XIA Automation Administrator's Guide

Version: 6.0

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XIA Automation Server

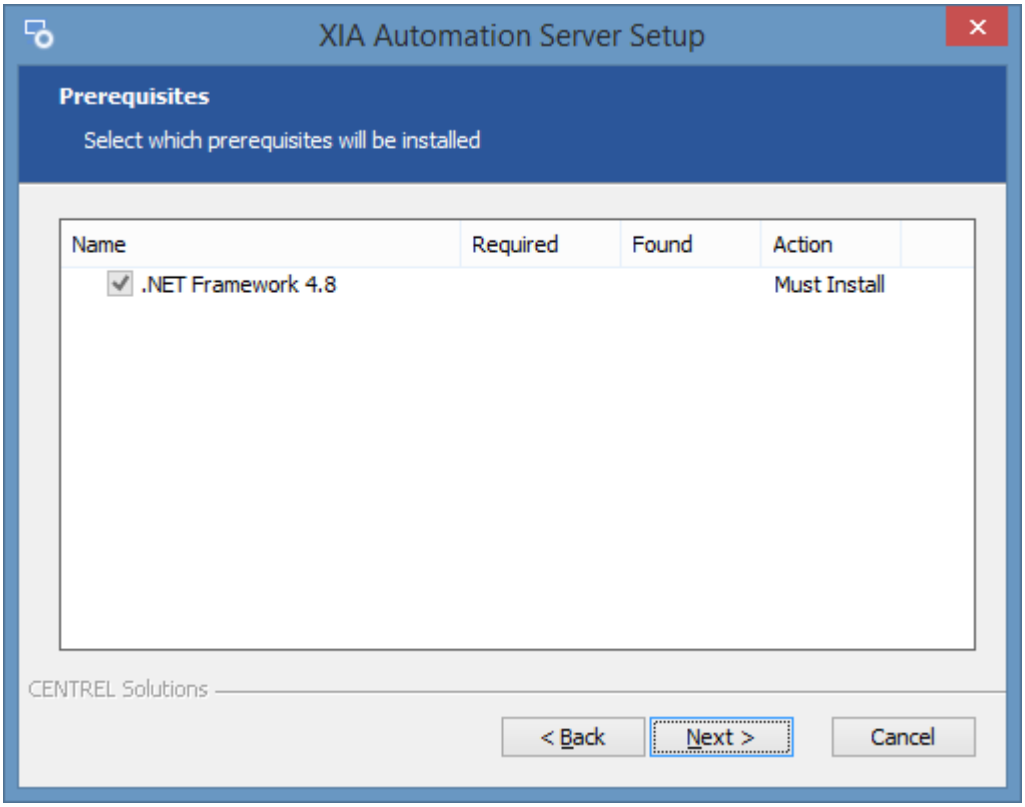
XIA Automation Server is a network task automation tool which helps you automate away common IT management and network tasks.

Installation

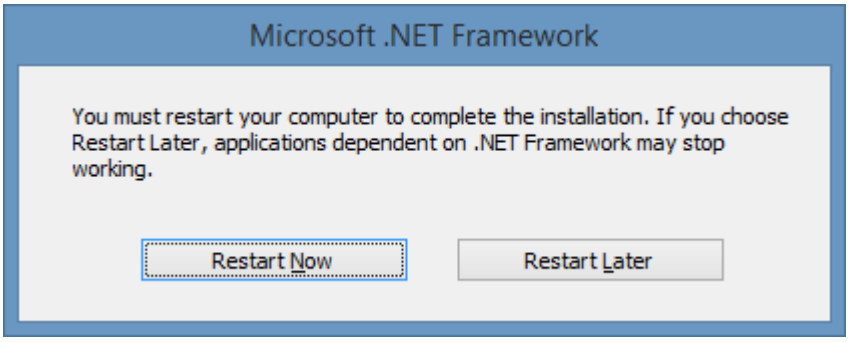
This section describes the installation process of XIA Automation Server. For information about the removal of the product, see the uninstallation section.

- Check that the system you are installing on meets the server requirements.
- Check that the system you are installing on has a full system backup.
- Download the latest installation package.
- Ensure you have an appropriate license file, or request a trial license.
- Review the roles and features that will be automatically installed.
- Start the installer
- If the .NET Framework 4.8 is not installed and is not available as a Windows feature the *Prerequisites Setup Wizard* will be displayed.

- You will be prompted to install the .NET Framework 4.8 if required.

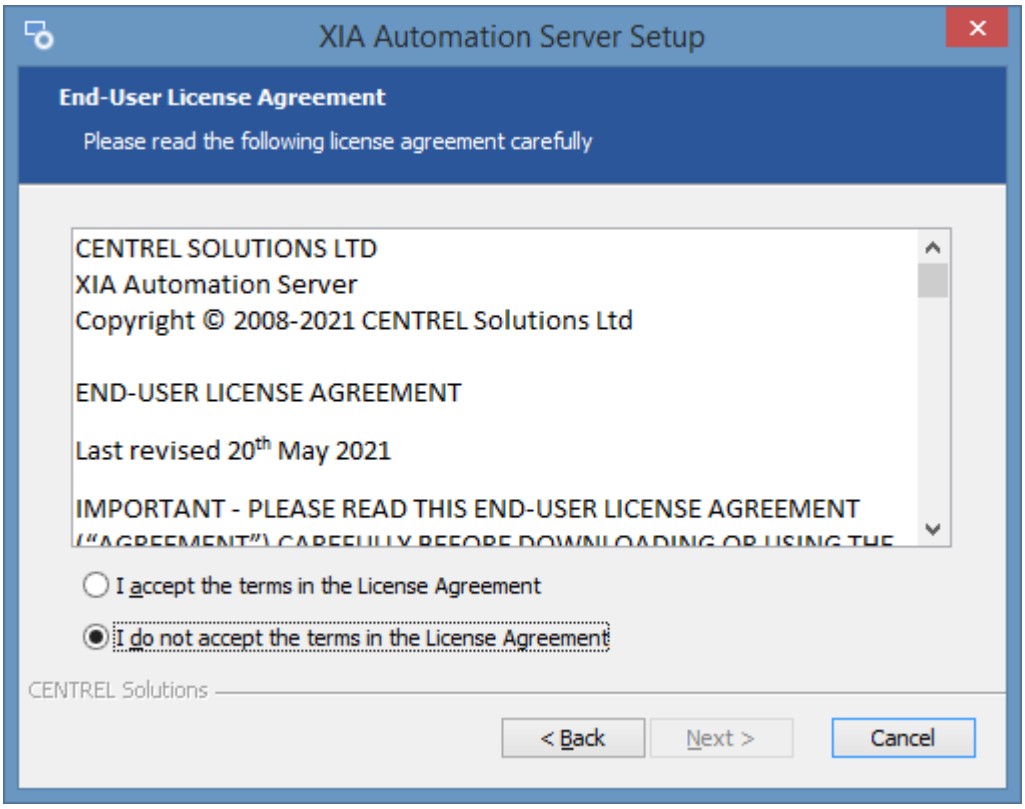


- If required the .NET Framework 4.8 will be installed and a log file created for the installation.
- You may be required to reboot to continue the installation. The installation will resume automatically after logging in following the reboot.

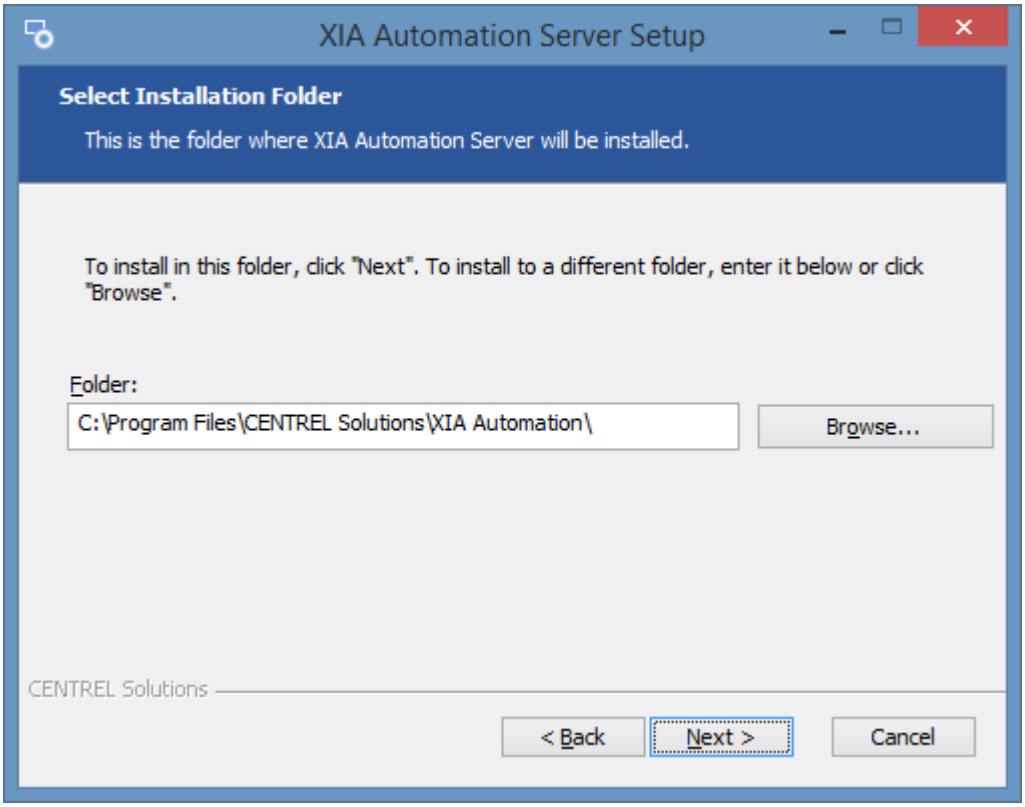


- The main installation screen will be displayed.

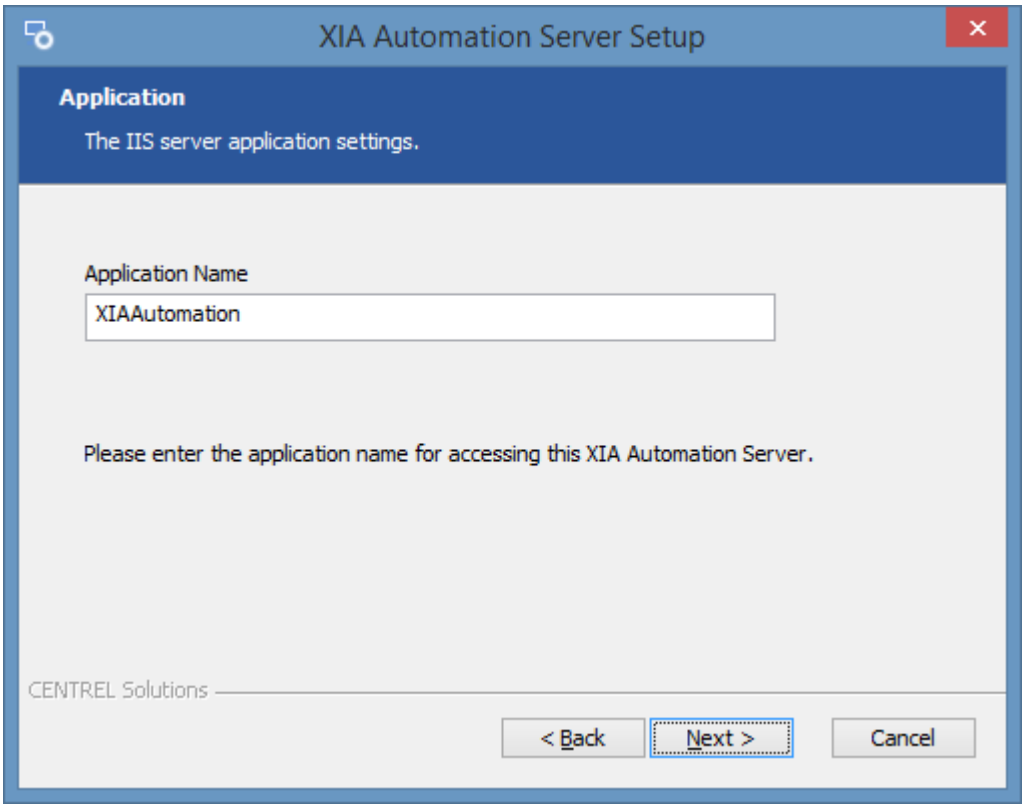
- Review the end user license agreement (EULA) and only accept if you agree to the terms. If you do not accept the terms of the agreement please cancel the installation.



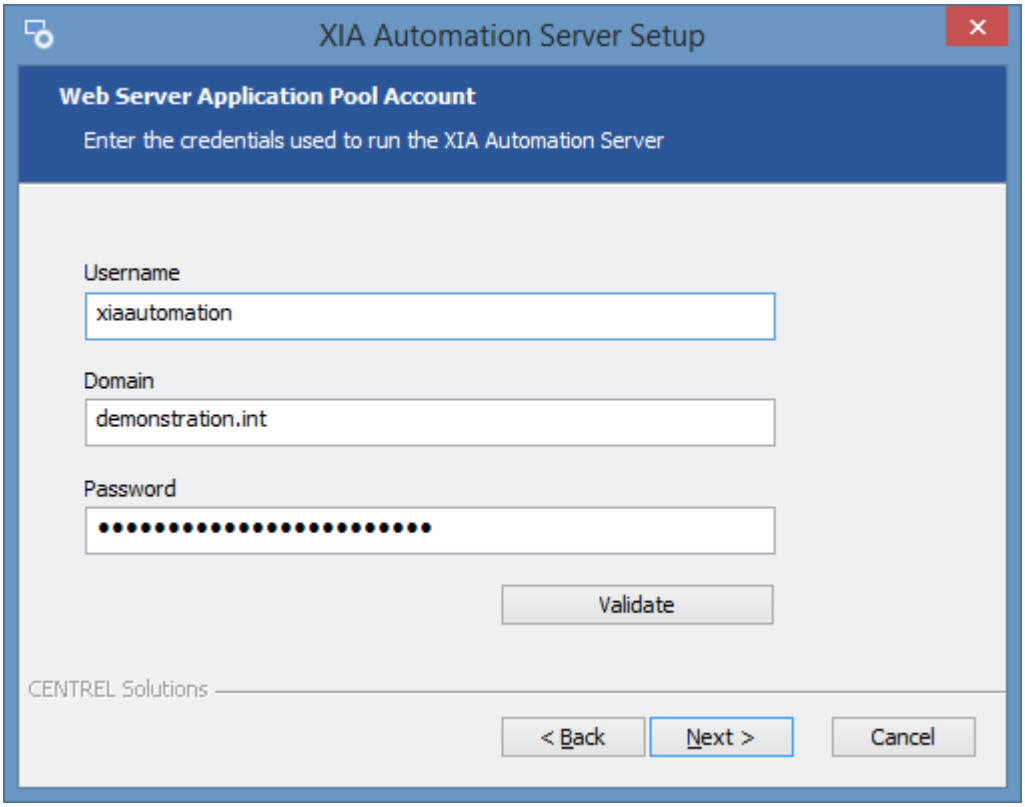
- Select the directory into which XIA Automation Server should be installed and click *Next*.



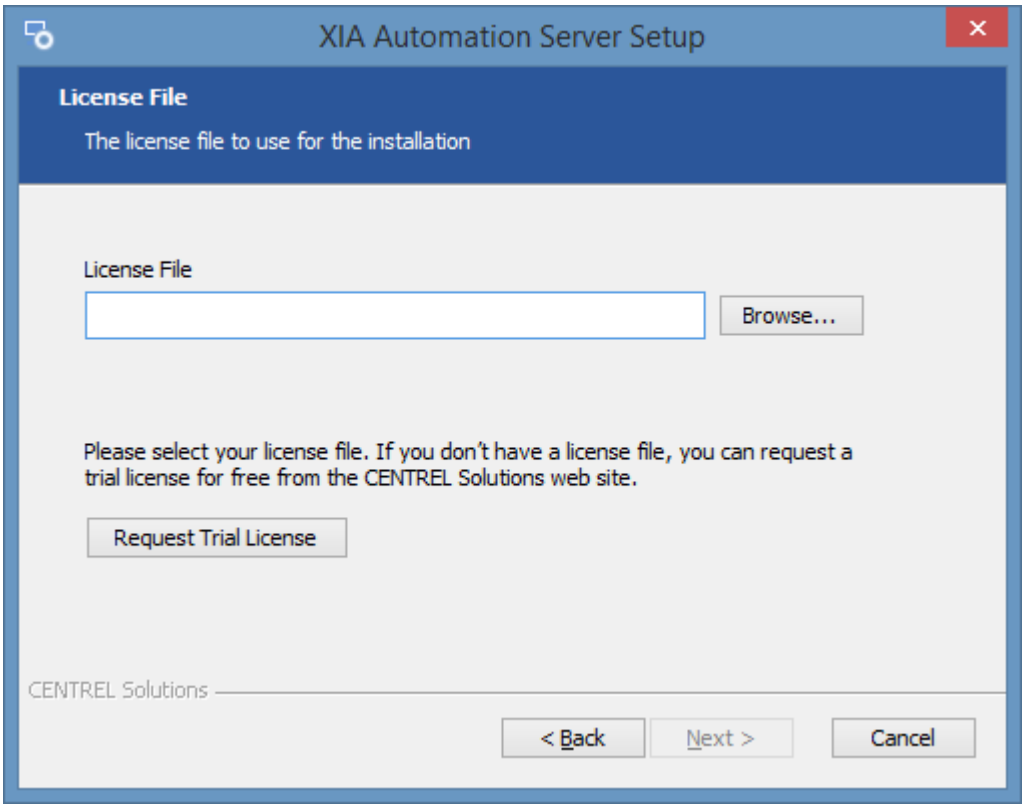
- Enter the application name, this is used to form the URL at which XIA Automation Server can be accessed and click *Next*.



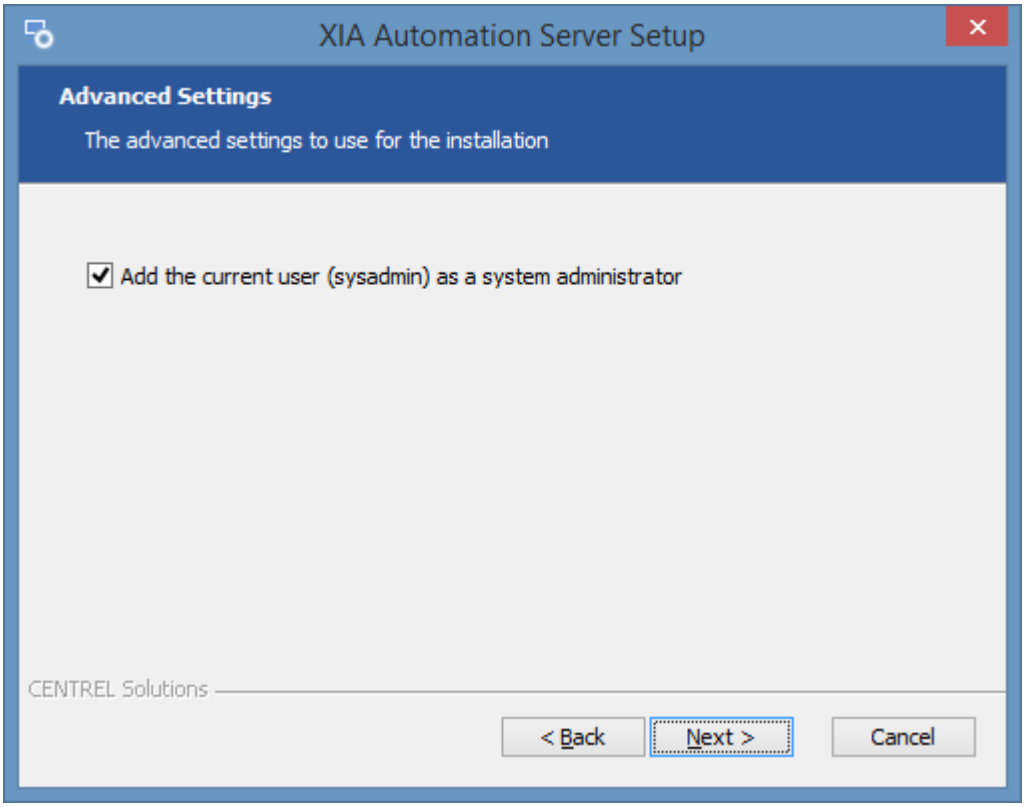
- Enter the credentials for the web server application pool account and click *Validate* to validate the account, and then click *Next*.



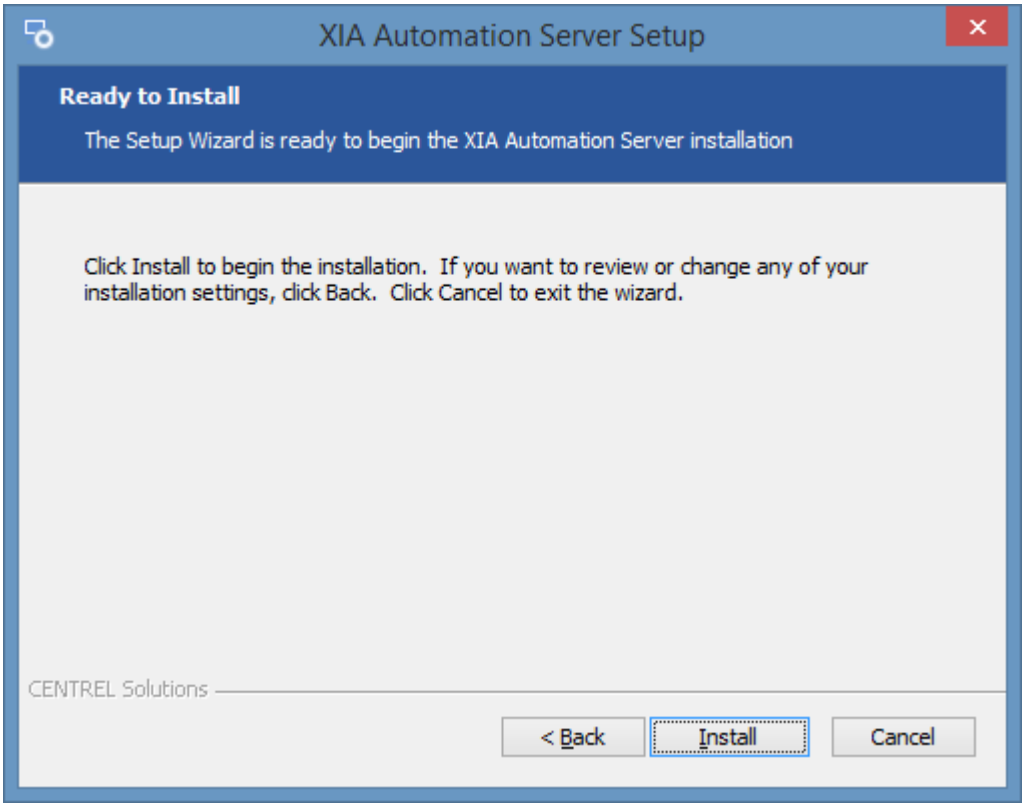
- Click *Browse* to browse for the trial or production license file you have been provided. If you do not have a license you can request a trial license.



- Enter the appropriate server advanced options and click *Next*.



- Click *Install* to begin the installation.

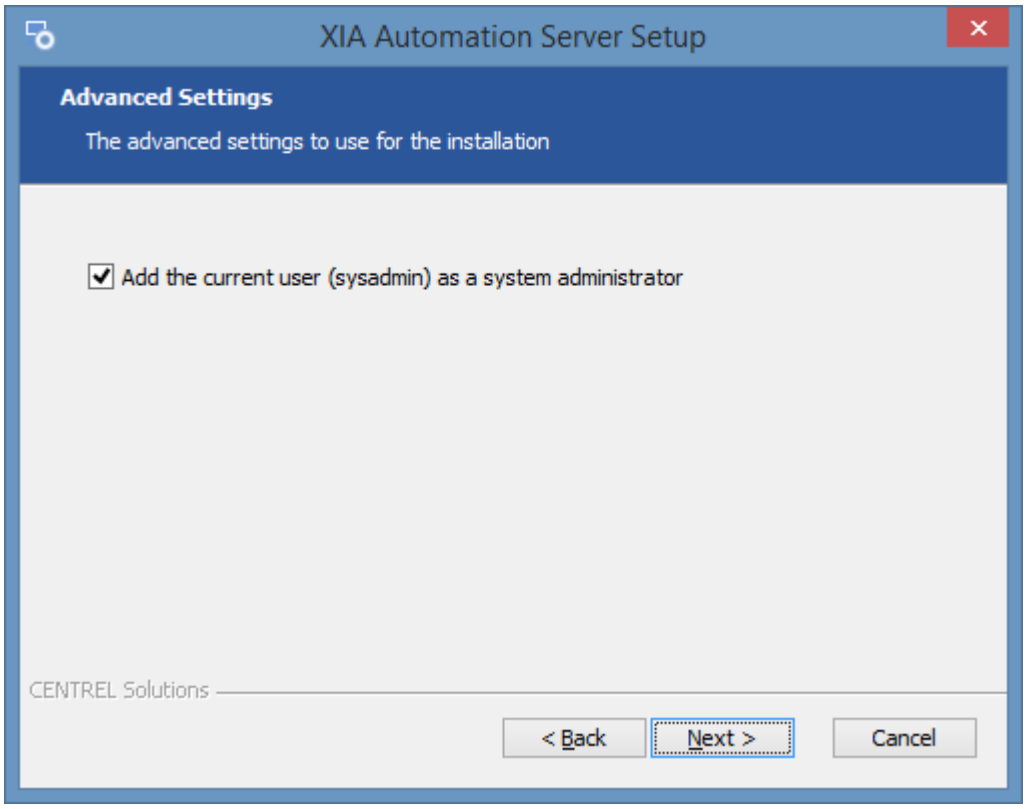


- When the installation is complete you will be prompted to View Server or Open Administration Tools. Click *Finish* to complete the installation.

- **NOTE:** If the installation was run as a user who is a member of the Administrators group, but not the Administrator user account, you may need to log off for the group membership to be updated.

Server Advanced Options

When installing XIA Automation Server the following client and server advanced options are presented.



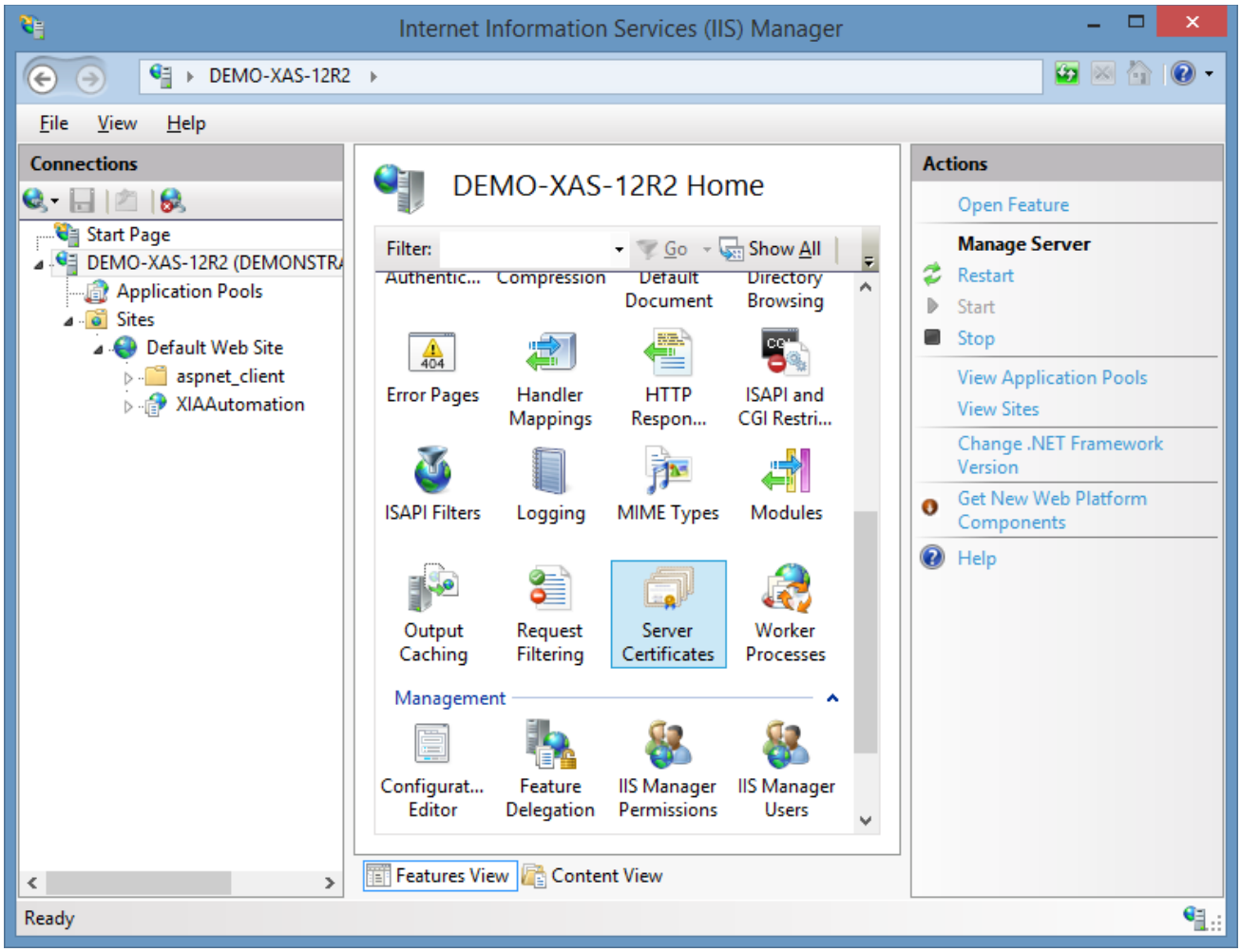
Add the current user (username) as a system administrator
Determines whether the user performing the installation should be automatically added as a system administrator.

Configure SSL (HTTPS)

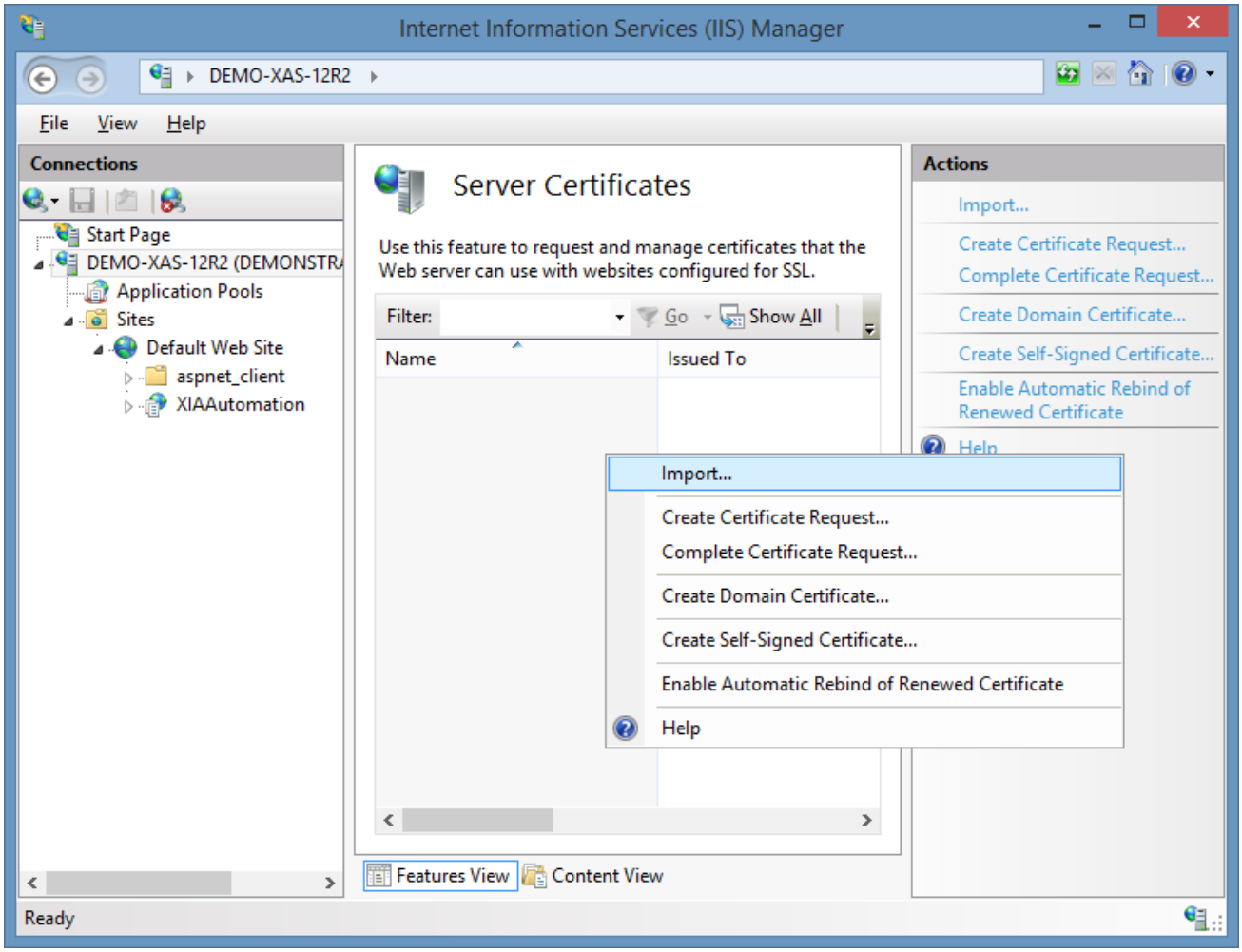
To configure XIA Automation Server to use SSL (also known as TLS) complete the following steps.

NOTE: This section is for guidance only, for more information review the documentation for the version of Internet Information Server (IIS) in use.

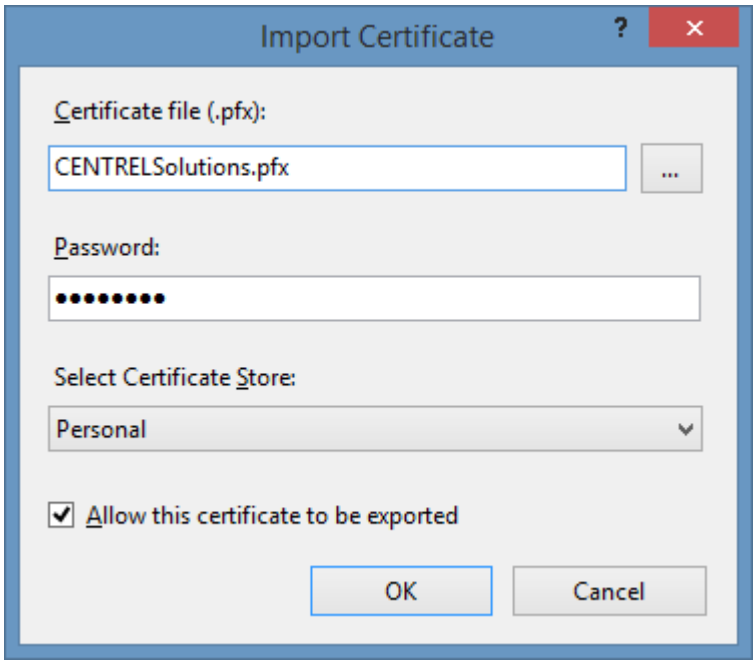
- An SSL certificate in .pfx format is required before proceeding - this can be generated by your network administrator or purchased from a 3rd party.
- Open the Internet Information Server (IIS) Manager tool.
- Select the server node, then double click *Server Certificates*.



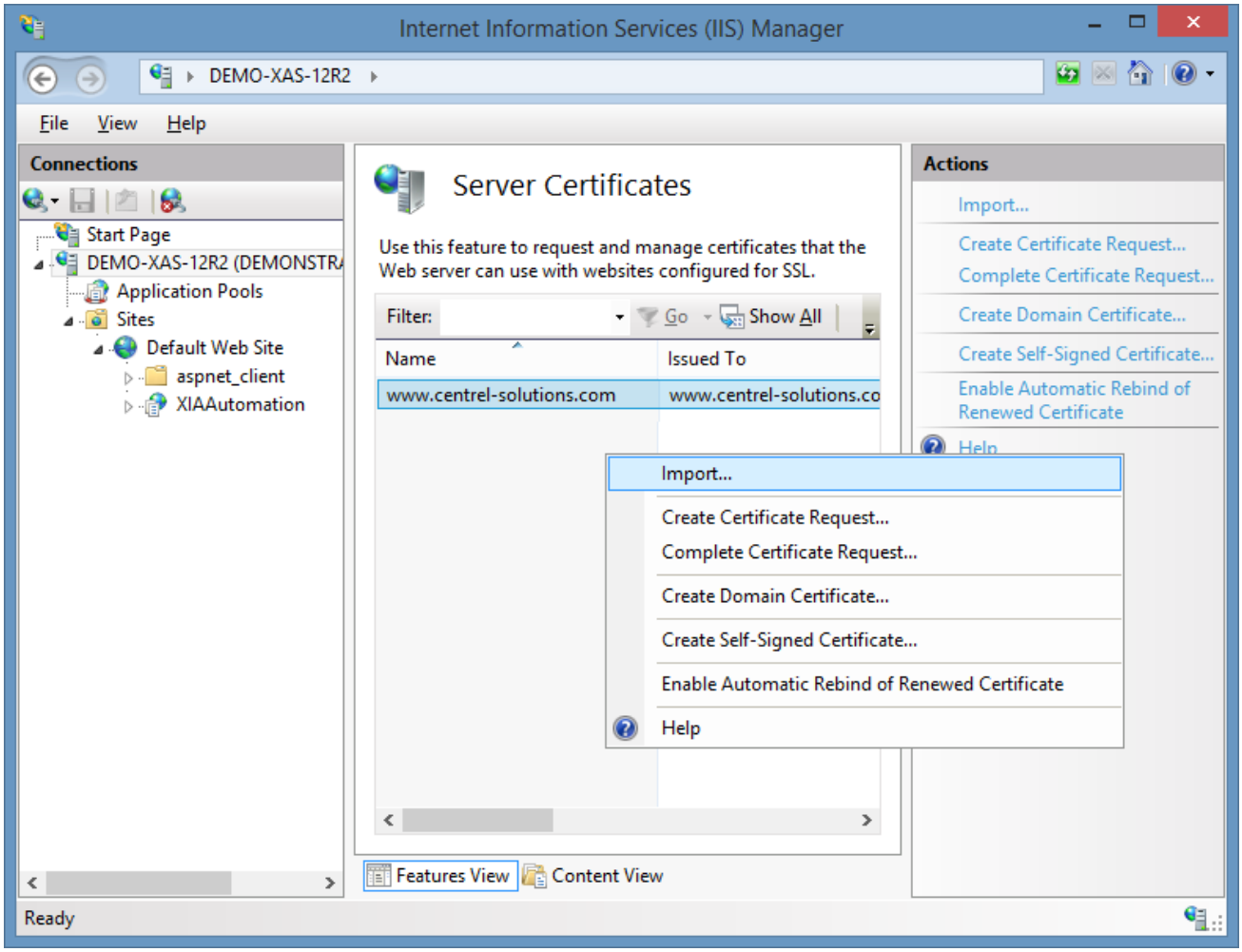
- Right click and select *Import.*



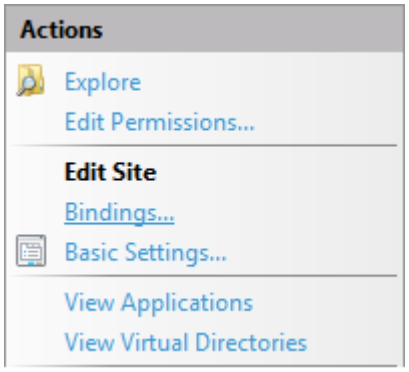
- Browse to the SSL certificate and enter the password.



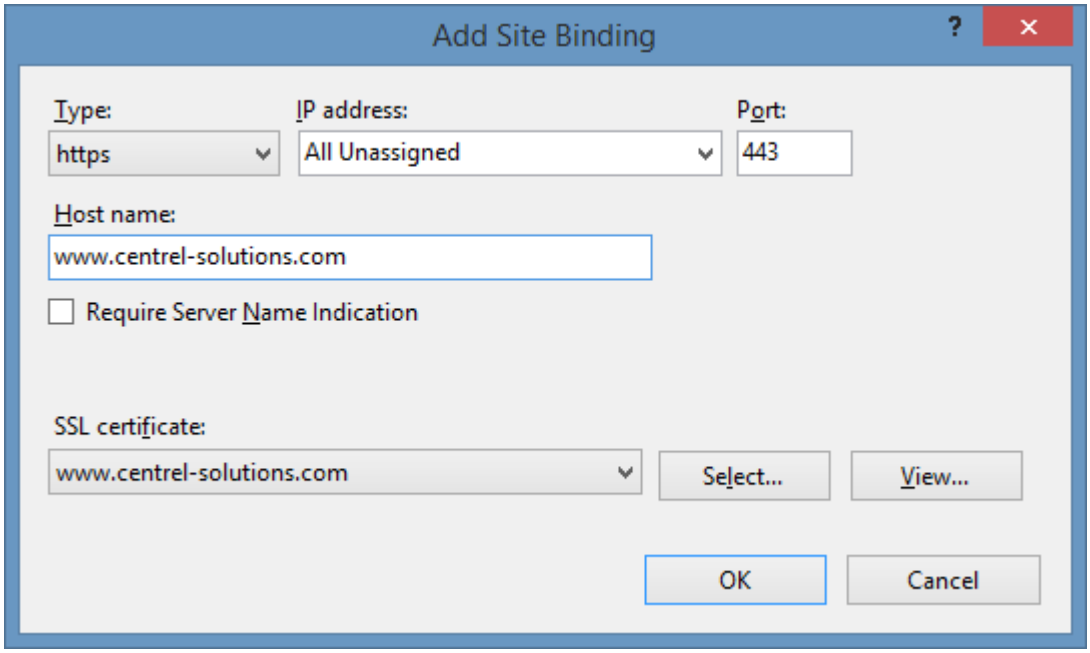
- Ensure that the certificate is installed.



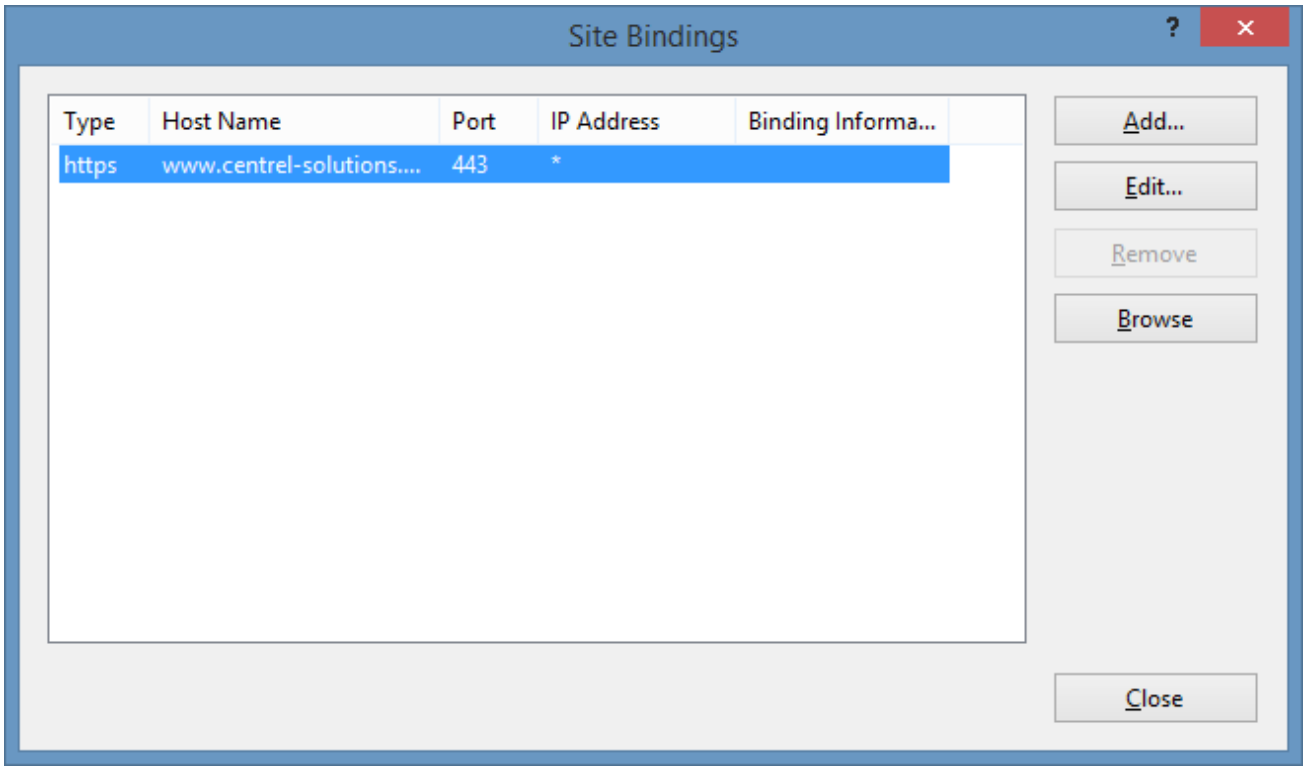
- Select the web site hosting XIA Automation Server and click *Bindings*.



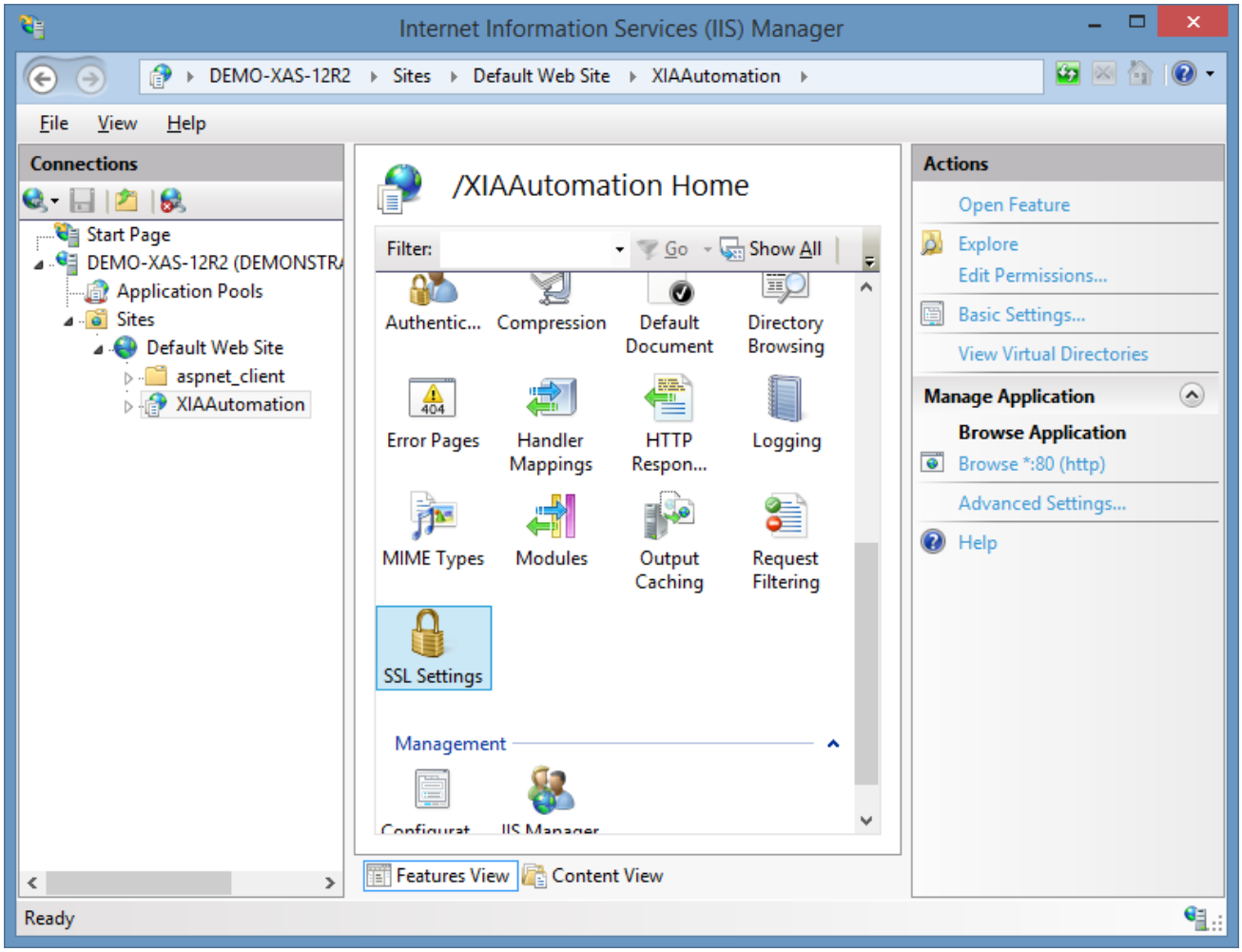
- Add a new HTTPS binding selecting the certificate and assign the host name as required.



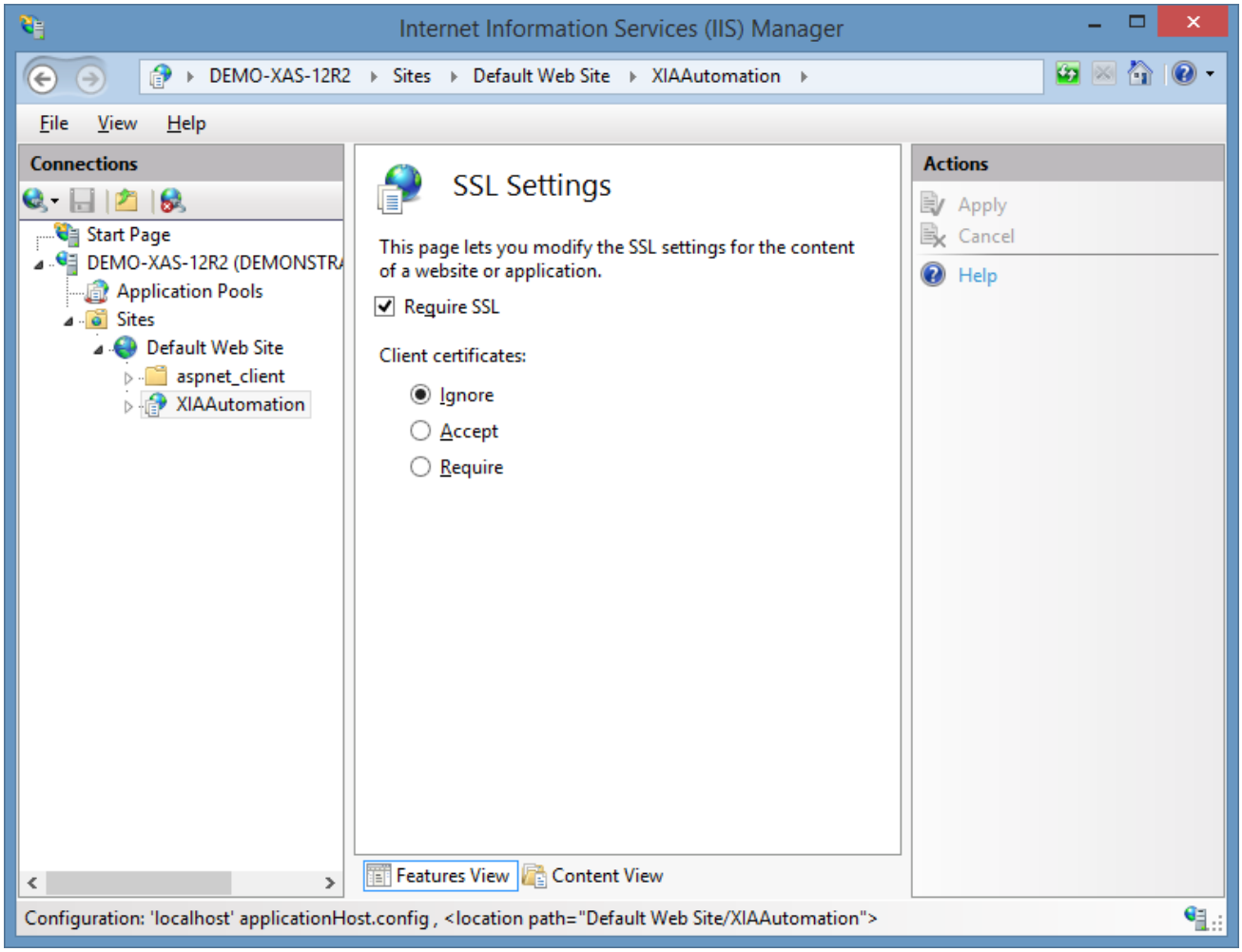
- Optionally remove the default HTTP binding if required.



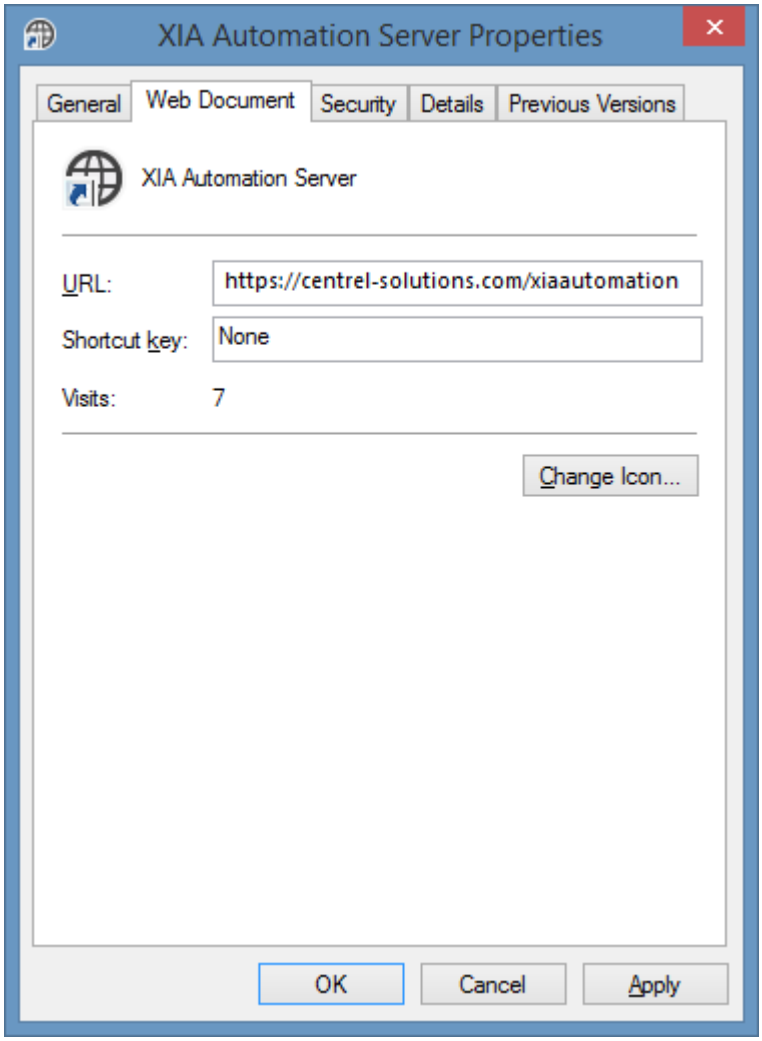
- Select the XIA Automation Server application and double click *SSL Settings*.



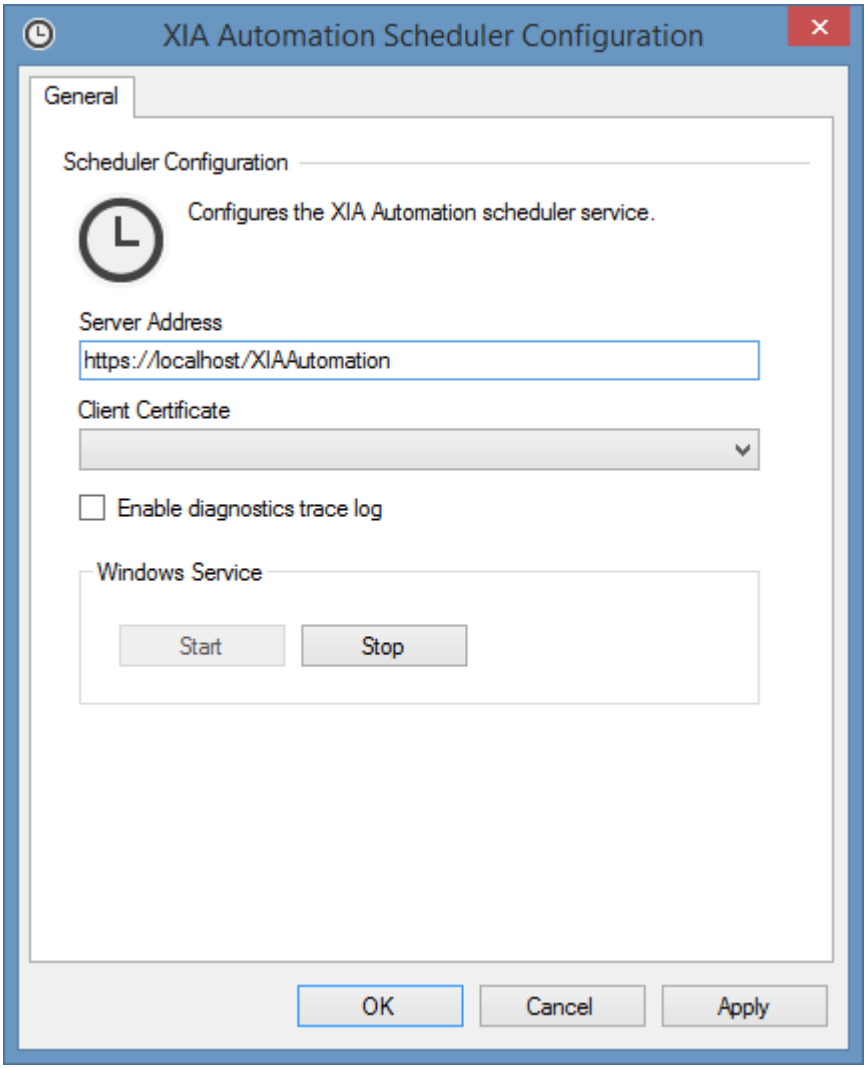
- Select *Require SSL* if required.



- Ensure that the installation can be accessed from a web browser.
- Right click the XIA Automation Server shortcut on the desktop, and click properties.
- Set the server address as required.



- Configure the XIA Automation Administration Tools to use the new URL.
- Open the scheduler configuration tool and set the server address to use the new URL.


XIA Automation Scheduler Configuration
General
Scheduler Configuration
Configures the XIA Automation scheduler service.
Server Address
https://localhost/XIAAutomation
Client Certificate
Enable diagnostics trace log
Windows Service
Start
Stop
OK
Cancel
Apply

Server Requirements

This section describes the requirements for the installation of XIA Automation Server.

Operating Systems (Server)
The following operating systems are supported for installation of a production version of XIA Automation Server:

- Windows Server 2022
- Windows Server 2019
- Windows Server 2016
- Windows Server 2012 R2

Prerequisites

- .NET Framework 4.8 (installed automatically) *

Internet Information Server

- Internet Information Server (installed automatically) **

** Please see the Microsoft .NET Framework 4.8 installation requirements for further information.*
*** This prerequisite is a shared component and not removed when the product is uninstalled.*

Custom Actions Log Files

NOTE: additional information related to the server installation may be logged to the custom actions log files which is stored in the following locations

%temp%\XIA Automation Server Installation Actions.log.

.NET Framework Installation Log File
If the .NET Framework is installed a log file will be created in the following location
%temp%\Microsoft .NET Framework 4.8 Setup_*xxxxxxxx_xxxxxxxxx*.html

Installed Roles and Features

During the installation of XIA Automation Server, the following roles, features and other shared components will be automatically installed:

- Microsoft .NET Framework 4.8

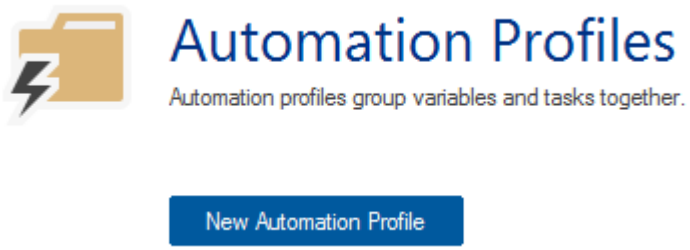
Web Server (IIS)
The following Internet Information Server (IIS) roles and features are installed automatically.

- Application Development > .NET Extensibility 4.x
- Application Development > ASP.NET 4.x
- Application Development > ISAPI Extensions
- Application Development > ISAPI Filters
- Common HTTP Features > Default Document
- Common HTTP Features > HTTP Errors
- Common HTTP Features > Static Content
- Security > Request Filtering
- Security > Windows Authentication
- Management Tools > IIS Management Console
- Management Tools > IIS Management Scripts and Tools

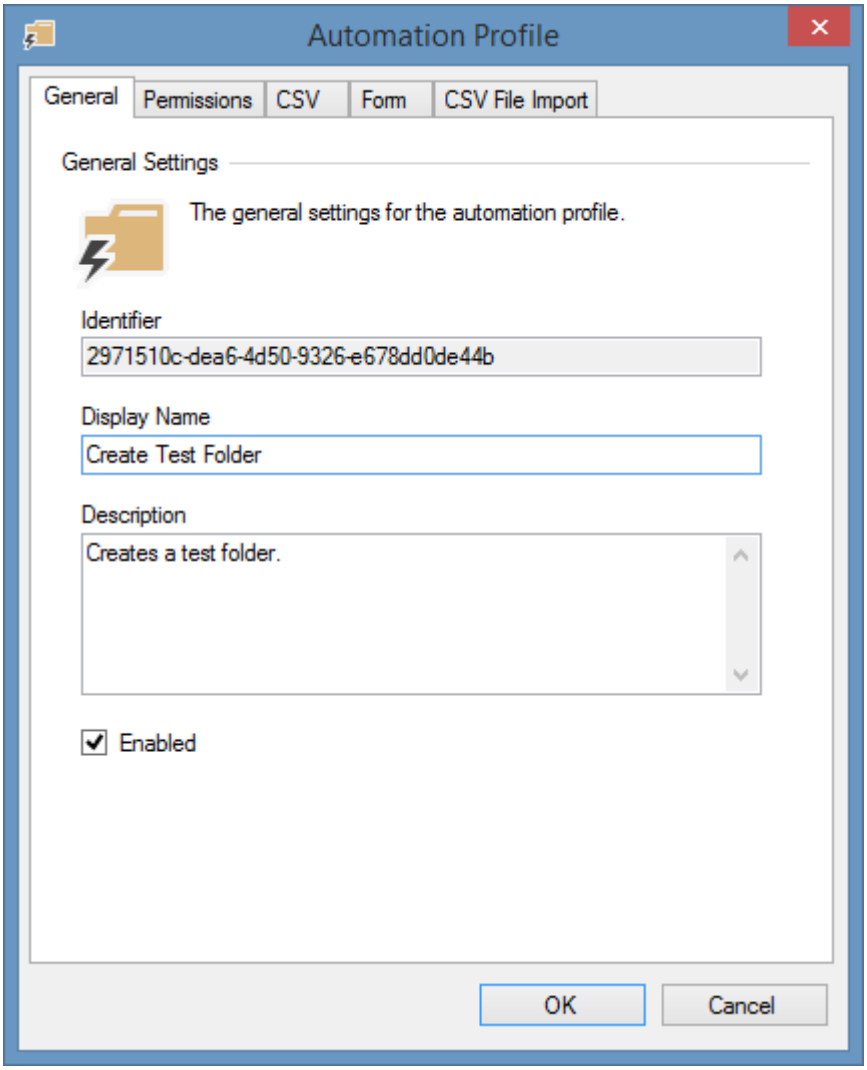
Creating your first automation profile

Once the installation has been completed, you are ready to create your automation profile.

- Start the XIA Automation Administration Tools by double clicking the desktop icon
- Go to automation profiles and click the *new automation profile* button.

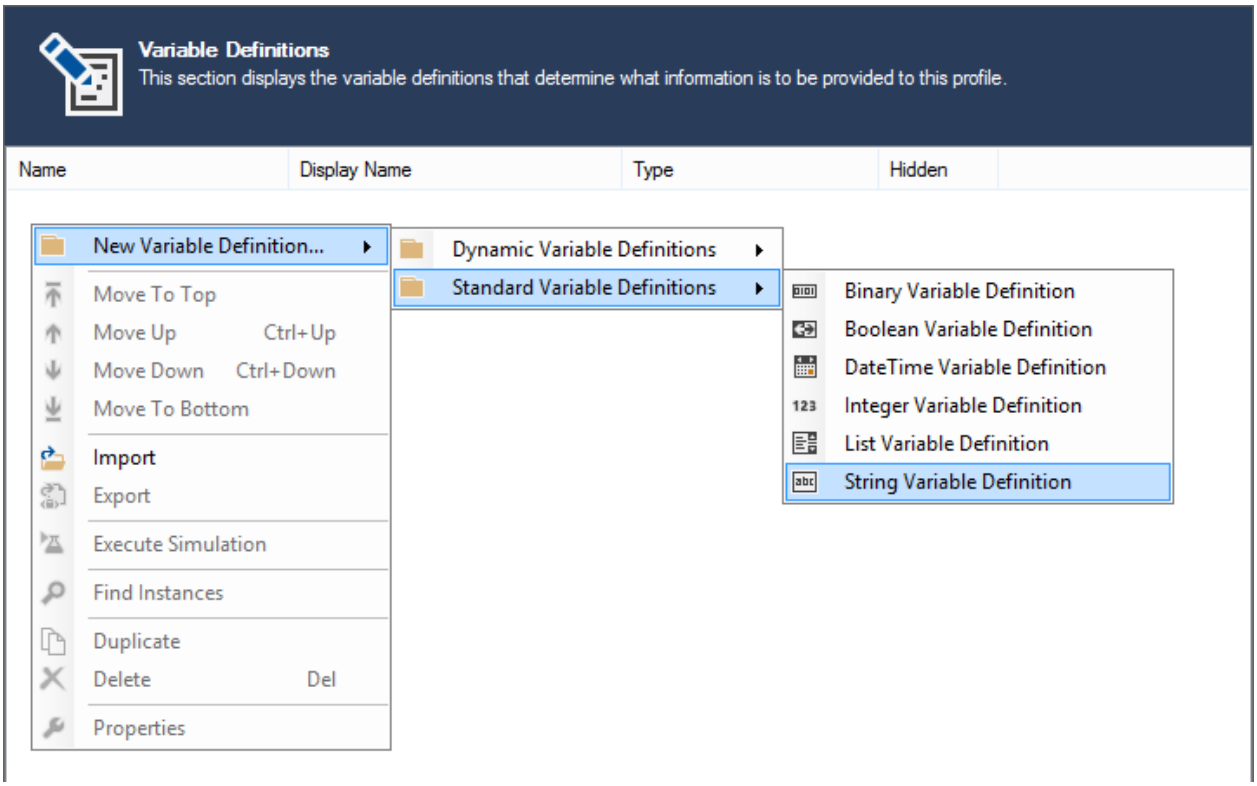


- Enter a display name and description and click OK.

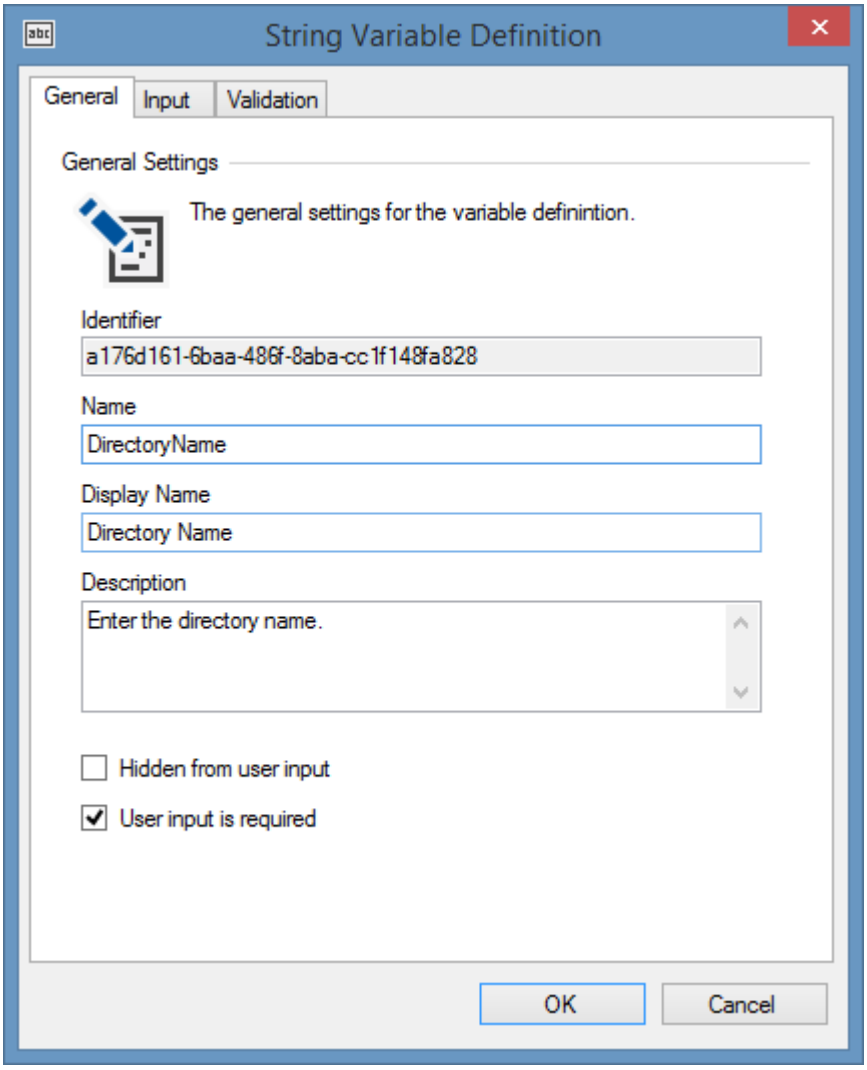


- Go to the variable definitions section of the automation profile.
- Right click the listview and select New Variable Definition > Standard Variable Definitions >

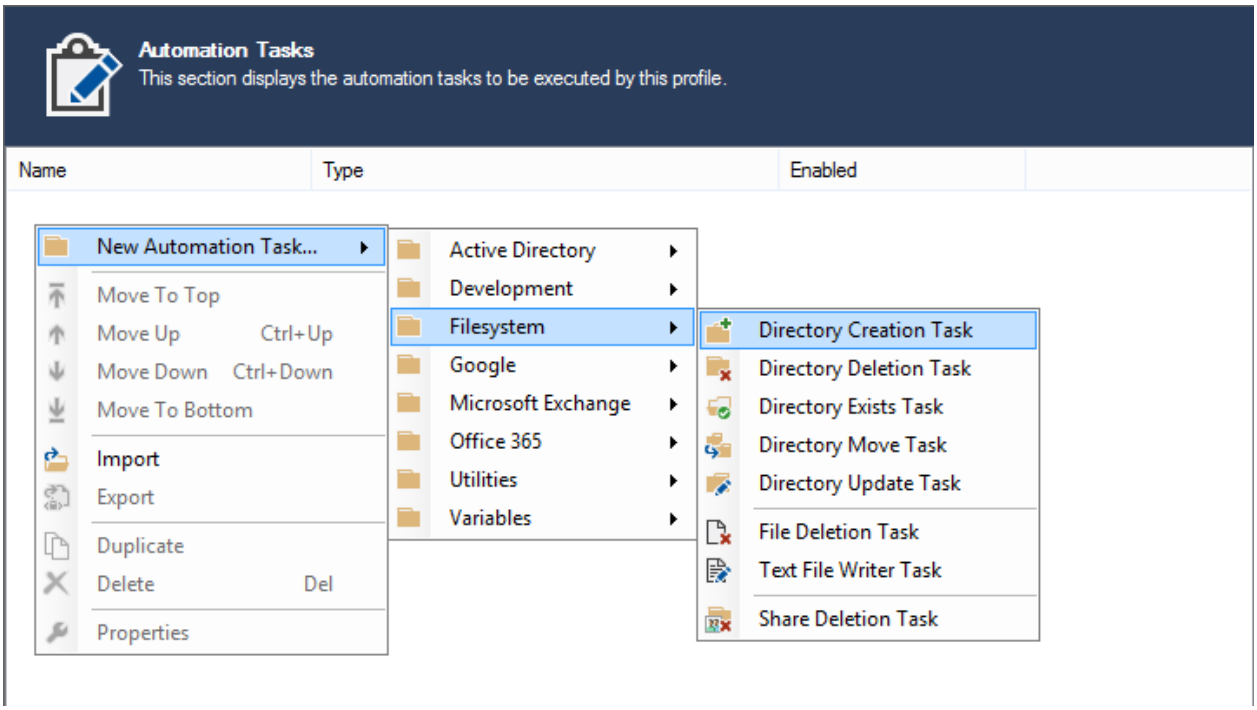
String Variable Definition.



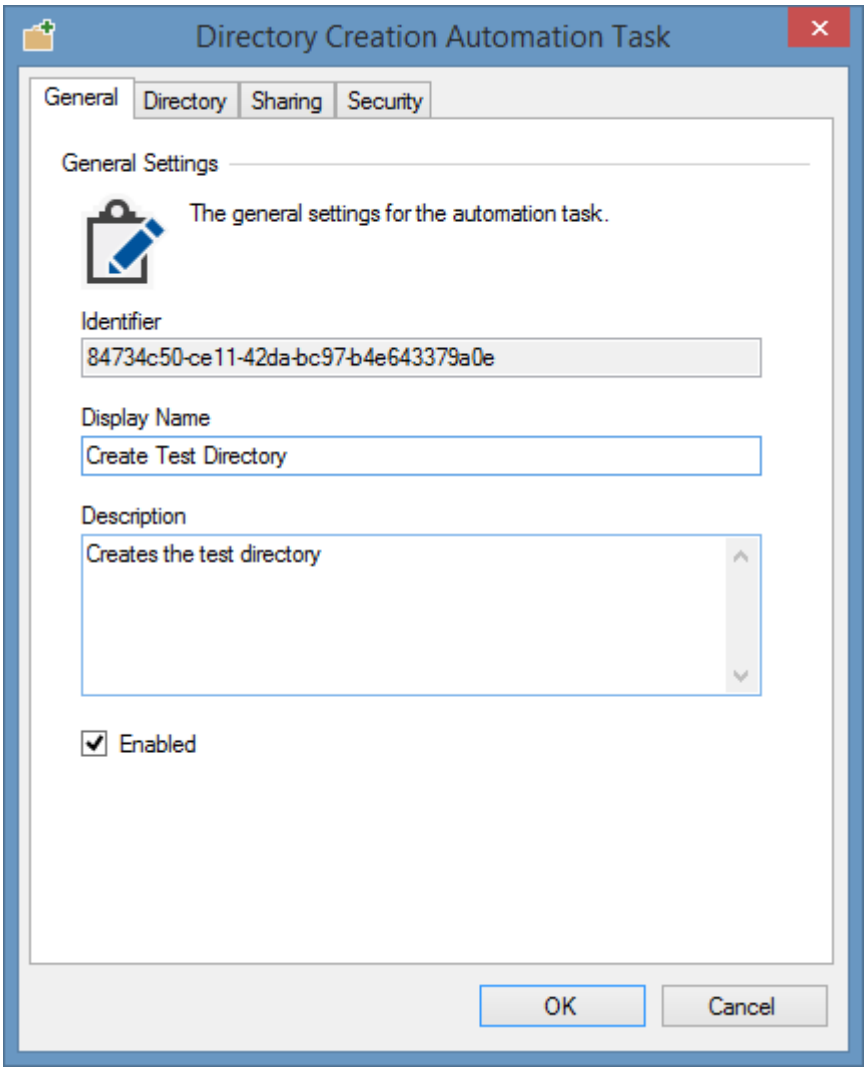
- Enter the name, display name, and description for the variable definition.



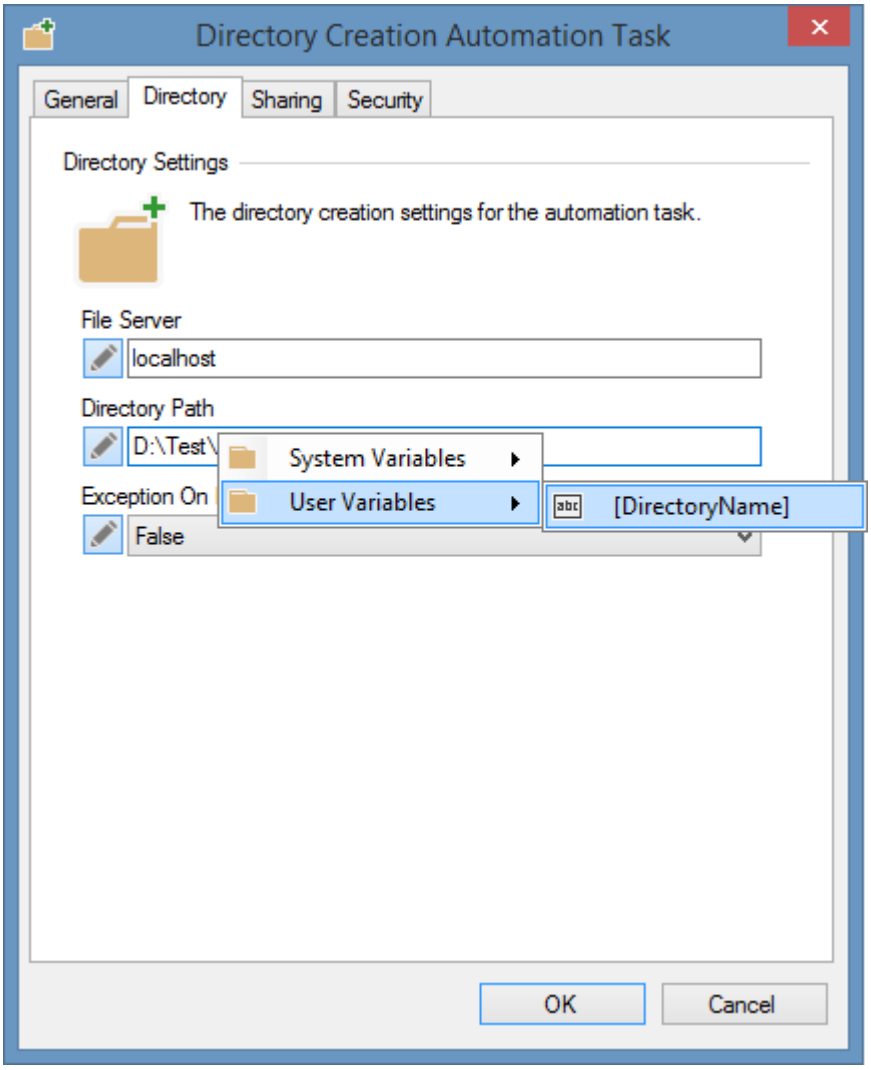
- Go to the automation tasks section of the automation profile.
- Right click the listview and select New Automation Task > Filesystem > Directory Creation Task.



- Enter the display name and description for the directory creation task.



- On the directory tab enter a valid directory path on the computer running XIA Automation Server including the [DirectoryName] variable definition for example D:\Test\[DirectoryName] and click OK.



- Click Save Configuration in the toolbar or file menu.
- In the user interface of the XIA Automation Server select the newly created automation profile.

Server Migration

The following steps describe how to move XIA Automation Server to a different physical or virtual machine:

- Ensure you have a **full system backup** of the existing and new server.
- If the new server is on a different Active Directory domain, you may need to contact CENTREL Solutions Support for an updated license file before proceeding.
- On the new server, install the **same version** of XIA Automation Server as is installed on the existing machine.
- Ensure that you can access the installation on the new server and that it performs correctly.

  NOTE: If you wish to use a newer version of XIA Automation Server, upgrade the existing server **before** performing the new installation. This may require you to obtain an updated license file from CENTREL Solutions Support.
- Copy the files from the App_Data folder on the existing server to the new server, overwriting any existing files.

  By default, these files are found in this location:
  C:\Program Files\CENTREL Solutions\XIA Automation\XIA Automation Server\App_Data
- If you have made any custom modifications to the Web.Config file, copy the file from the existing server to the new server.
- If you have installed any SSL certificates on the existing server, these must be migrated manually to the new server. Please see the documentation from your SSL certificate provider for more information.
- Once complete, uninstall the existing XIA Automation Server.

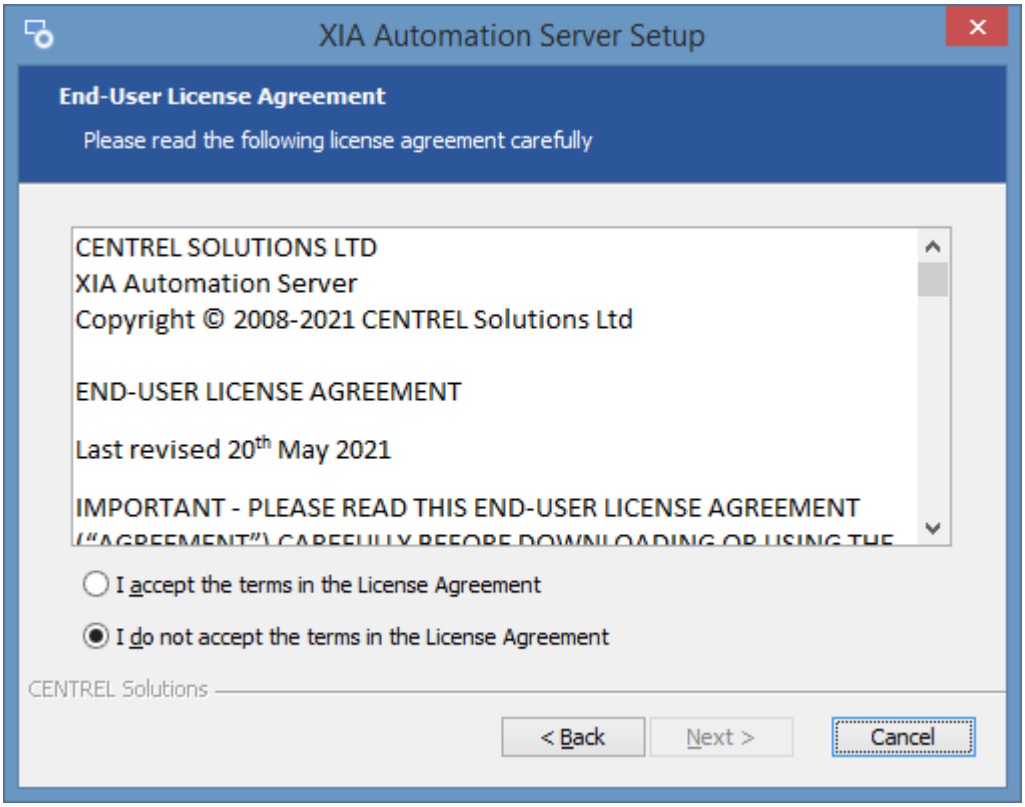
Server Upgrade

This section describes the upgrade process of XIA Automation Server, for new installations please see the installation section.

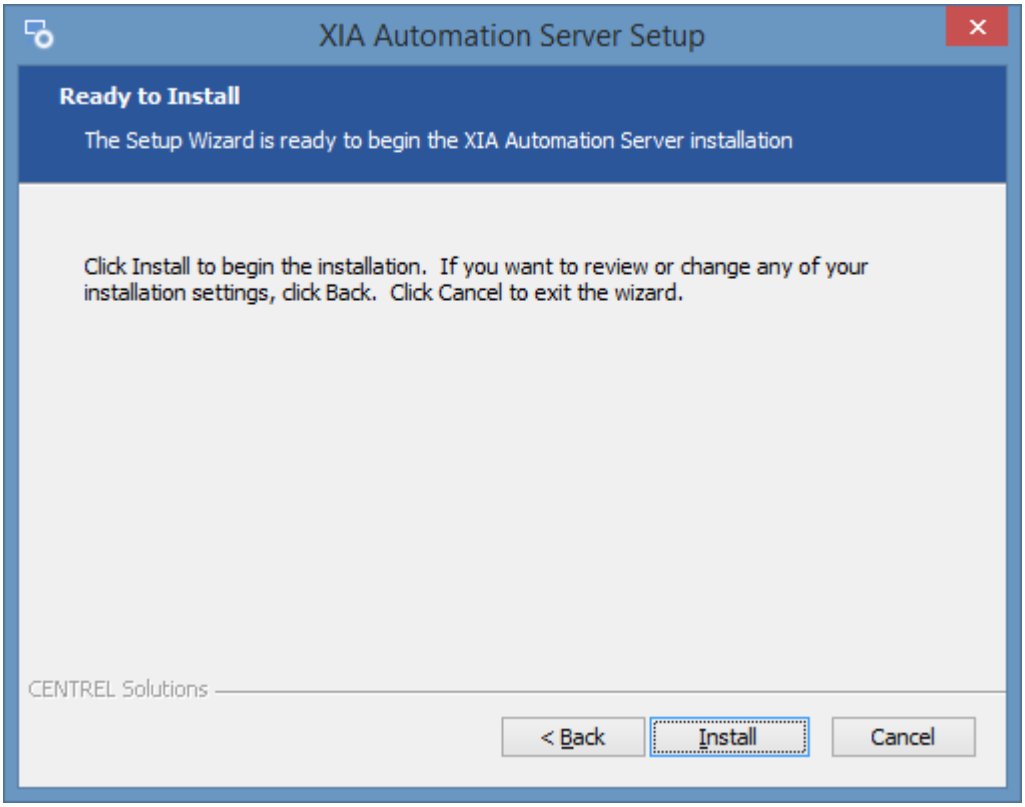
PLEASE NOTE: Due to architecture changes you cannot upgrade from versions older than version 4.

- Ensure that you have a full system backup.
- Ensure that the support expiry date of your license file is still valid, or if support has expired, later than the release date of the upgrade.
- Review the upgrade notes for the version being installed.
- Check that the system you are installing on meets the current server requirements.
- Download the latest installation package.
- Start the installation, the system should report *Ready to Upgrade*, click *Next.*

- Review the end user license agreement (EULA) and only accept if you agree to the terms. If you do not accept the terms of the agreement please cancel the installation.



- Click *Install* to begin the upgrade.



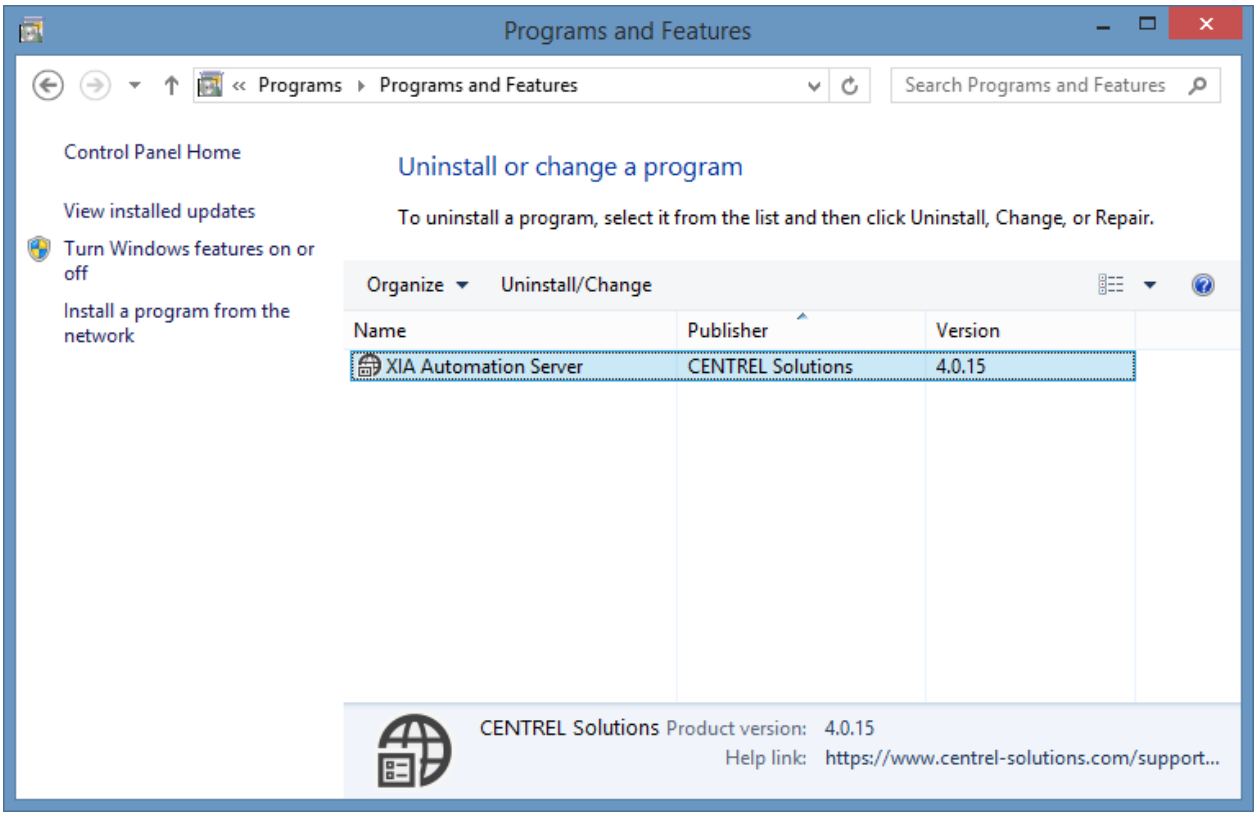
- When the installation is complete you will be prompted to View Server or Open Administration Tools. Click *Finish* to complete the installation.

XIA Automation Server Setup
Completing the XIA Automation Server Setup Wizard
Click the Finish button to exit the Setup Wizard.
View Server
Open Administration Tools
CENTREL
SOLUTIONS
< Back
Finish
Cancel

Uninstallation

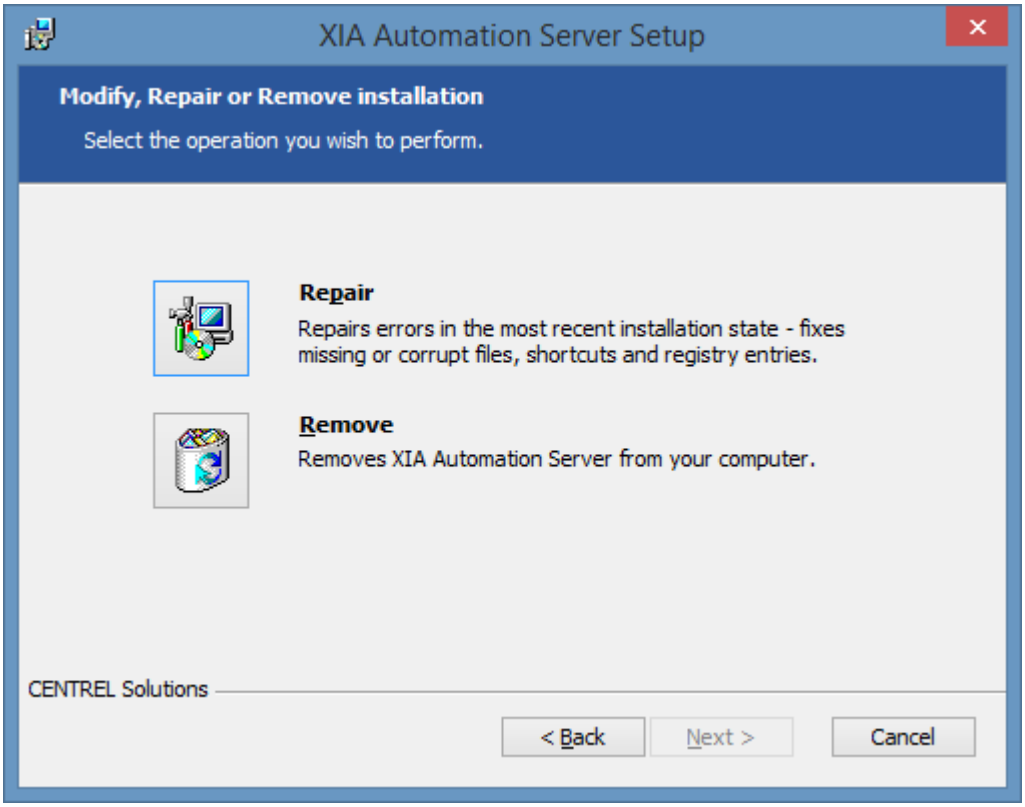
This section describes how to uninstall XIA Automation Server.

- Go to Control Panel
- Select Programs
- Right click the XIA Automation Server entry, and select *Uninstall/Change*.

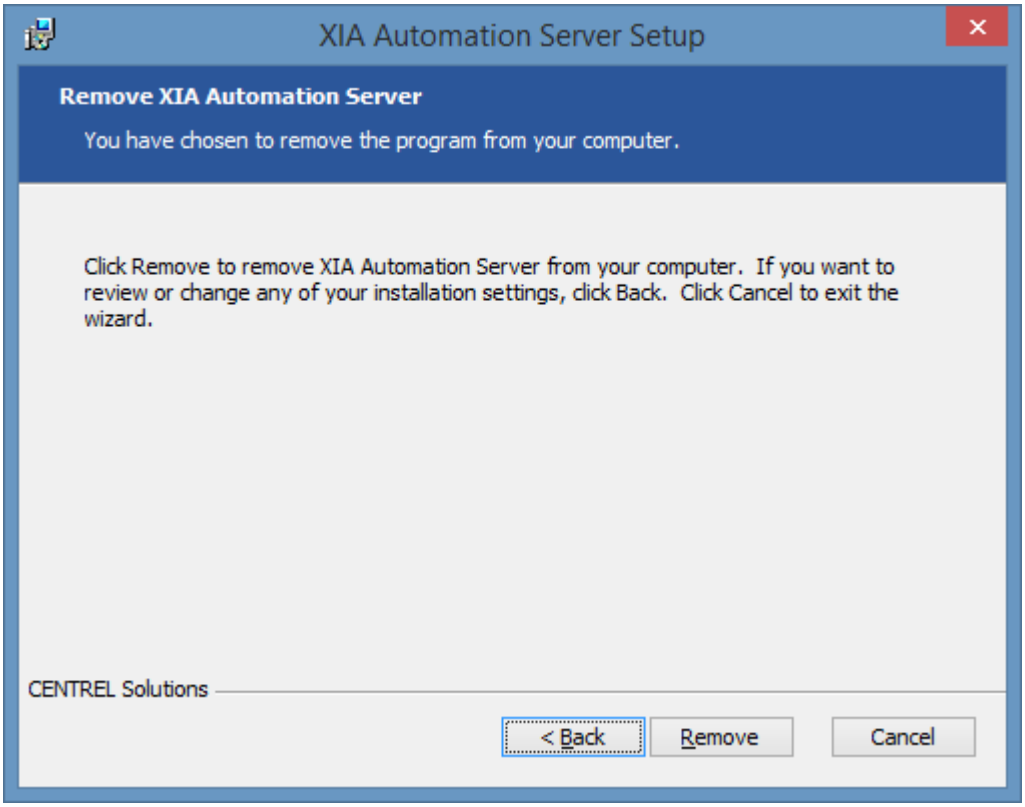


- The welcome screen will be displayed, click *Next* to continue.

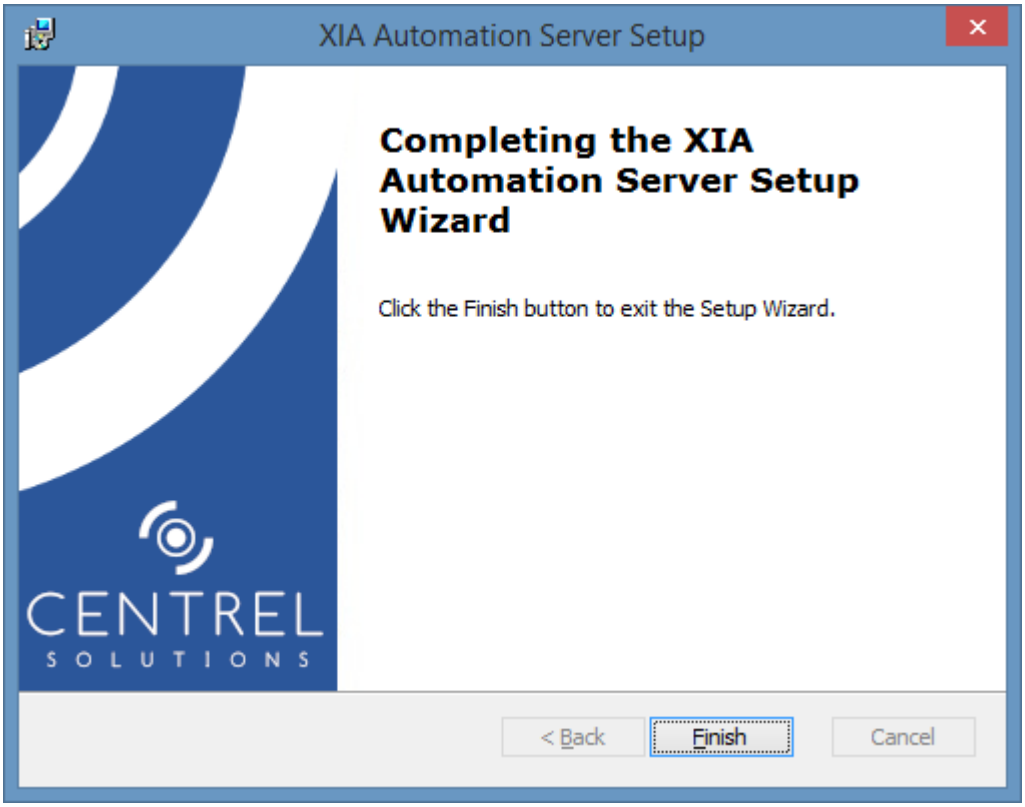
- The repair or remove installation screen will be displayed, click *Remove* to continue.



