24:37	2.541
Task name	Task type	Exec. context	Order	Active	Status	Result	Last execution	Exec. time															
Backup settings	Export settings	Background	1	Active	Waiting	Success	2017-10-19 09:24:37	2.541															
Backup settings to OneDrive	Active		2017-10-19 17:00:00	Success	2017-09-15 09:00:00																		
<table border="1"> <thead> <tr> <th>Task name</th> <th>Task type</th> <th>Exec. context</th> <th>Order</th> <th>Active</th> <th>Status</th> <th>Result</th> <th>Last execution</th> <th>Exec. time</th> </tr> </thead> <tbody> <tr> <td>Export settings</td> <td>Export settings</td> <td>Background</td> <td>1</td> <td>Active</td> <td>Waiting</td> <td>Success</td> <td>2017-10-18 17:00:00</td> <td>2.923</td> </tr> </tbody> </table>						Task name	Task type	Exec. context	Order	Active	Status	Result	Last execution	Exec. time	Export settings	Export settings	Background	1	Active	Waiting	Success	2017-10-18 17:00:00	2.923
Task name	Task type	Exec. context	Order	Active	Status	Result	Last execution	Exec. time															
Export settings	Export settings	Background	1	Active	Waiting	Success	2017-10-18 17:00:00	2.923															
Delete old log files	Active	Deletes log files older than 1 month	2017-10-19 23:10:00	Success	2017-09-08 17:00:00																		

Job and Task selection

In the Job and Task selection group box you select which columns to include in the report. You can select columns from common/generic properties of Jobs and Tasks.

Report styling

The report styling group allows you to control header/footer and Jobs/Tasks details.

Printer settings

The printer settings group box lets you select printer, orientation and other common printer properties.

Generate and print

Generate

The generate button creates the report (based on column and styling settings) which will be visible in the *Preview* window.

Print preview

The Print preview button shows the print preview window.

Save as PDF

The Save as PDF button generates a PDF file and allows you to save it anywhere in the file system.

Save as HTML

Saves the report as HTML.

Print

Prints the report according to preview window on the selected printer.

Permission

To block a user from viewing the Job report you need to disable the Jobs Read property in User permissions > Groups.

5.1.3.6 Objects - Object relations

The main menu **Tools > Objects > Object relations** option helps you to find relations between objects within VisualCron. Since many objects are "global" and can be reused, multiple relations may exist. It can be useful to know which relations an object has before deleting as it can be used in many places.

Tools > Objects > Object relations tab

	Type	Job name	Name/Description
	Task	Job Database SQL MSSQL-Nat	MSSQL-Nat-Ins
	Task	Job Database SQL MSSQL-Nat	MSSQL-Nat-Sel
	Task	Job Database SQL MSSQL-Nat	MSSQL-Nat-SPIO
	Task	Job Database SQL MSSQL-Nat	MSSQL-Nat-SPI
	Task	Job Database SQL MSSQL-Nat	MSSQL-Nat-SPI-NULL
	Task	Job Database SQL MSSQL-Nat	MSSQL-Nat-Job

Object type

Select the object type and all names of that object type will be listed under object name.

Object name

Once you have filtered out the object type you can select the name. When the name has been selected all internal objects, that use this object, will be listed in the grid below. For example, in the image above you can see that the Condition named "Check for file" is used in the Job "Test Job".

Result grid

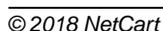
In the result grid all objects that use the object name is listed. You can double click to edit any object that is listed in the grid.

The **Object finder > Object search** tab, in the above window, opens a window which uses the same structure as the main menu **Tools > Objects > Object search** option. See here for more information.

5.1.3.7 Objects - Object search

The main menu **Tools > Objects > Object search** option performs search for a string within all internal objects of VisualCron. All properties that matches this string will be listed in the result grid.

Tools > Objects > Object search tab



5.1.3.8 Objects - Audit log

The main menu **Tools > Objects > Audit log** option is used to track changes among objects within VisualCron. These type of changes are logged an internal database - the same database where Job and Task logs are stored.

Tools > Objects > Audit log

Event date	User	Type	Job	Object	Event type	Diff	Summary
2017-10-19 11:47:10	VisualCron Default Admin	N/A	N/A	VisualCron Default Admin	Update		User 'VisualCron Default Admin' updated User 'VisualCron Default Admin'.
2017-10-19 11:05:41	VisualCron Default Admin	N/A	N/A	rambo	Update		User 'VisualCron Default Admin' updated Connection 'rambo'.
2017-10-19 10:38:50	VisualCron Default Admin	N/A	N/A	rambo	Add		User 'VisualCron Default Admin' added Connection 'rambo'.
2017-10-19 09:31:56	VisualCron Default Admin	N/A	N/A	VisualCron Default Admin	Login		User "VisualCron Default Admin" (admin) - Logged in successfully through
2017-10-19 09:25:07	VisualCron Tray Client Use	N/A	N/A	VisualCron Tray Client User	Login		User "VisualCron Tray Client User" (TrayClientUser) - Logged in successfull

The audit log is displaying the following information:

- Event date - when did the change occur
- User - who did the change
- Type - what kind of object that was changed
- Job - the related Job name, if available
- Object - the name of the object
- Event type - what kind of event type (add/update/delete etc)
- Diff - if the object contains any changes to previous object
- Summary - a short, description of what was changed

The amount of data stored (history) is controlled by the Server > Settings > Log > Database.

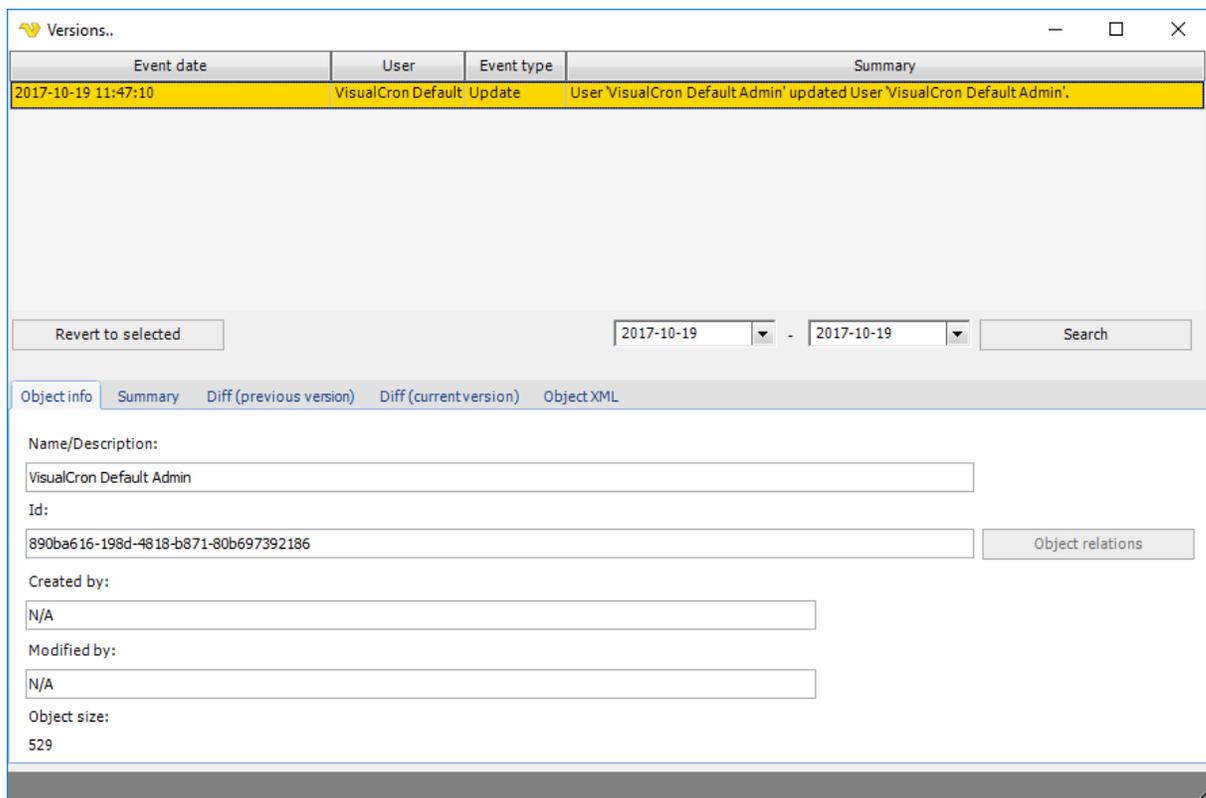
By default, if you open the audit log from the Tools menu, the audit log is opened with no filters, displaying the events of today. The audit log can be opened from various places and use different filters by default. For example, if you right click on a Job, it will show you events for this specific Job only. If you open the audit log from the Credentials window (and do not click on a specific Credential) changes to all Credentials are listed.

Double clicking on a row opens the Versions window, see Audit log > Versions for details.

5.1.3.8.1 Versions

The main menu **Tools > Objects > Audit log > Versions** window shows all changes related to a specific object. It is also possible, in detail, to compare the actual changes. You can also revert back to a specific version - let say you made a change and then want to go back to a previous version.

Tools > Objects > Audit log > Versions



The window is divided in two parts. A list that contains all changes with search functionality and tabs containing info about the *selected* version.

When clicking on a row the information in the lower part is updated with details about the actual stored object.

By default, the versions window only shows the changes of today, to alter this, select another date. The number of days or rows stored is controlled by the same settings for Audit Log_Settings.

Revert to selected

This means that the object that you clicked on (right clicked or selected) will be updated (or re-created if no longer existing). The Revert functionality only updates the object itself - not any relations to it. This means, that if you for example revert a Task that used a Credential (that is no longer existing) that Task may not work until you recreate and reselect that Credential. Reverts are currently logged as Add or Update depending on if they exist from the beginning or not.

Object info tab

This tab contains basic information like:

- Name
- Id of object
- Created
- Modified
- Object size

There is also a Object relations button so you can see where this object is used.

Summary tab

This is the same information as in the Summary column but might be easier to read if there are a lot of changes.

Diff (previous version) tab

This shows, in detail, the property changes between the selected object and the previous version.

Diff (current version) tab

This shows, in detail, the property changes between the selected object and the current existing object.

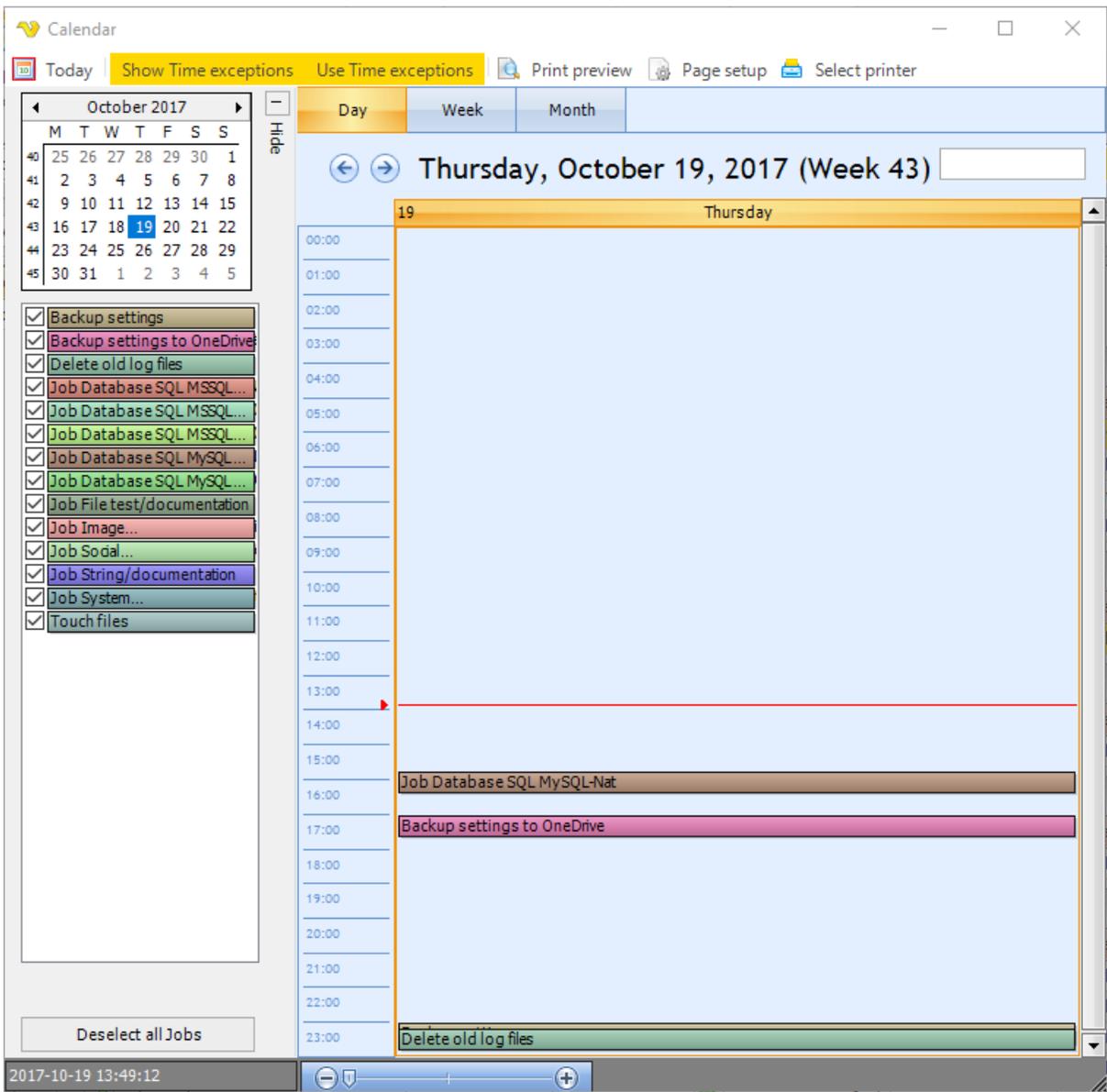
Object XML tab

This shows the XML specification details for the selected object.