- Click *Remove* to commence the uninstallation.



- Once complete click *Finish* to complete the uninstallation.



Web Server Application Pool Account

When installing XIA Automation Server, a user account is selected that is used to run the XIA Automation Server web application.

This account must have the permissions required to execute the automation profiles.

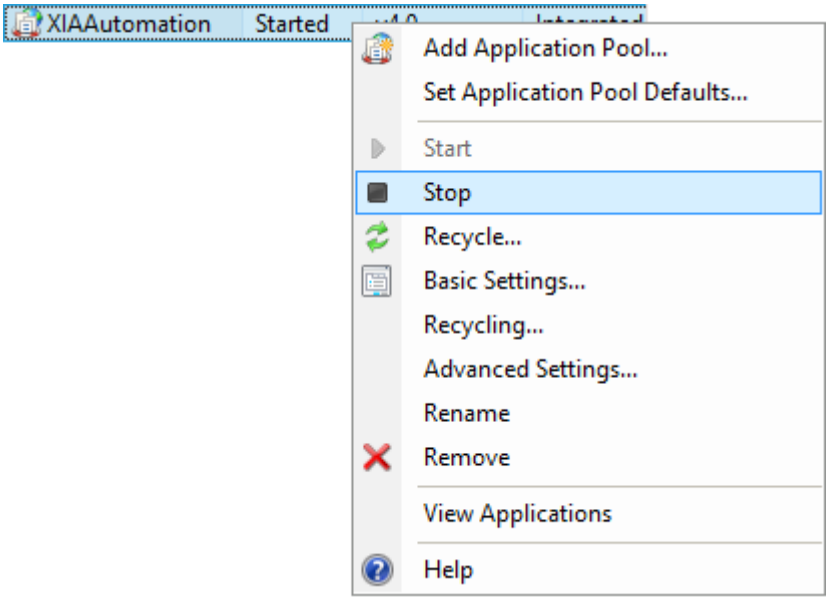
- The account must be created manually, it will not be created by the installer.
- The account should be dedicated for this purpose.
- The account will be assigned to the application pool created by the installer.
- The account has access to the potentially sensitive data and should therefore should have a suitably complex password.
- The account will be added to the IIS_IUSRS group.

Change Web Server Application Pool Account

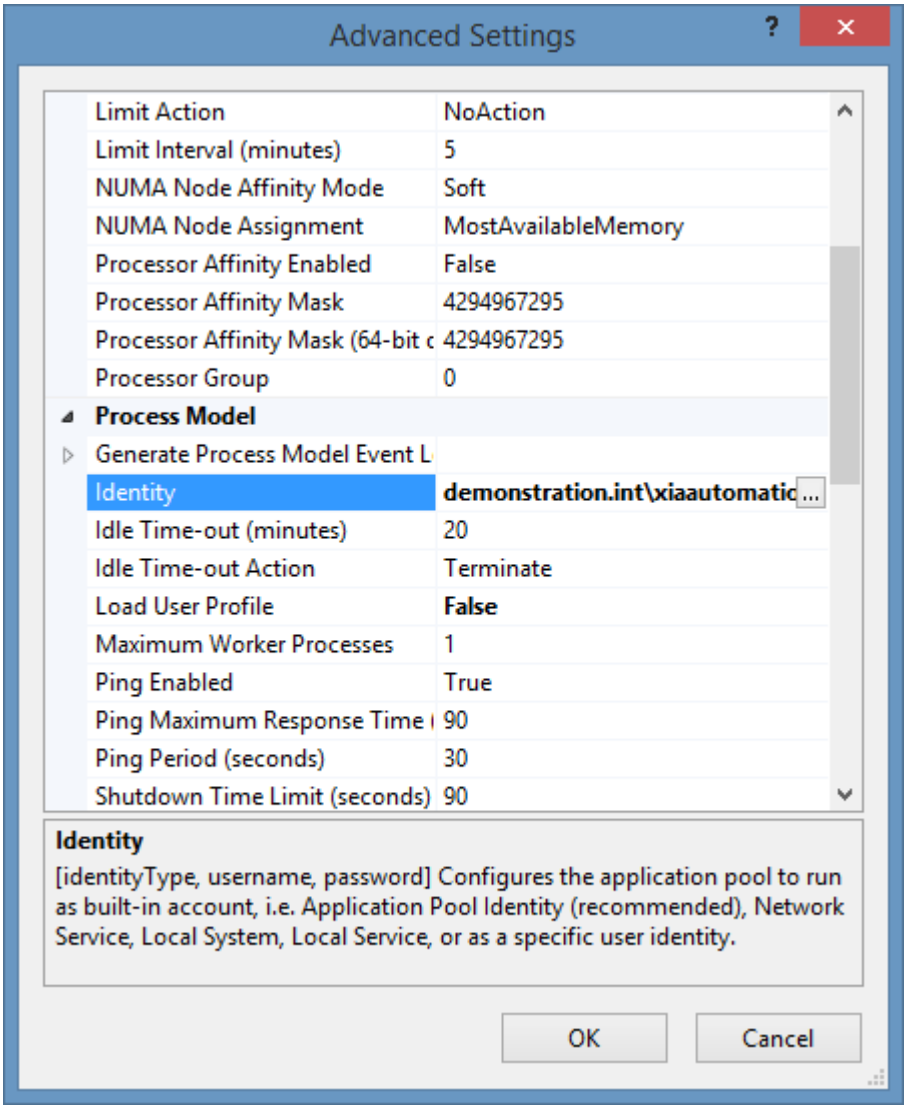
The following steps describe how to manually change the web server application pool account after XIA Automation Server has been installed.

WARNING: This process is not recommended, the installer should be used to assign the web server application pool account.

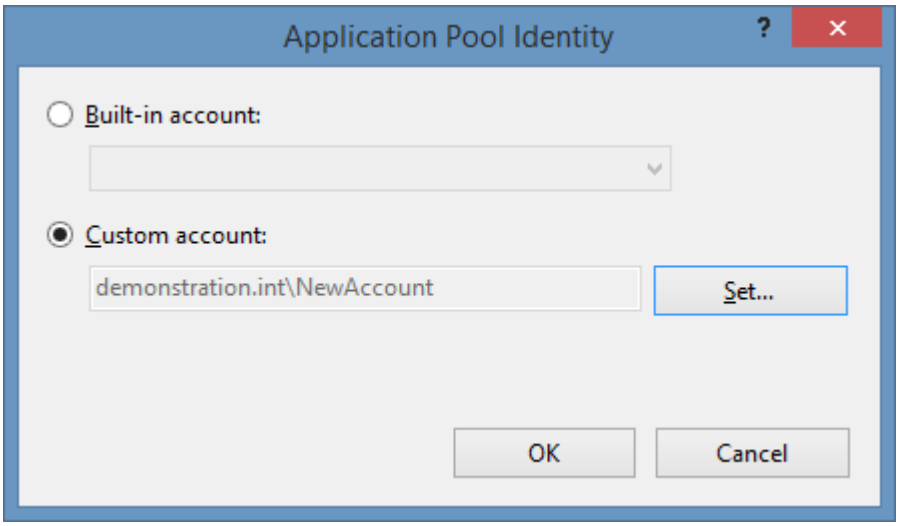
- Ensure you have a **full system backup** of the server.
- Create the user account that is to be used as the web server application pool account following the guidelines in the web server application pool account section.
- Add the web server application pool account to the IIS_USRS group.
- Open the Internet Information Services (IIS) Manager tool, and stop the XIA Automation application pool.



- In the advanced settings of the application pool modify the **Identity** property.

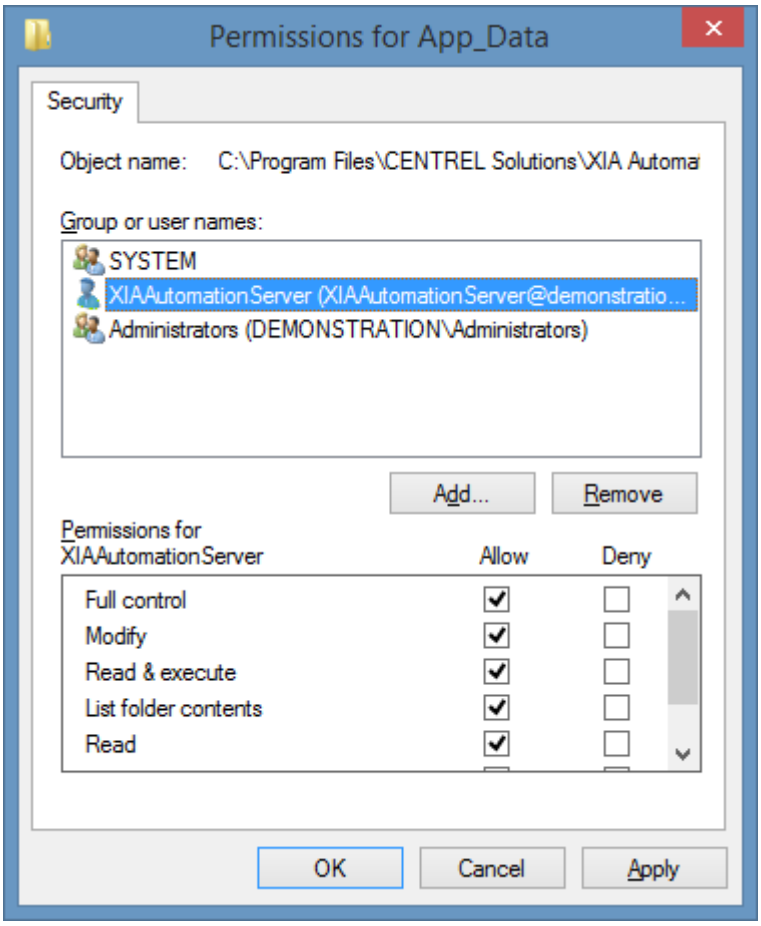


- Set the credentials for the web server application pool account.



- Modify the NTFS permissions on the App_Data directory, this is located by default in the following location.
  C:\Program Files\CENTREL Solutions\XIA Automation\XIA Automation Server\App_Data

- Remove the previous web server application pool account from the access control list, and ensure that the new web server application pool account has full control.



- Start the XIA Automation application pool.

- Test that the XIA Automation Server can be accessed through a web interface, and that scheduled tasks work as expected before proceeding.

Server Installation Troubleshooting

This section provides troubleshooting information for the installation of the XIA Automation Server.

- Please ensure that your system meets the server requirements.
- You can request support by going to our support page.
- For additional information about the installation please see the custom actions log files.
- For non-installation issues see the server troubleshooting section.

The installation package could not be opened

Symptoms
When installing XIA Automation Server, the installer reports

This installation package could not be opened. Verify that the package exists and that you can access it, or contact the application vendor to verify that this is a valid Windows Installer package.

Issue
This issue is seen when the installer package has been corrupted, typically during the download process.

Resolution
Download the installer and start the installation again.

XIA Automation Server Setup Wizard ended prematurely

Symptoms
When upgrading XIA Automation Server, the installer reports *XIA Automation Server Setup Wizard ended prematurely*.

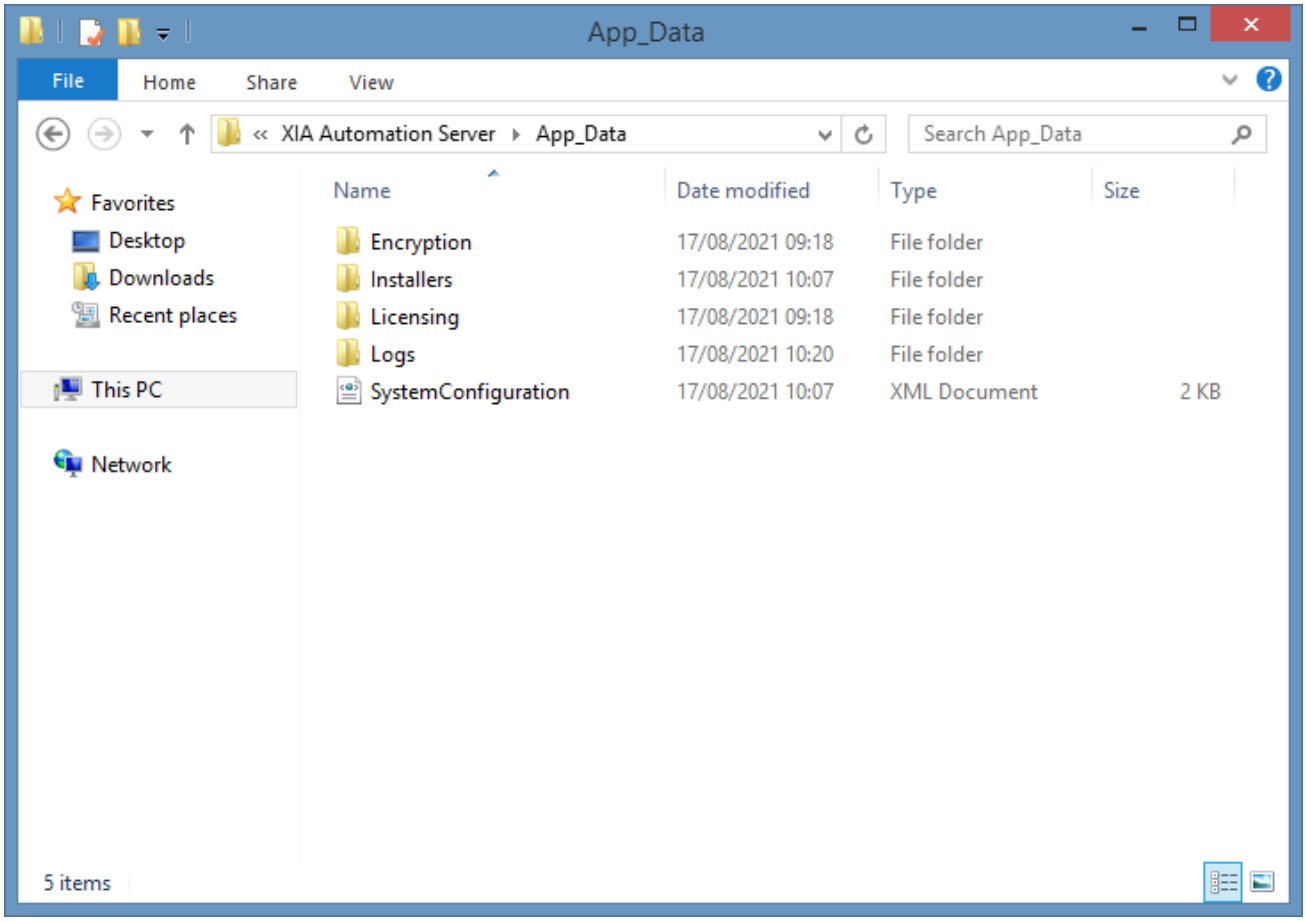
Issue
This issue is seen when the *IIS Management Scripts and Tools* role service has been removed from the server.

Resolution
Install the *IIS Management Scripts and Tools* role service and run the upgrade again.

Files and Directories

This section describes the important files and directories managed by the XIA Automation Server which are stored in the App_Data directory.

WARNING: The information in this section is provided for references purposes only. No files or directories should be modified or deleted directly.



Encryption
The encryption directory stores the encryption keys for the server.

Installers
The installers directory stores the administration tools installation files.

Licensing
The licensing directory contains the current license file license.licx.

Logs
Stores the current server diagnostics log.

System Configuration
The SystemConfiguration.xml file stores the configuration of the server.

Encryption Keys

XIA Automation Server uses 2048 bit RSA Keys to secure information contained within the automation profiles and server configuration settings.

The keys are generated by XIA Automation Server setup during installation and are stored in the App_Data\Encryption folder.

The files are named pub.key and priv.key for the public and private keys respectively.

NOTE: These keys are essential for the security of the XIA Automation Server and should be kept secure.

Should you lose these encryption keys you will not be able to decrypted passwords stored in automation profiles and server configuration settings.

Licensing

As per the terms of the End User License Agreement (EULA), XIA Automation Server must be licensed to be used.

For more information about the types of license see the license types section.

Licenses can be viewed and managed within the licensing section of the server configuration settings of the XIA Automation administration tools.

License Types

This section provides a summary of the available license types, however for detailed information please review the End User License Agreement (EULA).

Enterprise License
The enterprise license is the production license for XIA Automation Server.

Trial License
The trial license allows for the evaluation of XIA Automation Server for a limited time period.

Enterprise License

The enterprise license allows you to install XIA Automation Server on a single server within the organization named on the license, and optionally a second server for resilience purposes.

You may also install the XIA Automation Administration Tools on any computer owned by the organization named on the license that meets the administration tools requirements.

Trial License

The trial license is time limited and permitted for the evaluation of XIA Automation Server only, and cannot be used in a production environment.

System Administrators

System administrators have full access to use and manage XIA Automation Server.

Users who are members of the Administrators group on the machine where XIA Automation Server is installed are automatically given system administrator rights, however additional users and groups can be configured within the security settings.

Server Diagnostics Log

The server diagnostics can be enabled using the server diagnostics tab of the server configuration settings of the XIA Automation administration tools.

The diagnostics log can also be enabled manually by modifying the Web.Config file which can by default be found in the following location.
C:\Program Files\CENTREL Solutions\XIA Automation\XIA Automation Server\Web.config

```
<system.diagnostics>
  <trace autoflush="true">
    <listeners>
      <clear/>
      <!-- Uncomment the following line to enable trace logging from startup. This is not
required normally as this can be enabled from the web interface once the application is
running.
      <add name="TextTracer" type="CENTREL.XIA.Support.AdvancedTextWriterTraceListener,
CENTREL.XIA.Support" initializeData="~\App_Data\Logs\Trace\Trace.log"/>
      -->
    </listeners>
  </trace>
</system.diagnostics>
```

Server Troubleshooting

The following chapters cover the troubleshooting of XIA Automation Server, for issues with troubleshooting the installation see the server installation troubleshooting section.

Error Decrypting String Value

Symptoms
When accessing a configuration page or viewing a diagnostics log, you see the message:
"Error decrypting string value"

Cause
XIA Automation Server uses encryption to store sensitive data.

The error can be caused when

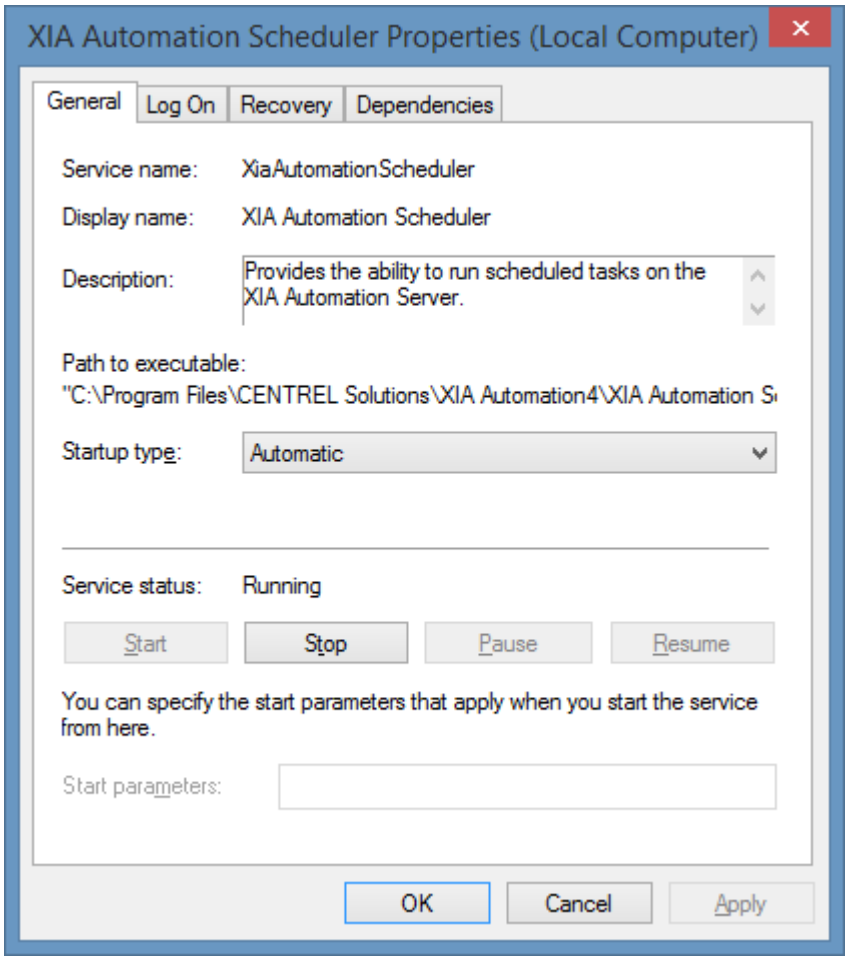
- The encryption keys are deleted or replaced.
- A configuration file is copied from another machine where different encryption keys were used to perform the encryption.

Resolution
Ensure that the correct encryption keys are in place.

Scheduler Service

The scheduler service is a Windows service that polls the scheduler web service and allows the automated execution tasks such as the import of data files into the XIA Automation Server.

The service runs automatically as the Local Service account.



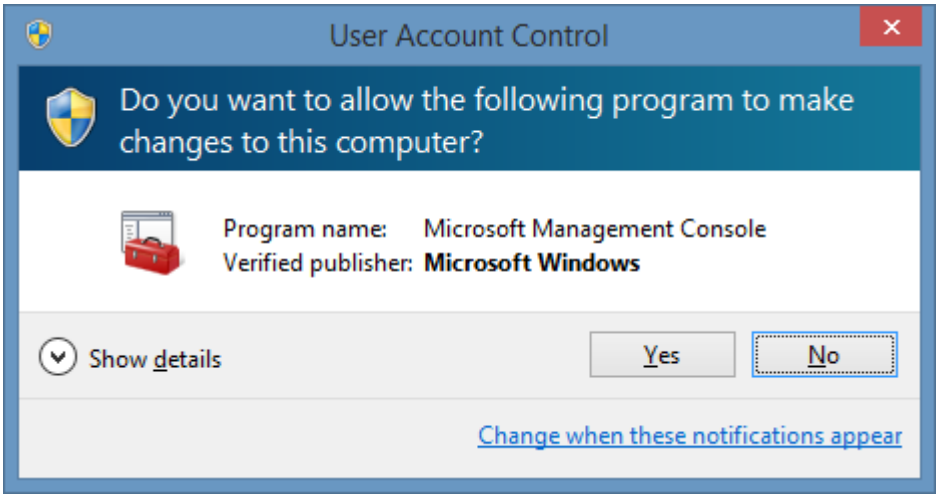
The scheduler service checks for tasks to execute every 60 seconds and can be configured with the scheduler configuration tool.

Configuring Client Certificates

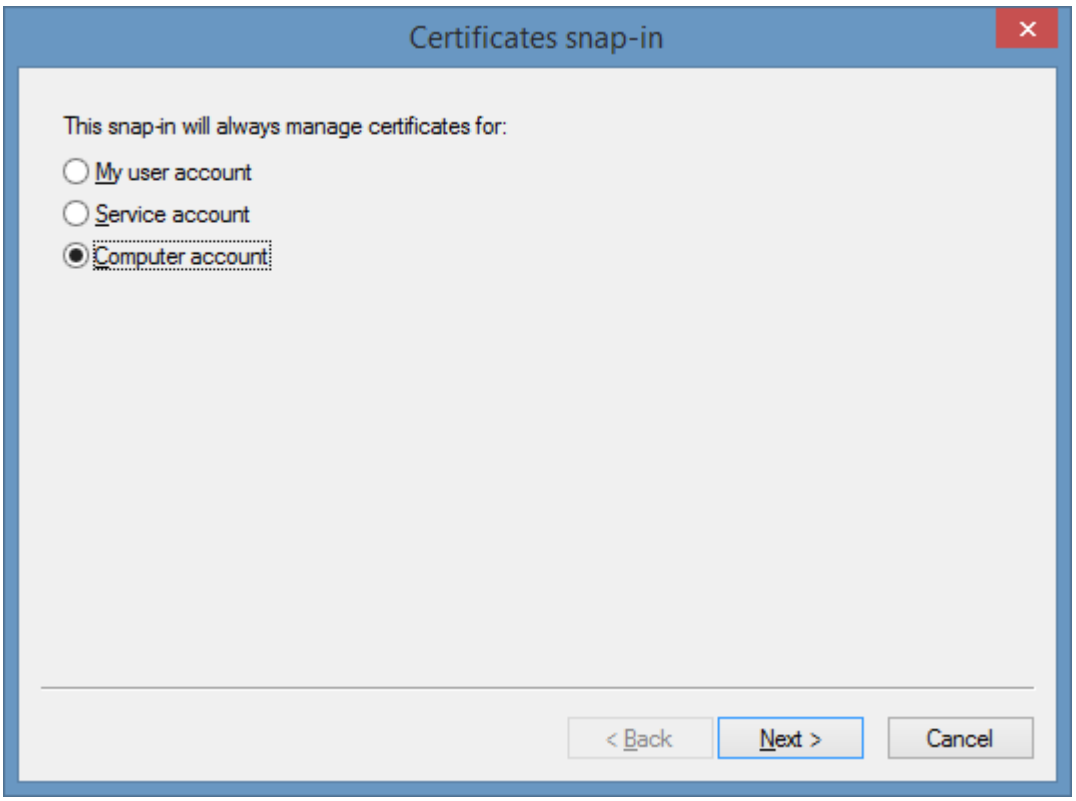
When using client certificate authentication, the scheduler service requires additional configuration. The scheduler service permits only local connections and it is possible to disable client certificate authentication for the scheduler web service only.

To enable the scheduler service to use client certificate authentication perform the following steps:

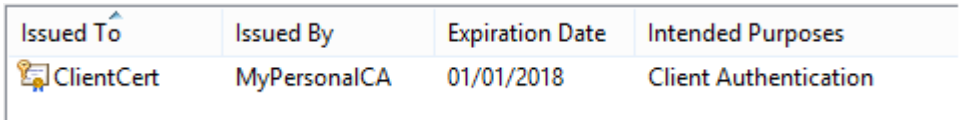
- Ensure that the server URL uses a secure (HTTPS) connection in the scheduler configuration tool.
- Login as an administrator and run mmc.exe.
- Accept the UAC prompt if required



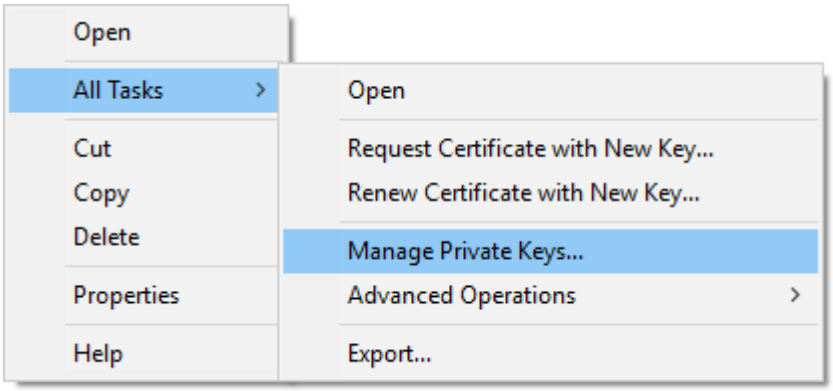
- Add the **Certificates** snap-in and ensure that **Computer account** is selected.



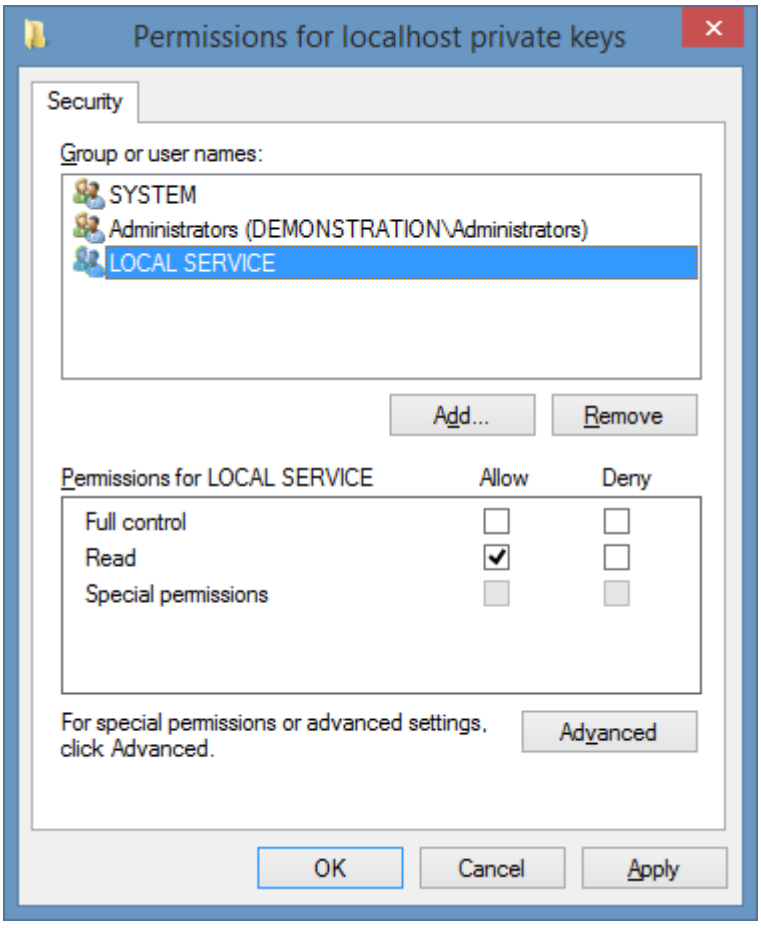
- Import the client certificate into the **Personal** folder for the **Computer account**.
- When imported ensure that the client certificate is within the expiration date and that **Client Authentication** is one of the intended purposes.



- Right click the certificate and select **Manage Private Keys**.



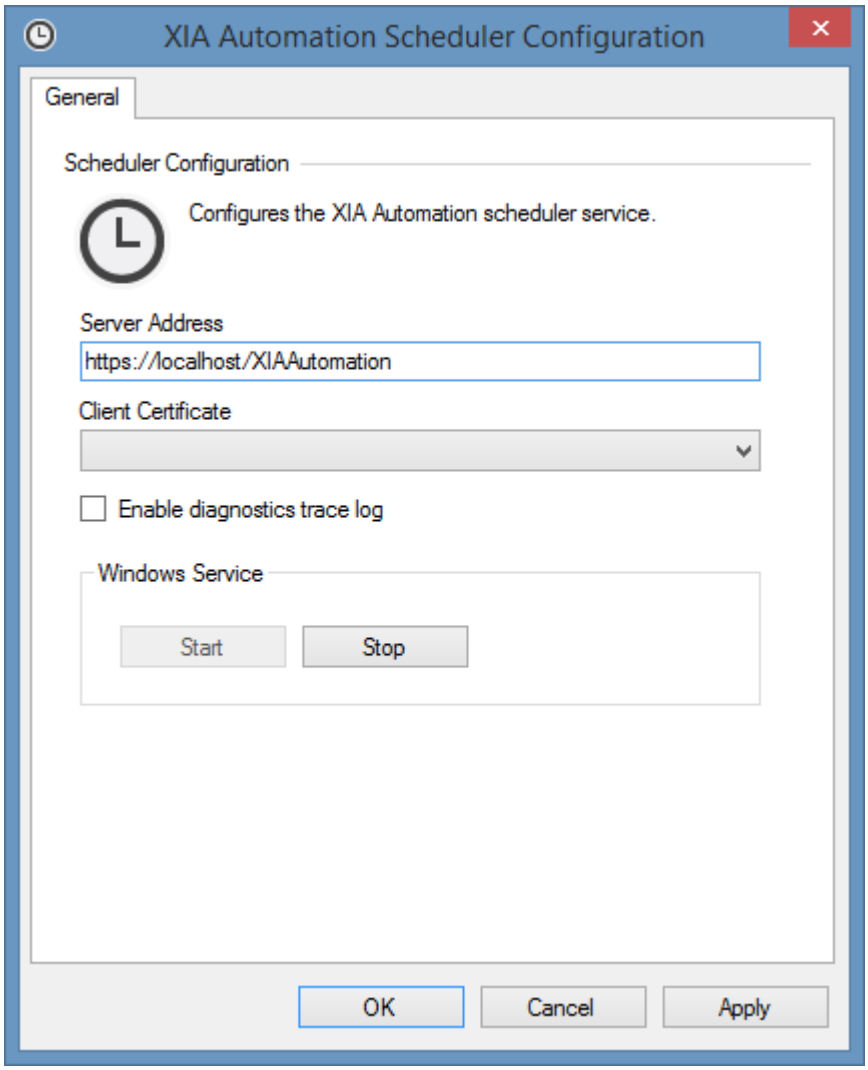
- Ensure that the Local Service account has permissions to **Read** the key.



- Select the client certificate in the scheduler configuration tool.

Scheduler Configuration Tool

The scheduler configuration tool allows for the simple configuration of the scheduler service.
Installation Directory\XIA Automation Scheduler\CENTREL.XIA.Automation.Server.SchedulerUI.exe



Server Address
The address of the XIA Automation Server installation.

Client Certificate
Determines which client certificate to use for client certificate authentication, if required. Only certificates that support client authentication and have the private key available will be listed. For more information see the configuring client certificates section.

Enable Diagnostics Trace Log
Determines whether the scheduler diagnostics log should be enabled for the scheduler service. The service must be stopped and started for this change to take effect.

Service Control
Provides information about the state of the scheduler service, and allows the service to be stopped and started.

Scheduler Diagnostics Log

The scheduler service has its own diagnostics log which can be enabled using the scheduler configuration tool.

Once enabled the diagnostics log is written, by default, to the following location.
C:\Program Files\CENTREL Solutions\XIA Automation\XIA Automation Scheduler\Logs\Trace\trace.log

Scheduler Registry Keys

The following registry keys are used by the scheduler service and are provided for reference only.

Please use the scheduler configuration tool to configure the scheduler service.

Url
This stores the URL used by the scheduler to access XIA Automation Server.
By default, this is http://localhost/xiaconfiguration, however, it can be modified if the server is installed at a different URL.
HKEY_LOCAL_MACHINE\SOFTWARE\CENTREL Solutions\XIA Automation\XIA Automation Server

ClientCertificateThumbprint
The thumbprint of the client certificate to use when connecting to the XIA Automation Server. For more information see the configuring client certificates section.
HKEY_LOCAL_MACHINE\SOFTWARE\CENTREL Solutions\XIA Automation\XIA Automation Scheduler

EnableTrace
This value determines whether trace logging should be enabled by the scheduler service. When set to zero, trace is disabled. When set to "1", trace is enabled.
HKEY_LOCAL_MACHINE\SOFTWARE\CENTREL Solutions\XIA Automation\XIA Automation Scheduler

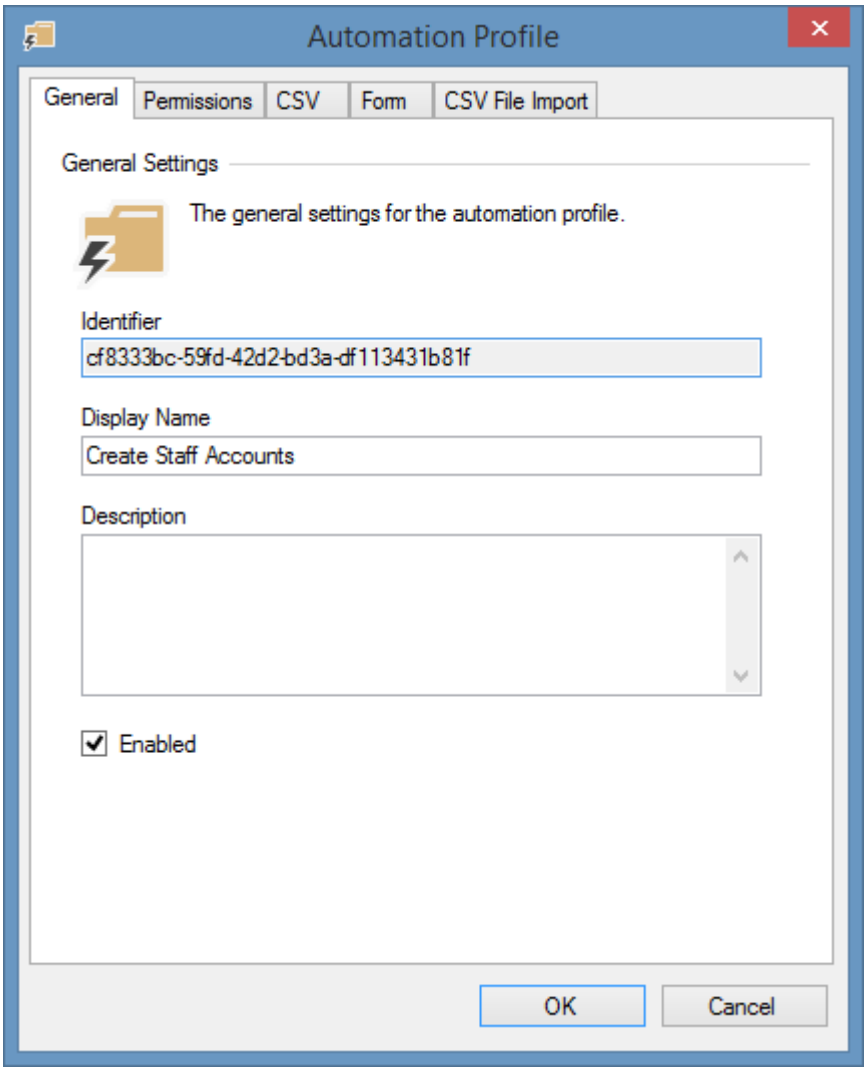
Path
This value determines the installation directory of the scheduler service.
HKEY_LOCAL_MACHINE\SOFTWARE\CENTREL Solutions\XIA Automation\XIA Automation Scheduler

Automatically Import Files

The scheduler service provides the ability to poll a directory on the file system and automatically import files within that directory.

To enable automatic import, complete the following steps:

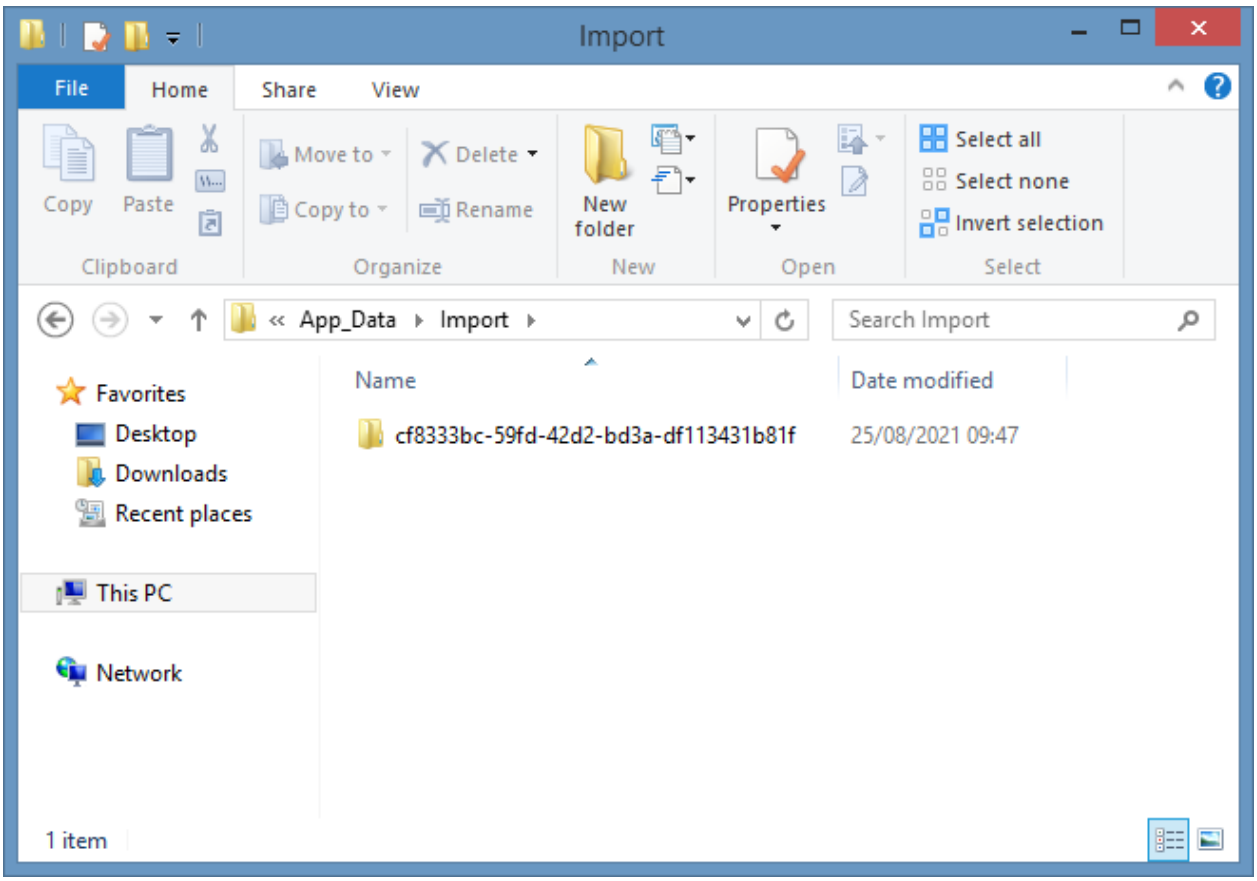
- Ensure that the scheduler service is configured and running.
- Enable the import functionality see the file import tab of the server configuration settings dialog of the XIA Automation administration tools.
- Open the import directory specified on the file import tab, by default this is the following path. C:\Program Files\CENTREL Solutions\XIA Automation\XIA Automation Server\App_Data\Import
- View the properties of the automation profile for which you wish to import files and note the display name and unique identifier on the general tab.



- Create a new directory in the import directory that matches either the profile display name or profile identifier.
  It is recommended that the profile identifier is used as this remains constant even if the profile

name is changed.

NOTE: This is done automatically if the *automatically create directories* option is enabled in the file import settings.



- Place any CSV files containing the data into the directory created. The files will be automatically imported by the scheduler service in date modification order at the next polling interval, and the results will be written to the audit log.

- If a file cannot be processed it will be moved to an "ImportFailures" directory within the automation profile's directory.

SDK

XIA Automation supports the ability to extend the system using the following SDKs.

Web Services API

Provides the ability to access the XIA Automation Server.

Dynamic Plugin Tasks

Provides the ability to execute custom code as an automation task when executing an automation profile.

Dynamic Plugin Variable Definitions

Provides the ability to execute custom code as a variable definition to provide users with custom values when executing an automation profile.

Web Services SDK

The following development environments are supported:

- Microsoft Visual Studio using C#.NET.
- Microsoft PowerShell or PowerShell Integrated Scripting Environment (ISE).

The following web services are integrated into XIA Automation Server.

Administration Web Service
The administration web service provides system administrators with access to the system configuration, licensing information, and server diagnostics.

This web services is also used by the administration tools.

Automation Web Service
The automation web service provides users with access to execute automation profiles.

Scheduler Access Web Service
The scheduler access web service is used by the scheduler service to perform automated actions such as automatically importing files. This web service is for **internal use** only and should not be accessed by the SDK.

Administration Web Service (System Administrators)

The administration web service provides functions such as access to the system configuration, licensing information, and server diagnostics.

This web services is also used by the administration tools.

```
# Connect to the administration web service.
Clear-Host;
$url = "http://localhost/XIAAutomation/WebService/AdministrationWebService.asmx";
Write-Host "Connecting to administration web service at" $url;
$administration = New-WebServiceProxy -UseDefaultCredential -Uri $url;
Write-Host "Connected as $($administration.GET_AuthenticatedUserName())";


# To use specific credentials use the Get-Credential cmdlet.
$creds = Get-Credential;
$administration = New-WebServiceProxy -Uri $url -Credential $creds;
```

NOTE: Only system administrators can access this web service.

Automation Status

The following example displays the automation status.

- Connect to the administration web service.

```
# Get the current automation status.
$status = $administration.GET_AutomationStatus();
if ($status.IsActive -eq $false)
{
    Write-Host "There is currently no active profile executing.";
    return;
}

# Display the status.
Write-Host "Automation Status";
Write-Host "-----------------------------";
Write-Host "Account Name: $($status.AccountName)";
Write-Host "Profile: $($status.ProfileDisplayName)";
Write-Host "Elapsed Time: $($status.ElapsedTimeString)";
Write-Host "Last Action: $($status.LastAction)";
```

NOTE: This is functionally equivalent to the method with the same name in the automation web service.

Disconnection

When access to the administration web service is completed the code should disconnect from the server.

```
# Disconnect from the administration web service.
$administration.DO_Disconnect();
```

NOTE: This prevents users accessing the XIA Automation Server using the administration tools from receiving a warning message that multiple system administrators are connected to the server.

Licensing Information

The following example gets and displays licensing information for the XIA Automation Server.

- Connect to the administration web service.

```
# Get licensing information.
$licensing = $administration.GET_LicensingInformation();
if ($licensing.IsLicensed -eq $false)
{
    "The product is not licensed.";
    return;
}

# Write licensing information.
Write-Host $licensing.License.LicenseTypeDisplayName;
Write-Host "-----------------------------------------------";
Write-Host "Customer Name: $($licensing.License.CustomerName)";
Write-Host "Expiry Date: $($licensing.License.ExpiryDate)";
Write-Host "Support Expiry Date: $($licensing.License.SupportExpiryDate)";
```

Server Diagnostics

The following example enables the diagnostics log on the XIA Automation Server.

- Connect to the administration web service.

```
# Enable diagnostics log.
$administration.DO_EnableTrace();

# Display the local path to the diagnostics log on the XIA Automation Server.
Write-Host $administration.GET_TraceLogPath();

# Display the contents of the diagnostics log.
Write-Host $administration.GET_TraceLogContents();
```

Scheduler Status

The following example displays the status of the scheduler service.

- Connect to the administration web service.

```
# Get the current scheduler status.
$status = $administration.GET_SchedulerStatus();
if ($status.IsExecuting -eq $false)
{
    Write-Host "The scheduler is not currently executing.";
    return;
}


# Display the status.
Write-Host "Scheduler Status";
Write-Host "----------------------------";
Write-Host "Last Updated: $($status.LastUpdated)";
Write-Host "Summary: $($status.Summary)";
```

System Configuration

The following example accesses and updates the configuration of the XIA Automation Server.

- Connect to the administration web service.

```
# Get the current system configuration.
$configuration = $administration.GET_SystemConfiguration();

# Modify the configuration.
$configuration.UserInterface.Title = "New Company Name";

# Update the configuration.
$administration.SET_SystemConfiguration($configuration);
```

Automation Web Service

The automation web service provides user access to access and execute automation profiles and check the automation status.

```
# Connect to the automation web service.
Clear-Host;
$url = "http://localhost/XIAAutomation/WebService/AutomationWebService.asmx";
Write-Host "Connecting to automation web service at" $url;
$automation = New-WebServiceProxy -UseDefaultCredential -Uri $url;
Write-Host "Connected as $($automation.GET_AuthenticatedUserName())";


# To use specific credentials use the Get-Credential cmdlet.
$creds = Get-Credential;
$automation = New-WebServiceProxy -Uri $url -Credential $creds;
```

Automation Status

The following example displays the automation status.

- Connect to the automation web service.

```
# Get the current automation status.
$status = $automation.GET_AutomationStatus();
if ($status.IsActive -eq $false)
{
    Write-Host "There is currently no active profile executing.";
    return;
}


# Display the status.
Write-Host "Automation Status";
Write-Host "-----------------------------";
Write-Host "Account Name: $($status.AccountName)";
Write-Host "Profile: $($status.ProfileDisplayName)";
Write-Host "Elapsed Time: $($status.ElapsedTimeString)";
Write-Host "Last Action: $($status.LastAction)";
```

NOTE: This is functionally equivalent to the method with the same name in the administration web service.

Automation Profiles Names

The following example gets the unique identifiers of the automation profiles to which the user has permission in GUID format.

The unique identifier is converted to the display name of the automation profile.

- Connect to the automation web service.

```
# Get the unique identifiers of the automation profiles to which the user has permissions.
$identifiers = $automation.GET_AutomationProfileIdentifiers();
foreach ($identifier in $identifiers)
{
    $displayName = $automation.GET_AutomationProfileDisplayName($identifier);
    Write-Host "$($displayName) - $($identifier)";
}
```

NOTE: The automation profile must have web service access enabled to be displayed in the results.

Execute Job

The following example executes a single job for an automation profile.

- Connect to the automation web service.
- Set the profile identifier to a valid automation profile.
- Set the variables as required by the automation profile.

```
# Set the unique identifier of the automation profile to execute.
$profileIdentifier = "207dd2fe-9380-4869-a6c3-39dae9a8bebb";

# Create a job and set the variables.
$job = $automation.DO_CreateJob();
$job = $automation.DO_AddVariable($job, "FirstName", "Tariq");
$job = $automation.DO_AddVariable($job, "LastName", "Razzaq");


# Execute the job.
$jobsIdentifier = $automation.DO_ExecuteJob($profileIdentifier, $job);
```

NOTE: The automation profile must have web service access enabled else an access denied exception will be thrown.

Execute Jobs

The following example executes multiple jobs for an automation profile.

- Connect to the automation web service.
- Set the profile identifier to a valid automation profile.
- Set the variables as required by the automation profile.

```
# Set the unique identifier of the automation profile to execute.
$profileIdentifier = "207dd2fe-9380-4869-a6c3-39dae9a8bebb";

# Create a new jobs collection for the specified automation profile.
$jobs = $automation.DO_CreateJobs($profileIdentifier);

# Create a job and set the variables.
$job = $automation.DO_CreateJob();
$job = $automation.DO_AddVariable($job, "FirstName", "Tariq");
$job = $automation.DO_AddVariable($job, "LastName", "Razzaq");
$jobs.Job += $job;


# Create a job and set the variables.
$job2 = $automation.DO_CreateJob();
$job2 = $automation.DO_AddVariable($job2, "FirstName", "Sarah");
$job2 = $automation.DO_AddVariable($job2, "LastName", "Jackson");
$jobs.Job += $job2;


# Execute the jobs.
$jobsIdentifier = $automation.DO_ExecuteJobs($jobs);
```

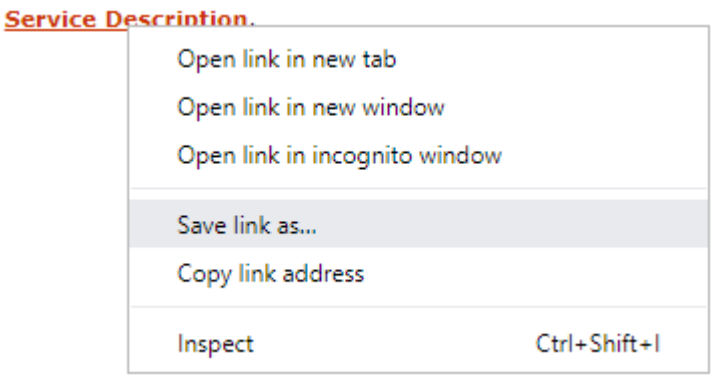
NOTE: The automation profile must have web service access enabled else an access denied exception will be thrown.

Using Windows PowerShell with Client Certificates

When using client certificates additional steps must be taken due to a limitation in the New-WebServiceProxy cmdlet which does not support client certificates.

- Open the XIA Automation Server web service that you are trying to access - for example http://localhost/XIAAutomation/WebService/AdministrationWebService.asmx

- Right click the service description link, and click save link as



- Save the WSDL document to a location accessible to the script - for example "C:\WebService\XiaAutomation.wsdl"

- Use the following in a PowerShell script or the PowerShell Integrated Scripting Environment (ISE), replacing the highlighted text with appropriate values

```
Clear-Host
$xia = New-WebServiceProxy "file://C:\WebService\filename.wsdl"
$certificate = Get-ChildItem Cert:\CurrentUser\My\{THUMBPRINT}
$xia.ClientCertificates.Add($certificate)
$xia.UseDefaultCredentials = $true
$xia.Url = {URL}
Write-Host $xia.GET_AuthenticatedUserName()
```

NOTE: When XIA Automation Server is upgraded the steps to generate the WSDL file must be repeated.

NOTE: The client certificate can be installed in the local machine certificate store and the script updated accordingly.

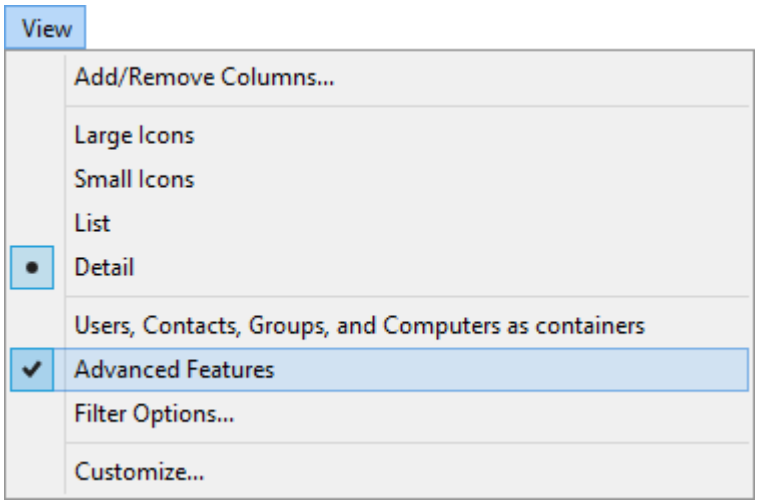
Technical Reference

The following provides a technical reference for XIA Automation Server.

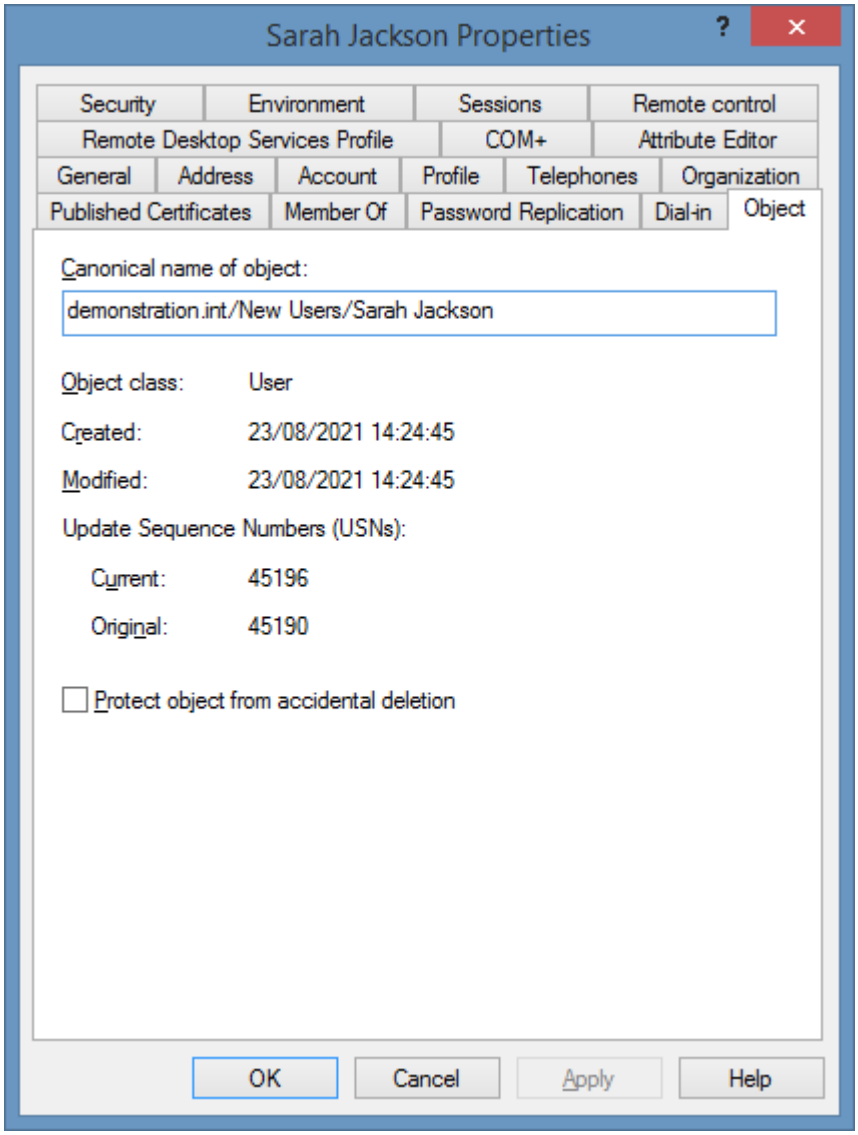
Canonical Name

The canonical name is an attribute in Microsoft Active Directory that describes the location of an object in the directory.

The canonical name of an object can be seen within the Active Directory Users and Computers by ensuring that the Advanced Features option is ticked on the view menu.



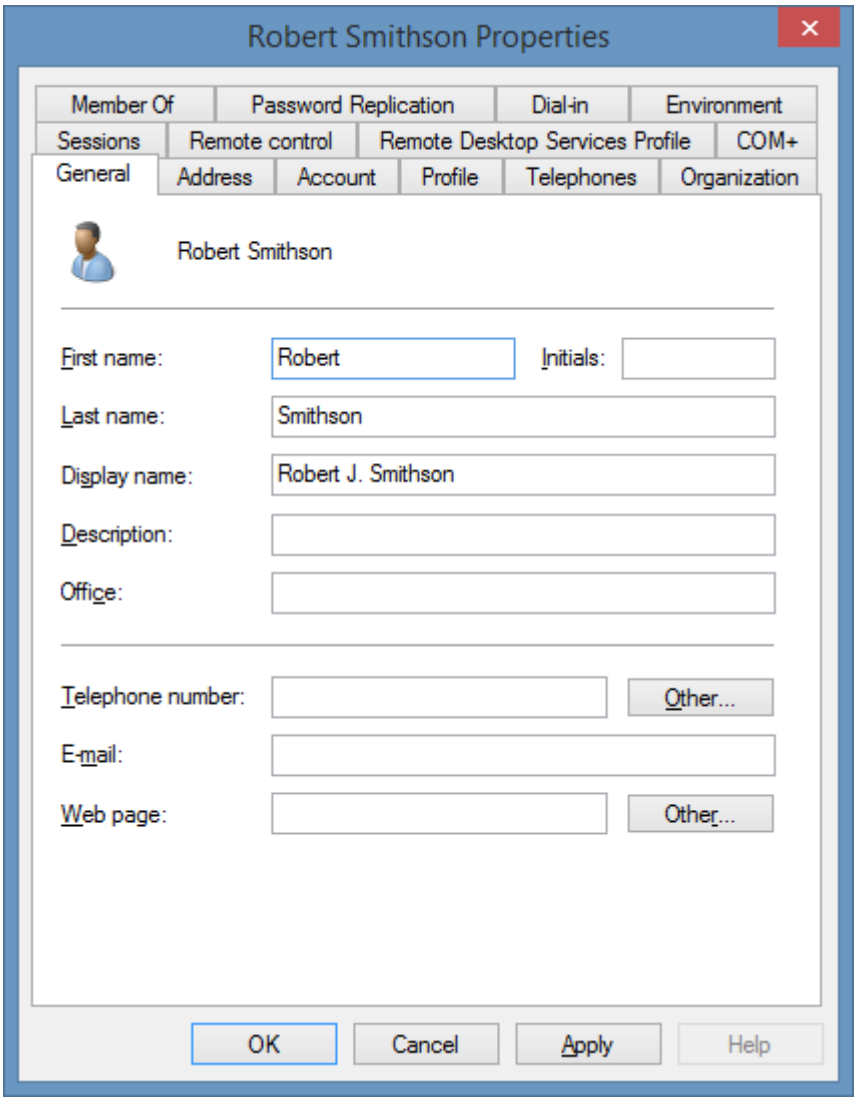
Then select the object tab.


Sarah Jackson Properties
Security
Environment
Sessions
Remote control
Remote Desktop Services Profile
COM+
Attribute Editor
General
Address
Account
Profile
Telephones
Organization
Published Certificates
Member Of
Password Replication
Dial-in
Object
Canonical name of object:
demonstration.int/New Users/Sarah Jackson
Object class: User
Created: 23/08/2021 14:24:45
Modified: 23/08/2021 14:24:45
Update Sequence Numbers (USNs):
Current: 45196
Original: 45190
Protect object from accidental deletion
OK
Cancel
Apply
Help

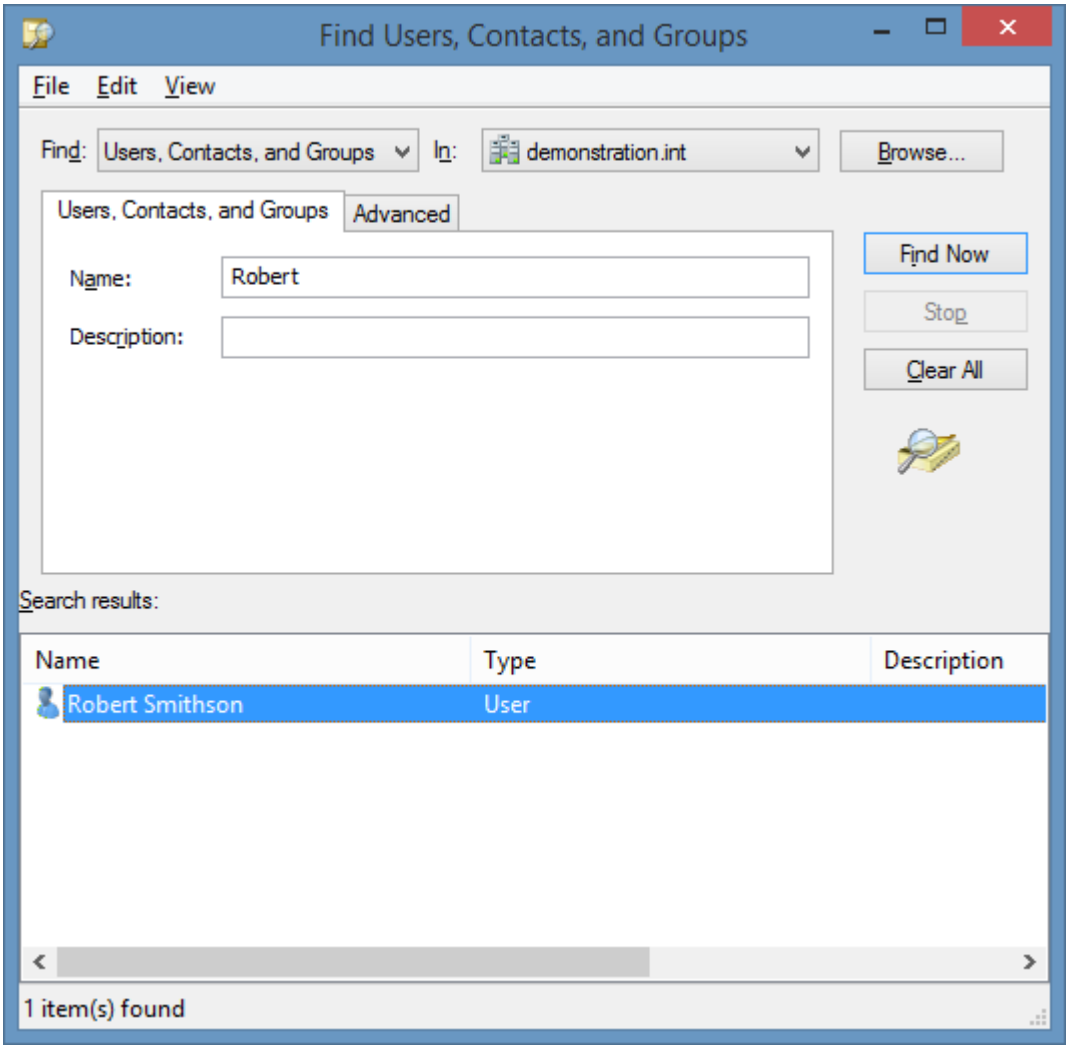
Common Name

The common name is an attribute in Microsoft Active Directory.

- The common name is displayed in Active Directory User and Computers.



- The common name is not used for authentication.
- This name does not have to be unique in the domain however must be unique within the container or organizational unit in which it is created.
- The common name is shown in search results.

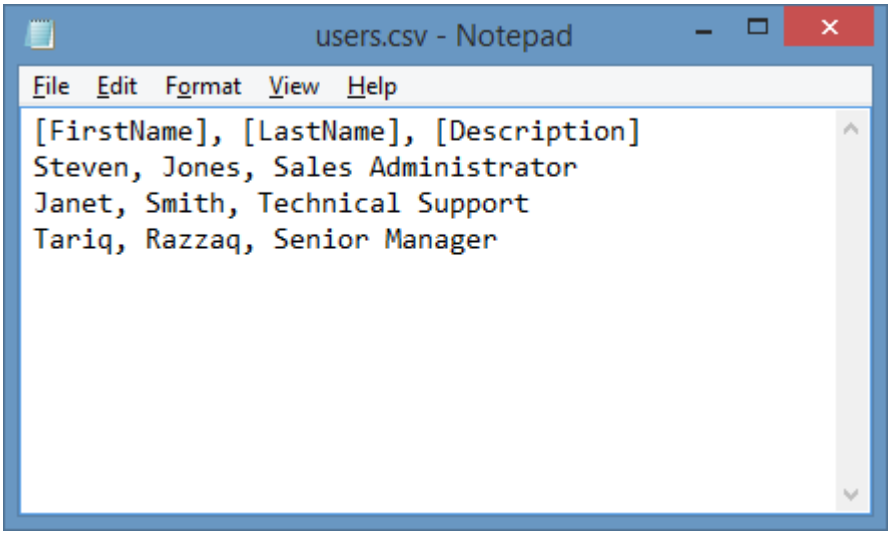

Find Users, Contacts, and Groups
File Edit View
Find: Users, Contacts, and Groups
In: demonstration.int
Browse...
Users, Contacts, and Groups
Advanced
Name: Robert
Description:
Find Now
Stop
Clear All
Search results:
Name
Type
Description
Robert Smithson
User
1 item(s) found

CSV Files

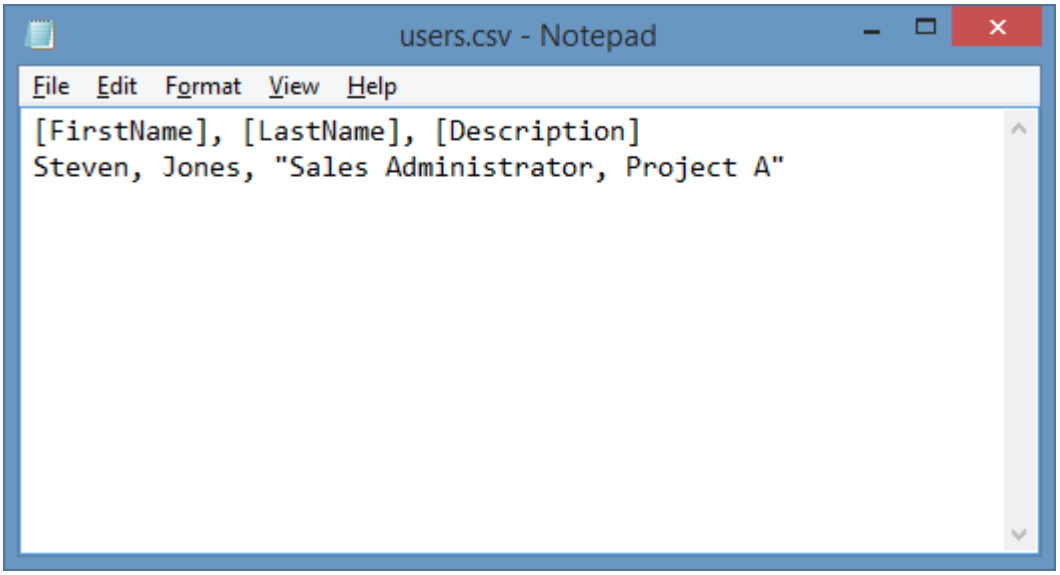
Comma-separated values (CSV) files can be imported into XIA Automation Server using either the CSV input user interface, or the automatic file import functionality provided by the scheduler service.

- The CSV file may include the automation variable names in the header row, this allows the columns to be mapped automatically.

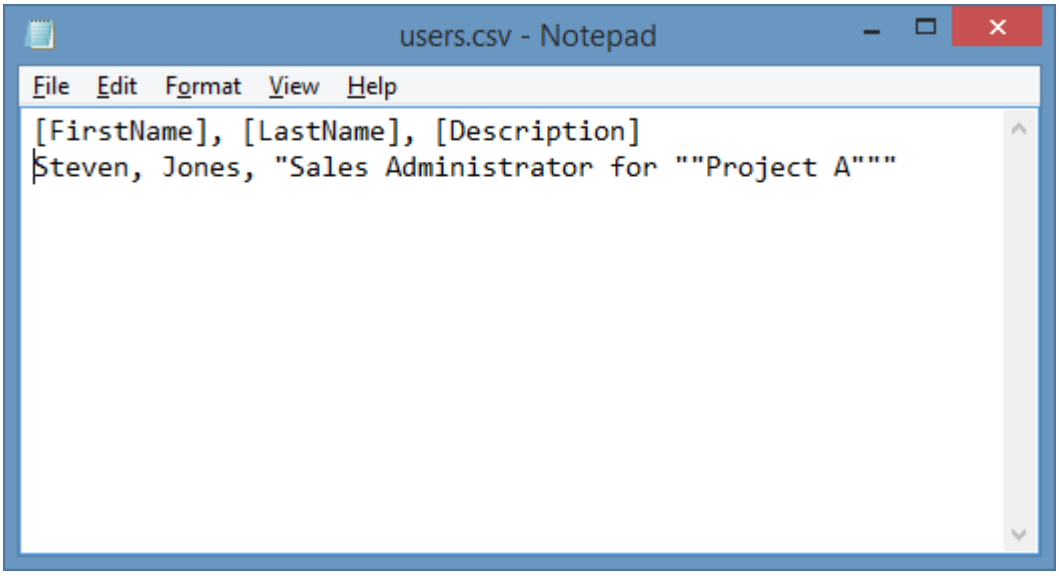
  The automation variable names may or may not be enclosed in square brackets, however the automation variable display name cannot be used.



- If a value includes a comma then the entire value must be enclosed in double quotation marks.

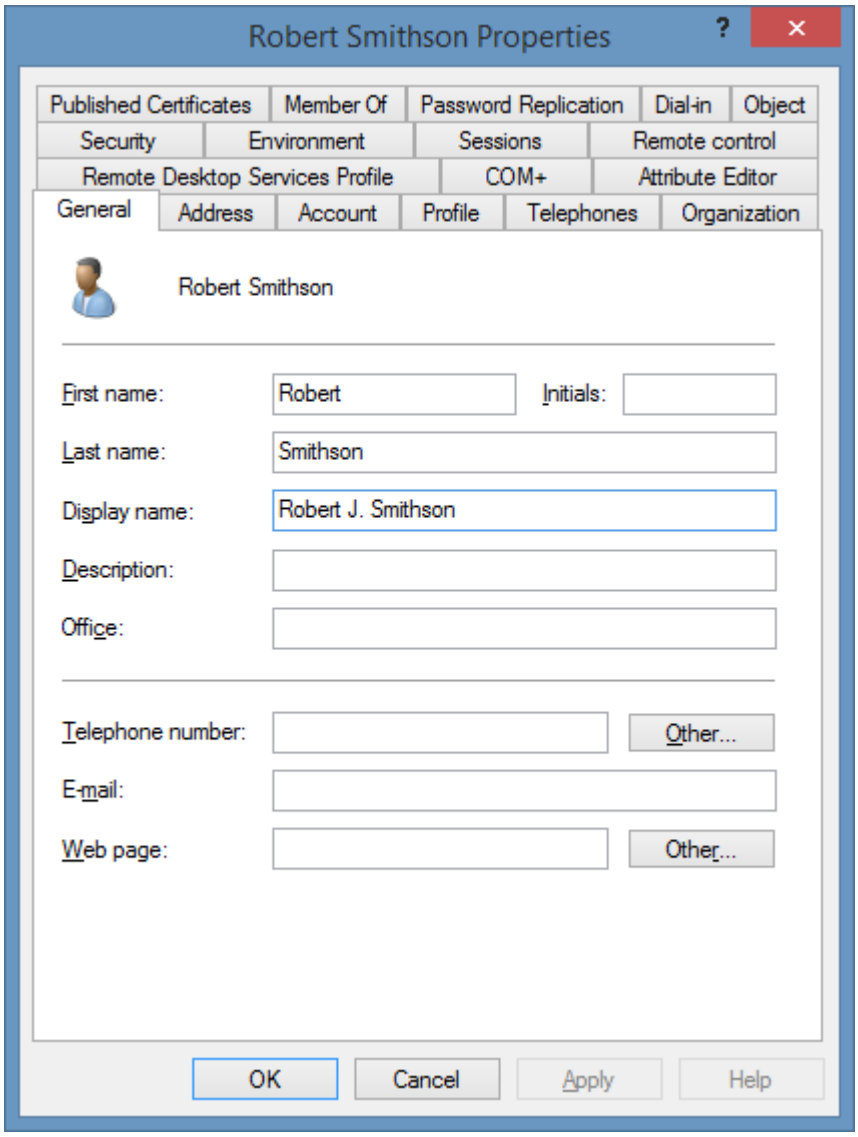


- If a value includes double quotation marks the entire value must be enclosed in double quotation marks and the double quotation marks replaced with two double quotation marks.


users.csv - Notepad
File Edit Format View Help
[FirstName], [LastName], [Description]
Steven, Jones, "Sales Administrator for ""Project A"""

Display Name

The display name is an attribute in Microsoft Active Directory. This is usually the combination of the users first name, middle initial, and last name, however can be set to any string.



- The display name is used for display purposes.
- This name is not used for authentication.
- This does not have to be unique in the domain.

GUID

A globally unique identifier (GUID) is a 128-bit value consisting of one group of 8 hexadecimal digits, followed by three groups of 4 hexadecimal digits each, followed by one group of 12 hexadecimal digits.

GUIDs are the Microsoft implementation of the distributed computing environment (DCE) universally unique identifier (UUID).

The following is an example of a GUID

6B29FC40-CA47-1067-B31D-00DD010662DA

User Interface

The main user interface of the XIA Automation Server can be accessed using a supported web browser.

About

Displays information about the XIA Automation Server including version and copyright information as well as links to the EULA, release notes, and web site.

Audit Logs

The audit logs record information about the automation profiles that have been run.

The audit logs can be searched using the following fields.

Account Name
The name of the account that executed the automation profile, or blank for all user accounts.
NOTE: Only system administrators can view the audit logs of other users.

Profile Display Name
The display name of the automation profile that was executed, or blank for all automation profiles.

Minimum Start Date
The minimum date on which the automation profile was executed.

Maximum Start Date
The maximum date on which the automation profile was executed.

Double clicking an audit log displays the audit log.

Audit Log

The audit log page displays all information about the audit log.

Account Name
The name of the account that executed the automation profile.

Data Source Type
The source of data that was used to execute the automation profile.

- Form
- CSV
- CSV File
- Web Service

Profile Display Name
The display name of the automation profile that was executed.

Profile Identifier
The unique identifier of the automation profile that was executed in GUID format.

Service Account
The account name of the service account.

Start Time
The date and time that the automation profile was executed.

Finish Time
The date and time that the automation profile execution completed.

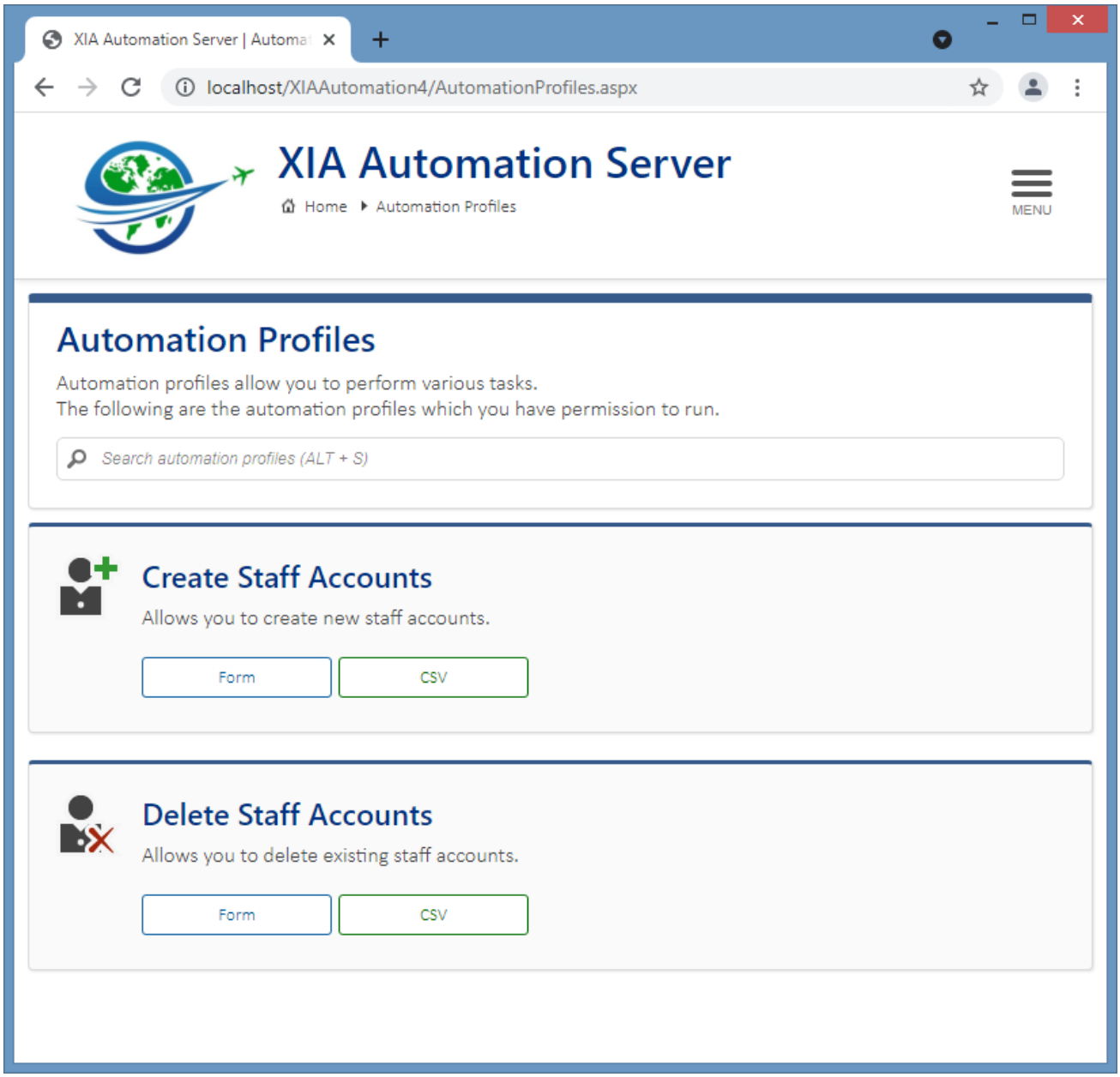
Duration
The length of time that the automation profile was executing.

Jobs
Displays information about each of the jobs that were executed.

Automation Profiles

The automation profiles page lists the automation profiles that the current user has permission to run.

The profiles can be searched by entering the whole or part of the automation profile name in the search box.



Automation Status

Displays the status of the currently executing automation profile.

NOTE: System administrators can see automation profiles that have been executed by any user.

Account Name
The account name of the user that executed the automation profile.

Data Source Type
The source of data that was used to execute the automation profile.

- Form
- CSV
- CSV File
- Web Service

Jobs Identifier
The unique identifier of the jobs being executed by the automation profile in GUID format.

Profile Display Name
The display name of the automation profile.

Start Time
The time that the automation profile was executed.

Elapsed Time
The amount of time that the automation profile has been executing.

Last Action
The last action that was performed.

Completed Tasks
A summary of the automation tasks that have been executed by the automation profile.

CSV Input

The CSV input page allows users to execute automation profiles using a CSV file.

NOTE: This user interface is not available for mobile devices.

Either drop the CSV file in the drop zone, or click browse to browse for the file.

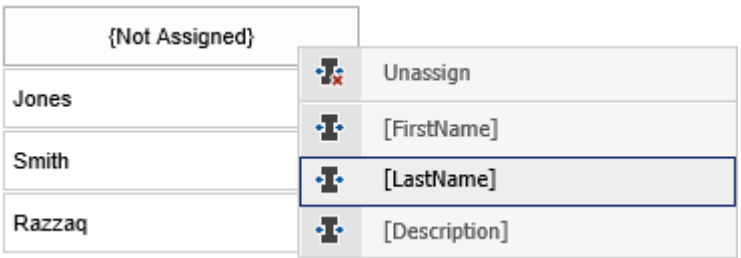
The information from the CSV file will be displayed. If the CSV file contains the automation variable names in the header row these will be mapped automaticity.

3 Lines

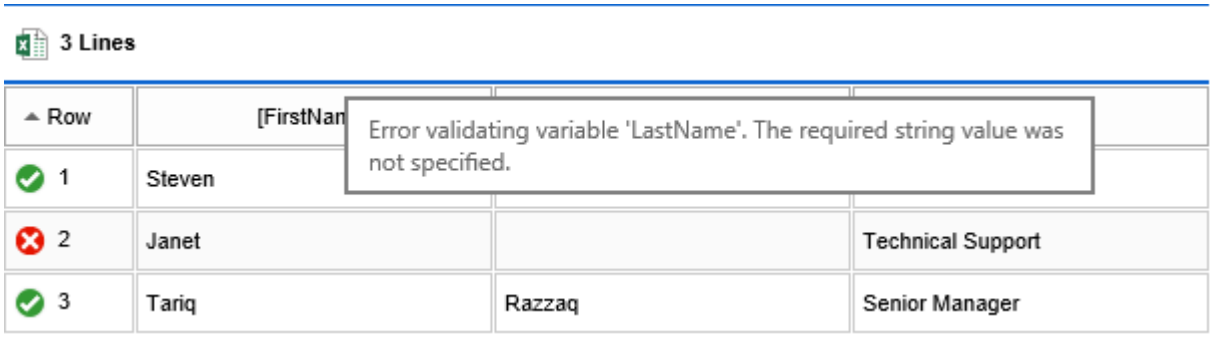
Row	[FirstName]	[LastName]	[Description]
1	Steven	Jones	Sales Administrator
2	Janet	Smith	Technical Support
3	Tariq	Razzaq	Senior Manager

To map the columns manually right click the column and assign the appropriate automation variable.

NOTE: Each automation variable can only be assigned once, if the automation variable is already assigned to a column it will be unassigned from that column.

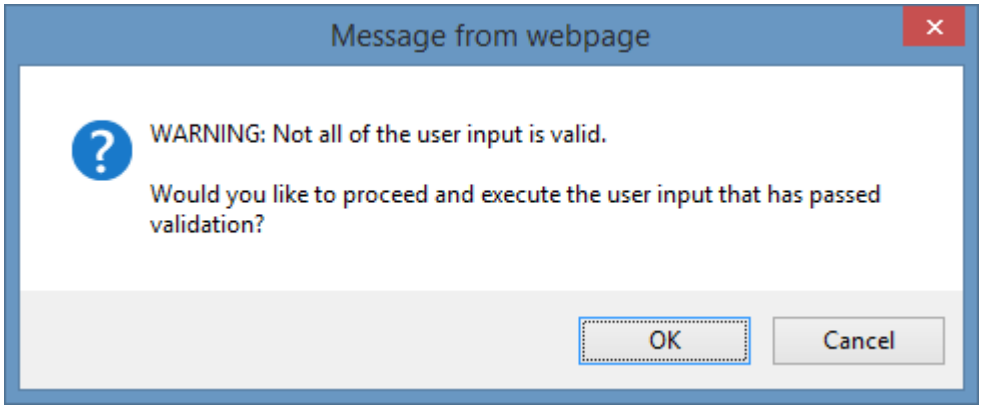


If the row contains validation errors a error icon is displayed for the row. Hovering the mouse over the row displays the validation error.



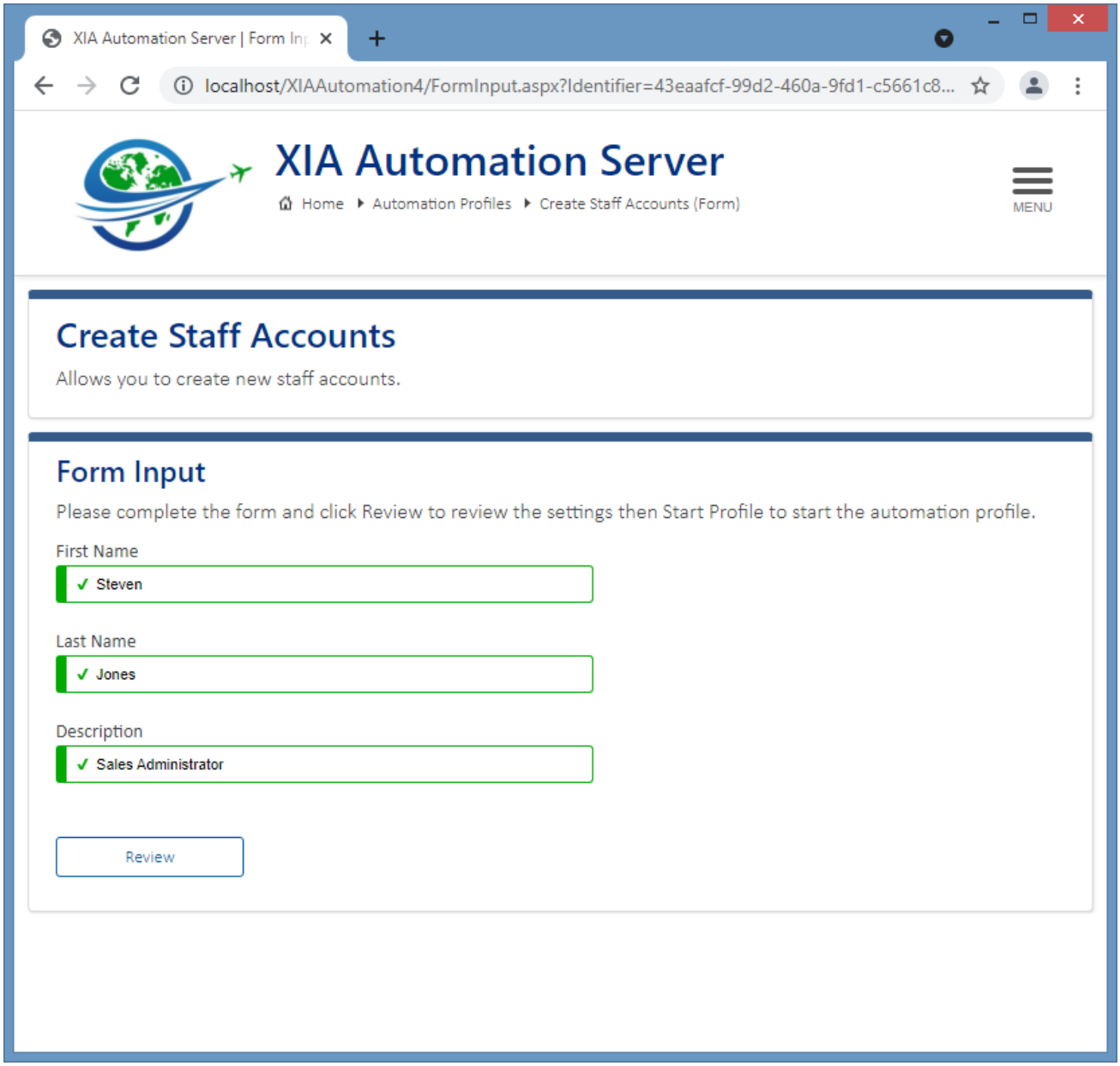
Clicking the start profile button will execute the automation profile.

NOTE: If any of the rows still fail validation you will be prompted whether to proceed and execute only the rows that have passed validation.



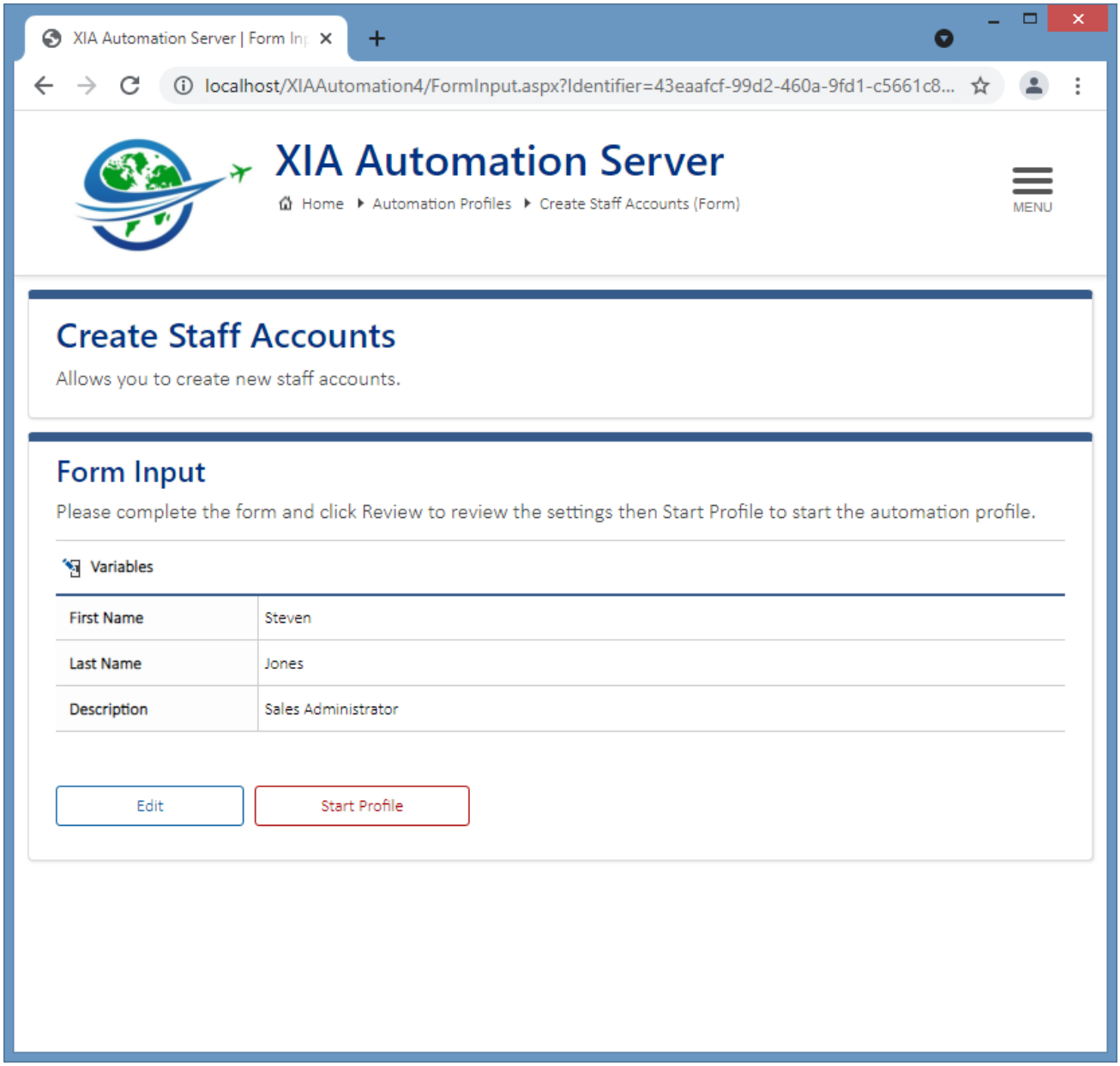
Form Input

The form input page allows users to execute automation profiles using a web based form interface.



Clicking the *Review* button displays the review page where the information can be reviewed and edited if necessary.

Clicking the *Start Profile* button will immediately execute the automation profile.


XIA Automation Server | Form In
localhost/XIAAutomation4/FormInput.aspx?Identifier=43eaafcf-99d2-460a-9fd1-c5661c8...
XIA Automation Server
Home
Automation Profiles
Create Staff Accounts (Form)
MENU
Create Staff Accounts
Allows you to create new staff accounts.
Form Input
Please complete the form and click Review to review the settings then Start Profile to start the automation profile.
Variables
First Name
Steven
Last Name
Jones
Description
Sales Administrator
Edit
Start Profile

Home

Displays the XIA Automation Server home page, which includes links to the following.

Automation Profiles
Displays the automation profiles that the user has permission to run.

Automation Status
Displays the current automation status.

Audit Logs
Displays the audit logs of profiles that have been run.

Menu

Selecting the menu icon displays the main menu which contains the following items.

Home
Displays the home page.

Automation Profiles
Displays the automation profiles that the user has permission to run.

Automation Status
Displays the current automation status.

Administration Tools Installer
Downloads the installation files for the XIA Automation Administration Tools. Only system administrators can access this item.

Audit Logs
Displays the audit logs of profiles that have been run.

Administration Web Service
Opens the administration web service. Only system administrators can access this item.

Automation Web Service
Opens the automation web service.

Help
Opens this help in a new web browser window.

About
Display the about dialog.

Web Controls

This section describes the web based controls in the XIA Automation Server.

Advanced Upload Control

The advanced upload control allows files to be uploaded to the XIA Automation Server.

Date Control

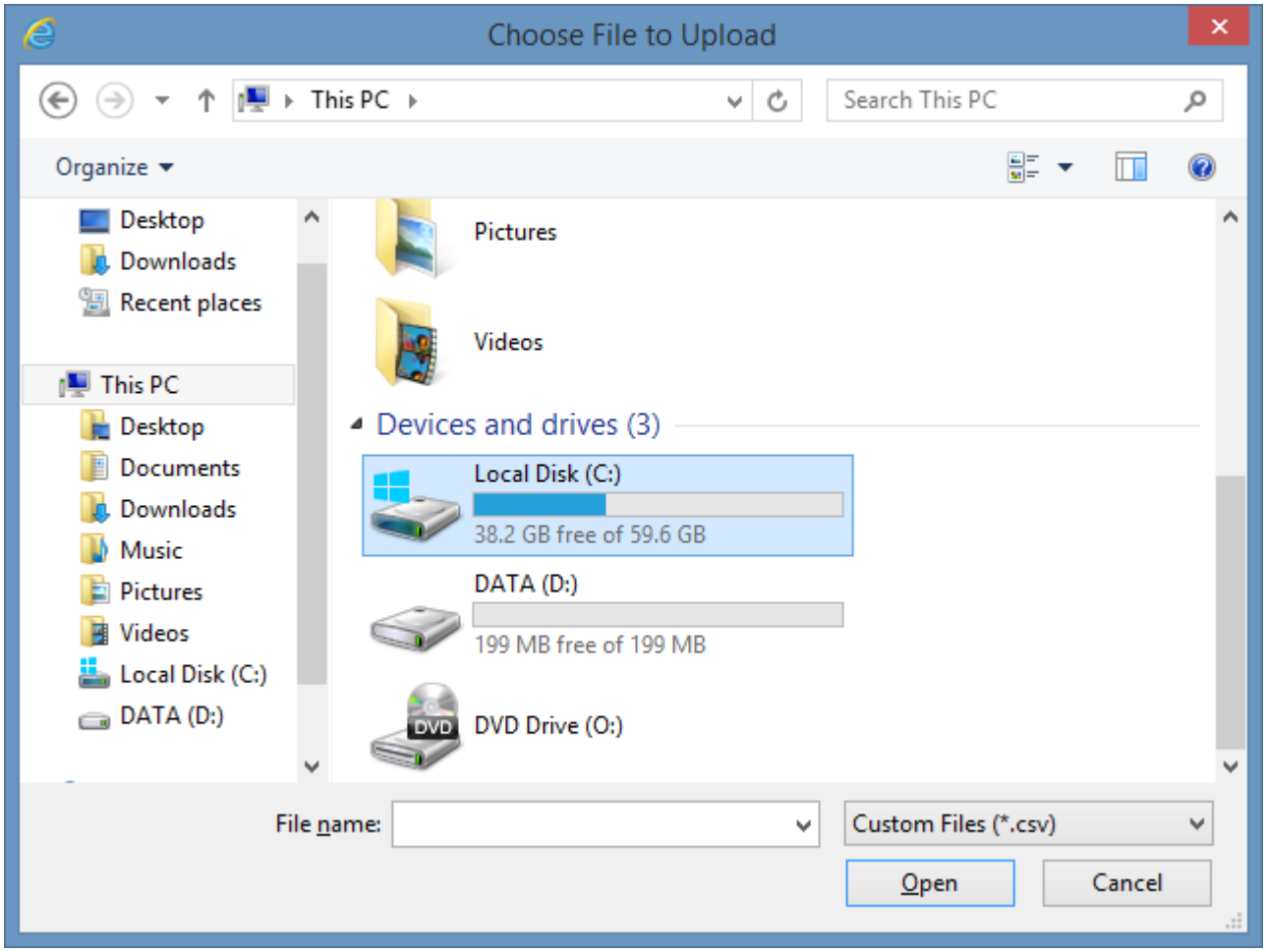
The date control allows the user to select a date.