5.1.3.9 Schedule - Calendar

The main menu **Tools > Schedule > Calendar** option presents an overview of scheduled Jobs. This way you can, for example, plan your Tasks (so they don't run at the exact same time).

Tools > Schedule > Calendar



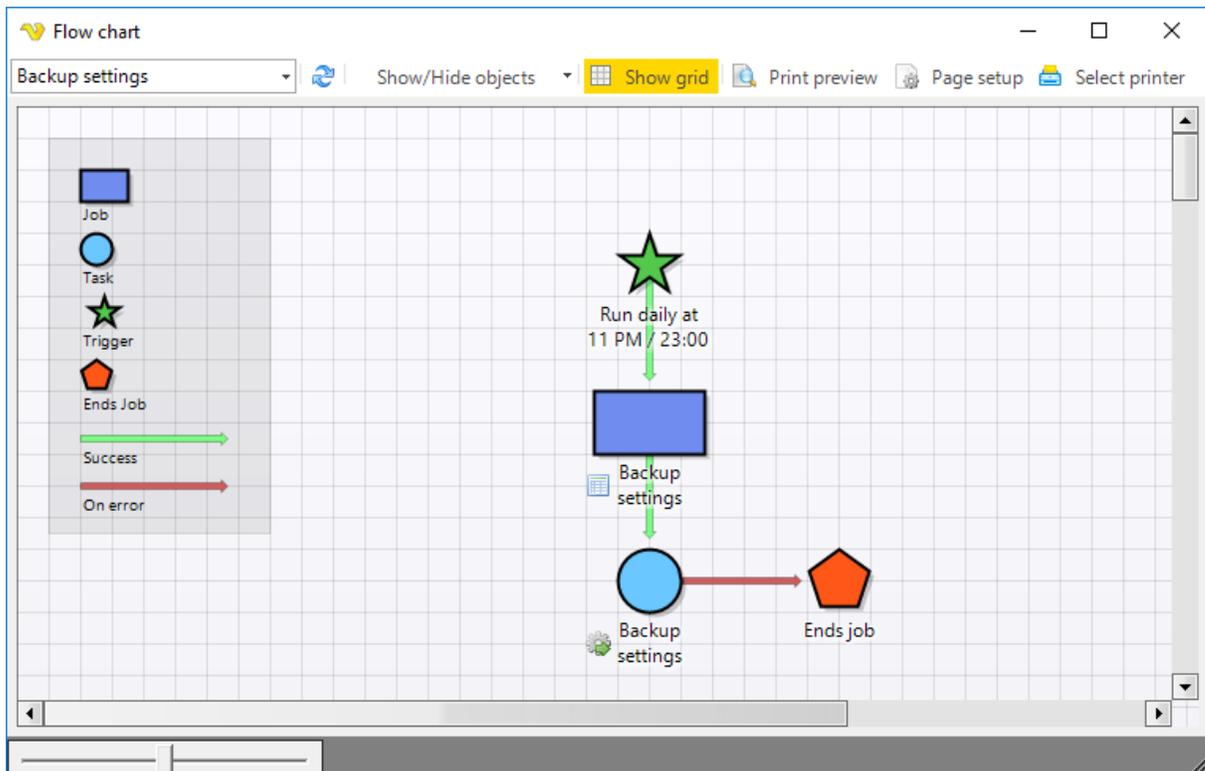
Permission

To block a user from viewing the Job report you need to disable the Jobs Read property in User permissions > Groups.

5.1.3.10 Flow chart - Flow chart

The main menu **Tools > Flow chart > Flow chart** option lets you view the internal steps within a Job. There are many ways to control the flow between Tasks. The Flow charts shows Triggers, Conditions, Tasks and Notifications.

Tools > Flow chart > Flow chart



Job selection

In the Jobs selection drop-down list shows you select which Job you would like to explore.

Refresh button

Refreshes the current view.

Show/Hide objects

In this menu you can check/uncheck which objects (Triggers, Conditions, Notifications, On error and Legend) the chart will show.

Show grid

Enables or disables the background grid.

Print preview

Opens the print preview window.

Page setup

Shows the printer page setup window.

Select printer

Opens the printer selection window.

Flow chart

The flow chart window includes the objects that is displayed in the top left area. A flow chart is drawn from top to bottom.

The following action can be performed:

- open an object for edit by double clicking on it
- hide a specific object type by right clicking on it and choose hide

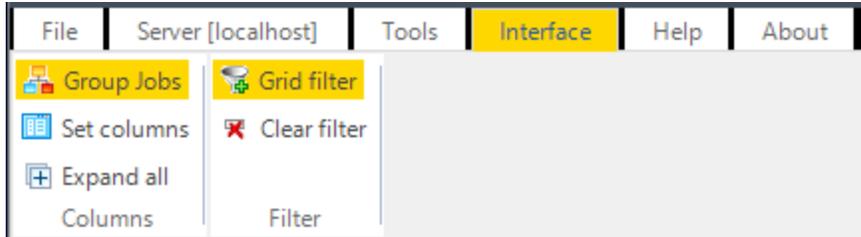
- hover over each object (and arrows) to see details

Permission

To block a user from viewing the Job report you need to disable the Jobs Read property in User permissions > Groups.

5.1.4 Interface

The **Interface** tab is a part of the main menu.



The current servers, Jobs and Tasks are listed in the Server/Job/Task grid.

The format of the Job/Task listing is controlled from the main menu **List** tab. The Job/Task list can be customized by filtering a specific column and setting the columns to be visible/invisible.

A view filter can be defined for one column by a match criteria.

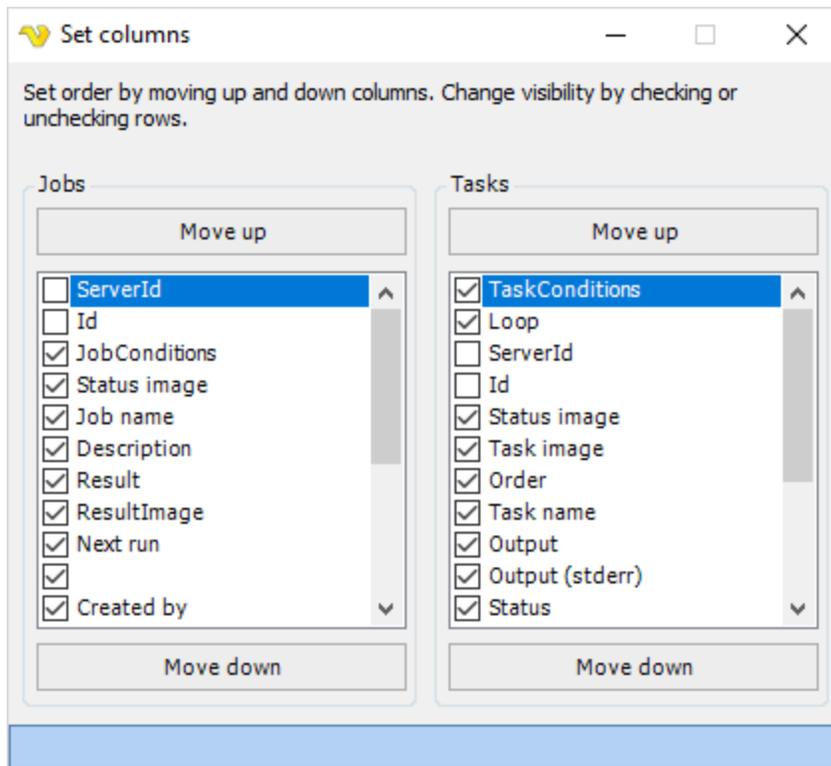
The number and the order of columns to view in the Job list can be modified.

5.1.4.1 Columns - Group Jobs

With the main menu **Interface > Columns > Group jobs** option, it is possible to expand or compress to Jobs the Servers/Groups/Jobs/Tasks grid.

5.1.4.2 Columns - Set columns

With the main menu **Interface > Columns > Set columns** option, each available Job/Task column can be set to visible/invisible and also the order of columns (from left to right) can be changed. All changes have immediate effect in the Server/Group/Job/Task grid.



5.1.4.3 Columns - Expand All

The main menu **Interface > Columns > Expand all** option operates in the Server/Group/Job/Task grid and "Expand all" or "Collapse all" Jobs/Tasks related to a specific server.

5.1.4.4 Filter - Grid filter

With the main menu **Interface > Filter > Grid filter** option and the toolbar *Grid filter* button it is possible to show or hide the *grid filter*. When changing, the settings are saved and if checked when closing you will see the *grid filter* above the main grid when you start up the client again.

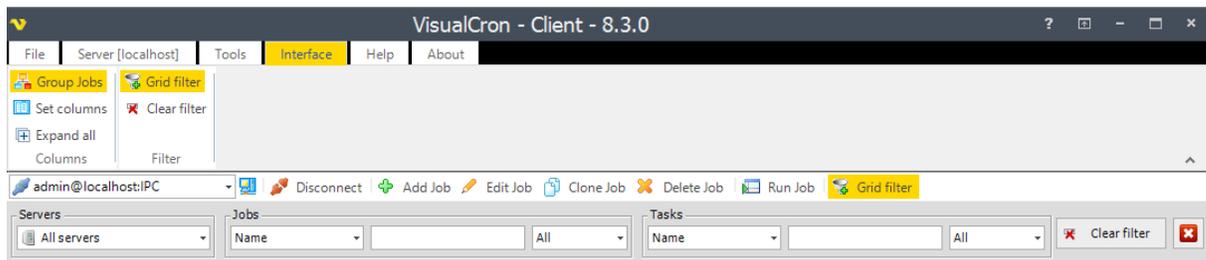
The *grid filter* lets you filter the list of Servers, Groups, Jobs and Tasks.

Press the *Clear filter* button to clear the filter field.

Select the Job attribute (in the drop down window starting with the "Job name" attribute) and then type characters in the filter field that shall match the selected attribute for the Job(s) you want to be shown in the Server/Jobs/Task grid. Filtering is dynamic, i.e. matching rows are instantly removed.

All changes have immediate effect on what is shown in the Server/Group/Job/Task grid.

Interface > Filter > Grid filter

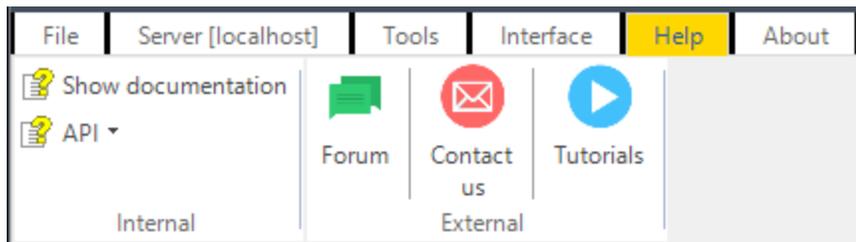


5.1.4.5 Filter - Clear filter

With the main menu **Interface > Filter > Clear filter** option and the toolbar *Clear filter* button it is possible to remove all grid filter settings.

5.1.5 Help

The **Help** tab is a part of the main menu.



5.1.5.1 Internal - Show Documentation

The main menu **Help > Internal > Show documentation** option opens the VisualCron Help dialog provided with the VisualCron installation.

5.1.5.2 Internal - API

With the main menu **Help > Internal > API** option, you can select either the *Show documentation* (in PDF format) or the *API reference* window.

5.1.5.3 External - Forum

The main menu **Help > External > Forum** option opens a new web browser window to the VisualCron users/tutorials/support/development discussion forum web page. We encourage you to use this forum e.g. for testimonials, problem solving or feature requests.