Advanced Upload Control

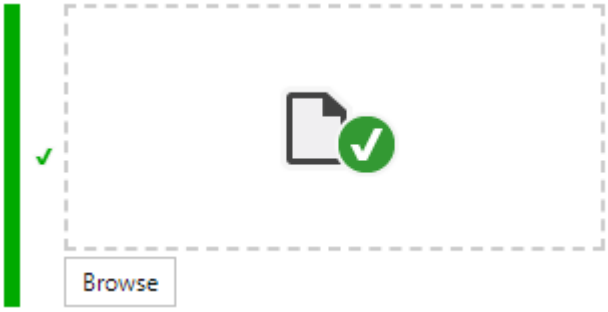
The advanced upload control allows files to be uploaded to the XIA Automation Server.

Files can be dropped directly into the drop zone shown with the dashed outline.

Clicking the button displays the file browse dialog.



When a file has been uploaded the success icon is displayed.

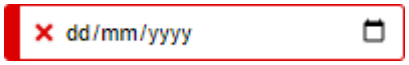


If the file uploaded is a valid image file, a thumbnail of that image is displayed.

Date Control

The date picker control allows the selection of a date.

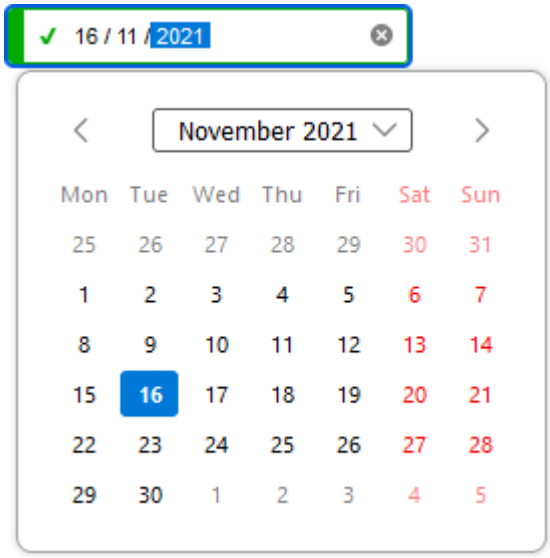
If the date is required but not set the control displays with a red border.



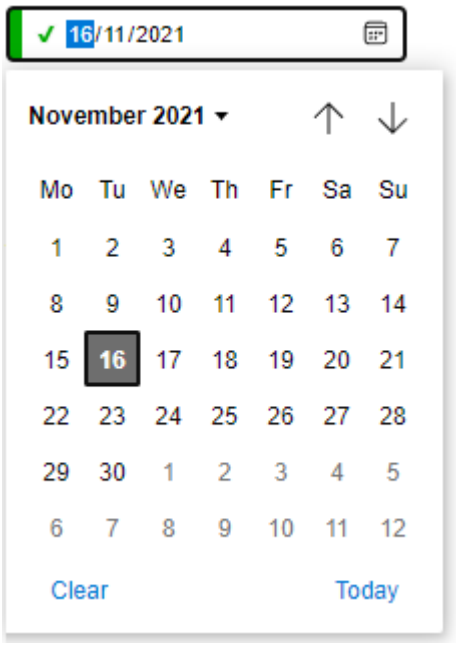
The control uses the HTML 5 date input control and the behaviour of this control varies between browsers.

The date can be entered by typing within the control or using the up and down arrows on the keyboard and is displayed in the short date format configured for the operating system.

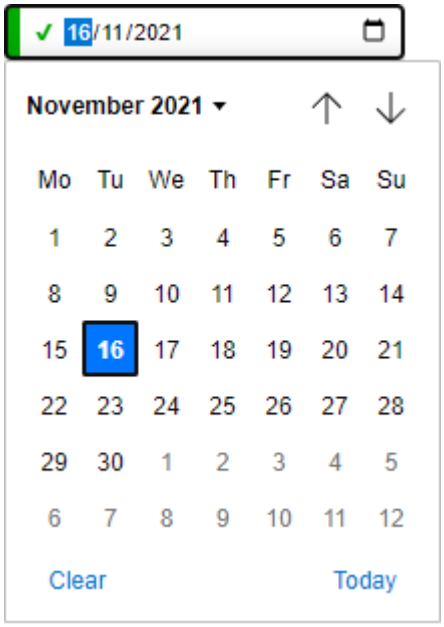
The control displayed in Mozilla Firefox.



The control displayed in Microsoft Edge.



The control displayed in Google Chrome.



Web Services

The web services provides the programmatic entry point for the Web Services SDK and scheduler service.

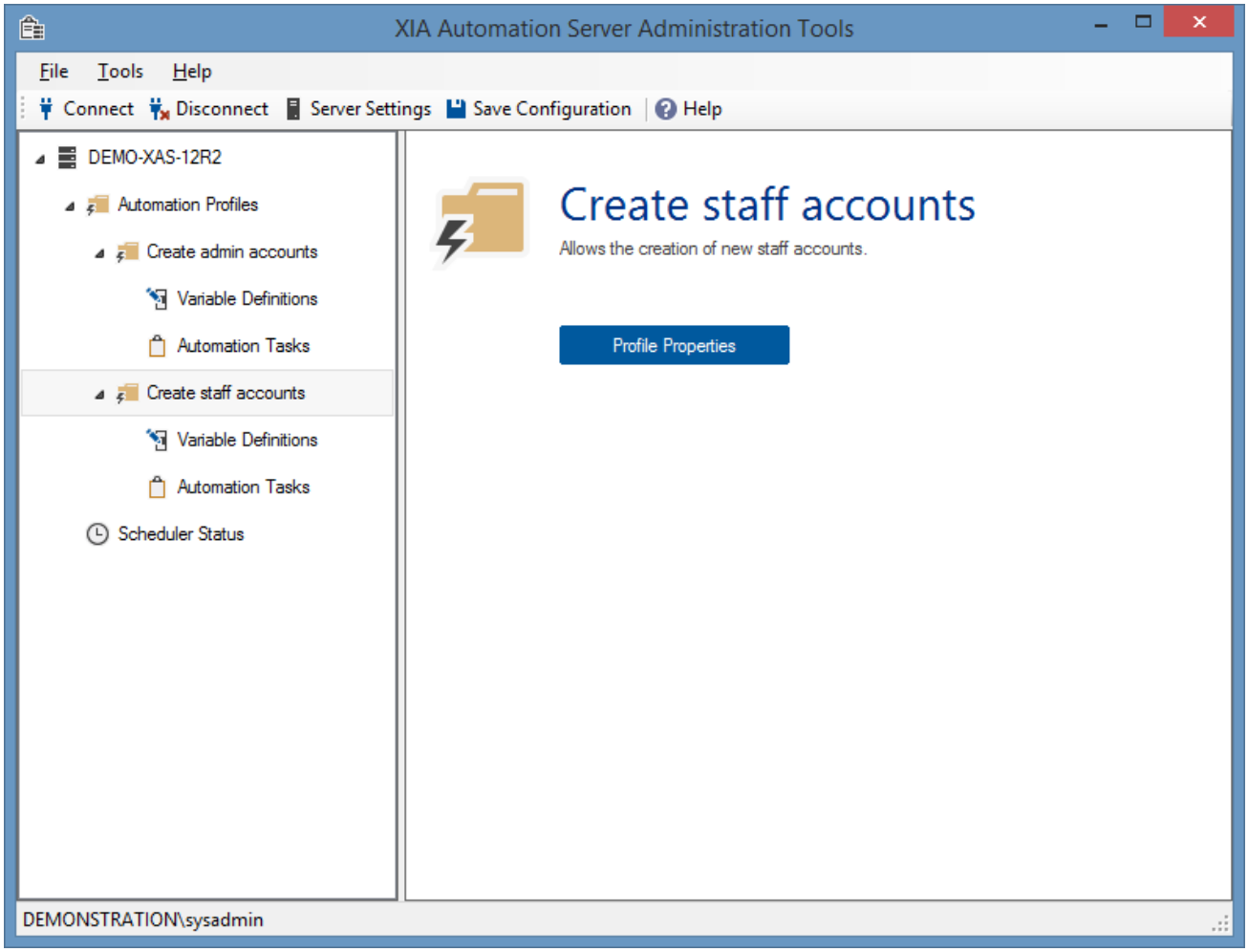
Scheduler Web Service

The scheduler web service is the entry point for the scheduler service to communicate with the XIA Automation Server and is for internal use by XIA Automation Server only.

The web service can be disabled on the web services tab of the server configuration settings within the XIA Automation administration tools.

XIA Automation Administration Tools

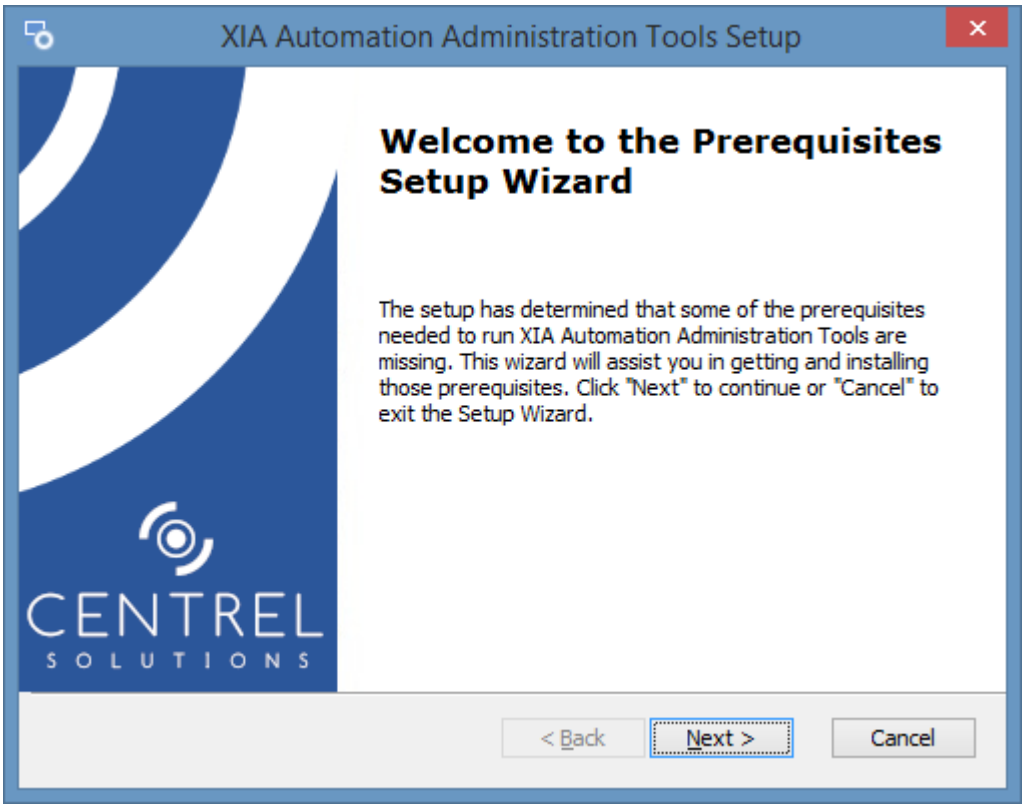
The XIA Automation Administration Tools are used for the configuration of the XIA Automation Server including designing the automation profiles that are executed by the user.



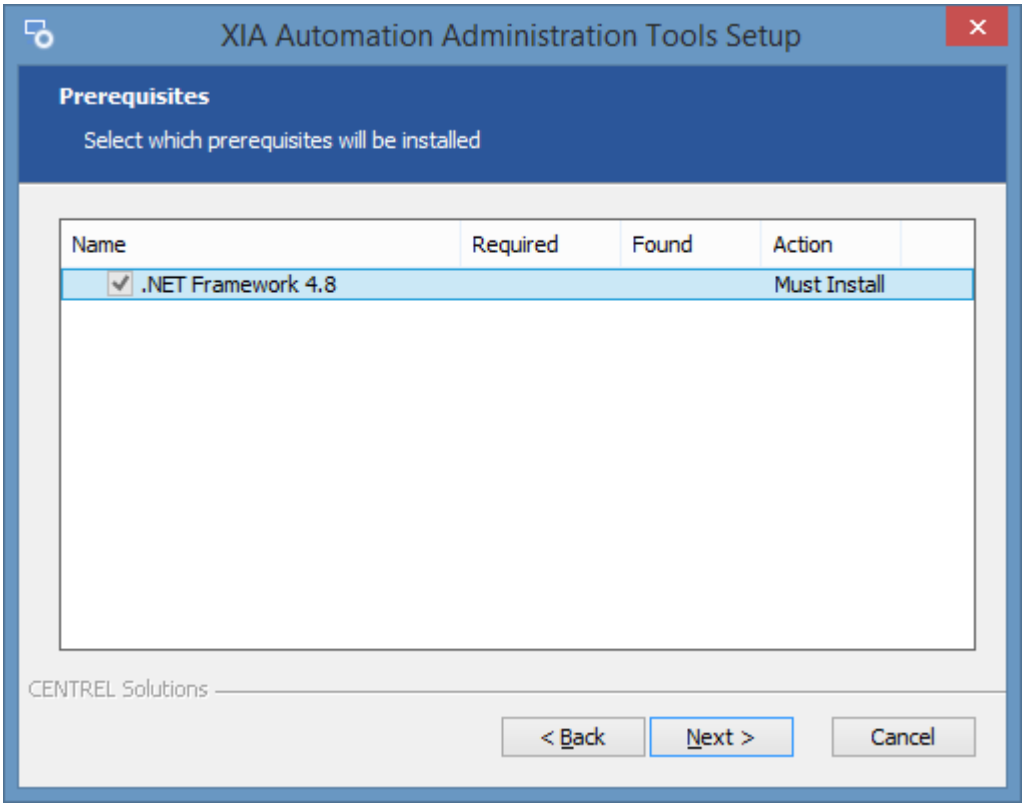
Installation

The XIA Automation Administration Tools can be installed on machines using the following process

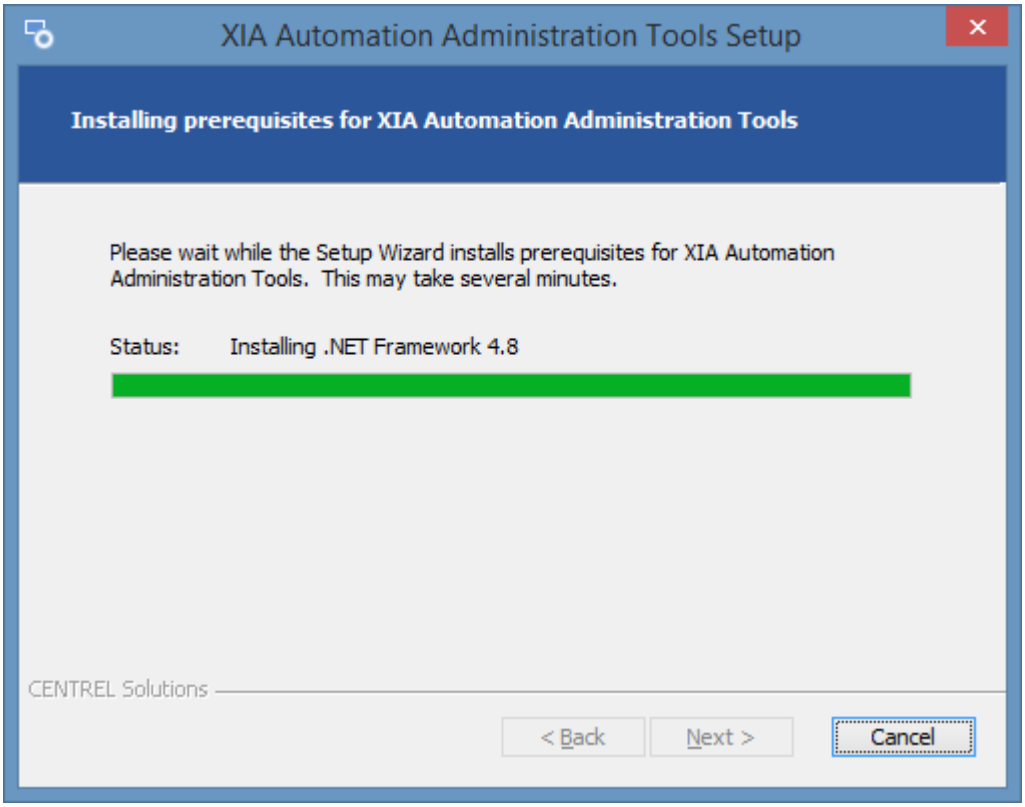
- **NOTE:** The XIA Automation administration tools are automatically installed with the XIA Automation Server.
- Check that the system you are installing on meets the administration tools requirements.
- Obtain the administration tools installation files.
- Start the installer.
- If the .NET Framework 4.8 is not installed and is not available as a Windows feature the *Prerequisites Setup Wizard* will be displayed.



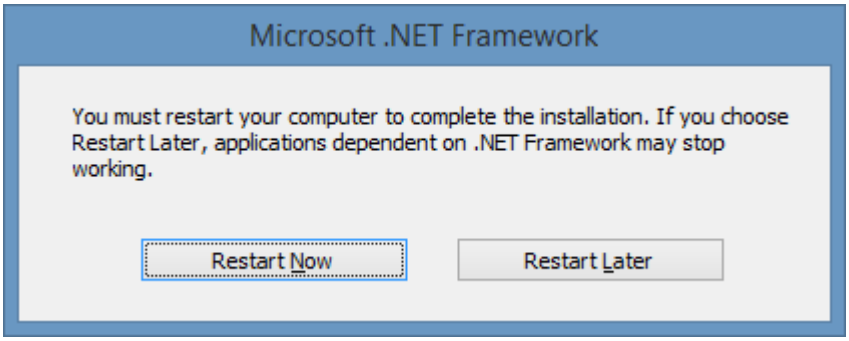
- You will be prompted to install the .NET Framework 4.8 if required.



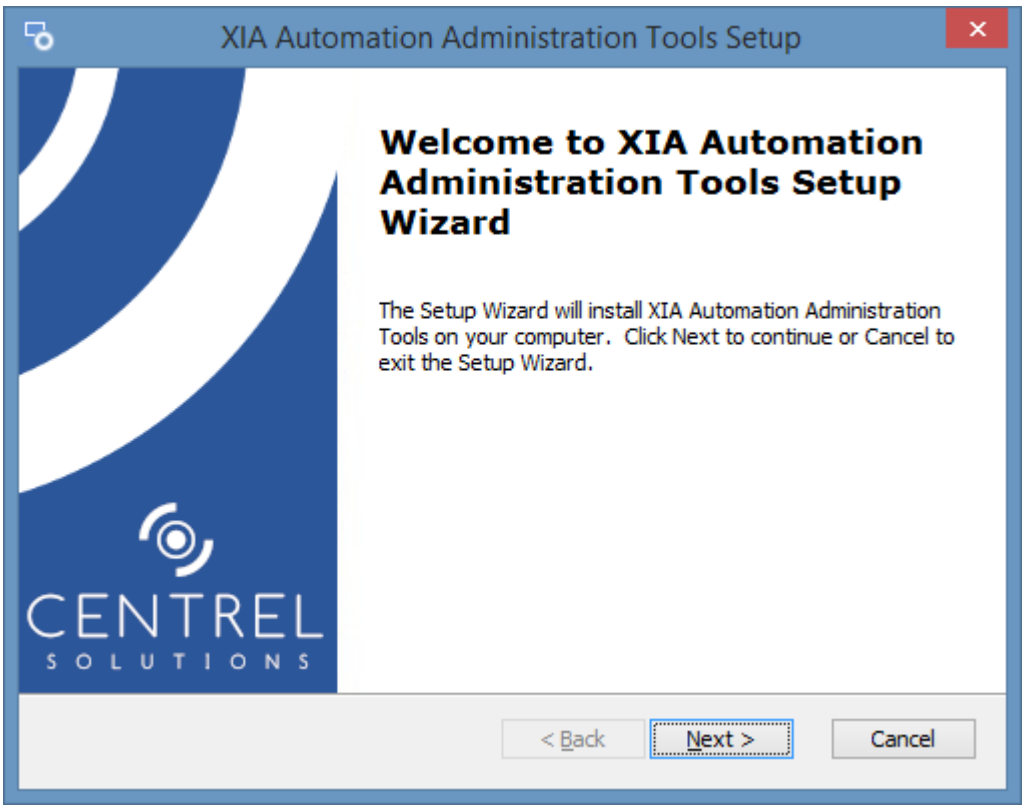
- If required the .NET Framework 4.8 will be installed and a log file created for the installation in the following location.
  %temp%\Microsoft .NET Framework 4.8 Setup_*xxxxxxxx*_*xxxxxxxxx*.html



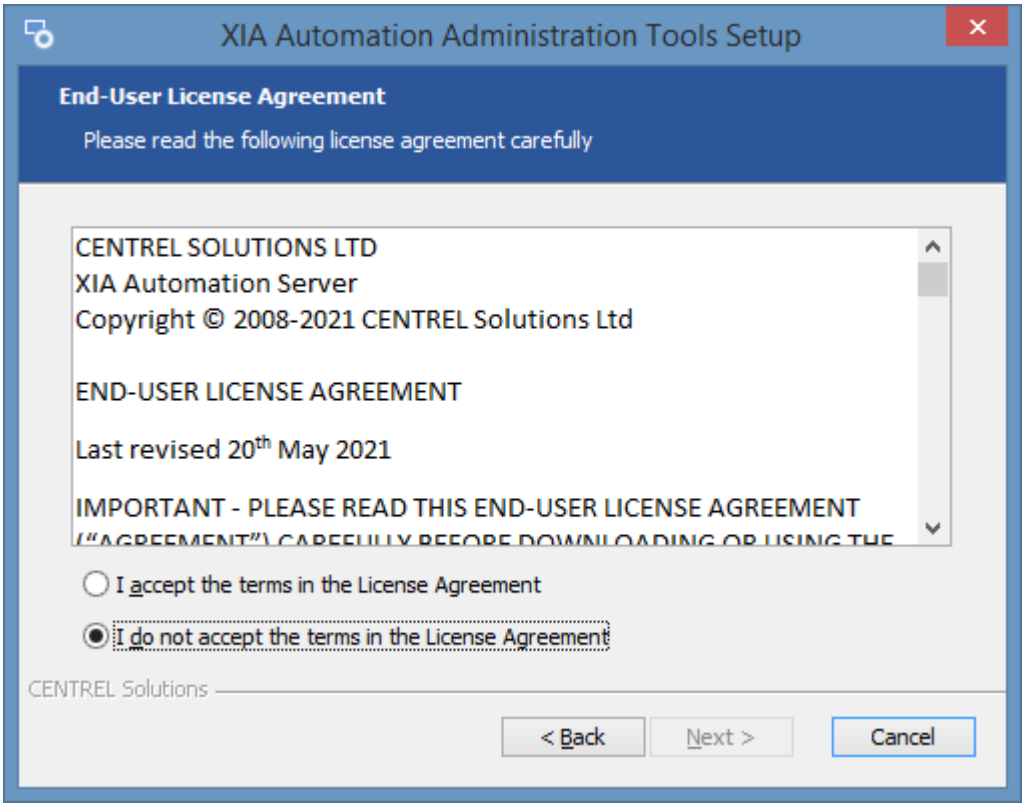
- You may be required to reboot to continue the installation. The installation will resume automatically after logging in following the reboot.



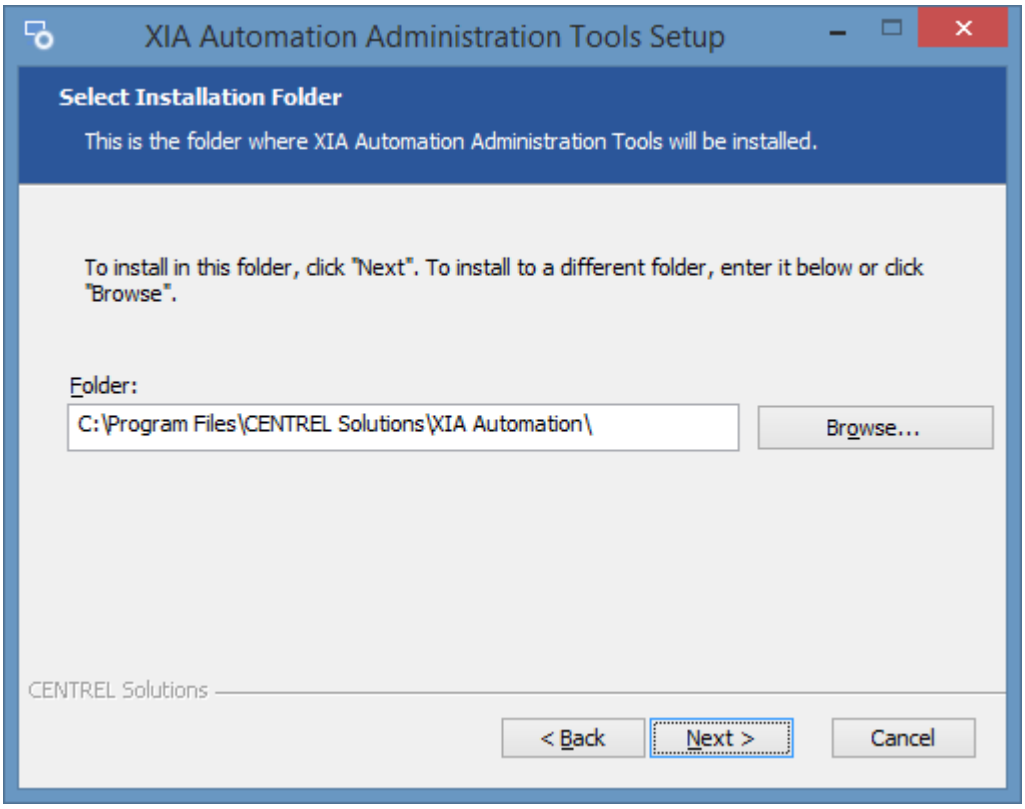
- The main installation screen will be displayed.



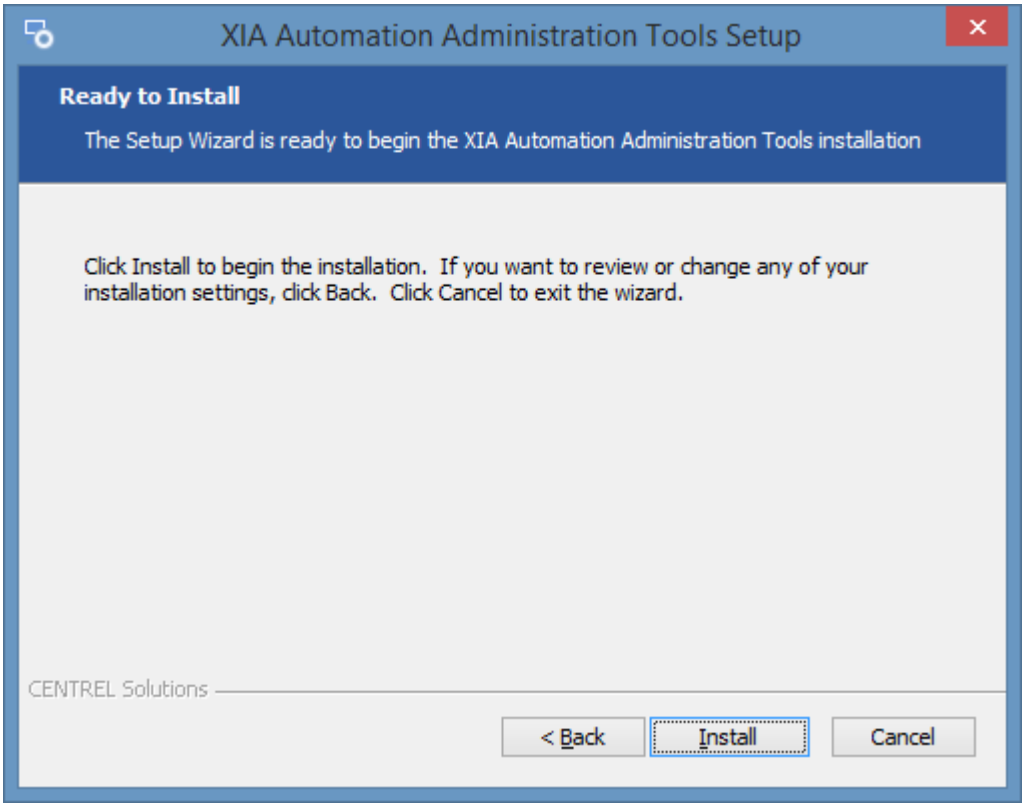
- Review the end user license agreement (EULA) and only accept if you agree to the terms. If you do not accept the terms of the agreement please cancel the installation.



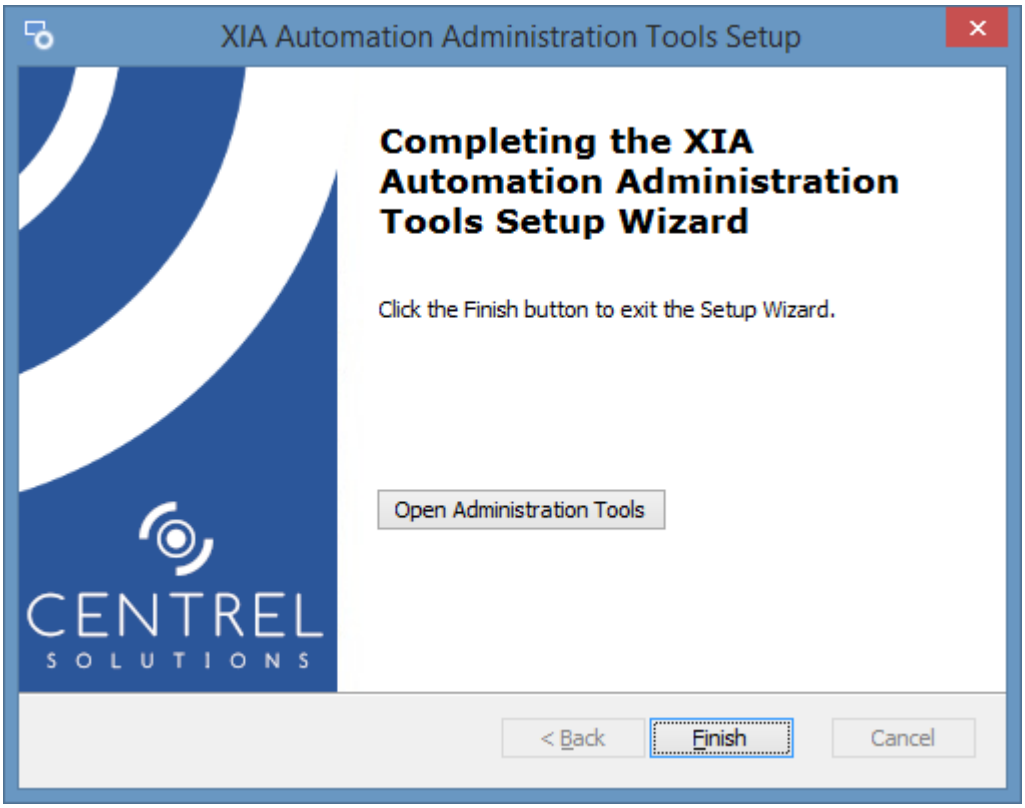
- Select the directory into which the XIA Automation administration tools should be installed and click *Next*.



- Click *Install* to begin the installation.



- When the installation is complete you will be prompted to Open Administration Tools. Click *Finish* to complete the installation.



Administration Tools Requirements

This section describes the requirements for the installation of XIA Automation Administration Tools.

Operating Systems (Server)
The following server operating systems are supported

- Windows Server 2022
- Windows Server 2019
- Windows Server 2016
- Windows Server 2012 R2

Desktop Operating Systems
The following desktop operating systems are supported

- Windows 11
- Windows 10 (64-bit)

Prerequisites

- .NET Framework 4.8 (installed automatically) *

** Please see the Microsoft .NET Framework 4.8 installation requirements for further information.*

Administration Tools Installation Files

The installation files for the XIA Automation Administration Tools can be obtained by

- Selecting the *Administration Tools Installer* item on menu of the XIA Automation Server.

- or -

- Opening the installation directory on the XIA Automation Server directly.

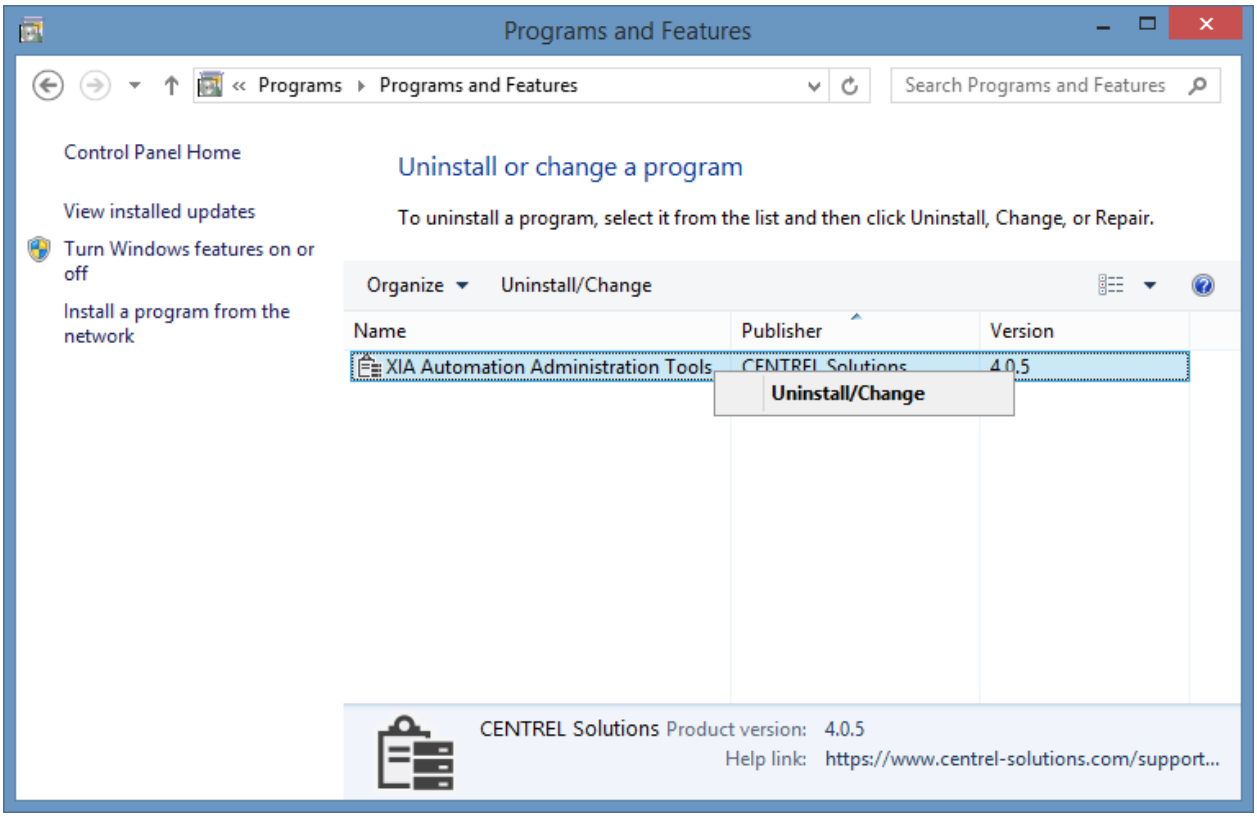
  By default the installer can be found here
  C:\Program Files\CENTREL Solutions\XIA Automation\XIA Automation Server\App_Data\Installers\Administration Tools\XIA Automation Administration Tools.exe

Uninstallation

When installed as part of the XIA Automation Server please follow the server uninstallation section.

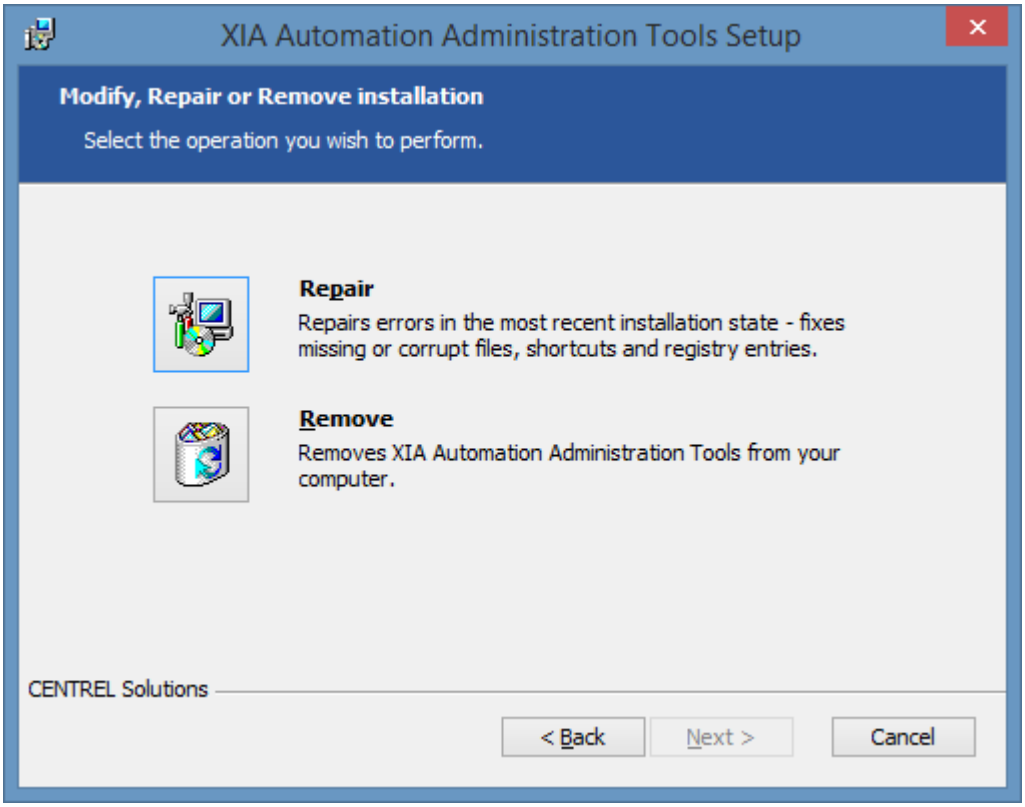
To uninstall a stand-alone installation of the XIA Automation administration tools simply

- Go to Control Panel
- Select Programs
- Right click the XIA Automation Administration Tools entry, and select *Uninstall/Change*.

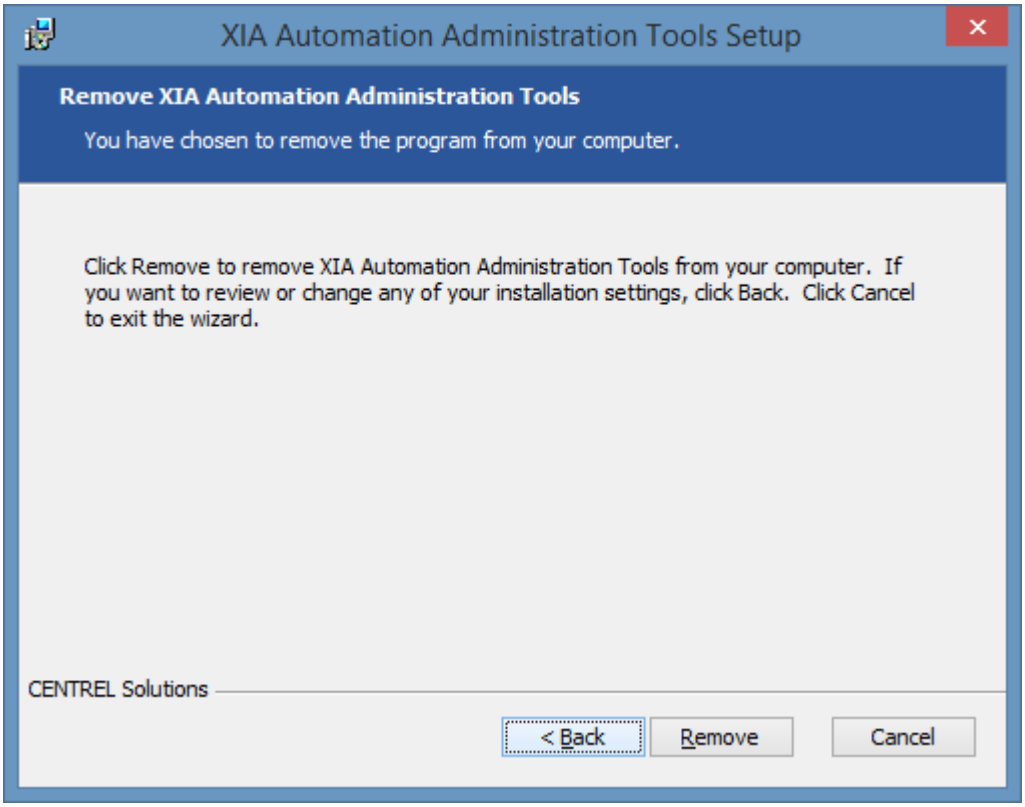


- The welcome screen will be displayed, click *Next* to continue.

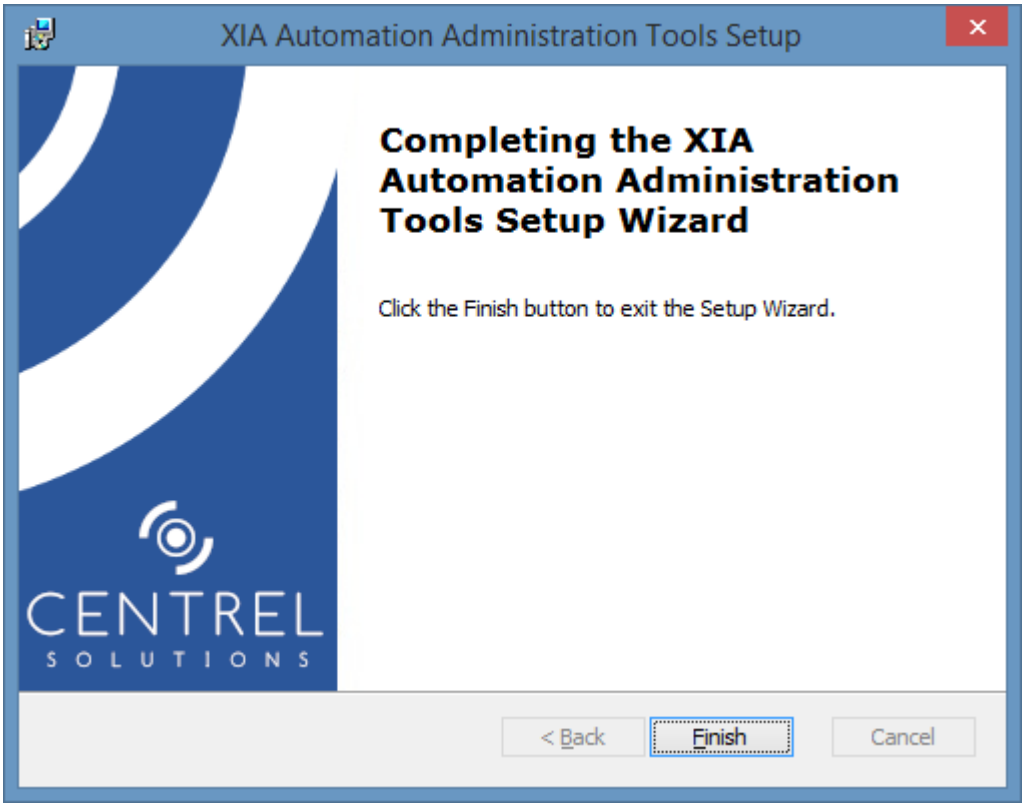
- The repair or remove installation screen will be displayed, click *Remove* to continue.



- Click *Remove* to commence the uninstallation.



- Once complete click *Finish* to complete the uninstallation.



Administration Tools Diagnostic Log

The administration tools diagnostics assists with troubleshooting the XIA Automation administration tools by writing detailed diagnostics information to a log file.

The administration tools diagnostics can be enabled and accessed from the tools menu within the XIA Automation administration tools.

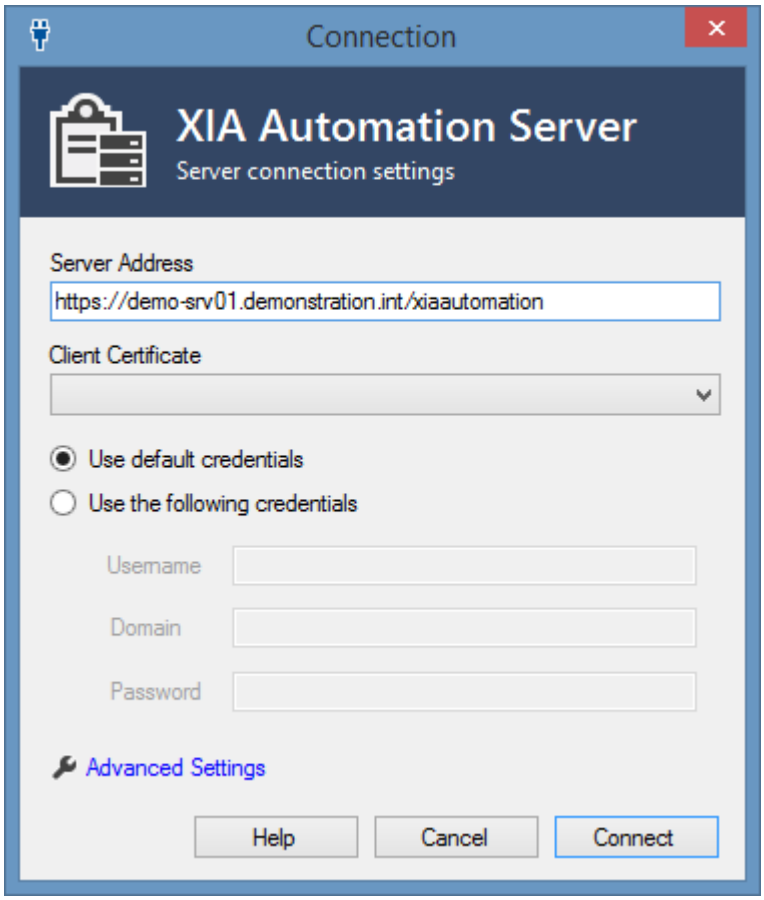
The diagnostics log is written in UTF-8 encoding.

The client diagnostics log file is written to the following location
%APPDATA%\CENTREL Solutions\XIA Automation Administration Tools\Logs\Trace

NOTE: For XIA Automation Server diagnostics logging see the server diagnostics.

Connection Form

The connection form allows users to connect to the XIA Automation Server.



Server Address
The address of the XIA Automation Server.

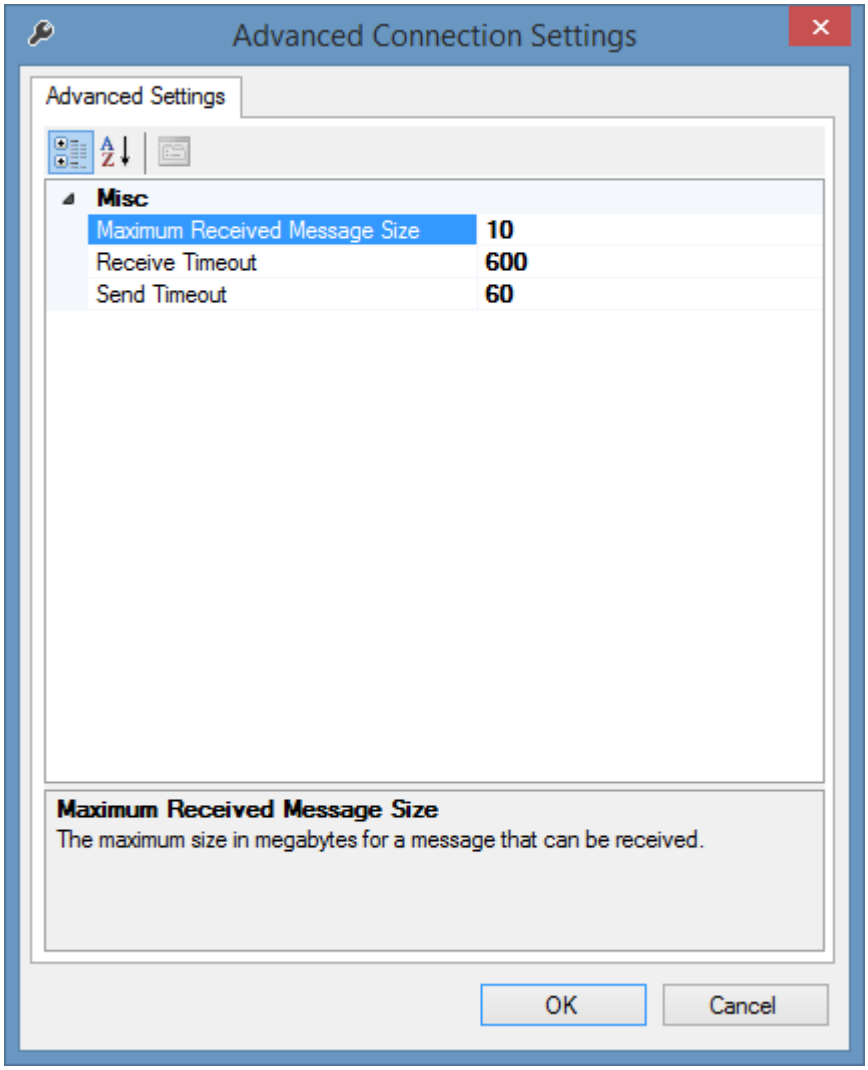
Client Certificate
The client certificate to use if required.

Use default credentials
Connects using the credentials of the currently logged in user.

Use the following credentials
Uses the specified credentials.

Advanced Settings
Displays the advanced connection settings dialog.

Advanced Connection Settings



Maximum Received Message Size
The maximum size in megabytes for a message that can be received.

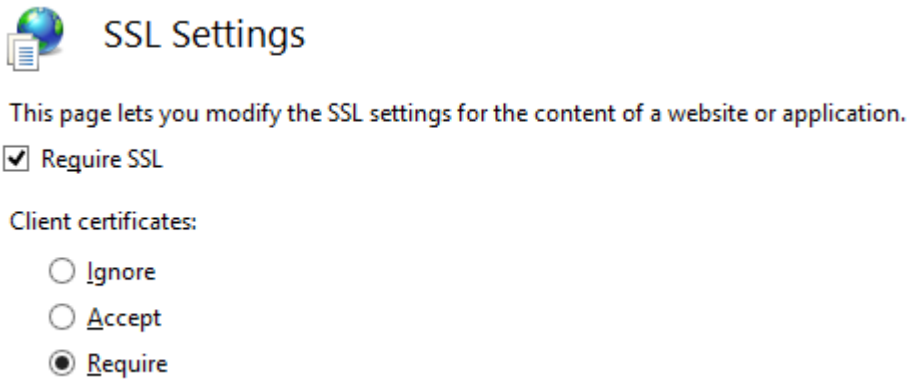
Receive Timeout
The receive timeout in seconds.

Send Timeout
The send timeout in seconds.

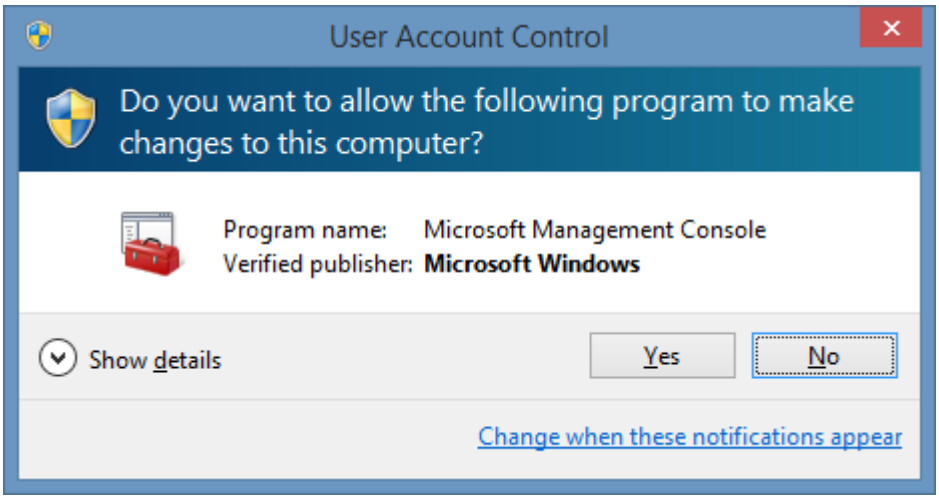
Configuring Client Certificates

To configure the XIA Automation administration tools to use client certificates in conjunction with Microsoft Internet Information Server (IIS) as a method of two factor authentication, complete the following steps:

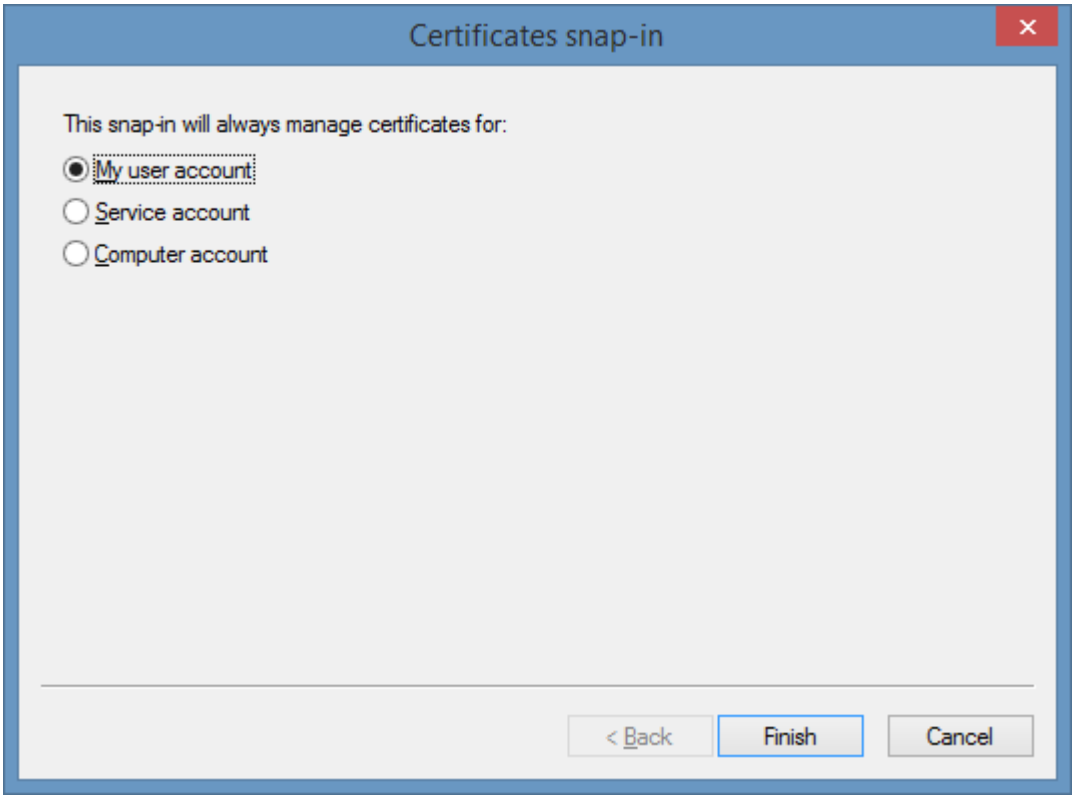
- Ensure that the IIS server is configured with a valid SSL certificate.
- Ensure that the IIS server SSL settings are configured appropriately to either accept or require client certificates



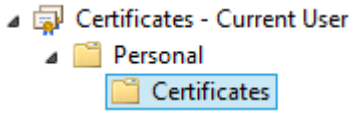
- Logon as the user account who will run the XIA Automation administration tools.
- Start the Microsoft Management Console by running the mmc.exe command.
- Accept the UAC prompt if required.



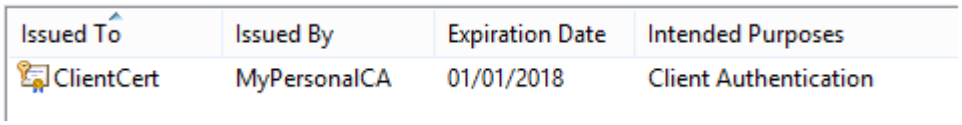
- Add the **Certificates** snap-in and ensure that **My user account** is selected.



- Import the client certificate into the **Personal** folder for the service user account.



- When imported ensure that the client certificate is within the expiration date and that **Client Authentication** is one of the intended purposes

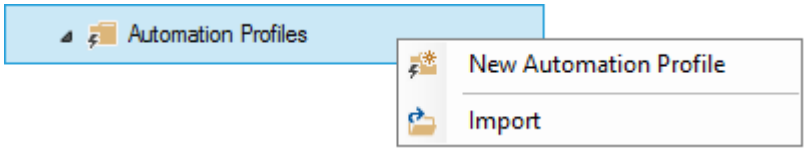


- Select the appropriate certificate on the connection form.

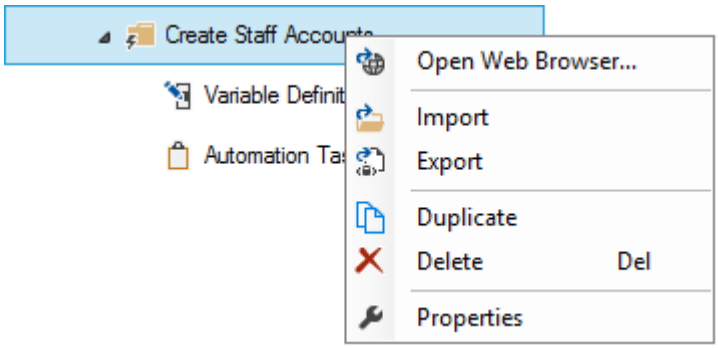
Automation Profiles

Automation profiles provide a logical unit of automation and include the security permissions, variable definitions, and automation tasks to be executed by the automation profile.

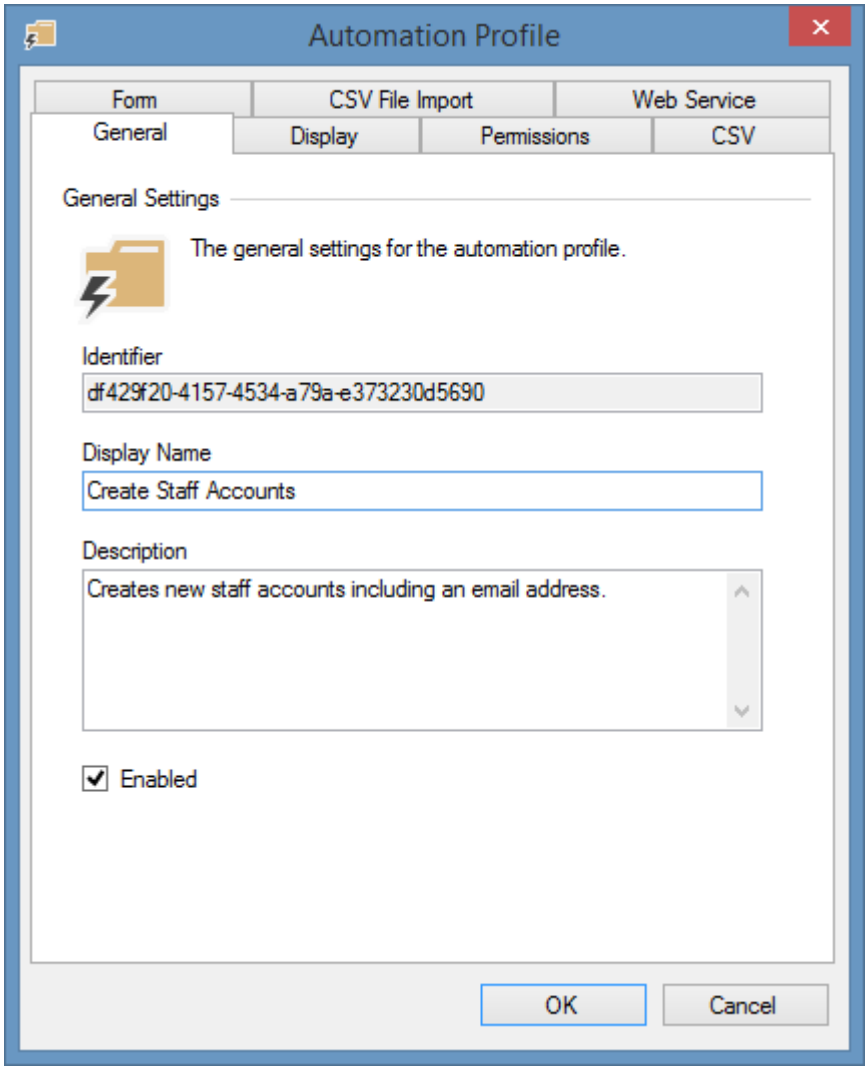
Right clicking the automation profiles node in the treeview displays the automation profiles context menu.



Right clicking an individual automation profile in the treeview displays the automation profile context menu.



Automation Profile



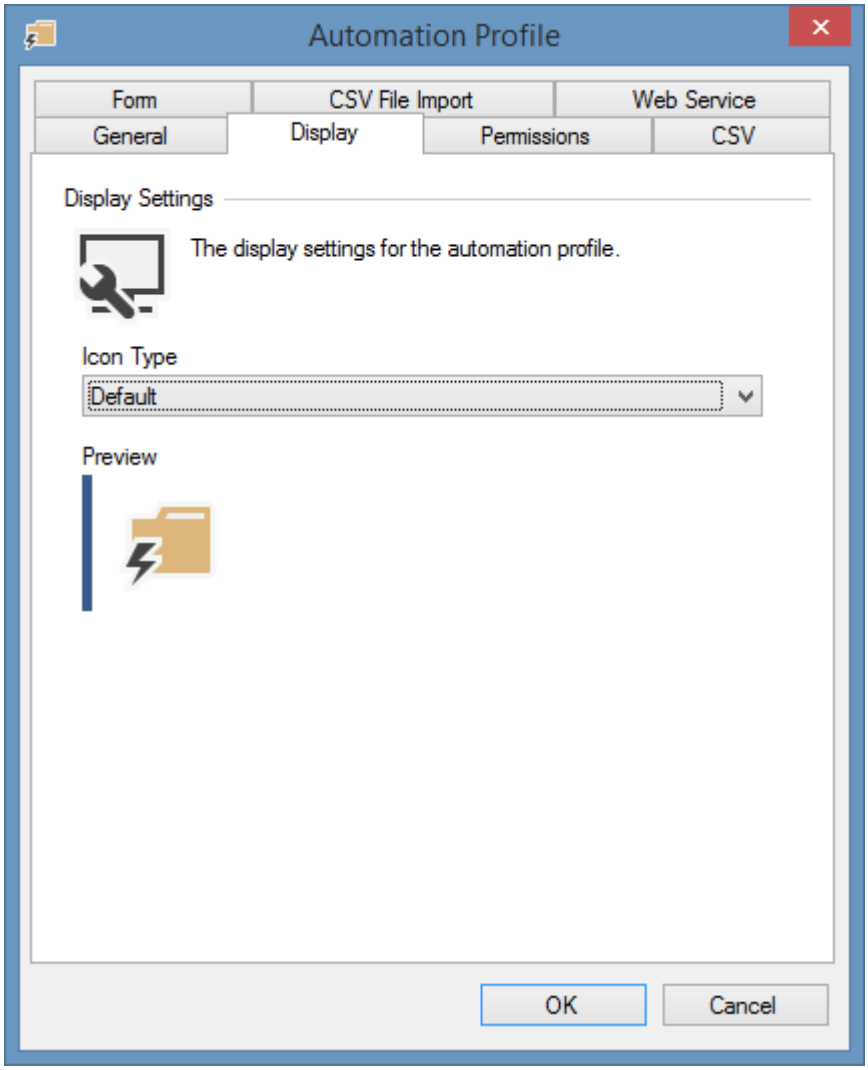
Identifier
The unique identifier of the automation profile in GUID format.

Display Name
The unique display name of the automation profile.

Description
The description of the automation profile.

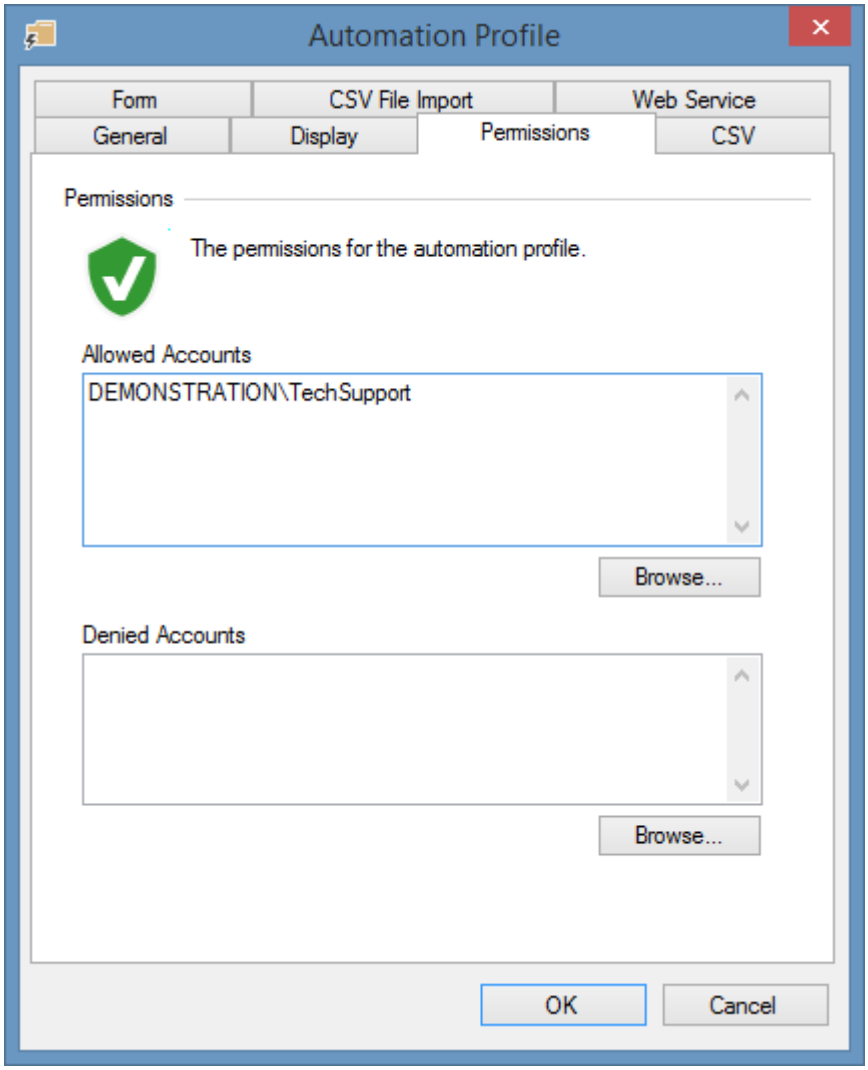
Enabled
Determines whether the automation profile is enabled.

Display



Icon Type
The type of icon to display for the automation profile in the server web interface.

Permissions

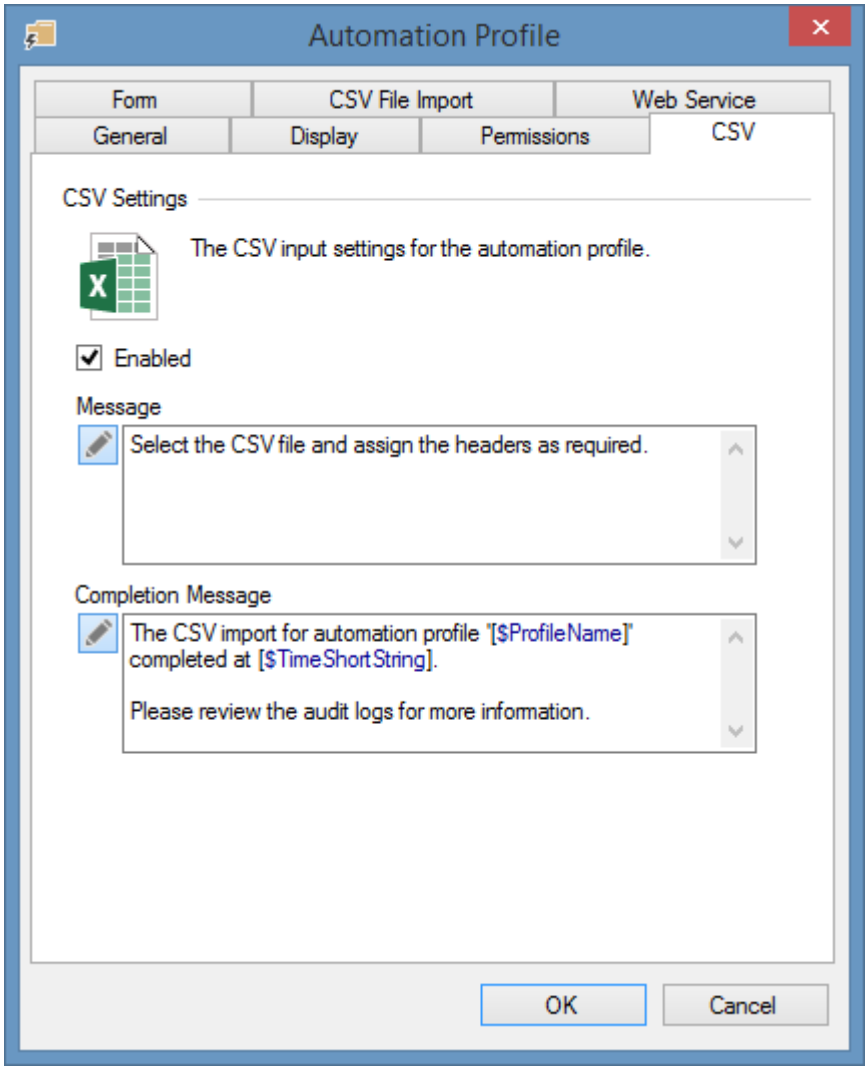


Allowed Accounts
The user or group accounts* that have permissions to execute the automation profile.
Clicking browse displays the account browser.

Denied Accounts
The user or group accounts that are denied permissions to execute the automation profile. Deny permissions override allow permissions.
Clicking browse displays the account browser.

* System administrators are automatically given permissions and cannot be denied permissions.

CSV

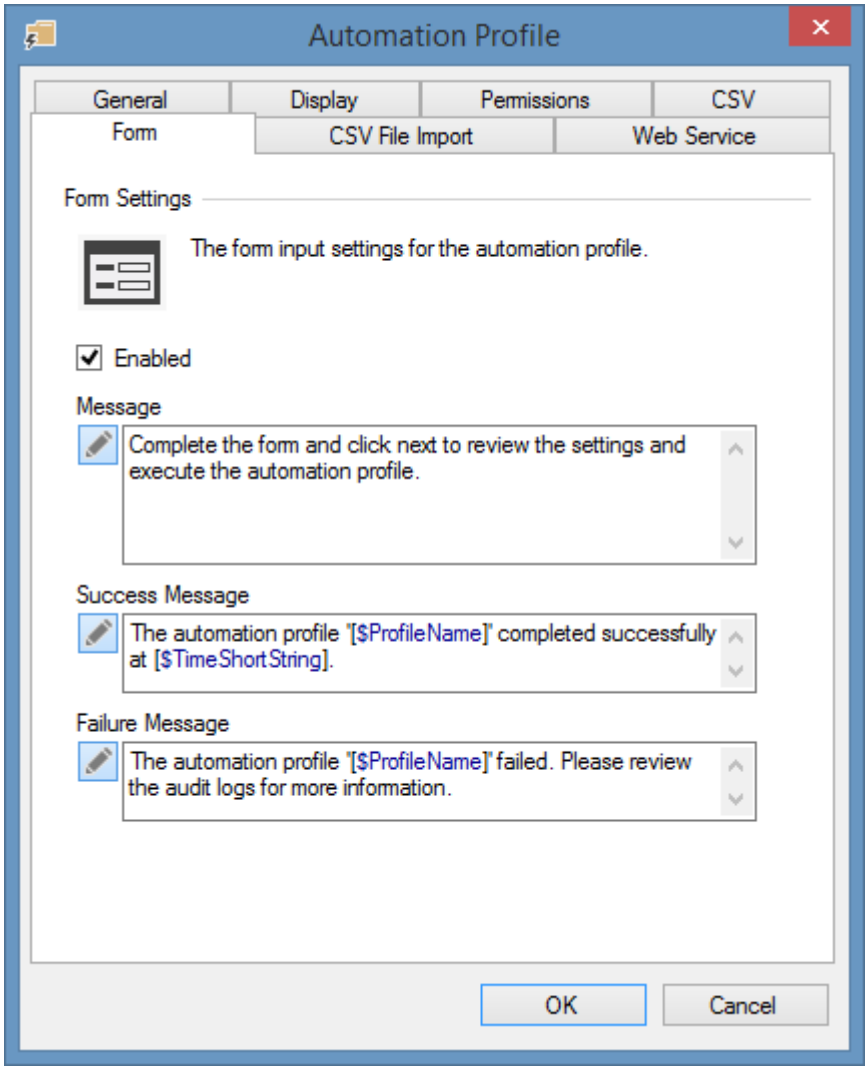


Enabled
Determines whether CSV input is enabled for the automation profile.

Message
The message to display to user in the XIA Automation Server web interface when using CSV input.

Completion Message
The message to display to user in the XIA Automation Server web interface when the CSV input completes.

Form



Enabled
Determines whether form input is enabled for the automation profile.

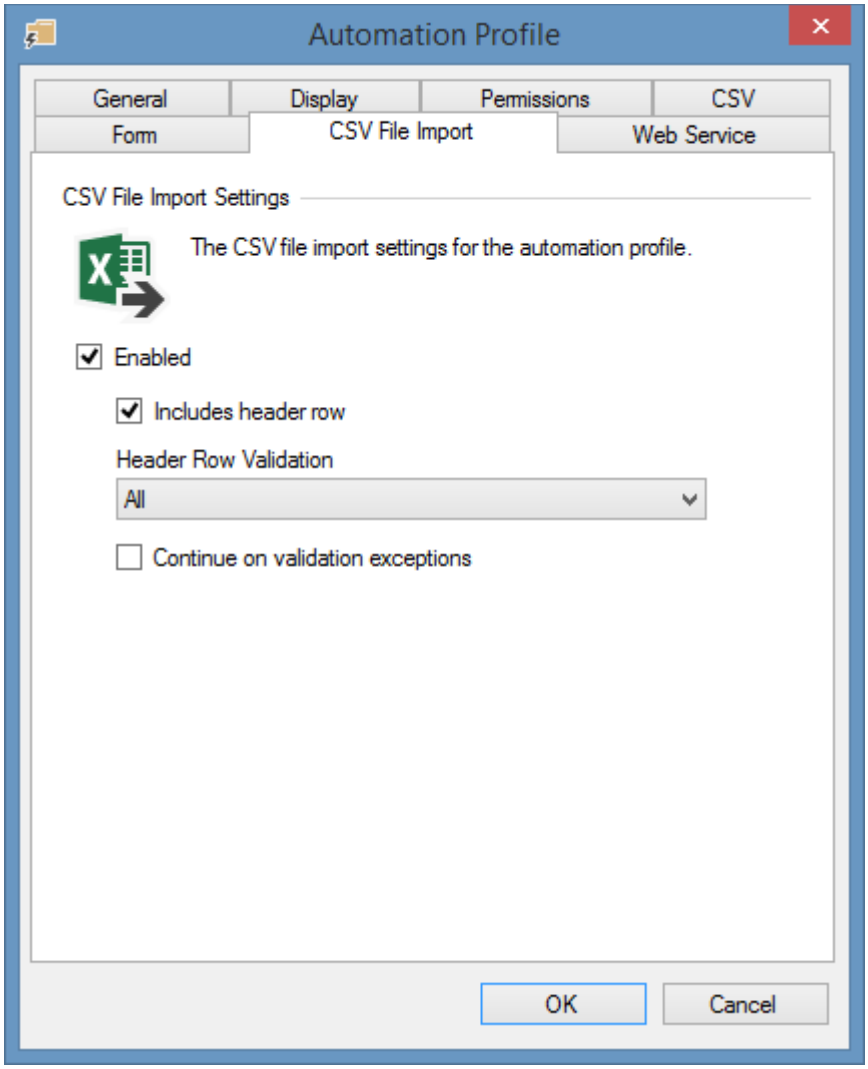
Message
The message to display to user in the XIA Automation Server web interface when using form input.

Success Message
The message to display to user in the XIA Automation Server web interface when using form input and the automation profile completes successfully.

Failure Message
The message to display to user in the XIA Automation Server web interface when using form input and the automation profile completes with errors.

CSV File Import

NOTE: For this tab to be enabled file import must be enabled in the server configuration settings.



Enabled
Determines whether CSV file import is enabled for the automation profile.

Includes header row
Determines whether the import files include a header row.

Header Row Validation
The header row validation settings.

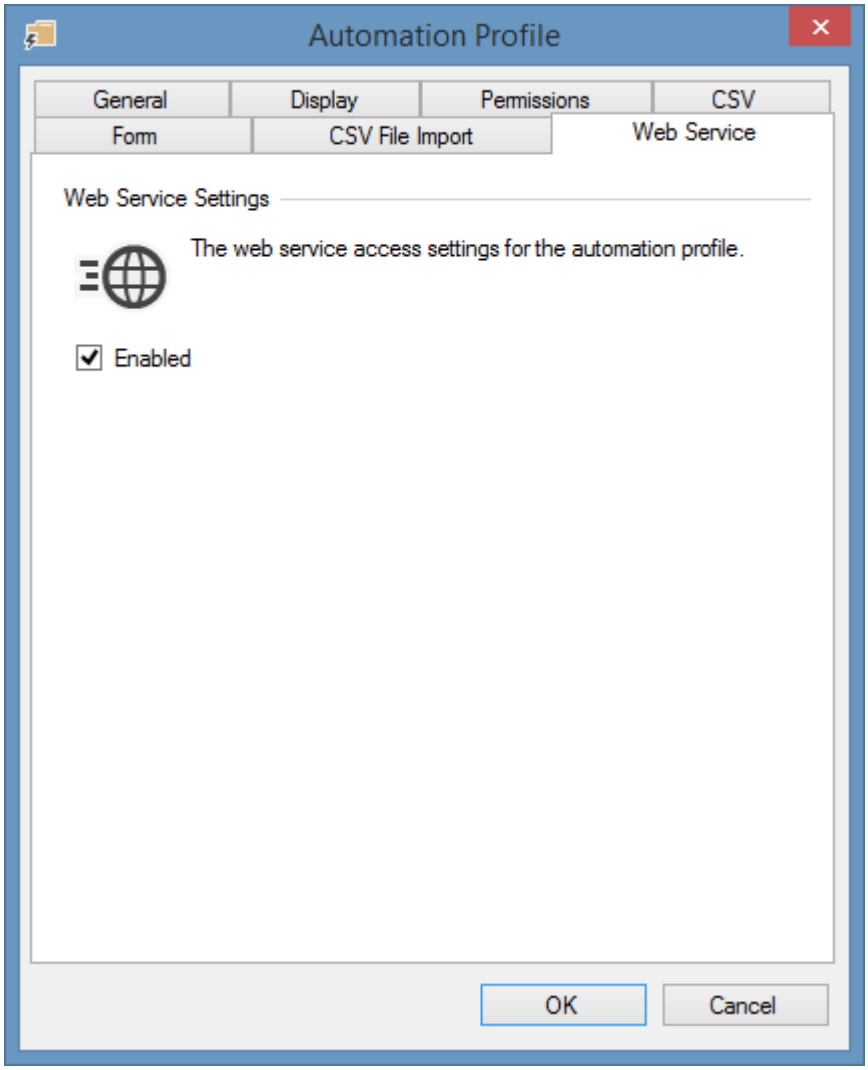
- None
  Does not ensure that any user visible variables are defined in the header row.

- All
  Ensures that all user visible variables are defined in the header row.

- Required
  Ensures that all required user visible variables are defined in the header row.

Continue on validation exceptions
Determines whether the system should continue processing rows in the CSV file when any row contains validation exceptions.

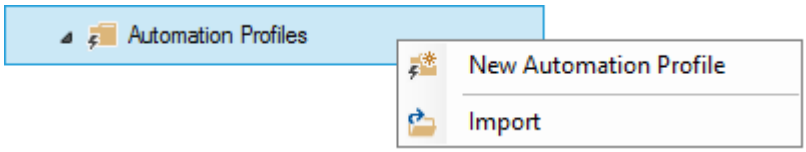
Web Service



Enabled
Determines whether web services access is enabled for the automation profile.

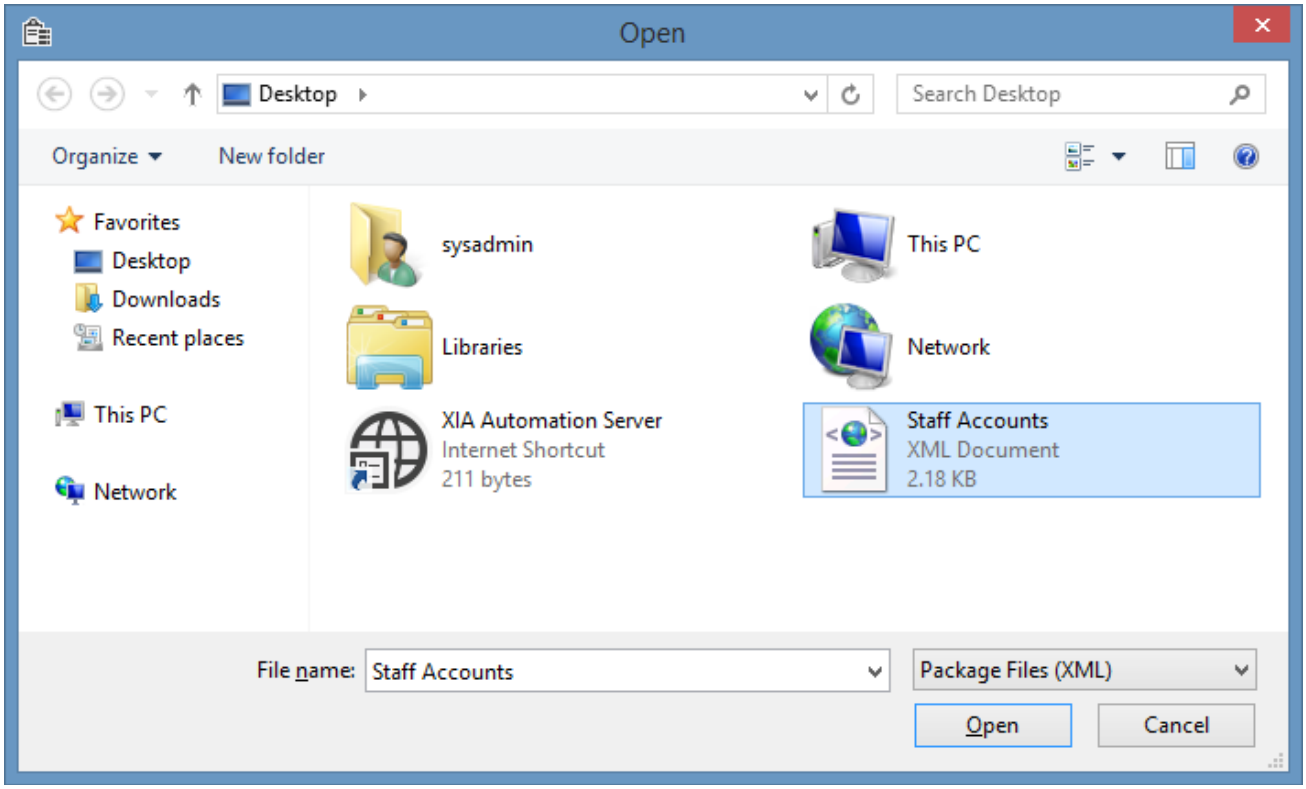
Automation Profiles Context Menu

Right clicking the automation profiles node in the treeview displays the automation profiles context menu.



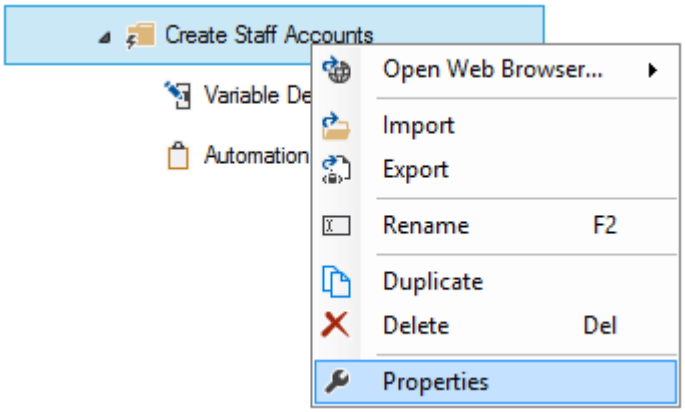
New Automation Profile
Displays the automation profile dialog.

Import
Displays the file open dialog where an automation profile XML file can be selected for import.



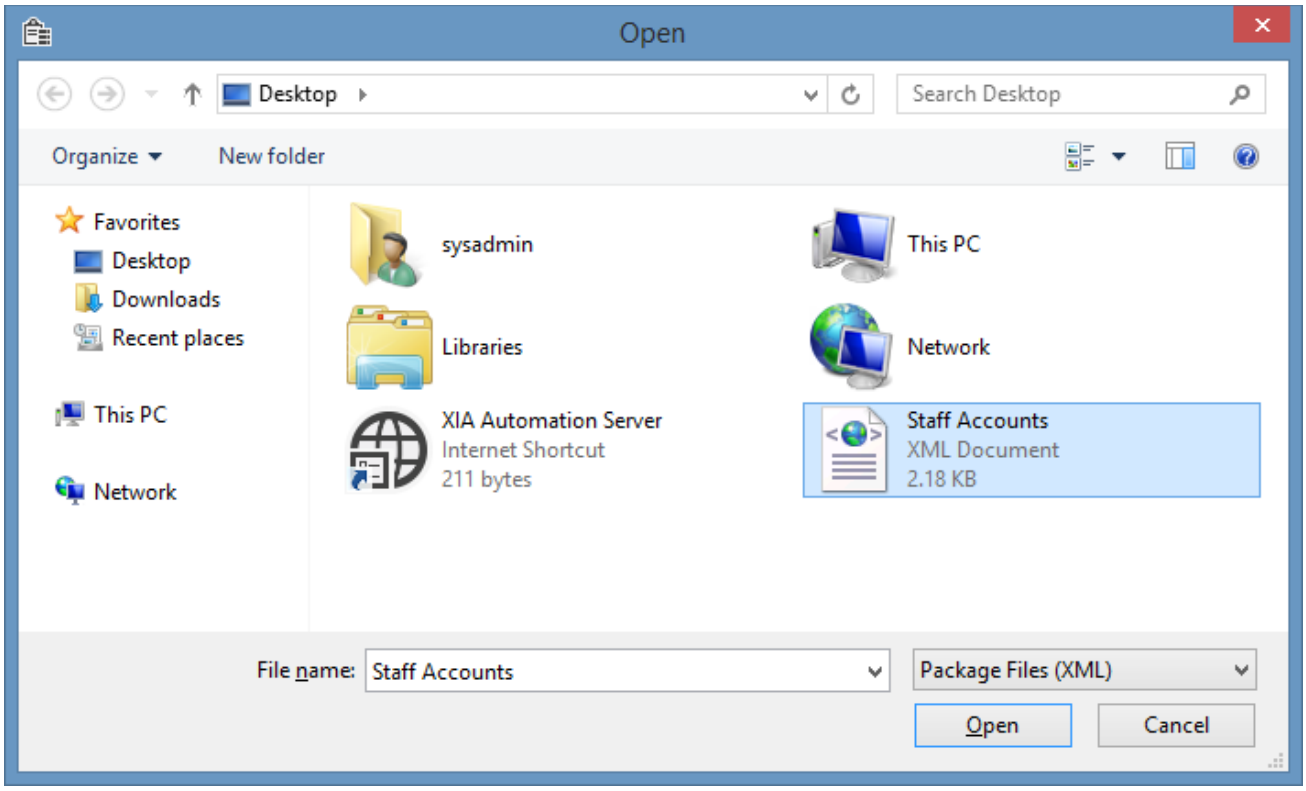
Automation Profile Context Menu

Right clicking an individual automation profile in the treeview displays the automation profile context menu.



Open Web Browser
Opens a web browser displaying the currently selected automation profile in the XIA Automation Server web interface.

Import
Displays the file open dialog where an automation profile XML file can be selected for import.



Export
Displays the file save dialog to select a file name to which the currently selected automation profile should be exported as XML.

Rename

Allows the currently selected automation profile to be renamed.

Duplicate
Creates a duplicate of the currently selected automation profile.

Delete
Deletes the currently selected automation profile.

Properties
Displays the properties of the currently selected automation profile.

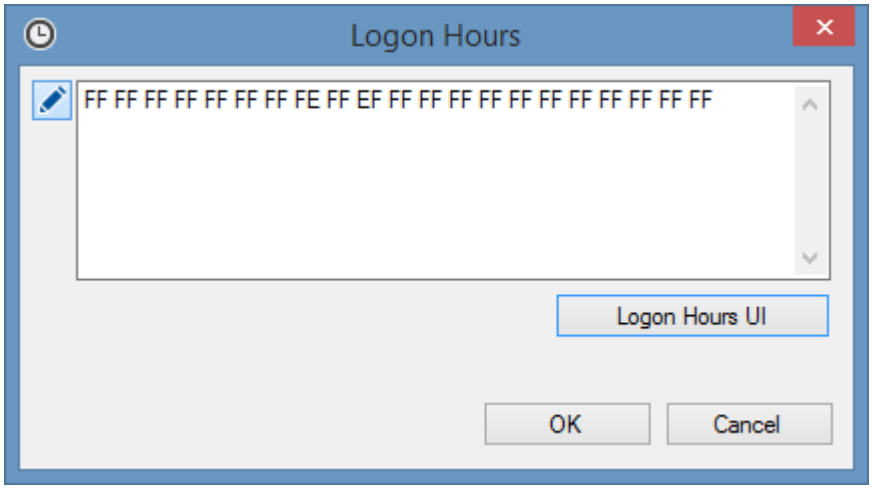
Automation Properties

Automation properties allow system administrators to assign values to automation tasks.

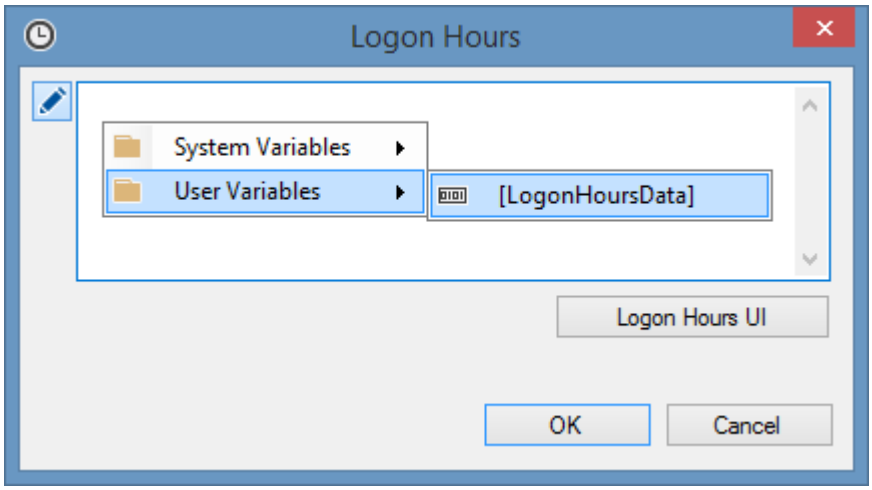
The values can be set by the system administrator, provided by the user using variable definitions, or configured as not set.

Binary Automation Property

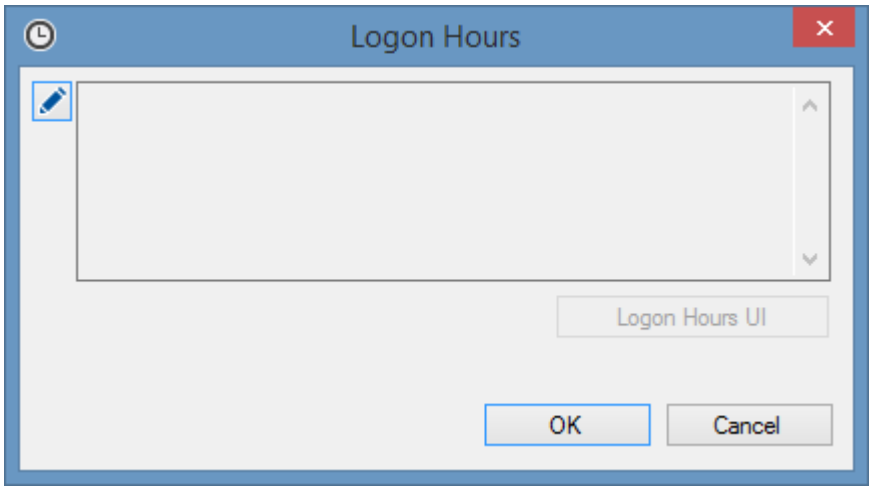
The binary automation property allow the input of binary data in hex string format.



Binary variables may also be assigned by right clicking the user interface and selecting a binary variable.

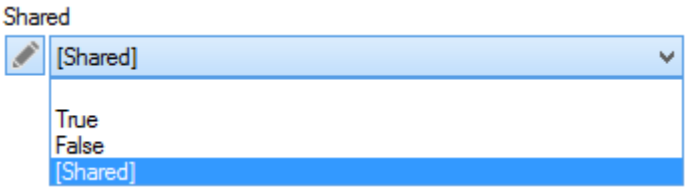


Set Button (Pencil Icon)
Determines whether the value of the property should be set, or retain the current or default value. If the set button is greyed out then the property is mandatory and must be set.



Boolean Automation Property

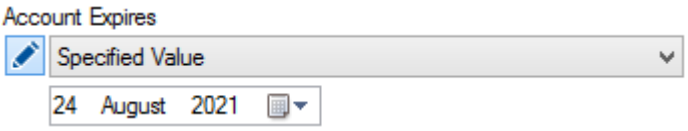
The boolean automation property allows the setting of a System.Boolean true/false value either directly, or by assigning an boolean variable definition.



Set Button (Pencil Icon)
Determines whether the value of the property should be set, or retain the current or default value. If the set button is greyed out then the property is mandatory and must be set.

DateTime Automation Property

The datetime automation property allows the setting of a System.DateTime value either directly, or by assigning an datetime variable definition.



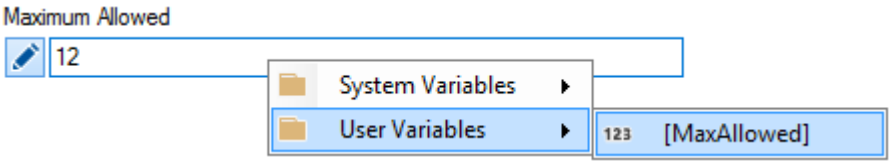
Specified Value
Allows the system administrator to set the value. Depending on the automation property, this may include the date, date and time, or time components.

$Now
Sets the value to date and time when the automation profile is executed.

Set Button (Pencil Icon)
Determines whether the value of the property should be set, or retain the current or default value. If the set button is greyed out then the property is mandatory and must be set.

Integer Automation Property

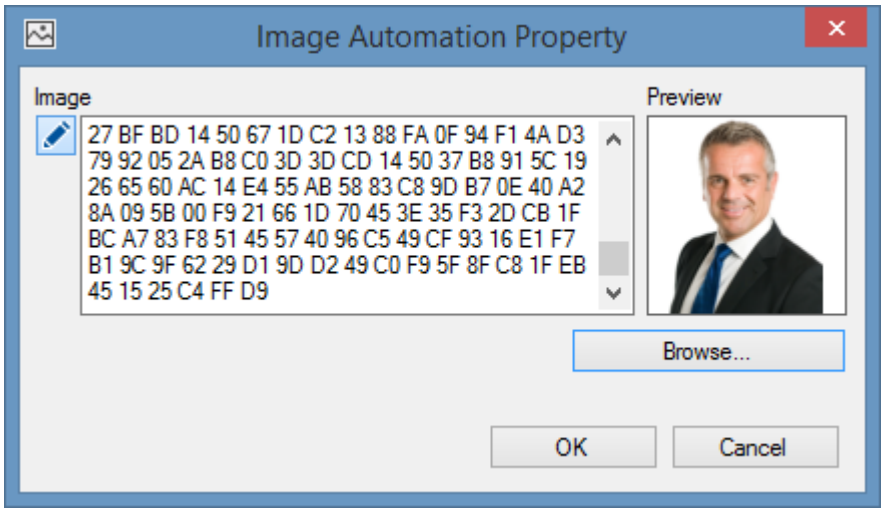
The integer automation property allows the setting of a System.Int32 value either directly or by assigning an integer variable definition.



Set Button (Pencil Icon)
Determines whether the value of the property should be set, or retain the current or default value. If the set button is greyed out then the property is mandatory and must be set.

Image Automation Property

The image automation property is a special type of binary automation property that allows the setting of a binary value that represents an image.



Set Button (Pencil Icon)
Determines whether the value of the property should be set, or retain the current value.
If the set button is greyed out then the property is mandatory and must be set.