5.1.5.4 External - Contact Us

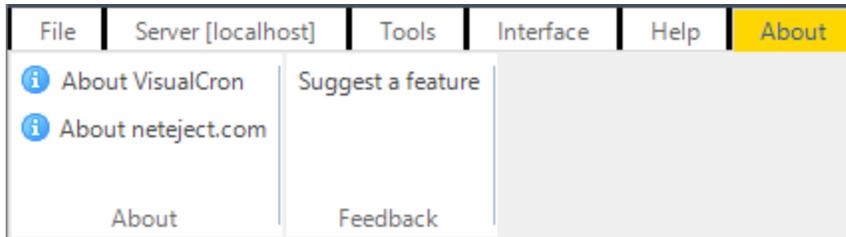
The main menu **Help > External > Contact us** option opens a new web browser window to the VisualCron Contact web page.

5.1.5.5 External - Tutorials

The main menu **Help > External > Tutorials** option opens a new web browser window to the VisualCron Demos web page.

5.1.6 About

The **About** tab is a part of the main menu.



5.1.6.1 About - About VisualCron

The main menu **About > About > About VisualCron** option shows detailed VisualCron version information.

5.1.6.2 Feedback - Suggest A Feature

The main menu **About > Feedback > Suggest a feature** option opens the VisualCron Community Forum web page.

5.2 Toolbar

The toolbar is located in the top of the VisualCron client screen, under the main menu but over the Grid filter (Servers/Jobs/Tasks list).

5.2.1 Server selection

If you have added multiple servers in the main menu **File > Servers > Manage servers**, you can quickly switch between these in the leftmost drop down list in the VisualCron client toolbar. Select the desired server you want to switch to. If you don't want to enter password between switches, then add the password in *Manage servers* window. During the server switch, the main window is disabled.

You can see which server you are connected to in the toolbar item list or in the main menu **Server [<server name>]** tab. The progress of the server switch is visible in the progress bar to the right in the status bar of the main window - when full, all values has been loaded to the client.

Note: The VisualCron client is for performance reasons only connected to one server at a time. The information you see (Jobs etc.) are only related to the current server connection.

5.2.2 Manage servers

The toolbar *Manage servers* icon performs the same function as the main menu **File > Servers > Manage servers** option. Both will open the Manage servers dialog where server connections are managed. See Manage servers for more information.

5.2.3 Disconnect/Connect

The toolbar *Disconnect/Connect* option, disconnects or connects (depending on the current server connection status) the server name indicated in server selection part of the toolbar and in the main menu **Server [<server name>]** tab.

5.2.4 Add Job

A new Job can be created by clicking on the toolbar *Add Job* option. For more information, see the Main - Jobs section.

5.2.5 Edit Job

A marked Job in the Server/Job/Task grid can be opened for edit by clicking toolbar the *Edit Job* option. For more information, see the Main - Jobs section.

5.2.6 Clone Job

A marked Job in the Server/Job/Task grid can be cloned by clicking toolbar the *Clone Job* option. See clone Job and the Main - Jobs section for more information.

5.2.7 Delete Job

A marked Job in the Server/Job/Task grid can be deleted by clicking toolbar the *Delete Job* option.

5.2.8 Run Job

A marked Job in the Server/Job/Task grid can be run at any time by clicking toolbar the *Run Job* option.

The Job can be manually executed even if it is "Deactivated".

5.3 Server/Group/Job/Task area

The Server/Group/Job/Task grid occupies the main part of the VisualCron Client application. This provides an overview where groups of all defined server connections with all their related Tasks and Jobs are shown. Also, most changes of server, Jobs and Tasks may be managed in this grid.

For each server, there are two child "tracks", where the first track(s) show the Job(s) defined for the server and the second child track show the Task(s) connected to each Job. The Task and Job tracks provide real time information about next execution and last execution result. Status of each Task, including error messages from Tasks, are showed in the Task list. The output is shown in under the heading columns. The full output is obtained by mouse double-click on the output column.

Jobs can be defined, viewed and deleted by *Add*, *Edit*, *Clone* or *Delete*. Furthermore, Jobs can be managed by the *Export* and *Import* functions. Once a Job is defined, it can be set to active or inactive.

By mouse right-click on a Job, some Job related information and statistics are available. General Job information, is included in the **Tools > Explore > Server Monitor**.

Jobs can be managed by the Toolbar buttons or the mouse right-click menu for a Job.

All Jobs are listed in the Job list grid. The Job list view can be changed by the **Interface > Columns > Set columns** option by filtering the Job list columns.

All executed Jobs return an exit code. If a Job runs successfully and exits normally, it will return 0 as exit code which means that it is successful. If any error should occur, a different exit code will be used.

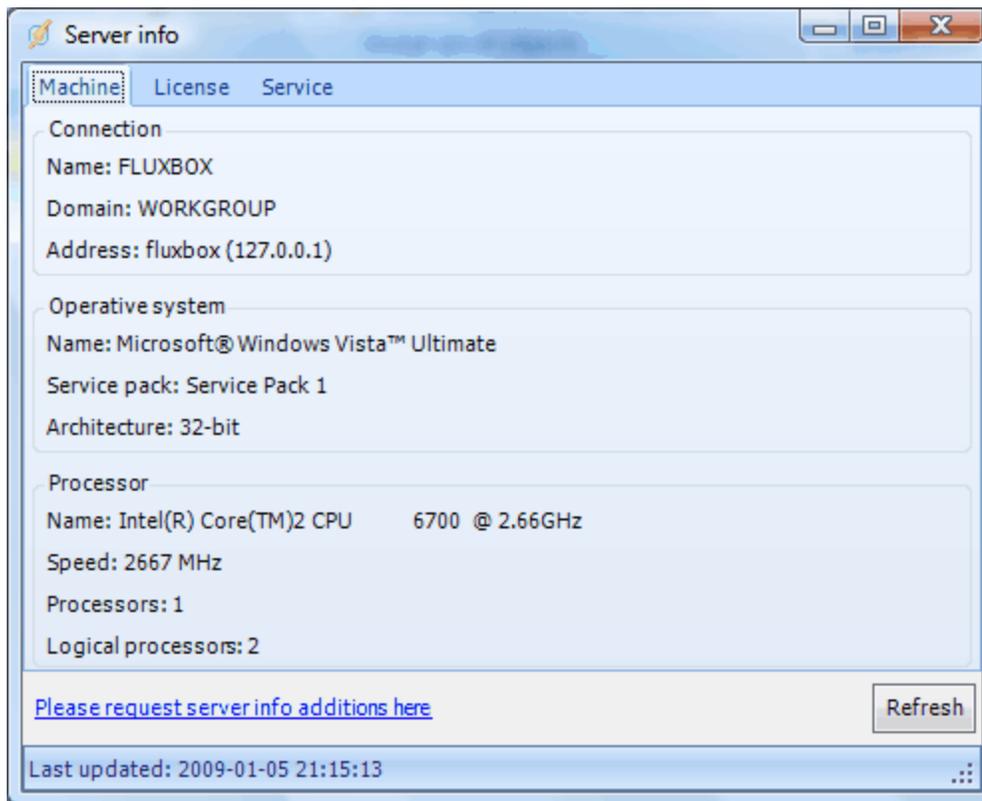
Find out more about Windows exit codes.

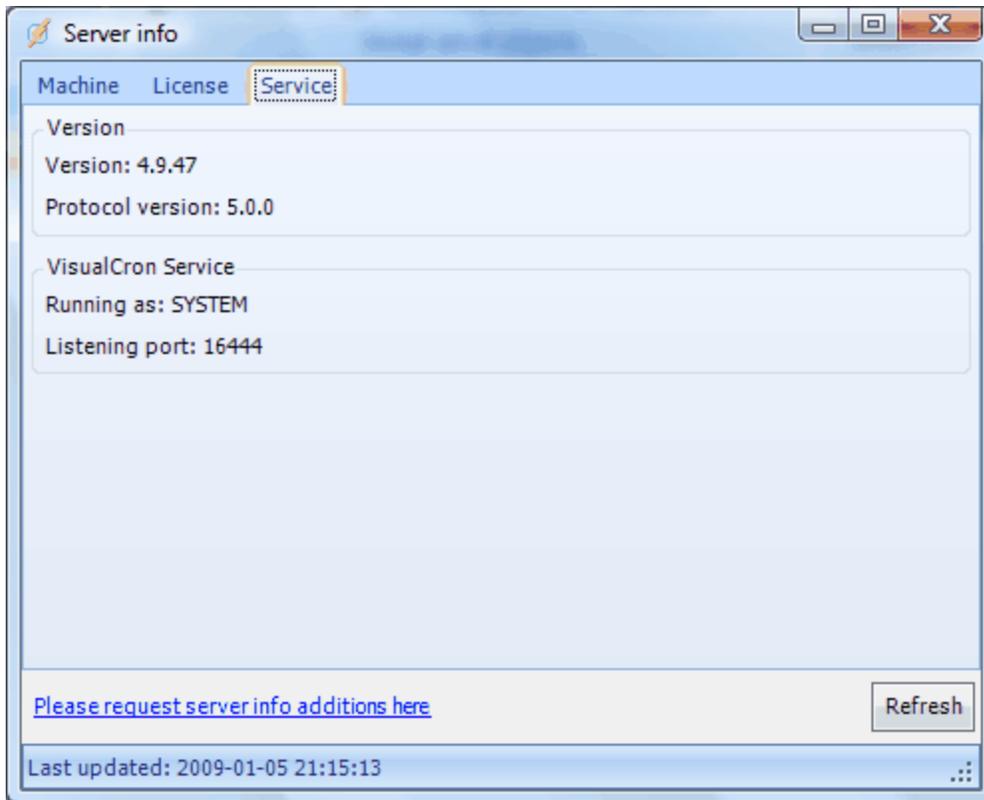
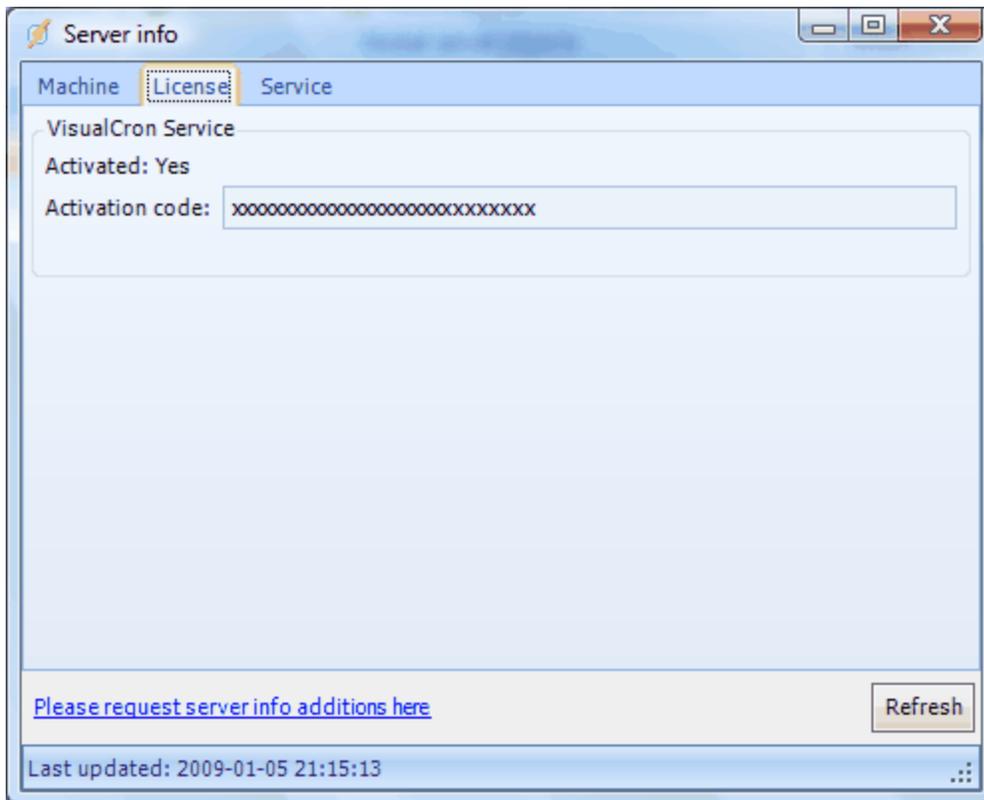
5.3.1 Server heading

Each defined server (connection) is presented in the Server/Job/Task grid as a group with a server/username heading followed by a set of child tracks with one row for each defined Job. All Tasks defined for a Job is finally presented as child tracks under each of these Jobs.

5.3.1.1 Server Info

Server info window lets you view various information about the machine hosting VisualCron. You access Server info from the **Server -> Server info** tab or mouse right-click on a server heading in the Server/Job/Task grid.





5.3.2 Job List

By mouse right-click on a Job in the Server/Group/Job/Task grid, Job related options are available. See list of Job and Task options in the Job List sub chapters.

5.3.2.1 Add Job

When a Job or a Task is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Add* to add a new Job. A new Job can also be added by the toolbar *Add Job* button.

5.3.2.2 Add Task to Job

When a Job or a Task is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Add Task to Job '<Job name>'* to add a Task to a Job.

5.3.2.3 Edit Job

When a Job is defined, right-click on the Job or Task in the Server/Job/Task grid and select *Edit Job '<Job name>'* to edit the Job. A Job, marked in the Server/Group/Job/Task grid, can also be edited by the toolbar *Edit Job* button.

5.3.2.4 Clone Job

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Clone Job '<Job name>'* to clone the Job.

A Job, marked in the Server/Group/Job/Task grid, can also be cloned by the toolbar *Clone Job* button.

All settings for an already defined Job can be cloned (copied) into a new Job. Except for pure Job settings all triggers, Tasks, notifications etc. are also copied to the new Job without any change. Only change of Job *Name* is necessary before the new Job can be saved, but of course any other change of the new Job is possible.

Clone Job always works locally, i.e. a cloned Job can only be added to the currently connected server.

5.3.2.5 Delete Job

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Delete Job '<Job name>'* to delete the Job. A Job, marked in the Server/Group/Job/Task grid, can also be deleted by the toolbar *Delete Job* button.

5.3.2.6 Delete selected Jobs

If more than one Job is selected and a Job is right-clicked in the Server/Group/Job/Task grid, the *Delete selected Jobs* option is used to delete the selected Jobs. The Jobs, selected in the Server/Group/Job/Task grid, can also be deleted by the toolbar *Delete Job* button.

5.3.2.7 Cut Job

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Cut Job '<Job name>'* to cut the Job.

5.3.2.8 Copy Job

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Copy Job '<Job name>'* to copy the Job.

The copy Job function copies the Job temporarily to the memory which makes it possible to paste the Job to another server than the one that is currently connected.

5.3.2.9 Paste Job

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Paste Job '<Job name>'* to paste a previously copied Job.

The copy Job function copies the Job temporarily to the memory which makes it possible to paste the Job to another server than the one that is currently connected.

5.3.2.10 Run Job

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Run Job '<Job name>'* to force an immediate execution of the selected Job. The Job will be executed even if it is "Inactivate".

5.3.2.11 Run Job with options

By right-click on a Job, the Run Job with options menu item lets you start the Job with certain parameters.

In the window that opens you can control the following:

- If it should start with or without Conditions
- If it should override Variables or use new ones
- If it should update current Job Variables with new ones or not
- If it should start from a certain Task on complete with a certain Task

Run Job with options

Run Job - with options

Job: Job Database SQL MSSQL-Nat

Conditions: With Conditions

Variables:

+ Add ✎ Edit ✕ Delete

Key	Variable	Value
Var1	{JOB(Active Variable Var1)}	test1
Var2	{JOB(Active Variable Var2)}	test2

Update Job Variables

Tasks:

From first Task

From Task:
 No task selected

To last Task

To Task:
 No task selected

Cancel Run

With Conditions

This controls if the Job should be started by checking Conditions before or not. Default is false.

Variables

Existing Job Variables will be listed here. It is possible to add new, delete or update Job Variables.

Update Job Variables

When checked, it will update existing Job Variables. If unchecked it will use the once specified when clicking Run but never update existing.

Tasks

You can choose to start from first Task or a certain Task and run to last Task or a certain Task.

5.3.2.12 Triggers

The Jobs right-click Triggers option opens the selection of Deactivate and Fire.

5.3.2.13 Run Task

If a Task for a Job is selected and the Task is right-clicked in the Server/Group/Job/Task grid, the selected Task is run.

5.3.2.14 Stop Job

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Stop Job '<Job name>'* to stop a Job that is currently executing.

5.3.2.15 Activate/Deactivate job

By default an added (new) Job is set to active. The "active" status for a Job is indicated by a green (green check icon) while the "deactive" status is indicated by a red (red cross icon) icon in the leftmost part for each specific Job in the Server/Group/Job/Task grid. It is possible to change status in the right-click menu for a Job by the *Activate/Deactivate Job '<Job name>'* option.

If you look at the Job list for status indication, please note that any Job list column, including the status column, can be set to invisible.

It is also possible to *Activate/Deactivate* a Task status by right-click on a Task and select the *Activate/Deactivate Task '<Task name>'* option.

5.3.2.16 Reset Job

Enter topic text here.

5.3.2.17 Job log

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Job log* to open the log window.

The data in this window is based on the local database file. The number of entries in this file is limited by the *Job Log* settings in **Server > Settings > Log settings > Database settings**.

The dates you see is the From date and To date. These are the minimum and maximum values from the local database. Press the *Get* button to fetch the matching Job Job entries.

The Job log is always updated in real time, i.e. scheduled Tasks within the Job will show up while executing.

Job right-click > Job log

Event time	Exit code	Execution time												
2017-10-16 10:11:39	0	00:00:00.1												
<table border="1"> <thead> <tr> <th>Last run</th> <th>Name</th> <th>Exit code</th> <th>Execution time</th> <th>Output</th> <th>Output (stderr)</th> </tr> </thead> <tbody> <tr> <td>2017-10-16 10:11:39</td> <td>MySQL-ODBC-SPI</td> <td>0</td> <td>00:00:00.0</td> <td>No output</td> <td>No output</td> </tr> </tbody> </table>			Last run	Name	Exit code	Execution time	Output	Output (stderr)	2017-10-16 10:11:39	MySQL-ODBC-SPI	0	00:00:00.0	No output	No output
Last run	Name	Exit code	Execution time	Output	Output (stderr)									
2017-10-16 10:11:39	MySQL-ODBC-SPI	0	00:00:00.0	No output	No output									
Event time	Exit code	Execution time												
2017-10-16 10:10:53	0	00:00:00.1												
<table border="1"> <thead> <tr> <th>Last run</th> <th>Name</th> <th>Exit code</th> <th>Execution time</th> <th>Output</th> <th>Output (stderr)</th> </tr> </thead> <tbody> <tr> <td>2017-10-16 10:10:53</td> <td>MySQL-ODBC-SPI</td> <td>0</td> <td>00:00:00.0</td> <td>Double click for o</td> <td>No output</td> </tr> </tbody> </table>			Last run	Name	Exit code	Execution time	Output	Output (stderr)	2017-10-16 10:10:53	MySQL-ODBC-SPI	0	00:00:00.0	Double click for o	No output
Last run	Name	Exit code	Execution time	Output	Output (stderr)									
2017-10-16 10:10:53	MySQL-ODBC-SPI	0	00:00:00.0	Double click for o	No output									
Event time	Exit code	Execution time												
2017-10-16 10:09:19	77777	00:00:00.1												
<table border="1"> <thead> <tr> <th>Last run</th> <th>Name</th> <th>Exit code</th> <th>Execution time</th> <th>Output</th> <th>Output (stderr)</th> </tr> </thead> <tbody> <tr> <td>2017-10-16 10:09:19</td> <td>MySQL-ODBC-Ins</td> <td>77777</td> <td>00:00:00.0</td> <td>No output</td> <td>Double click for o</td> </tr> </tbody> </table>			Last run	Name	Exit code	Execution time	Output	Output (stderr)	2017-10-16 10:09:19	MySQL-ODBC-Ins	77777	00:00:00.0	No output	Double click for o
Last run	Name	Exit code	Execution time	Output	Output (stderr)									
2017-10-16 10:09:19	MySQL-ODBC-Ins	77777	00:00:00.0	No output	Double click for o									

Filter

You are able to filter between All, Failed and Success job execution results.

5.3.2.18 Task log

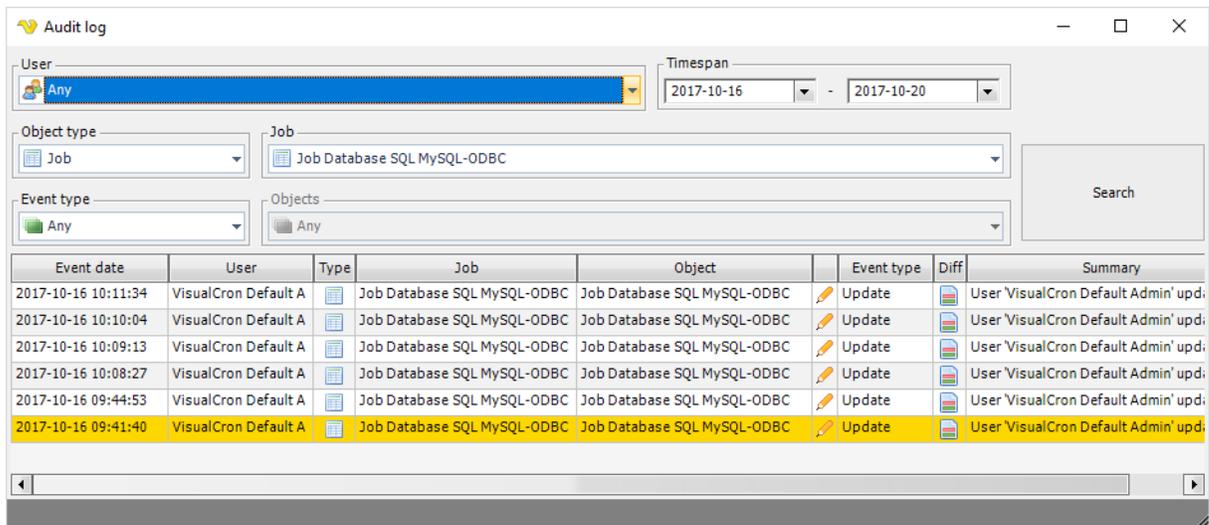
When a Task is defined, right-click on the Task in the Server/Group/Job/Task grid and select *Task log* to open the log window. This window looks the same as the one opened by **Server > Information > Log** (see Information log), except that the Task related log window only shows a specific Task history.

5.3.2.19 Audit log

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Audit log* to open the audit log window.

This window uses the same structure as the main menu **Tools > Objects > Audit log** option. See here for more information.

Job > Audit log

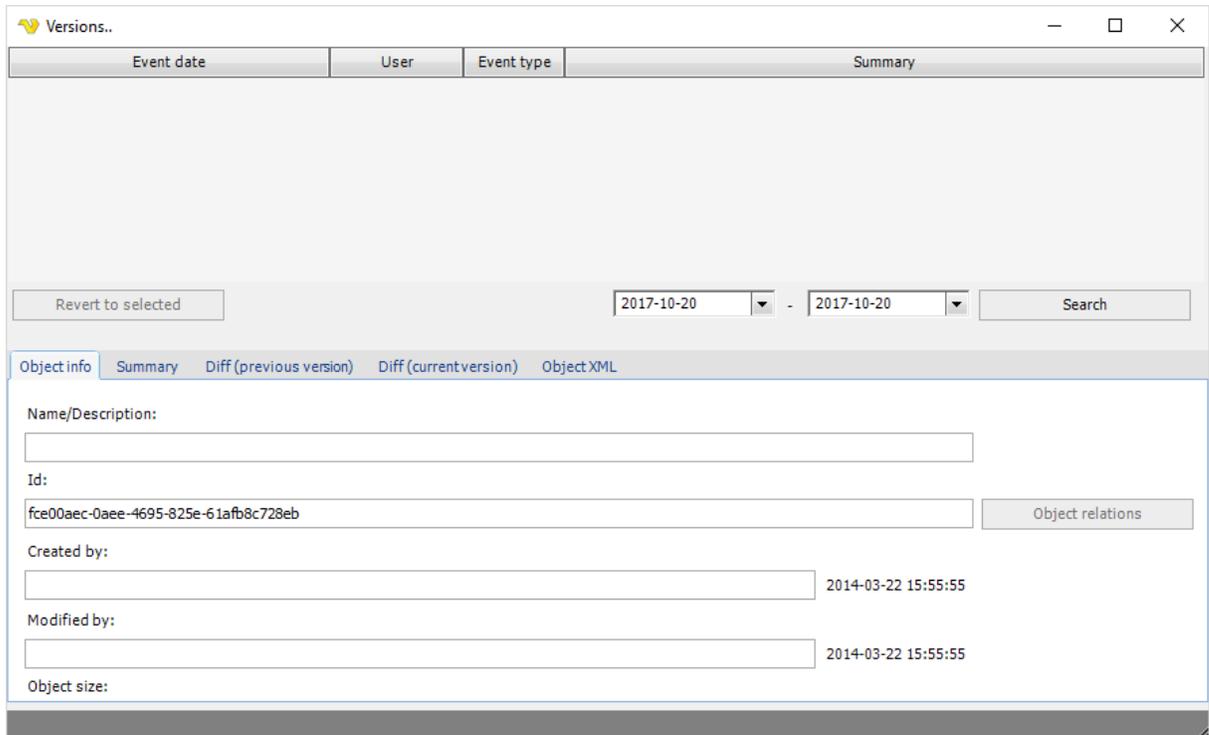


5.3.2.20 Versions

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Version* to open the versions window.