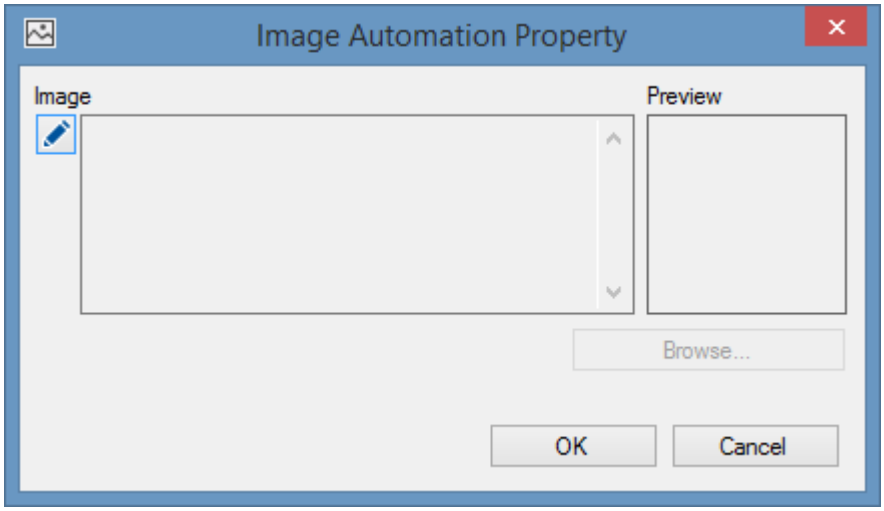


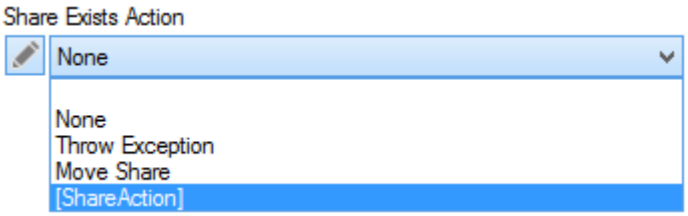
Image
The binary data that represents the image or a binary variable.

Preview
The preview of the image.

Browse
Displays the open file dialog to select an image file with a .jpg, .jpeg, or .png extension.

Integer Enum Automation Property

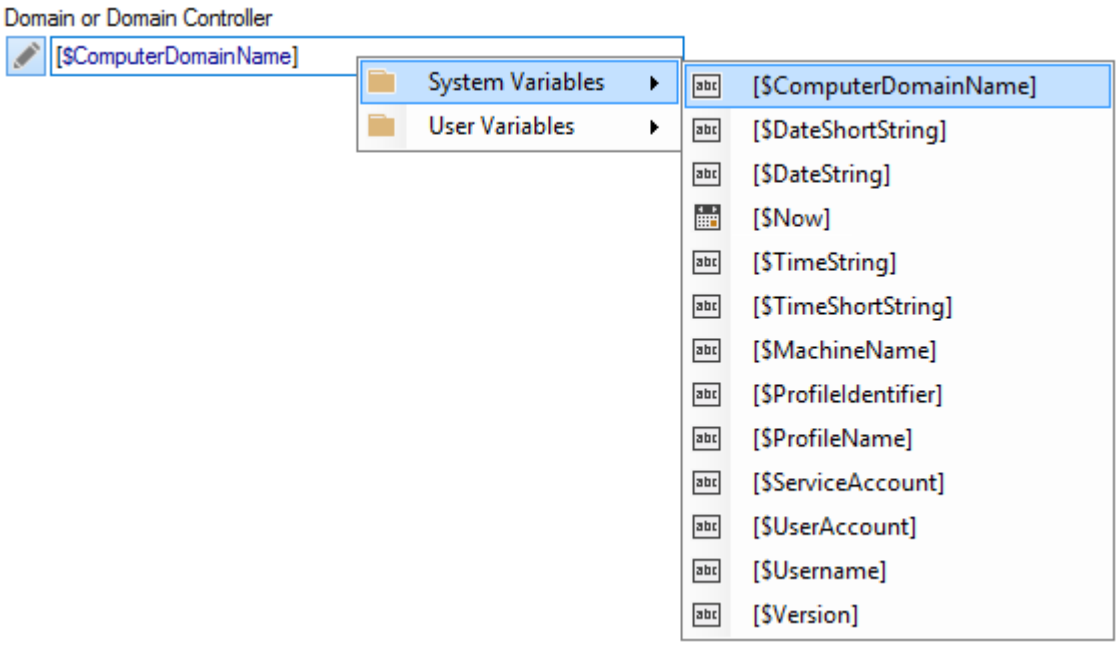
The integer enum automation property allows the setting of a System.Enum value either directly using the predefined values, or by assigning an integer variable definition.



Set Button (Pencil Icon)
Determines whether the value of the property should be set, or retain the current or default value. If the set button is greyed out then the property is mandatory and must be set.

String Automation Property

The string automation property allows the input of a System.String value either directly or by assigning variable definitions.
If a variable definition is assigned that does not provide a string value directly then the display value of that variable is used.

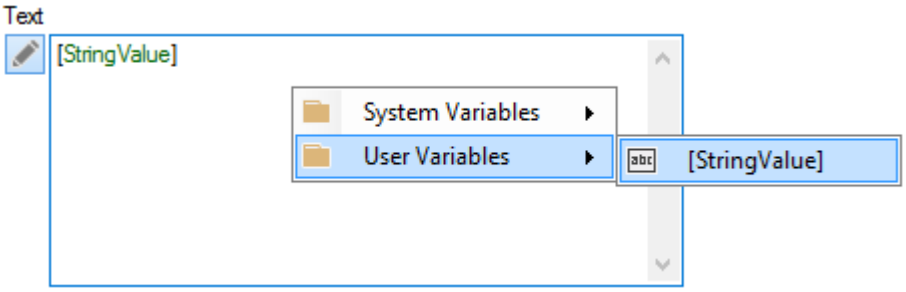


Set Button (Pencil Icon)
Determines whether the value of the property should be set, or retain the current or default value.
If the set button is greyed out then the property is mandatory and must be set.

Special Characters
The square brackets characters [and] are used to identify variable definitions.
To include these characters in the property use the HTML entity numbers [for the opening bracket and] for the closing bracket.

Multiline String Automation Property

The multiline string automation property allows the input of a System.String value that can span multiple lines either directly or by assigning variable definitions.
If a variable definition is assigned that does not provide a string value directly then the display value of that variable is used.

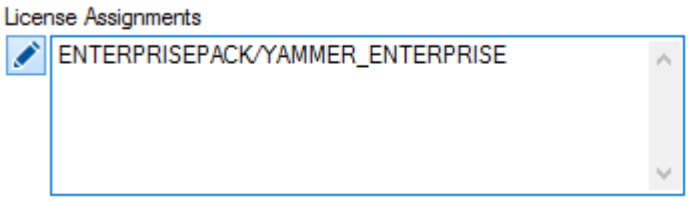


Set Button (Pencil Icon)
Determines whether the value of the property should be set, or retain the current or default value.
If the set button is greyed out then the property is mandatory and must be set.

Special Characters
The square brackets characters [and] are used to identify variable definitions.
To include these characters in the property use the HTML entity numbers [for the opening bracket and] for the closing bracket.

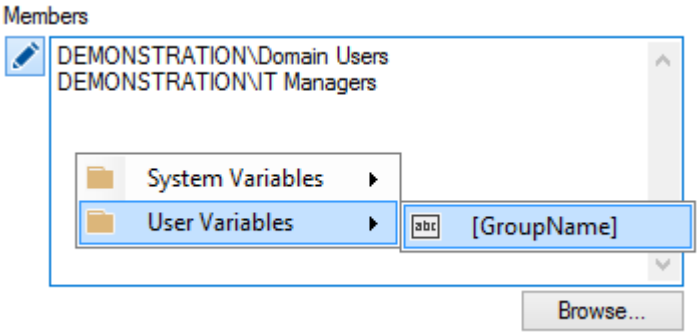
Multivalue String Automation Property

The multivalue automation property properties allow the input of multiple System.String values either directly or by assigning variable definitions.
If a variable definition is assigned that does not provide a string value directly then the display value of that variable is used.



Set Button (Pencil Icon)
Determines whether the value of the property should be set, or retain the current or default value. If the set button is greyed out then the property is mandatory and must be set.

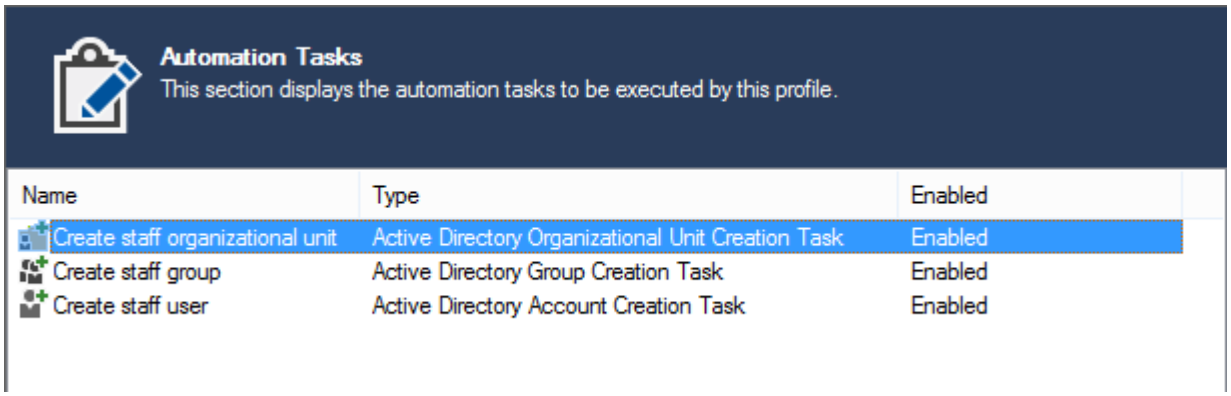
Accounts
If the automation property is to enter accounts the account names are automatically resolved by the XIA Automation Server.



Browse
Clicking the browse button displays the account browser dialog.

Automation Tasks

Automation tasks perform the work of each automation profile and are executed sequentially.



Tasks are grouped into the following task types

Active Directory
Perform actions relating to Microsoft Active Directory on-premises.

Development
Allow custom actions to be written using Microsoft C#.

Filesystem
Perform actions relating to the Windows filesystem.

Google
Perform actions relating to Google accounts.

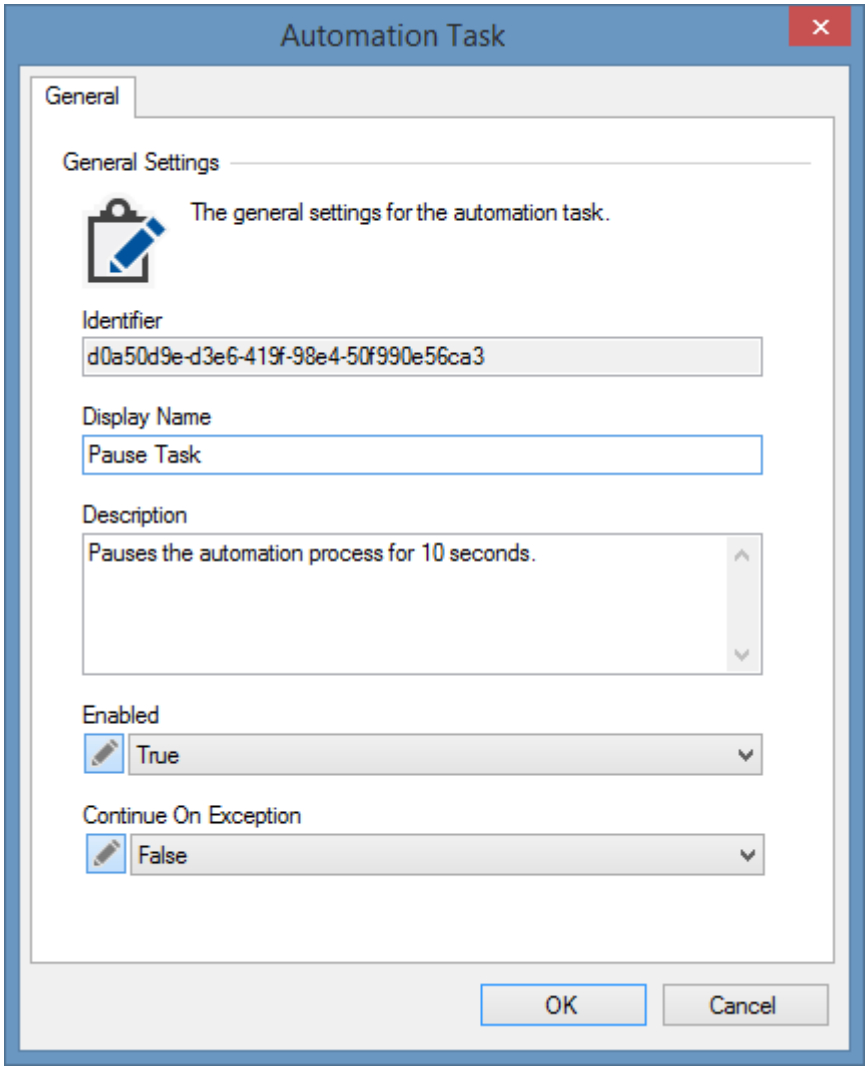
Microsoft Exchange
Perform actions relating to Microsoft Exchange Online and Microsoft Exchange On-Premises management.

Office 365
Perform actions relating to Microsoft Office 365 account management.

Utilities
Perform utility style support functions.

Variables
Perform functions relating to variables.

General Settings



Identifier
The unique identifier of the automation task in GUID format.

Display Name
The unique display name of the automation task.

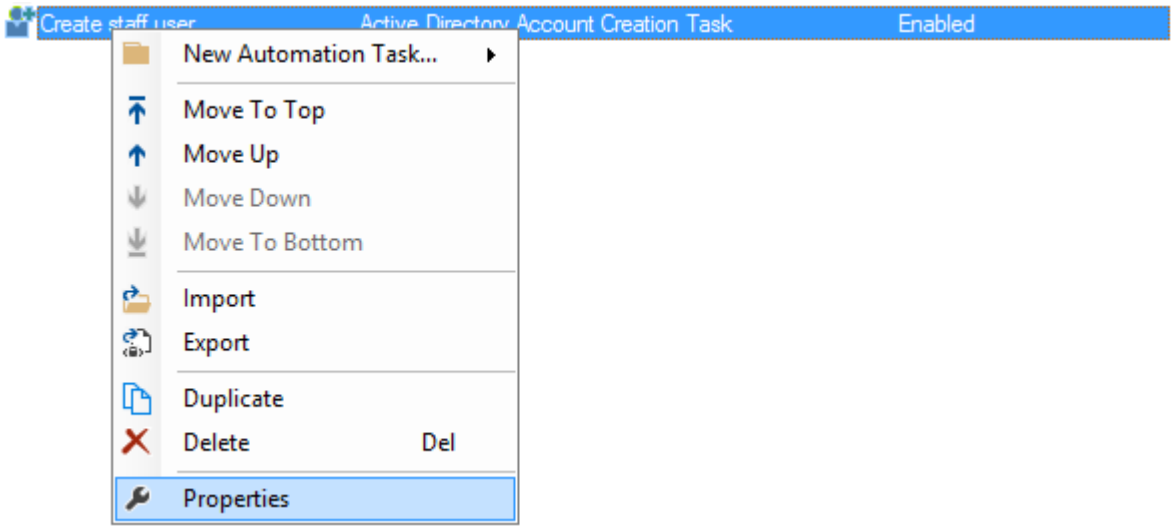
Description
The description of the automation task.

Enabled
A boolean variable that determines whether the automation task is enabled.

Continue On Exception
A boolean variable that determines whether the automation profile should continue executing if the automation task fails with an exception.

Automation Tasks Context Menu

Right clicking the automation tasks listview displays the automation tasks context menu.



New Automation Task
Creates a new automation task of the selected task type.

Move To Top
Moves the selected automation task to the top of the list.

Move Up
Moves the selected automation task up the list.

Move Down
Moves the selected automation task down the list.

Move To Bottom
Moves the selected automation task to the bottom of the list.

Import
Displays the open file dialog to import an automation task from an XML file.

Export
Exports the currently selected automation task to XML.

Duplicate
Creates a duplicate of the currently selected automation tasks.

Delete
Deletes the currently selected automation tasks.

Properties
Displays the properties of the selected automation task.

Active Directory

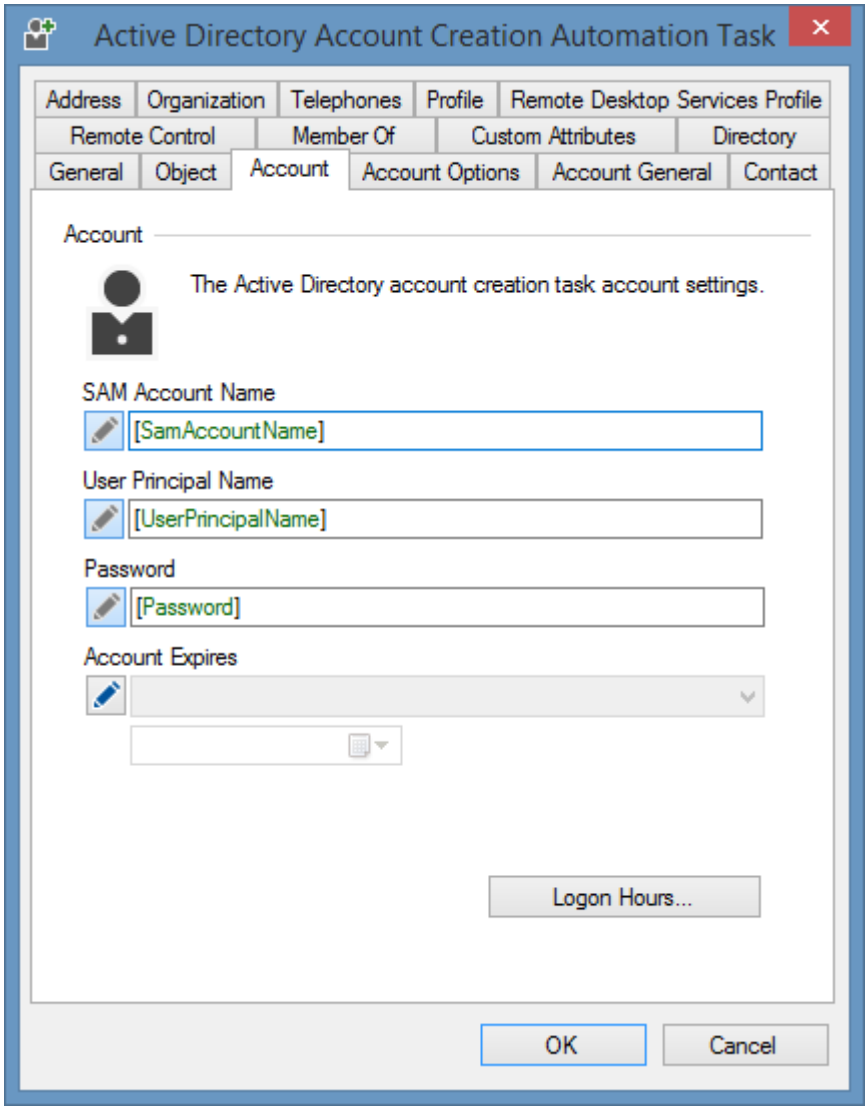
The Active Directory automation tasks perform actions relating to Microsoft Active Directory on-premises.

Active Directory Account Creation Task

The Active Directory account creation task is capable of creating a new Active Directory account.

To update an existing account see the Active Directory account update task.

Account



SAM Account Name
The SAM account name of the account.

User Principal Name
The user principal name of the account.

Password
The initial password to set for the account.

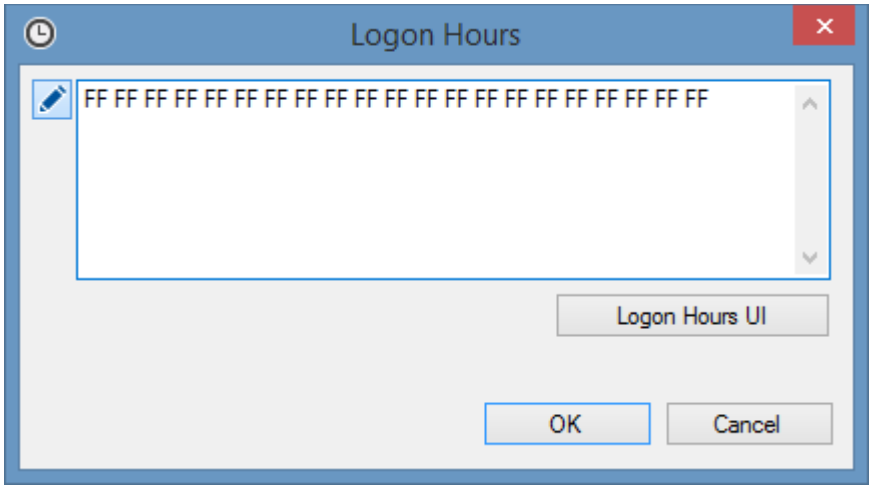
Account Expires
Determines whether the account should expire.

Logon Hours
The logon hours for the account.

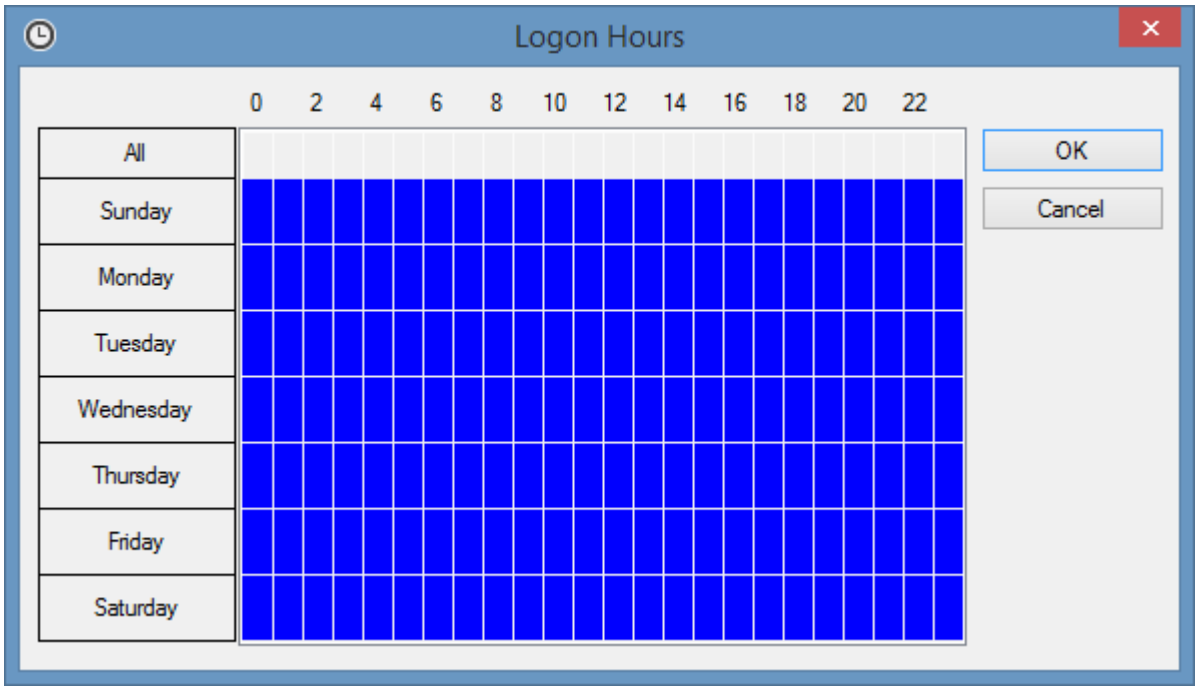
NOTE: To automatically generate a unique SAM account name and user principal name for the account see the Active Directory account name generator task.

Logon Hours

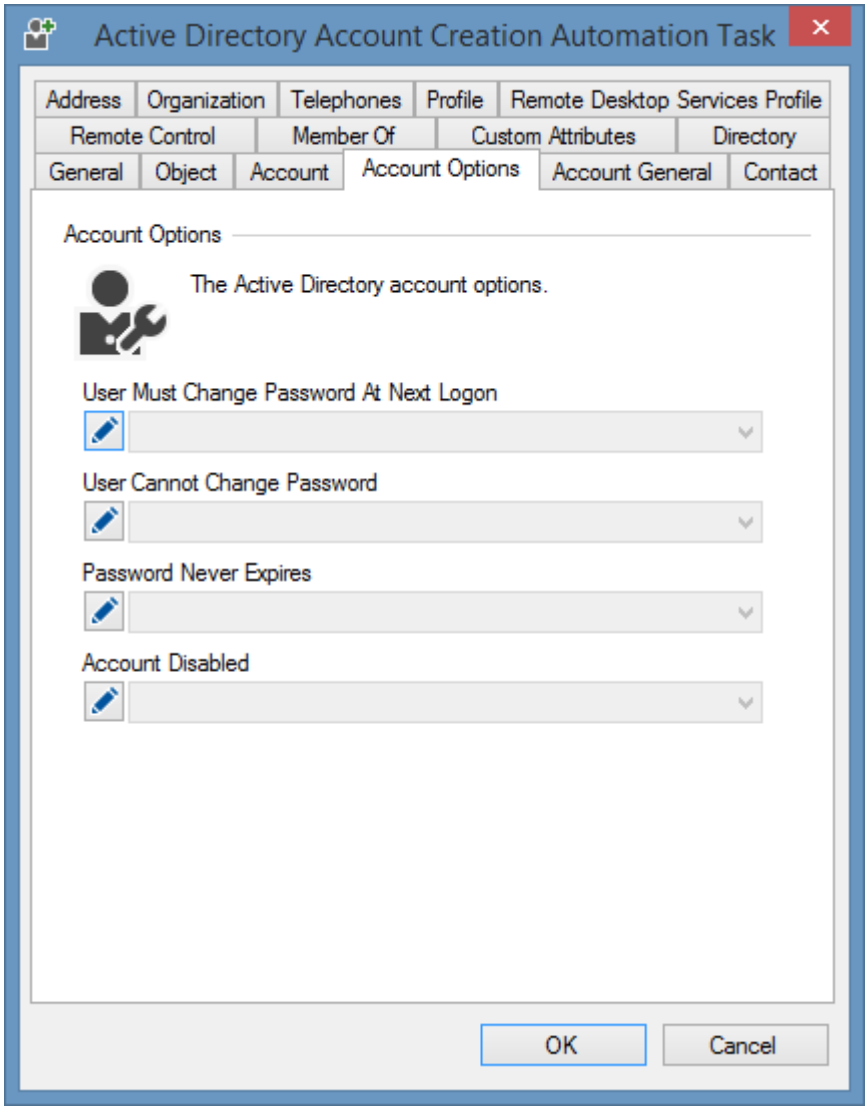
The logon hours for the account.



Logon Hours UI
Displays the logon hours user interface. Each block represents an hour with blue blocks permitting logon, and white blocks denying logon.



Account Options



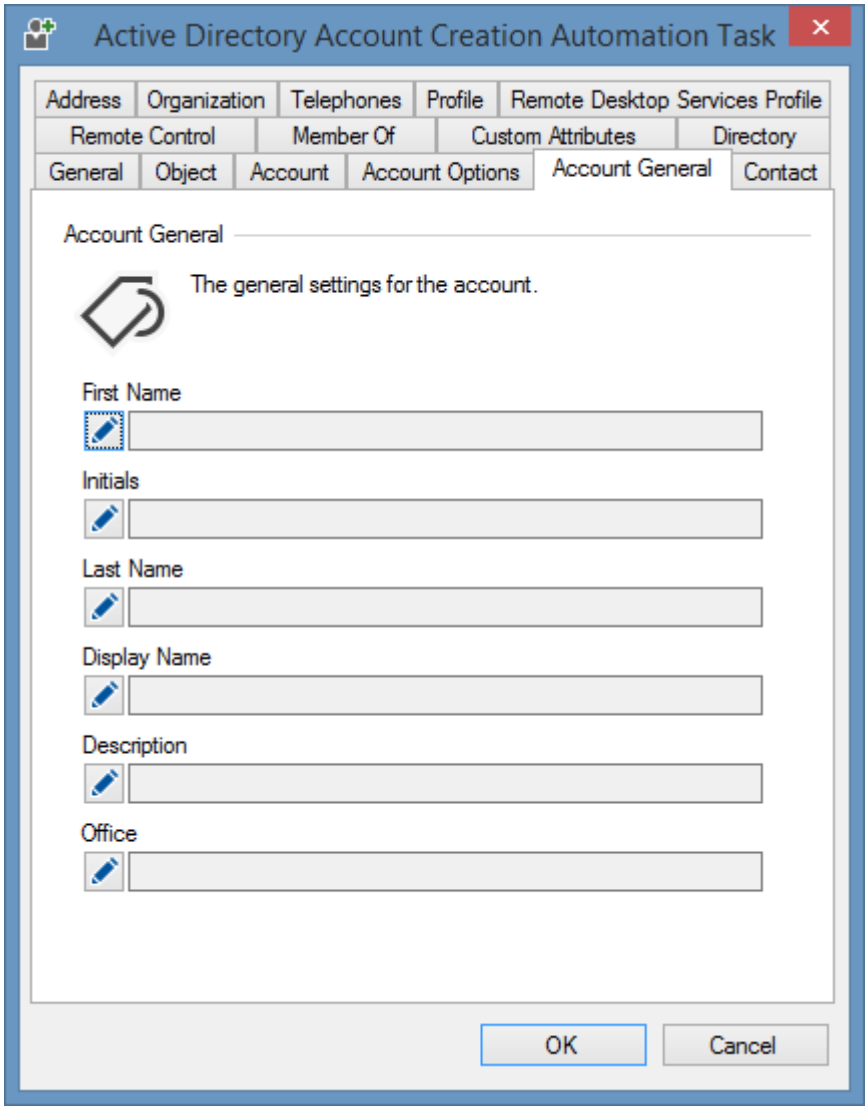
User Must Change Password At Next Logon
Determines whether the user must change their password at next logon.

User Cannot Change Password
Determines whether the user is prevented from changing their password.

Password Next Expires
Determines whether the password will never expire.

Account Disabled
Determines whether the account will be disabled when created.

Account General



First Name
The first name of the user.

Initials
The initials of the user.

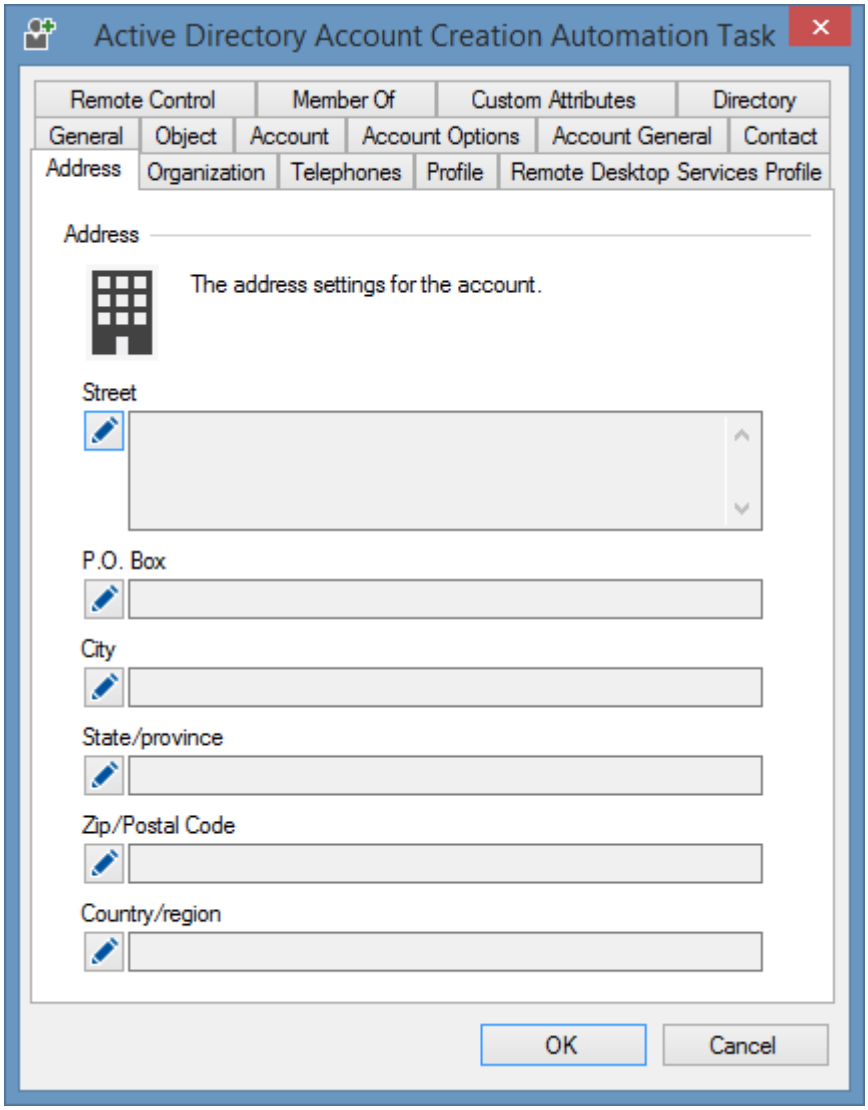
Last Name
The last name of the user.

Display Name
The display name of the user.

Description
The description of the user.

Office
The office of the user.

Address



Street
The street address for the user.

P.O. Box
The PO box address for the user.

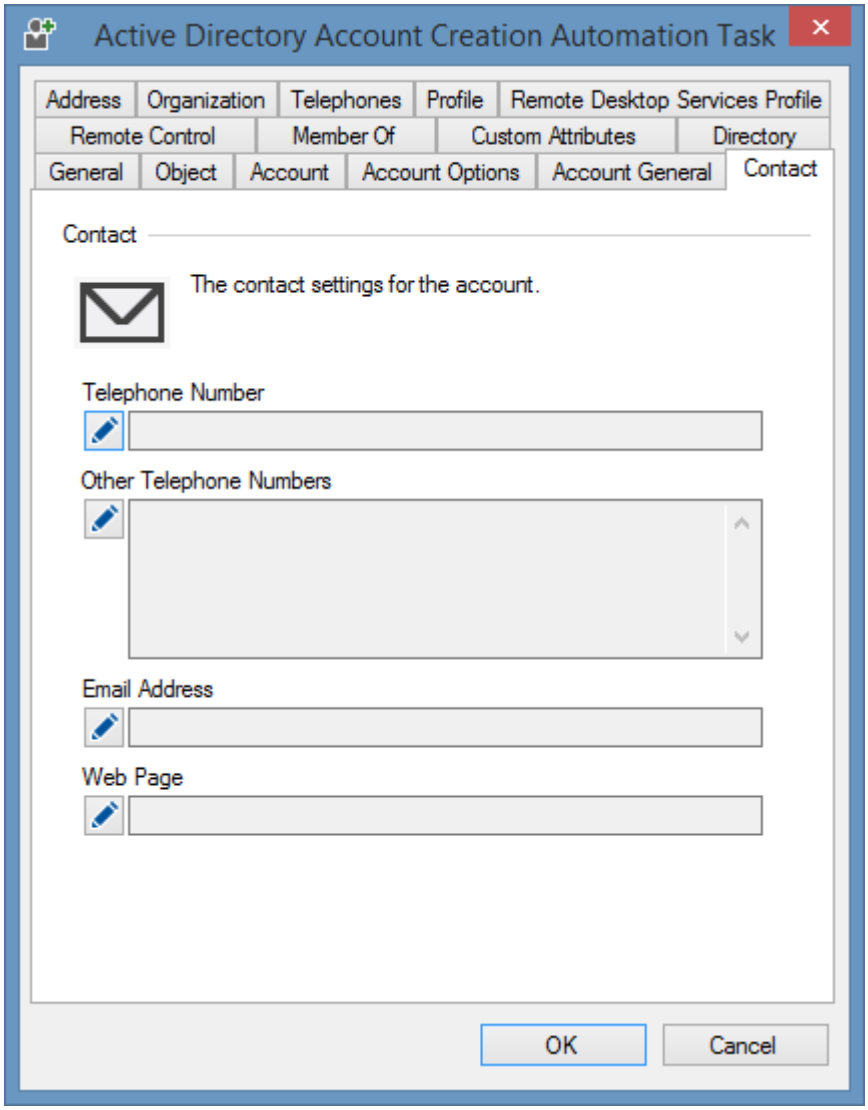
City
The city for the user.

State/province
The state or province for the user.

Zip/Postal Code
The Zip or postal code for the user.

Country/region
The country or region (ISO 3166-1-alpha-2) code assigned to the user account - for example "US".

Contact



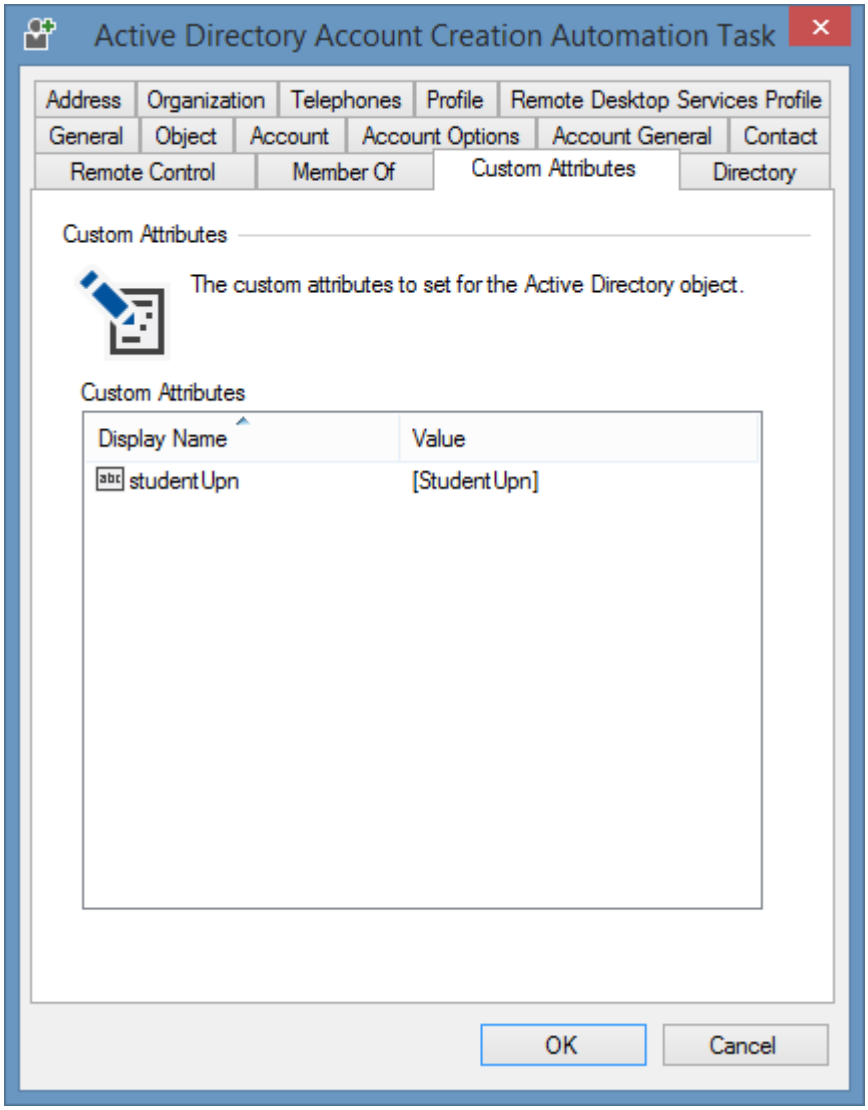
Telephone Number
The telephone number for the user.

Other Telephone Numbers
Other telephone numbers for the user.

Email Address
The email address for the user.

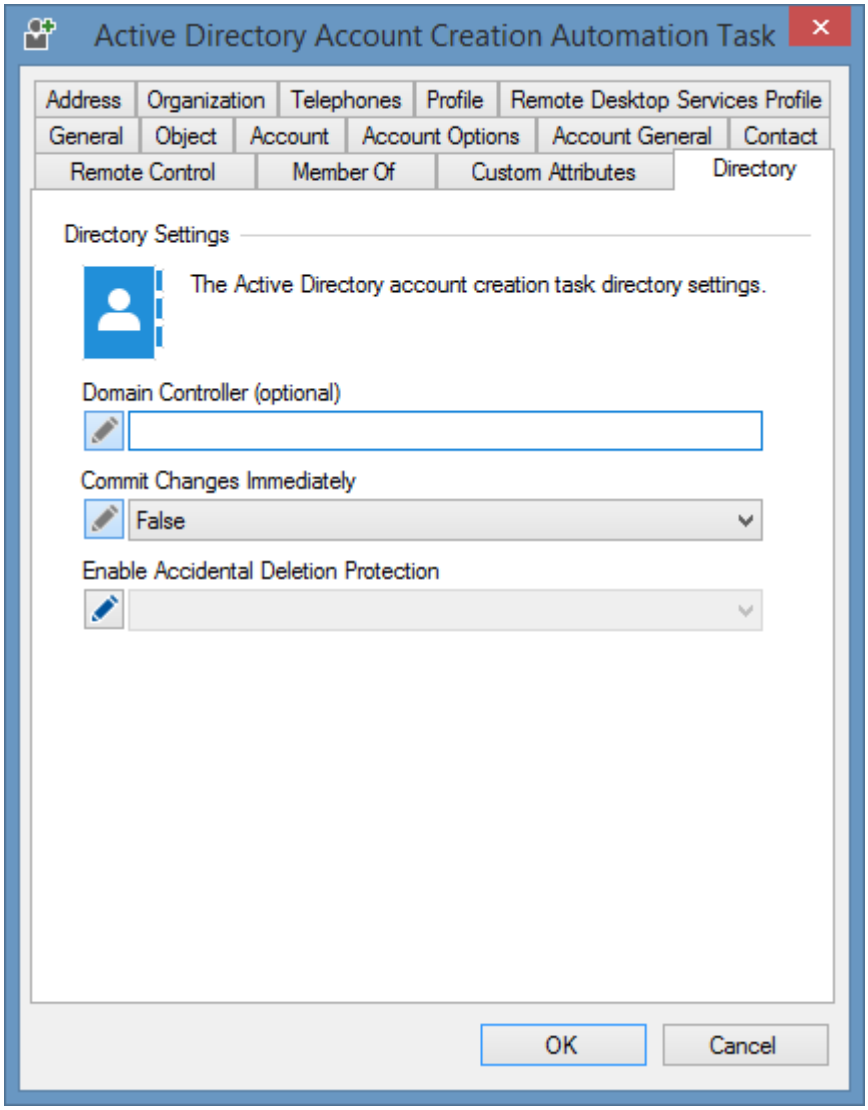
Web Page
The web page for the user.

Custom Attributes



Custom Attributes
The custom attributes to set for the account.

Directory

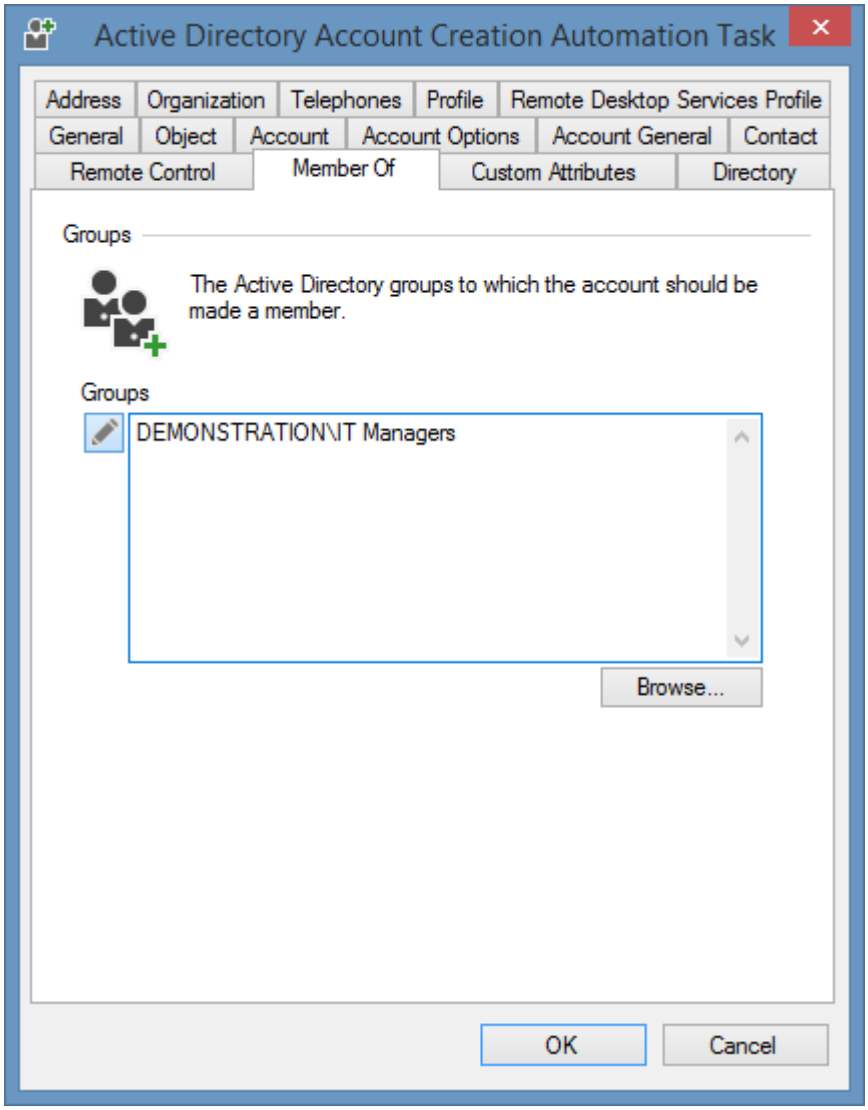


Domain Controller (optional)
The fully qualified domain name of a specific domain controller to use for the operation.

Commit Changes Immediately
Determines whether each change made to the directory is committed immediately. This can assist in troubleshooting.

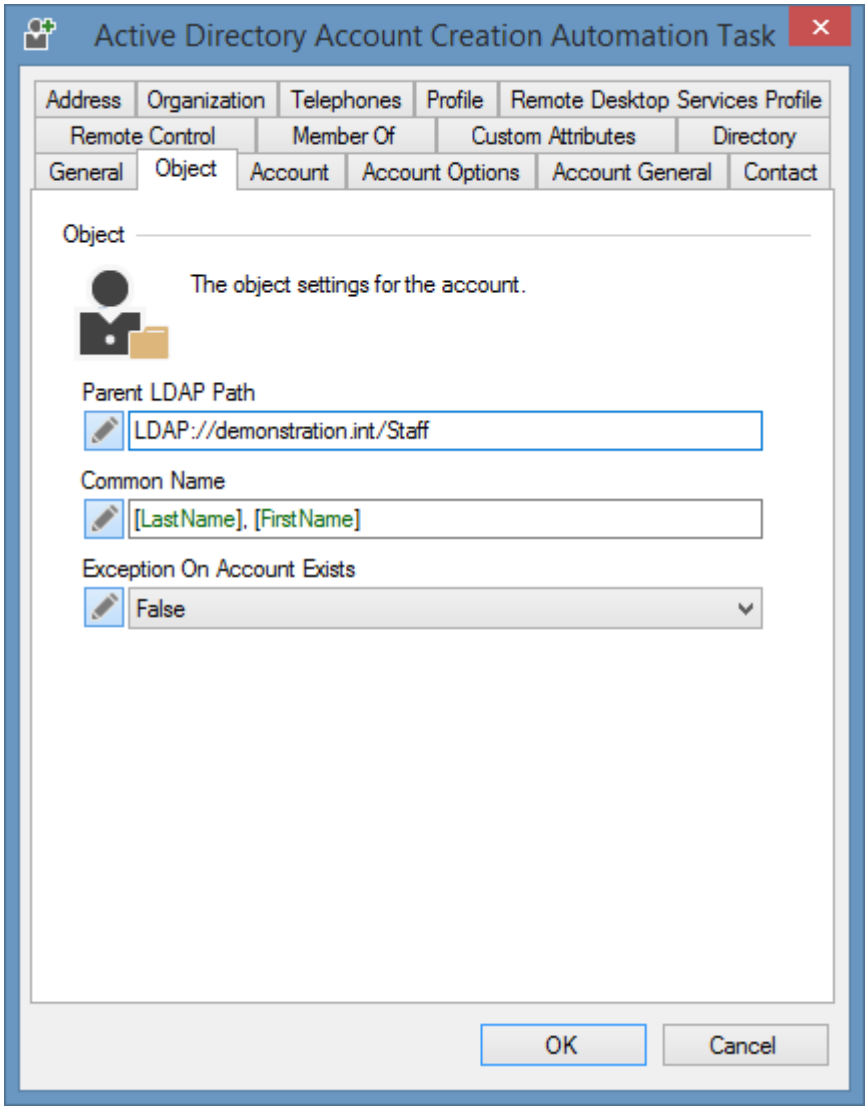
Enable Accidental Deletion Protection
Determines whether accidental deletion protection should be enabled for the account.

Member Of



Groups
The Active Directory groups to which the account should be made a member.
Clicking the *browse* button displays the account browser.

Object

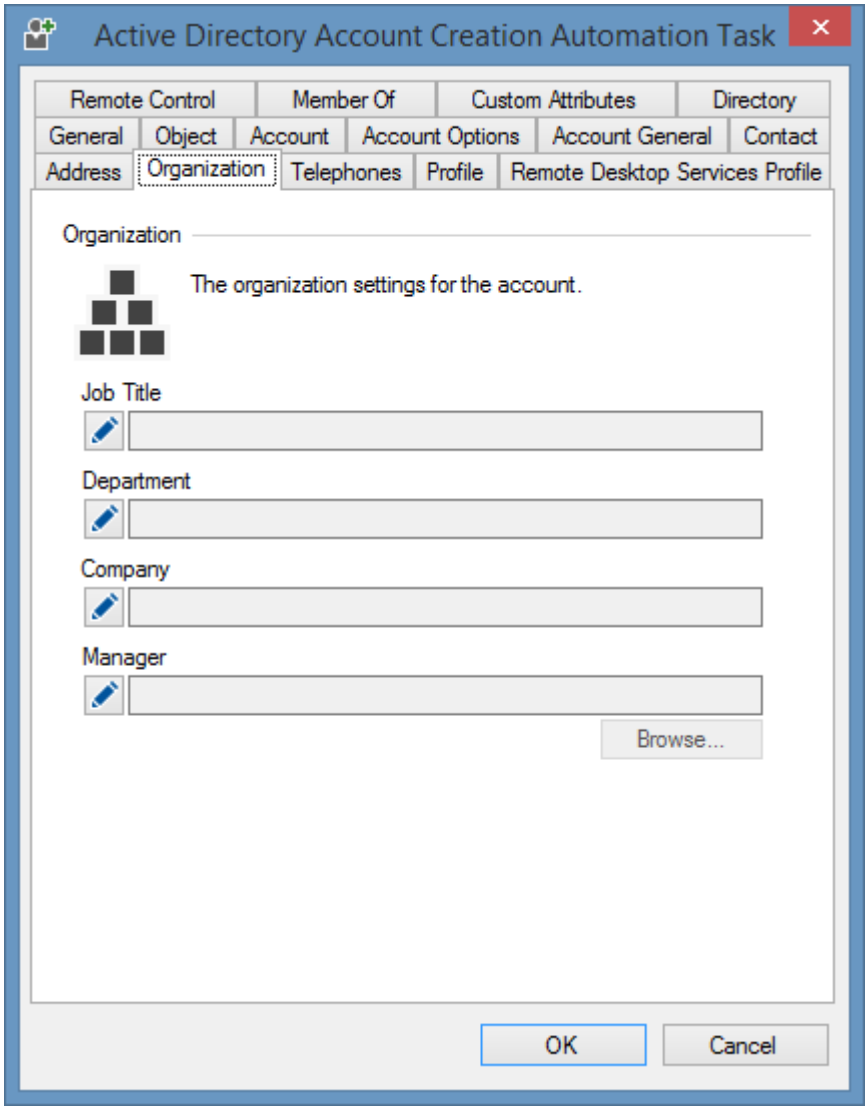


Parent LDAP Path
The absolute LDAP path in canonical name format in which to create the account.

Common Name
The common name of the account.

Exception On Account Exists
Determines whether an exception should be thrown if the account to create already exists.

Organization



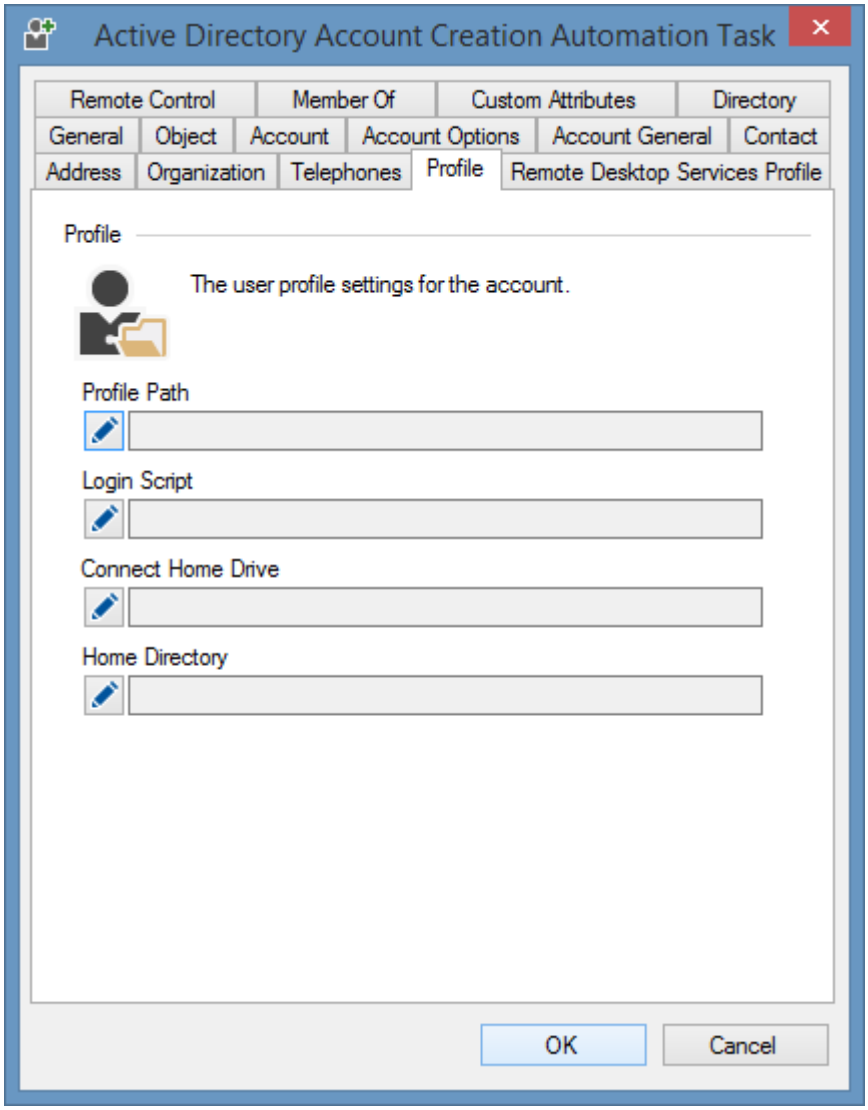
Job Title
The job title of the user.

Department
The department of the user.

Company
The company of the user.

Manager
The SAM account name or user principal name of the manager to assign to the user account. Clicking the *browse* button displays the account browser.

Profile



Profile Path
The network path to the user's roaming or mandatory profile.

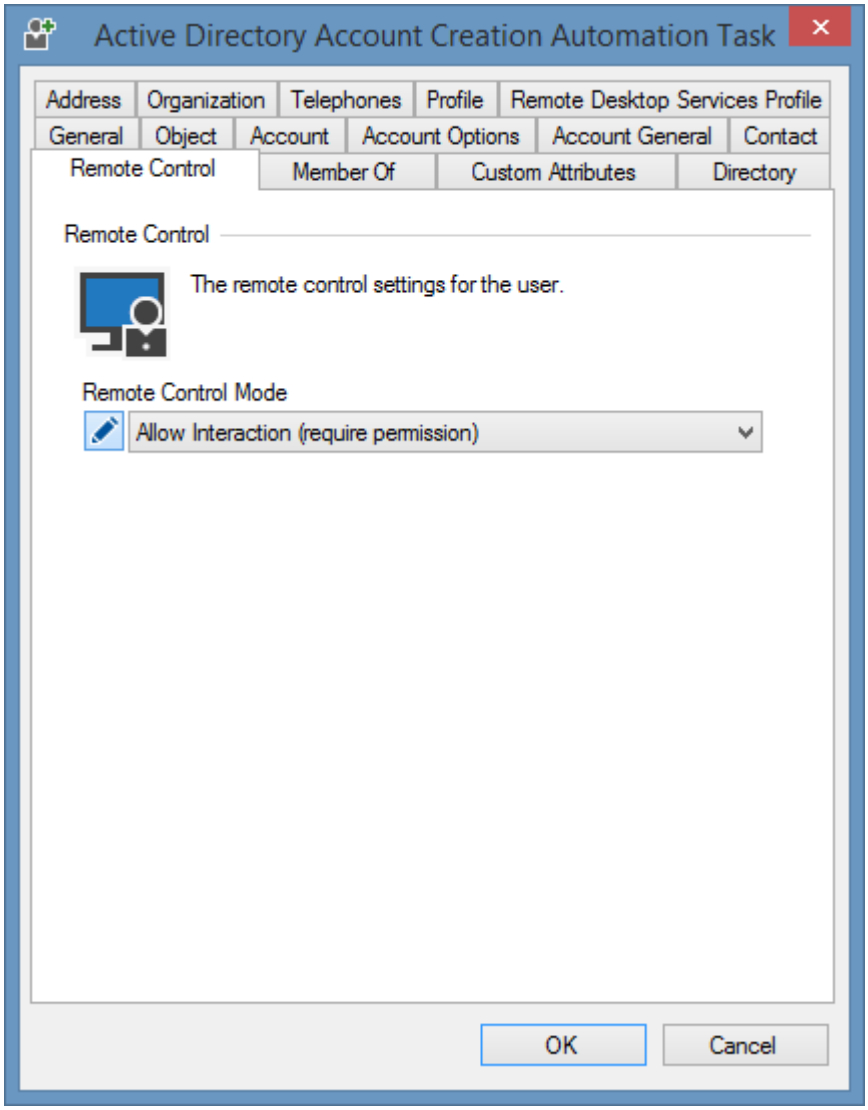
Login Script
The login script.

Connect Home Drive
The drive letter that should be connected for the user.

Home Directory
The path to the home folder.

NOTE: When the home drive is set, the home directory must be a UNC path.
NOTE: When the home drive is not set, the home directory must be a valid local path using the form: drive-letter:\directory.

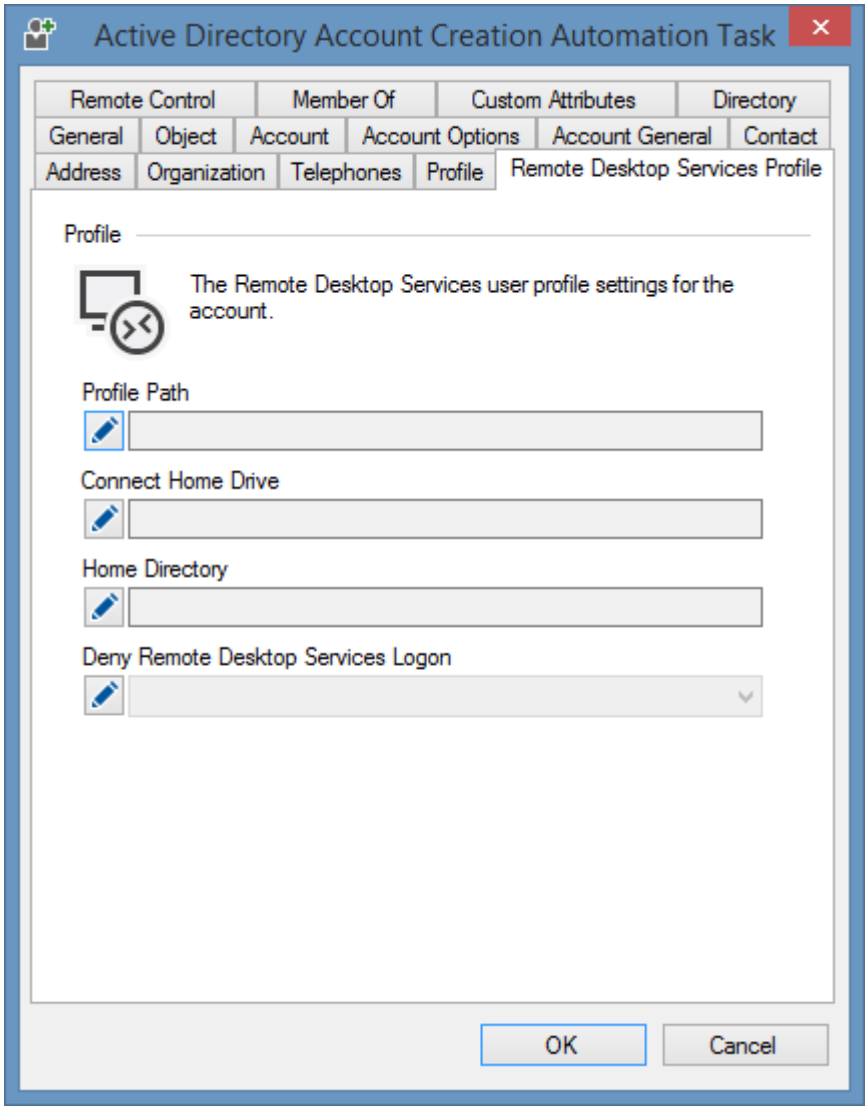
Remote Control



Remote Control Mode
The remote control mode for the user

- Disabled
- Allow Interaction (require permission)
- Allow Interaction
- View Only (require permission)
- View Only

Remote Desktop Services Profile



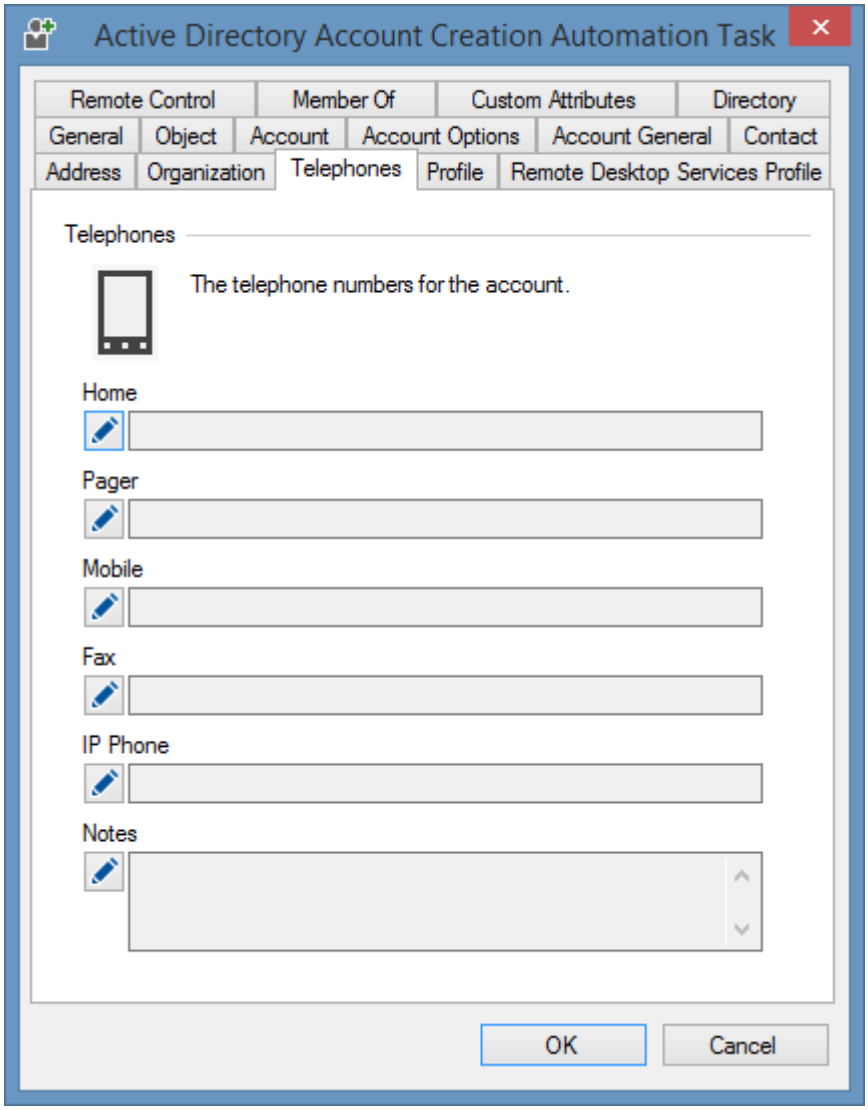
Profile Path
The network path to the user's roaming or mandatory profile when logging in using Remote Desktop Services.

Connect Home Drive
The drive letter that should be connected for the user.

Home Directory
The path to the home folder.
NOTE: When the home drive is set, the home directory must be a UNC path.

Deny Remote Desktop Services Logon
Determines whether the user should be denied the ability to logon using Remote Desktop Services.

Telephones



Home
The home phone number.

Pager
The pager number.

Mobile
The mobile number.

Fax
The fax number.

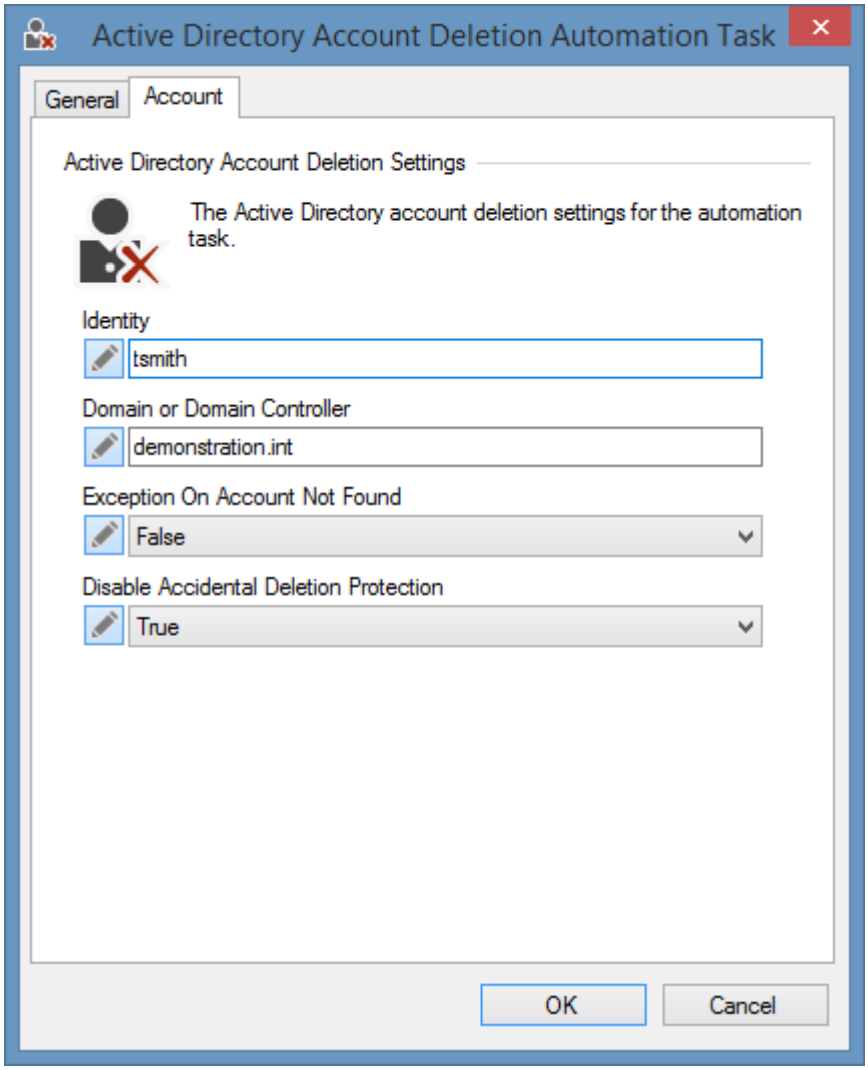
IP Phone
The user's IP phone number.

Notes
The telephony related notes.

Active Directory Account Deletion Task

The Active Directory account deletion task is capable of deleting an Active Directory account with the specified identity.

Account



Identity
The SAM account name or user principal name of the account to delete.

Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the account resides, or the fully qualified domain name of a specific domain controller to use for the operation.

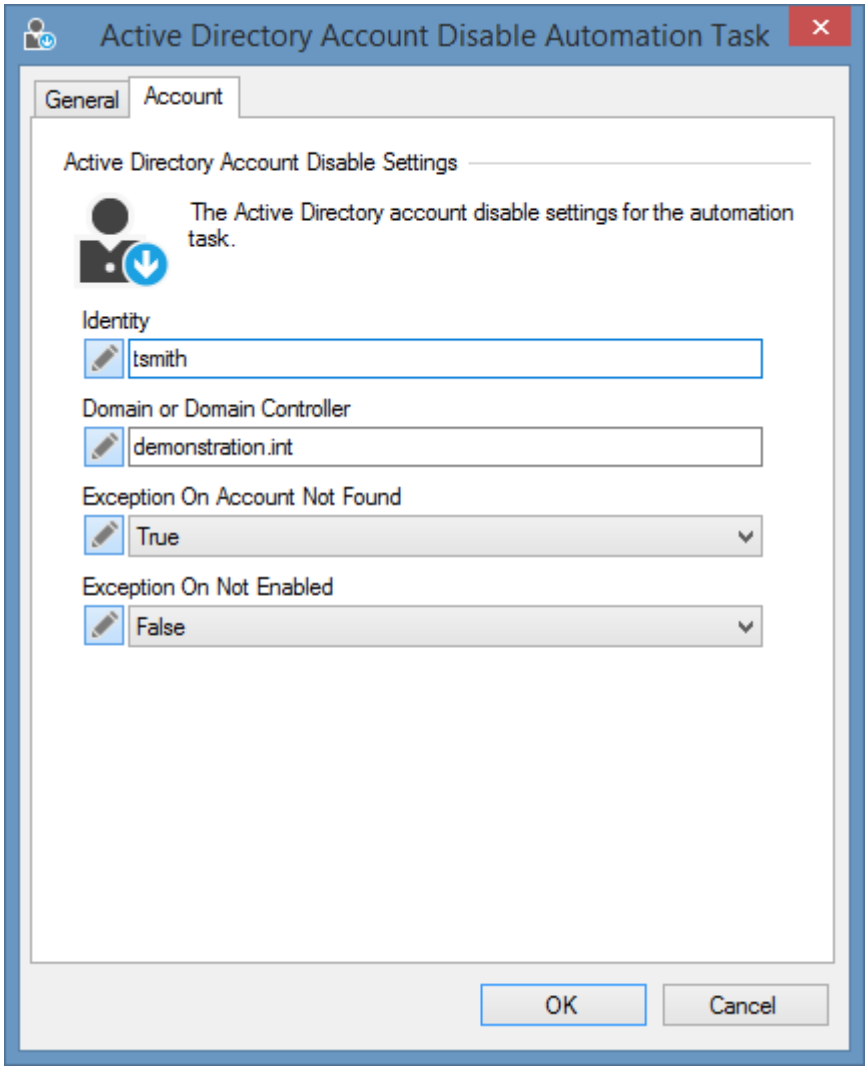
Exception On Account Not Found
Determines whether an exception should be thrown if the account to delete is not found.

Disable Accidental Deletion Protection
Determines whether the "Protect object from accidental deletion" option should be disabled for the account before attempting deletion.

Active Directory Account Disable Task

The Active Directory account disable task is capable of disabling an enabled Active Directory account with the specified identity.

Account



Identity
The SAM account name or user principal name of the account to disable.

Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the account resides, or the fully qualified domain name of a specific domain controller to use for the operation.

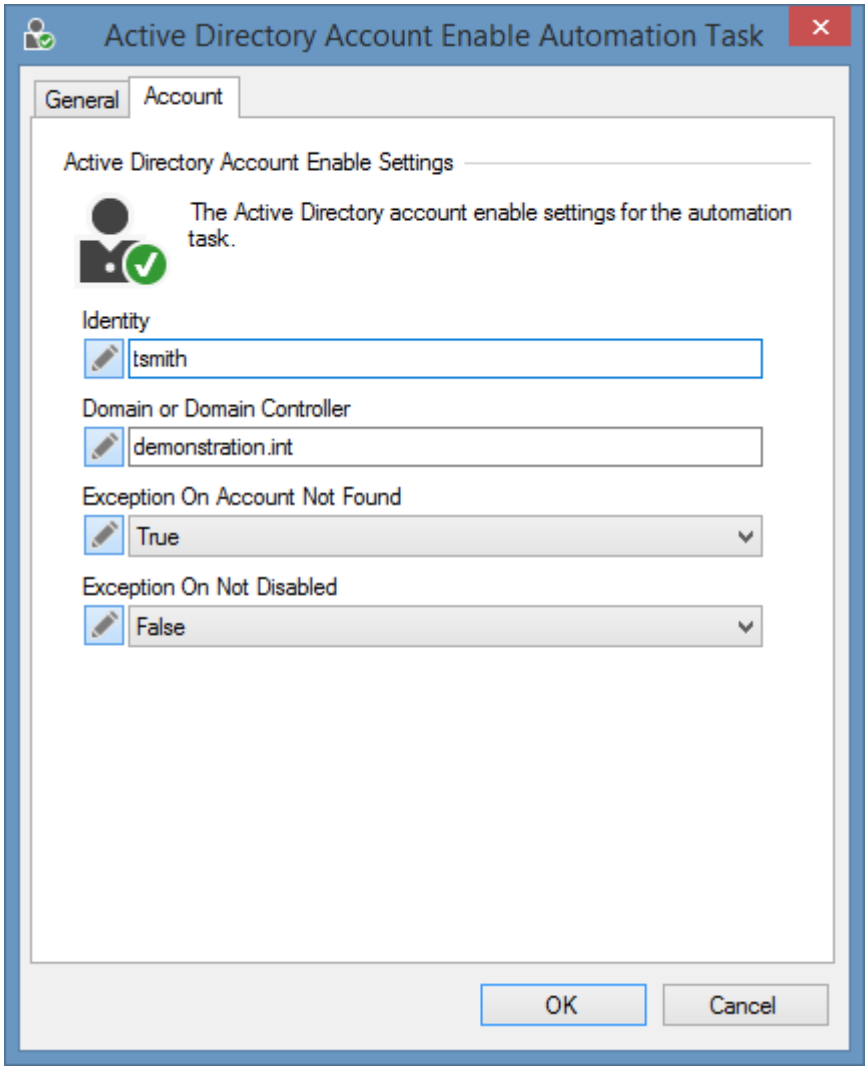
Exception On Account Not Found
Determines whether an exception should be thrown if the account to disable is not found.

Exception On Not Enabled
Determines whether an exception should be thrown if the account to disable is not currently enabled.

Active Directory Account Enable Task

The Active Directory account enable task is capable of enabling a disabled Active Directory account with the specified identity.

Account



Identity
The SAM account name or user principal name of the account to enable.

Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the account resides, or the fully qualified domain name of a specific domain controller to use for the operation.

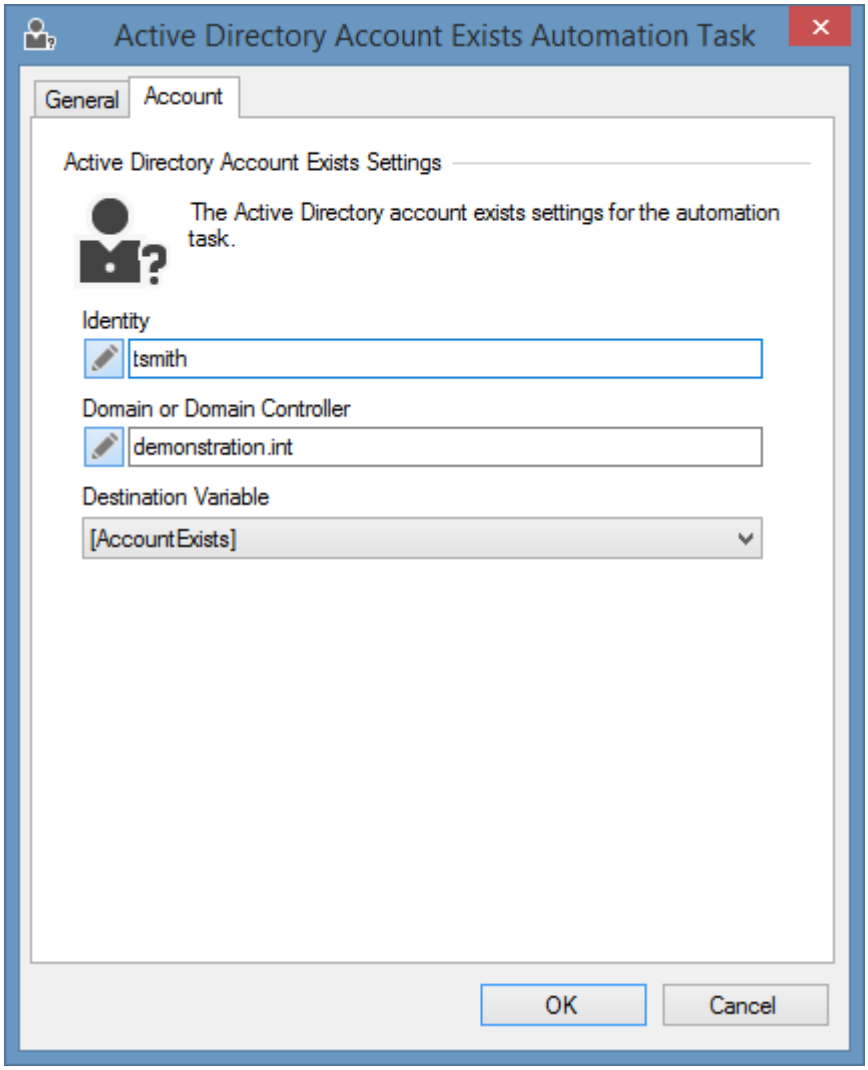
Exception On Account Not Found
Determines whether an exception should be thrown if the account to enable is not found.

Exception On Not Disabled
Determines whether an exception should be thrown if the account to enable is not currently disabled.

Active Directory Account Exists Task

The Active Directory account exists task is capable of determining whether an Active Directory account with the specified identity exists in the domain.

Account



Identity
The SAM account name or user principal name of the account to locate.

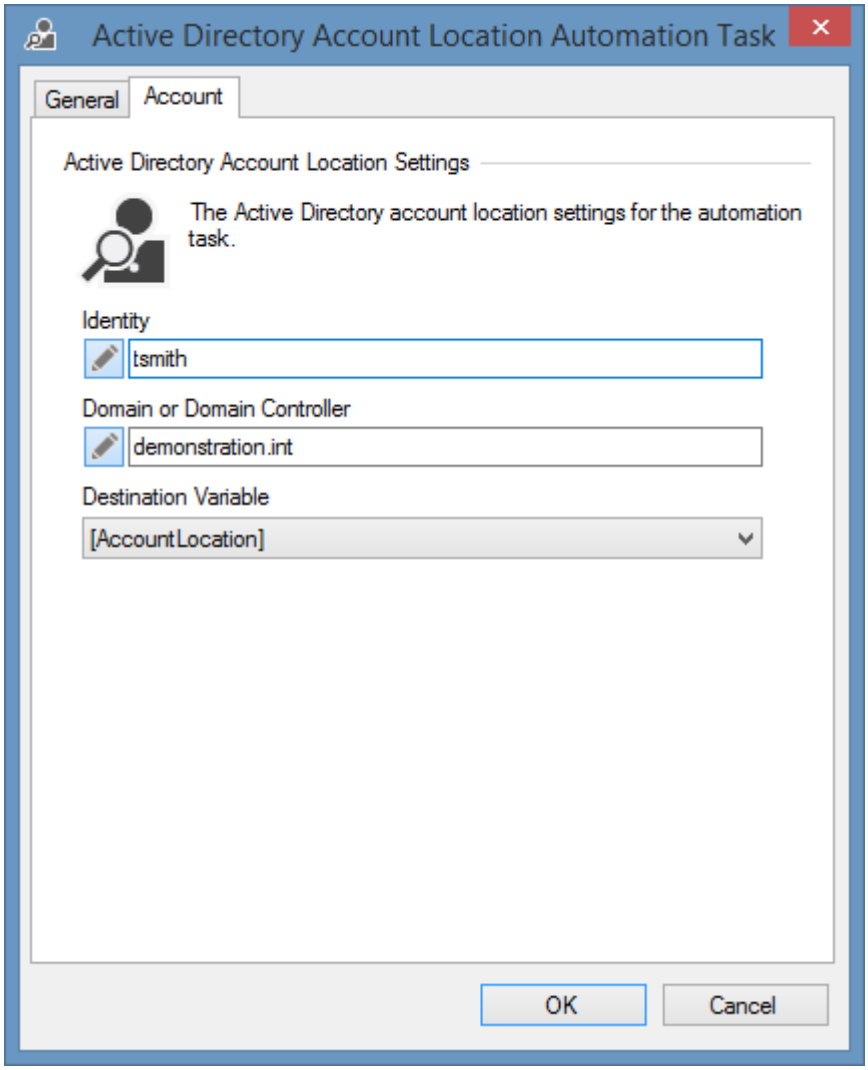
Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the account resides, or the fully qualified domain name of a specific domain controller to use for the operation.

Destination Variable
The boolean variable in which to store the return value.

Active Directory Account Location Task

The Active Directory account location task is capable of determining the canonical LDAP path of an Active Directory account with the specified identity in the specified domain.

Account



Identity
The SAM account name or user principal name of the account to locate.

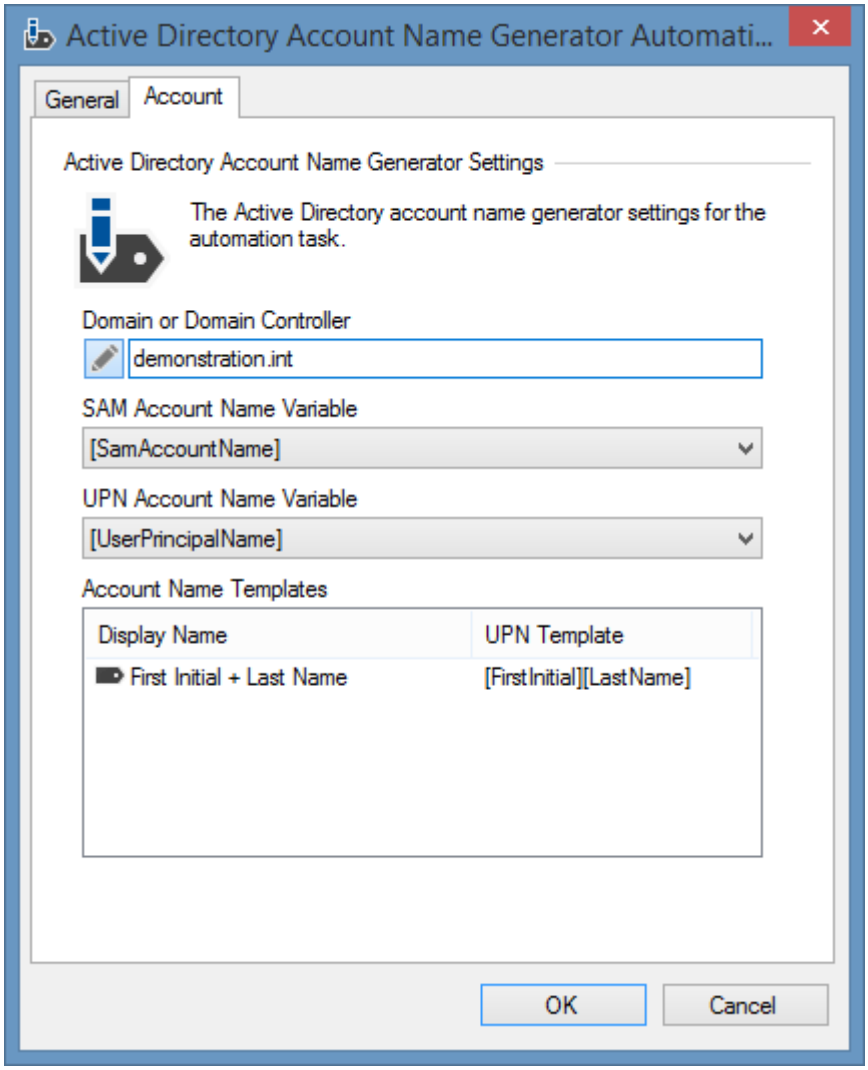
Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the account resides, or the fully qualified domain name of a specific domain controller to use for the operation.

Destination Variable
The string variable in which to store the return value. The value will be in canonical name format - for example "LDAP://demonstration.int/Management Team/tsmith".

Active Directory Account Name Generator Task

The Active Directory account name generator task is capable of generating a unique new SAM account name and user principal name for an Active Directory account based on account name templates.

Account



Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the account name is to be generated, or the fully qualified domain name of a specific domain controller to use for the operation.

SAM Account Name Variable
The string variable in which to store the generated SAM account name.

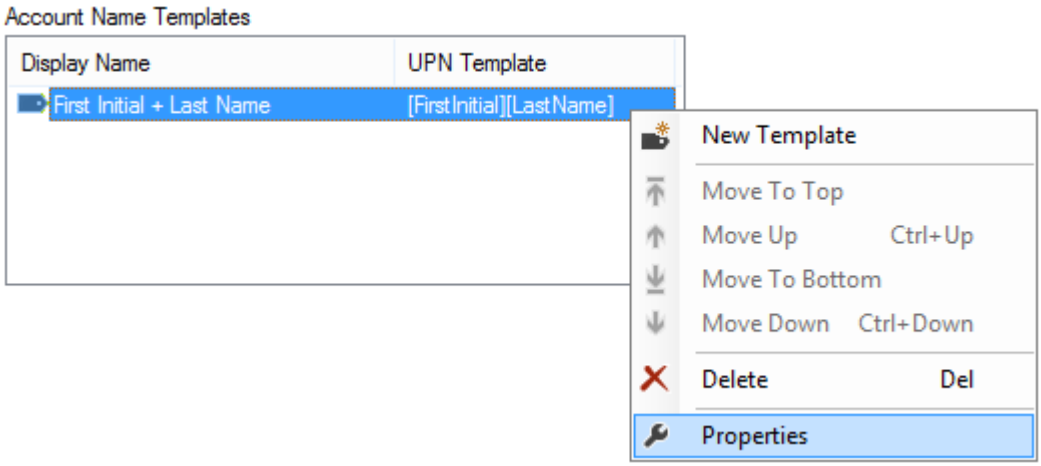
UPN Account Name Variable
The string variable in which to store the generated user principal name.

Account Name Templates
The account name templates to use to generate the account name.

Account Name Templates

Account name templates are used to determine new available SAM account names and user principal names for Active Directory accounts within a domain.

The account name templates are processed in order, and at least one template must be defined for a Active Directory account name generator task.



New Template
Displays a new account name template.

Move To Top
Moves the currently selected account name template to the top of the list.

Move Up
Moves the currently selected account name template up the list.

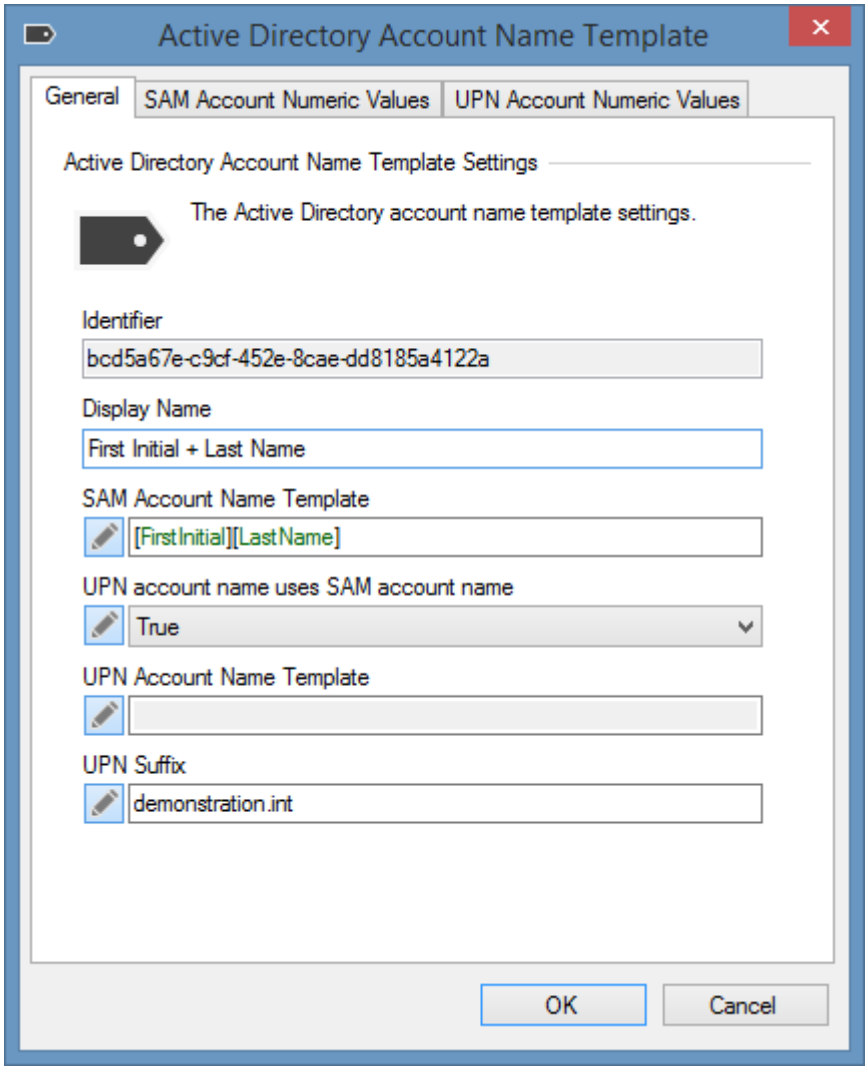
Move To Bottom
Moves the currently selected account name template to the bottom of the list.

Move Down
Moves the currently selected account name template down the list.

Delete
Deletes the currently selected account name template.

Properties
Displays the properties of the currently selected account name template.

General



Display Name
The display name for the account name template.

SAM Account Name Template
The template to use to generate a unique SAM account name in the domain. The token <n> can be included to use SAM account numeric values.

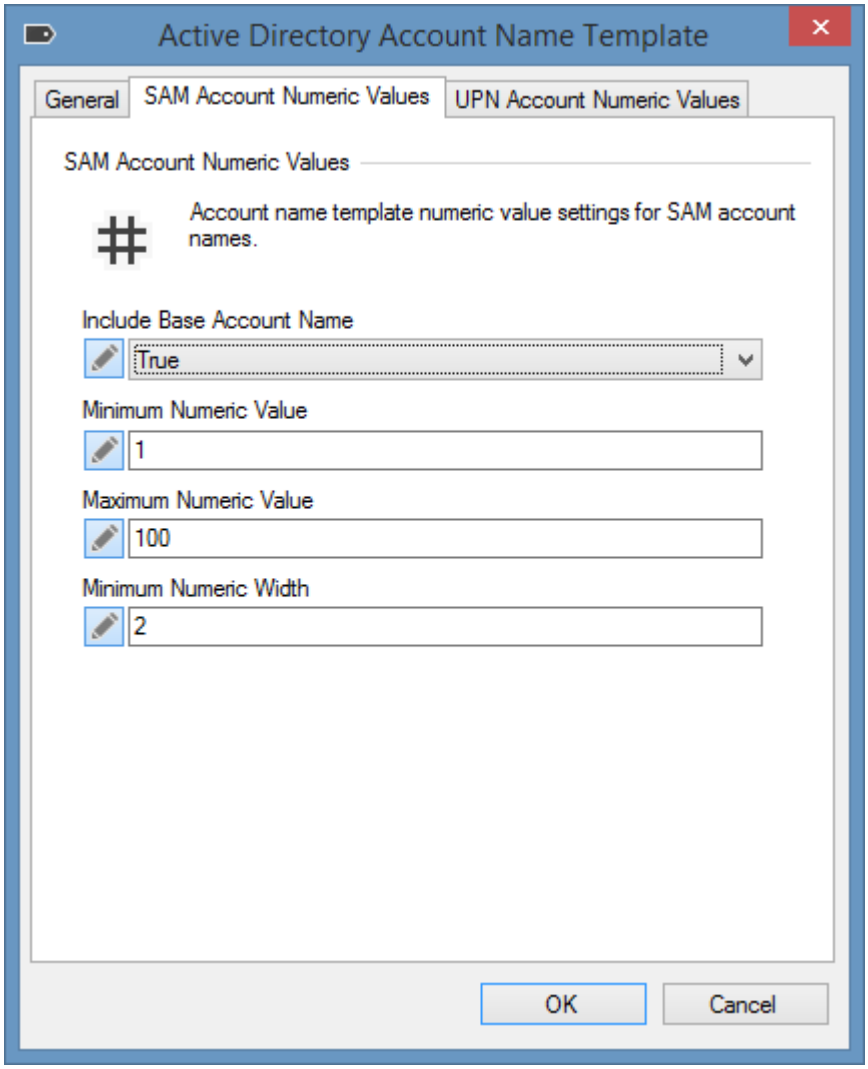
UPN Account Name Uses SAM Account Name
Determines whether the user principal name uses the same template as the SAM account name so that both user names match. By default this is true.

UPN Account Name Template
The template to use to generate a unique user principal name.

UPN Suffix
The domain suffix to use for the user principal name.

SAM Account Numeric Values

If the SAM account name template specified in the general tab includes the <n> token the Active Directory account name generator task can append numeric values to generate a unique SAM account name in the domain.



Include Base Account Name
Determines whether the base account should be included - for example when true the template "tsmith<n>" would include "tsmith" as a possible account name.

Minimum Numeric Value
The minimum numeric value to append to the account name.

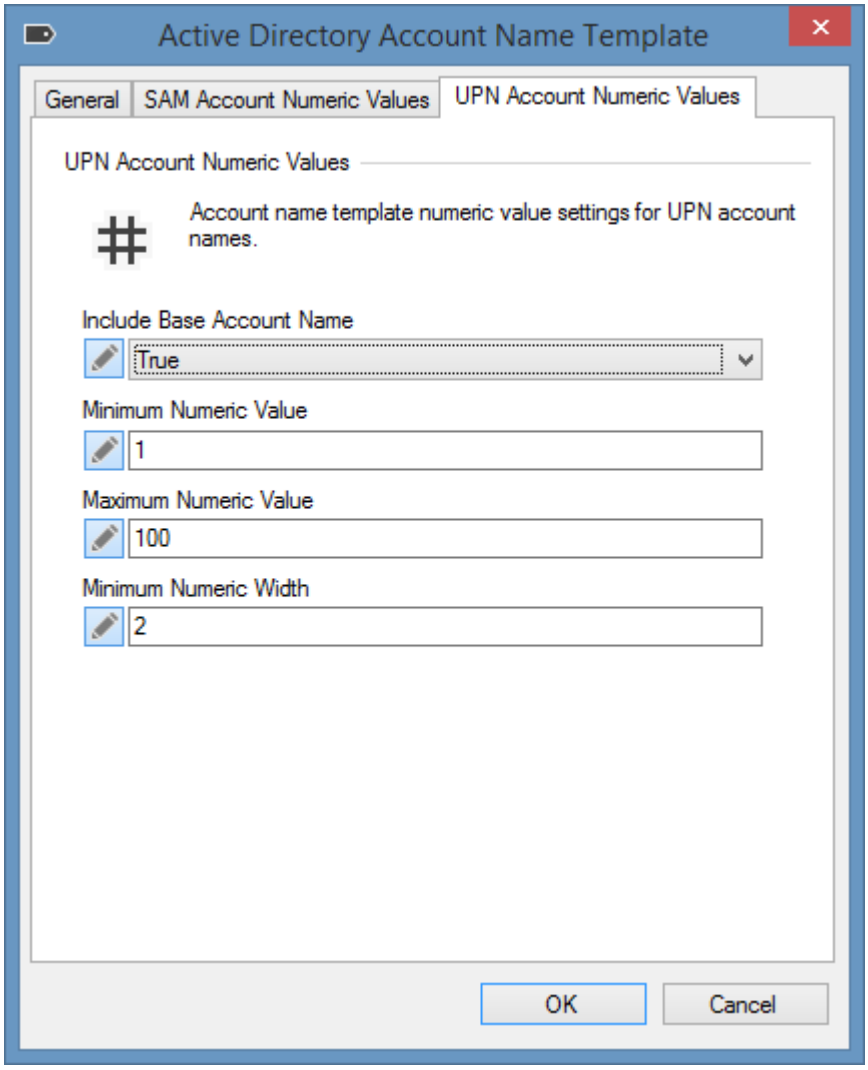
Maximum Numeric Value
The maximum numeric value to append to the account name.

Minimum Numeric Width
The minimum numeric width of the numeric value to append - for example for a value of 3 the template "tsmith<n>" would include account names such as "tsmith", "tsmith001", "tsmith002", etc. as possible account names.

UPN Account Numeric Values

If the UPN account name template specified in the general tab includes the <n> token the Active Directory account name generator task can append numeric values to generate a unique user principal name.