This window uses the same structure as the main menu **Tools > Objects > Audit log > Versions** option. See here for more information.

Job > Versions

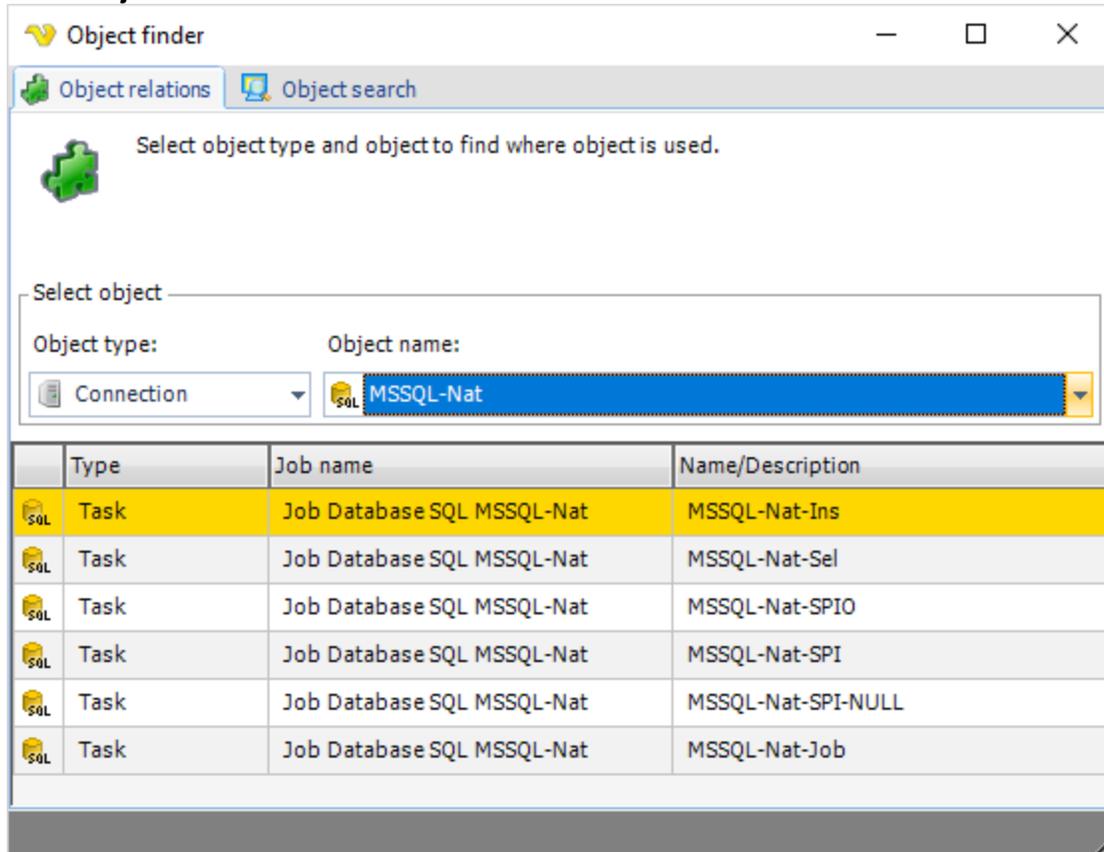


5.3.2.21 Object relations

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Object relations* to open the **Object finder** window.

This **Object relations** tab uses the same structure as the main menu **Tools > Objects > Object relations** option. See here for more information.

Job > Object relations



The **Object finder > Object search** tab, in the above window, opens a window which uses the same structure as the main menu **Tools > Objects > Object search** option. See here for more information.

5.3.2.22 Show Statistics

The Jobs *Show statistics* option lists some basic definition and run information for a Job.

5.3.2.23 Show flow chart

When a Job is defined, right-click on the Job or Task in the Server/Group/Job/Task grid and select *Show flow chart* to open the Flow chart window.

The Flow chart is available the main menu **Tools > Flow chat > Flow chart** option. See here for more information.

5.3.3 Task List

By mouse right-click on a Task, a set of Task options are available. These are similar to, and in some cases identical to, the options that are available for a Job in the Job List sub chapters.

5.4 Status Bar

The status bar is located in the bottom of the client window.

5.4.1 Server Name

The VisualCron **Server: <server name>** that is currently connected to the client. The same name is also displayed in the main menu **Server [<server name>]** tab.

5.4.2 Server Time

The server time label displays the actual time on the server. If you only use VisualCron locally you will not see any difference from your local time. The server time is used by VisualCron for running of Jobs.

The displayed server time is only updated when you log on to the client. If you change the time on the server, it won't be shown in the client until next login. However, this does not affect the running of Jobs.

The format on the server time is based on your regional settings. If you want to change the format you go to *Windows Control Panel -> Regional Settings*. Changes won't take effect until you restart VisualCron.

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6 Debug and Logging

Additional debug entries may be written into the client/server log files or sent by email.

See the following chapters for more information.

6.1 Debug

Settings for debug log entries are found in the main menu *Manage -> Manage server settings -> Log settings* tab.

Additional debug and log information is available for the server and log function.

6.2 Send Email

The main email settings are found in the main menu *Manage -> Manage server settings -> Email settings*. Additional email setting information is available.

For each Job that shall use the Notification email feature, the Notification options are checked for the specific Job/Task in the *Edit/Add Job -> Notifications* or the *Edit/Add Task -> Notifications* tabs.

6.3 Technical information

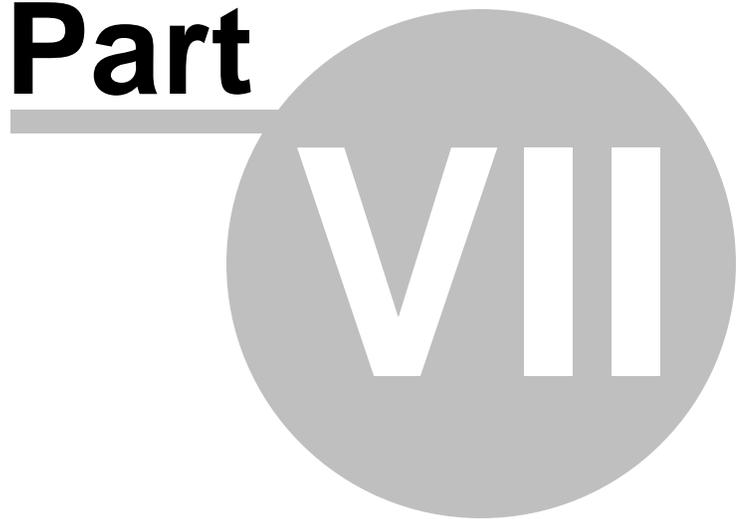
Some important VisualCron related folders and their usage

<u>Folder name</u>	<u>Usage</u>
C:\WINDOWS\system 32\	See remote and customized installation
C:\Program Files\VisualCron\	VisualCron default installation folder
C:\Program Files\VisualCron\backup\VC-Settings.zip	Default file name for exported settings
C:\Program Files\VisualCron\data\triggers\mail\{MailId}\{MailId}.eml	Default file name for a saved email
C:\Program Files\VisualCron\log\	Default log file folder, see settings for more information
C:\Program Files\VisualCron\settings\jobs.xml	Default Job settings file
C:\Program Files\VisualCron\settings\timeexceptions.xml	Default file name for time exceptions
C:\Program Files\VisualCron\settings\users.xml	Default users file name, see "forgot my password" for more information
C:\php\php.exe	Normal PHP file name, see PHP scripting for more information

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7 Security

Many actions has been taken to ensure security. Look at the following chapters to learn more.

7.1 SSL Encryption of Socket

All the information transferred between the client and the server are encrypted in standard 128 bit SSL which makes it "near" impossible to read the information if you "tapped the line".

Optionally can the connection be compressed which increase the security further.

7.2 Important Values are stored Encrypted

Important values like *Username*, *Password* etc. are encrypted by VisualCron with TripleDES ensuring that no one who gets the hands of the files can read and interpret that information.

7.3 Interactive logon

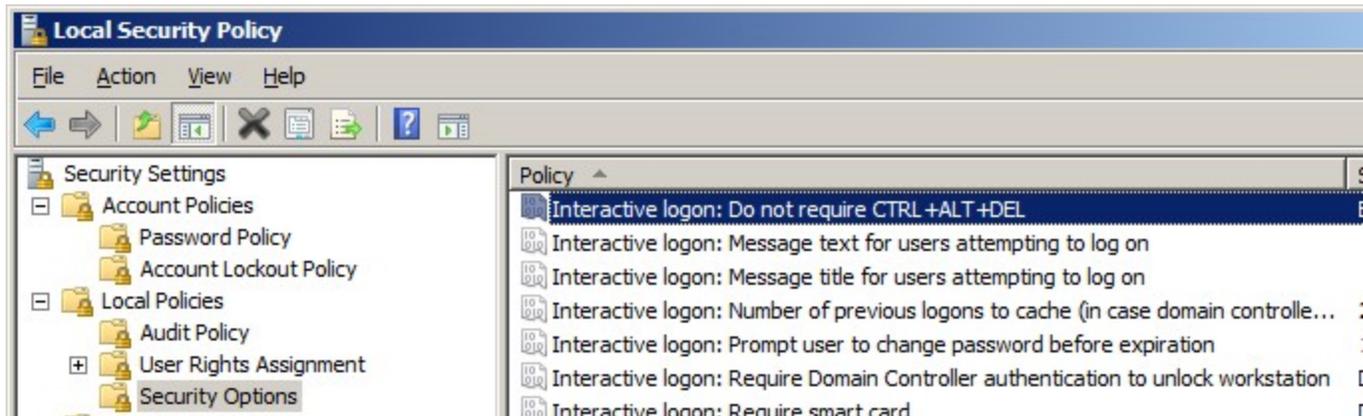
Windows 2008 and later security settings for Credential Provider

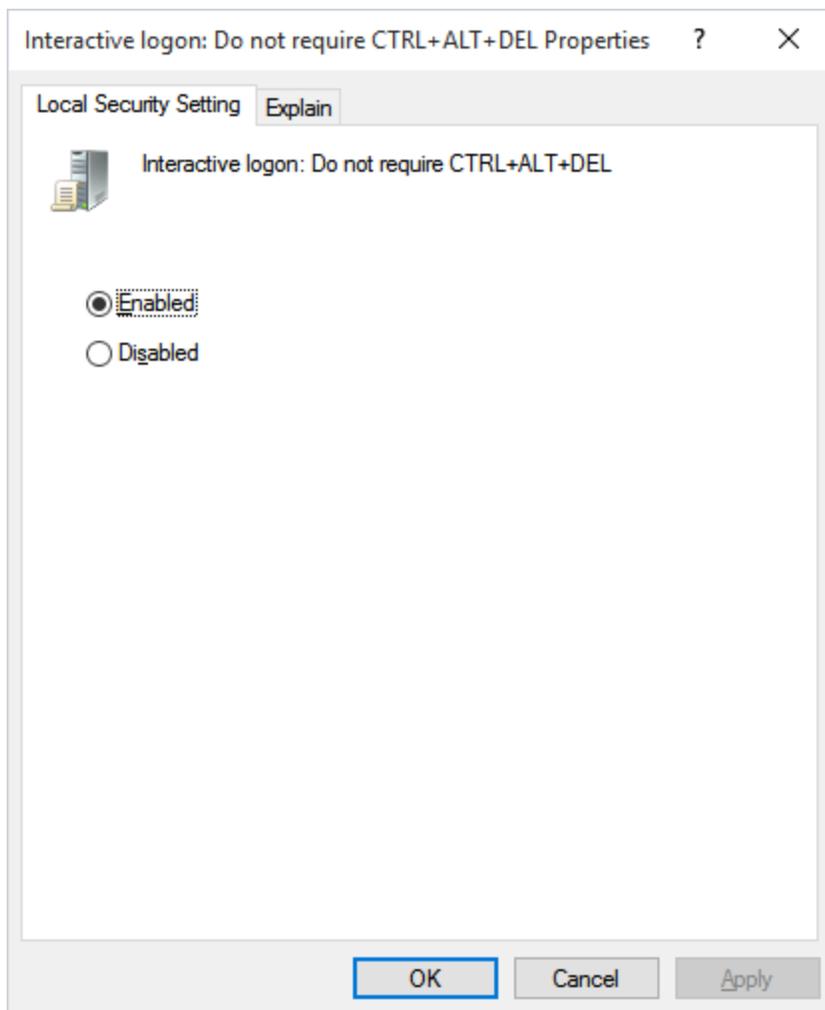
Two security settings are required for "Foreground execution":

1. *Do not require CTRL+ALT+DEL*

To make interactive logon work in Windows 2008 you must disable SAS (Secure Attention Sequence). You do this by opening Administrative tools->Local Security Policy.

In the Local policies you need to enable "Interactive logon: Do not require CTRL+ALT+DEL" as in the image below:





This security setting determines whether pressing CTRL+ALT+DEL is required before a user can log on.

If this policy is enabled on a computer, a user is not required to press CTRL+ALT+DEL to log on. Not having to press CTRL+ALT+DEL leaves users susceptible to attacks that attempt to intercept the users' passwords. Requiring CTRL+ALT+DEL before users log on ensures that users are communicating by means of a trusted path when entering their passwords.

If this policy is disabled, any user is required to press CTRL+ALT+DEL before logging on to Windows.

Default on domain-computers: Enabled: At least Windows 8/Disabled: Windows 7 or earlier.

Default on stand-alone computers: Enabled.

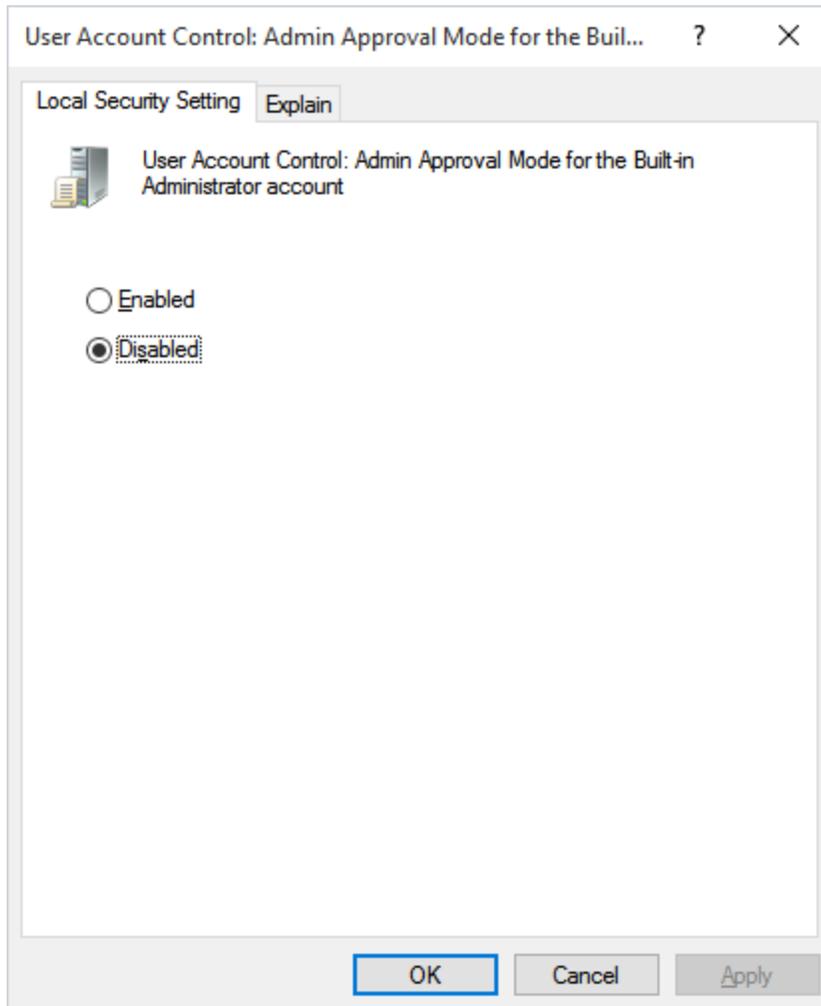
2. User Account Control: Admin Approval Mode for the Built-in Administrator account

To be able to communicate with the Credential Provider you need to disable this setting found in Administrative tools->Local Security Policy->User Account Control: Use Admin Approval Mode for the built-in Administrator account. After applying this setting a reboot of the computer is required.

This policy setting controls the behavior of Admin Approval Mode for the built-in Administrator account.

The options are:

- Enabled: The built-in Administrator account uses Admin Approval Mode. By default, any operation that requires elevation of privilege will prompt the user to approve the operation.
- Disabled: (Default) The built-in Administrator account runs all applications with full administrative privilege.



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8 Commands, scripts and third party tools

VisualCron in itself is quite clean in functionality. VisualCron just executes programs/commands at a given time or at a certain event. In this way there is no limit in how many things VisualCron can do. Any command can be executed that in itself does "anything". Here some utilities are presented, that can be useful for any Job. Some utilities may be developed by neteject.com and some by 3rd parties.

There are different ways to accomplish what you want to do. Most things can be done with any scripting language for example Perl, PHP or VBScript. You can also accomplish a lot with the built in commands in the operating system. Find the way that feels comfortable for you. Look in the examples section for some solutions.

Please submit your favorite command, program, tool or utility via the [contact web page](#). Also, make a suggestion if you have an idea of a useful utility that can't be found elsewhere.

The solutions are divided into the followings parts:

Commands and batch files

These are built in commands in windows. Microsoft has provided a lot of tools for accomplishing different Tasks.

Scripts

With scripts you are more flexible. On Windows we recommend using PHP or VBScript.

Third party tools

This may be utilities written by other companies than neteject.com or Microsoft.

8.1 Commands and batch files

With "commands", Windows commands are addressed. Windows has a lot of commands which are delivered with the operating system. All these can be executed with VisualCron. If you have a set of commands to be executed, then a batch file is recommended.

Windows commands from Microsoft

All Windows commands are described here:

[Windows 2000](#)

[Windows XP Pro](#)

Windows 2000 Resource Kit

Microsoft has written some commands that not are included in the operating system but can be downloaded for free [here](#).

Writing your own batch file

What is a batch file? Read more about it [here](#).

A list of useful batch files can be found [here](#).

8.2 Scripts

By using scripts you can perform almost anything in Windows. There are several scripting languages that you can use, where the most common are:

- VBScript
- PHP
- Perl

All these scripting languages are free to use. Look at the section for each scripting language about how to install and use it with VisualCron.

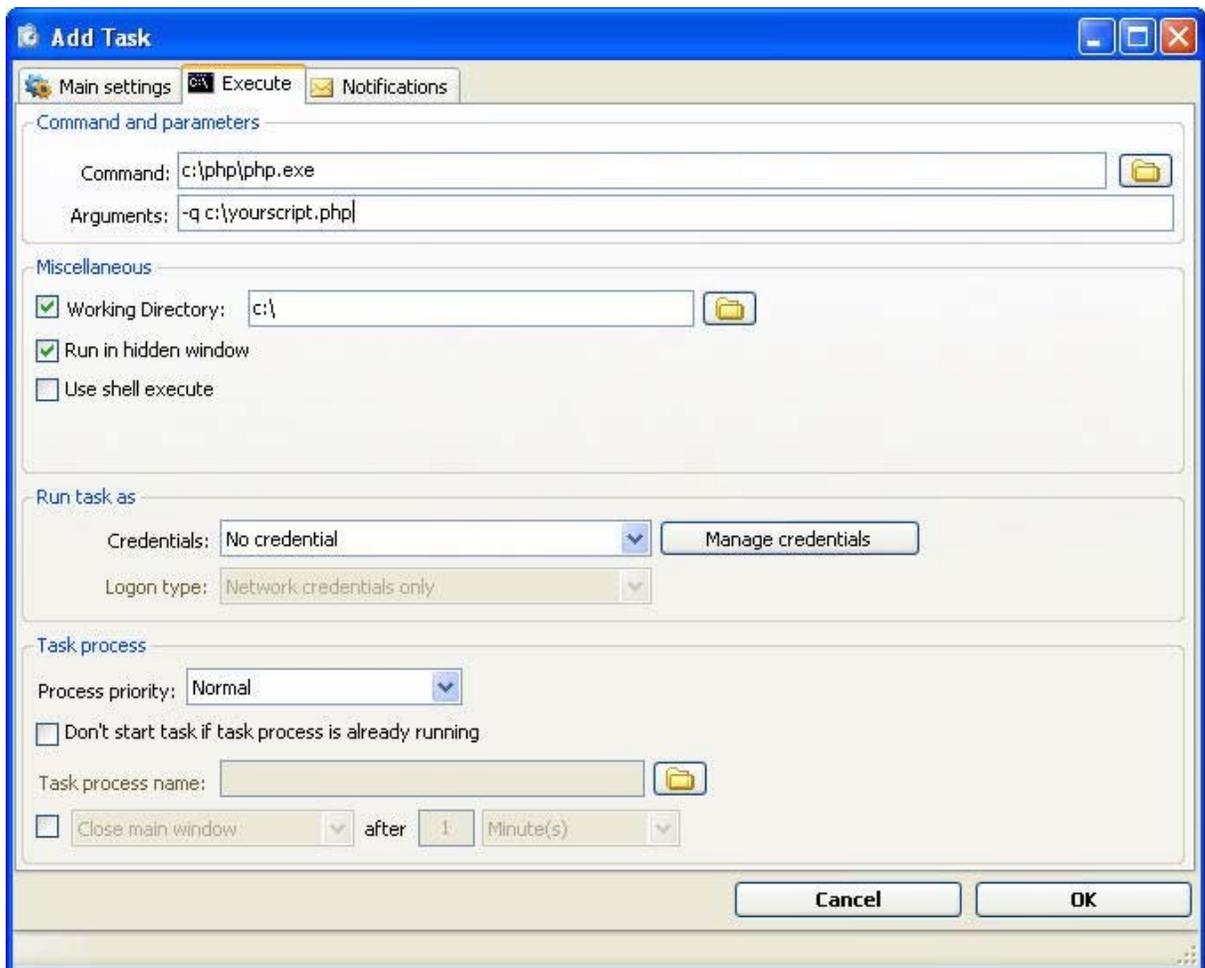
To execute external scripts on another web server, use the Job type "HTTP" to POST or GET to a script on a server. Read more about it [here](#).

8.2.1 Using PHP for scripting

Using PHP to perform Tasks on the computer provides many options. With PHP you can for example connect to different databases, read and process files, send mail, print files etc. PHP is quite easy to learn and is free for download. To read more about PHP and download the package go [here](#).

After installing and configuring PHP in your way, it is easy to call your scripts from VisualCron. In the *Command* field, enter the full path to the php.exe file, normally "C:\php\php.exe". In the *Arguments* field you can enter several parameters to php.exe, for example "-q yourscrip.php". This executes the script in a quiet mode and no window is shown.

Watch out if you use relative links in your script, if you do that you may want to specify a Working directory so that script knows where to find the relative paths.



Example of executing a php-script in VisualCron

8.2.2 Using VBScript for scripting

What is VBScript?

Microsoft Visual Basic Scripting Edition brings active scripting to a wide variety of environments, including Web client scripting in Microsoft Internet Explorer and Web server scripting in Microsoft Internet Information Service.