NOTE: If the *UPN Account Name Uses SAM Account Name* setting on the general tab is set to true these settings do not apply.



Include Base Account Name
Determines whether the base account should be included - for example when true the template "tsmith<n>" would include "tsmith" as a possible account name.

Minimum Numeric Value
The minimum numeric value to append to the account name.

Maximum Numeric Value
The maximum numeric value to append to the account name.

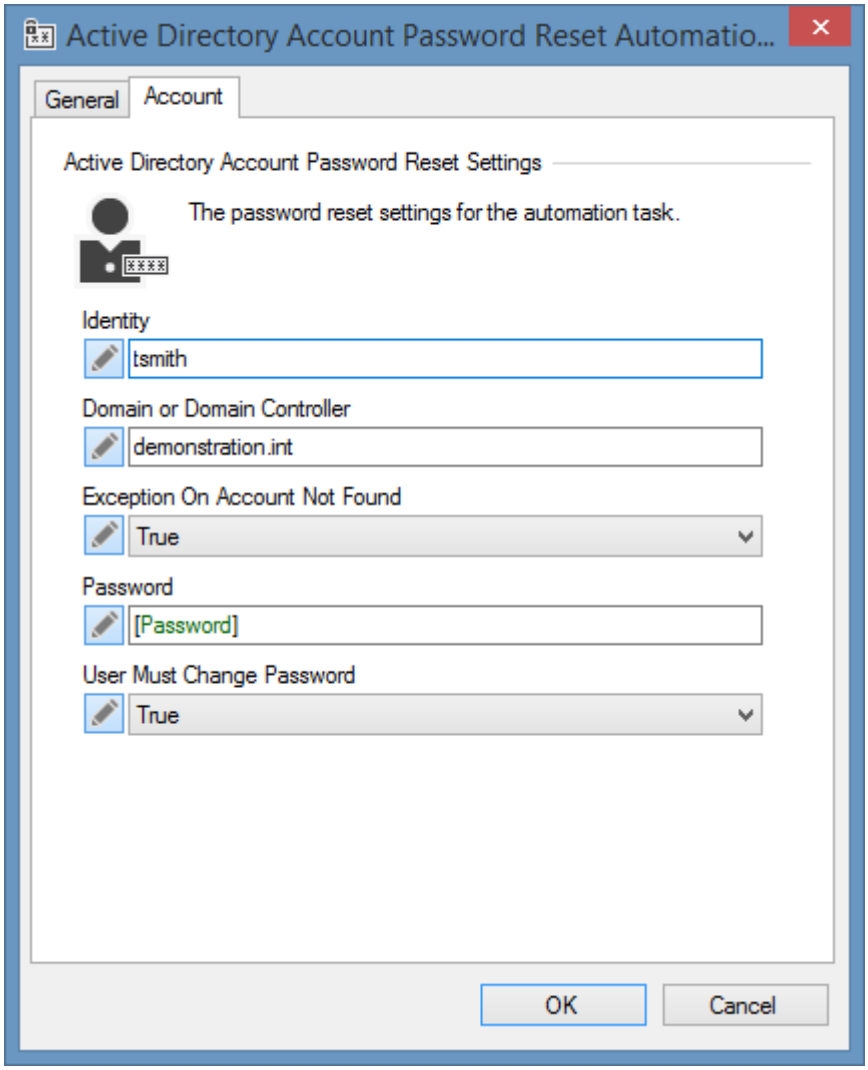
Minimum Numeric Width
The minimum numeric width of the numeric value to append - for example for a value of 3 the template "tsmith<n>" would include account names such as "tsmith", "tsmith001", "tsmith002", etc.

as possible account names.

Active Directory Account Password Reset Task

The Active Directory account password reset task is capable of resetting the password of an Active Directory account with the specified identity.

Account



Identity
The SAM account name or user principal name of the account for which the password is to be reset.

Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the account resides, or the fully qualified domain name of a specific domain controller to use for the operation.

Exception On Account Not Found
Determines whether an exception should be thrown if the account is not found.

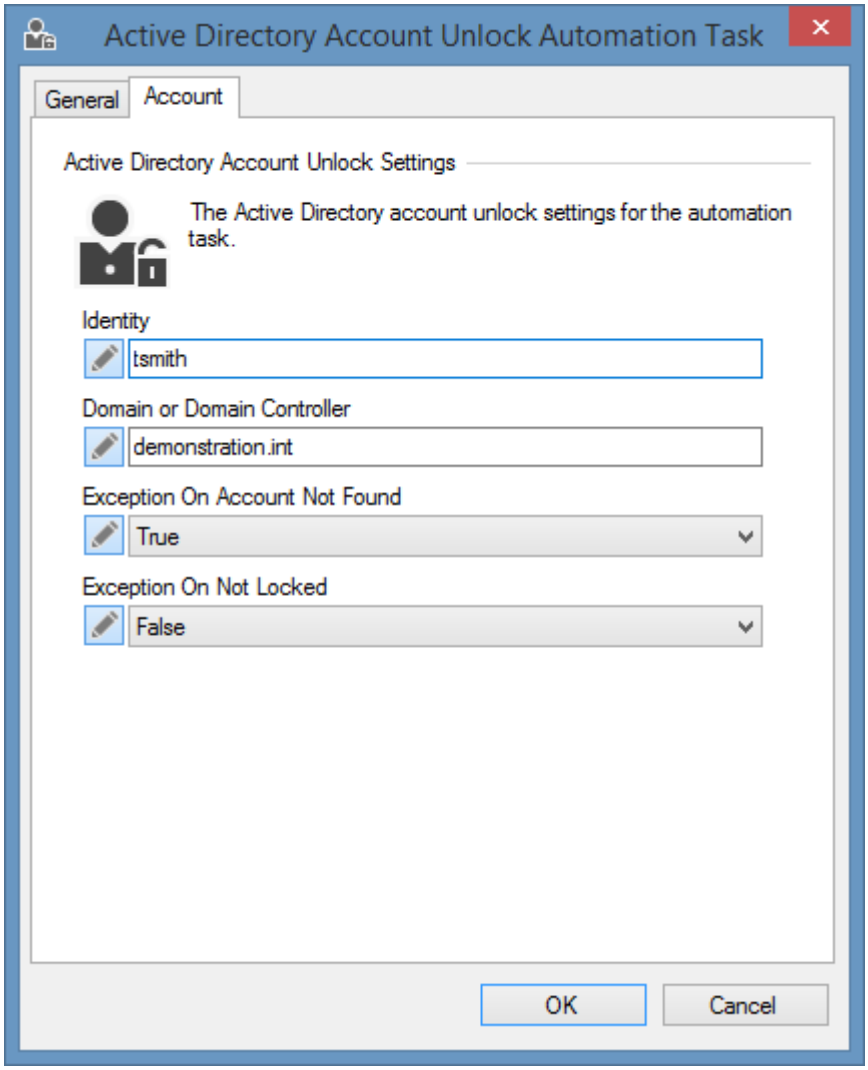
Password
The password to set for the account.

User Must Change Password
Determines whether the user must change password at next logon.

Active Directory Account Unlock Task

The Active Directory account unlock task is capable of unlocking a locked Active Directory account with the specified identity.

Account



Identity
The SAM account name or user principal name of the account to unlock.

Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the account resides, or the fully qualified domain name of a specific domain controller to use for the operation.

Exception On Account Not Found
Determines whether an exception should be thrown if the account to unlock is not found.

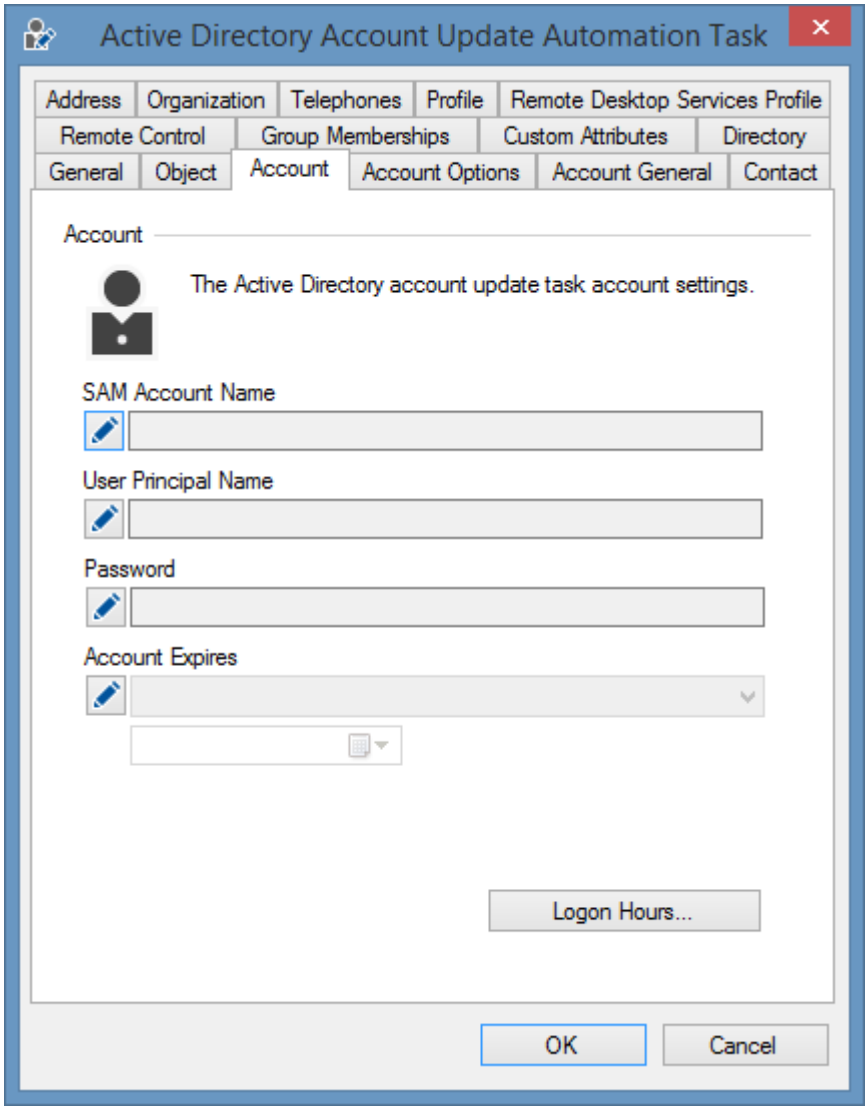
Exception On Not Locked
Determines whether an exception should be thrown if the account to unlock is not currently locked.

Active Directory Account Update Task

The Active Directory account update task is capable of updating an existing Active Directory account.

To create a new account see the Active Directory account creation task.

Account



SAM Account Name
The new SAM account name for the account.

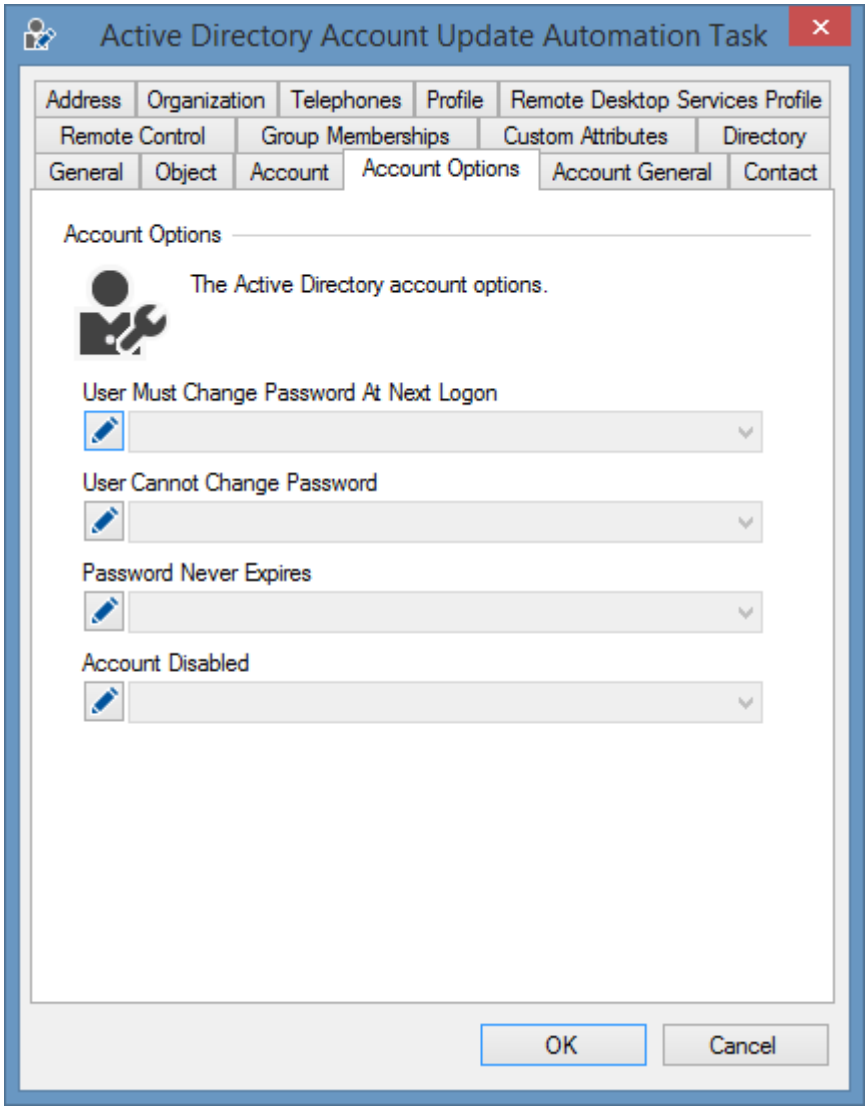
User Principal Name
The new user principal name for the account.

Password
The new password to set for the account.

Account Expires
Determines whether the account should expire.

Logon Hours
The logon hours for the account.

Account Options



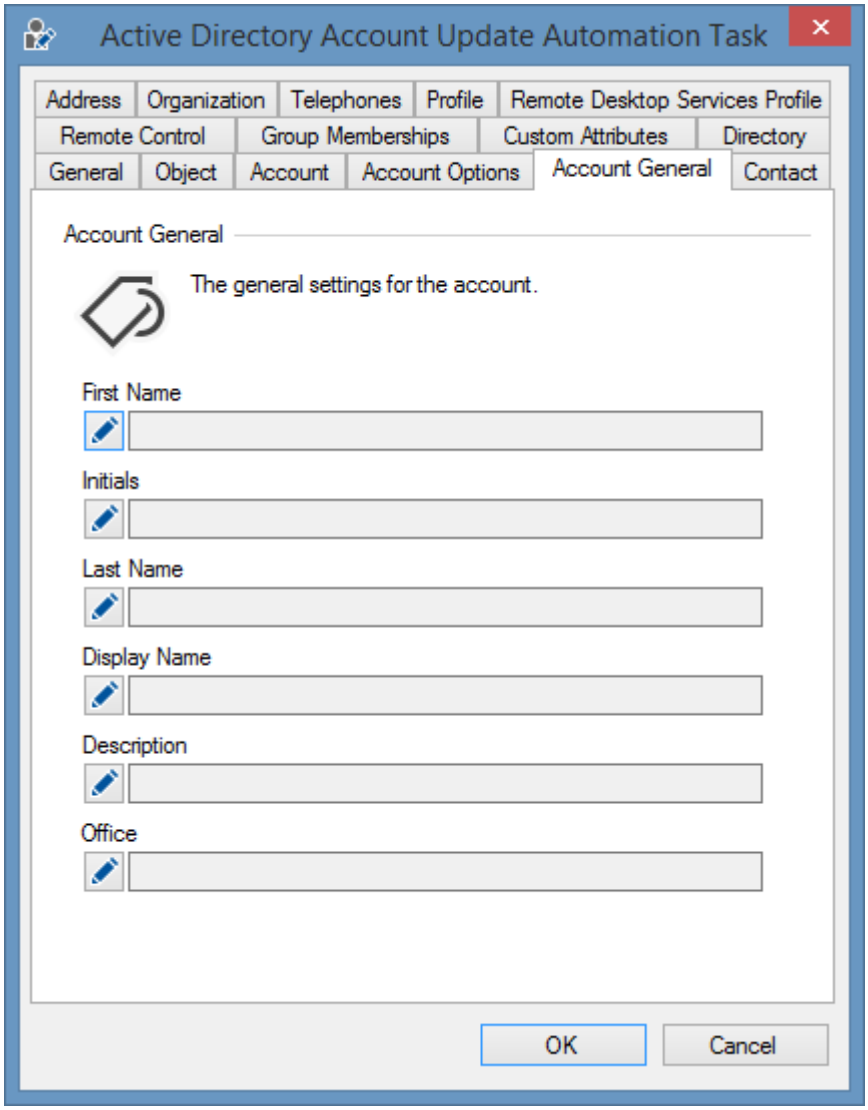
User Must Change Password At Next Logon
Determines whether the user must change their password at next logon.

User Cannot Change Password
Determines whether the user is prevented from changing their password.

Password Next Expires
Determines whether the password will never expire.

Account Disabled
Determines whether the account should be disabled.

Account General



First Name
The first name of the user.

Initials
The initials of the user.

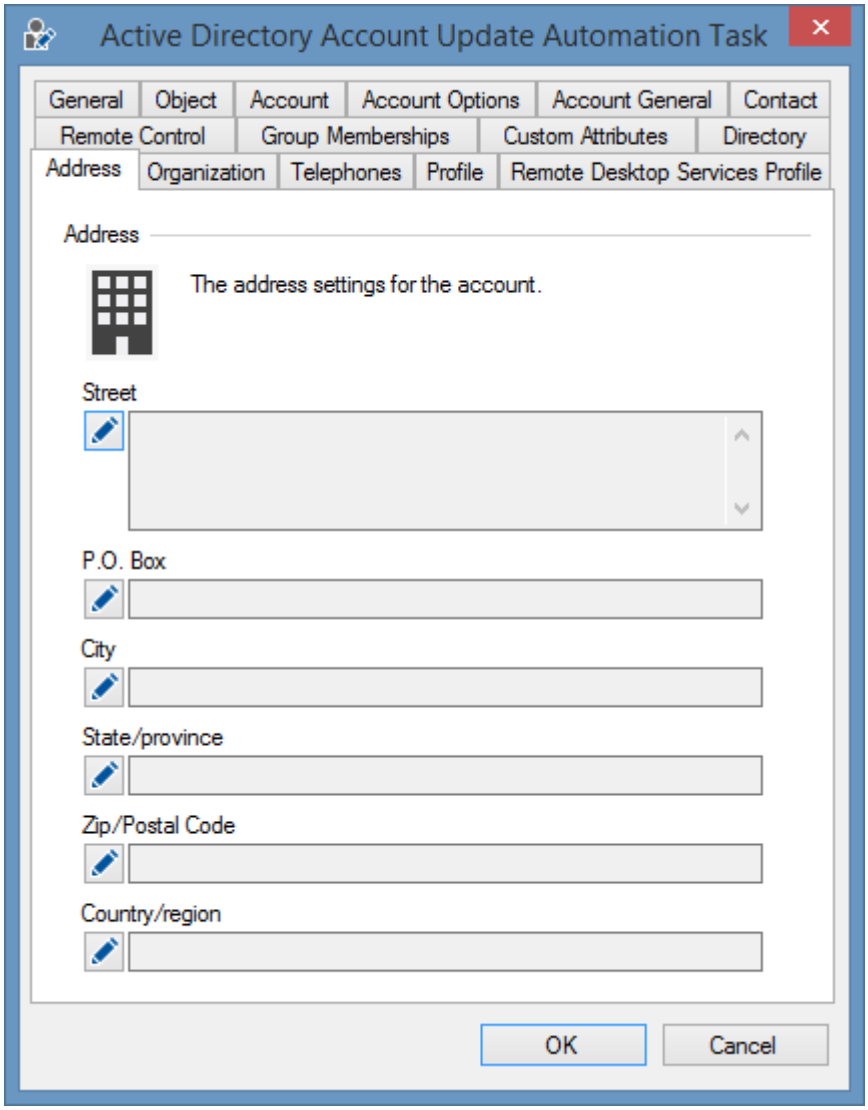
Last Name
The last name of the user.

Display Name
The display name of the user.

Description
The description of the user.

Office
The office of the user.

Address



Street
The street address for the user.

P.O. Box
The PO box address for the user.

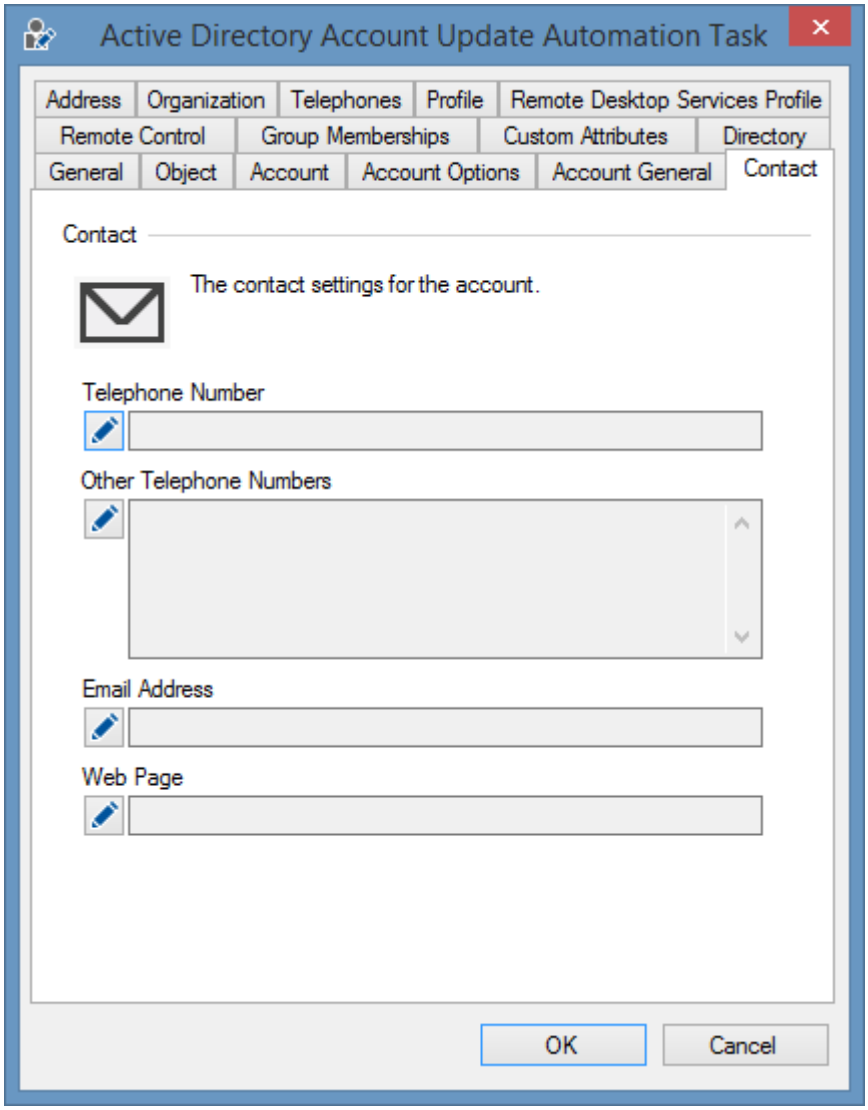
City
The city for the user.

State/province
The state or province for the user.

Zip/Postal Code
The Zip or postal code for the user.

Country/region
The country or region (ISO 3166-1-alpha-2) code assigned to the user account - for example "US".

Contact



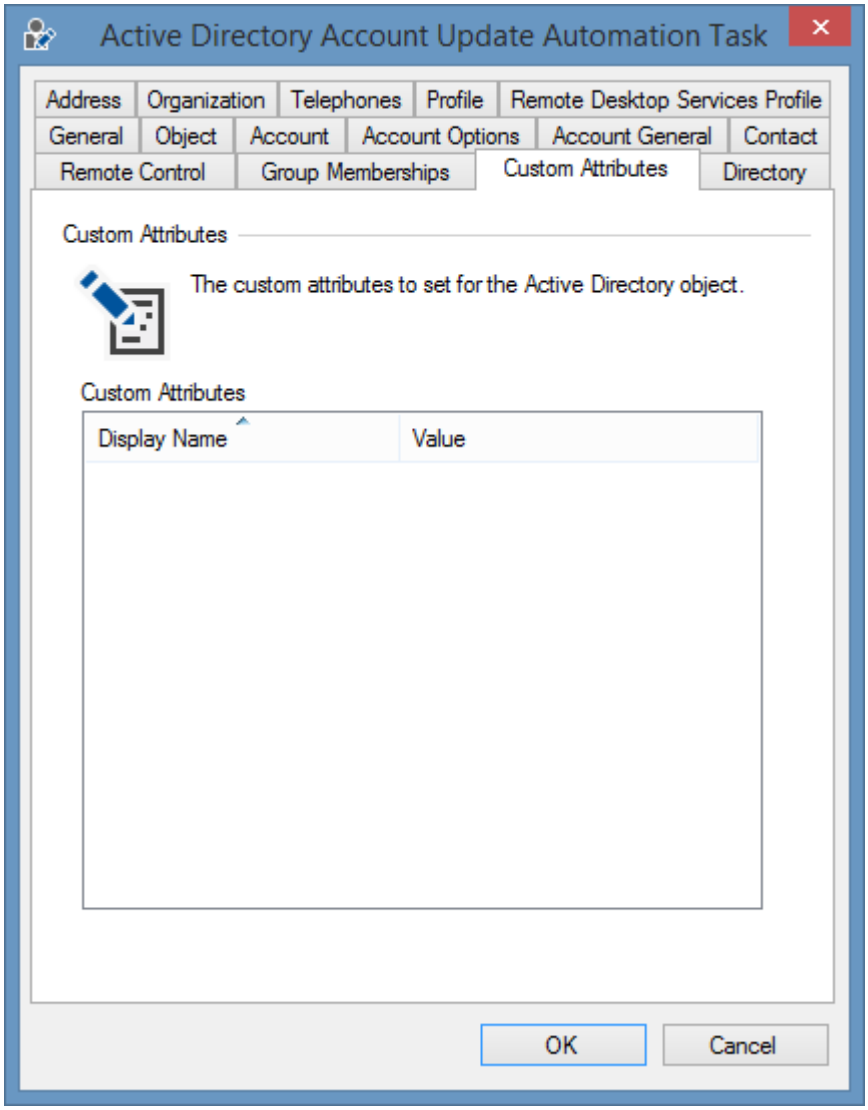
Telephone Number
The telephone number for the user.

Other Telephone Numbers
Other telephone numbers for the user.

Email Address
The email address for the user.

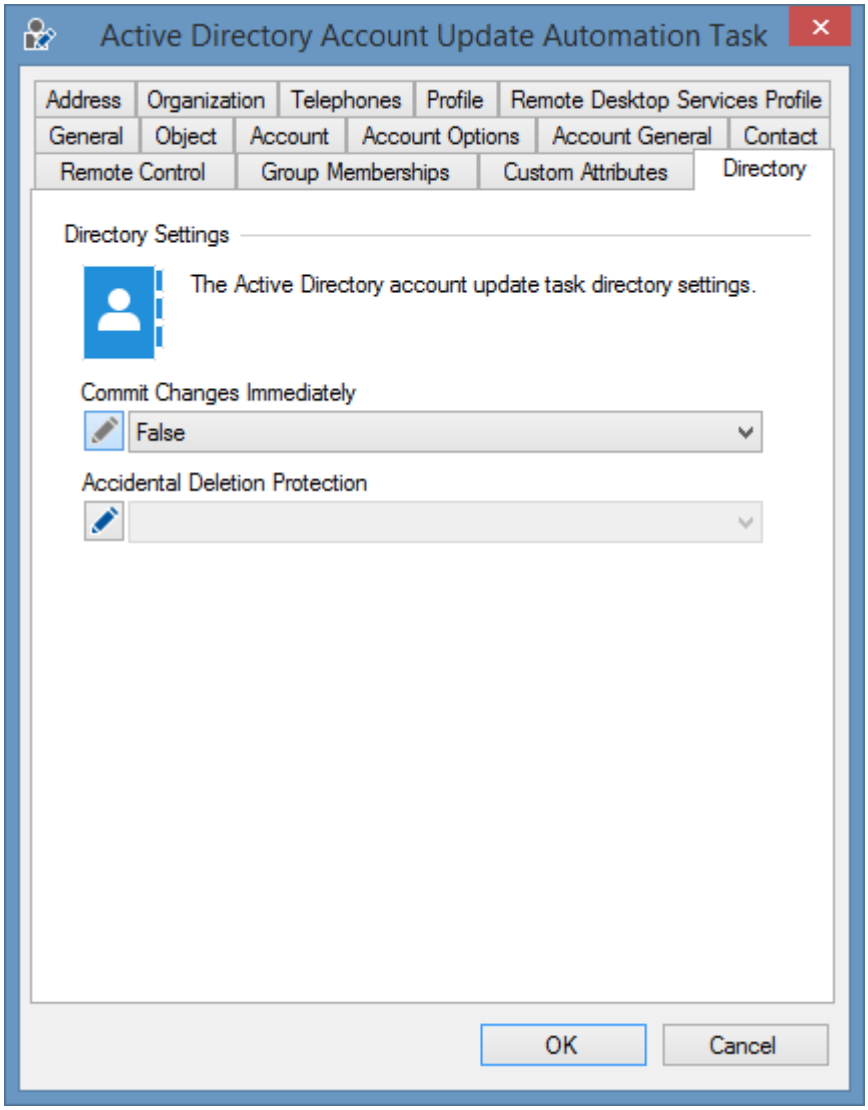
Web Page
The web page for the user.

Custom Attributes



Custom Attributes
The custom attributes to set for the account.

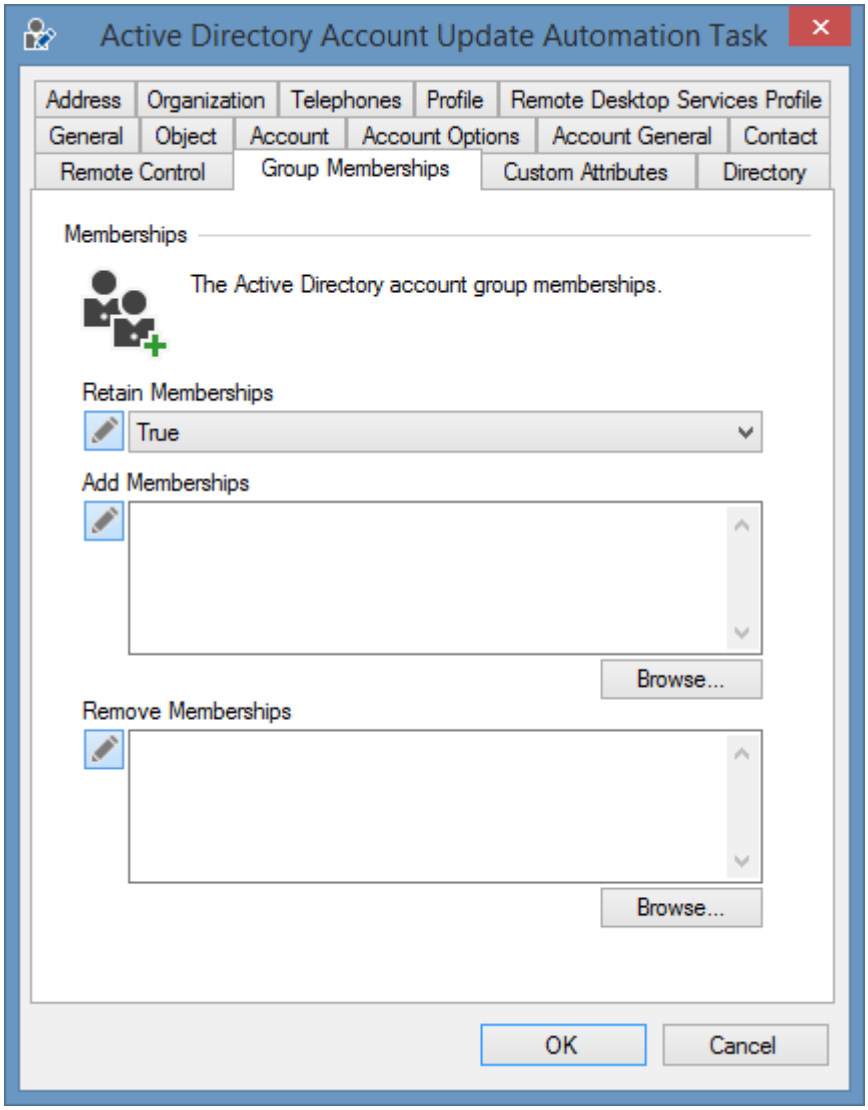
Directory



Commit Changes Immediately
Determines whether each change made to the directory is committed immediately. This can assist in troubleshooting.

Enable Accidental Deletion Protection
Determines whether accidental deletion protection should be enabled or disabled for the account.

Group Membership

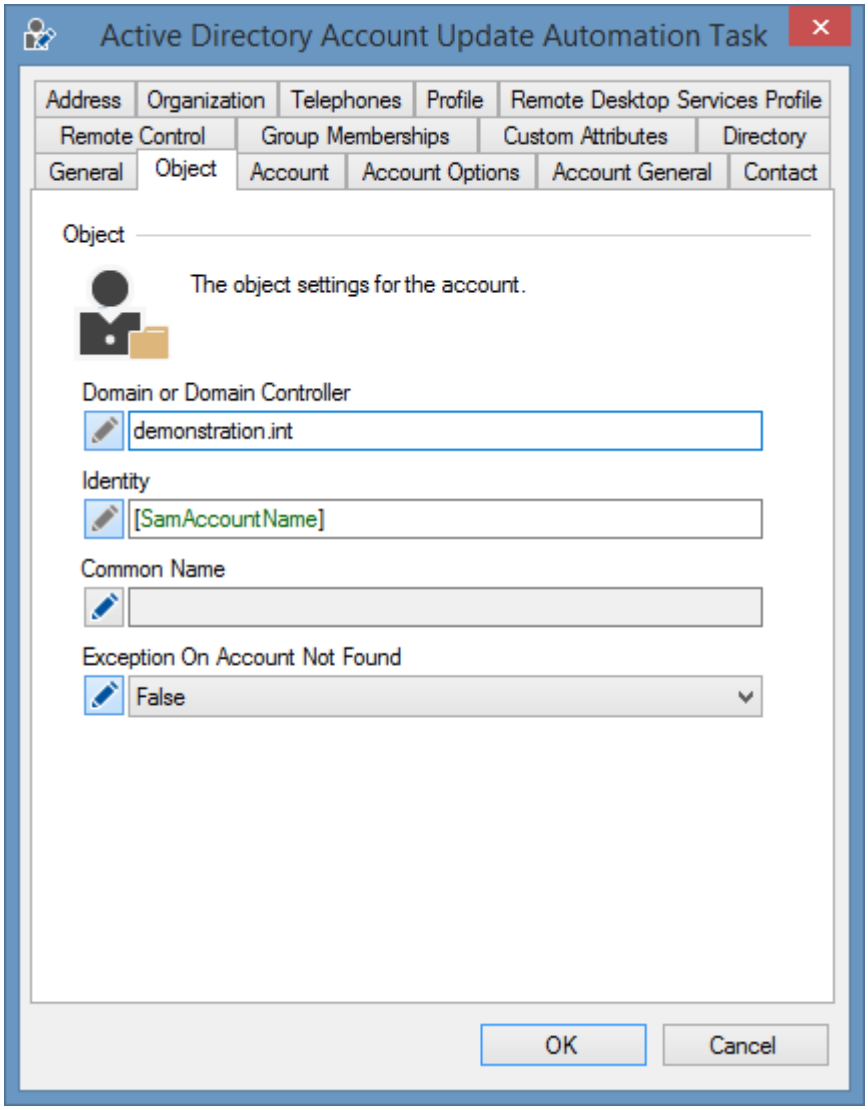


Retain Memberships
Determines whether the Active Directory groups to which the account is currently a member should be retained.

Add Memberships
The Active Directory groups to which the account should be made a member.
Clicking the *browse* button displays the account browser.

Remove Memberships
The Active Directory groups from which the account should be removed.
Clicking the *browse* button displays the account browser.

Object



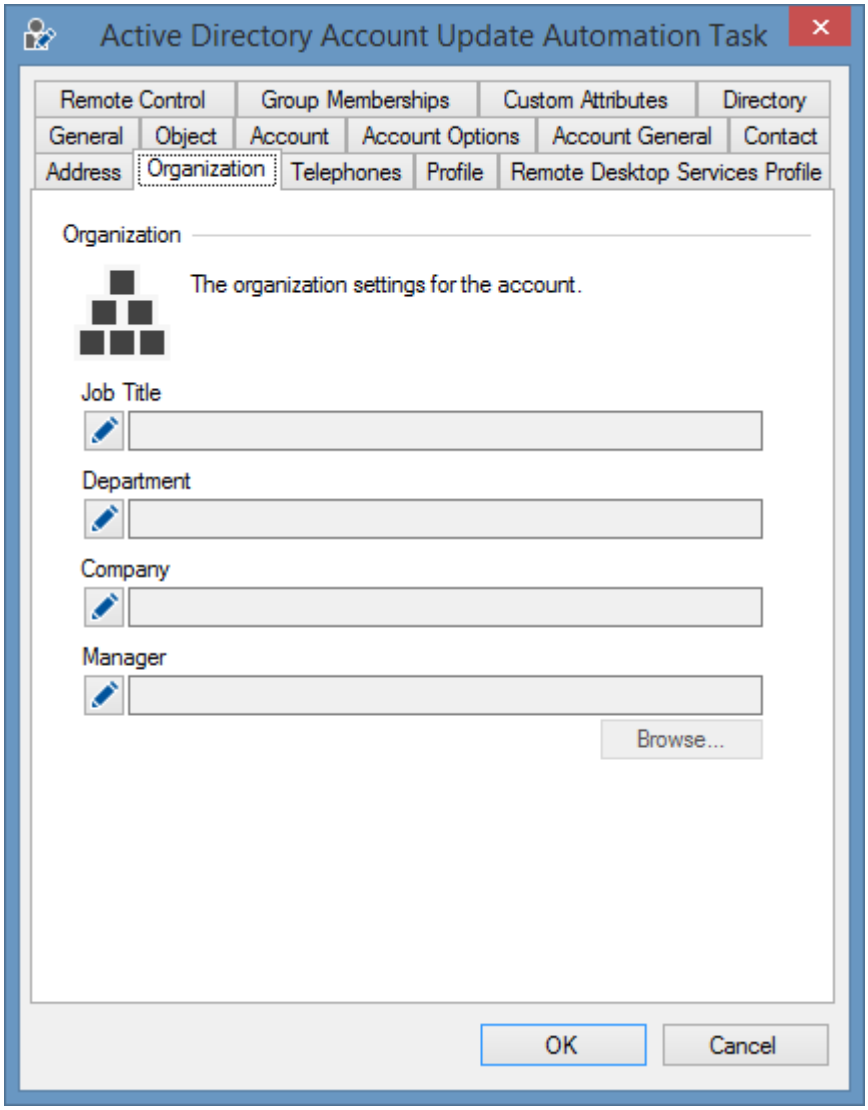
Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the account resides, or the fully qualified domain name of a specific domain controller to use for the operation.

Identity
The SAM account name or user principal name of the account to update.

Common Name
The new common name for the account.

Exception On Account Not Found
Determines whether an exception should be thrown if the account to update is not found.

Organization



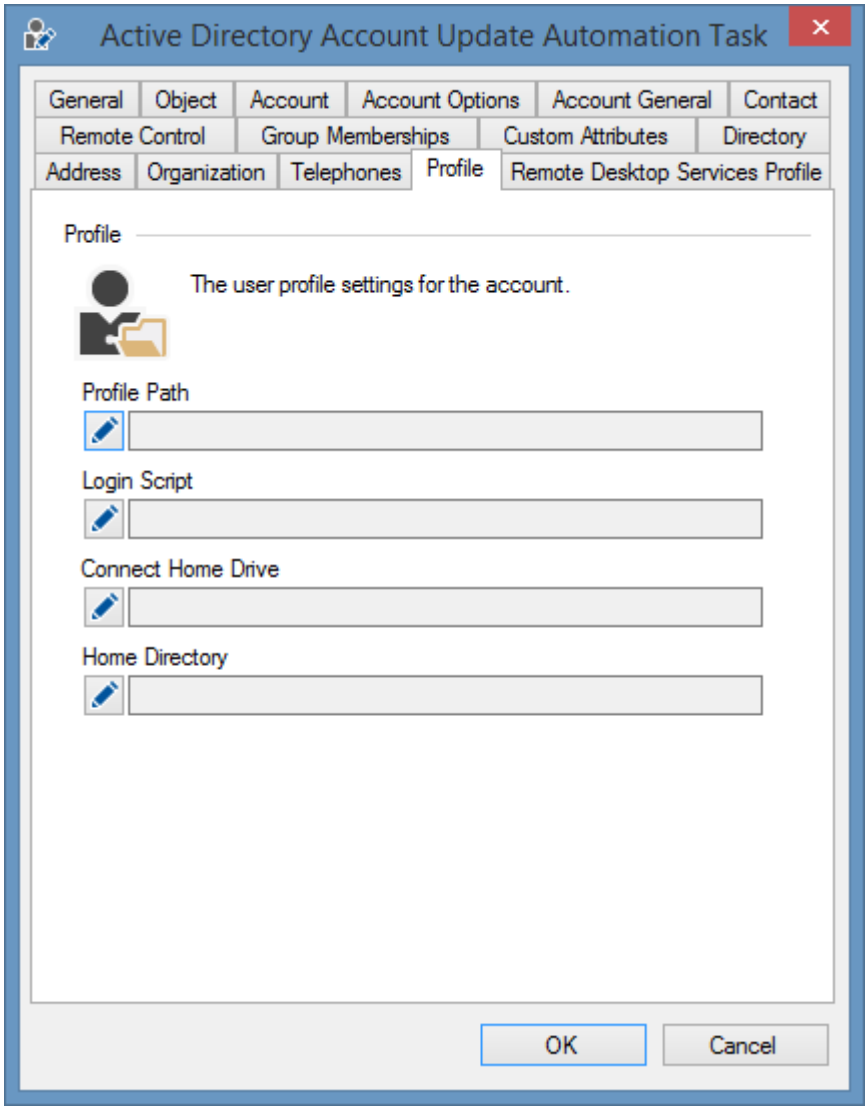
Job Title
The job title of the user.

Department
The department of the user.

Company
The company of the user.

Manager
The SAM account name or user principal name of the manager to assign to the user account. Clicking the *browse* button displays the account browser.

Profile



Profile Path
The network path to the user's roaming or mandatory profile.

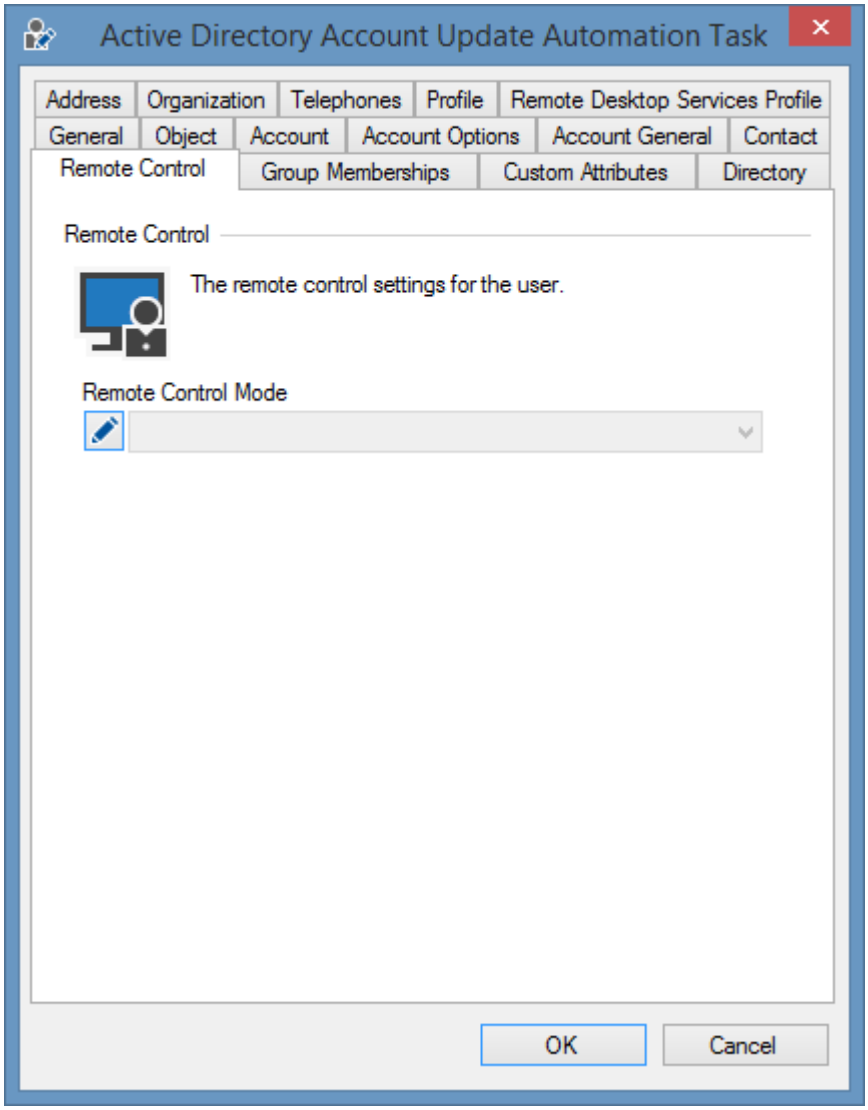
Login Script
The login script.

Connect Home Drive
The drive letter that should be connected for the user.

Home Directory
The path to the home folder.

NOTE: When the home drive is set, the home directory must be a UNC path.
NOTE: When the home drive is not set, the home directory must be a valid local path using the form: drive-letter:\directory.

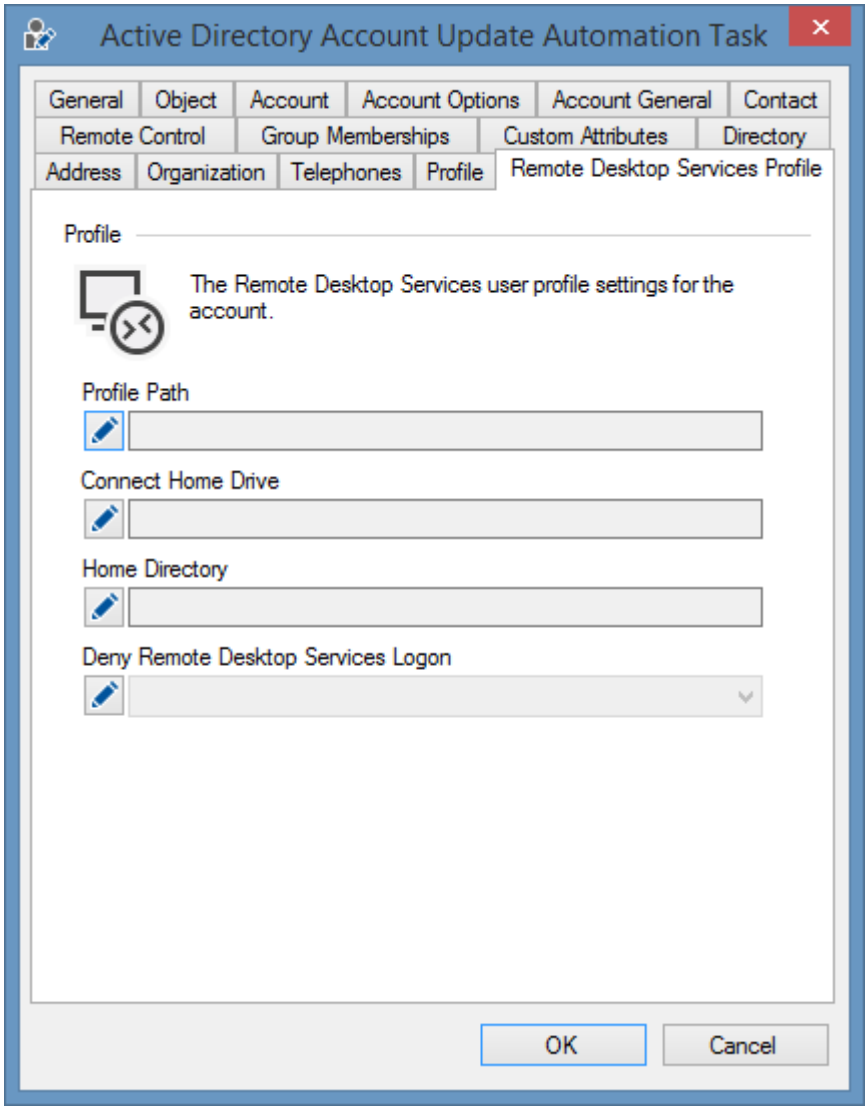
Remote Control



Remote Control Mode
The remote control mode for the user

- Disabled
- Allow Interaction (require permission)
- Allow Interaction
- View Only (require permission)
- View Only

Remote Desktop Services Profile



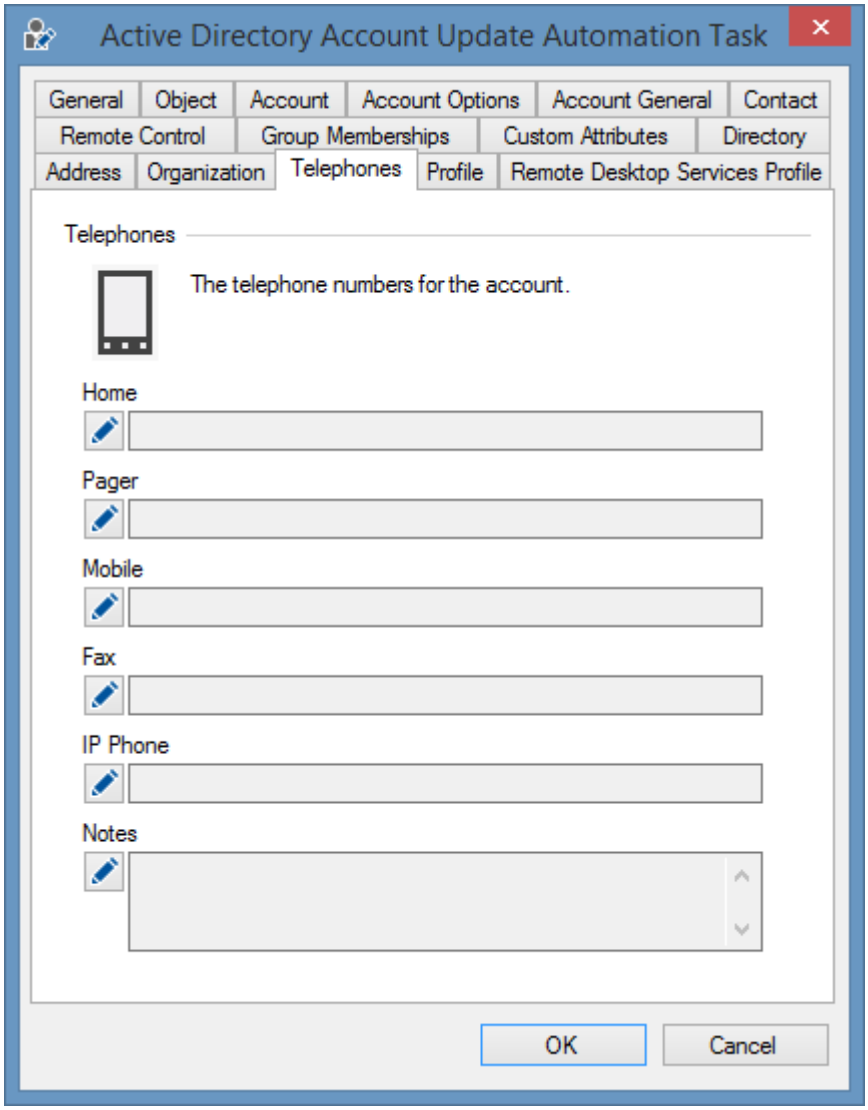
Profile Path
The network path to the user's roaming or mandatory profile when logging in using Remote Desktop Services.

Connect Home Drive
The drive letter that should be connected for the user. The connect home drive setting cannot be blank or clear. To disconnect the home drive either set the home directory to a local path, an empty string, or clear.

Home Directory
The path to the home folder.
NOTE: When the home drive is set, the home directory must be a UNC path.

Deny Remote Desktop Services Logon
Determines whether the user should be denied the ability to logon using Remote Desktop Services.

Telephones



Home
The home phone number.

Pager
The pager number.

Mobile
The mobile number.

Fax
The fax number.

IP Phone
The user's IP phone number.

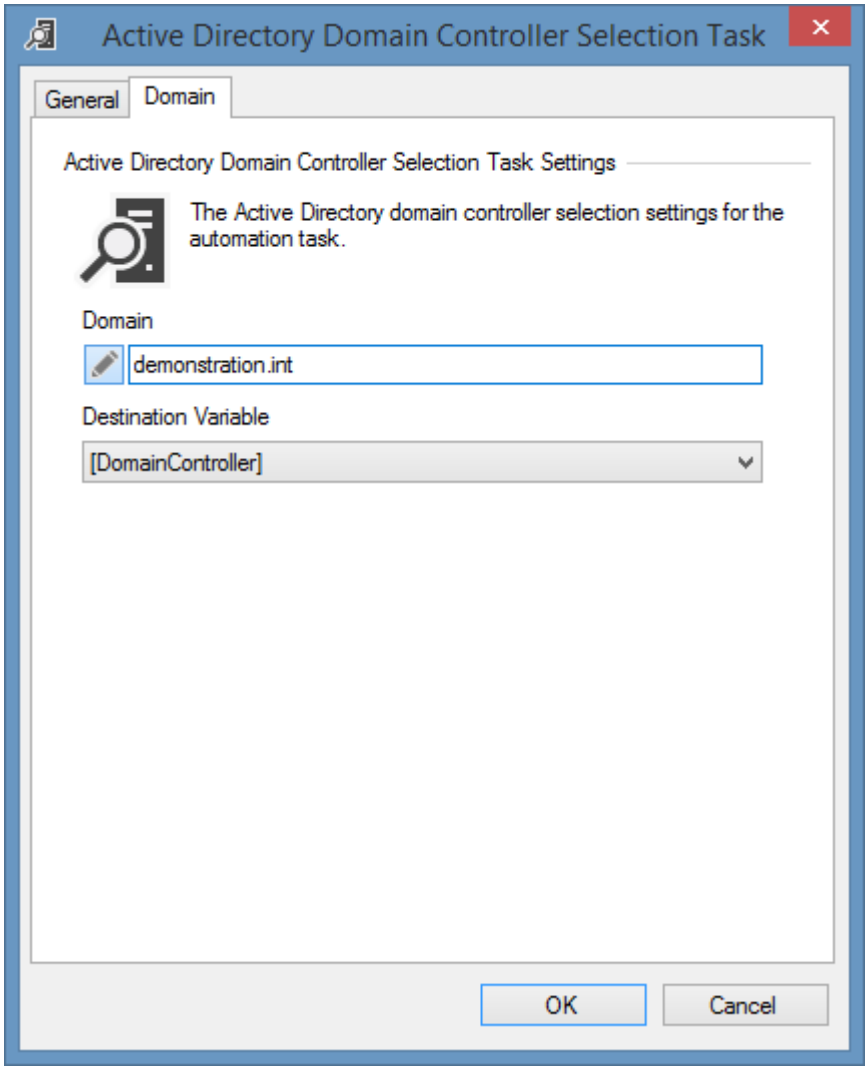
Notes
The telephony related notes.

Active Directory Domain Controller Selection Task

The Active Directory domain controller selection task is capable of selecting a domain controller for the specified Active Directory domain.

The fully qualified domain name of the domain controller is stored in the specified string variable.

Domain



Domain
The fully qualified domain name (FQDN) of the Active Directory domain for which the domain controller should be selected.

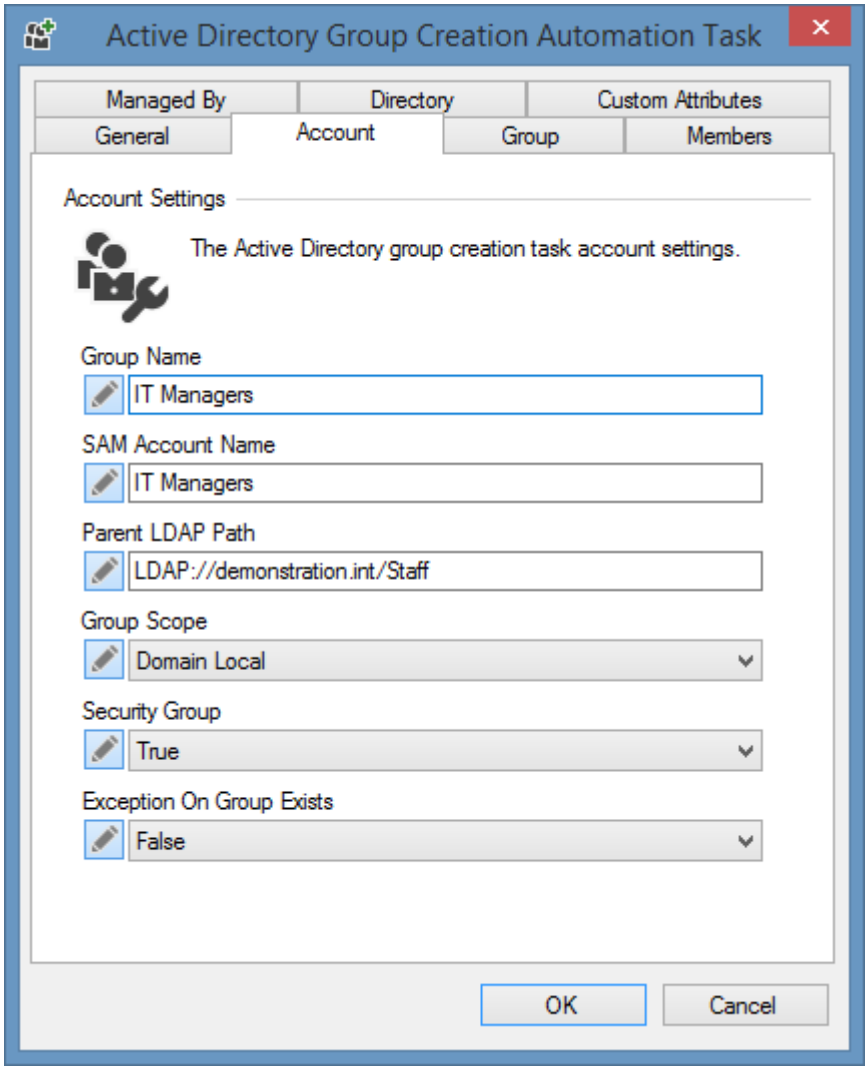
Destination Variable
The string variable in which to store the fully qualified domain name of the domain controller.

Active Directory Group Creation Task

The Active Directory group creation task is capable of creating a new Active Directory group.

To update an existing group see the Active Directory group update task.

Account



Group Name
The group name.

SAM Account Name
The SAM account name of the group.

Parent LDAP Path
The absolute LDAP path in canonical name format in which to create the group.

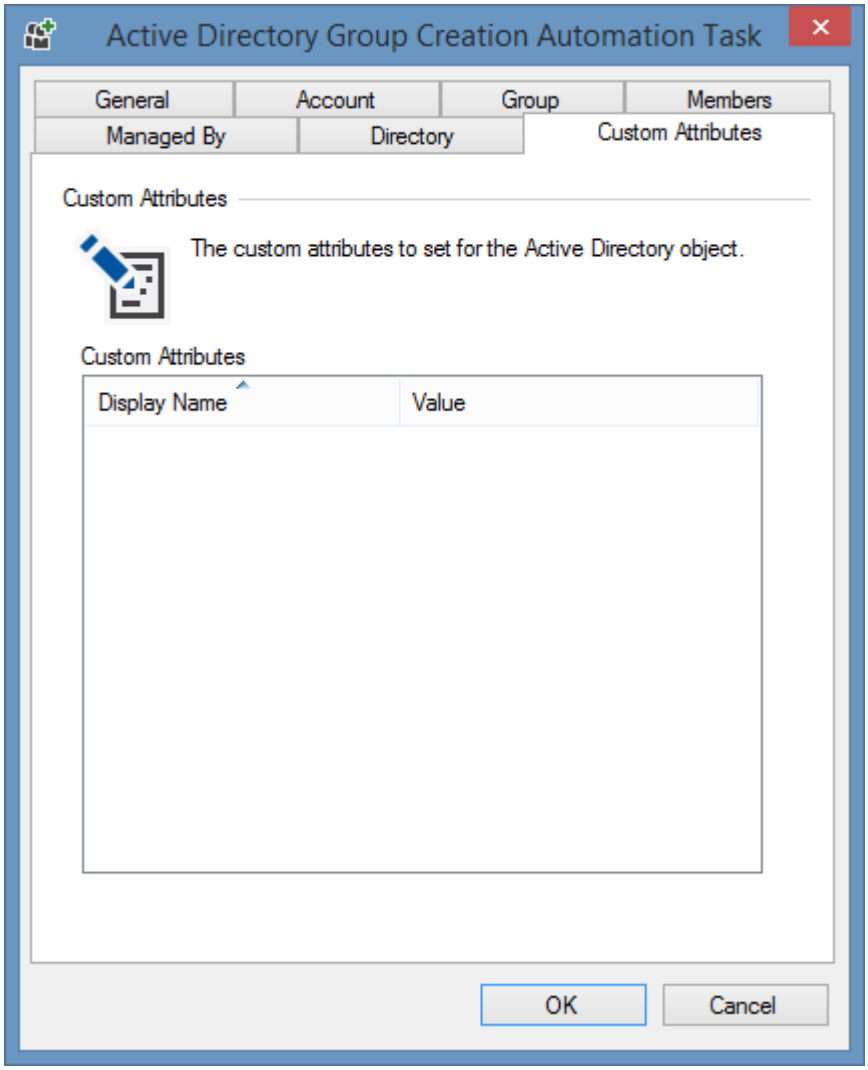
Group Scope
The scope of the group

- Domain Local
- Global
- Universal

Security Group
Determines whether the group is a security group. When set to false a distribution group is created.

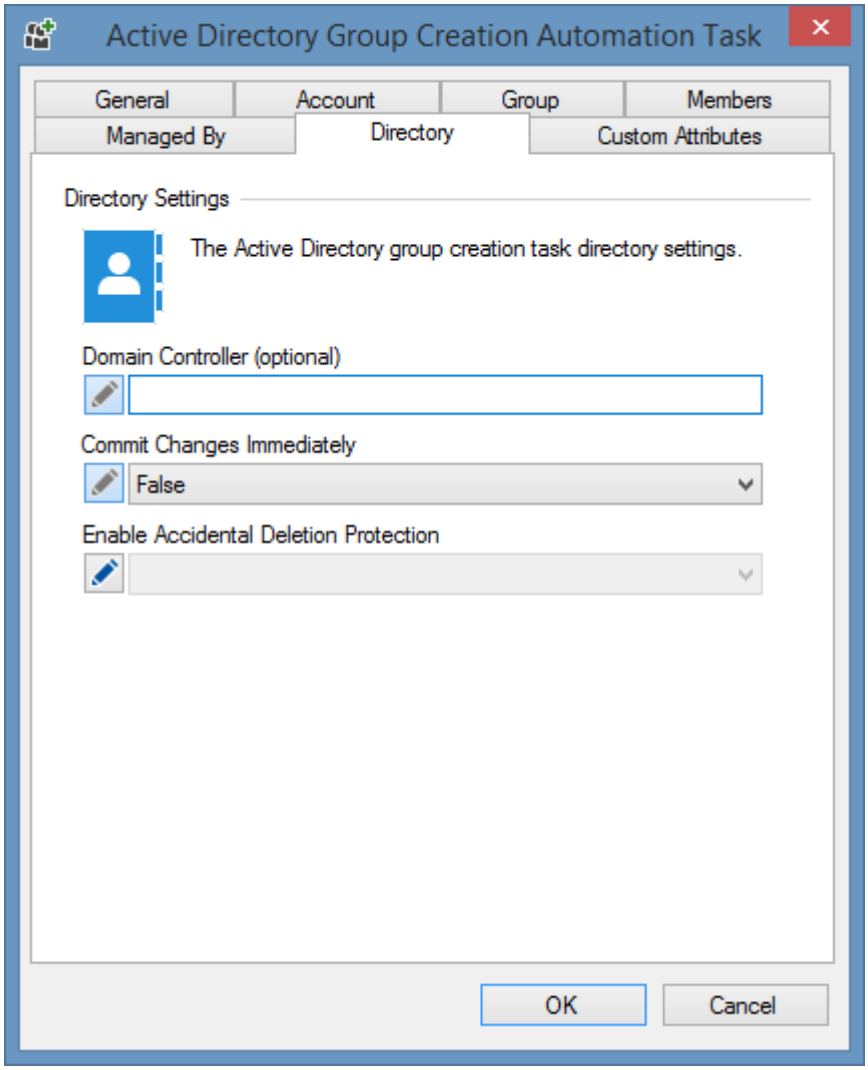
Exception On Group Exists
Determines whether an exception should be thrown if the group to create already exists.

Custom Attributes



Custom Attributes
The custom attributes to set for the group.

Directory

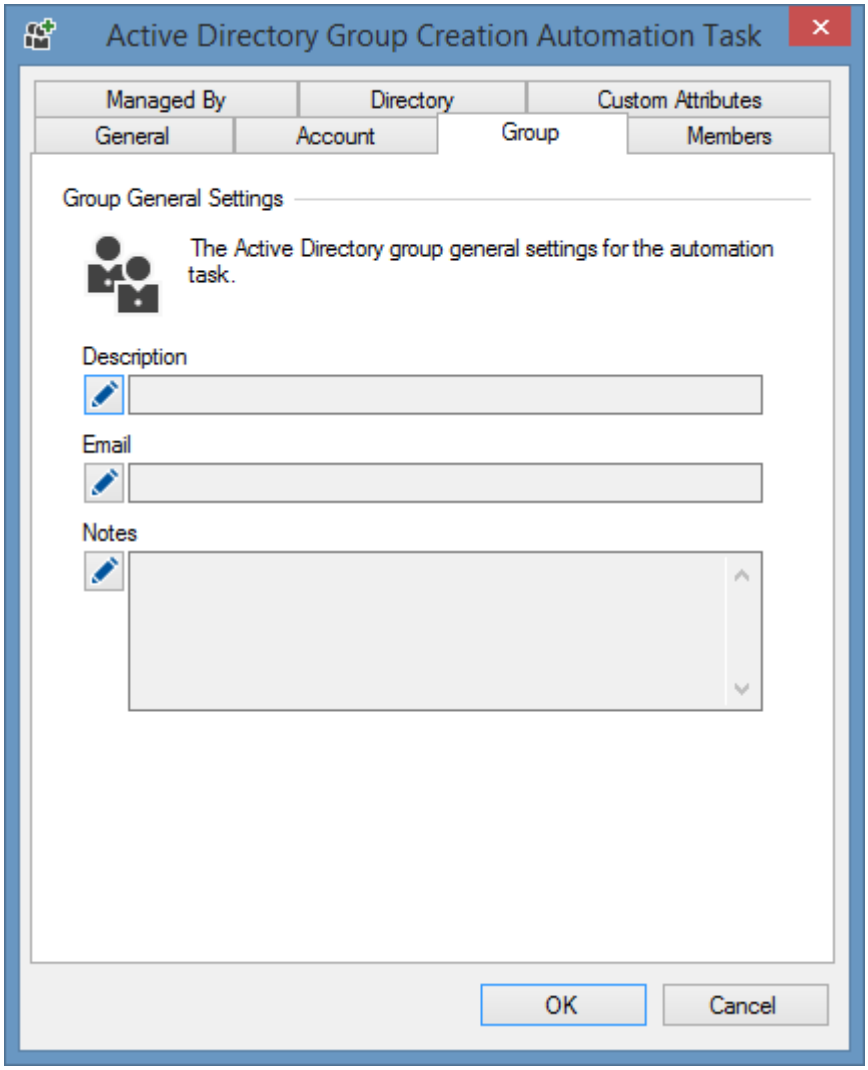


Domain Controller (optional)
The fully qualified domain name of a specific domain controller to use for the operation.

Commit Changes Immediately
Determines whether each change made to the directory is committed immediately. This can assist in troubleshooting.

Enable Accidental Deletion Protection
Determines whether accidental deletion protection should be enabled for the group.

Group

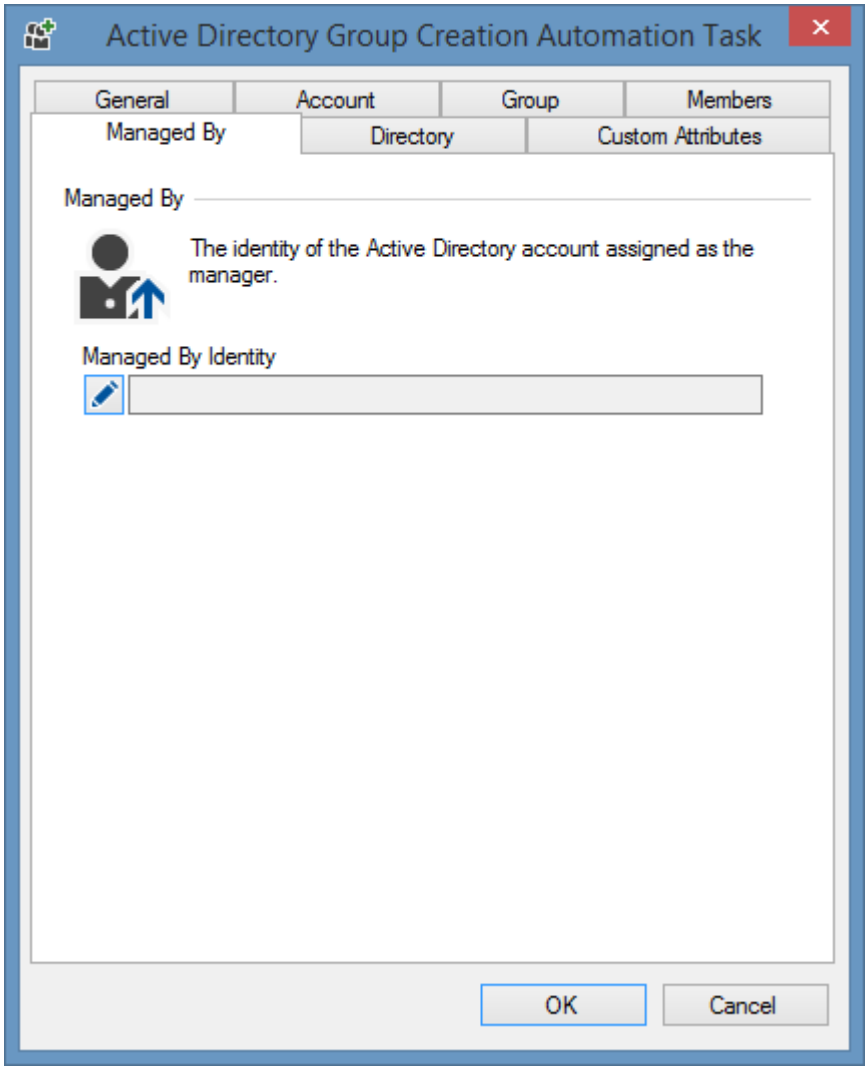


Description
The description of the group.

Email
The email address for the group.

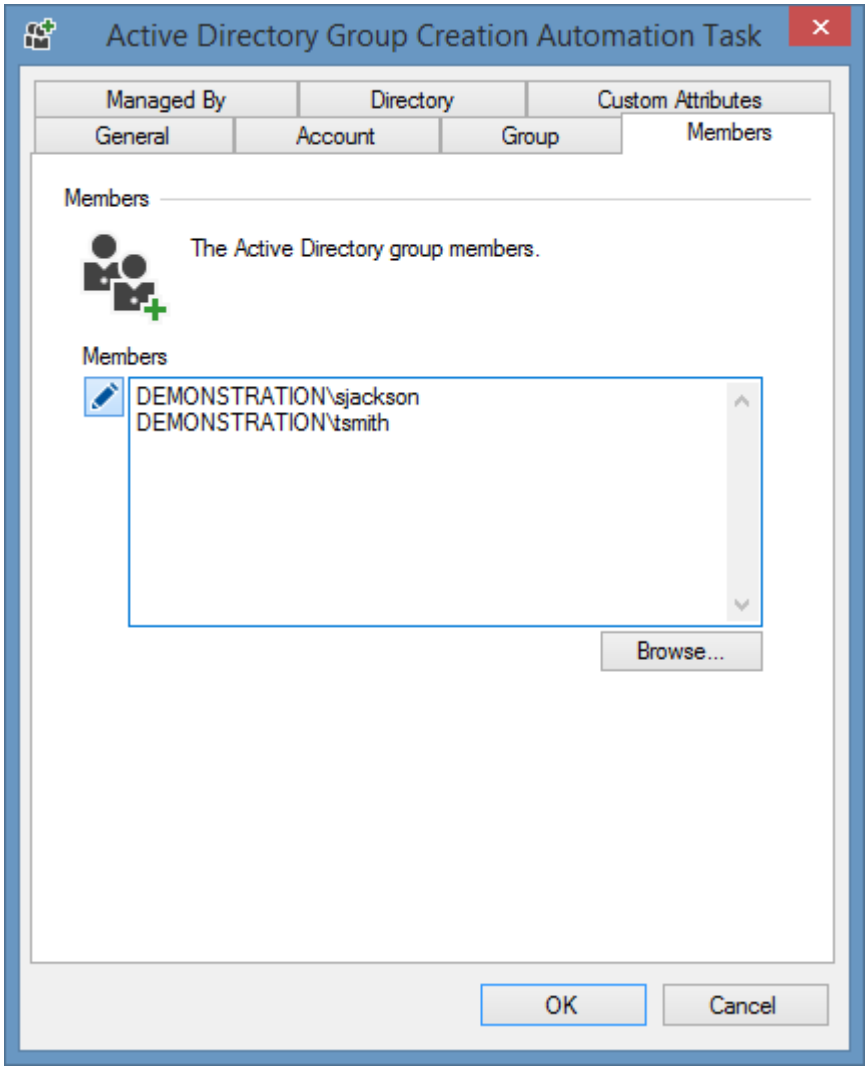
Notes
Notes relating to the group.

Managed By



Managed By
The SAM account name or user principal name of the manager to assign to the group. Clicking the *browse* button displays the account browser.

Members

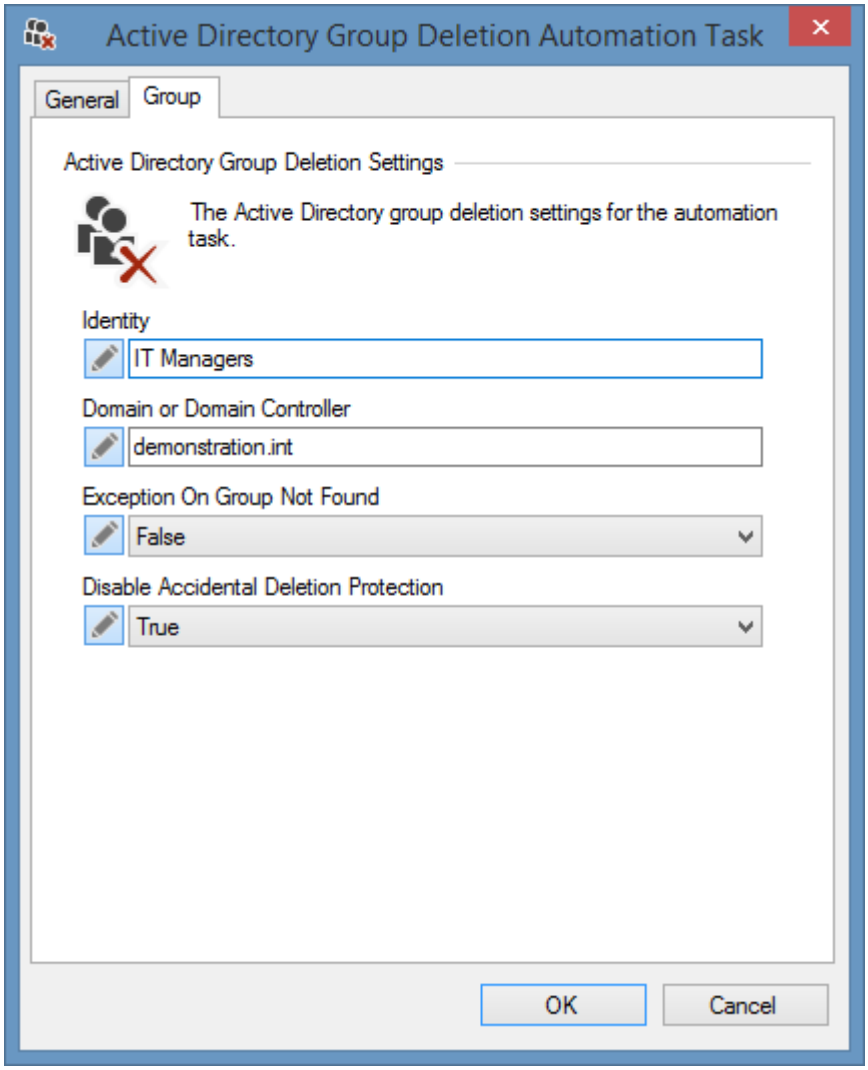


Members
The Active Directory accounts and Active Directory groups which should be made members of the group.
Clicking the *browse* button displays the account browser.

Active Directory Group Deletion Task

The Active Directory group deletion task is capable of deleting an Active Directory group with the specified identity.

Group



Identity
The identity of the group to delete.

Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the group resides, or the fully qualified domain name of a specific domain controller to use for the operation.

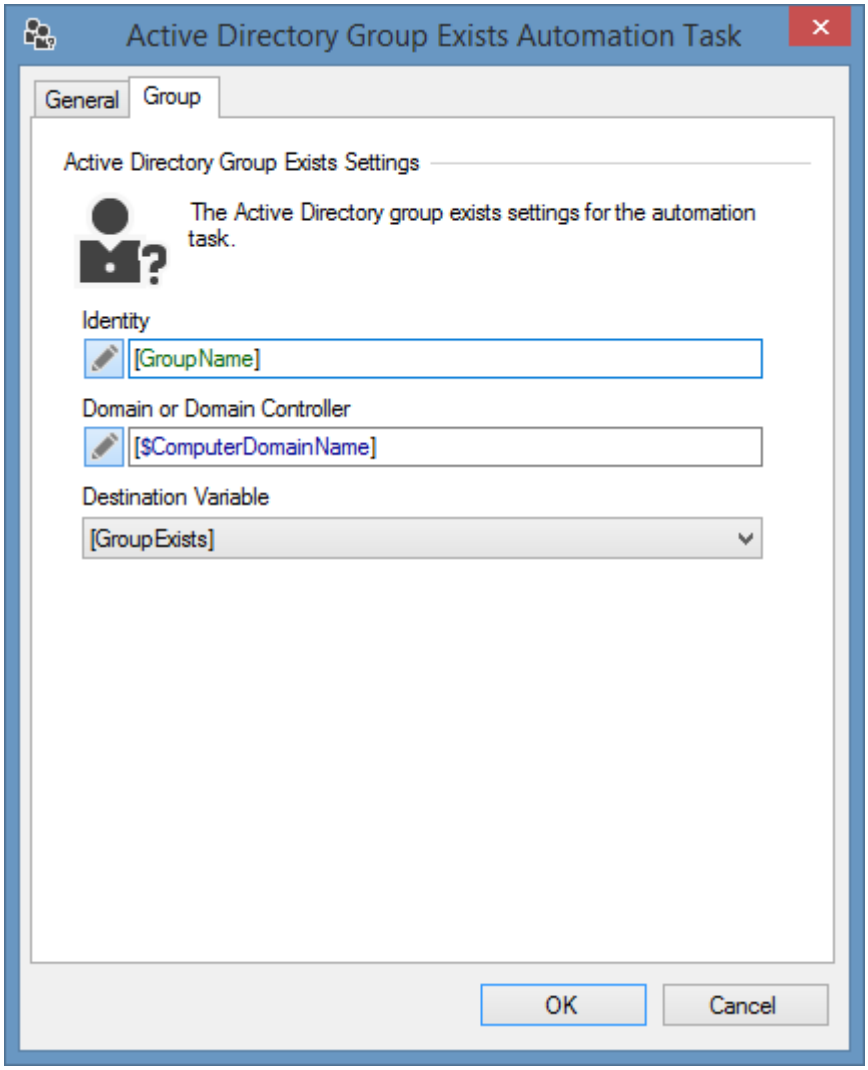
Exception On Group Not Found
Determines whether an exception should be thrown if the group to delete is not found.

Disable Accidental Deletion Protection
Determines whether the "Protect object from accidental deletion" option should be disabled for the group before attempting deletion.

Active Directory Group Exists Task

The Active Directory group exists task is capable of determining whether an Active Directory group with the specified identity exists in the domain.

Group



Identity
The identity of the group to locate.

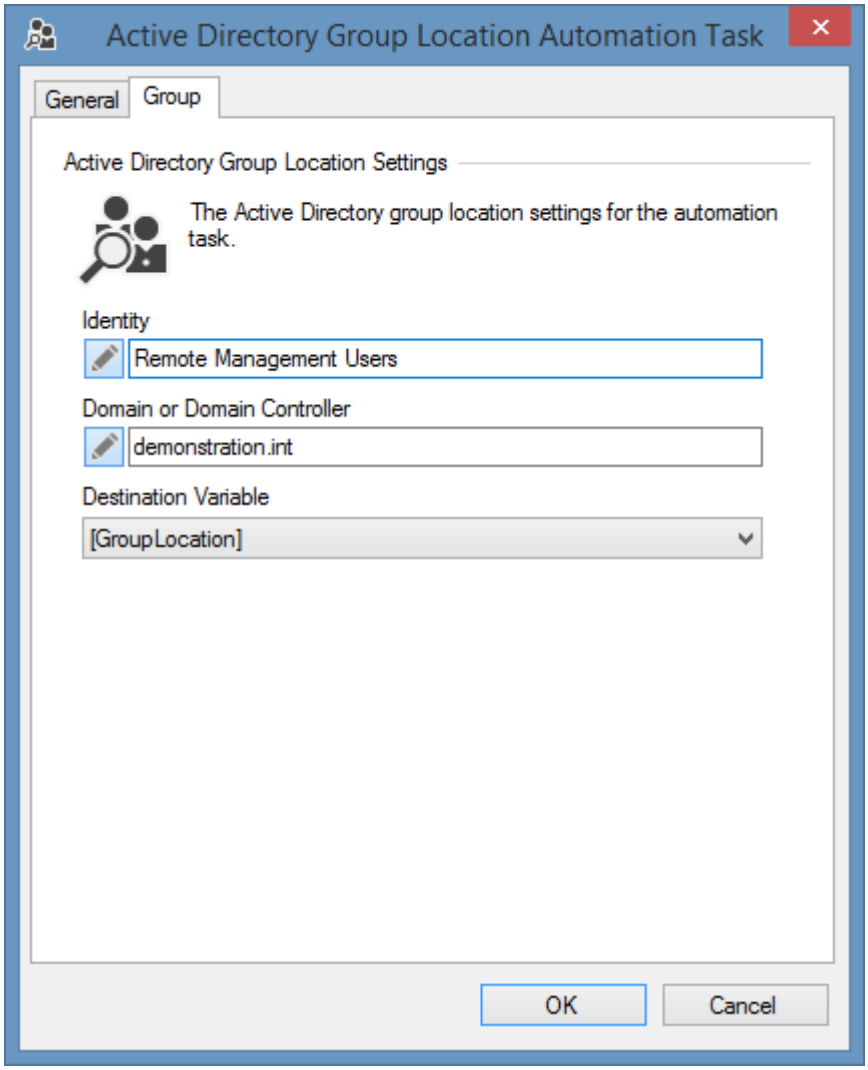
Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the group resides, or the fully qualified domain name of a specific domain controller to use for the operation.

Destination Variable
The boolean variable in which to store the return value.

Active Directory Group Location Task

The Active Directory group location task is capable of determining the canonical LDAP path of an Active Directory group with the specified identity in the specified domain.

Group



Identity
The identity of the group to locate.

Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the group resides, or the fully qualified domain name of a specific domain controller to use for the operation.

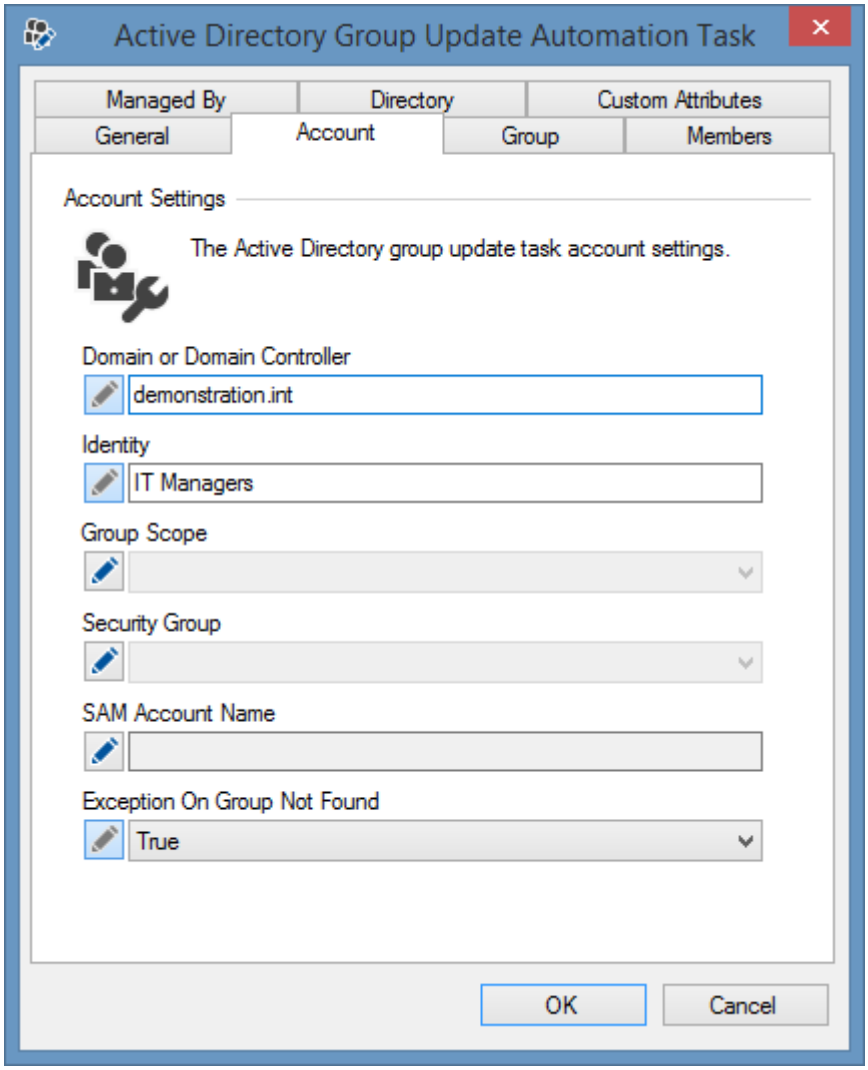
Destination Variable
The string variable in which to store the return value. The value will be in canonical name format - for example "LDAP://demonstration.int/Management Team/Managers".

Active Directory Group Update Task

The Active Directory group update task is capable of updating an existing Active Directory group.

To create a new group see the Active Directory group creation task.

Account



Domain or Domain Controller
Either the fully qualified domain name (FQDN) of the Active Directory domain in which the group resides, or the fully qualified domain name of a specific domain controller to use for the operation.

Identity
The SAM account name of the group to update.

Group Scope
The scope of the group

- Domain Local
- Global
- Universal

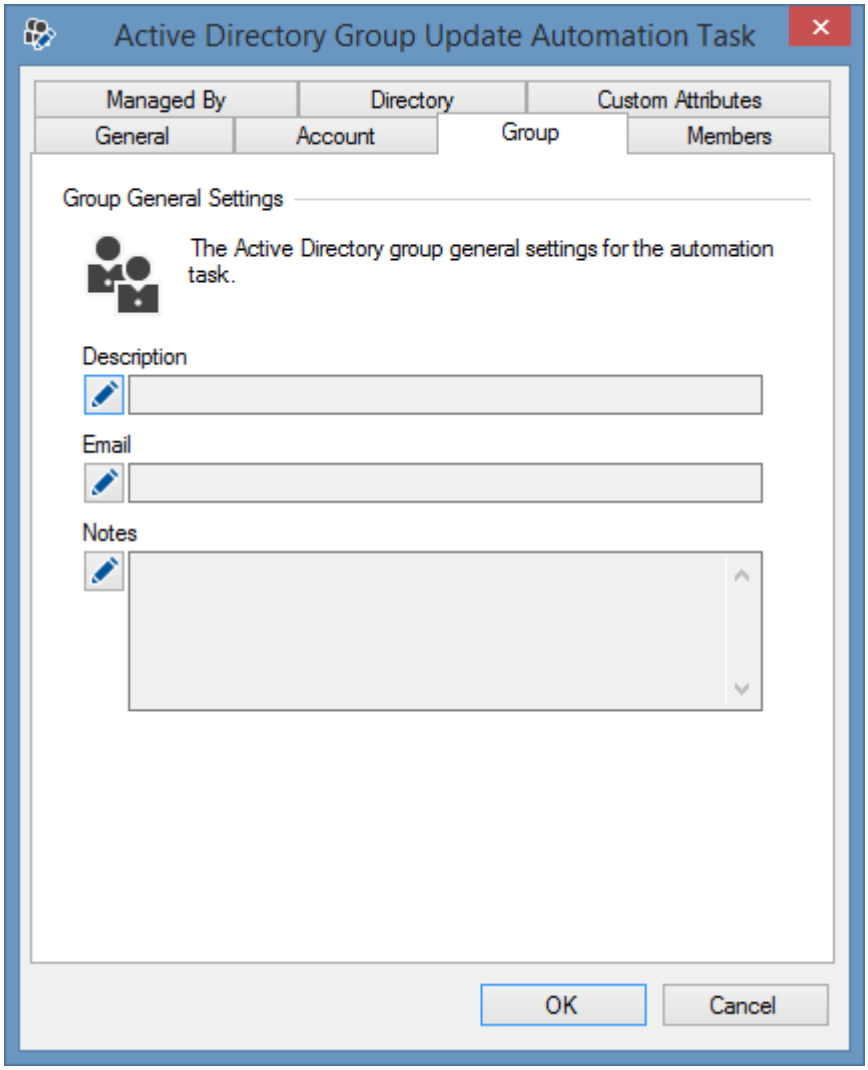
Security Group
Determines whether the group is a security group. When set to false the group is made a distribution group.

SAM Account Name

The new SAM account name of the group.

Exception On Group Not Found
Determines whether an exception should be thrown if the group to update is not found.

Group

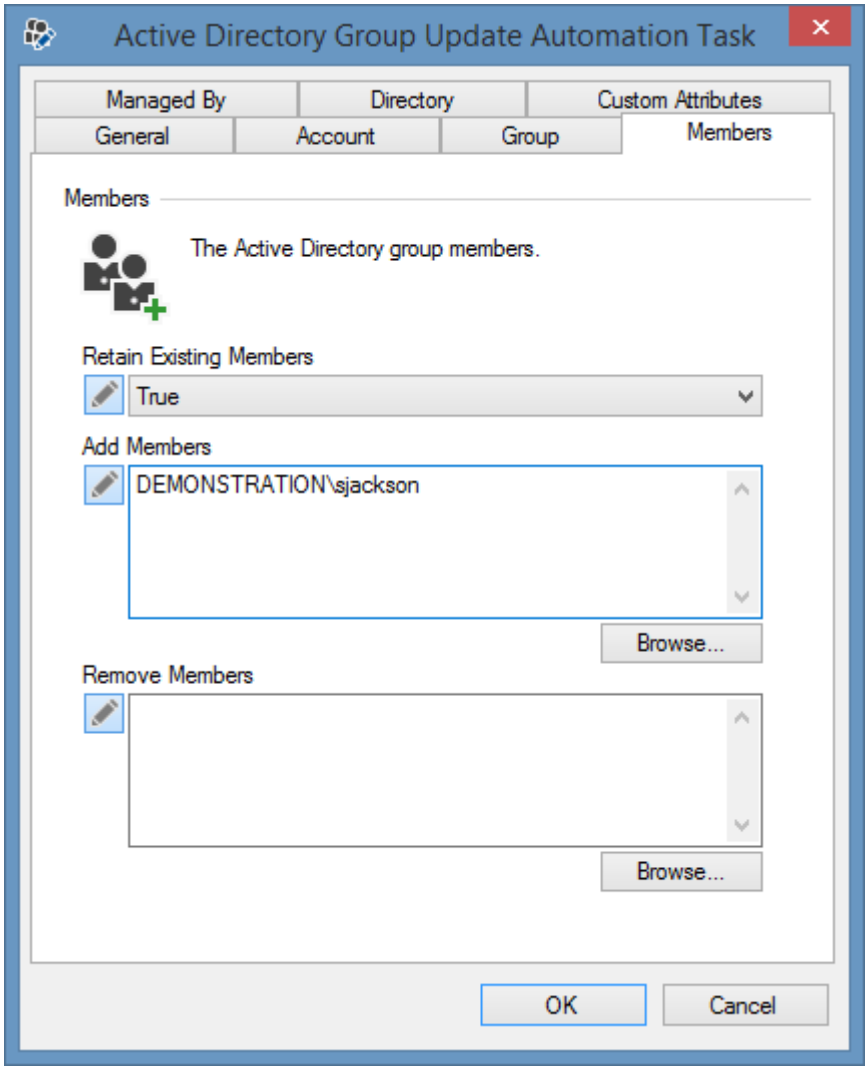


Description
The description of the group.

Email
The email address for the group.

Notes
Notes relating to the group.

Members

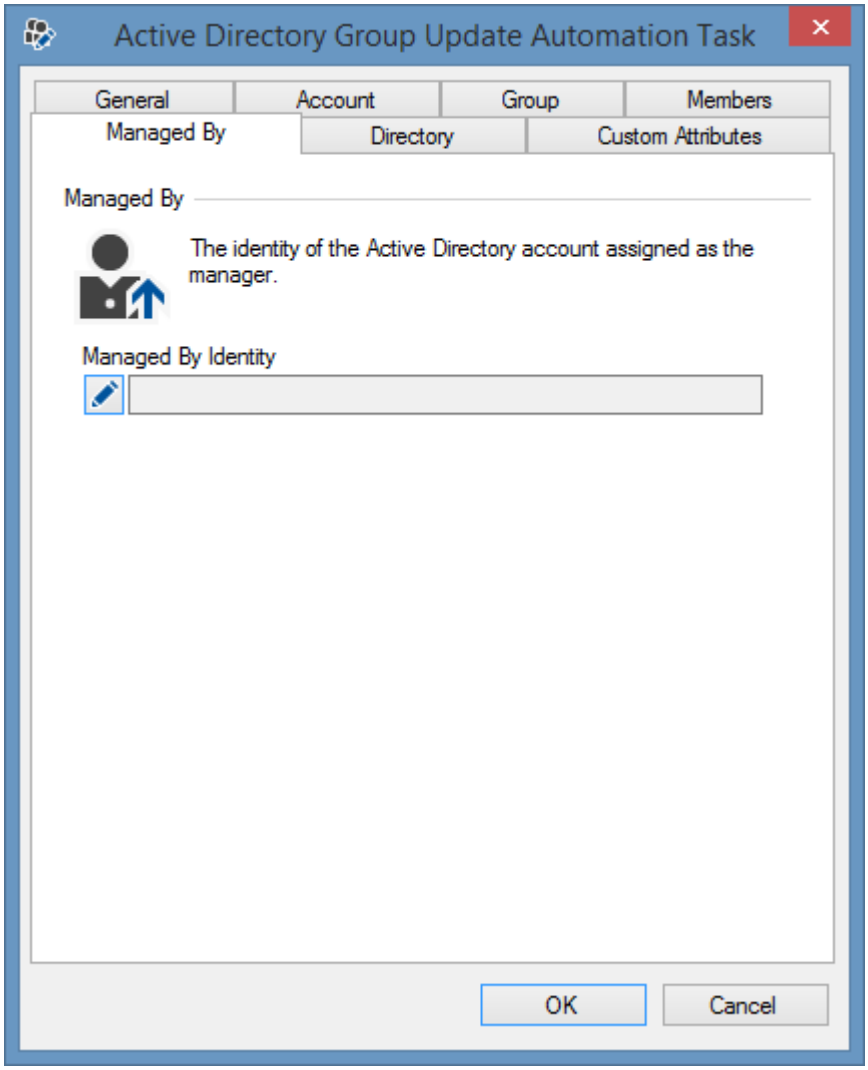


Retain Existing Members
Determines whether the existing members of the group should be retained.

Add Members
The Active Directory accounts and Active Directory groups which should be made members of the group.
Clicking the *browse* button displays the account browser.