Easy to Use and Learn

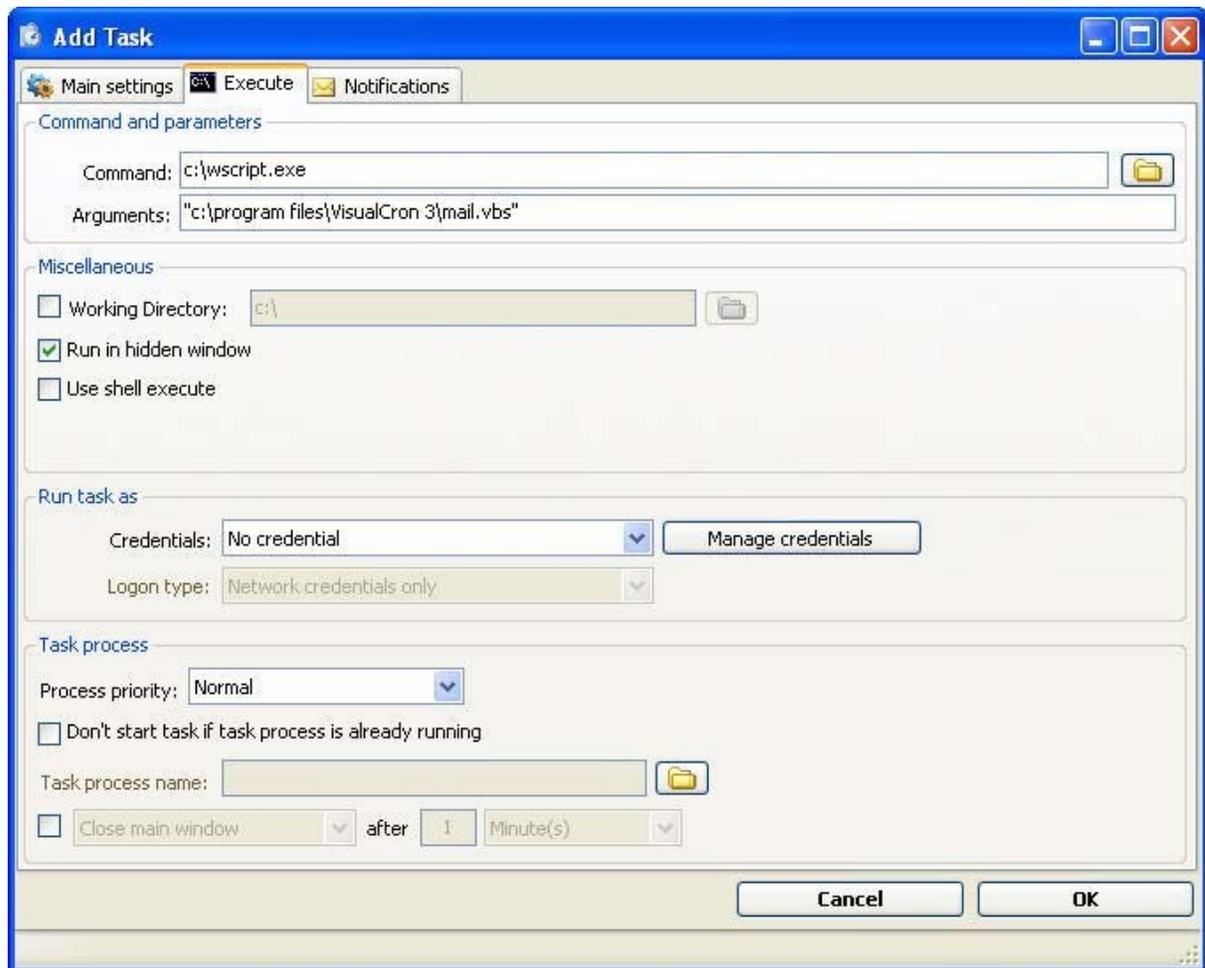
If you already know Visual Basic or Visual Basic for Applications (VBA), VBScript will be very familiar. Even if you do not know Visual Basic, once you learn VBScript, you are on your way to programming with the whole family of Visual Basic languages. Although you can learn about VBScript in just these few Web pages, they do not teach you how to write the code. To learn programming, take a look at Step by Step books available from Microsoft Press.

Windows Script

VBScript talks to host applications using Windows Script. With Windows Script, browsers and other host applications do not require special integration code for each scripting component. Windows Script enables a host to compile scripts, obtain and call entry points, and manage the namespace available to the developer. With Windows Script, language vendors can create standard language run-time modules for scripting. Microsoft will provide run-time support for VBScript. Microsoft is working with various Internet groups to define the Windows Script standard in order to make scripting engines interchangeable. Windows Script is used in Microsoft® Internet Explorer and in Microsoft® Internet Information Service.

Using VBScript in VisualCron

To execute VBScript from VisualCron you specify "wscript.exe" in the *Command* field. In the *Arguments* field you specify the full path to your script, for example "C:\myscripts\dosomething.vbs".



Example of executing .vbs script in VisualCron

8.3 Third-party tools

You can use VisualCron to run and control any other program. For example can you start a backup program at a certain time. Another example is to use VisualCron to record radio shows at certain times.

If you have any good program/utility that you use with VisualCron then please use the [contact web page](#) and tell us about it!

8.3.1 NirCmd

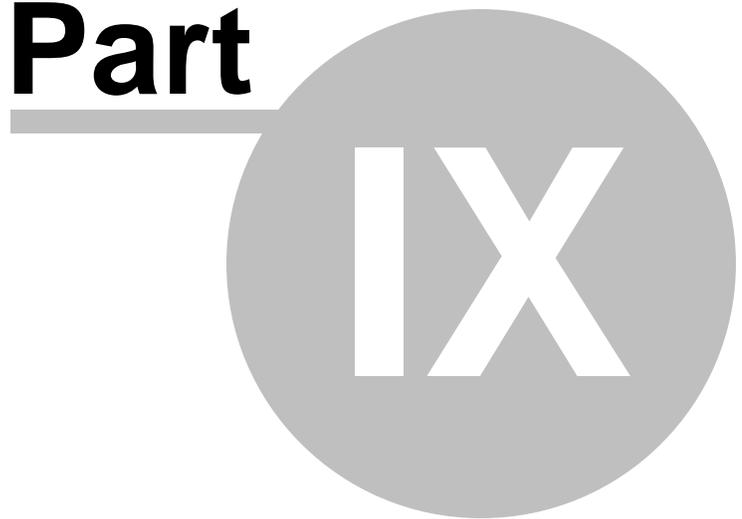
NirCmd is a small command line utility that allows you to do some useful Tasks without displaying any user interface. By running NirCmd with a simple command line option, you can write and delete values and keys in the Registry, write values into a INI file, dial to your internet account or connect to a VPN network, restart windows or shut down the computer, create shortcut to a file, change the created/modified date of a file, change your display settings, turn off your monitor, open the door of your CD-ROM drive, and more.

NirCmd can be found [here](#).

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9 FAQ

If you want to know more about VisualCron or encounter any problem, please consult the listed questions/answers and read this manual.

9.1 How do I install VisualCron? / Upgrade procedure

Download the latest revision of VisualCron to your desktop.

I do not have VisualCron installed

1. Double-click on the install icon.
2. Click on Next
3. Accept agreement
4. Choose whether you want to install the Client only or the Server (you need the Server on the machine you want to run Tasks on)
5. Click Next until the install finishes

I already have VisualCron installed

1. Stop the Server by clicking on Stop in the main window.
2. Make sure that no Jobs are currently running.
3. As a precaution you can backup your Jobs before upgrading. Choose Export in main menu and store backup in a safe place.
4. Close the Client.
5. Uninstall the current version by choosing Uninstall from Start menu->VisualCron or from Control panel->Add/Remove programs
6. Double-click on the install icon on the downloaded setup
7. Click on Next
8. Accept agreement
9. Choose whether you want to install the Client only or the Server (you need the Server on the machine you want to run Tasks on)
10. Click Next until the install finishes

VisualCron is now installed and you can start it by clicking on the desktop icon or from the folder VisualCron in the Windows start menu.

NOTE: If any upgrade procedure fails with an error then please examine this help.

9.2 Why is VisualCron using so much memory?

VisualCron is written in a .NET-language. Programs, which run under the .NET Framework have different memory handling. The memory handling is called Garbage Collection and it's handled automatically by the .NET Framework. When starting a .NET-application, the .NET-Framework allocates some memory, often more than needed. Memory is automatically freed when no longer needed by the application. Freeing memory takes system resources and is nothing that you want to do all the time.

Often only memory is freed when it's really needed. This may result in that a .NET application may appear to use more resources than it really do. The bottom line is that you don't have to worry about this as long as an application does not increase in memory in regular intervals - then it may be a problem (memory leak).

9.3 Why is the installation file so big?

The installation package may be quite big if you download the package with the .NET Framework included. This is because the .NET Framework package is about 24 MB by itself.

The .NET Framework package is included in XP SP2 and can be found as a separate update at Windows Update.

9.4 Why is VisualCron not free anymore?

A lot of resources and time has been spent on developing functionality that the users of VisualCron have requested. The producer of VisualCron, neteject.com, considers that the increased user value implies charging.

9.5 Why does my firewall warn/Why does VisualCron try to access the Internet?

At startup, VisualCron will try to check for new updates. To do this VisualCron needs to access the Internet. In this way you will be notified of the latest changes when a new version is released. If you don't want use this feature you can uncheck this option in the settings-dialog.

Also, from VisualCron version 2.0.0 and up, VisualCron needs to access the Internet in the following cases:

- When VisualCron is installed
- When trying to connect to a remote VisualCron server
- When trying the register name and email for newsletter

If you have a firewall application running, you should respond with "Allow connections on all ports, everytime".

9.6 Why does add/edit/delete takes some time to appear in job list?

When your are adding/editing/deleting a Job you are also communicating with the server. To be sure that you, and everyone else connected to the server has the same information, all information has to go through the server and then back to your and other clients. Depending how fast your computer is, the speed of the connection and how busy your computer is, this action can take a moment.

9.7 How can I support VisualCron?

To be able to continue the VisualCron development, we need your support in different ways.

- We need your feedback on the current functions
- We need your bug reports
- We need to know how you want to use VisualCron

If you think you can help, send this information in the [contact web page](#).

9.8 How do I move a license? / Activate VisualCron on a new server

If you already have activated VisualCron on one server you must de-activate your old install first before being able to activate on a new server.

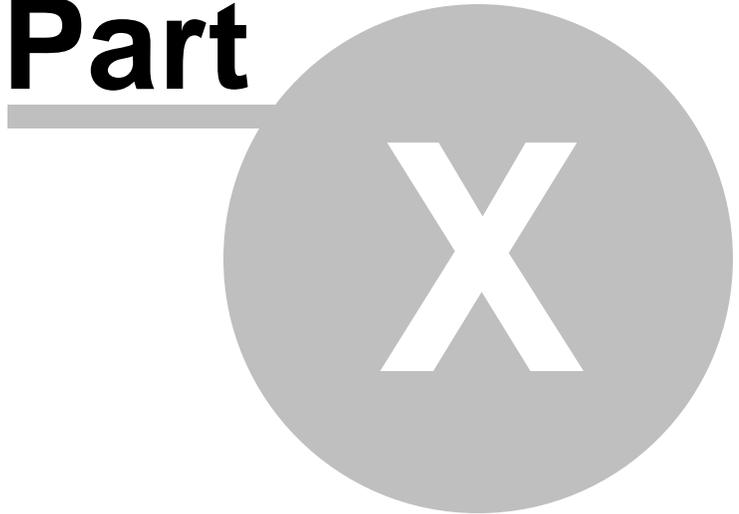
To deactivate your old license you need to:

1. Connect to the Server with the Client
2. Choose Deactivate/move your license in the About menu
3. Install VisualCron on the new server
4. Activate your license on the new server

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10 Examples

In the following chapters, some user set-up examples are provided.

10.1 Setting a job to run every second minute or 5 minutes

To set something to run every second minute you go to *Add/Edit Job -> Time settings -> Minute*.

If you want it to run every second minute you must have 1 minute between each execute. You can then for example choose minutes 0, 2, 4, 6, 8, 10, 12 and so on up to 58.

If you want to run every 5 minute you choose 0, 5, 10, 15, 20 and so on up to 55. Remember, if you want to do this every hour, you must also choose Every hour.

10.2 Using arguments/parameters for a job

As VisualCron separates the executable file and the arguments (e.g. command line parameters for a batch file), all arguments are entered in the argument field. You don't need to start with a space character.

[Here](#) is one example which shows you how to run .vbs files.

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XI

11 Troubleshooting

In the following chapters, some troubleshooting hints are provided.

11.1 My job does not run!

If your Job does not run then check this list, in the following order:

1. Is the Job active? If the icon for the Job in the Job list is red, then right click on the row and select *Activate*.
2. Is the VisualCron Server "On"? If the Start/Stop toolbar icon shows *Start*, click on the icon/button to *Start* the server.
3. Can you run the Job manually? Right click on the Job and select *Run Job*. If it does run then look at the time settings. What does next run say? Alter your time settings. If your Job does not run when you select *Run Job* then the command line or parameters might be wrong, please check.
4. Log in the server log and the output column if the Task. Perhaps you can find the error there.
5. Is your command and argument correct? You need to separate the argument from the command in the two fields. You can not write "C:\php\php.exe -q myscript.php" in the command line, in this case the command line must be "C:\php\php.exe" and the argument "-q myscript.php".

You can turn on debug for the server, see show log and log to file for more information. Run the Job manually again and then open the log file. Open the log file with the corresponding date. This log file may say something about the error. If you believe that the error is in VisualCron itself then send the log file to support@visualcron.com. Remember to turn debug off after turning it on because an activated debug option slows down VisualCron.

11.2 I can't start VisualCron!

Please use the [contact web page](#) to describe the problem in more detail.

Include the following information:

- operating system
- Any error message you receive
- How far it goes. Do you see the login screen, anything else?

11.3 I can't connect to the VisualCron server!

Please check the following:

- Is the port and address correct?
- Open the Windows *Control Panel* -> *Administrative Tools* -> *Services*. In the list of services, locate VisualCron Service. Is the "VisualCron Service" started?
- Do you receive any error message? Please report it on the [contact web page](#).

The server log file says: Error at clientthread: System.ComponentModel.Win32Exception: The credentials supplied to the package were not recognized

The certificate that VisualCron uses has probably been changed, removed or other security setting has changed in the system. Perform these steps to restore to original state:

1. Download VCCertCleaner
2. Run VCCertCleaner and click on "Clean". A message box shows "Done!". Close the program
3. Go to *Control Panel* -> *Administrative tools* -> *Services* and stop the VisualCron service. Wait a few seconds and then start it again
4. Try to connect again

11.4 I have forgot my password to the server!

The password is located at the computer where the VisualCron Server is installed.

- Exit the VisualCron client
- On the computer where the VisualCron server is installed, open the Windows *Control Panel* -> *Administrative Tools* -> *Services*. Mark the "VisualCron Service" in the list, right click and select "Stop service"
- Delete the file called "users.xml". By default, the file is installed in the "C:\Program\VisualCron\settings" folder
- Go back to the Services window and select "Start service" for the "VisualCron Service"
- Start the VisualCron Client. Login with username "admin" and a blank/empty password. Remember to update the username and password when you have logged in

11.5 VisualCron error: Missing system file perfc009.dat

The error behind this message is: System.InvalidOperationException: Process performance counter is disabled, so the requested operation cannot be performed.

Probably has a third party application deleted an important system file called perfc009.dat. Just download it from here and extract with WinZip it to your system32 directory (normally "C:\WINDOWS\system32\"), then start VisualCron again.

Also, check that you have read access to the following key:
HKEY_LOCAL_MACHINE\Software\Microsoft\Windows NT\CurrentVersion\Perflib\009

11.6 I am getting errors when trying to open the VisualCron documentation

If you get error "**No application is associated with the specified file for this operation**" you probably not have Adobe Acrobat reader installed.

You can obtain and install it for free here: <http://www.adobe.com/products/acrobat/readstep2.html>

11.7 I can't download VisualCron!

Please use the VisualCron support [contact web page](#).

11.8 I am getting errors on Windows 98/ME, what can I do?

Generally, VisualCron 2.0.0 or later isn't supported in the Windows 98/ME environments. We use this statement because VisualCron 2.0.0 or later is not tested in these environments as VisualCron 1.6.0 was.

VisualCron may run correctly also in the Windows 98/ME environments. However, no support from neteject.com will be provided.

11.9 VisualCron client timeouts when connecting

Problem 1: This can happen when you have stopped or started the VisualCron service manually or installed a new version. If VisualCron has started a Job before you did this and the Job is still running, then VisualCron still has a connection to that Job.

Exit the running Job. On the computer where the VisualCron server is installed, open the Windows *Control Panel -> Administrative Tools -> Services*. Mark the "VisualCron Service" in the list, right click and select "Restart service".

Problem 2: This can also happen if the default port 16444 is already used by the client or it could be any else reason.

To determine this you have to stop the VisualCron service in *Control Panel -> Administrative Tools -> Services*. Locate the *server_settings.xml* located in *c:\program files\VisualCron\settings*. Open the file with notepad and change Debug to "True" instead of "False". Start the VisualCron *service* and try to login. Locate the log file in *C:\Program files\VisualCron\log* named *log_serverXXXXXX.txt* (current date) and send it to support.

11.10 My Windows command does not execute correctly, why?

Perhaps your program/Job is running when you double click it but not in VisualCron. Remember that commands in VisualCron are executed under the SYSTEM account, by default, which uses another environment than the ordinary user. When you double click on your command you execute it as the logged in user.

To produce the same result in VisualCron you need to connect a user to that Task. A user consists of a username, password and a domain/computer name - this is called a credential in VisualCron. Credentials can be centrally managed in VisualCron. You can add new credentials by choosing "Manage credentials" from the main menu. Be sure to have the right casing as it is case sensitive. Enter the username, password and computer name that you normally use when you execute this command or create a new account in the Control Panel.

To connect the added credential you edit your Task and select the credential (in the select box) in the add Task window. Try to execute again. Please contact support if you need further assistance.

Other problems that may appear:

You can't for example write "ftp.exe" as command line if you don't setup the environment for that.

Solution 1: point directly to the file, like *C:\WINDOWS\system32\ftp.exe* in the command line.

Solution 2: use *C:\WINDOWS\system32* as Working Directory and *ftp.exe* in the command line.

Solution 3: activate *Use shell execute* in the Task Execute settings. However, when using this option you can't redirect output.

Solution 1 or 2 are the recommended solutions.

11.11 My settings doesn't seem to work

A Job definition can be quite complex with triggers, Tasks, notifications etc. All setting windows have to be accepted (OK) and closed before a Job is scheduled correctly.

11.12 I am getting errors when trying to open a external link from VisualCron

You are getting this error because you have Firefox as a default browser. The Firefox version you are using is an old version that contains a bug which produces this error. Please upgrade your browser at: <http://www.firefox2.com/>

Related errors:

- System.Diagnostics.Process.StartWithShellExecuteEx
- System.ComponentModel.Win32Exception

11.13 I am getting installation errors

If you get installation errors then please:

1. Place the VisualCron.msi file in C:\
2. Open a command window and go to C:\
3. Enter the following text: "msiexec /i VisualCron.msi /log log.txt"
4. Please send the log.txt file using the [contact web page](#)

11.14 WMI is broken - setup fails

VisualCron is dependant on WMI and WMI needs to be fully working at the server side of VisualCron.

WMI, or Windows Management Instrumentation, is a Microsoft Windows component that publishes information about system objects. It's commonly used to perform Tasks like gathering statistics about system behavior or retrieving meta data about the computer or its applications (such as reading system logs, obtaining or modifying Registry values, manipulating remote desktops, and so on).

Unfortunately, it's easy for WMI to become damaged, and if that happens, the system may begin behaving very strangely. You may start seeing errors, some of them with the notice "Windows Management Instrumentation might be corrupted." (That message usually occurs if you're trying to edit WMI properties.)

One quick way to find out if WMI is broken is to enter wmicmgmt.msc into the Start | Run box. This launches the WMI Management Infrastructure console, and if you get an error doing this, odds are WMI is broken.

If WMI is broken, how can it be fixed? The only Microsoft-endorsed way to repair WMI is to reinstall Windows. But for most of us, that isn't a practical approach. Another method is to force WMI to repair itself. Of all the WMI repair techniques I've seen, this five-step approach seems to work the best. (However, it may not work on all systems.)

1. At the command line, type net stop winmgmt. You may get a warning that other services need to be stopped as well; type Y and continue
2. Open Explorer and go to the folder called %SystemRoot%\System32\WBEM\Repository
3. Delete that folder and everything in it
4. Reboot the system normally
5. On the next login, open a command prompt and type the following commands in this order:
winmgmt /clearadap winmgmt /kill winmgmt /unregserver winmgmt /regserver winmgmt /resyncperf

This procedure will force the WINMGMT service to re-register itself as well, although, if WMI is damaged, re-registering can be a problem. If this approach does not work, an in-place upgrade (i.e., a reinstall) might be required.

11.15 The VisualCron service does not start automatically

Cause

This issue may occur if the VisualCron Server service times out before it starts successfully. This issue is more likely to occur if your computer is heavily loaded.

Resolution

Warning - If you use Registry Editor incorrectly, you may cause serious problems that may require you to reinstall your operating system. Microsoft cannot guarantee that you can solve problems that result from using Registry Editor incorrectly. Use Registry Editor at your own risk.

To resolve this issue, increase the time-out value for service startup process. When you increase this value, the VisualCron Server service has more time to load when the computer starts. To increase the service startup time, create the following registry entry: Subkey: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control Name: ServicesPipeTimeout Type: REG_DWORD Data: The number of milliseconds that you want to give the services to start in Typically, a data value of 45,000 is sufficient to keep the service from timing out. However, you can reduce or increase this value according to your specific startup requirements. For example, to use a time-out value of 60 seconds, assign a data value of 60,000 to the ServicesPipeTimeout registry entry. A larger data value does not decrease your computer's performance.

To create this registry entry, follow these steps:

1. Click Start, click Run, type regedit, and then click OK
2. Locate and then click the following registry subkey:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control
3. Right-click Control, point to New, and then click DWORD Value
4. In the New Value #1 box, type ServicesPipeTimeout, and then press ENTER
5. Right-click ServicesPipeTimeout, and then click Modify
6. Click Decimal, type the number of milliseconds that you want to wait until the service times out, and then click OK. For example, to wait 60 seconds before the service times out, type 60000
7. Quit Registry Editor, and then restart the computer

11.16 Upgrade/Setup fails

When you are doing an upgrade the previous version is first uninstalled and then the new version is installed. If something should go wrong here you can end up with the error messages that says "The specified service does not exist as an installed service.". In this case you get nowhere because the program is installed but the service for VisualCron is not. The solution for this are the following steps (your settings will remain):

1. Download and install Microsoft Cleanup Utility from this page: <http://support.microsoft.com/kb/290301>
2. Run the "Windows Install Clean Up" that was installed
3. Locate VisualCron in the list and click on *Remove*
4. Remove all files in the VisualCron main folder but keep all sub folders (and their content)
5. Install the latest version VisualCron again

11.17 System.NotSupportedException: The server mode SSL must use a certificate

If you get this error in the log file you are missing some security pack from Microsoft. Please perform all updates available on Windows Update.

11.18 Error 114 in SFTP task

If you get error 114 in the SFTP Task you have not enabled password authentication at your SFTP server. Edit the configuration file and set:

```
passwordauthentication no
```

```
to
```

passwordauthentication yes

11.19 Uninstall fails - can't find package VisualCron.msi

Try uninstalling from Add/Remove programs instead of the Uninstall link at the Start menu.

11.20 File not found / access denied

If you are working with files you may get the above error. Normally when you know a file is there but VisualCron can't find the reason is probably a permission error. What is important to know is that, if you use background execution, everything is being run from the Windows service. The Windows service is normally running as the LOCALSYSTEM user account.

Normally, the LOCALSYSTEM account has no network access and might be restricted to certain private folders. There are a couple of ways to come around this:

1. Add a credential to the Task. With a Credential VisualCron can impersonate as another user. Normally you should create the same Credential as you are logged in as.
2. Change the username of the Service. Even though you can do this we do recommend that you add the Credential instead.

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XII

12 Definitions

In the following chapters, you'll find descriptions of definitions that are used in the VisualCron application and in this manual.

12.1 General

Here you will find acronyms and descriptions of general computer terms:

Client/Server - Client/server describes the relationship between two computer programs in which one program, the client, makes a service request from another program, the server, which fulfills the request. Although the client/server idea can be used by programs within a single computer, it is a more important idea in a network.

FTP - File Transfer Protocol. A commonly used protocol for exchanging files over any network that supports the TCP/IP protocol (such as the Internet or an intranet).

GUI - Graphical User Interface. An interface that has pictures as well as words on the screen. With windows, icons, pull-down menus, and the mouse, the graphical user interface is easier to learn and work with.

HTTP - HyperText Transfer Protocol. The protocol most often used to transfer information from World Wide Web servers to browsers, which is why Web addresses begin with http://. Also called Hypertext Transport Protocol.

ISP - Internet Service Provider. An organization that offers users access to the Internet and related services.

PHP - PHP: Hypertext Preprocessor. An open source, reflective programming language.

SMTP - Simple Mail Transfer Protocol. The de facto standard for e-mail transmissions across the Internet.

Socket - One endpoint of a two-way communication link between two programs running on the network. A socket is bound to a port number so that the TCP layer can identify the application that data is destined to be sent.

SQL - Structured Query Language. The most popular computer language used to create, modify, retrieve and manipulate data from relational database management systems.

TCP - Transmission Control Protocol. Transport layer protocol (L4) that is one of the core protocols of the Internet protocol suite.

Tread - A part of a program that can execute independently of other parts. Operating systems that support multithreading enable programmers to design programs whose threaded parts can execute concurrently.

VB - Visual Basic. A computer programming language from Microsoft.

WAV - Or WAVE), short for Waveform audio format, is a Microsoft and IBM audio file format standard for storing audio on PCs.

WMI - Windows Management Instrumentation. In Microsoft Windows operating systems, a set of extensions to the Windows Driver Model.

12.2 VisualCron specific

Some expressions are VisualCron specific:

Grid - The larger area in the VisualCron client window in which all Servers/Jobs/Tasks are visualized with basic data and their relationship to each other.

Notification - A notification is a way to deliver a result for a Job or Task.

Run (Job) - When the server time matches the Job time setting, a Job is run by VisualCron. Depending on Job type, different actions are performed (e.g. an application is executed).

Server status - The "On"/"Off" status of the VisualCron server.

Service status - The "Started"/"Stopped" status of the VisualCron server service.

Task type - Different type of activities that VisualCron can initiate. The *Task type* is a main setting in the *Add Job/Edit Job -> Tasks -> Add/Edit* dialog.

12.3 Documentation format

In this documentation, the following format conventions are used:

visualcron.com	Link to a web page or a documentation chapter
<i>Italics</i>	Menu item, button or parameter name referring to the client user interface
Bold	Text paragraph name, note or defined word/expression
<i>Bold/Italics</i>	Tab name
"value"	Specific expression, parameter value, path or file name
<name>	Placeholder for a specific set of names
->	Used for description of menu navigation, e.g. main menu Server -> <i>Settings</i> -> <i>Main settings</i>

Endnotes 2... (after index)

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