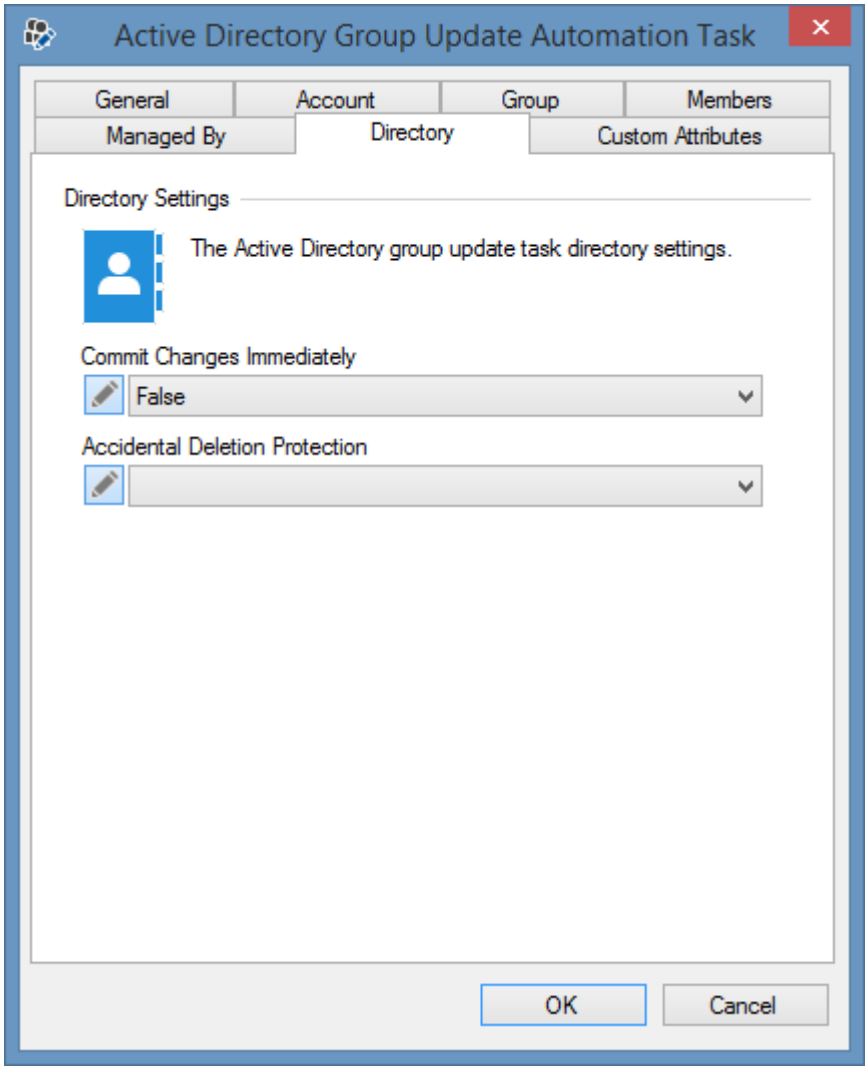
Remove Members
The Active Directory accounts and Active Directory groups which should be removed from the group.
Clicking the *browse* button displays the account browser.

Managed By



Managed By
The SAM account name or user principal name of the manager to assign to the group. Clicking the *browse* button displays the account browser.

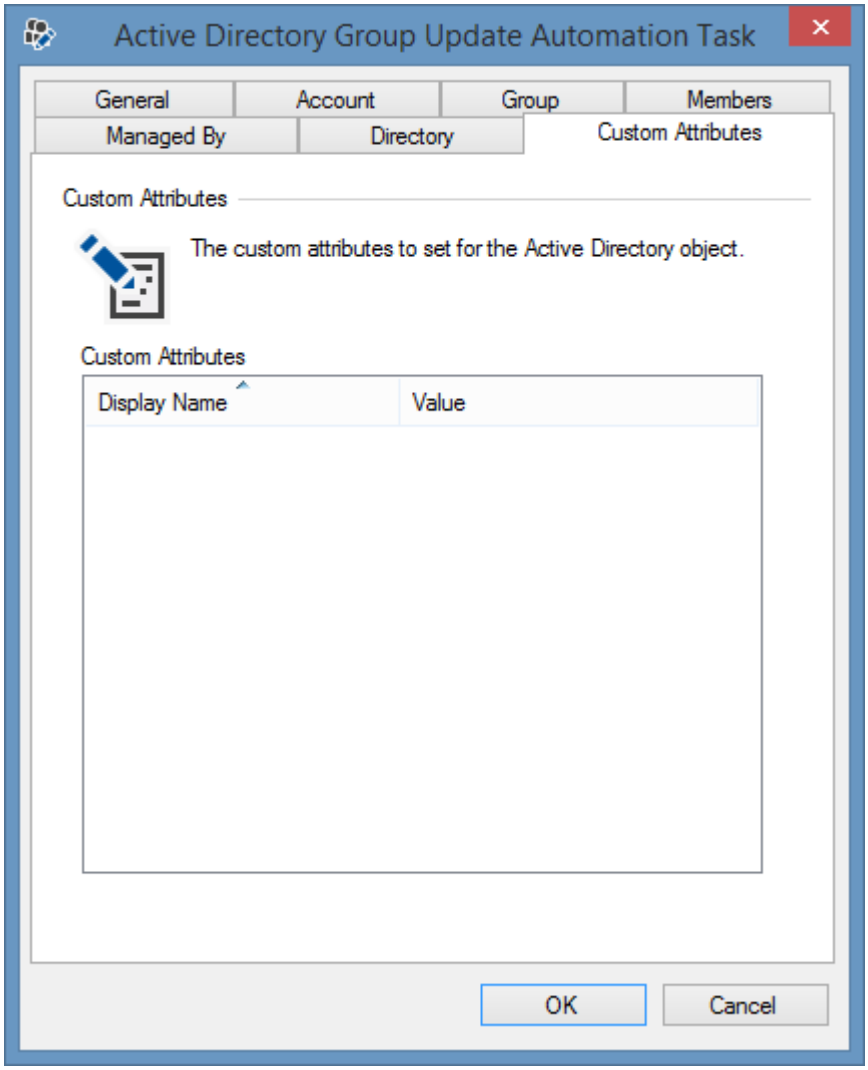
Directory



Commit Changes Immediately
Determines whether each change made to the directory is committed immediately. This can assist in troubleshooting.

Accidental Deletion Protection
Determines whether accidental deletion protection should be enabled or disabled for the group.

Custom Attributes

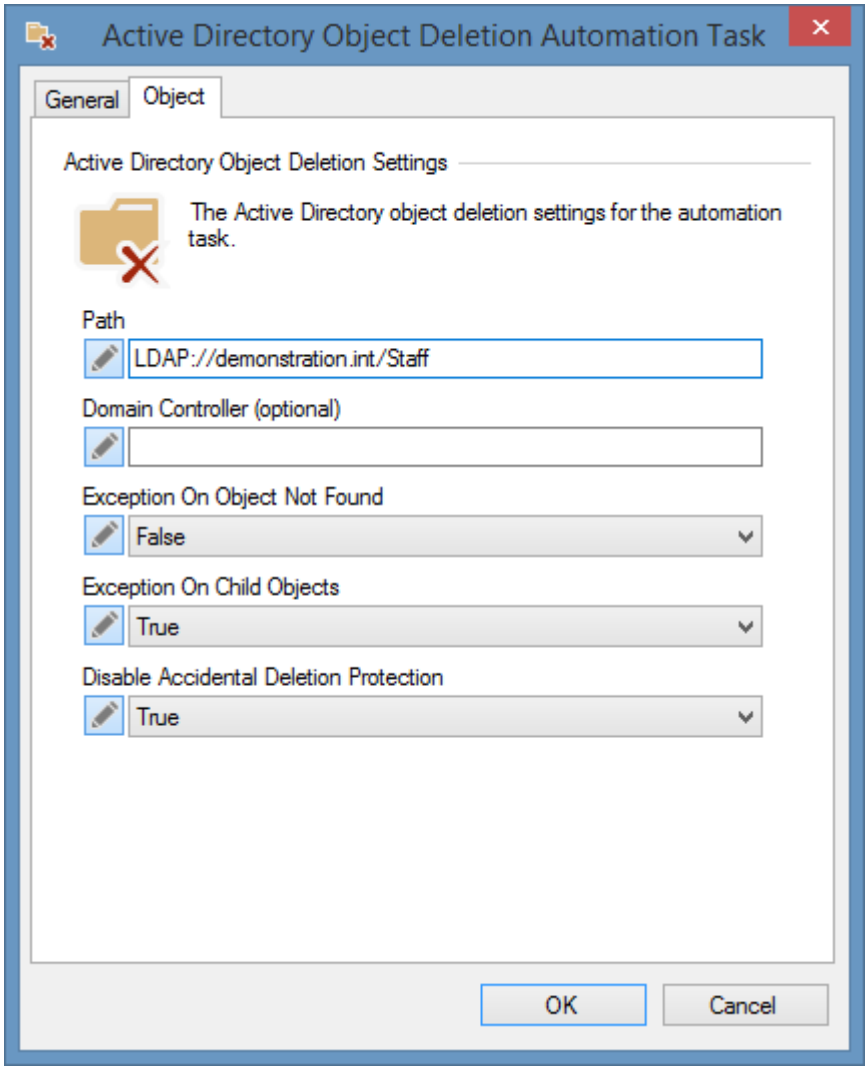


Custom Attributes
The custom attributes to set for the group.

Active Directory Object Deletion Task

The Active Directory object deletion task is capable of deleting an Active Directory object found at the specified path.

Object



Path
The absolute LDAP path in canonical name format of the object to delete.

Domain Controller (optional)
The fully qualified domain name of a specific domain controller to use for the operation.

Exception On Object Not Found
Determines whether an exception should be thrown if the object to delete does not exist.

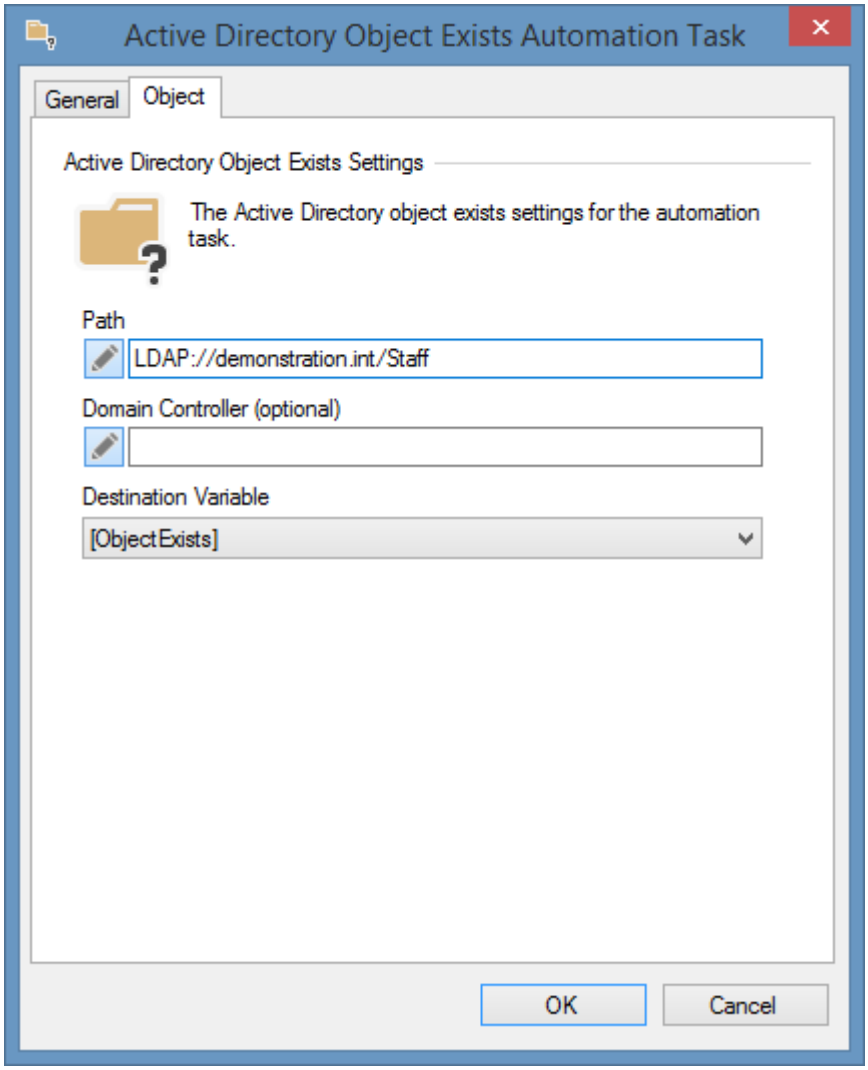
Exception On Child Objects
Determines whether an exception should be thrown if the object to delete contains child objects.

Disable Accidental Deletion Protection
Determines whether the "Protect object from accidental deletion" option should be disabled for the object before attempting deletion.

Active Directory Object Exists Task

The Active Directory object exists task is capable of determining whether an Active Directory object exists at the specified path.

Object



Path
The absolute LDAP path in canonical name format of the object to evaluate.

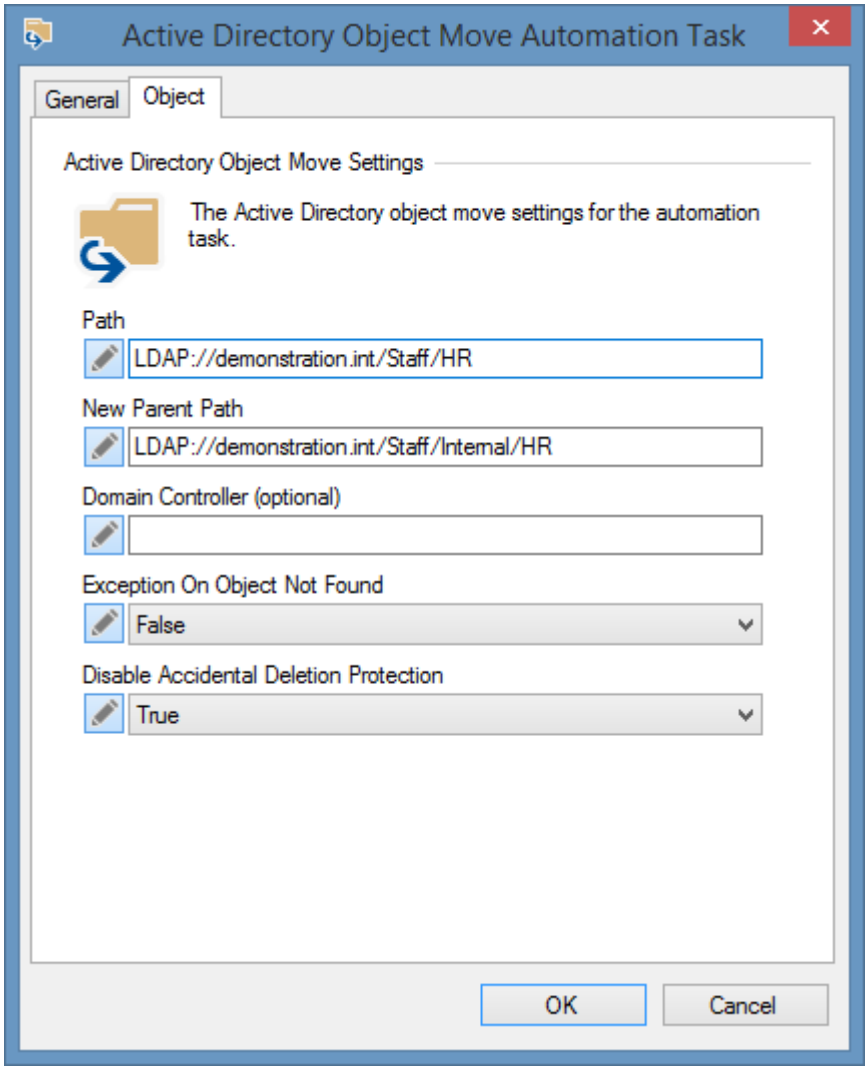
Domain Controller (optional)
The fully qualified domain name of a specific domain controller to use for the operation.

Destination Variable
The boolean variable in which to store the return value.

Active Directory Object Move Task

The Active Directory object move task is capable of moving an Active Directory object from the specified path to a new location in the directory.

Object



Path
The absolute LDAP path in canonical name format of the object to move.

New Parent Path
The absolute LDAP path in canonical name format to which the object is to be moved.

Domain Controller (optional)
The fully qualified domain name of a specific domain controller to use for the operation.

Exception On Object Not Found
Determines whether an exception should be thrown if the object to move is not found.

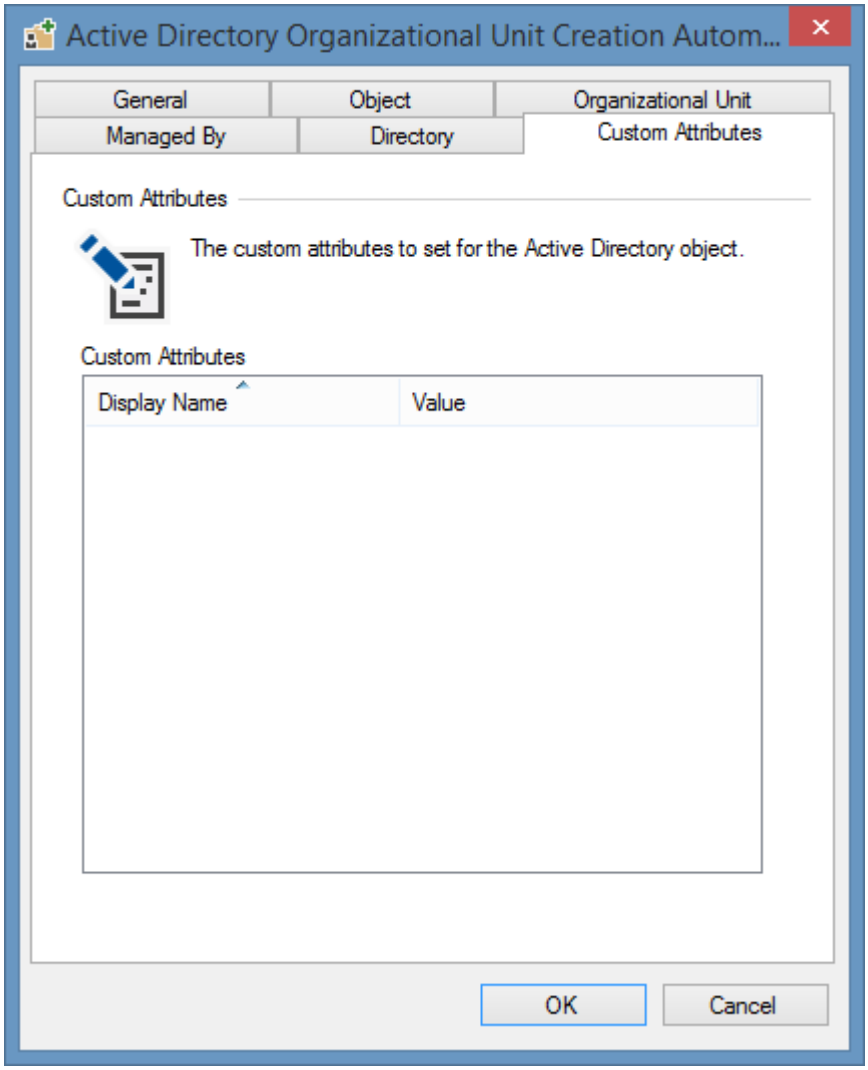
Disable Accidental Deletion Protection
Determines whether the "Protect object from accidental deletion" option should be disabled for the object before attempting the move.

Active Directory Organizational Unit Creation Task

The Active Directory organizational unit creation task is capable of creating a new Active Directory organizational unit.

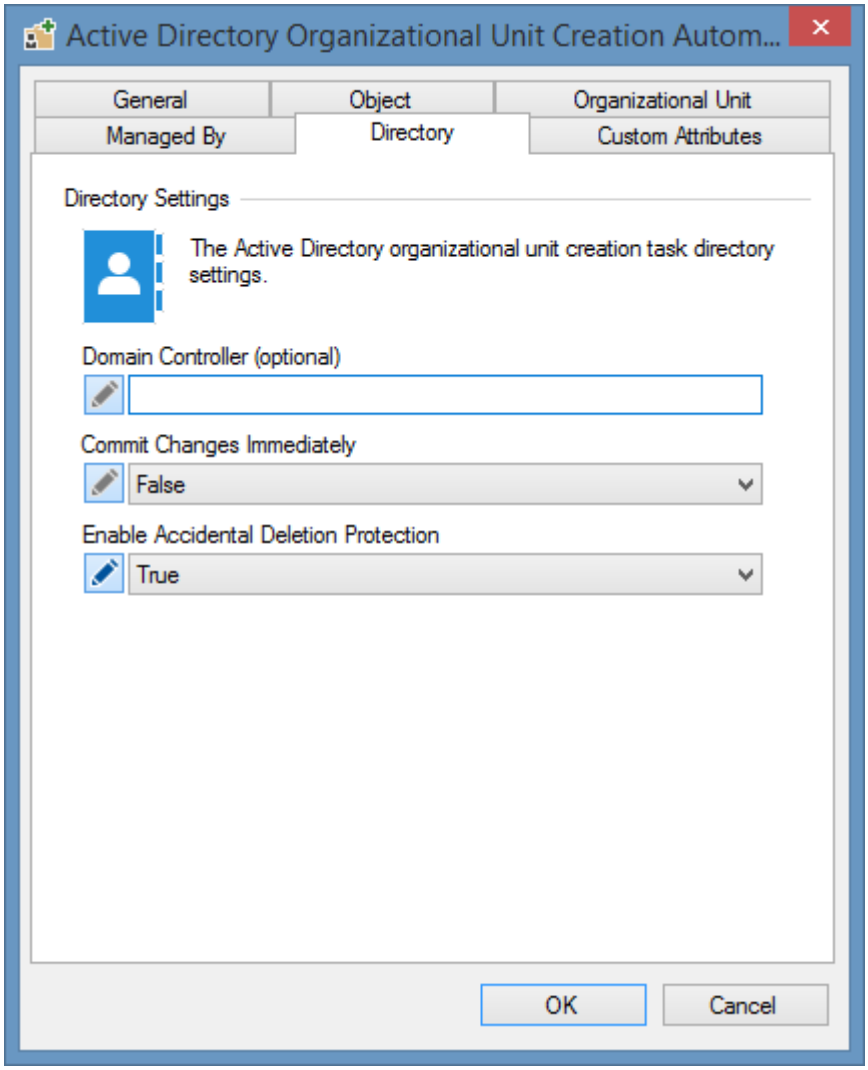
To update an existing organizational unit see the Active Directory organizational unit update task.

Custom Attributes



Custom Attributes
The custom attributes to set for the organizational unit.

Directory

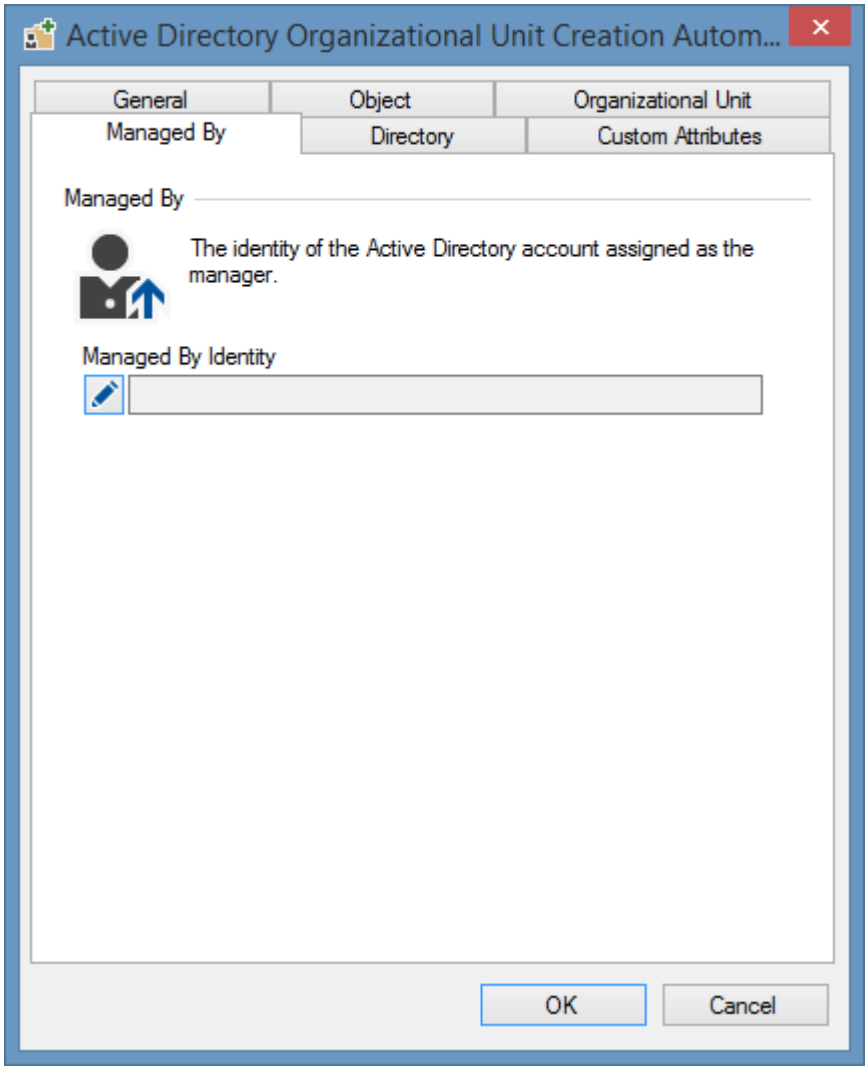


Domain Controller (optional)
The fully qualified domain name of a specific domain controller to use for the operation.

Commit Changes Immediately
Determines whether each change made to the directory is committed immediately. This can assist in troubleshooting.

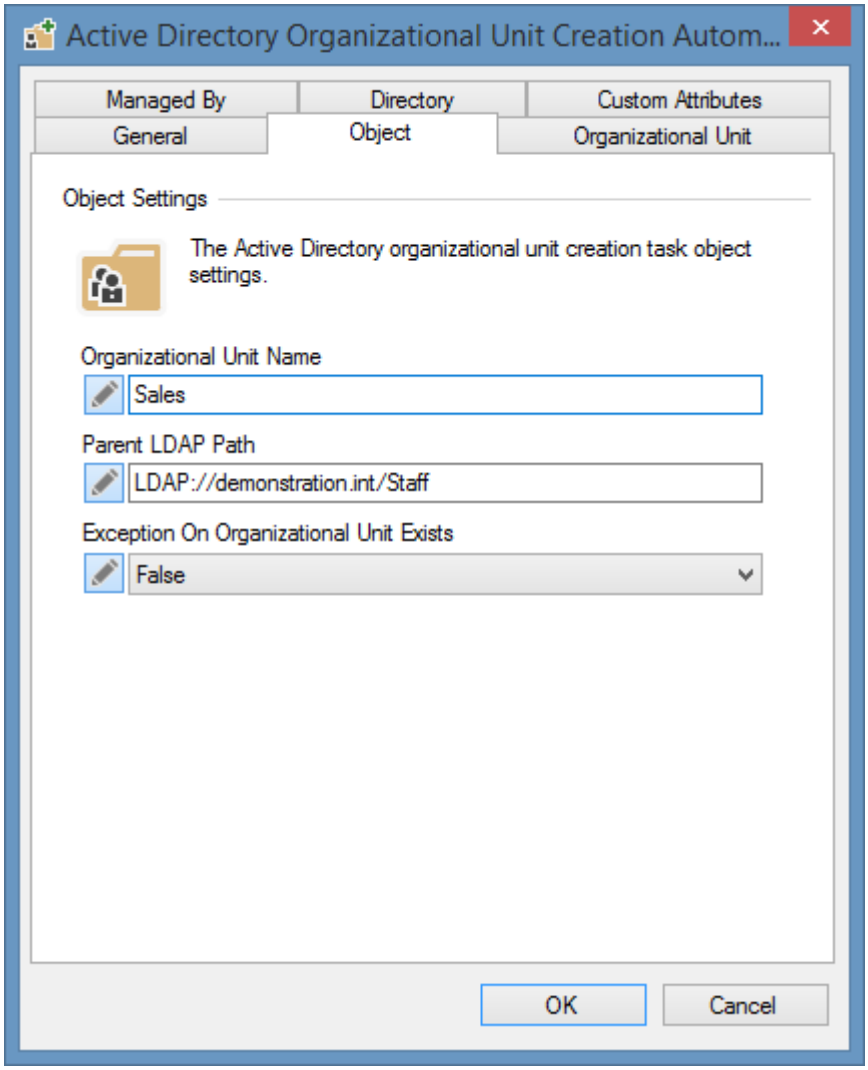
Enable Accidental Deletion Protection
Determines whether accidental deletion protection should be enabled for the organizational unit.

Managed By



Managed By
The SAM account name or user principal name of the manager to assign to the organizational unit. Clicking the *browse* button displays the account browser.

Object

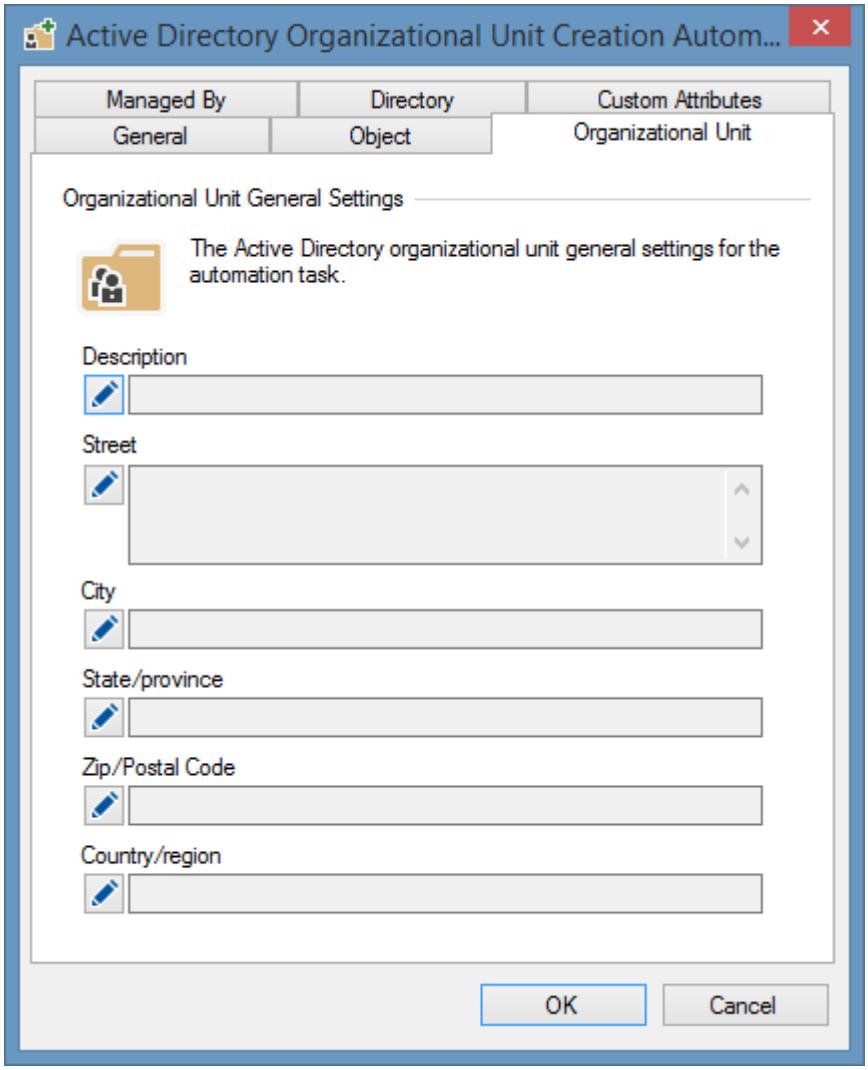


Organizational Unit Name
The name of the organizational unit to create.

Parent LDAP Path
The absolute LDAP path in canonical name format in which to create the organizational unit.

Exception On Organizational Unit Exists
Determines whether an exception should be thrown if an organizational unit already exists with the name specified in the specified parent LDAP path.

Organizational Unit



Description
The description of the organizational unit.

Street
The street address for the organizational unit.

P.O. Box
The PO box address for the organizational unit.

City
The city for the organizational unit.

State/province
The state or province for the organizational unit.

Zip/Postal Code
The Zip or postal code for the organizational unit.

Country/region
The country or region (ISO 3166-1-alpha-2) code assigned to the organizational unit - for example

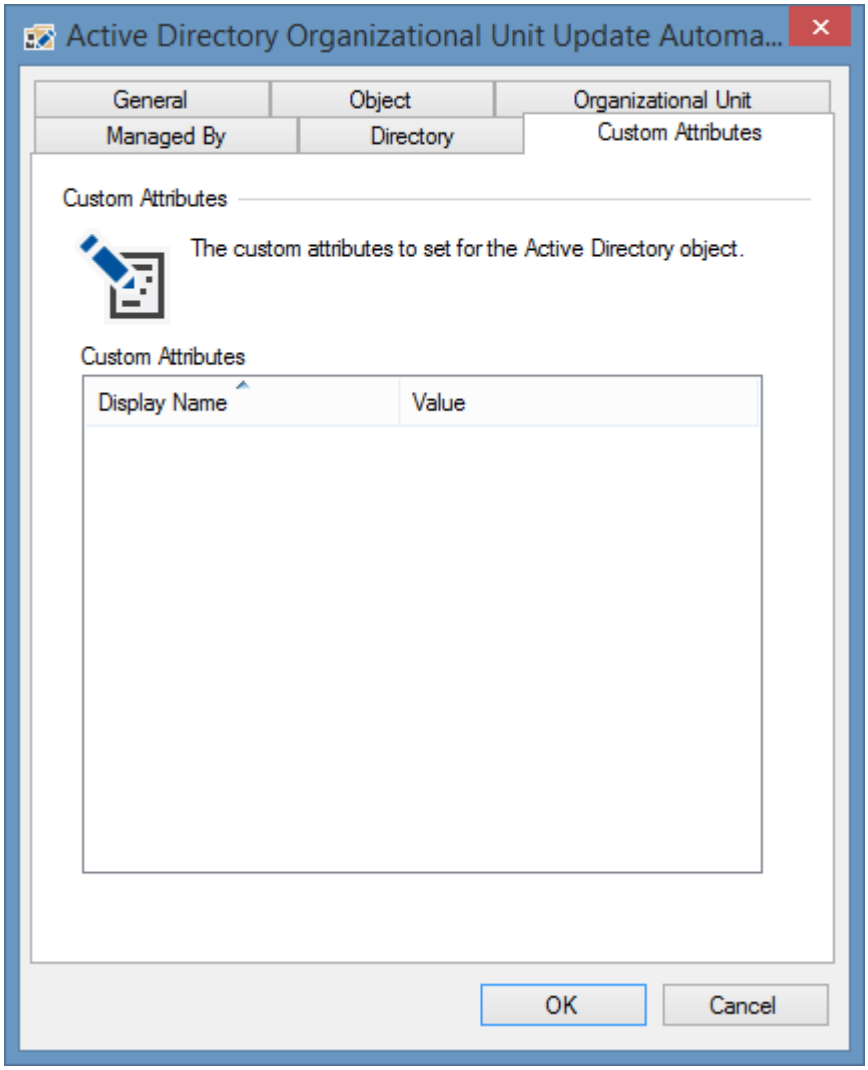
"US".

Active Directory Organizational Unit Update Task

The Active Directory organizational unit update task is capable of updating an existing Active Directory organizational unit.

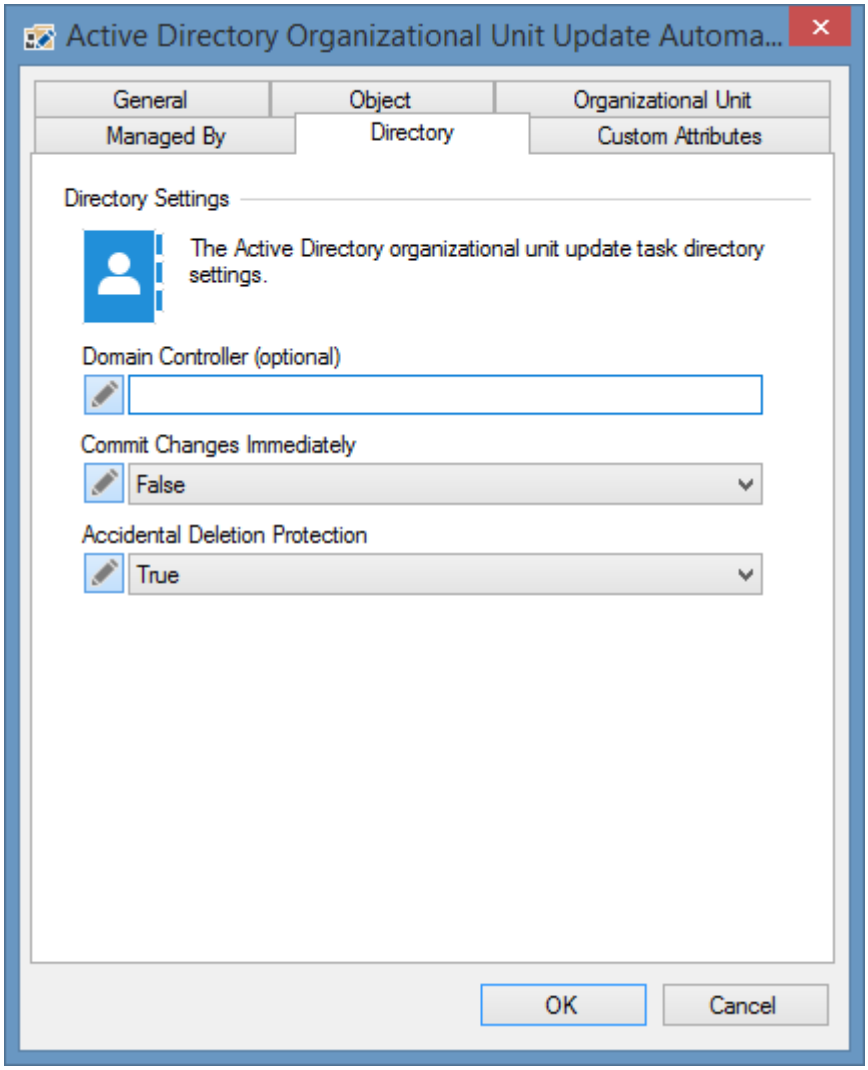
To create a new organizational unit see the Active Directory organizational unit creation task.

Custom Attributes



Custom Attributes
The custom attributes to set for the organizational unit.

Directory

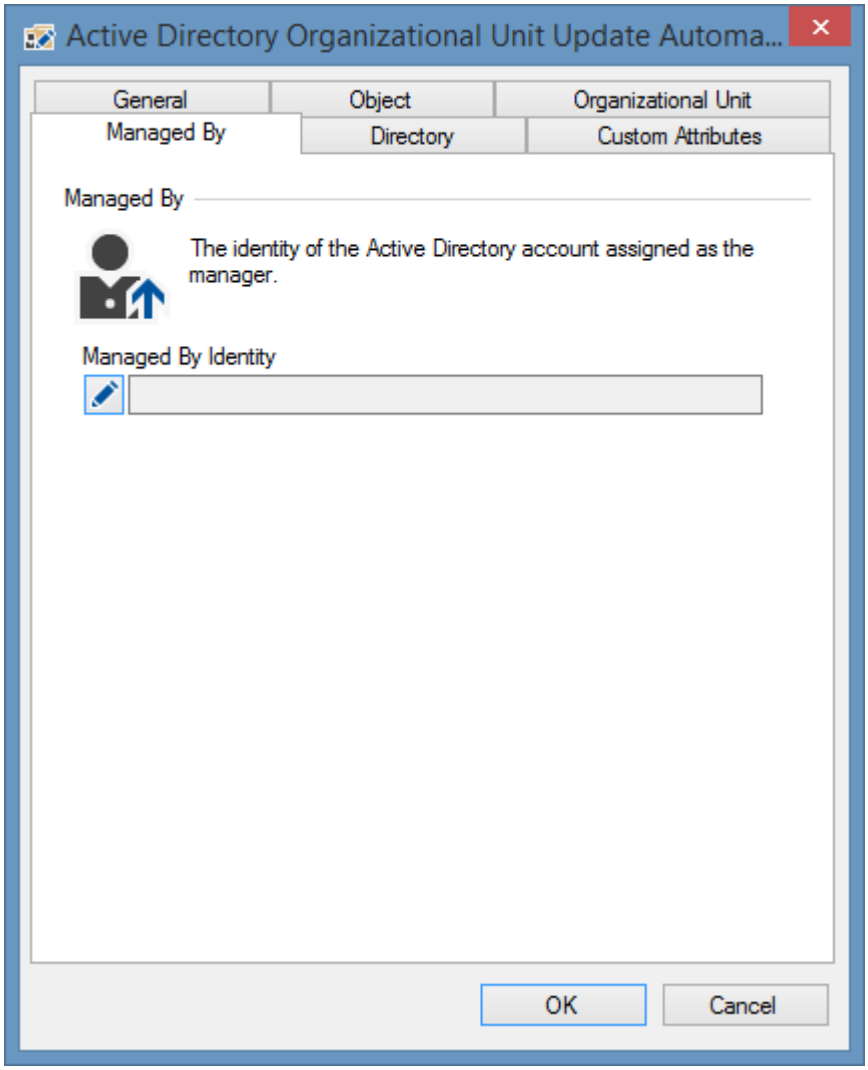


Domain Controller (optional)
The fully qualified domain name of a specific domain controller to use for the operation.

Commit Changes Immediately
Determines whether each change made to the directory is committed immediately. This can assist in troubleshooting.

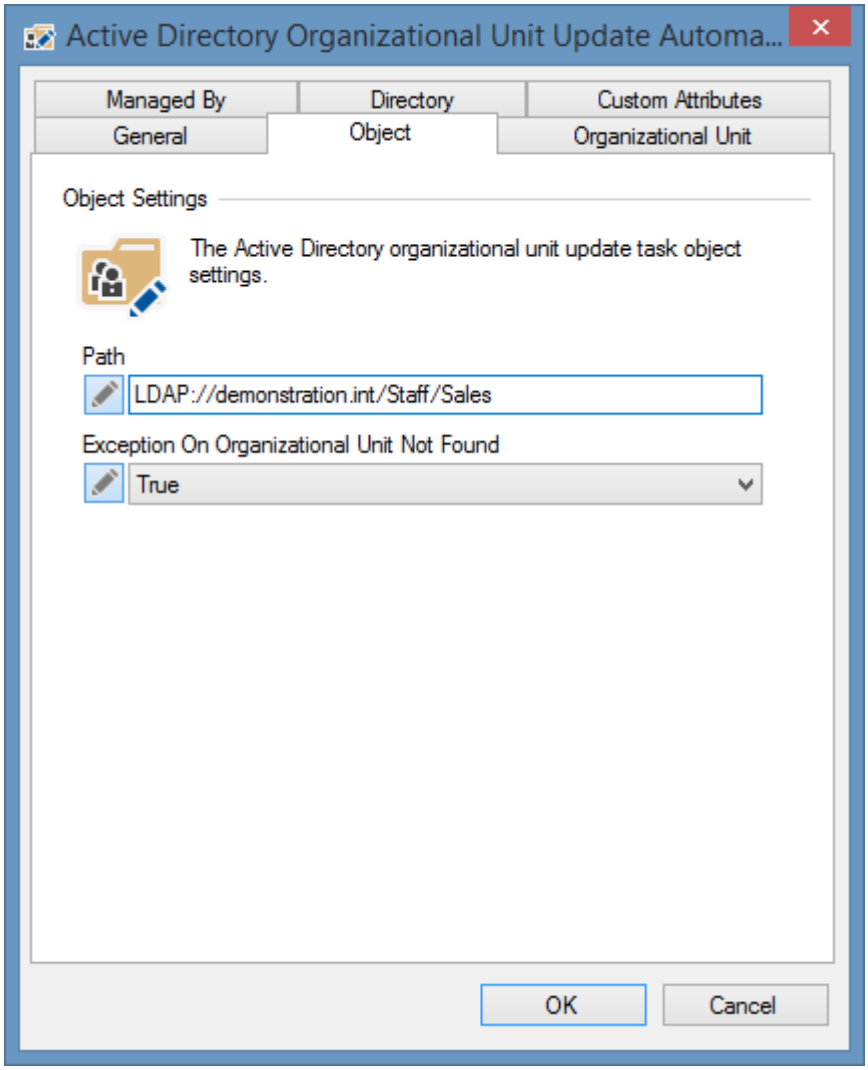
Accidental Deletion Protection
Determines whether accidental deletion protection should be enabled or disabled for the organizational unit.

Managed By



Managed By
The SAM account name or user principal name of the manager to assign to the organizational unit. Clicking the *browse* button displays the account browser.

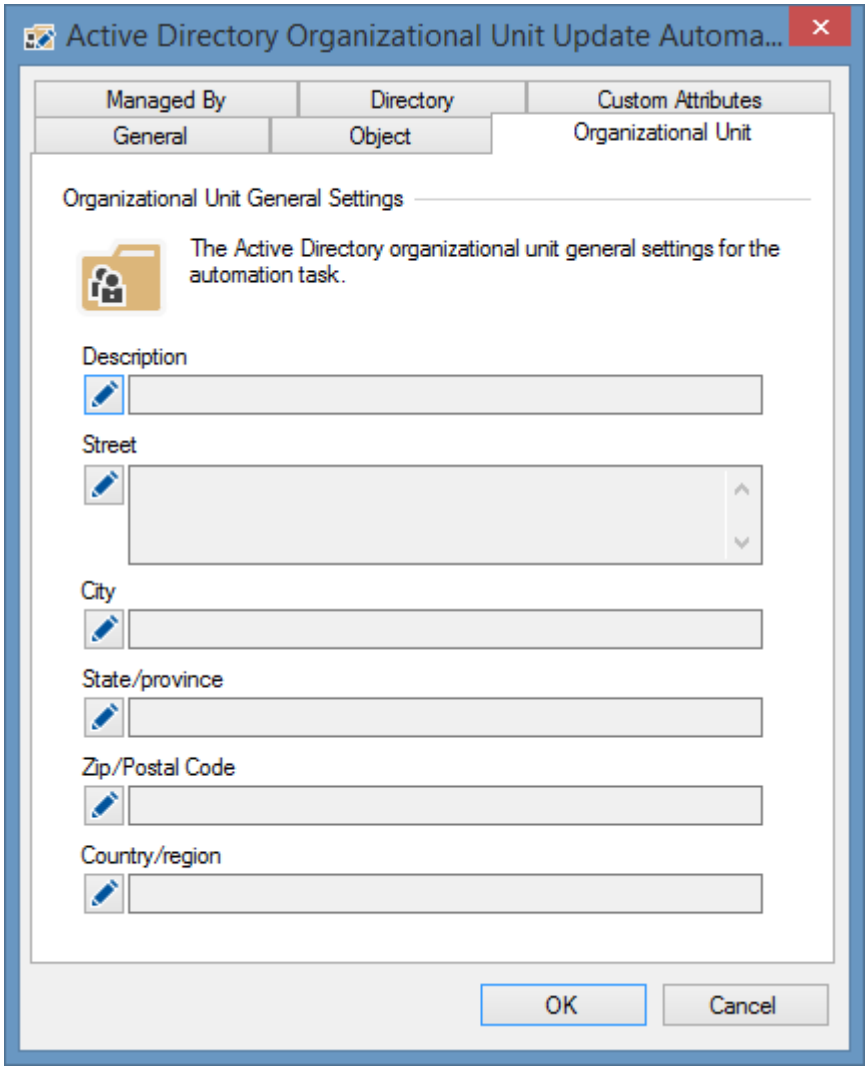
Object



Path
The absolute LDAP path in canonical name format of the organizational unit to update.

Exception On Organizational Not Found
Determines whether an exception should be thrown if the organizational unit to update is not found.

Organizational Unit



Description
The description of the organizational unit.

Street
The street address for the organizational unit.

P.O. Box
The PO box address for the organizational unit.

City
The city for the organizational unit.

State/province
The state or province for the organizational unit.

Zip/Postal Code
The Zip or postal code for the organizational unit.

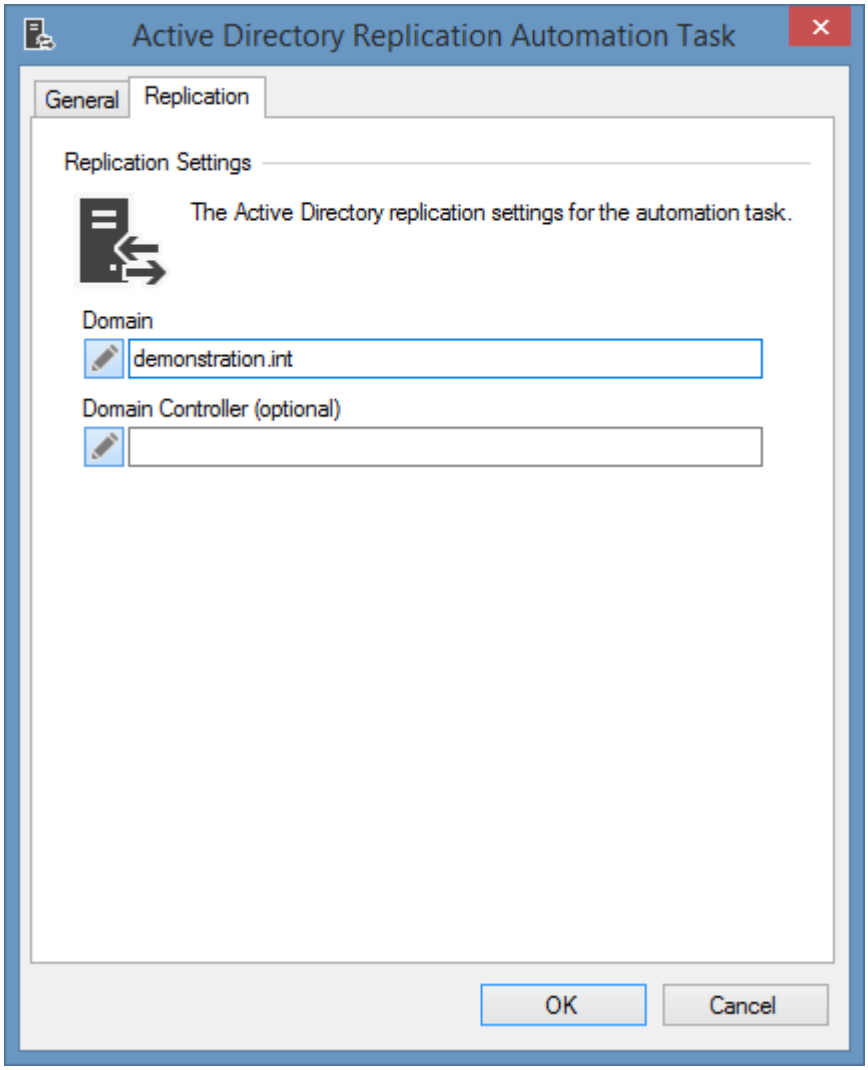
Country/region
The country or region (ISO 3166-1-alpha-2) code assigned to the organizational unit - for example

"US".

Active Directory Replication Task

The Active Directory replication task is capable of forcing Active Directory replication.

Replication

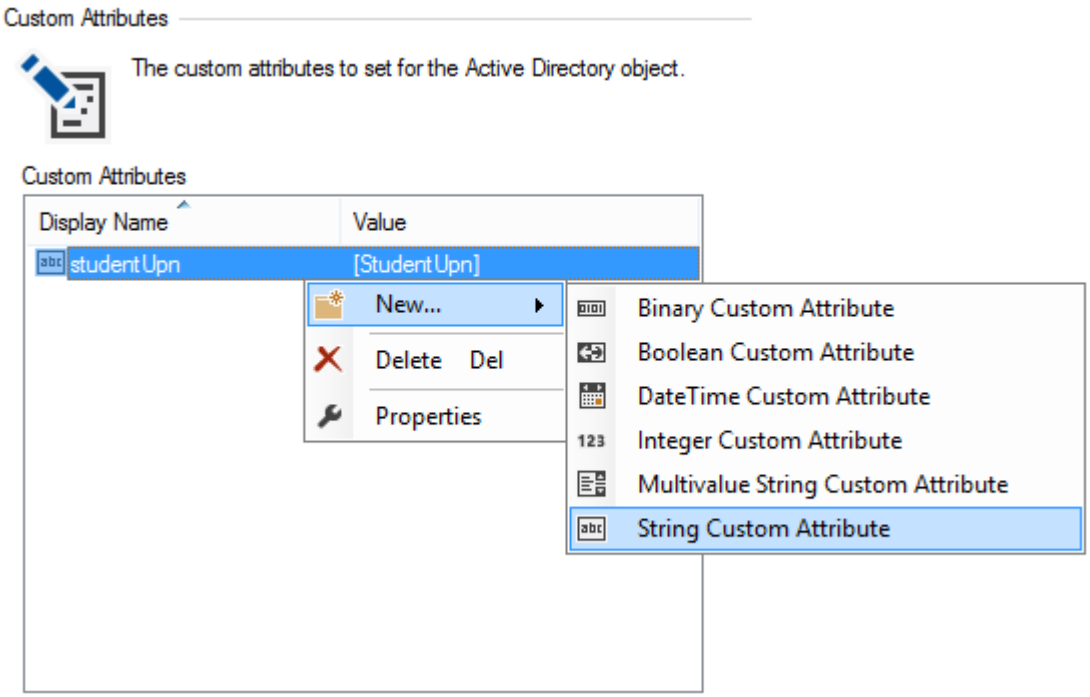


Domain
The name of the Active Directory domain to replicate.

Domain Controller
The fully qualified domain name of the domain controller to replicate, or an empty string to replicate all domain controllers.

Custom Attributes

This section allows attributes to be set for objects within Active Directory that otherwise cannot be set by XIA Automation Server. These can be built in Active Directory attributes, or attributes that have been created by extending the schema.



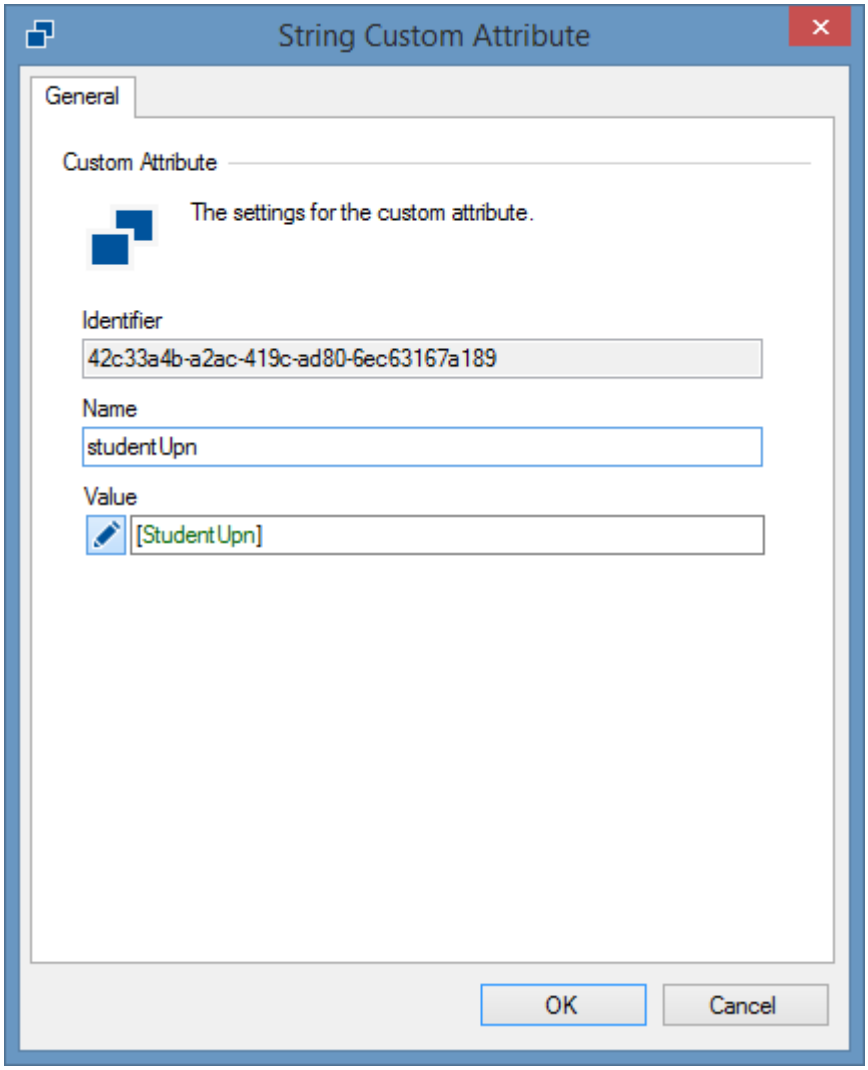
Right clicking the custom attributes listview displays the context menu.

New
Creates a new custom attribute of the specified type.

Delete
Deletes the currently selected custom attribute.

Properties
Displays the properties of the currently selected custom attribute.

Custom Attribute



Identifier
The unique identifier of the custom attribute in GUID format. This identifier is internal to XIA Automation Server.

Name
The unique name of the attribute.

Value
The value to assign to the attribute. The type of value is determined by the custom attribute type.

Custom Attribute Types

Binary Custom Attribute
A System.Byte array that can be used to update string (octet) attributes.

Boolean Custom Attribute
A System.Boolean true or false value that can be used to update boolean attributes.

DateTime Custom Attribute
A System.DateTime value that can be used to update large integer attributes.

Integer Custom Attribute
A System.Int32 value that can be used to update integer attributes.

MutliValue String Custom Attribute
A System.String array value that can be used to update multivalued string attributes.

String Custom Attribute
A System.String value that can be used to update string (unicode) attributes.

Troubleshooting

This section highlights the known issues for the Active Directory automation tasks and provides details of the solutions.

Could not find the name or insufficient right to see name

Symptoms
When executing an Active Directory automation task you receive the following error.
Name translation could not find the name or insufficient right to see name.

Cause

- This error can occur if an LDAP path entered in the Active Directory automation task is not valid or the Web Server application pool account does not have permissions to the path.

- This error can also be seen when multiple directory service operations are performed by an automation profile and are inadvertently executed on multiple domain controllers. The different domain controllers do not have up-to date information until directory replication occurs.

Resolution

- Ensure that the path is valid and that the Web Server application pool account has the required permissions to access the path in Active Directory.

- Specify a domain controller that should perform all directory related automation tasks in the automation profile.

  It is possible to use the Active Directory domain controller selection task to identify a domain controller to use rather than hard coding a domain controller name in the automation tasks.

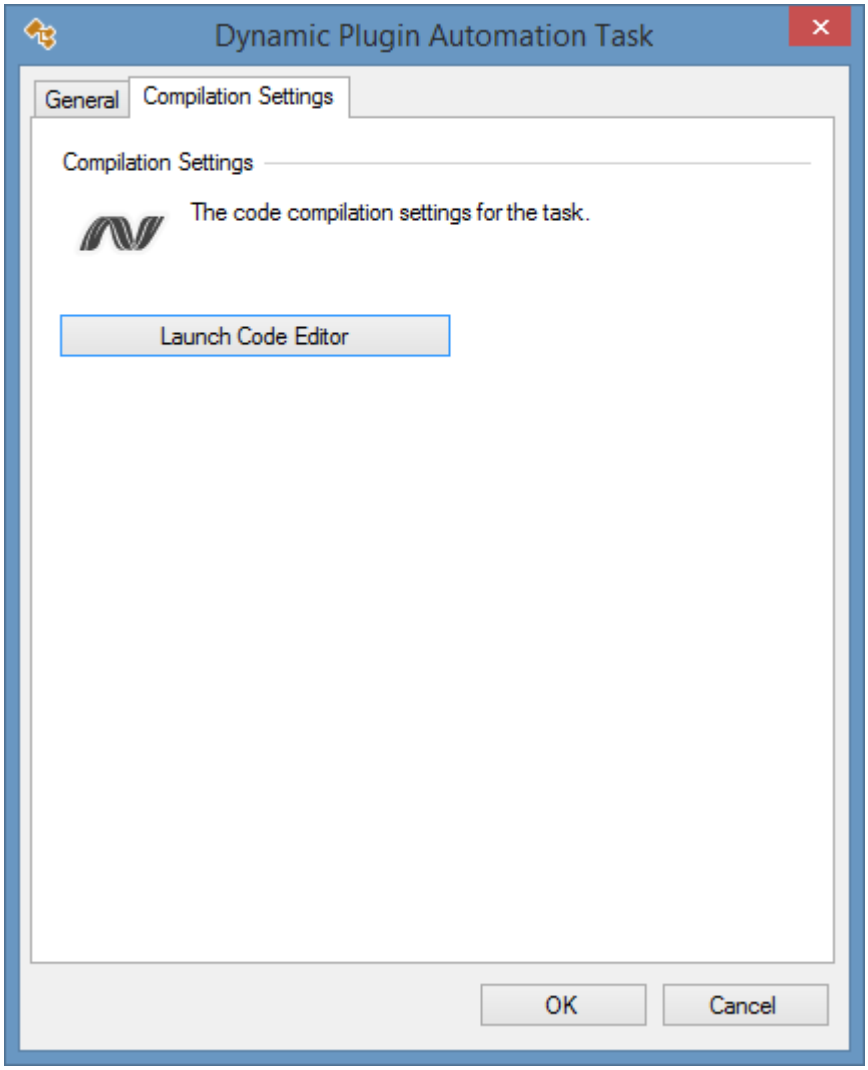
Development

The development automation tasks allow custom actions to be written using Microsoft C#.

Dynamic Plugin Task

The dynamic plugin task allows custom actions to be performed using Microsoft C# code.

Compilation Settings



Launch Code Editor
Open the built-in dynamic code editor.

Task Parameter

The Task parameter in the dynamic code editor allows access to the dynamic plugin task being executed.

Variables Parameter

The Variables parameter in the dynamic code editor allows access to the current variables.

For example to modify the value of a variable called AccountEnabled.

```
/// <summary>
/// Executes the dynamic automation task.
/// </summary>
public override void Execute()
{
     BooleanVariable variable =
(BooleanVariable)Variables.Items.FindByName("AccountEnabled");
     variable.Value = true;
}
```

Filesystem

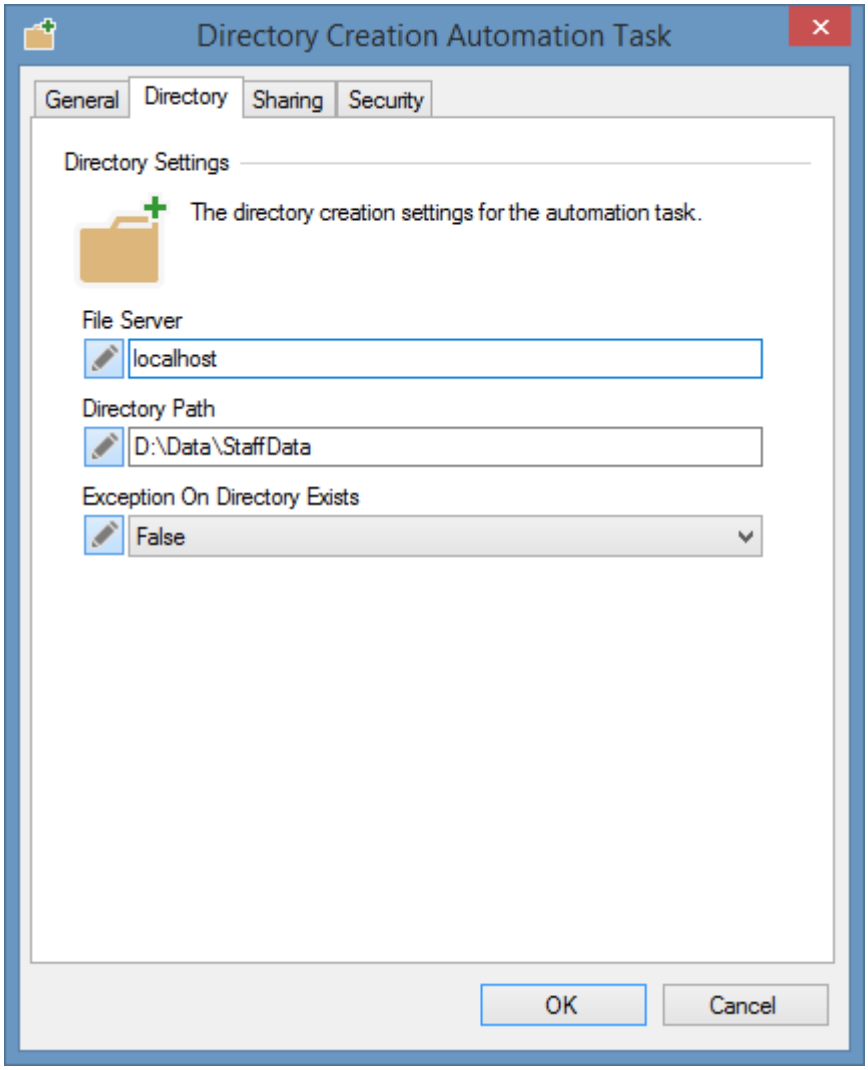
The filesystem automation tasks perform actions relating to the Windows filesystem.

Directory Creation Task

The directory creation task can create a directory on a local or remote Windows machine.

To update an existing directory see the directory update task.

Directory

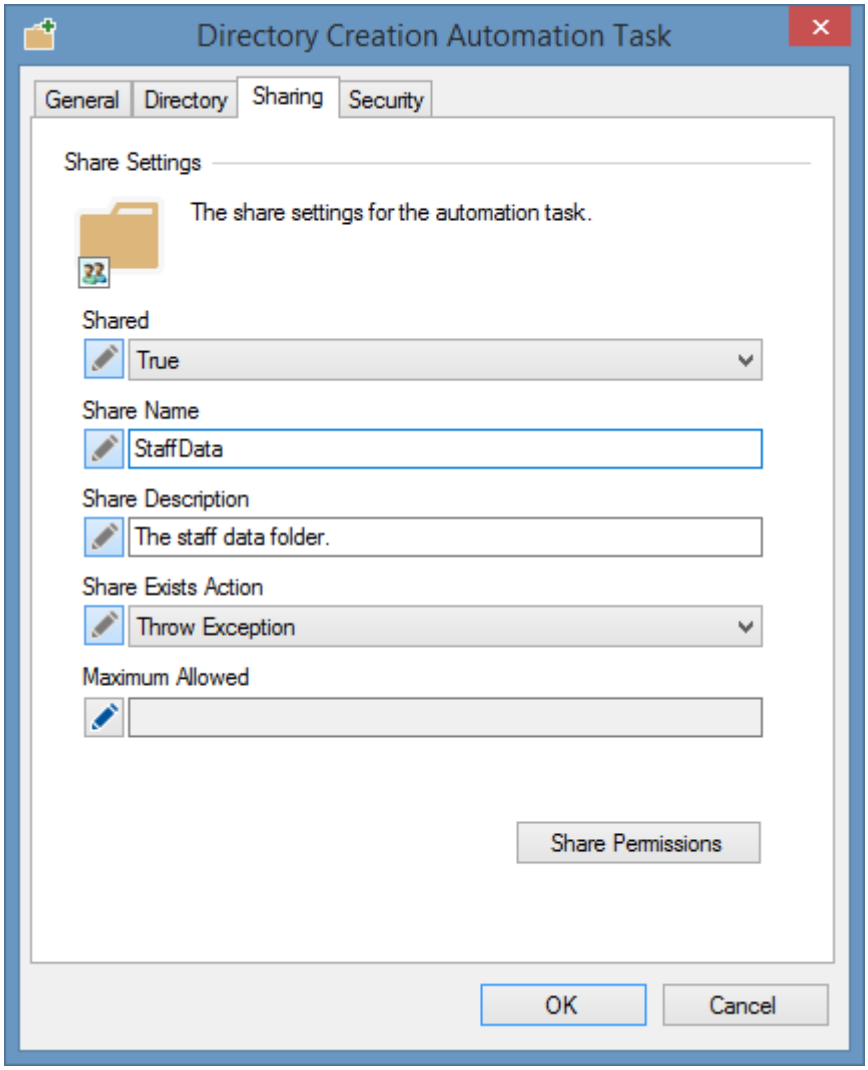


File Server
The NetBIOS name, IP address, or fully qualified domain name of the machine on which the directory should be created. To create the directory on the XIA Automation Server executing the task enter *localhost*.

Directory Path
The absolute local path of the directory to create on the specified file server.

Exception On Directory Exists
Determines whether an exception should be thrown if the directory to create already exists on the file server.

Sharing



Shared
Determines whether the directory should be shared.

Share Name
The share name.

Share Description
The description of the file share.

Share Exists Action
Determines the action to take if the share already exists for a different directory.

- None
  The existing share is retained and no changes are made.

- Throw Exception
  An exception is thrown.

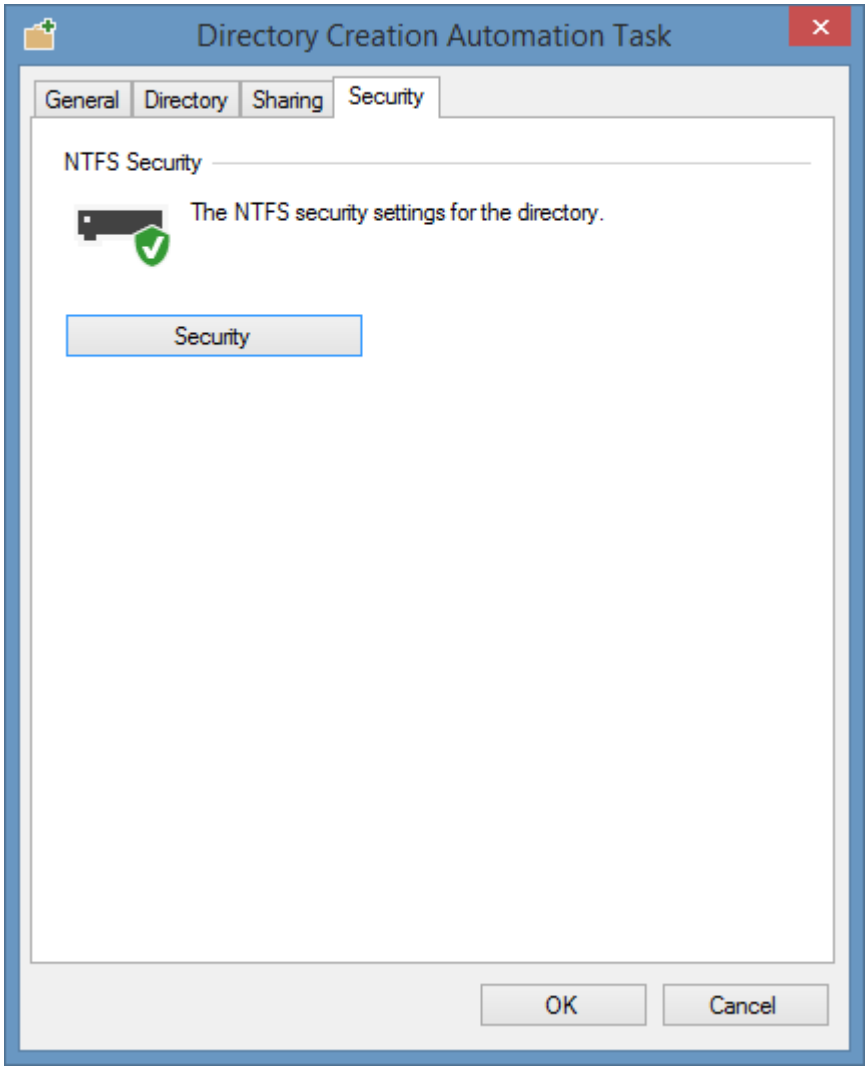
- Move Share

The existing share is deleted and the share is moved to the newly created directory.

Maximum Allowed
The maximum number of concurrent connections allowed - by default this is not set (no limit).

Share Permissions
The share permissions.

Security

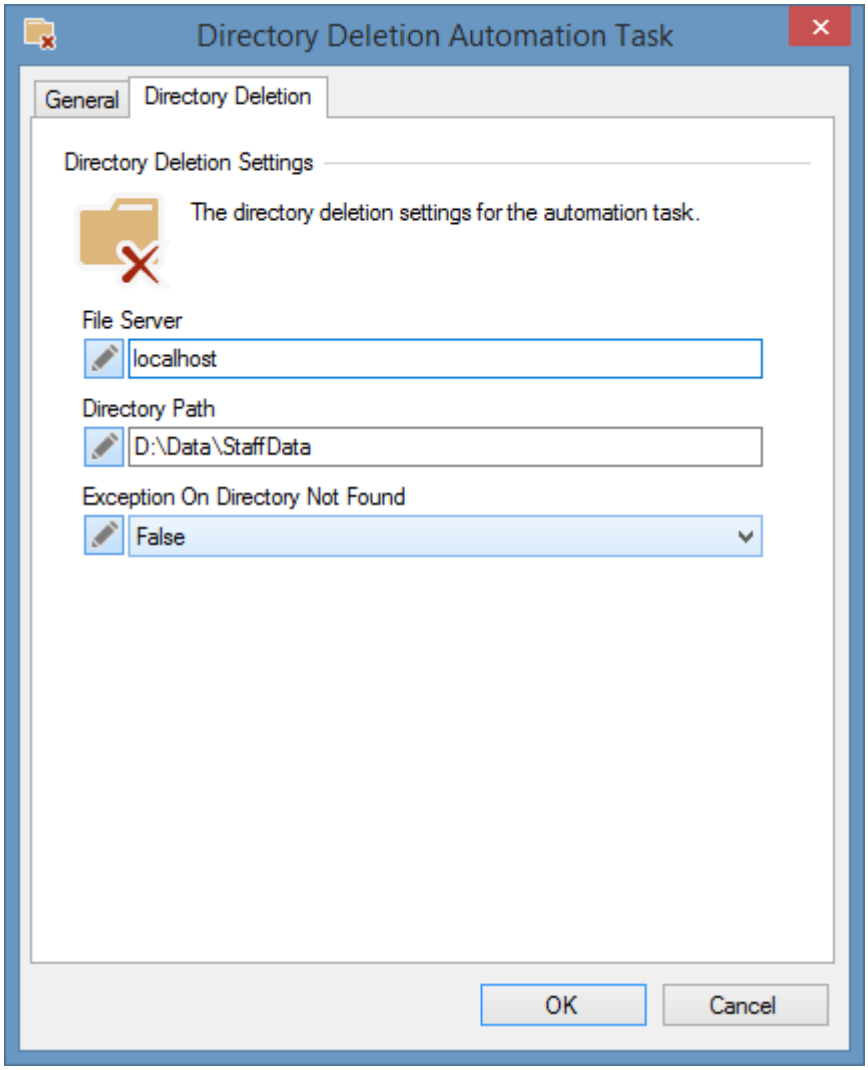


Security
Displays the NTFS security dialog.

Directory Deletion Task

The directory deletion task can delete a directory on a local or remote Windows machine.

Directory Deletion



File Server
The NetBIOS name, IP address, or fully qualified domain name of the machine on which the directory should be deleted. To delete the directory on the XIA Automation Server executing the task enter *localhost*.

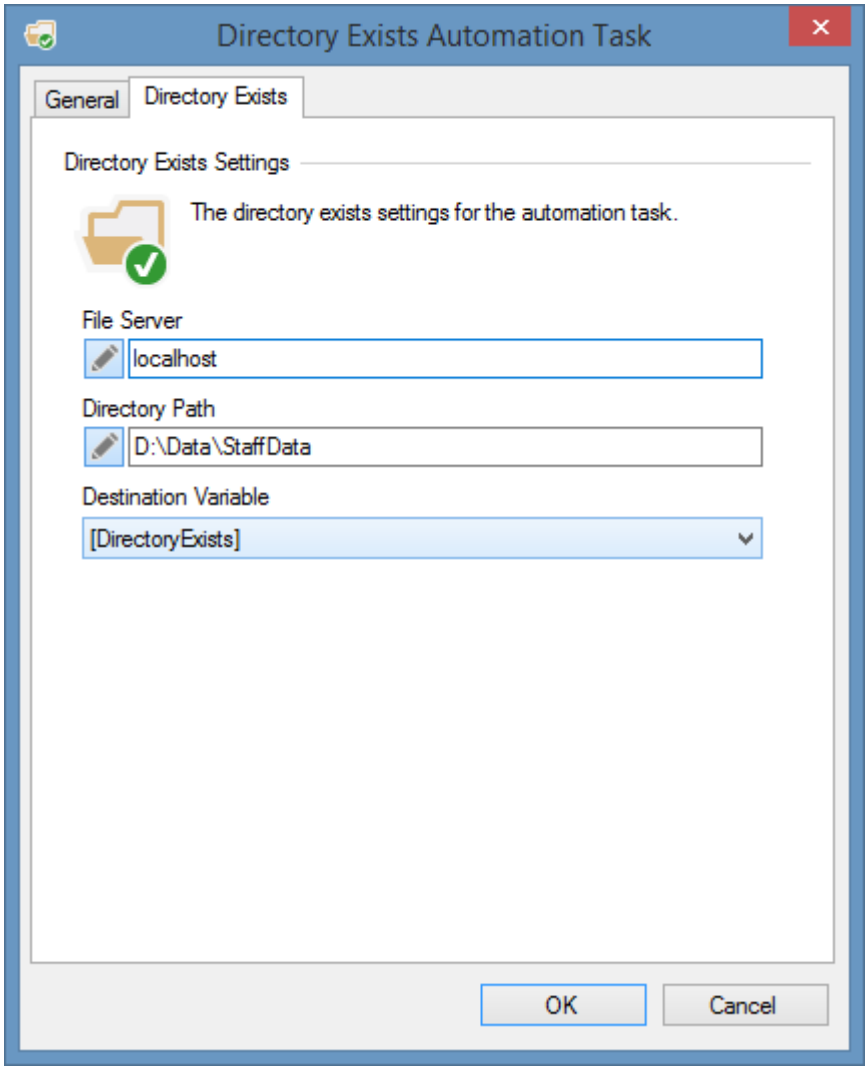
Directory Path
The absolute local path of the directory to delete on the specified file server.

Exception On Directory Not Found
Determines whether an exception should be thrown if the directory to delete does not exist on the file server.

Directory Exists Task

The directory exists task can determine if a directory exists on a local or remote Windows machine.

Directory Exists



File Server
The NetBIOS name, IP address, or fully qualified domain name of the machine on which the directory should be evaluated. To evaluate the directory on the XIA Automation Server executing the task enter *localhost*.

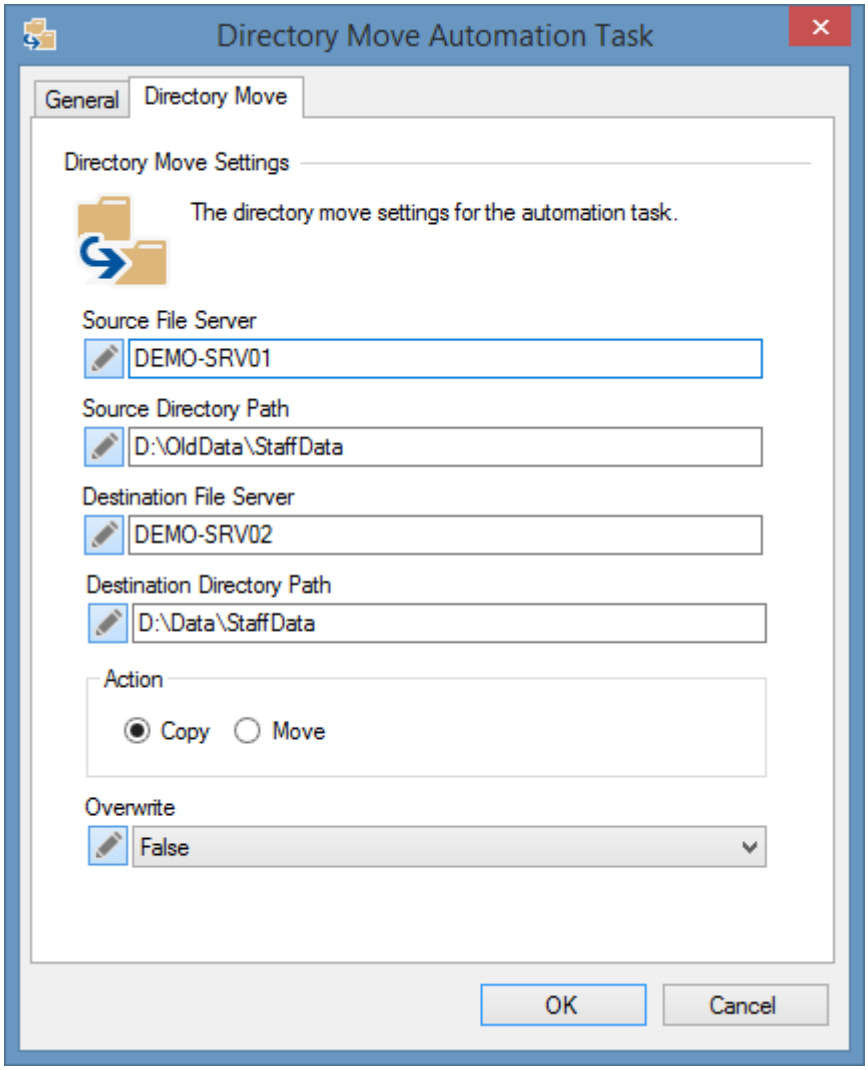
Directory Path
The absolute local path of the directory to evaluate on the specified file server.

Destination Variable
The boolean variable in which to store the result of the evaluation.

Directory Move Task

The directory move task can copy or move a directory to a new location on a local or remote Windows machine.

Directory Move



Source File Server
The NetBIOS name, IP address, or fully qualified domain name of the machine on which the source directory can be found.

Source Directory Path
The absolute local path of the directory to move or copy.

Destination File Server
The NetBIOS name, IP address, or fully qualified domain name of the machine to which the directory should be copied or moved.

Destination Directory Path
The absolute local path where the directory should be copied or moved.

Action
Determines whether the directory should be copied or moved.

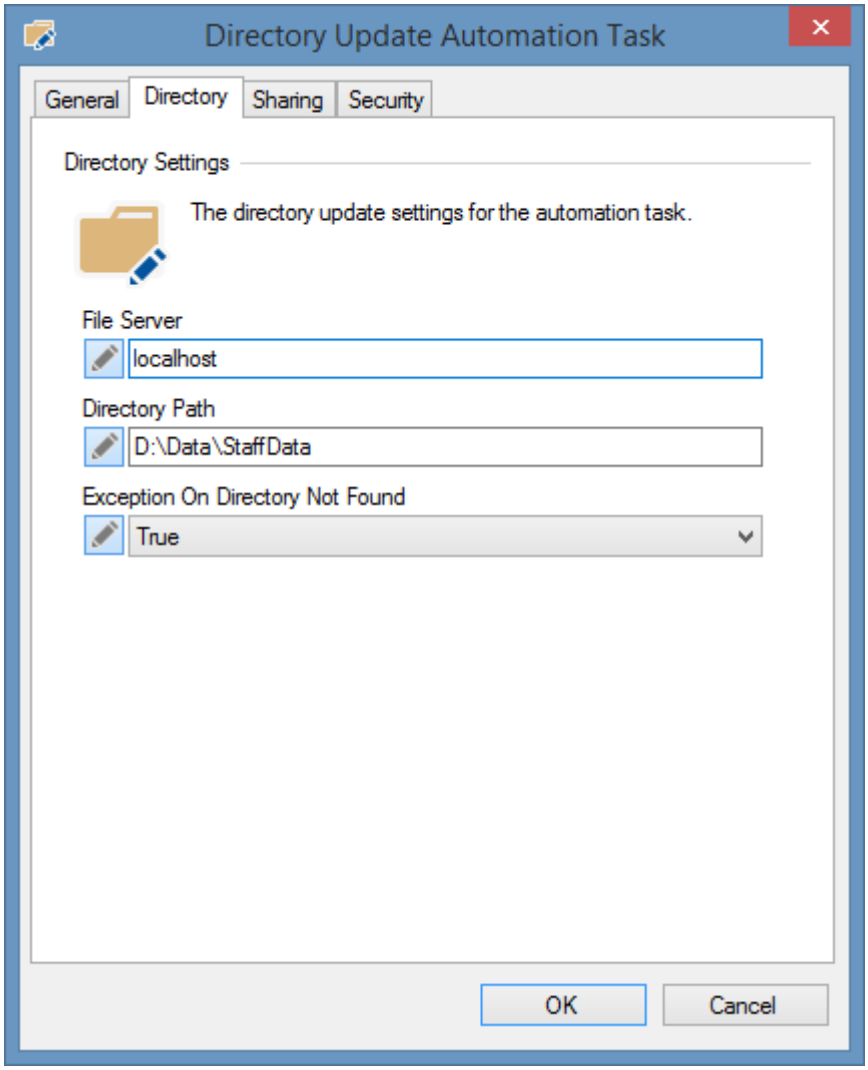
Overwrite
Determines whether the destination directory should be overwritten if it already exists.

Directory Update Task

The directory update task can update an existing directory on a local or remote Windows machine.

To create a new directory see the directory creation task.

Directory

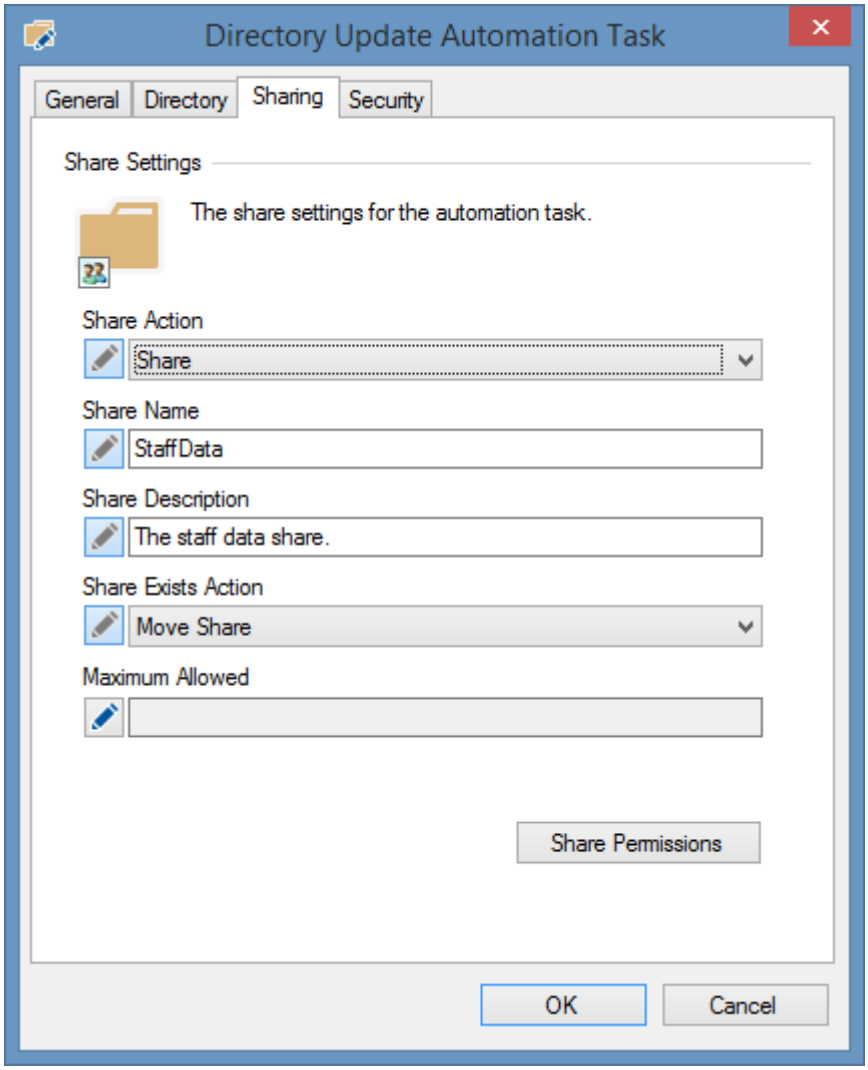


File Server
The NetBIOS name, IP address, or fully qualified domain name of the machine where the directory resides. To update the directory on the XIA Automation Server executing the task enter *localhost*.

Directory Path
The absolute local path of the directory to update on the specified file server.

Exception On Directory Not Found
Determines whether an exception should be thrown if the directory to update does not exist on the file server.

Sharing



Share Action
Determines whether the directory should be shared.

- None
  The directory should not be shared, however existing shares are retained.

- Stop Sharing
  If the directory is already shared then the share(s) are deleted.

- Share
  The directory is shared.

Share Name
The share name.

Share Description
The description of the file share.

Share Exists Action

Determines the action to take if the share already exists for a different directory.

- None
  The existing share is retained and no changes are made.

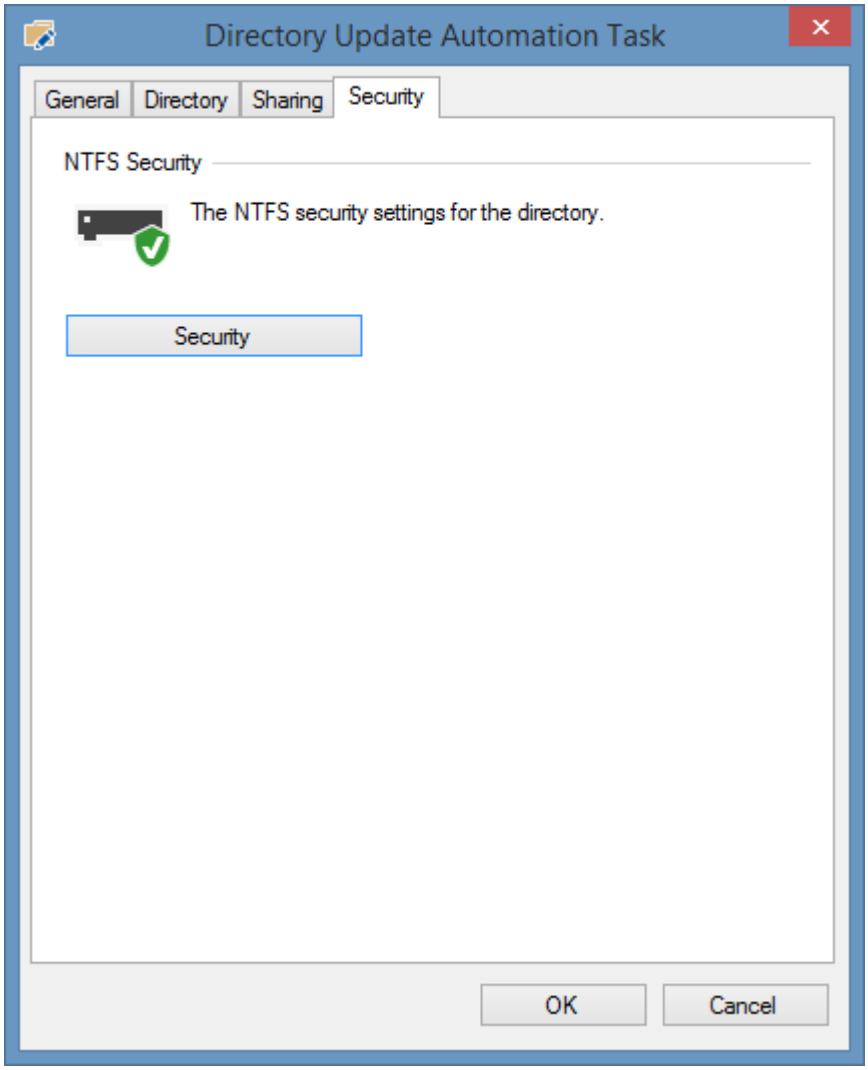
- Throw Exception
  An exception is thrown.

- Move Share
  The existing share is deleted and the share is moved to the newly created directory.

Maximum Allowed
The maximum number of concurrent connections allowed - to reset this to unlimited set this value to blank.

Share Permissions
The share permissions.

Security

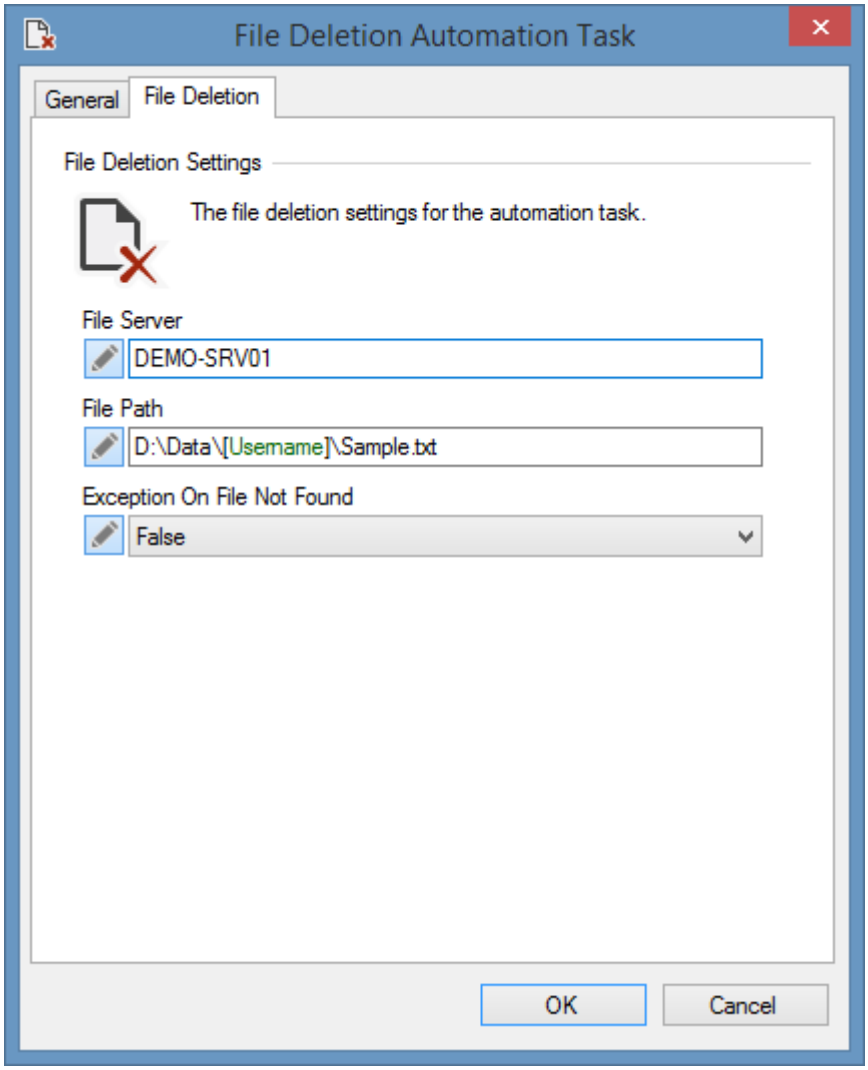


Security
Displays the NTFS security dialog.

File Deletion Task

The file deletion task can delete a file on a local or remote Windows machine.

File Deletion



File Server
The NetBIOS name, IP address, or fully qualified domain name of the machine on which the file to delete resides. To delete the file on the XIA Automation Server executing the task enter *localhost*.

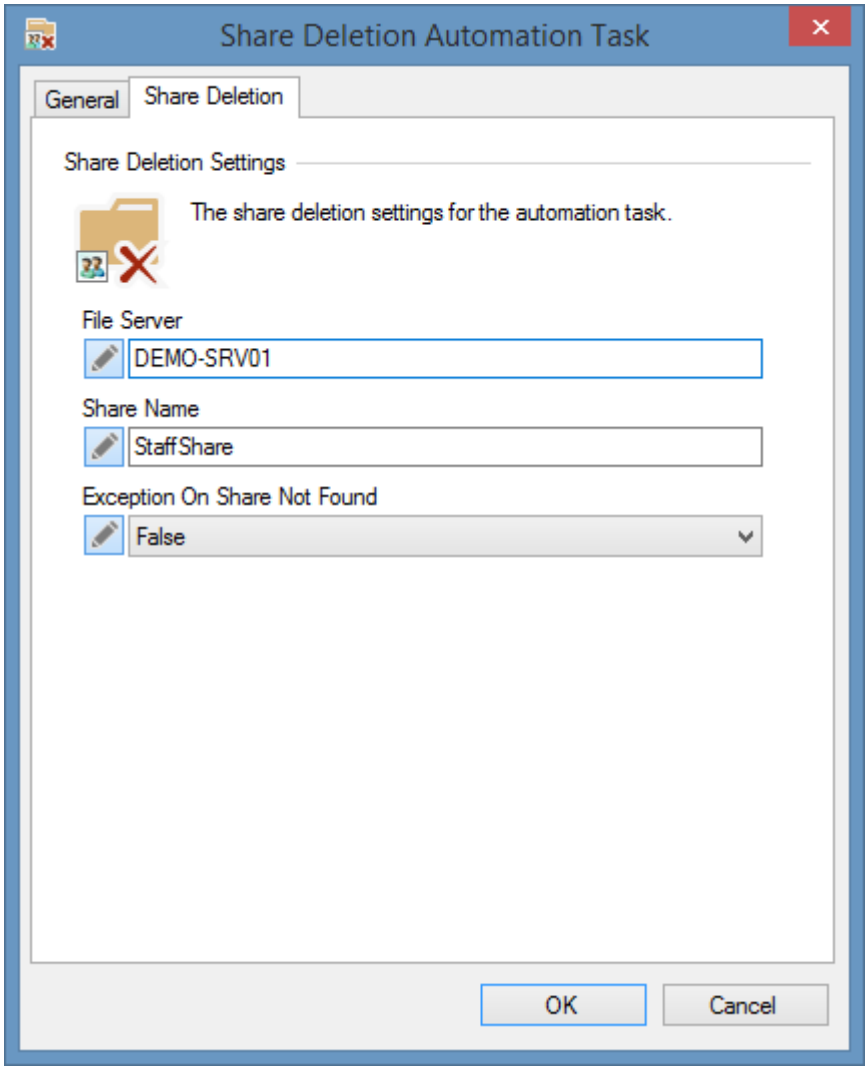
Directory Path
The absolute local path of the file to delete on the specified file server.

Exception On File Not Found
Determines whether an exception should be thrown if the file to delete does not exist on the file server.

Share Deletion Task

The share deletion task can delete a share by share name on a local or remote Windows machine.

Share Deletion



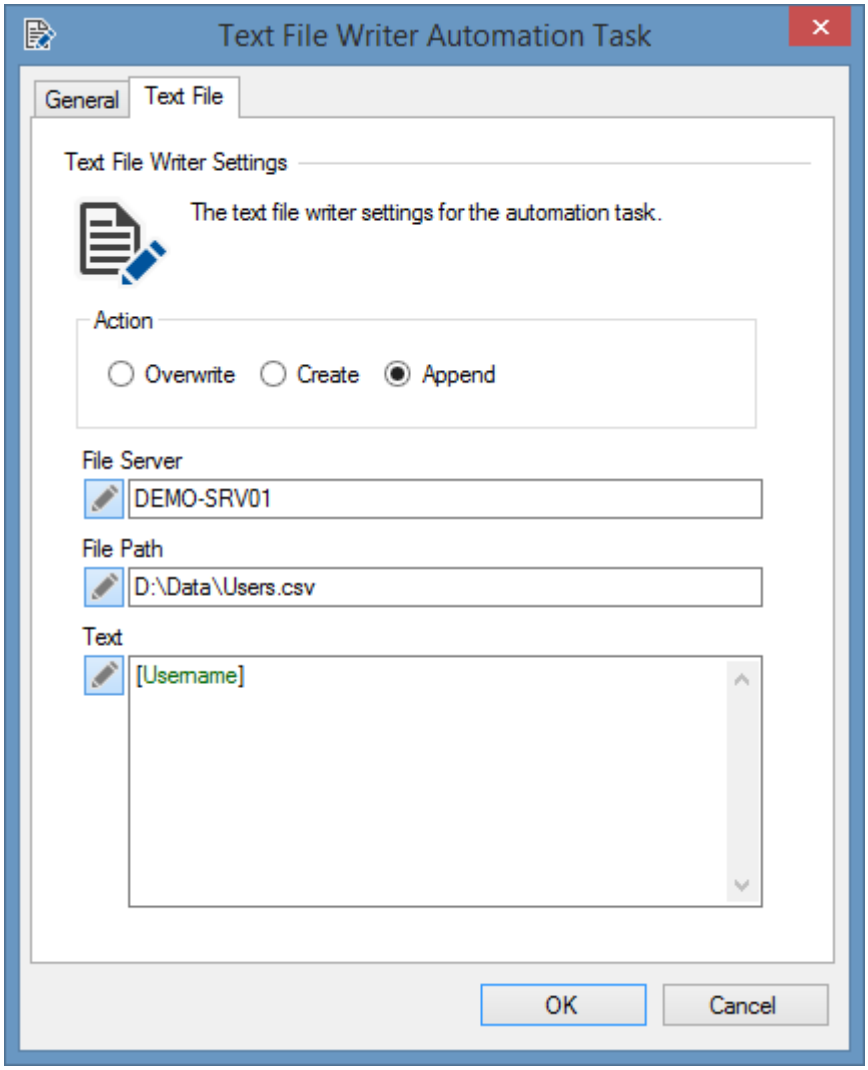
File Server
The NetBIOS name, IP address, or fully qualified domain name of the machine on which to delete the share.

Share Name
The name of the share to delete.

Exception On Share Not Found
Determines whether an exception should be thrown if the share to delete does not exist on the file server.

Text File Writer Task

Text File



Action
Determines the action

- Overwrite
  The file is overwritten if it already exists, or created if it does not exist.

- Create
  The file is created, if the file already exists an exception is thrown.

- Append
  The specified text is appended to the file if it already exists, or created if it does not exist.

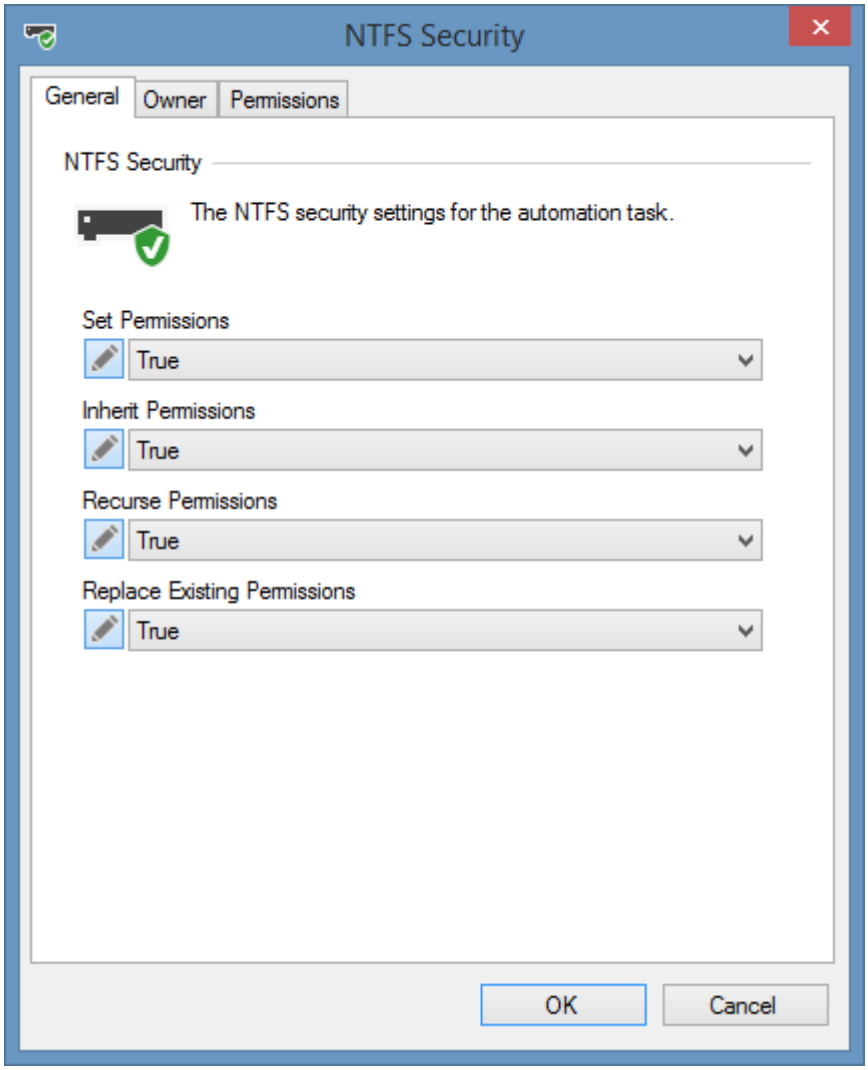
File Server
The NetBIOS name, IP address, or fully qualified domain name of the machine on which the file should be written. To write to a file on the XIA Automation Server executing the task enter *localhost*.

Text
The text to write or append to the file.

NTFS Security

NTFS is the primary file system for Windows and Windows Server.

General



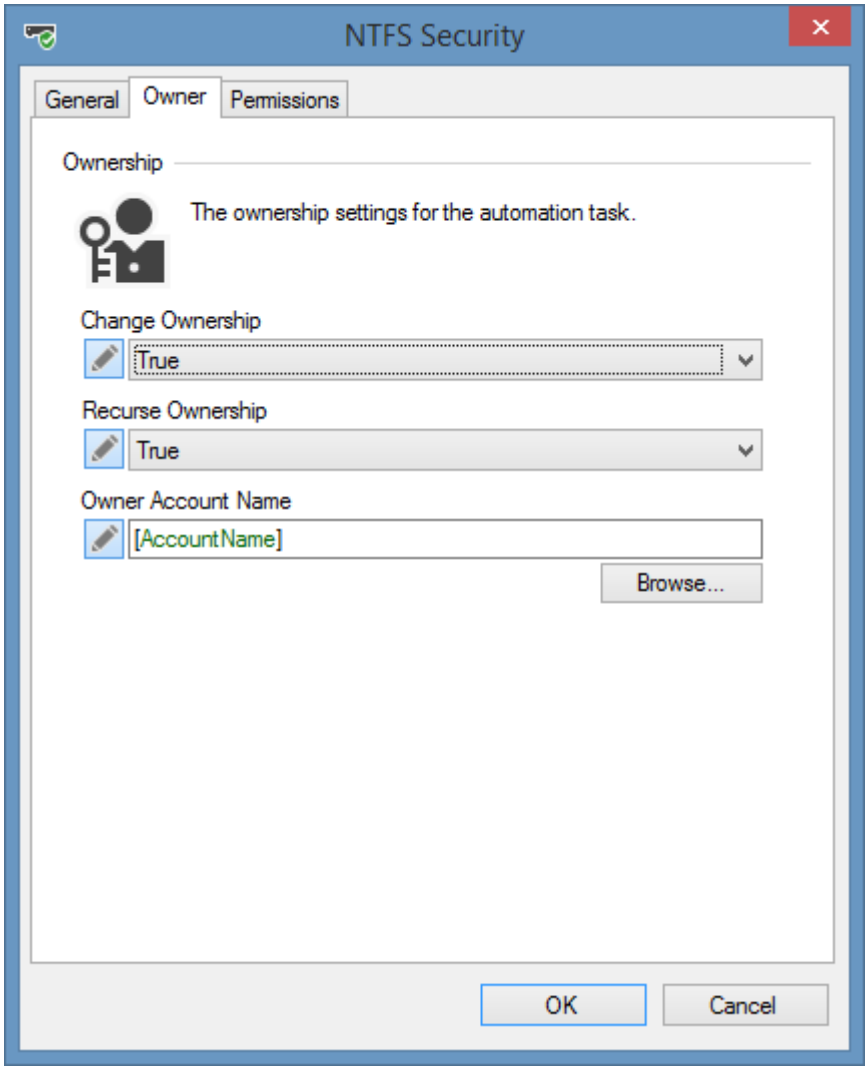
Set Permissions
Determines whether to set the NTFS permissions.

Inherit Permissions
Determines whether to inherit the NTFS permissions from the parent directory.

Recurse Permissions
Determines whether the NTFS permissions set on this directory should be recursed to child objects.

Replace Existing Permissions
Determines whether the NTFS permissions on child objects should be replaced with permissions inherited from this directory.

Owner

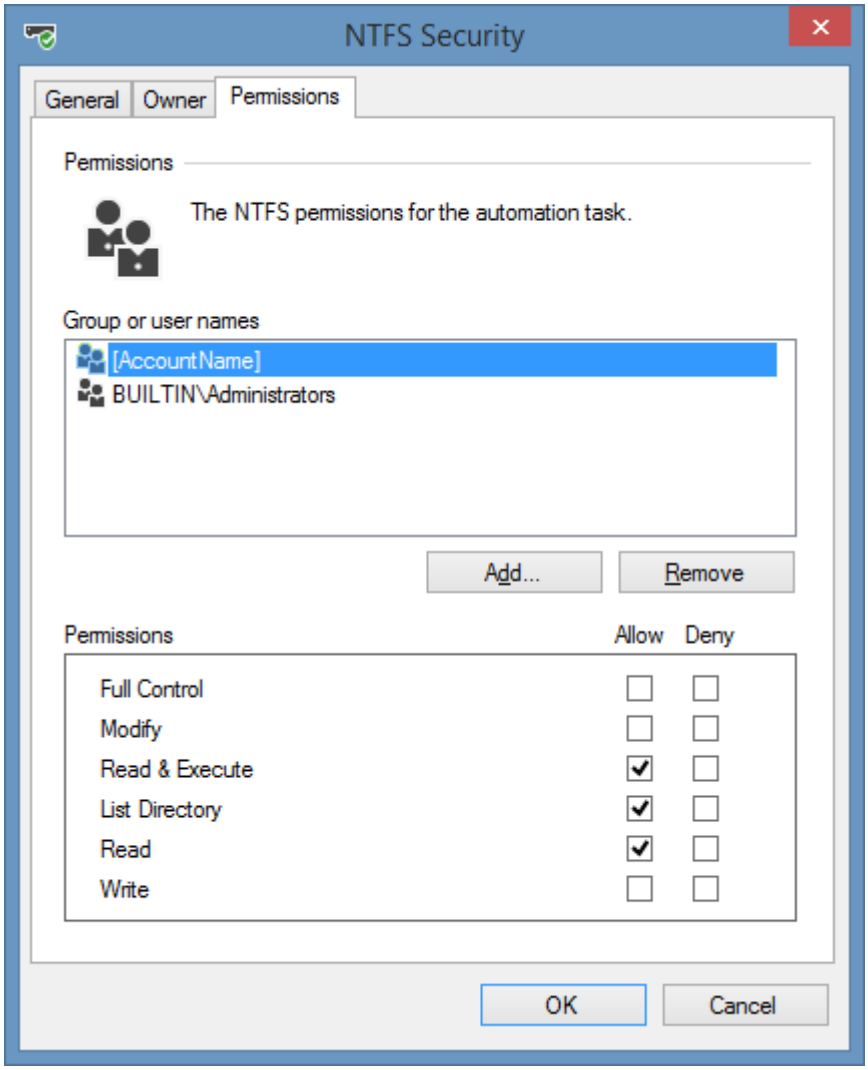


Change Ownership
Determines whether the NTFS ownership of this file directory should be changed.

Recurse Permissions
Determines whether the NTFS ownership set on this directory should be recursed to child objects.

Owner Account Name
The user or group to take ownership.
This can be selected using the account browser, entering the name manually, or by setting variable.

Permissions



Group or user names
The group or user names for which NTFS permissions should be set.

Add
Adds a new group or user name using the account browser or variable.

Remove
Removes the currently selected group or user name from the list.

Full Control
The currently selected group or user is either allowed or denied full control.

Modify
The currently selected group or user is either allowed or denied modify permissions.

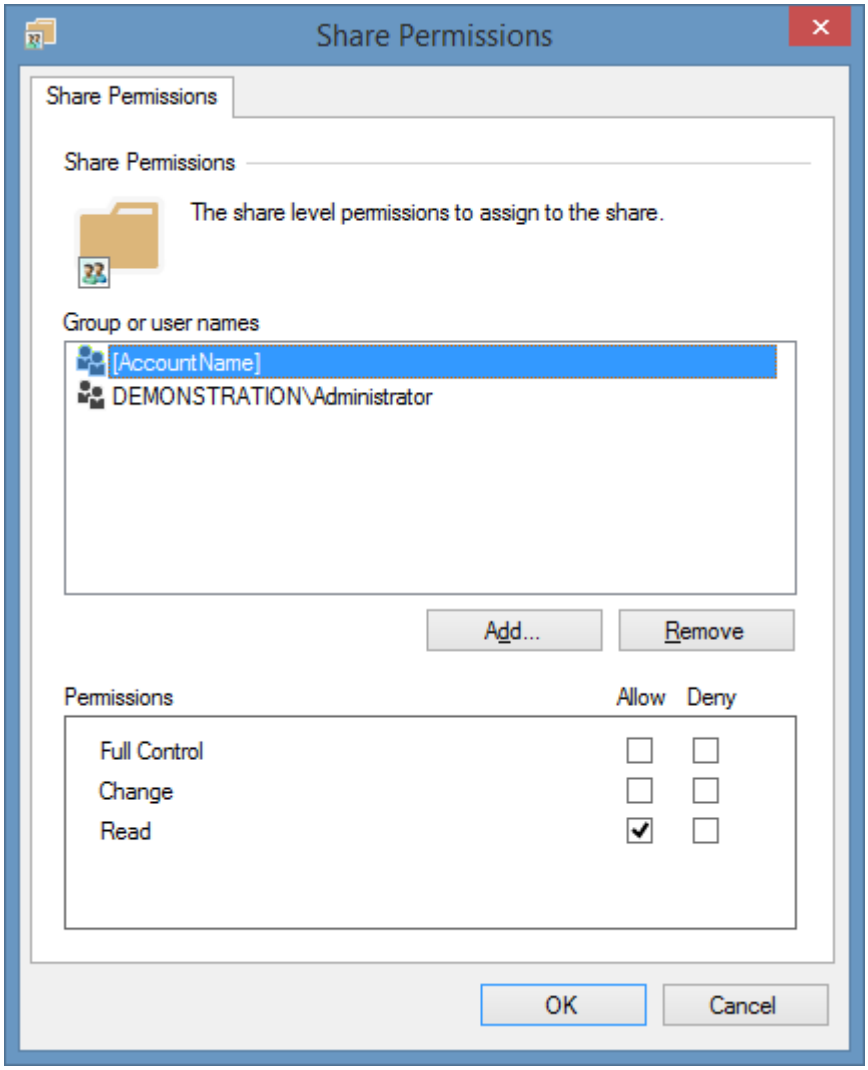
Read & Execute
The currently selected group or user is either allowed or denied read and execute permissions.

List Directory
The currently selected group or user is either allowed or denied list directory permissions.

Read
The currently selected group or user is either allowed or denied read permissions.

Write
The currently selected group or user is either allowed or denied write permissions.

Share Permissions



Group or user names
The group or user names for which share permissions should be set.

Add
Adds a new group or user name using the account browser or variable.

Remove
Removes the currently selected group or user name from the list.

Full Control
The currently selected group or user is either allowed or denied full control share permissions.

Change
The currently selected group or user is either allowed or denied change share permissions.

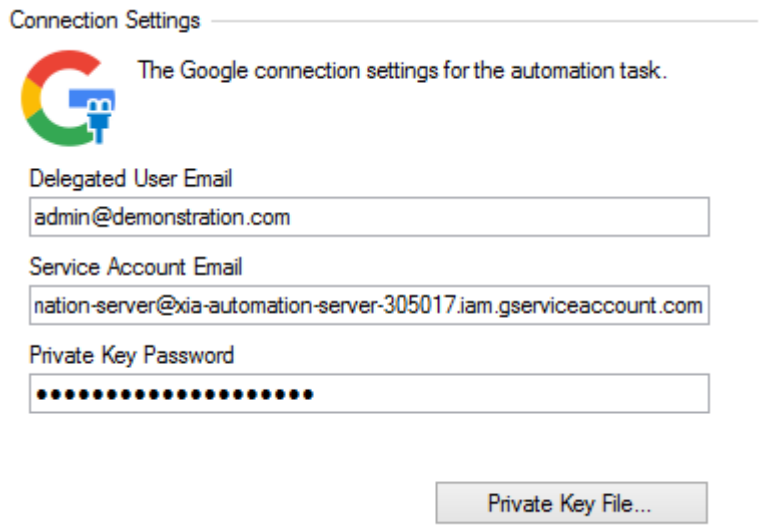
Read
The currently selected group or user is either allowed or denied read share permissions.

For information on NTFS permissions see the security section.

Google

The Google automation tasks perform actions relating to Google accounts.

Connection Settings



Delegated User Email
The delegated user email - this should be an existing Google account - for example "admin@demonstration.com".

Service Account Email
The service account email.

Private Key Password
The private key password.

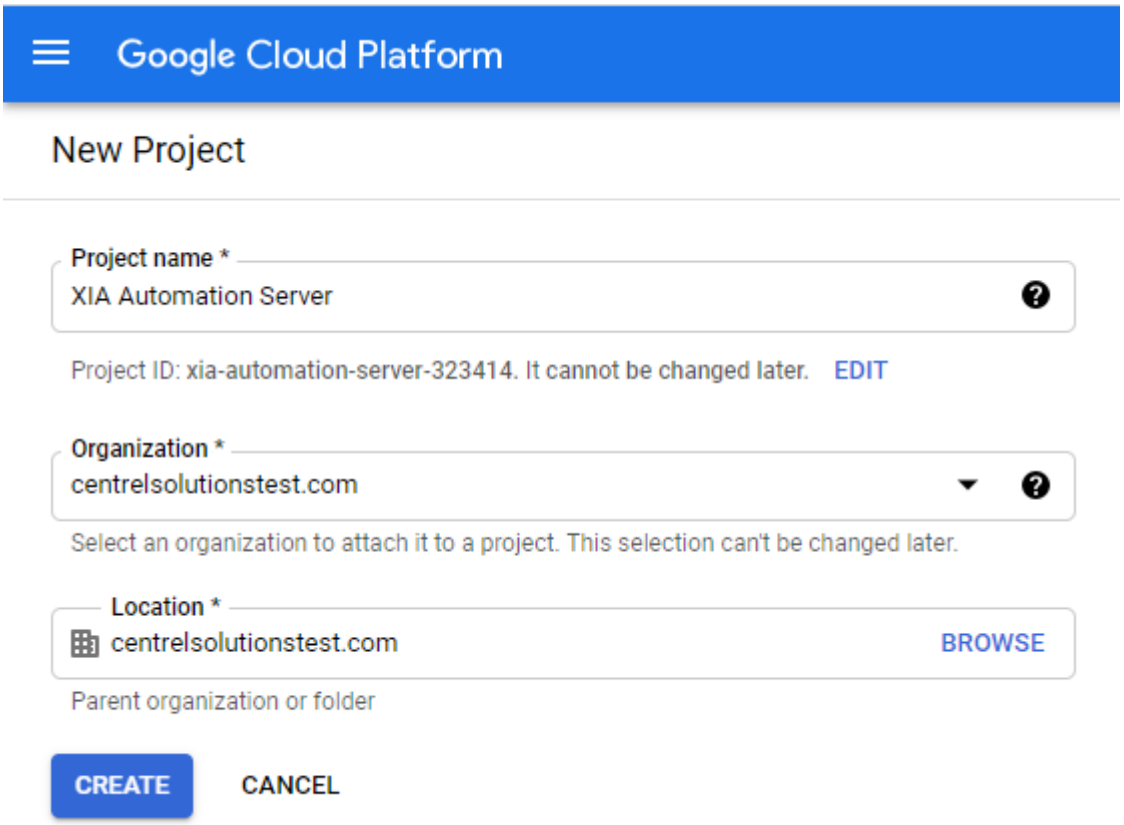
Private Key File
Opens a file dialog to browse to the private key file in .p12 format.

Google Service Account Setup (Part 1)

Follow these steps to enable login using a Google service account.

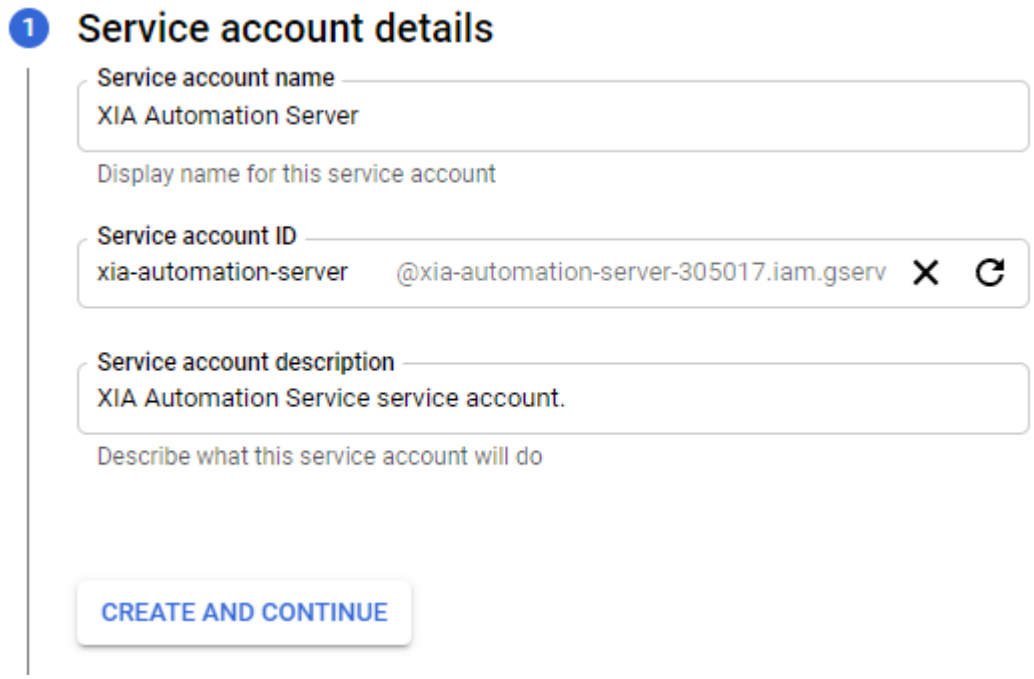
For more information see
https://cloud.google.com/iam/docs/creating-managing-service-accounts

- Go to the Google Cloud Console and login as a user with appropriate permissions.
  https://console.cloud.google.com/
- From the navigation menu go to IAM and Admin > Service Accounts.
- Create a new project if required.

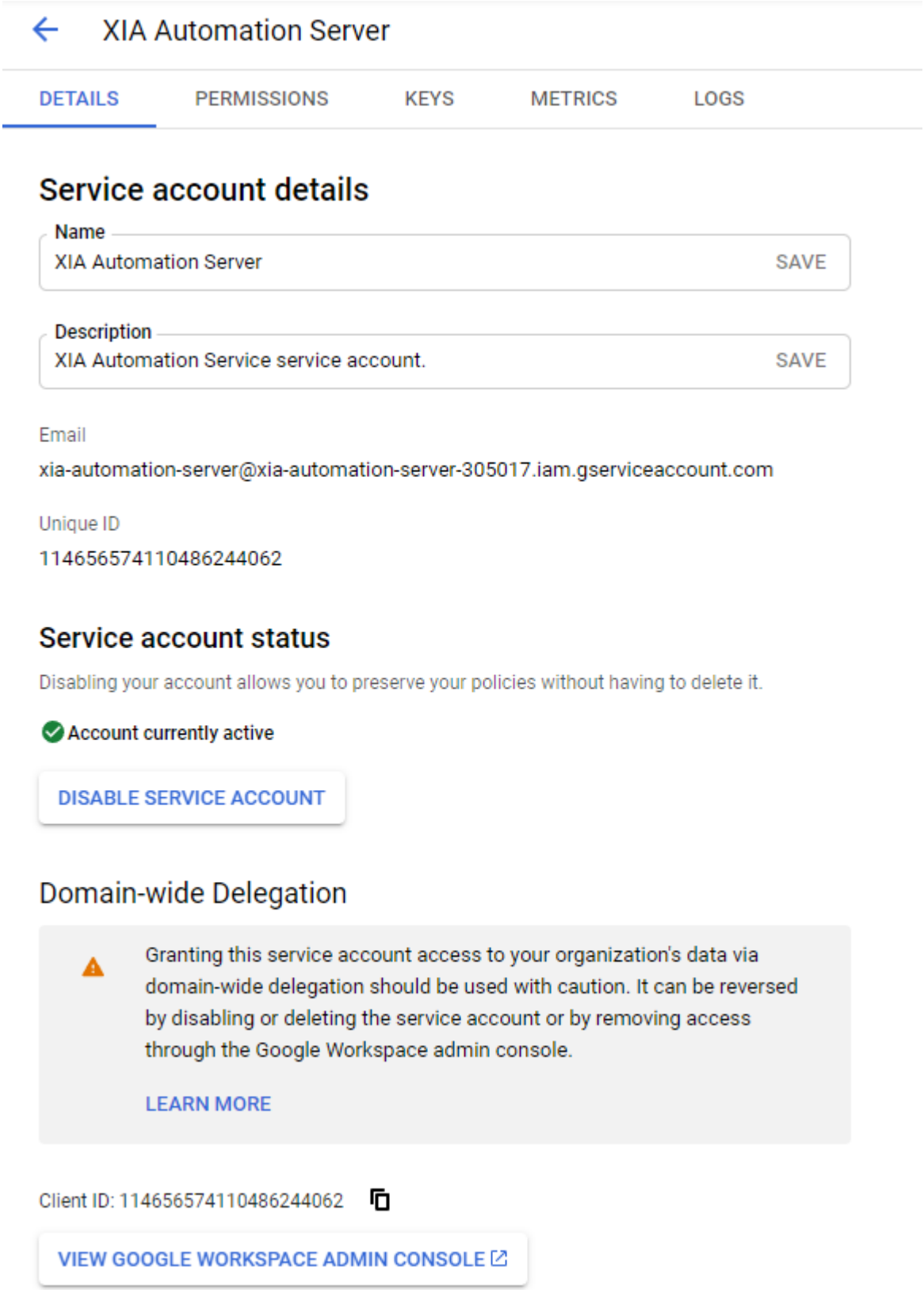


- Click the *create service account* button.

- Enter the appropriate details and click *create and continue*, and then click *done*.



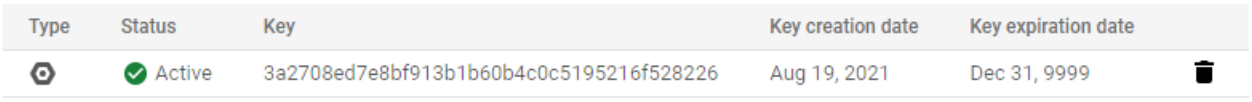
- Open the details of the service account, and click *show advanced settings*.



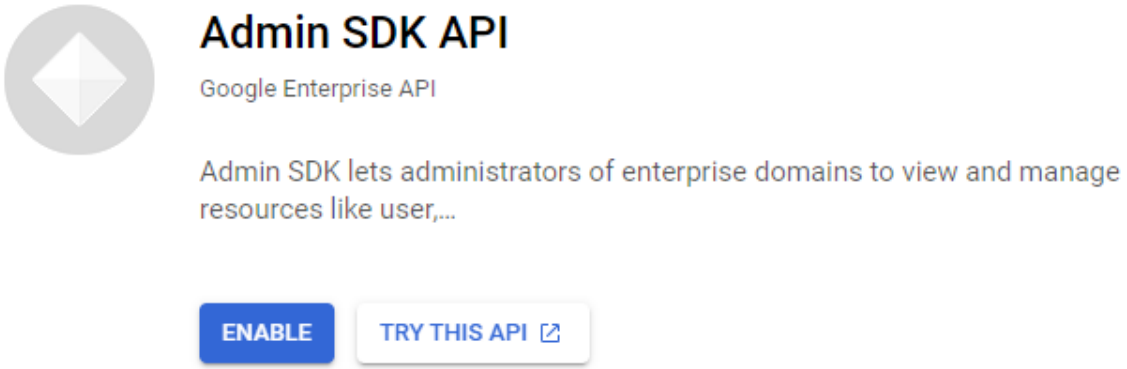
- Make a note of the value of the **Email** field - this is the **service account email** to use for the connection settings.
- Make a note of the **Client ID** - this is required later in this section.
- Go to Keys.

- Click *Add Key > Create new key > P12.*
- Save the file when prompted, this is the **private key file**.
- Make a note of the private key password.

- The key should be listed.



- From the navigation menu go to APIs & Services > Library.
- Search for the Admin SDK API and click *enable*.

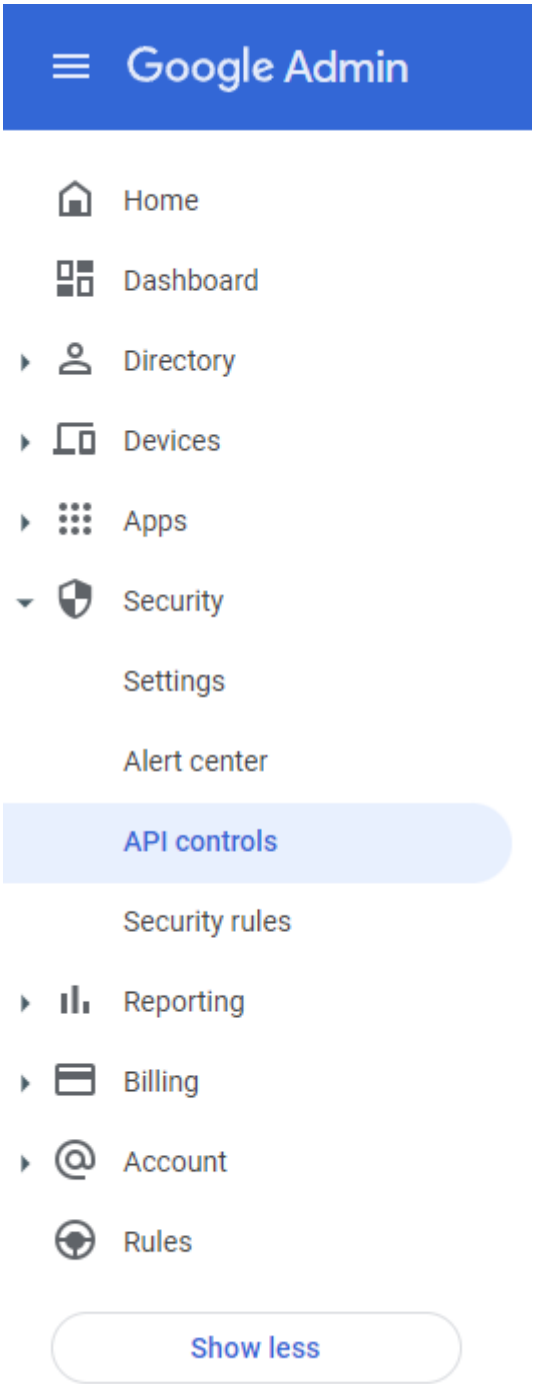


- Continue with the steps in Google Service Account Setup (Part 2).

Google Service Account Setup (Part 2)

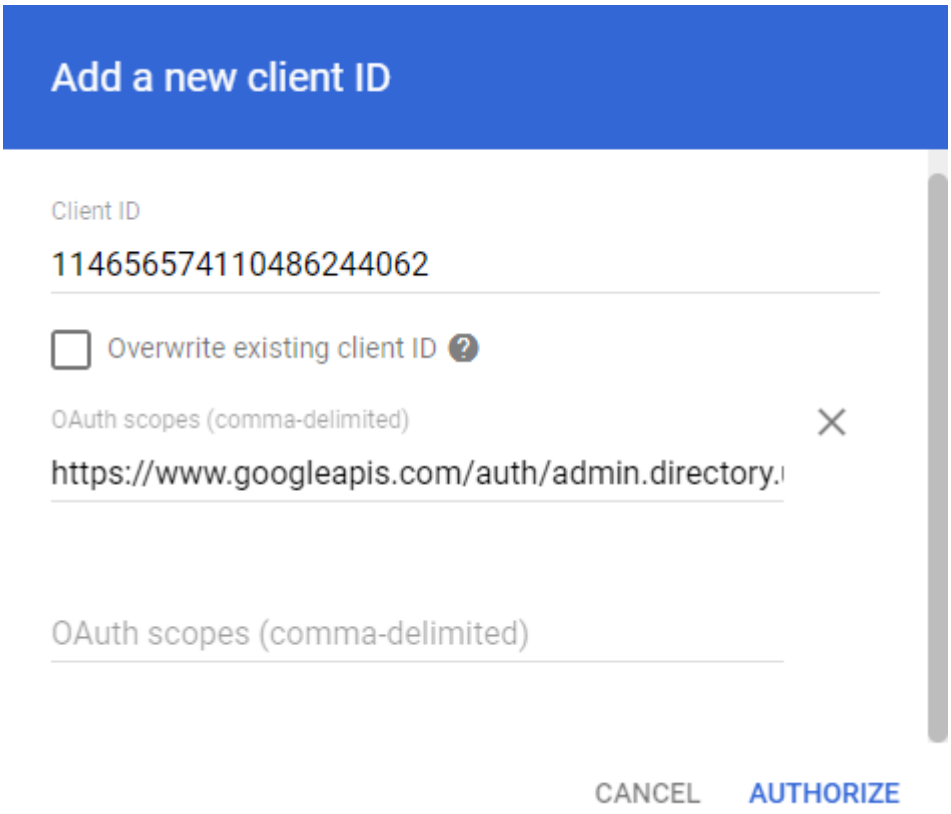
Follow the steps in Google Service Account Setup (Part 1).

- Go to the Google admin site and login as a user with appropriate permissions.
  https://admin.google.com/
- From the menu go to Security > API Controls (if security isn't visible click the *Show more* button).



- Click the *manage domain wide delegation* link.
- Click *Add New*.

- Enter the Client ID created earlier and the following scope and click *authorize.*
https://www.googleapis.com/auth/admin.directory.user

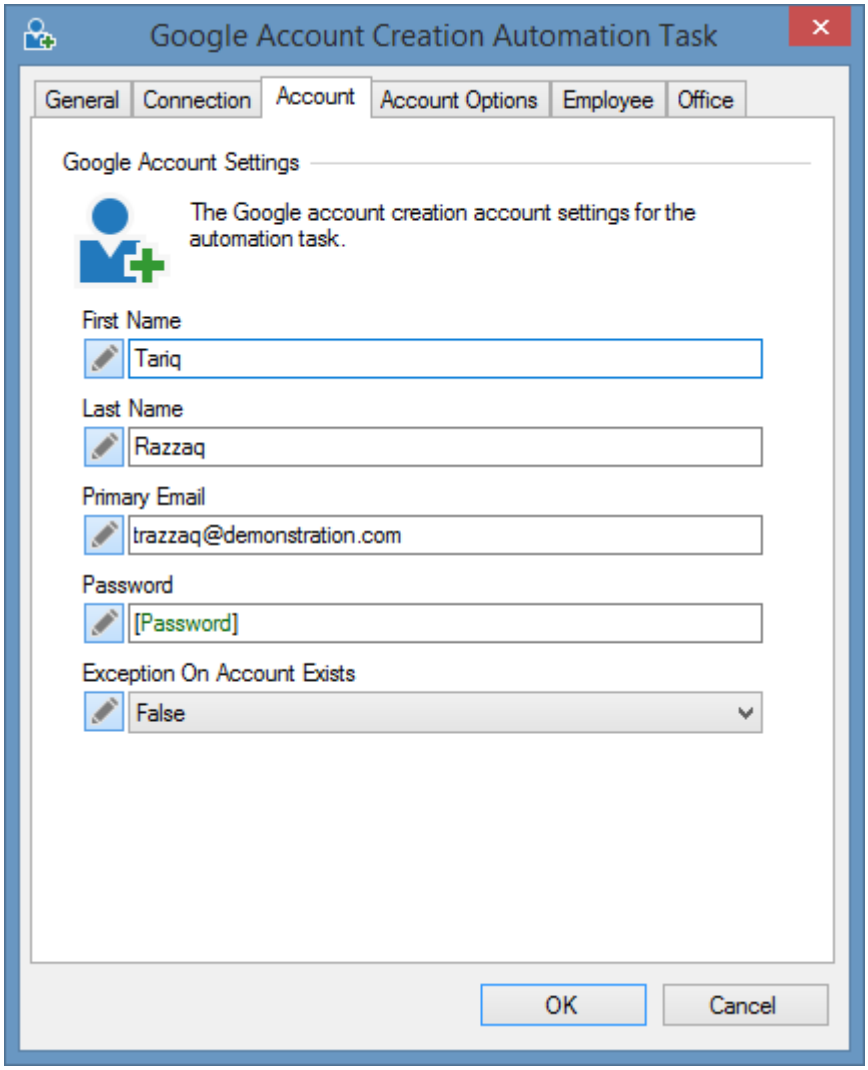


Google Account Creation Task

The Google account creation task is capable of creating a Google account.

To update an existing account see the Google account update task.

Account



First Name
The user's first name.

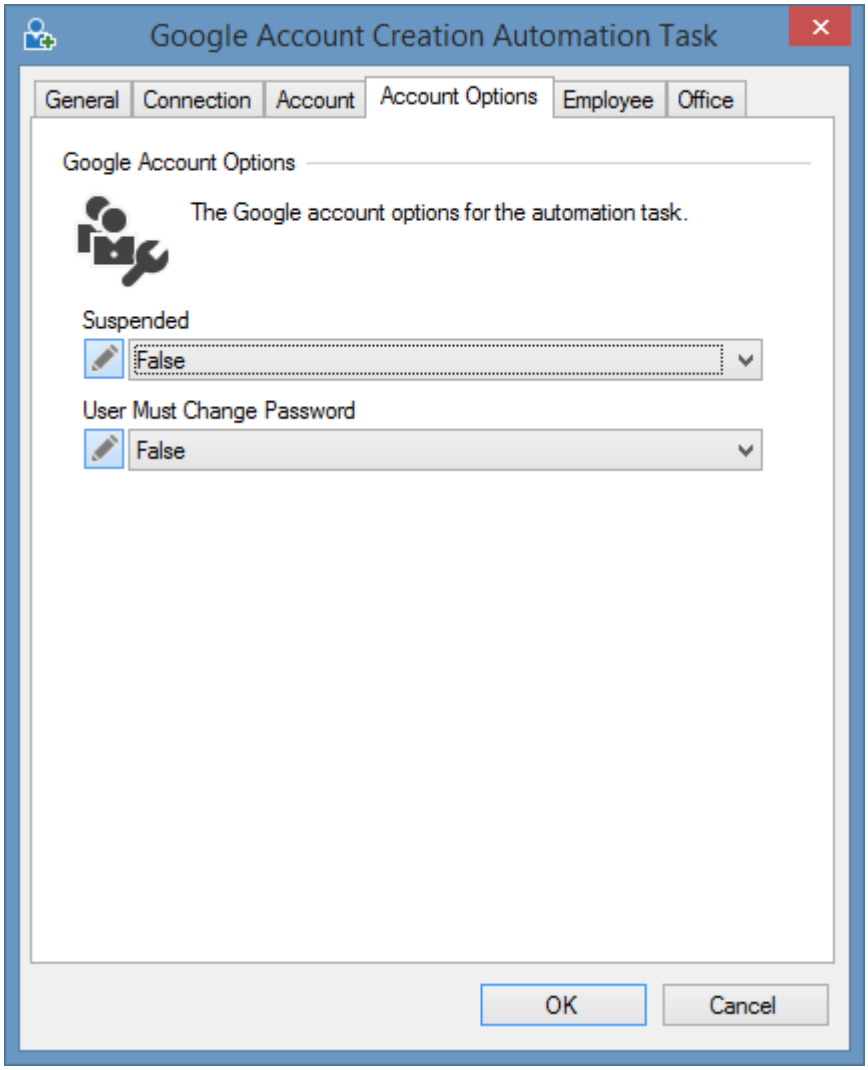
Last Name
The user's last name.

Primary Email
The primary email address for the account.

Password
The initial password to set for the account.

Exception On Account Exists
Determines whether an exception should be thrown if the account already exists.

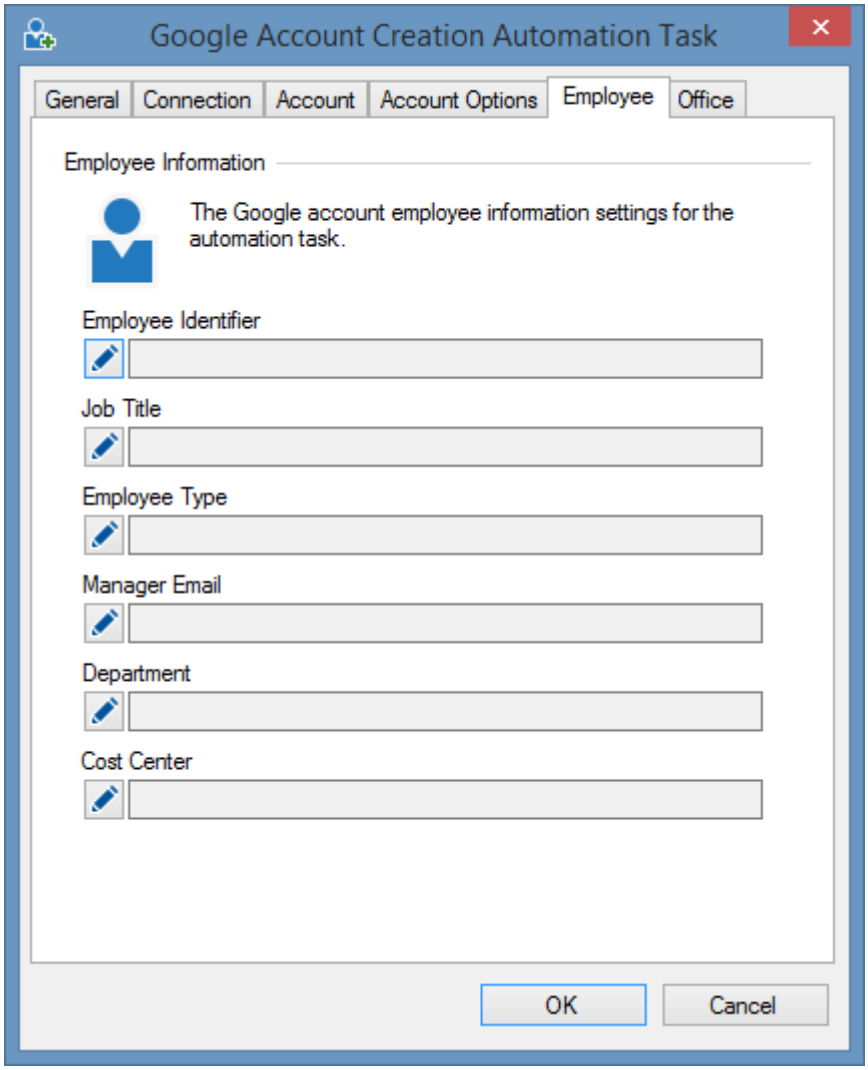
Account Options



Suspended
Determines whether the user account is suspended upon creation.

User Must Change Password
Determines whether the user must change password at next logon.

Employee



Employee Identifier
The employee identifier.

Job Title
The job title for the user account.

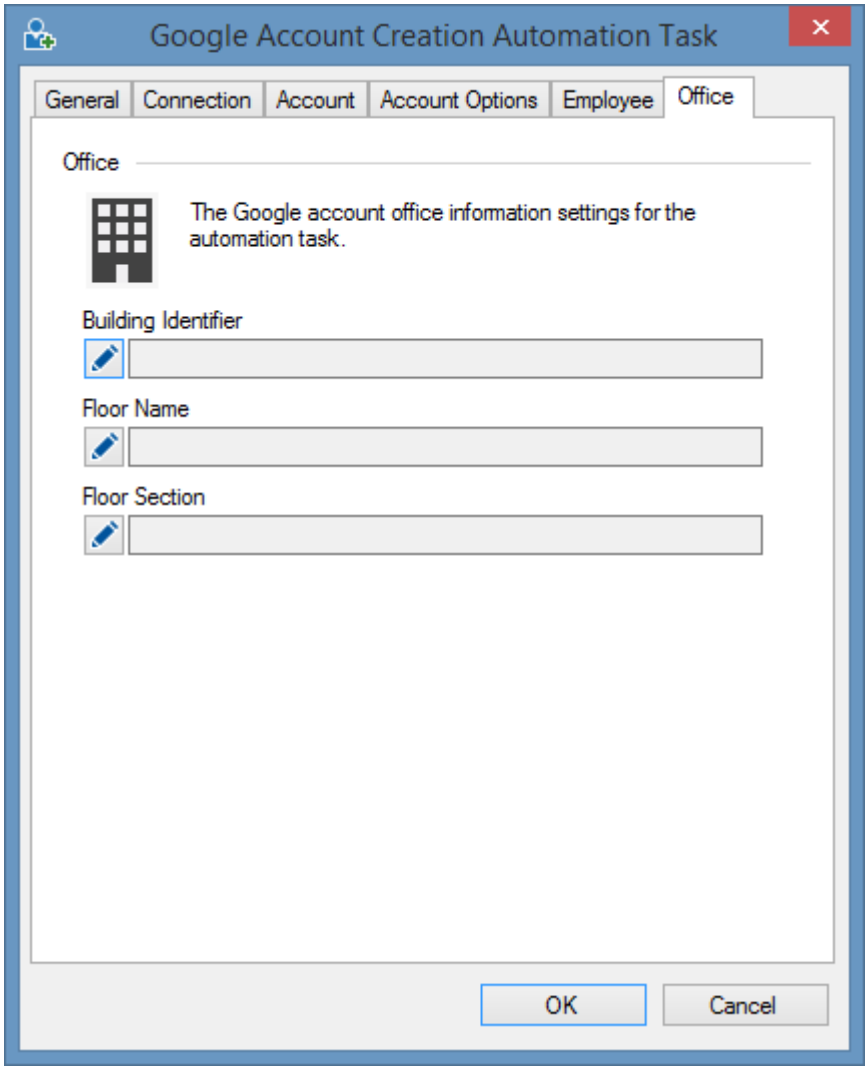
Employee Type
The employee type.

Manager Email
The email address of the manager.

Department
The department of the user account.

Cost Center
The cost center for the user account.

Office



Building Identifier
The building identifier.

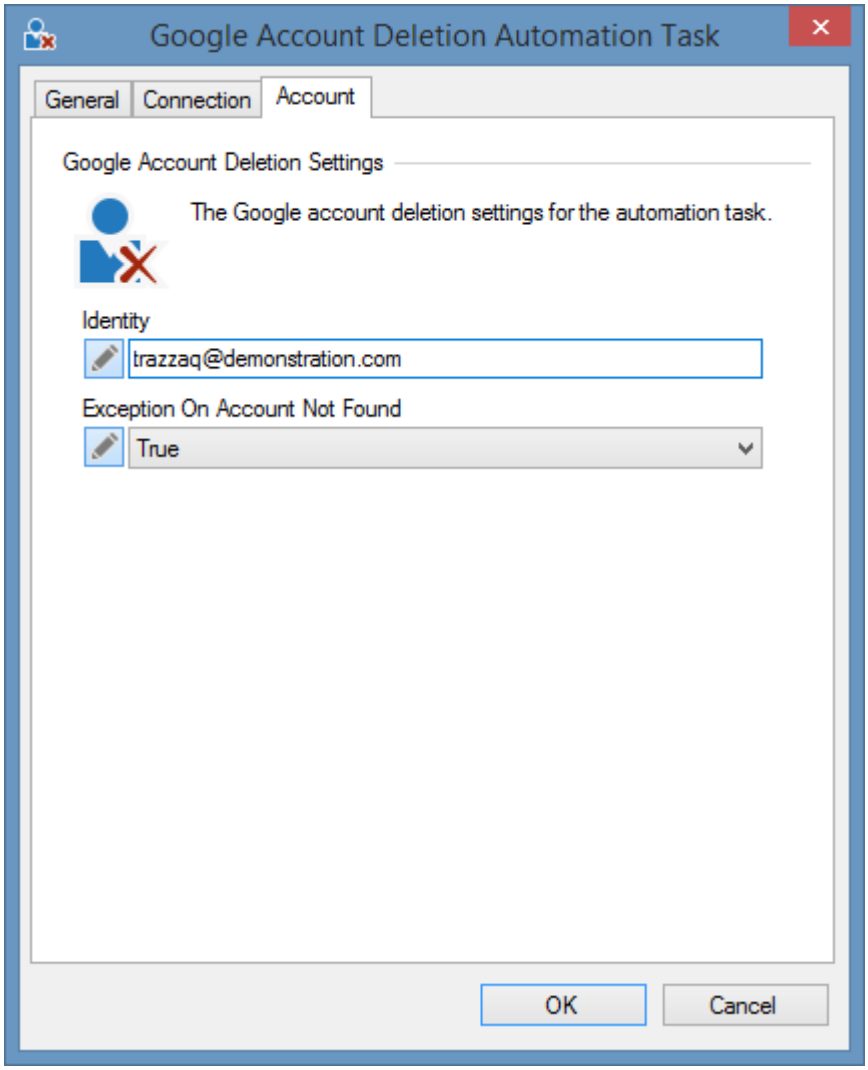
Floor Name
The name of the floor on which the user resides.

Floor Section
The floor section.

Google Account Deletion Task

The Google account deletion task is capable of deleting a Google account with the specified identity.

Account



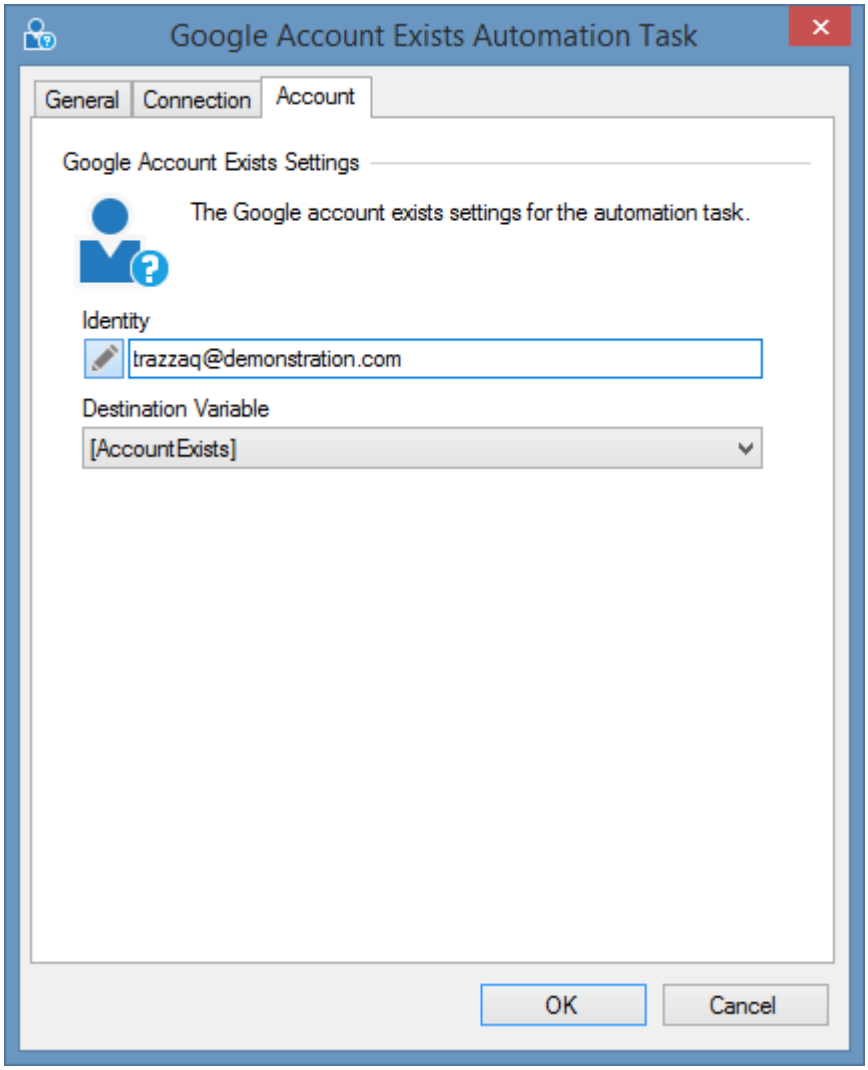
Identity
The identity of the account to delete. This can be the user's primary email address, the unique user identifier, or one of the user's alias email addresses.

Exception On Account Not Found
Determines whether an exception should be thrown if the account with the specified identity does not exist.

Google Account Exists Task

The Google account exists task is capable of determining whether a Google account with the specified identity exists in the environment.

Account



Identity
The identity of the account to locate. This can be the user's primary email address, the unique user identifier, or one of the user's alias email addresses.

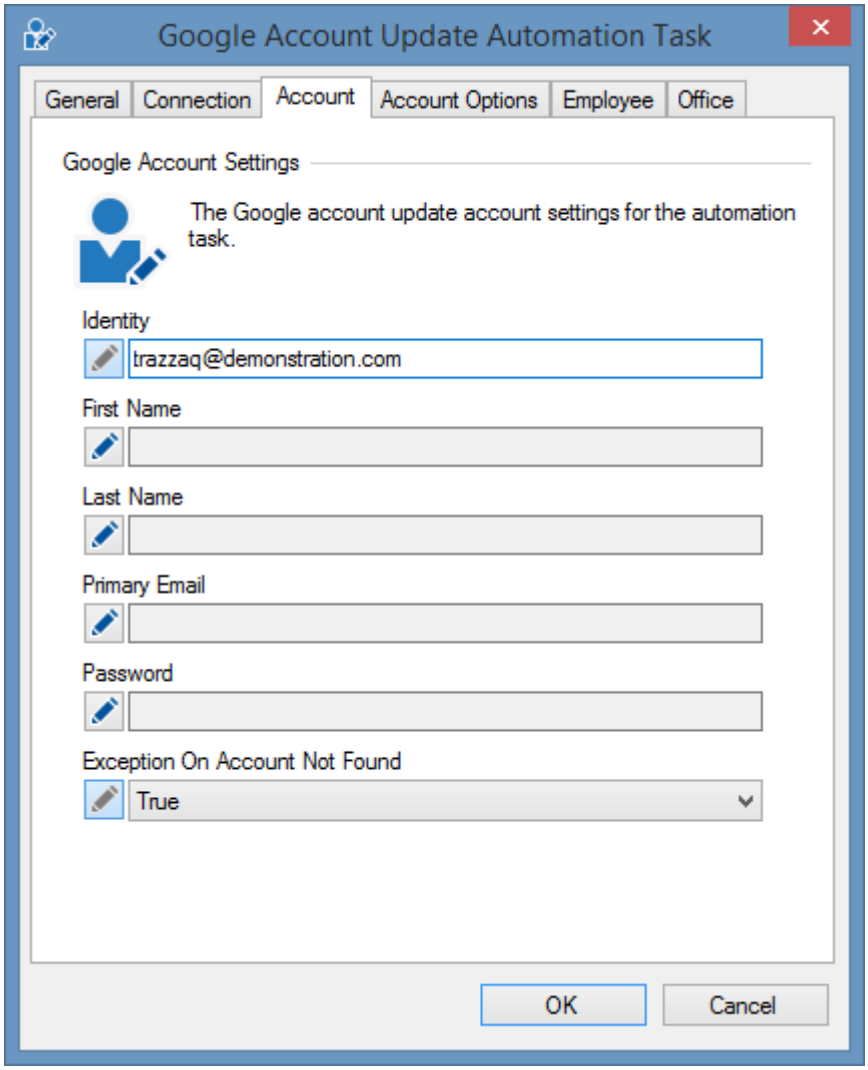
Destination Variable
The boolean variable in which to store the return value.

Google Account Update Task

The Google account update task is capable of updating an existing Google account.

To create a new account see the Google account creation task.

Account



Identity
The identity of the account to update. This can be the user's primary email address, the unique user identifier, or one of the user's alias email addresses.

First Name
The user's first name.

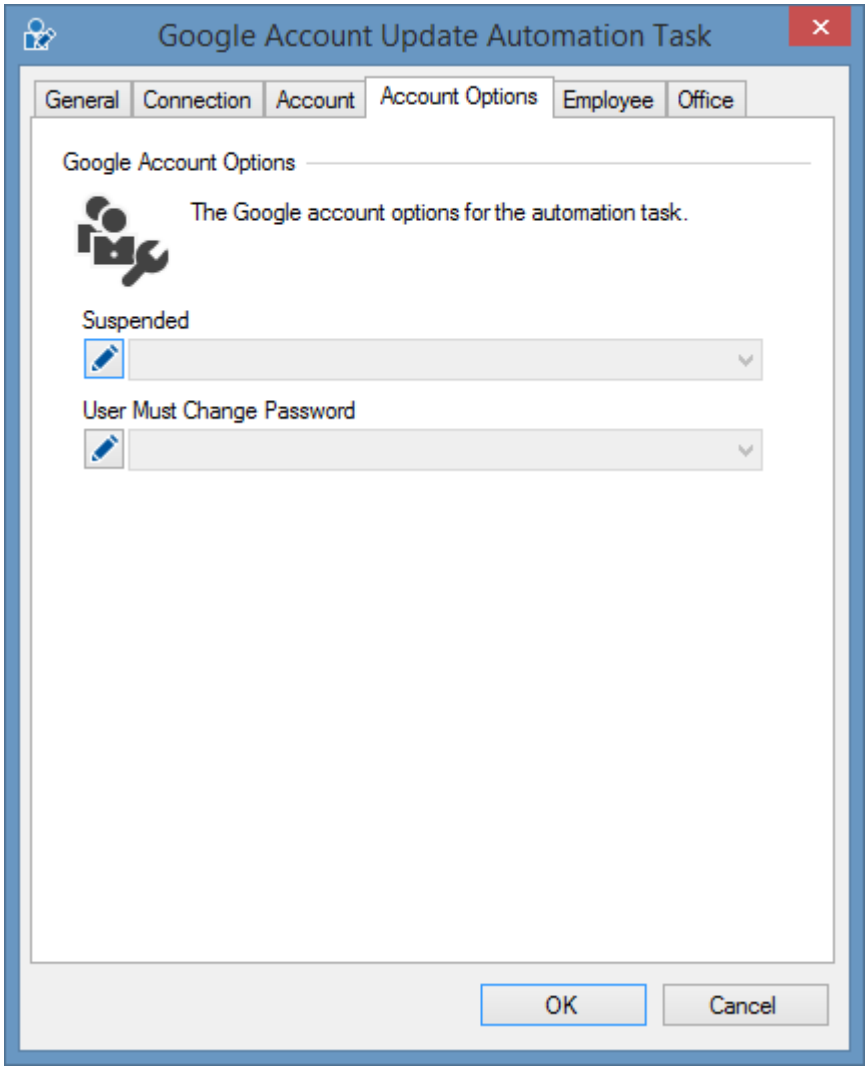
Last Name
The user's last name.

Primary Email
The new primary email address for the account.

Password
The new password to set for the account.

Exception On Account Not Found
Determines whether an exception should be thrown if the account to update does not exist.

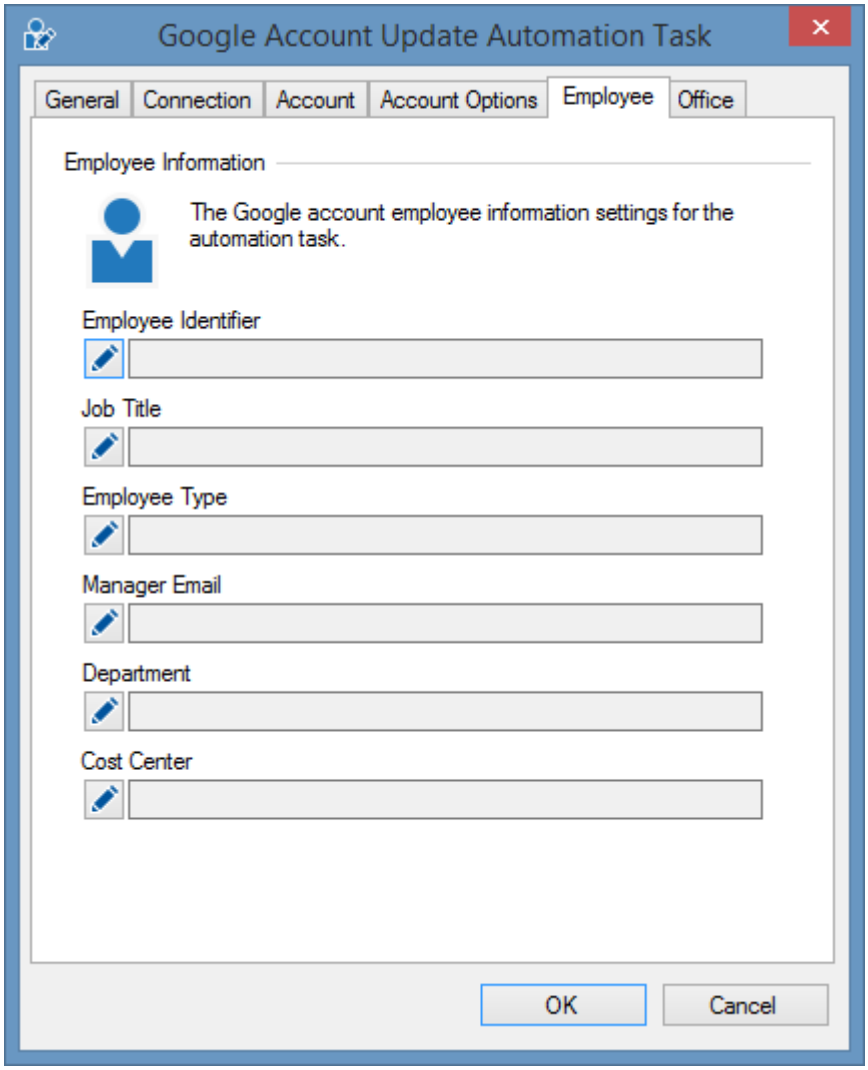
Account Options



Suspended
Determines whether the user account is suspended.

User Must Change Password
Determines whether the user must change password at next logon.

Employee



Employee Identifier
The employee identifier.

Job Title
The job title for the user account.

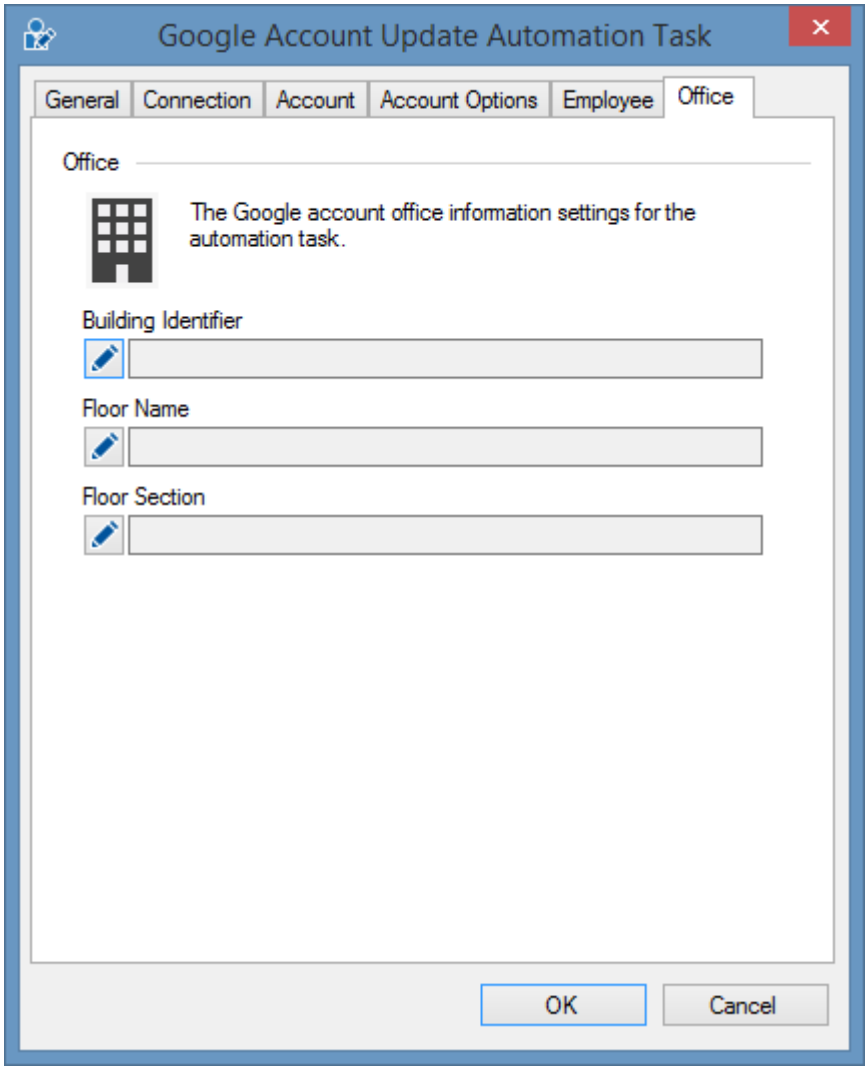
Employee Type
The employee type.

Manager Email
The email address of the manager.

Department
The department of the user account.

Cost Center
The cost center for the user account.

Office



Building Identifier
The building identifier.

Floor Name
The name of the floor on which the user resides.

Floor Section
The floor section.

Troubleshooting

This section highlights the known issues for the Google based automation tasks and provides details of the solutions.

The specified network password is not correct

Symptoms
When executing a Google based automation task you receive the following error.
The specified network password is not correct.

Cause
The private key password specified in the connection settings is incorrect.

Resolution
Enter the correct private key password in the connection settings.

Invalid email or User ID

Symptoms
When executing a Google based automation task you receive the following error.
Error connecting to Google. Invalid email or User ID.

Cause
The delegated user email or service account email setting specified in the connection settings is incorrect.

Resolution
Enter the correct delegated user email and service account email in the connection settings.

403 Forbidden

Symptoms
When executing a Google based automation task you receive the following error.
The remote server returned an error: (403) Forbidden.

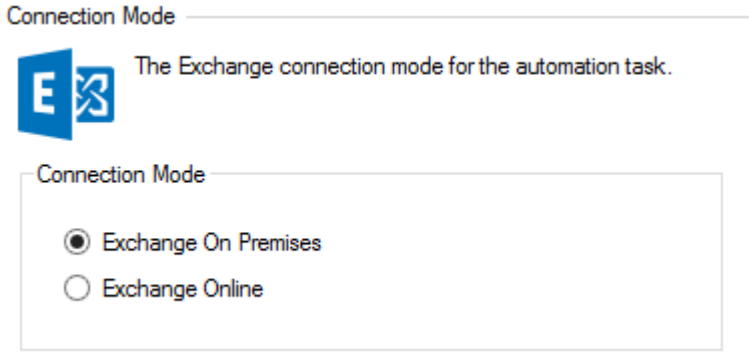
Cause
The Admin SDK API has not been enabled.

Resolution
Review the steps in the section Google Service Account Setup (Part 1) and ensure that the Admin SDK API has been enabled.

Microsoft Exchange

The Microsoft Exchange automation tasks perform actions relating to Microsoft Exchange Online and Microsoft Exchange On-Premises management.

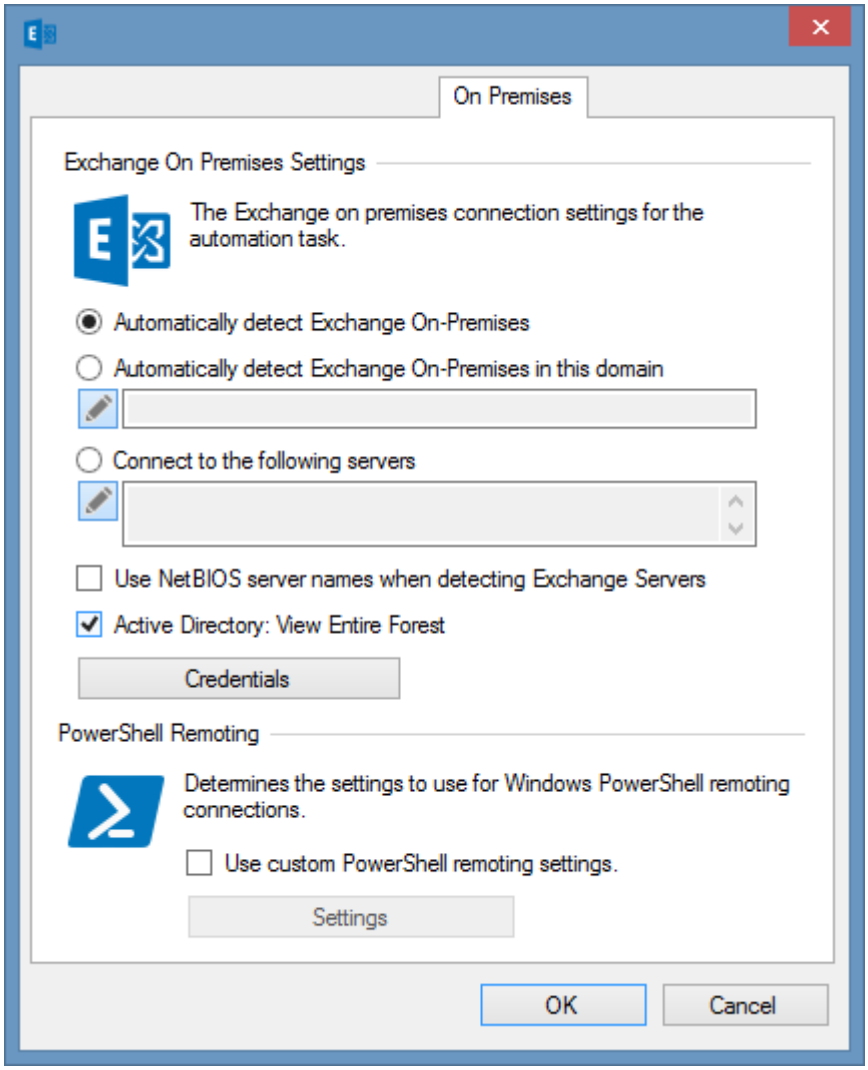
Connection



Exchange On Premises
Connects to a Microsoft Exchange Premises organization in your environment.

Exchange Online
Connects to Microsoft Exchange Online.

Exchange On Premises



Automatically detect Exchange On-Premises
Connects to the Active Directory forest to which the machine running XIA Automation Server is a member and executes a query to locate Microsoft Exchange Servers.

Automatically detect Exchange On-Premises in this domain
Connects to the Active Directory forest to which the specified domain belongs and executes a query to locate Microsoft Exchange Servers.

Connect to the following servers
Attempts to connect to the specified Exchange Servers in order.

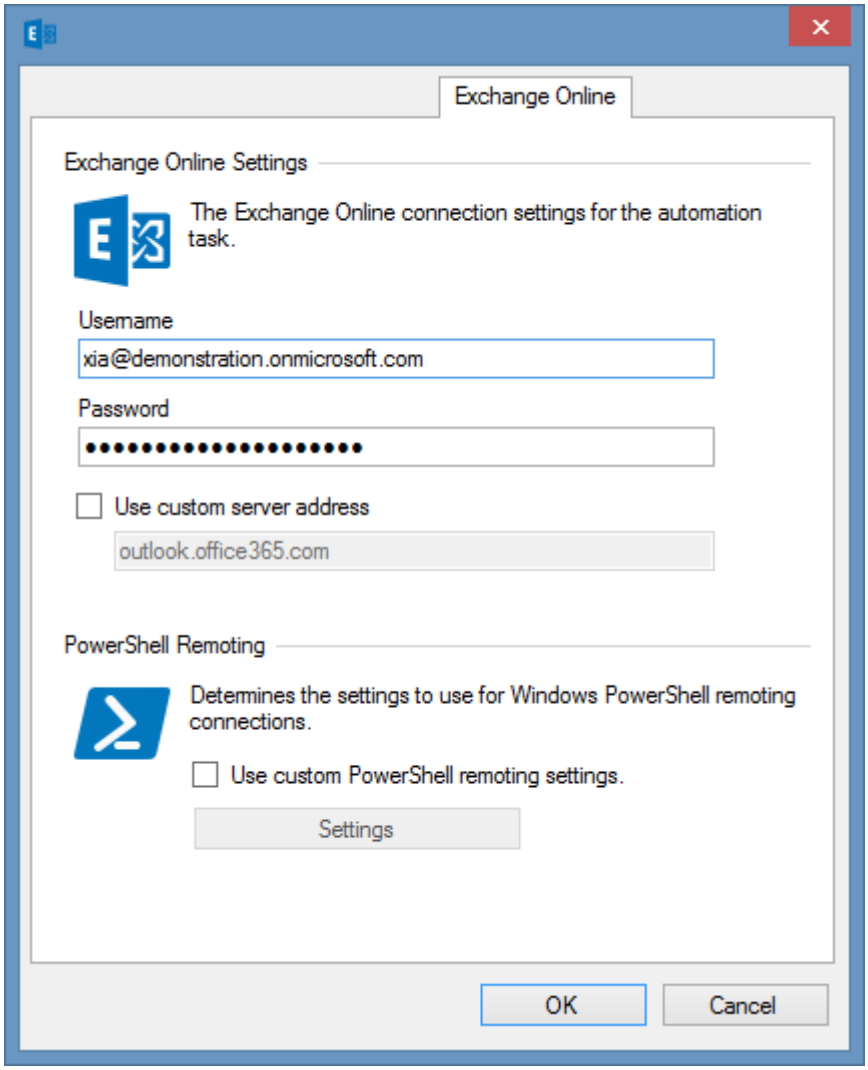
Use NetBIOS names when detecting Exchange Servers
When automatically detecting Exchange Servers determines whether to use the NetBIOS names of the Exchange Servers for the connections instead of the fully qualified domain name.

Active Directory: View Entire Forest
Determines whether all objects in the forest are viewed by the PowerShell session.

Credentials
Determines the credentials to use for the connection.

Use custom PowerShell remoting settings
The custom PowerShell remoting connection settings to use.

Exchange Online



Username
The username for the connection.

Password
The password for the connection.

Use custom server address
The custom server address for the connection.

Use custom PowerShell remoting settings
The custom PowerShell remoting connection settings to use.

Exchange Mailbox Disable Task

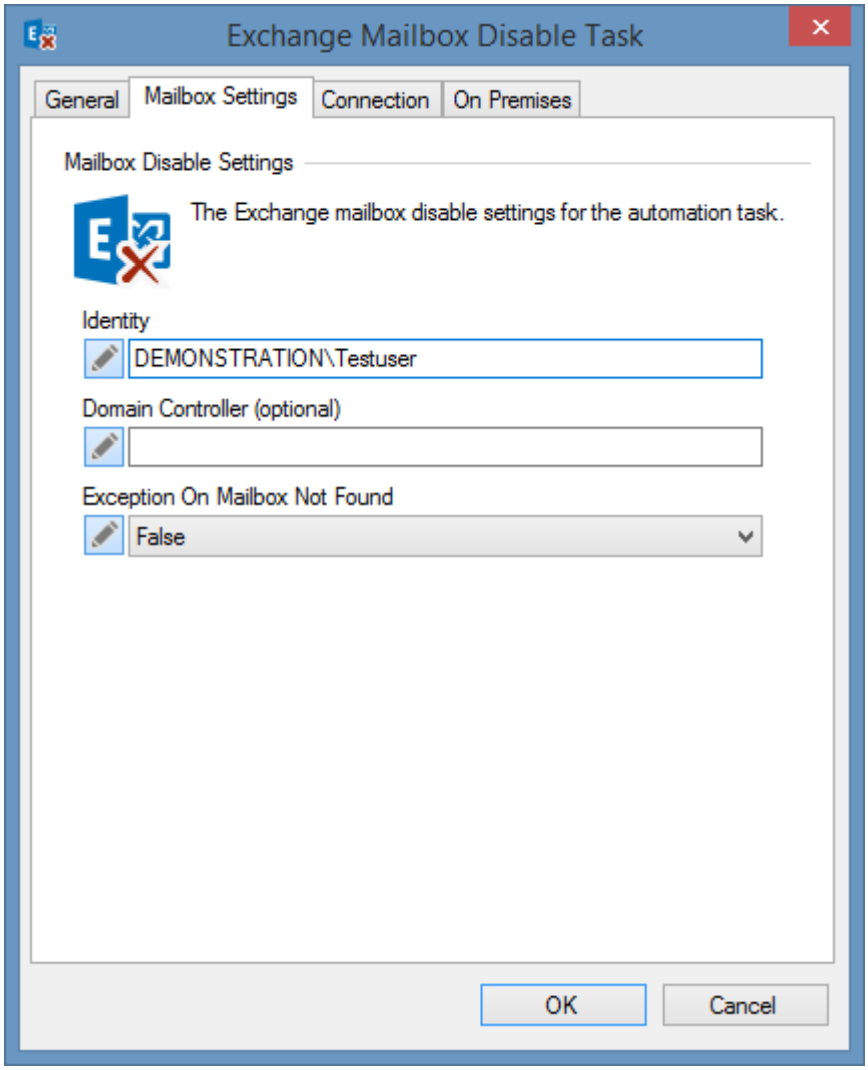
The Exchange mailbox disable task is capable of mailbox disabling an account on Microsoft Exchange On-Premises.

For more information see the Disable-Mailbox cmdlet.

The following Exchange versions are supported.

- Microsoft Exchange 2019
- Microsoft Exchange 2016
- Microsoft Exchange 2013
- Microsoft Exchange 2010

Mailbox Settings



Identity
The identity of the account to mailbox disable.

Domain Controller
The Active Directory domain controller to use to perform the operation.

Exception On Mailbox Not Found
Determines whether an exception is thrown if the mailbox to disable does not exist.

Exchange Mailbox Enable Task

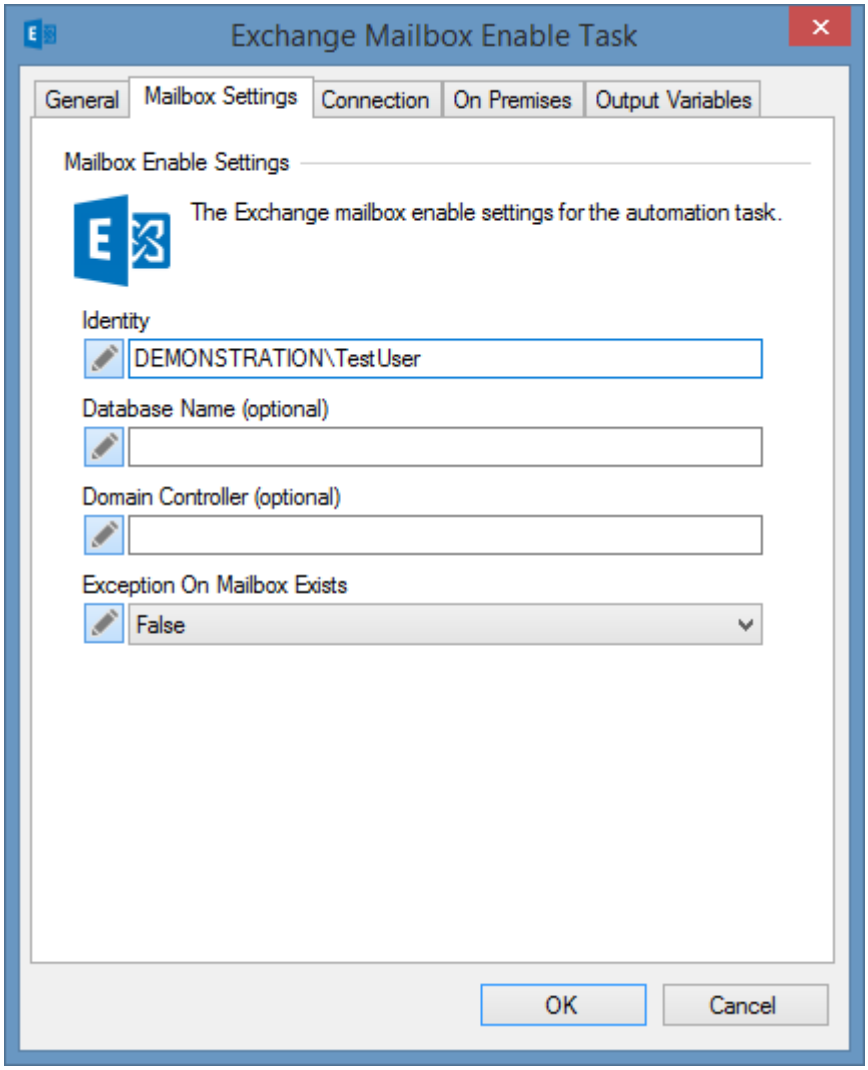
The Exchange mailbox enable task is capable of mailbox enabling an account on Microsoft Exchange On-Premises.

For more information see the Enable-Mailbox cmdlet.

The following Exchange versions are supported.

- Microsoft Exchange 2019
- Microsoft Exchange 2016
- Microsoft Exchange 2013
- Microsoft Exchange 2010

Mailbox Settings



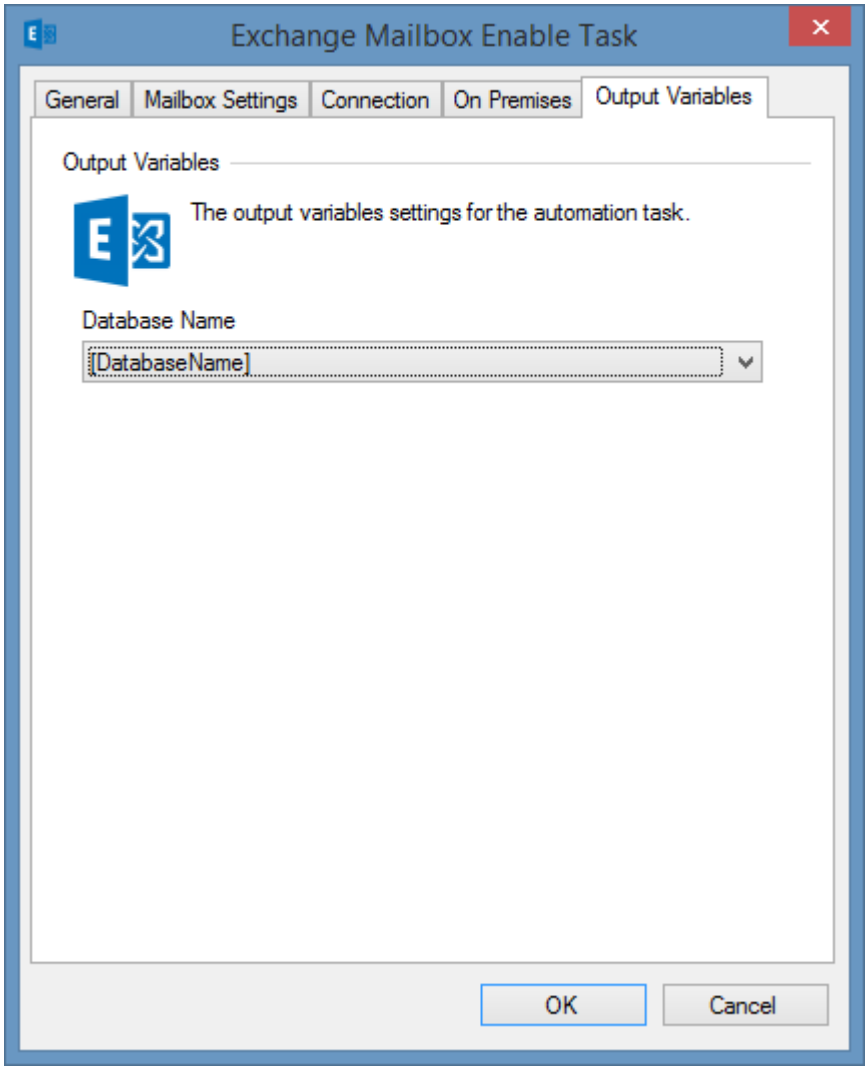
Identity
The identity of the account to mailbox enable.

Database Name
The database in which to create the mailbox.

Domain Controller
The Active Directory domain controller to use to perform the operation.

Exception On Mailbox Exists
Determines whether an exception is thrown if the mailbox already exists.

Output Variables



Database Name
The string variable in which to store the name of the database in which the mailbox was created.

Exchange User Photo Update Task

The Exchange user photo update task is capable of updating or removing a user's photo on Microsoft Exchange On-Premises and Exchange Online.

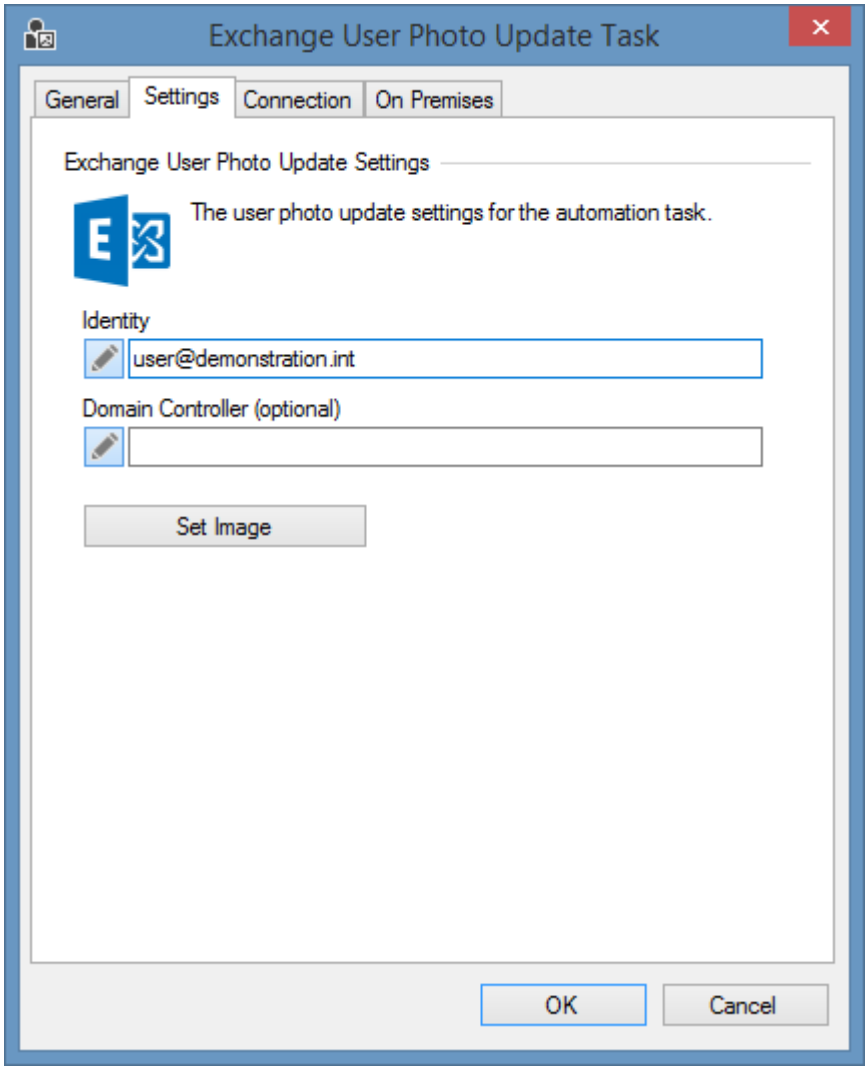
NOTE: Updating the photo of a user in Exchange Online updates their primary photo in Microsoft 365.

For more information see the Set-UserPhoto cmdlet.

The following Exchange versions are supported.

- Microsoft Exchange Online
- Microsoft Exchange 2019
- Microsoft Exchange 2016
- Microsoft Exchange 2013
- Microsoft Exchange 2010

Settings



Identity
The identity of the account for which the user photo is to be updated.

Domain Controller
The Active Directory domain controller to use to perform the operation. This only applies to Microsoft Exchange On-Premises.

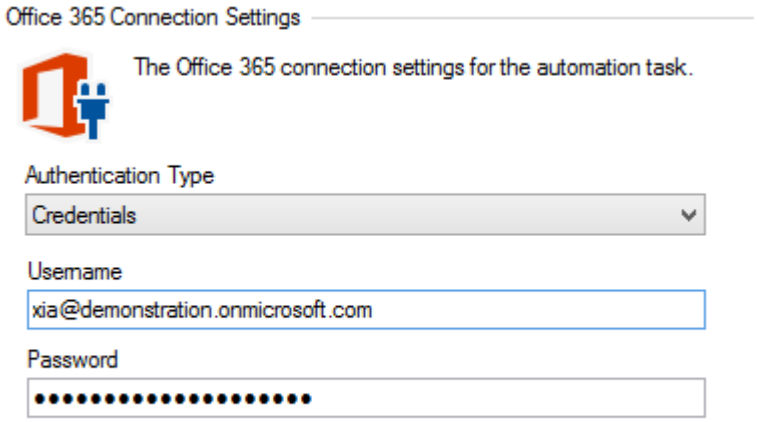
Set Image
Displays the image automation property form to allow setting of the image to use as the user photo.

Office 365

The Office 365 automation tasks perform actions relating to Microsoft Office 365 account management.

Connection Settings

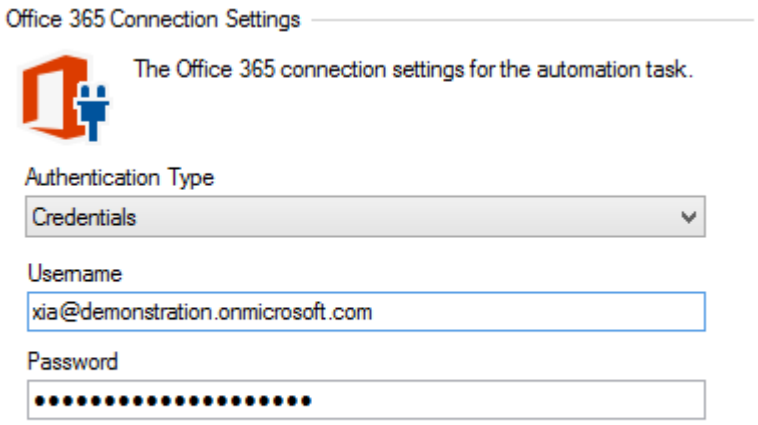
The connection to Office 365 can use standard username and password credentials, or a service principal with certificate, or service principal with a client secret.



Credentials

The connection to Office 365 can use standard username and password credentials.

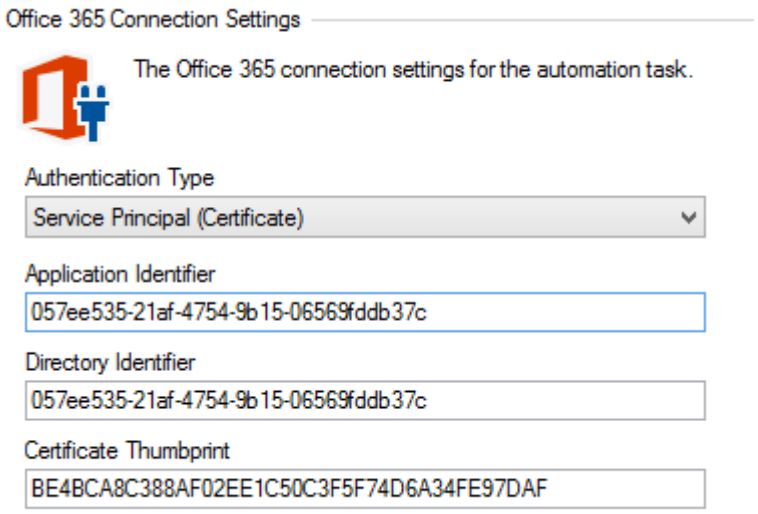
NOTE: This has now been deprecated and may be removed in a future release. Please use service principal authentication.



Username
The username of the account to use for the connection.

Password
The password to use for the connection.

Service Principal (Certificate)



Application Identifier
The unique identifier of the application.

Directory Identifier
The unique identifier of the Entra directory.

Certificate Thumbprint
The thumbprint of the certificate to use for authentication.

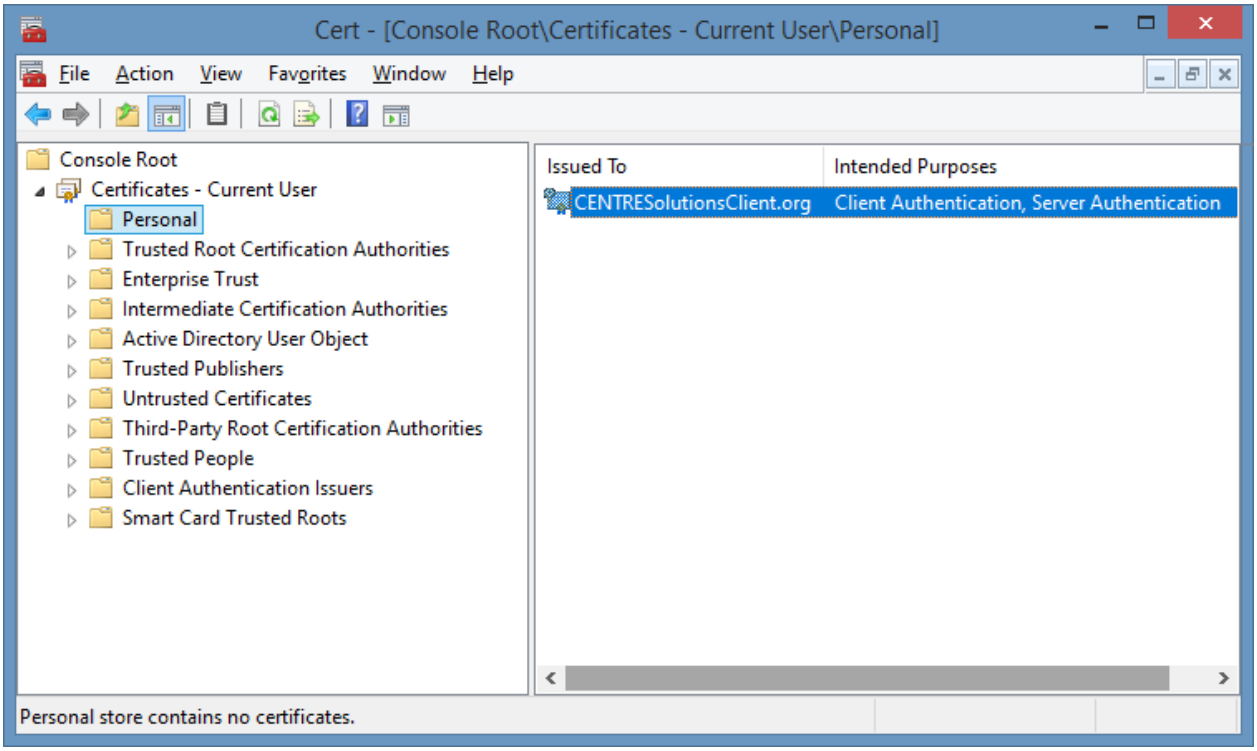
For more information see the Office 365 service principal certificate setup section.

Office 365 Service Principal Certificate Setup

Follow these steps to enable login using a service principal with client certificate.

For more information see
https://learn.microsoft.com/entra/identity-platform/howto-create-service-principal-portal

- Ensure that you have a client certificate available in the Personal store of the Current User in the certificates management console.



- Export the certificate to DER encoded binary X.509 (.CER) format.
- Logon to the Entra admin center as a user account with the sufficient permissions.
- Go to Applications > App Registrations.
- Click New Registration.
- Enter an appropriate name - for example "XIA Automation Server".
- For supported account types select
  Accounts in this organizational directory only
- Do not specify a Redirect URI.
- Click *Register*.
- Make a note of the following values

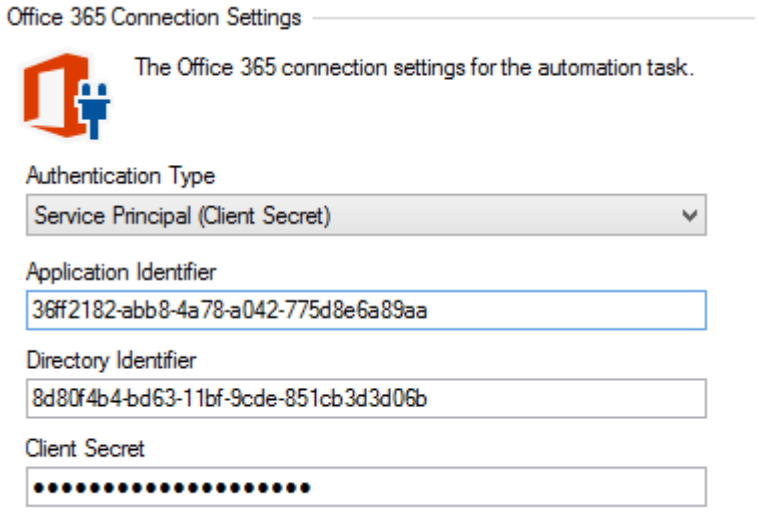
Application (client) ID
Directory (tenant) ID

- Go to *Certificates & secrets.*
- Ensure that the *Certificates* tab is selected.
- Click *Upload Certificate*.
- Browse to the exported .CER file.
- Copy the **thumbprint value**.
- Go to Applications > App Registrations > *XIA Automation Server* > API Permissions.
- Click *Add a permission*.
- Select Azure Service Management > user_impersonation.
- Click *Add* and ensure the permission is listed.
- Click the *Grant admin consent* button.

API / Permissions name	Type	Description	Admin c...	Status
Azure Service Management (1)				
user_impersonation	Delegated	Access Azure Service Manage...	No	Granted for CENTREL SOLUTIONS LTD
Microsoft Graph (1)				
User.Read	Delegated	Sign in and read user profile	No	Granted for CENTREL SOLUTIONS LTD

- Go to Roles & Admins.
- Assign the *XIA Automation Server* service principal the permissions required to execute the automation tasks.

Service Principal (Client Secret)



Application Identifier
The unique identifier of the application.

Directory Identifier
The unique identifier of the Entra directory.

Client Secret
The client secret.

For more information see the Office 365 service principal client secret setup section.

Office 365 Service Principal Client Secret Setup

Follow these steps to enable login using a service principal with client secret.

For more information see
https://learn.microsoft.com/entra/identity-platform/howto-create-service-principal-portal

- Ensure that the requirements are met.
- Logon to the Entra admin center as a user account with the sufficient permissions.
- Go to Applications > App Registrations.
- Click New Registration.
- Enter an appropriate name - for example "XIA Automation Server".
- For supported account types select
  Accounts in this organizational directory only
- Do not specify a Redirect URI.
- Click *Register*.
- Make a note of the following values

  Application (client) ID
  Directory (tenant) ID
- Go to *Certificates & secrets.*
- Ensure the *Client secrets* tab is selected.
- Click *New Client Secret*.
- Enter a description and appropriate expiry.
- Copy the **client secret value**.
- Go to Applications > App Registrations > *XIA Automation Server* > API Permissions.
- Click *Add a permission*.
- Select Azure Service Management > user_impersonation.
- Click *Add* and ensure the permission is listed.
- Click the *Grant admin consent* button.

API / Permissions name	Type	Description	Admin c...	Status
Azure Service Management (1)				
user_impersonation	Delegated	Access Azure Service Manage...	No	Granted for CENTREL SOLUTIONS LTD
Microsoft Graph (1)				
User.Read	Delegated	Sign in and read user profile	No	Granted for CENTREL SOLUTIONS LTD

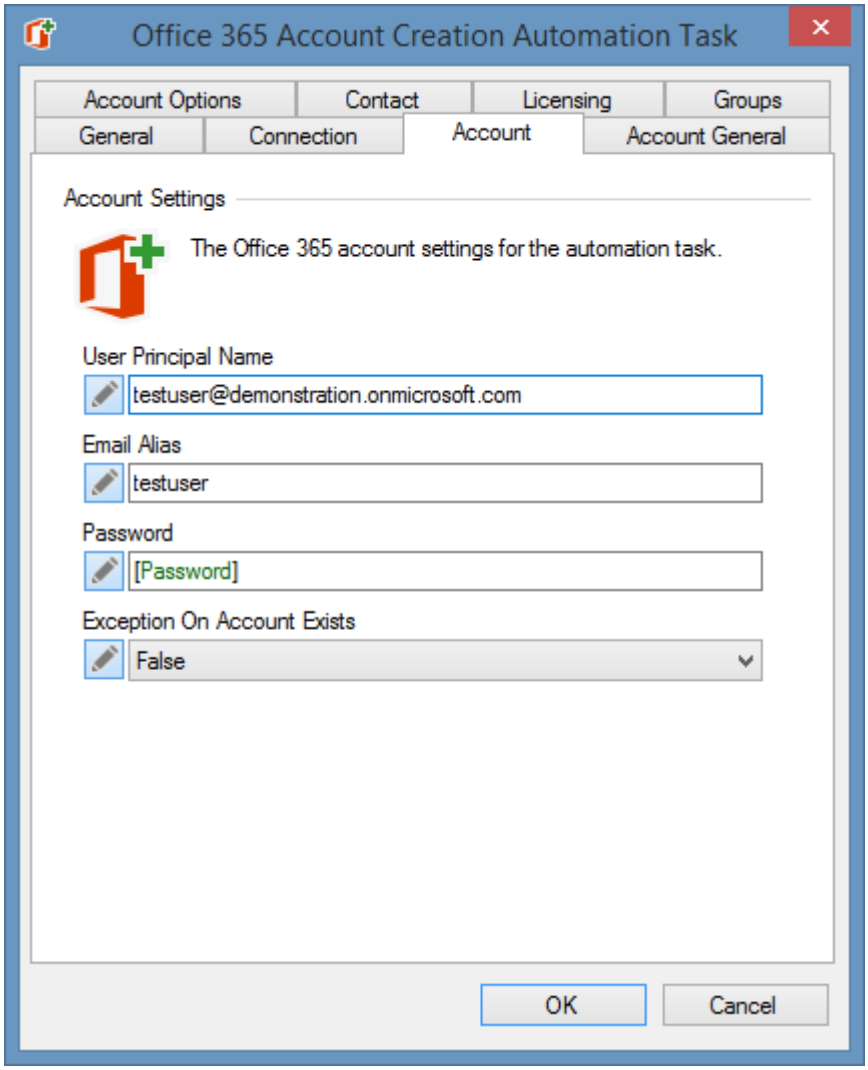
- Go to Roles & Admins.
- Assign the *XIA Automation Server* service principal the permissions required to execute the automation tasks.

Office 365 Account Creation Task

The Office 365 account creation task is capable of creating an Office 365 account.

To update an existing Office 365 account see the Office 365 account update task.

Account



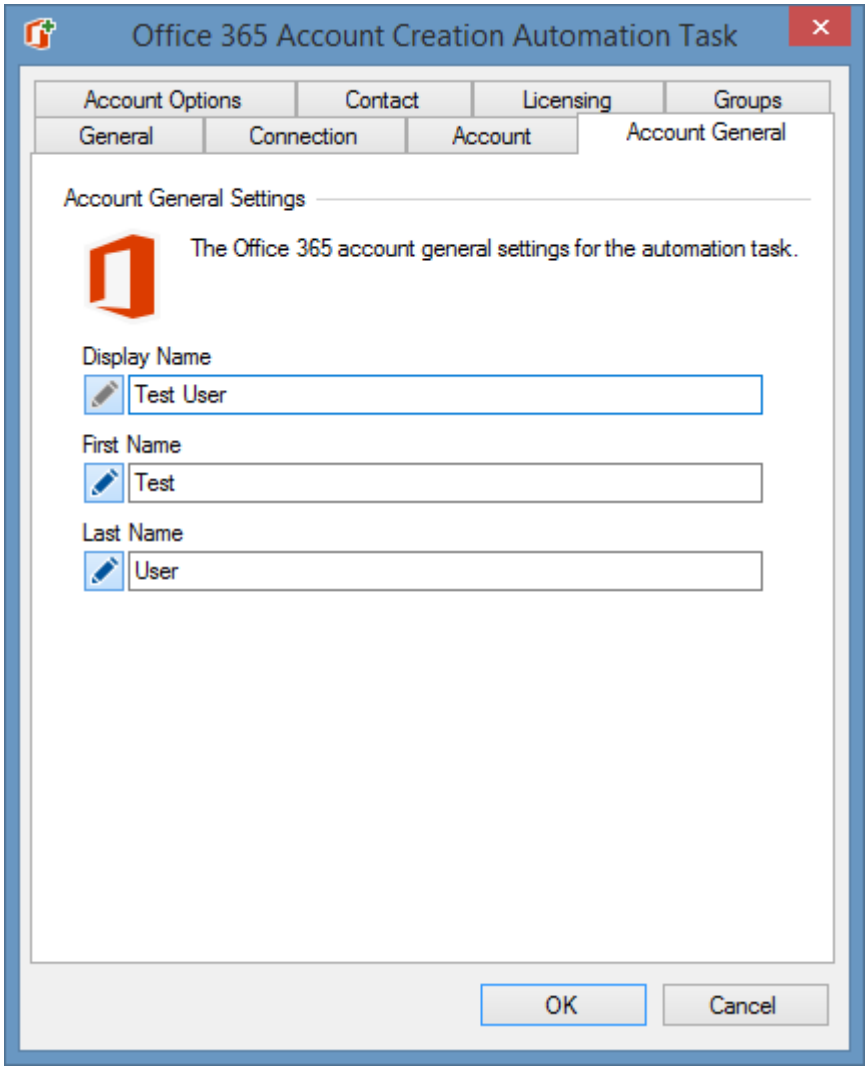
User Principal Name
The user principal name of the account to create.

Email Alias
The email alias for the account.

Password
The password to assign to the new account.

Exception On Account Exists
Determines whether an exception should be thrown if the account with the specified user principal name already exists.

Account General

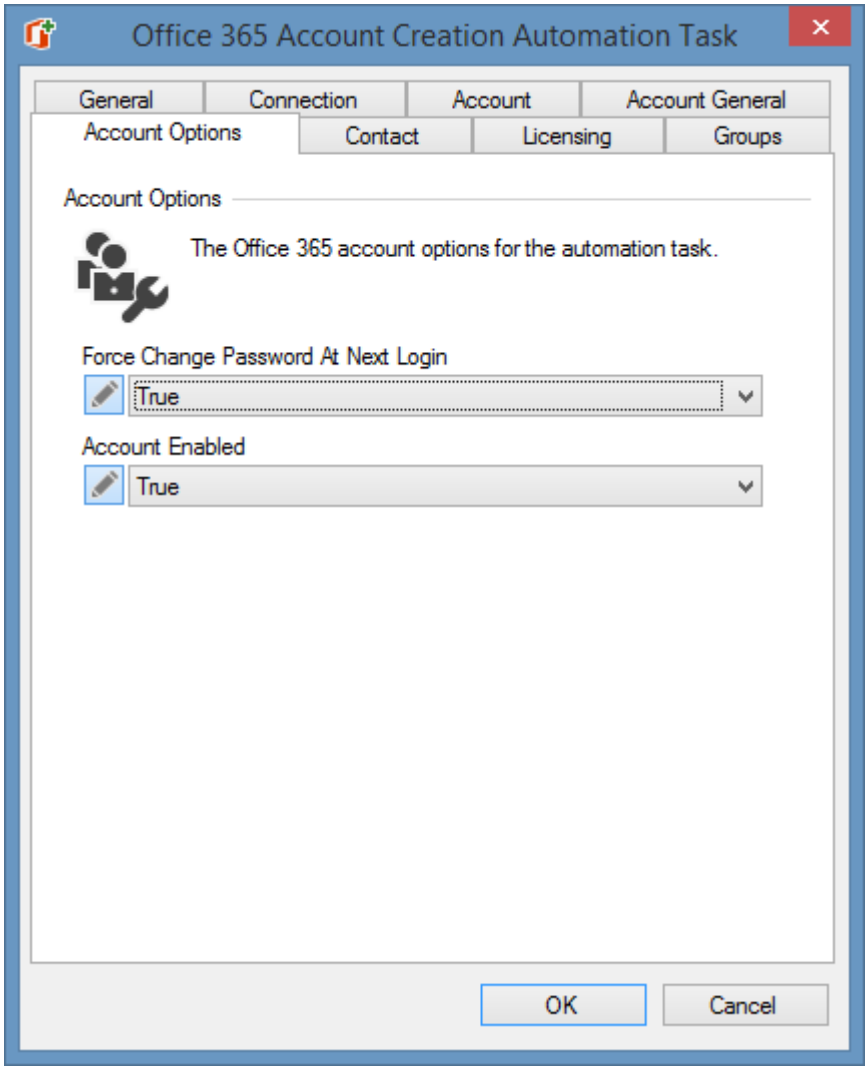


Display Name
The display name of the account.

First Name
The optional first name of the user.

Last Name
The optional last name of the user.

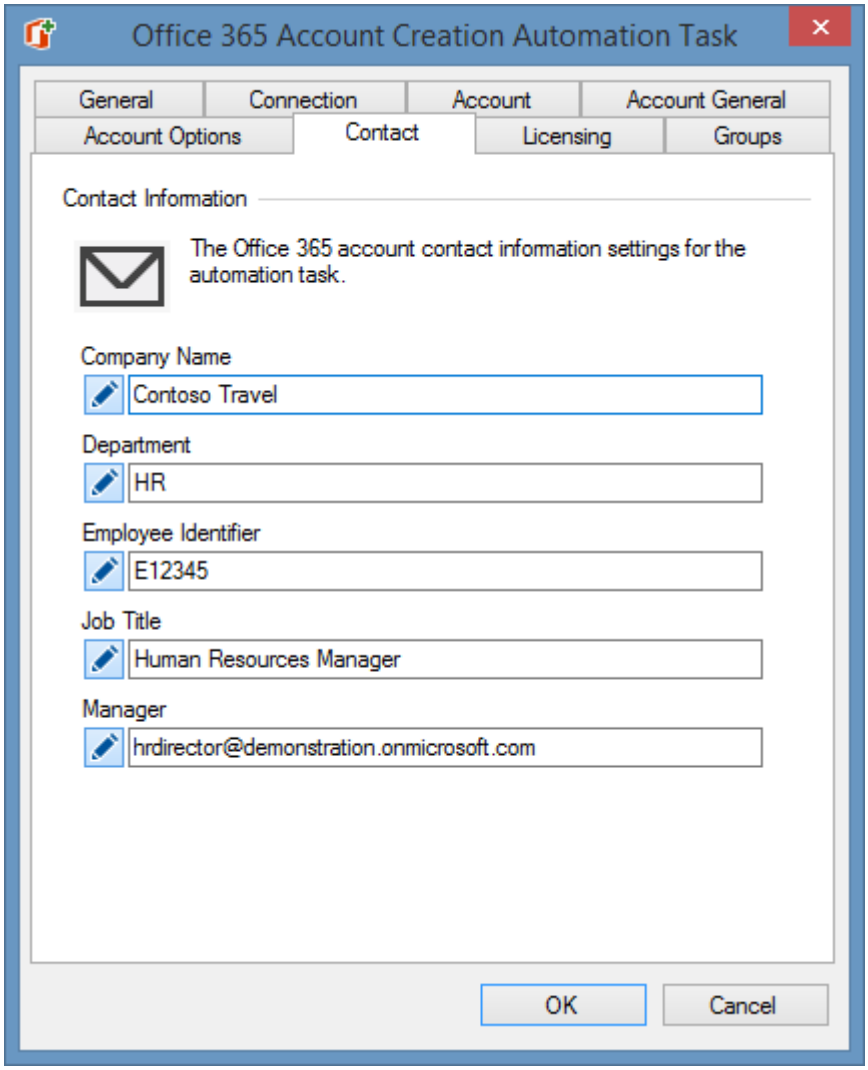
Account Options



Force Change Password At Next Logon
Determines whether the account will be forced to change password at next logon.

Account Enabled
Determines whether the account is enabled.

Contact



Company Name
The name of the company.

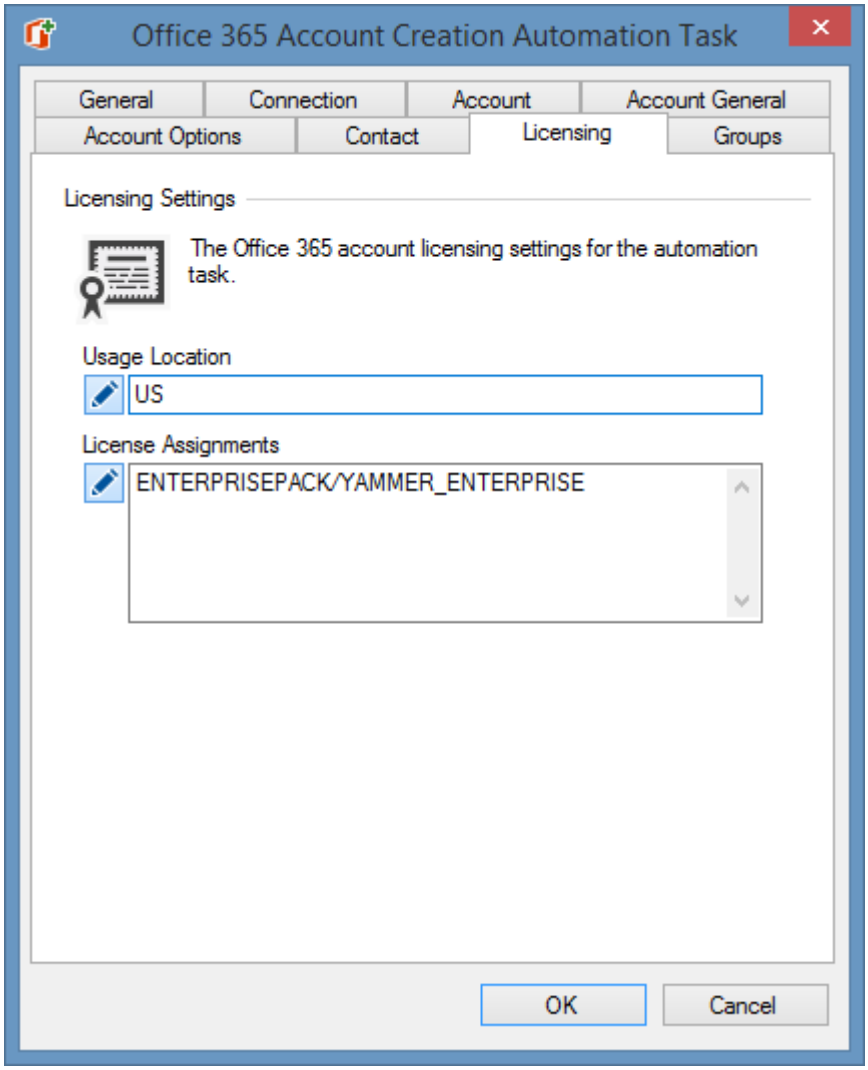
Department
The department to which the user belongs.

Employee Identifier
The employee identifier.

Job Title
The job title of the user.

Manager
The user principal name or object identifier of the user's manager.

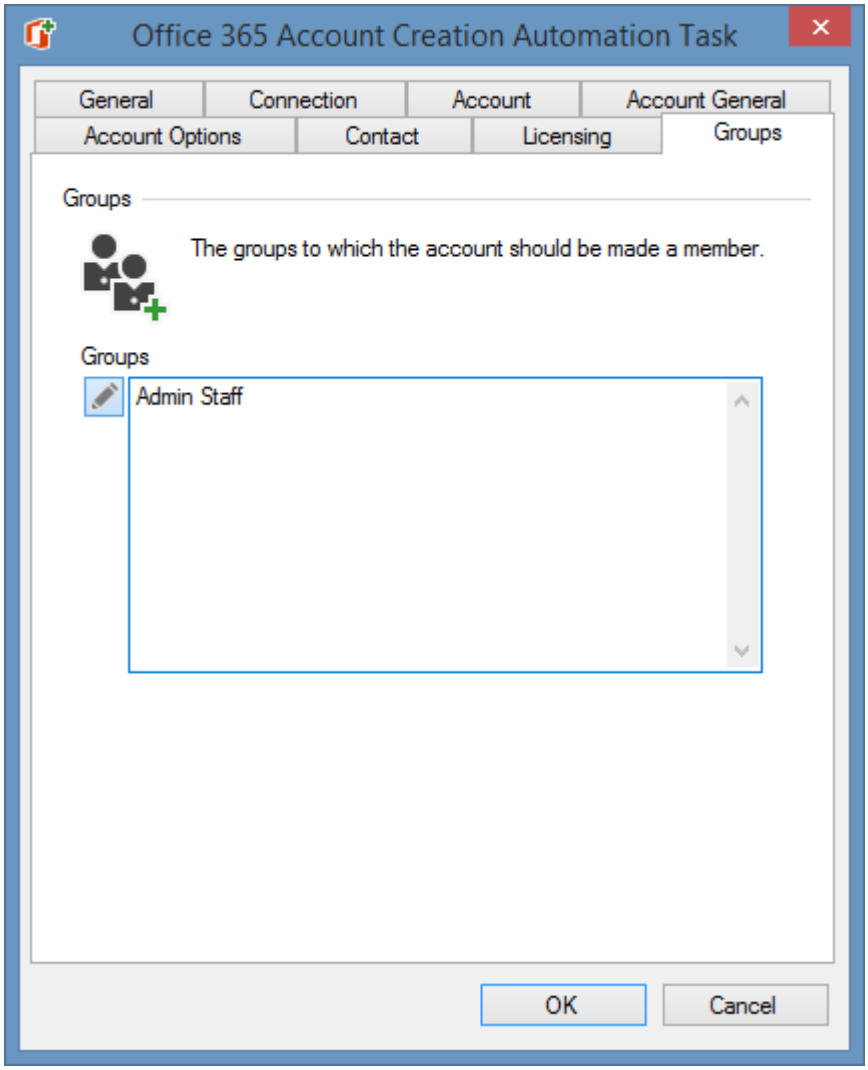
Licensing



Usage Location
The two letter country code (ISO standard 3166) to assign to the user account.
This is required for users that will be assigned licenses due to a legal requirement to check for availability of services in countries.

License Assignments
The licenses to assign to the user account - for example "ENTERPRISEPACK".
Service plans can also be specified - for example "ENTERPRISEPACK/YAMMER_ENTERPRISE".

Groups

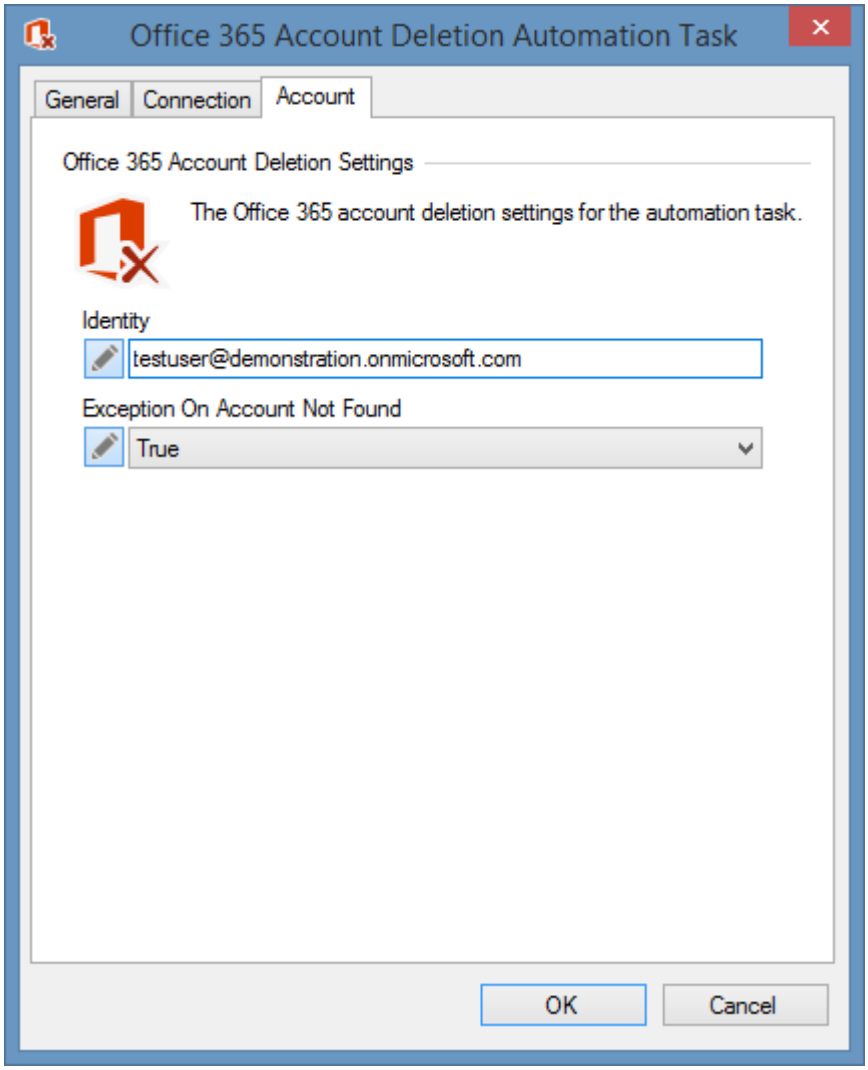


Groups
The names or object identifier of the groups to which the account should be added.

Office 365 Account Deletion Task

The Office 365 account deletion task is capable of deleting an Office 365 account with the specified identity.

Account



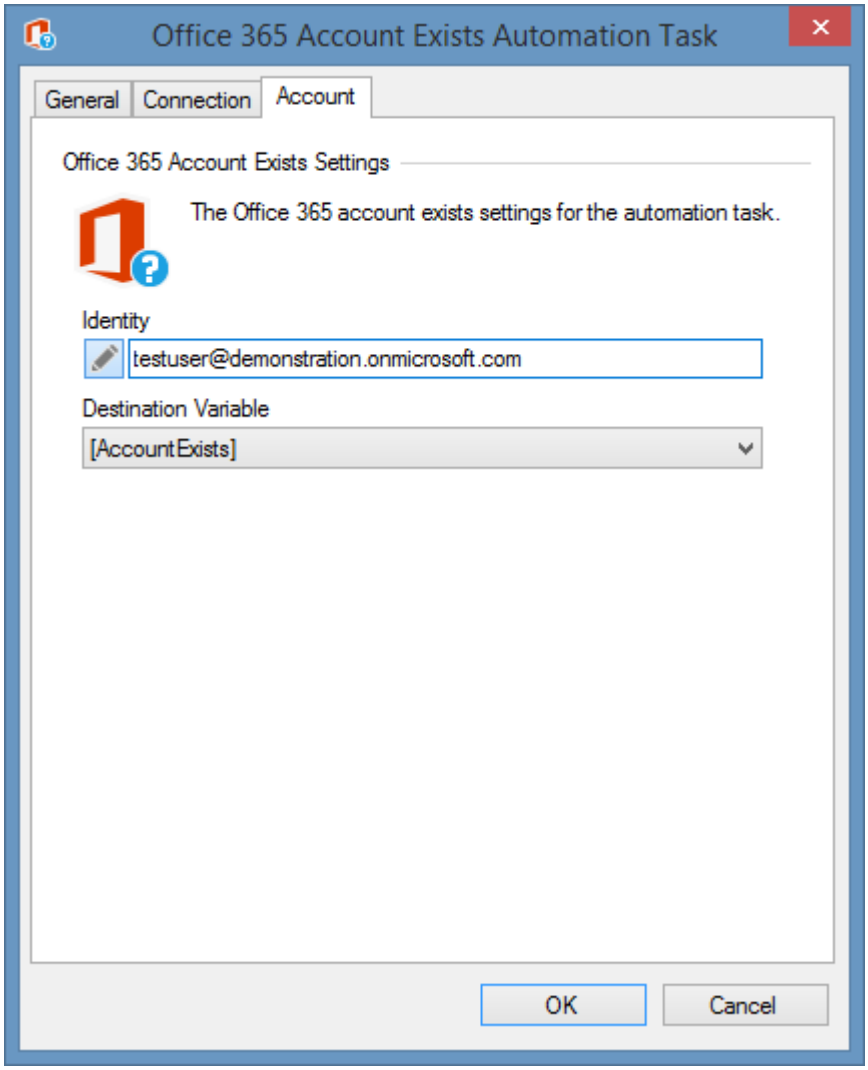
Identity
The user principal name or object identifier of the account to delete.

Exception On Account Not Found
Determines whether an exception should be thrown if the account with the specified identity does not exist.

Office 365 Account Exists Task

The Office 365 account exists task is capable of determining whether an Office 365 account with the specified identity exists in the environment.

Account



Identity
The user principal name or object identifier of the account to locate.

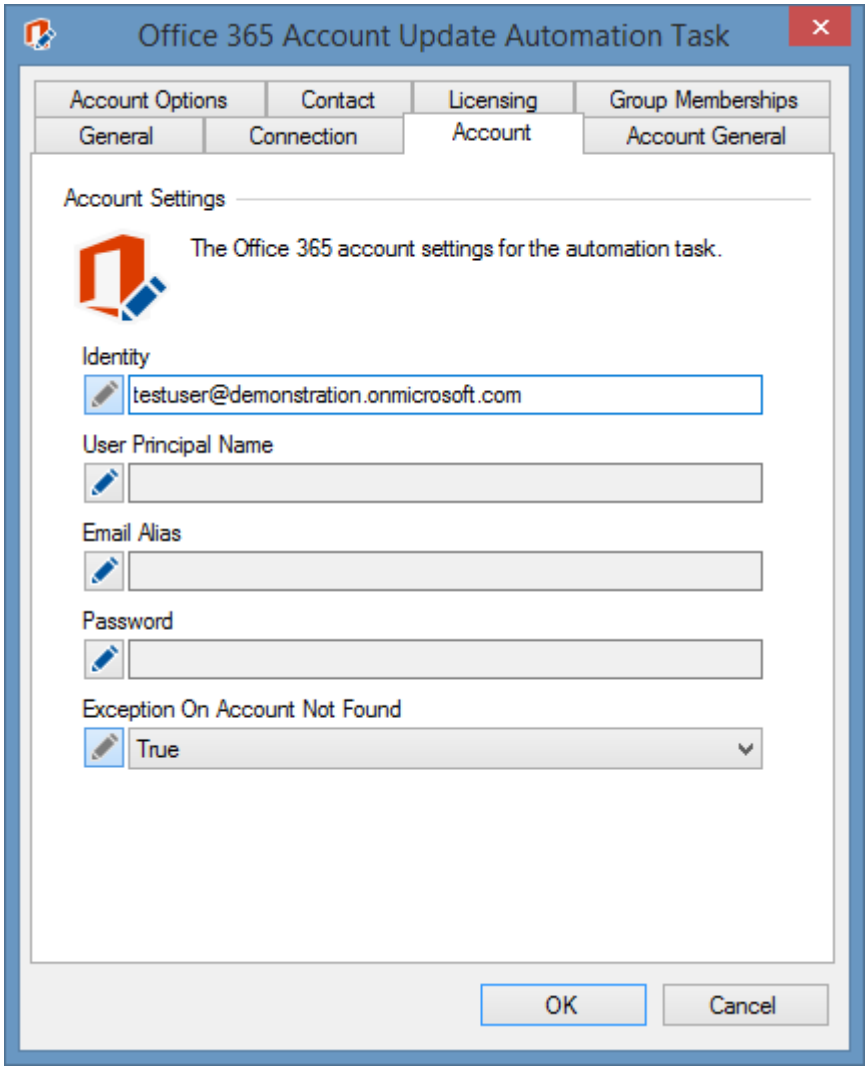
Destination Variable
The boolean variable in which to store the return value.

Office 365 Account Update Task

The Office 365 account update task is capable of updating an existing Office 365 account.

To create a new Office 365 account see the Office 365 account creation task.

Account



Identity
The user principal name or object identifier of the account to update.

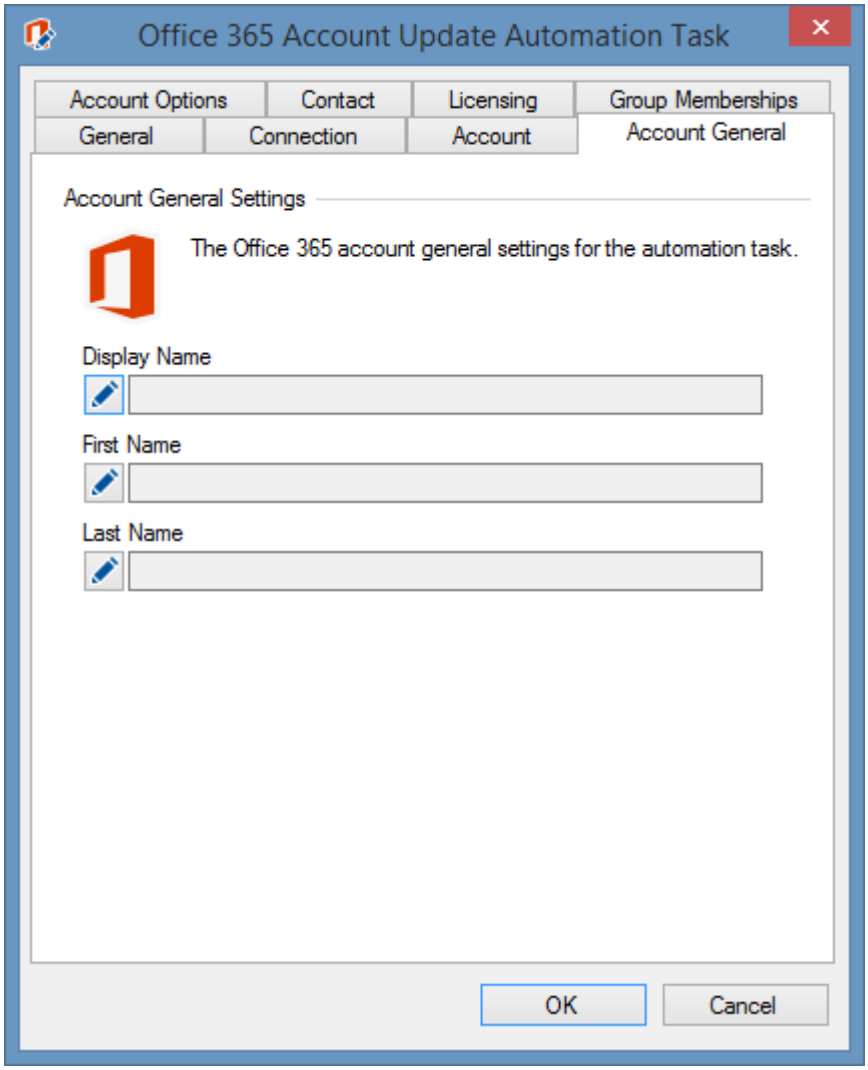
User Principal Name
The new user principal name for the account.

Email Alias
The new email alias for the account.

Password
The new password for the account.

Exception On Account Not Found
Determines whether an exception should be thrown if the account to update is not found.

Account General

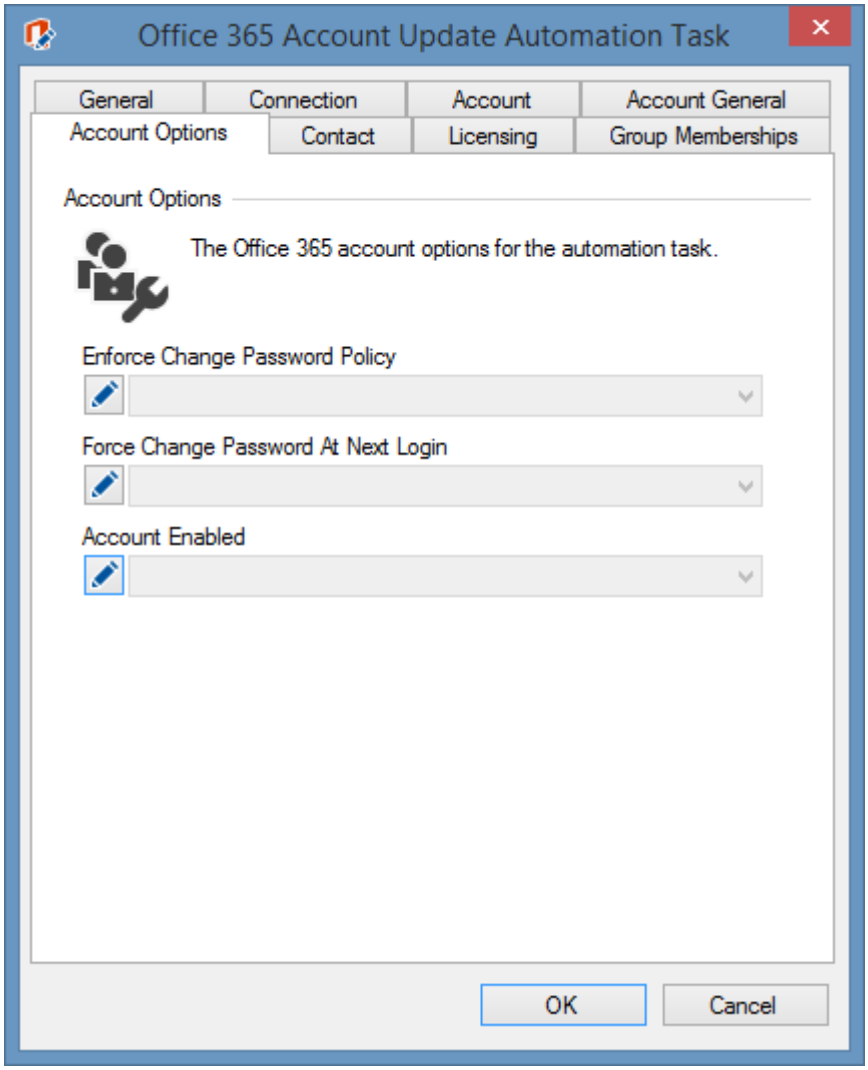


Display Name
The new display name of the account.

First Name
The new first name of the user.

Last Name
The new last name of the user.

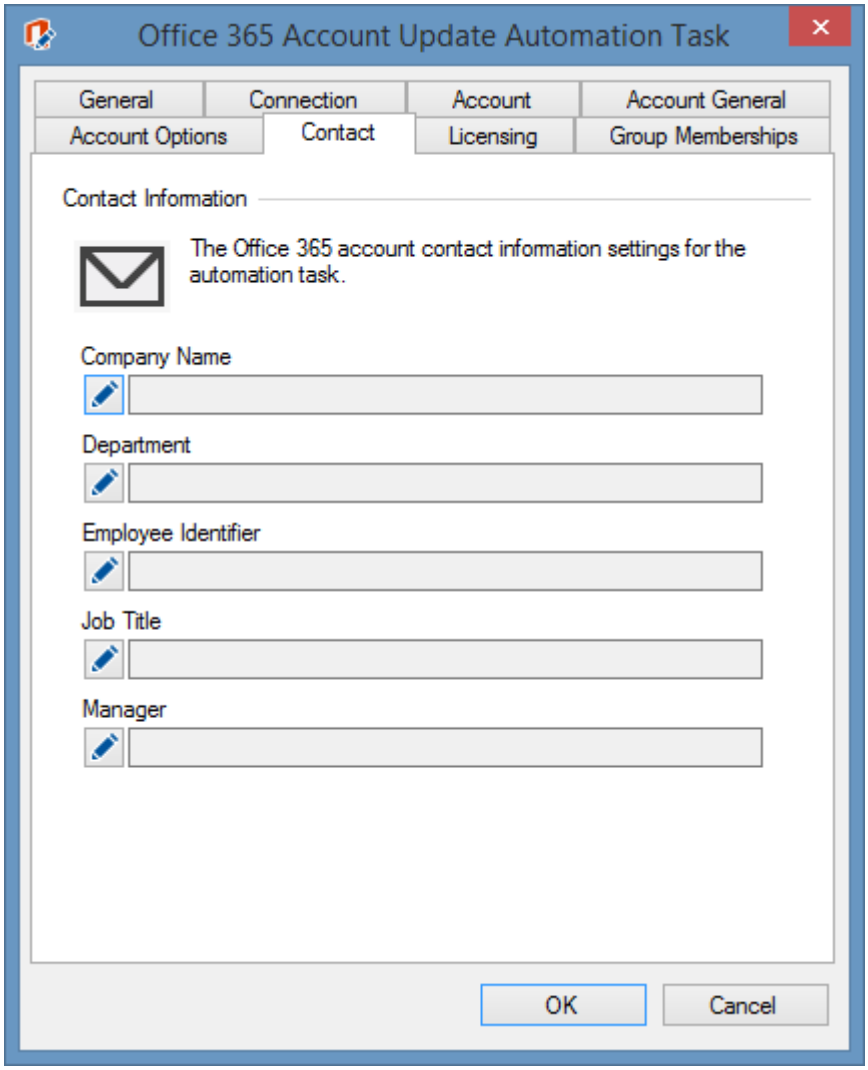
Account Options



Force Change Password At Next Logon
Determines whether the account will be forced to change password at next logon.

Account Enabled
Determines whether the account is enabled.

Contact



Company Name
The name of the company.

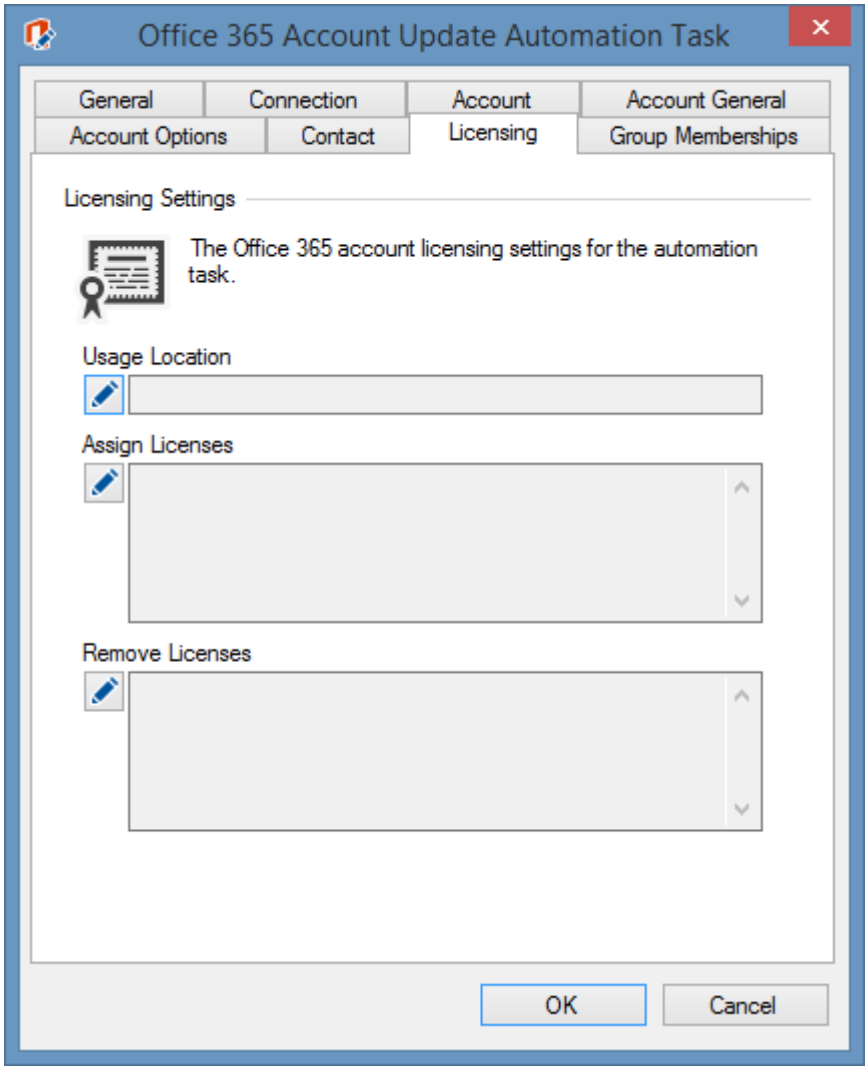
Department
The department to which the user belongs.

Employee Identifier
The employee identifier.

Job Title
The job title of the user.

Manager
The user principal name or object identifier of the user's manager.

Licensing

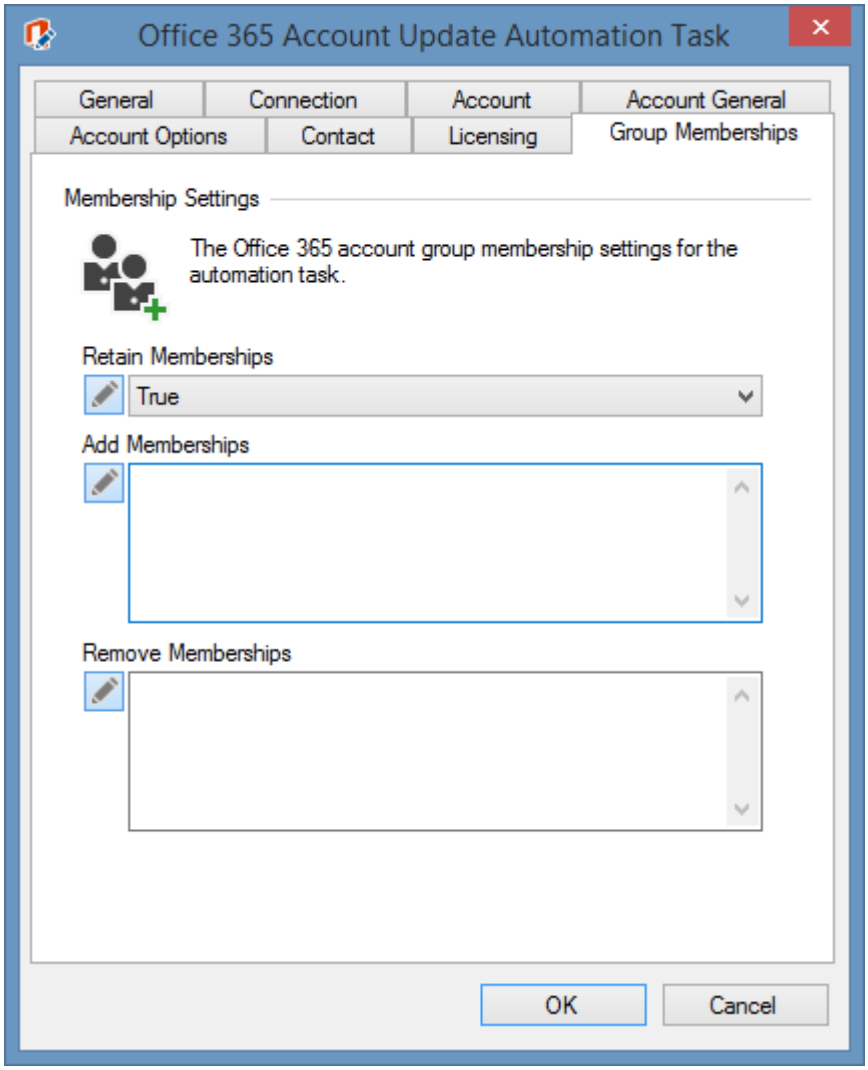


Usage Location
The two letter country code (ISO standard 3166) to assign to the user account.
This is required for users that will be assigned licenses due to a legal requirement to check for availability of services in countries.

Assign Licenses
The licenses to assign to the user account - for example "ENTERPRISEPACK".
Service plans can also be specified - for example "ENTERPRISEPACK/YAMMER_ENTERPRISE".

Remove Licenses
The licenses to remove from the user account - for example "ENTERPRISEPACK".
Service plans can also be specified - for example "ENTERPRISEPACK/YAMMER_ENTERPRISE".

Group Memberships



Retain Memberships
Determines whether the group memberships currently assigned to the account should be retained.

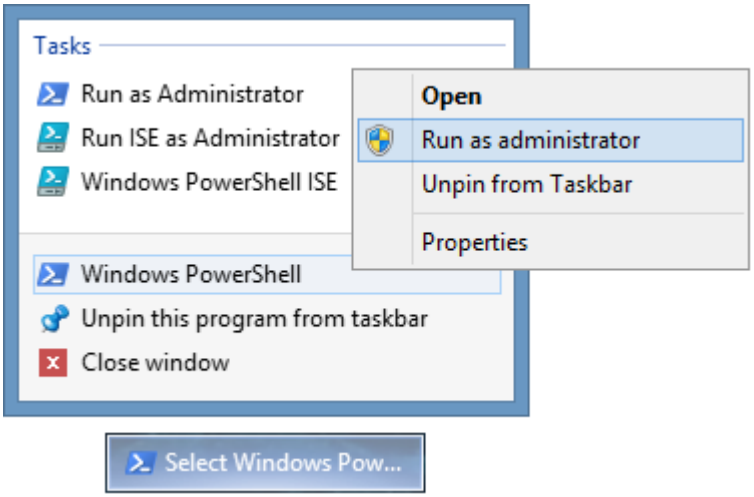
Add Memberships
The names or object identifier of the groups to which the account should be added.

Remove Memberships
The names or object identifier of the groups from which the account should be removed.

Requirements

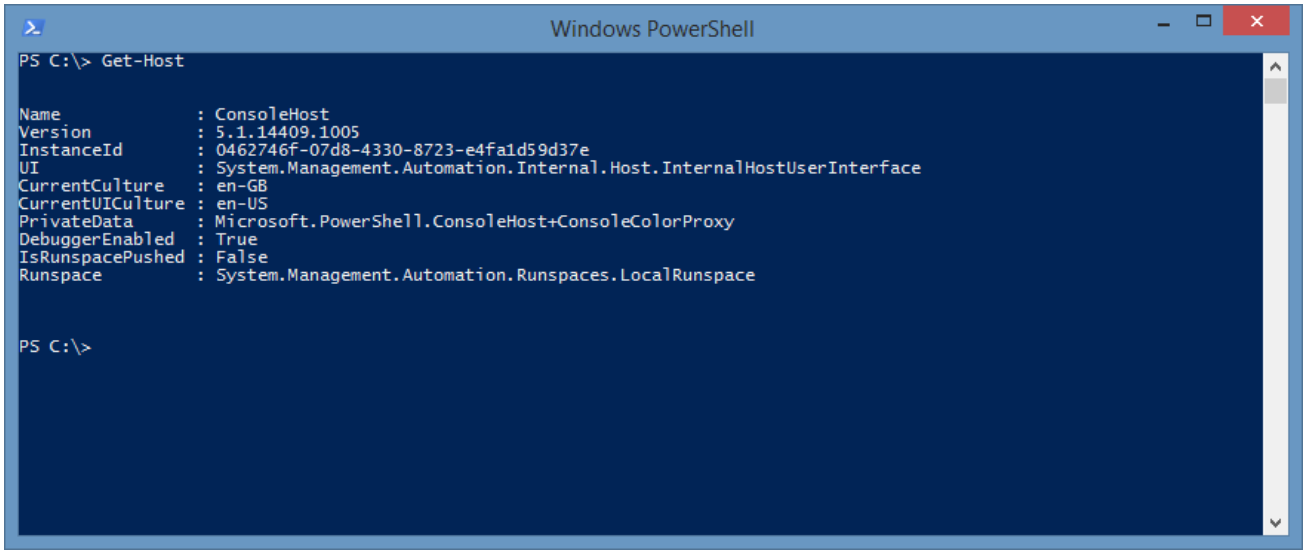
The Office 365 automation tasks require the Microsoft Graph PowerShell modules.

- Open Windows PowerShell as an Administrator.



- Enter the Get-Host command.

- Ensure that Windows PowerShell version 5.1 or above is installed, if not download and install Windows PowerShell 5.1 or above
  http://aka.ms/wmf5download



- Install the Microsoft Graph PowerShell modules by entering the following command.

  Install-Module "Microsoft.Graph" -Scope AllUsers

  NOTE: You can also set the scope to "CurrentUser" if logged on as the XIA Automation account.

- If prompted to install the NuGet provider answer [Y]es.

- If the error "WARNING: Unable to download the list of available providers. Check your internet

connection." is seen then issue the following commands.

```
[Net.ServicePointManager]::SecurityProtocol = [Net.SecurityProtocolType]::Tls12
Register-PSRepository -Default -Verbose
Set-PSRepository -Name "PSGallery" -InstallationPolicy Trusted
Install-Module "Microsoft.Graph" -Scope AllUsers
```

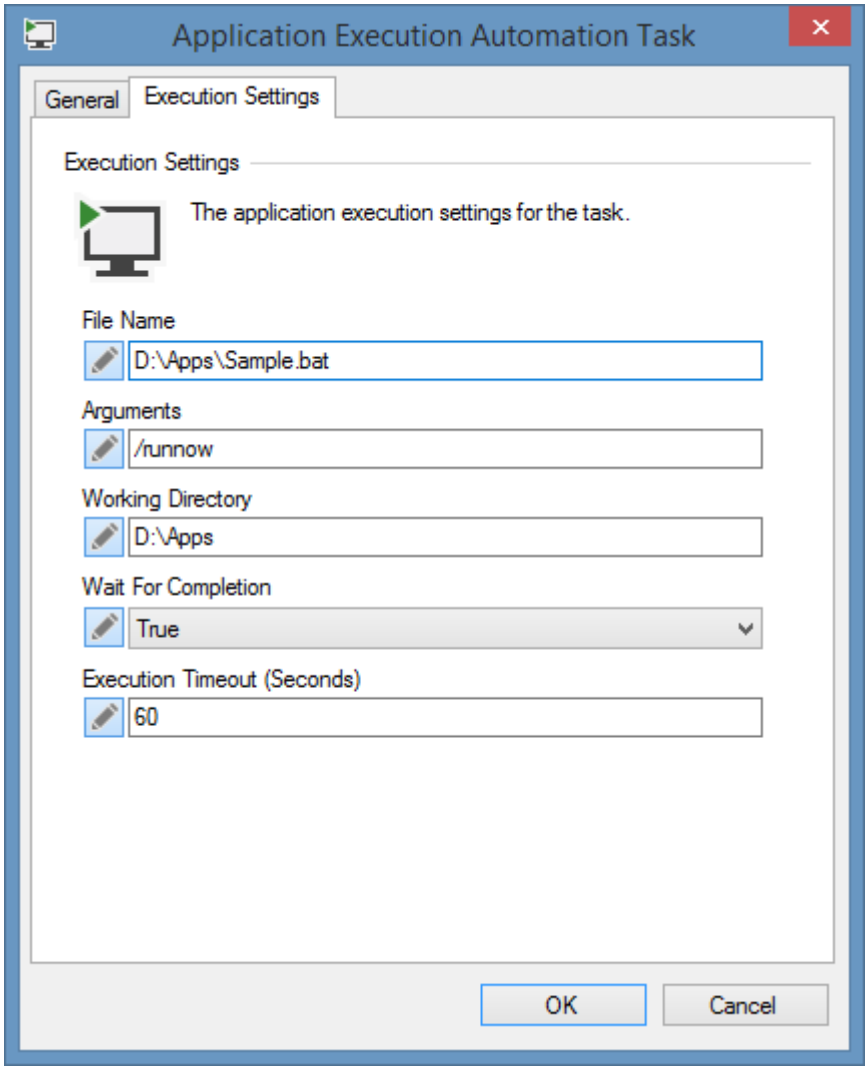
Utilities

The utility automation tasks perform utility style support actions such as pausing the automation process, and executing external applications.

Application Execution Task

The application execution task can execute an external application, script or batch file.

Execution Settings



File Name
The absolute path to the application, script, or batch file to execute.

Arguments
The command line arguments.

Working Directory
The working directory for the application.

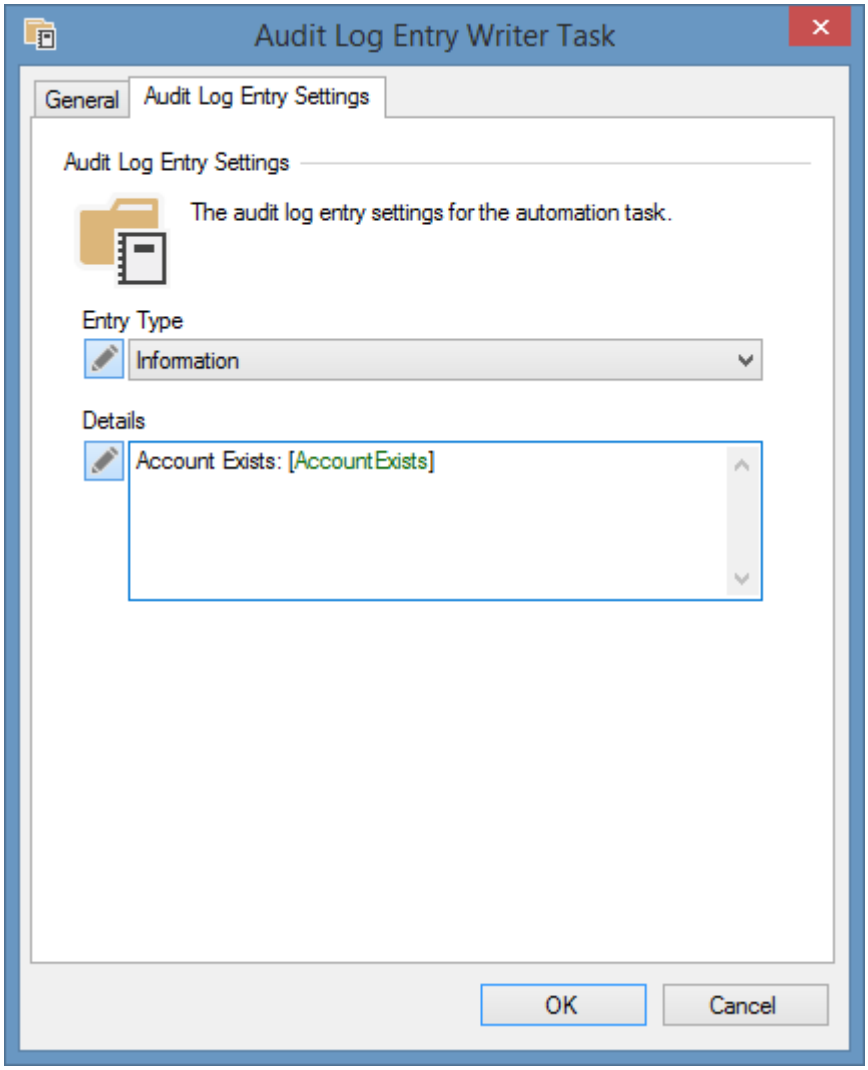
Wait For Completion
Determines whether the system should wait for the application to complete.

Execution Timeout (Seconds)
The timeout for the application to complete executing before the automation task fails. This setting only applies if "Wait For Completion" is true.

Audit Log Entry Writer Task

The audit log entry writer task is able to write an entry to the audit log with the specified entry type and details.

Audit Log Entry Settings



Entry Type
An integer automation property that represents the type of entry to write to the audit log.

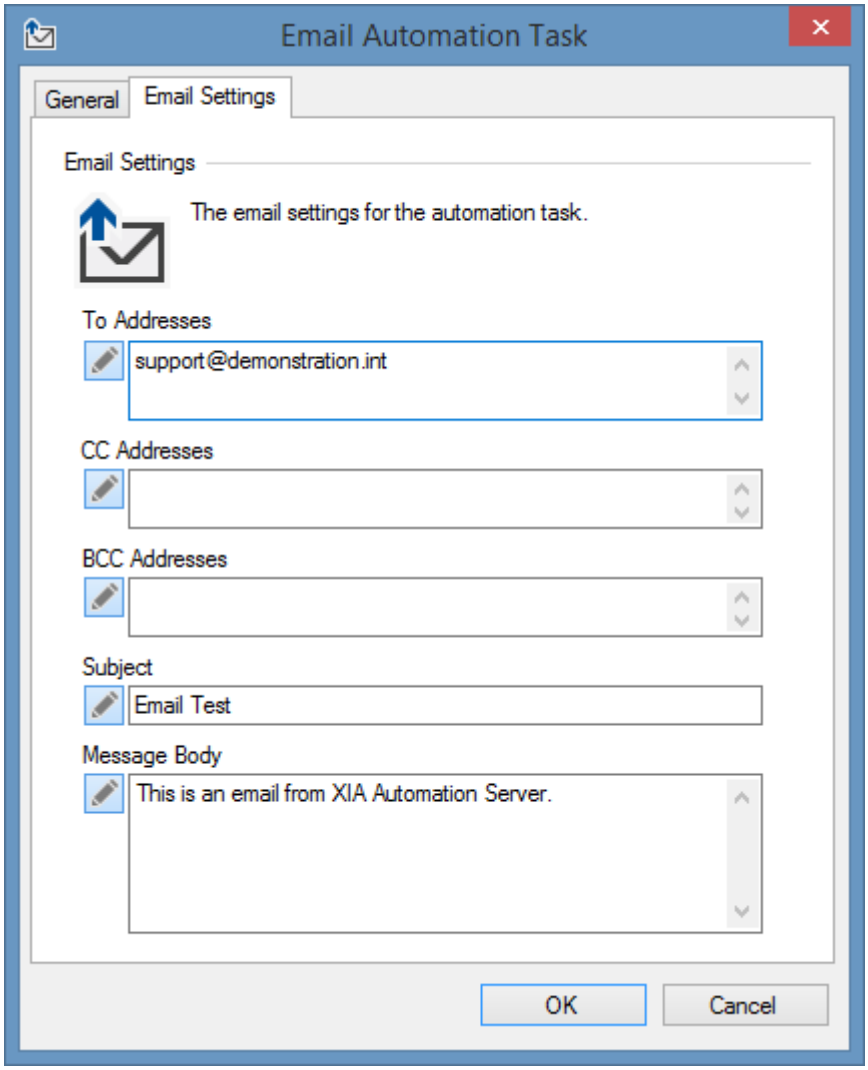
Details
A multiline string automation property that represents the details of the entry to write to the audit log.

Email Task

The email automation task can send an email by SMTP.

NOTE: This task requires that SMTP is enabled and configured in the SMTP settings.

Email Settings



To Addresses
A list of valid email address to which the email should be sent.

CC Addresses
A list of valid email address to which the email should be carbon copied.

BCC Addresses
A list of valid email address to which the email should be blind carbon copied.

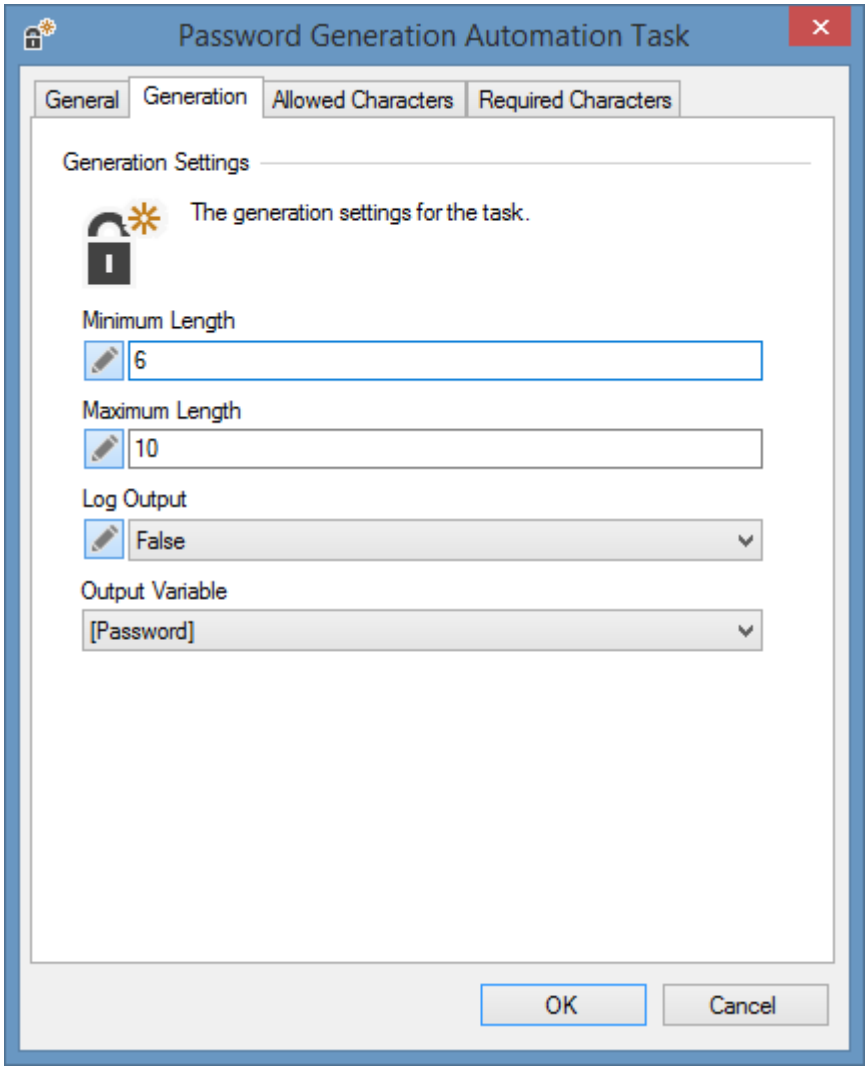
Subject
The subject of the email.

Message Body
The email message body.

Password Generation Task

The password generation task is capable of generating a random password based on specific criteria and storing the generated password in a variable.

Generation Settings



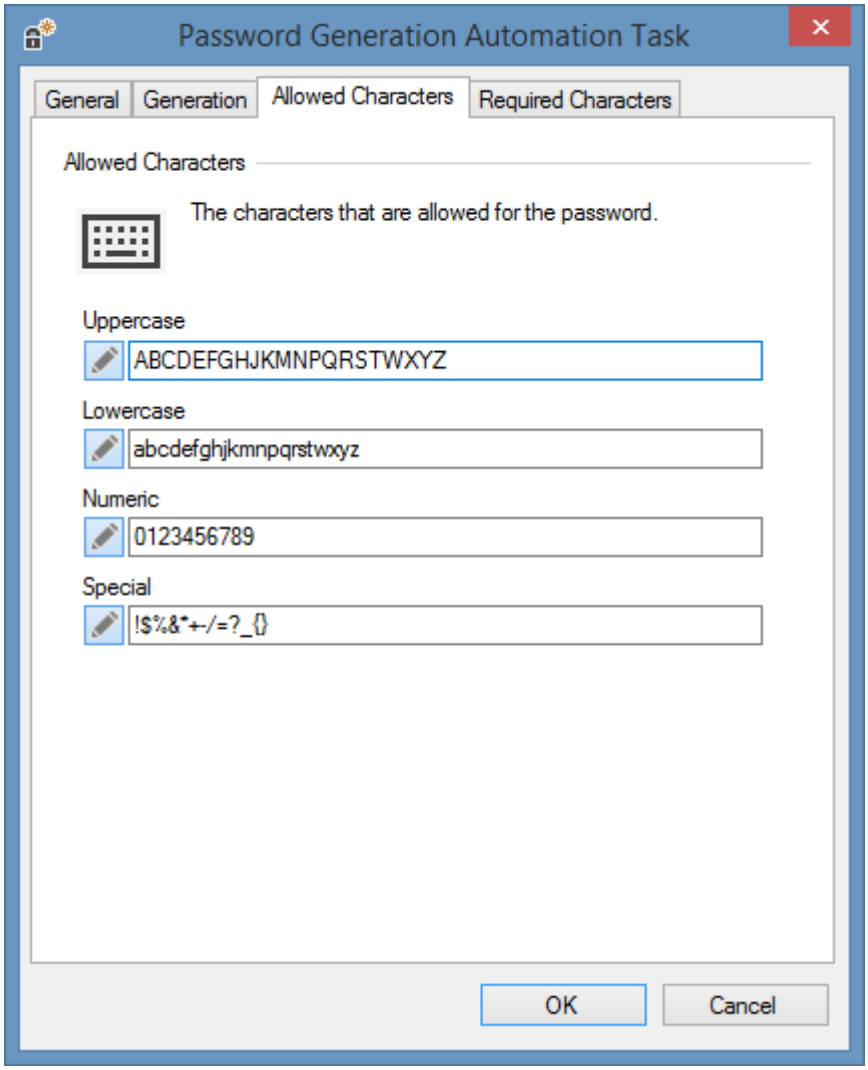
Minimum Length
The minimum number of characters in the generated password.

Maximum Length
The maximum number of characters in the generated password.

Log Output
Determines whether the output from the task should be written to log files.

Output Variable
The variable definition to which the generated password should be output.

Allowed Characters



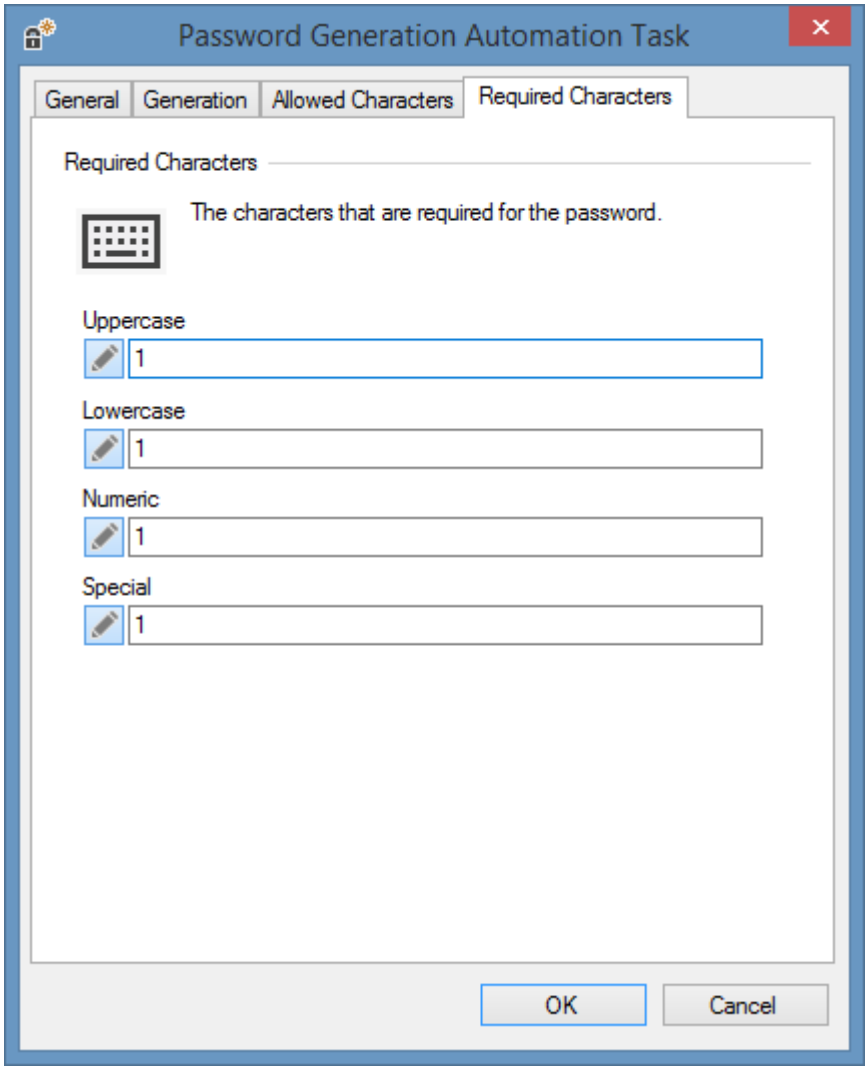
Uppercase
The uppercase characters that are allowed for the password.

Lowercase
The lowercase characters that are allowed for the password.

Numeric
The numeric characters that are allowed for the password.

Special
The special characters that are allowed for the password. Square brackets [and] cannot be used as special characters.

Required Characters



Uppercase
The number of uppercase characters required to be included in the password.

Lowercase
The number of lowercase characters required to be included in the password.

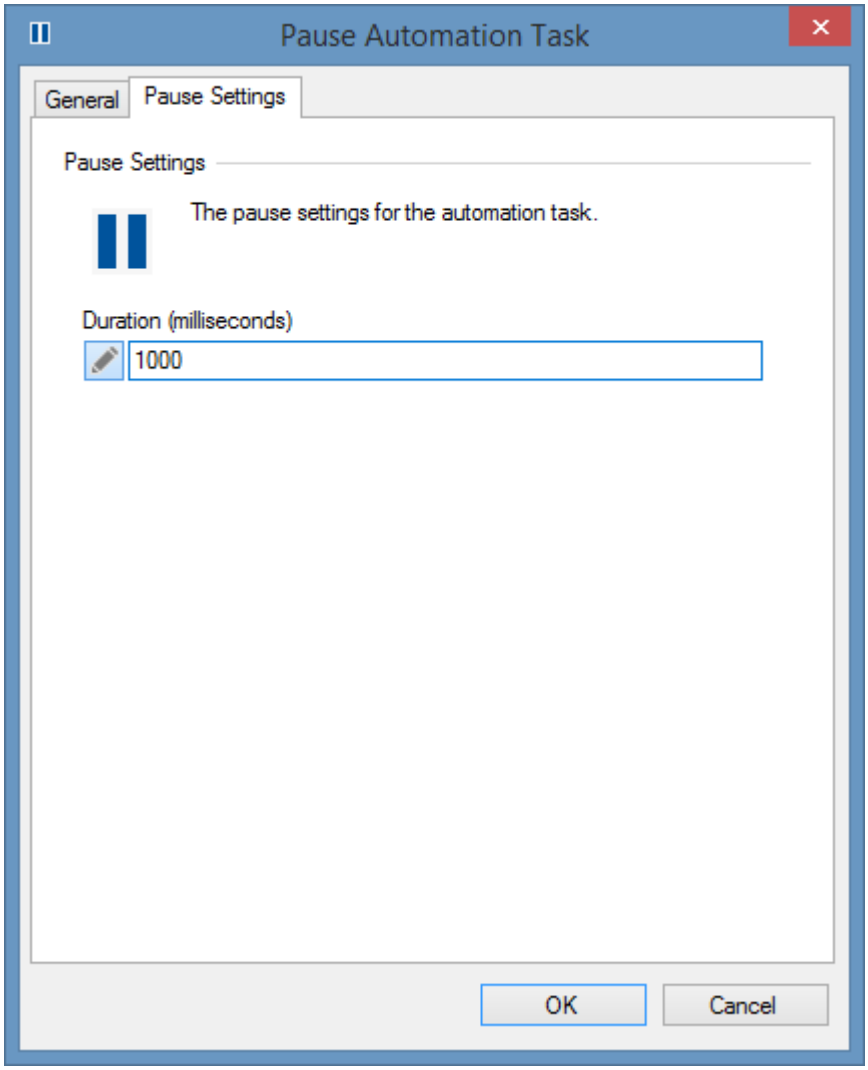
Numeric
The number of numeric characters required to be included in the password.

Special
The number of special characters required to be included in the password.

Pause Task

The pause task is able to pause the automation profile execution for the specified time.

Pause Settings

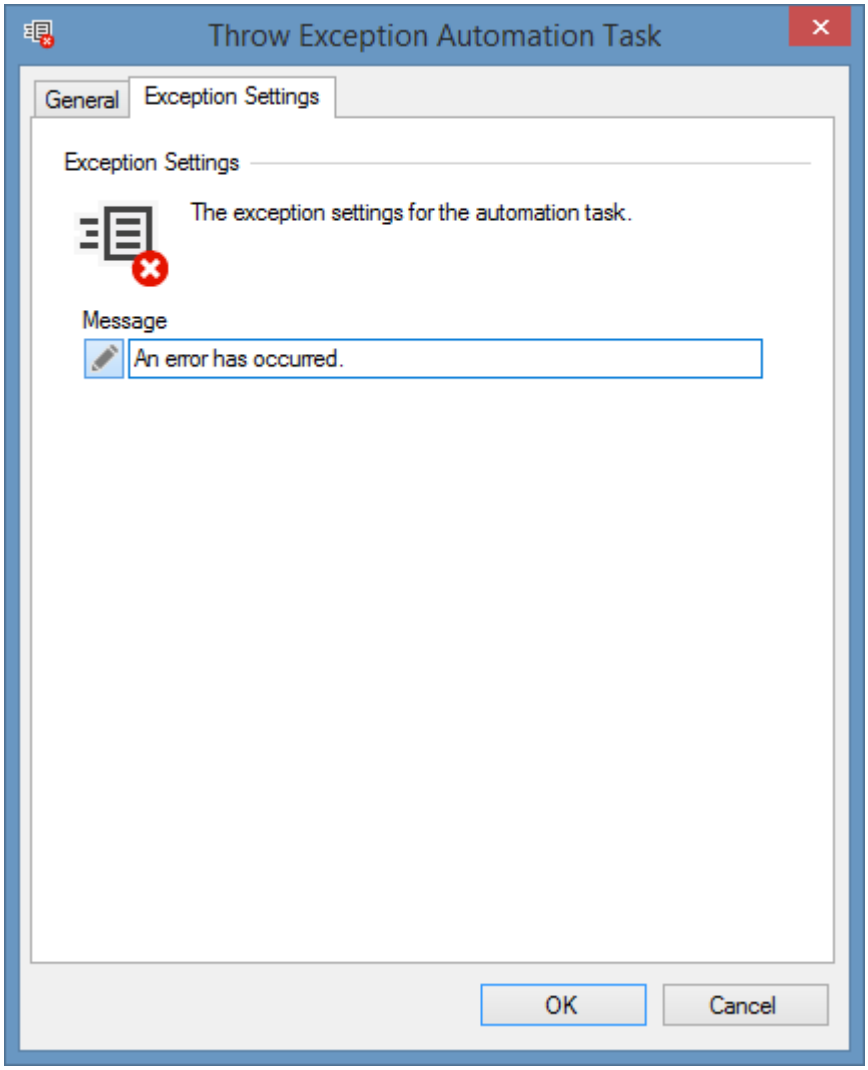


Duration (milliseconds)
The pause duration in milliseconds.

Throw Exception Task

The throw exception task is able to throw a .NET exception with a specific message.

Exception Settings



Message
The exception message.

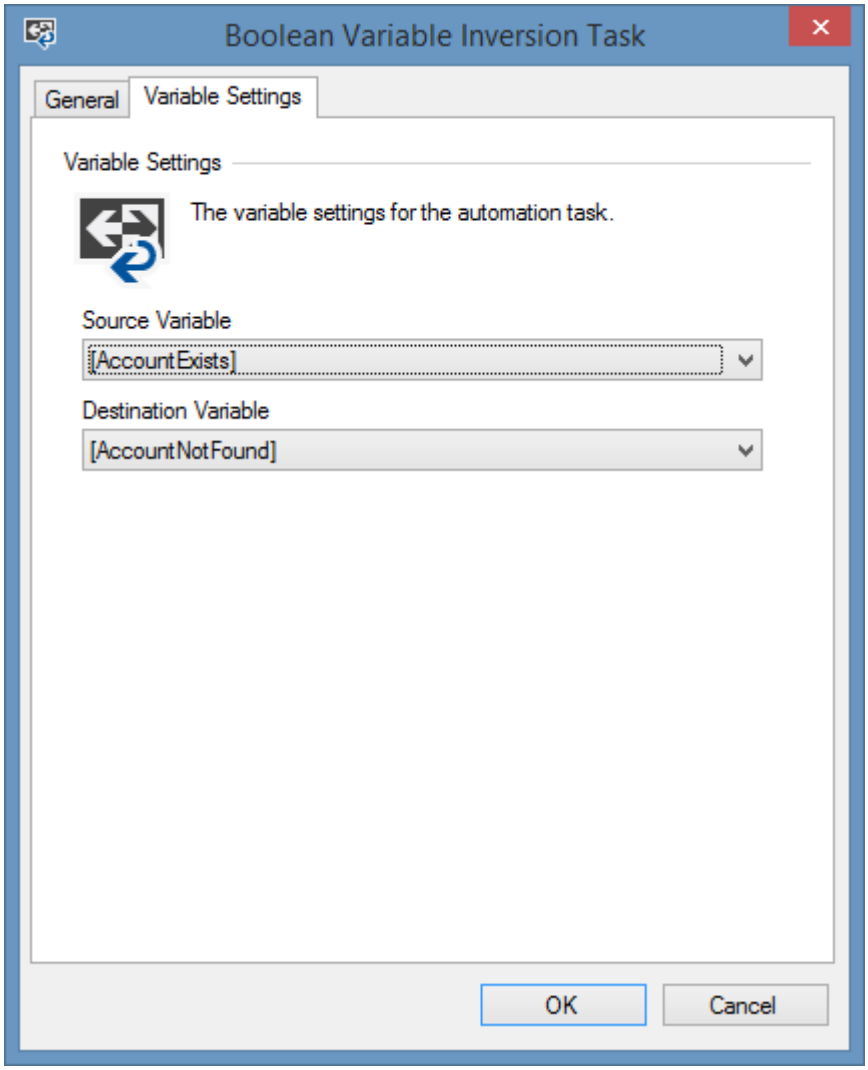
Variables

The variable automation tasks perform actions relating to variables.

Boolean Variable Inversion Task

The boolean variable inversion task is able to invert the value of a boolean variable.

Settings



Source Variable
The boolean variable from which the value should be read.

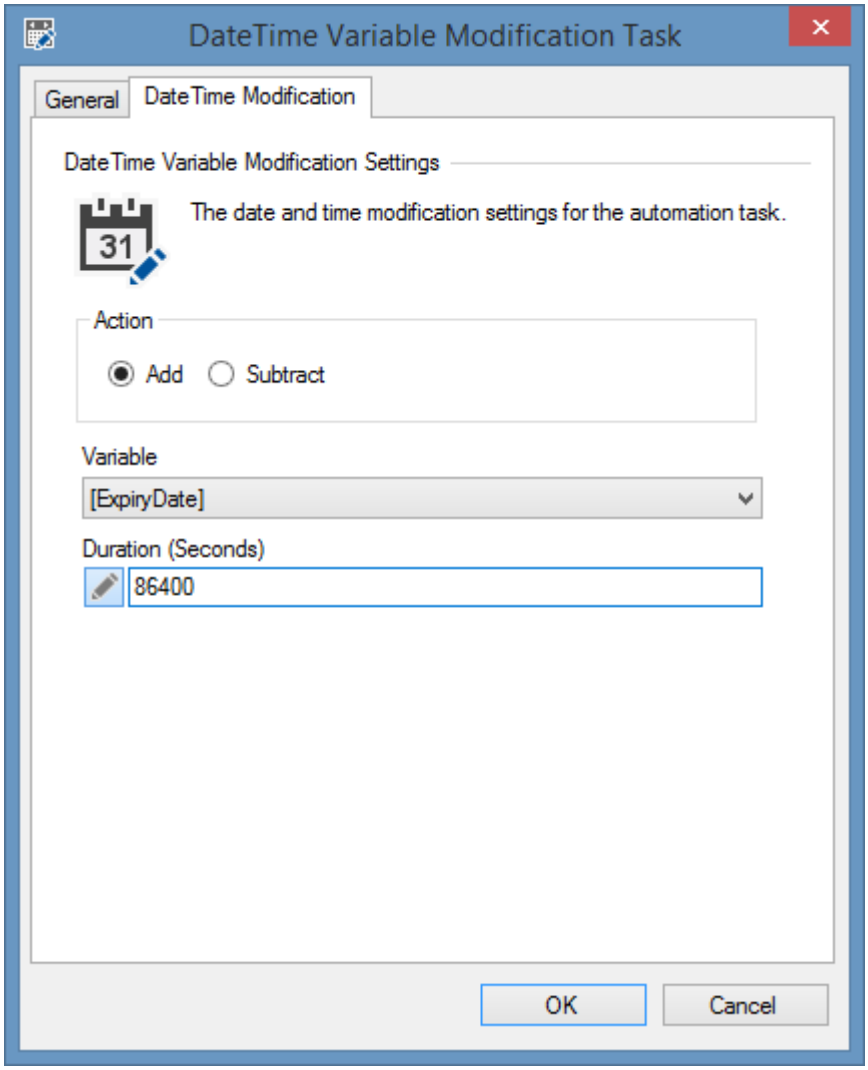
Destination Variable
The boolean variable which should receive the inverted value.

NOTE: The source and destination can be set to the same boolean variable.

DateTime Variable Modification Task

The datetime variable modification task is able to add or subtract time from a datetime variable.

DateTime Modification



Action
Determines whether the specified duration should be added or removed from the datetime variable.

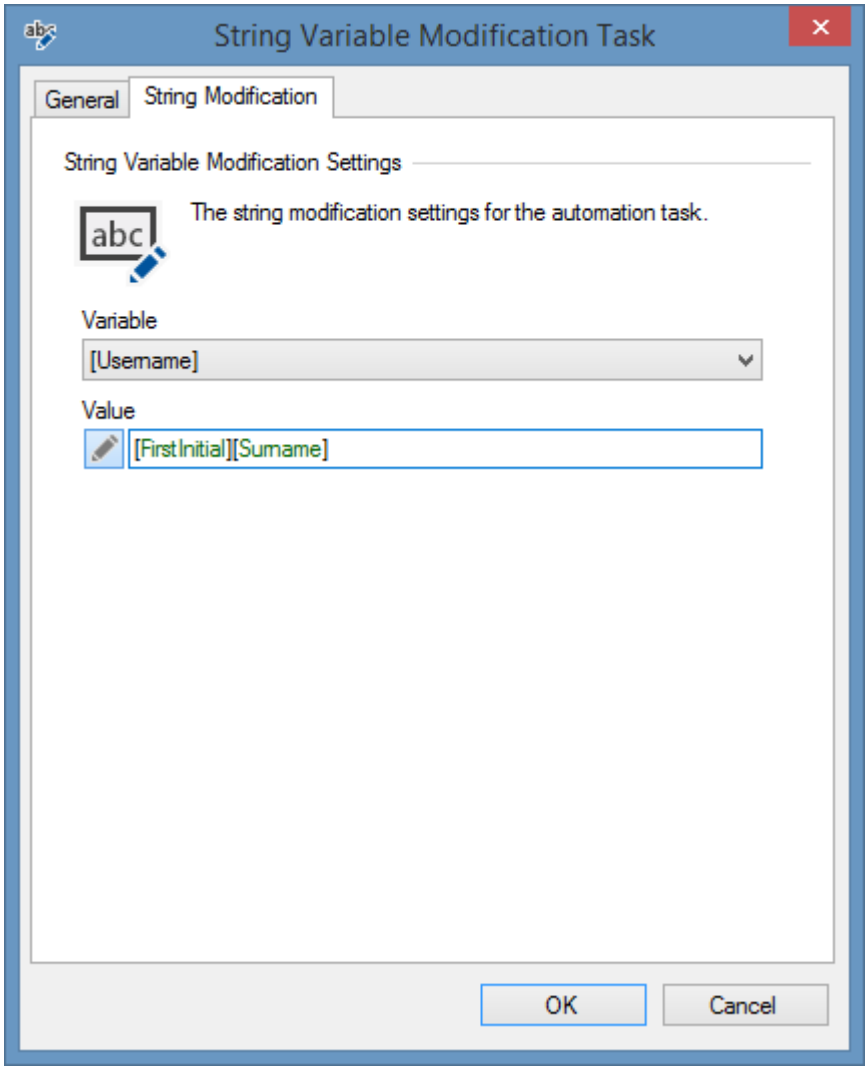
Variable
The datetime variable that is to be modified.

Duration (Second)
The duration in seconds that is to be added or subtracted from the datetime variable.

String Variable Modification Task

The string variable modification task is able modify the value of a string variable.

String Modification



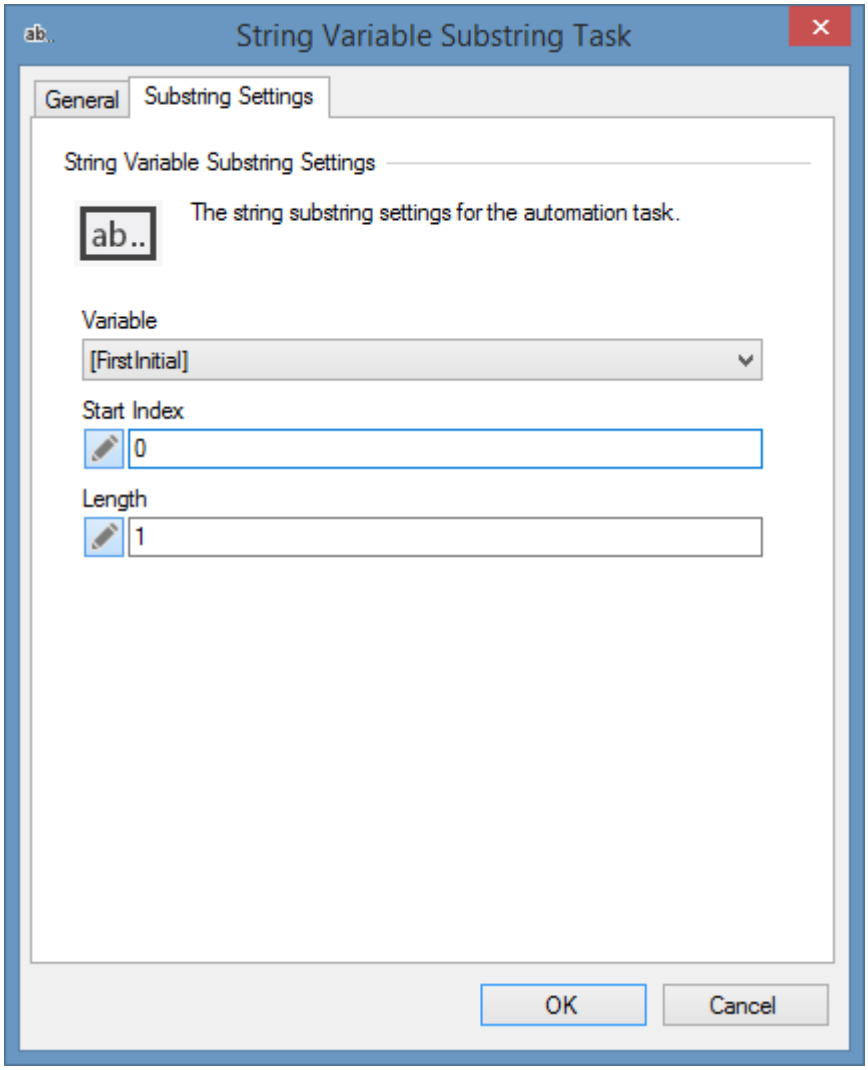
Variable
The string variable to modify.

Value
The new value to assign to the string variable.

String Variable Substring Task

The string variable substring task is able modify the value of a string variable taking part of a string - for example to take the first letter of a name to determine the initial.

Substring Settings



Variable
The string variable to modify.

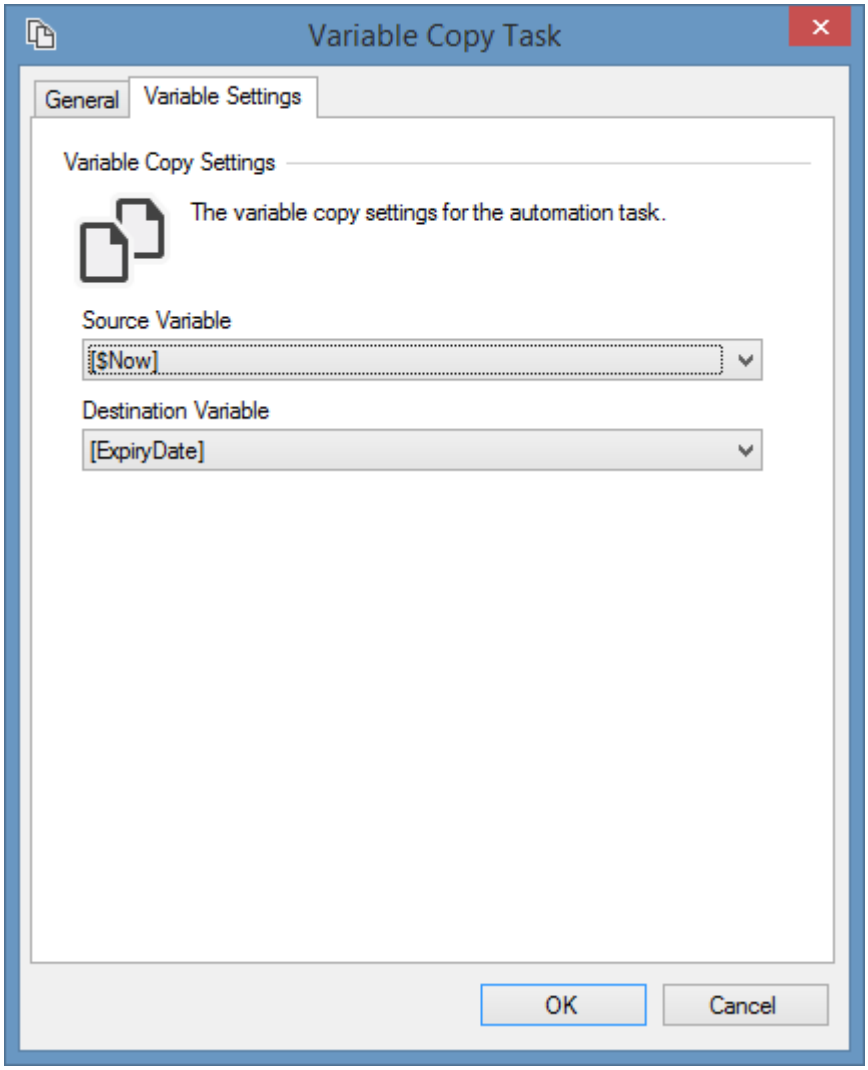
Start Index
The zero based start index of the substring.

Length
The length of the substring - this may not exceed the length of the string value.

Variable Copy Task

The variable copy task can copy the value of one variable to another variable of the same type.

Variable Settings

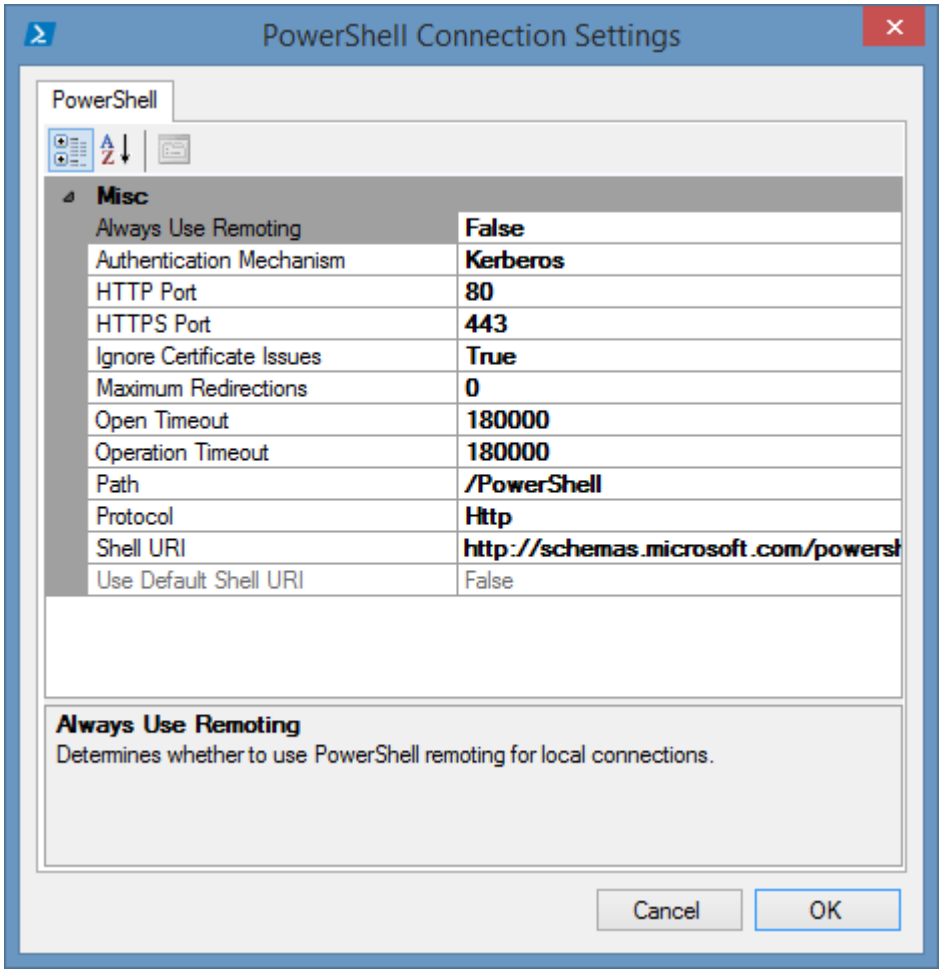


Source Variable
The variable from which the value should be read.

Destination Variable
The variable which should receive the value. The type of variable must match that of the source variable.

PowerShell Remoting Settings

The advanced PowerShell connection settings.



Always Use Remoting
Determines whether to use PowerShell remoting even when making local connections.

Authentication Mechanism
The authentication mechanism - Kerberos, Automatic, Negotiate or Basic.

HTTP Port
The TCP port to use for HTTP based PowerShell remoting connections.

HTTPS Port
The TCP port to use for HTTP based PowerShell remoting connections.

Ignore Certificate Issues
Determines whether certificate issues should be ignored when making HTTPS connections.

Maximum Redirections
The maximum number of URI redirections to allow.

Open Timeout
The maximum amount of time (in milliseconds) that Windows PowerShell will wait for an open

operation to complete. By default this is 180 seconds.

Operation Timeout
The amount of time (in milliseconds) that Windows PowerShell will wait for an operation to complete. By default this is 180 seconds.

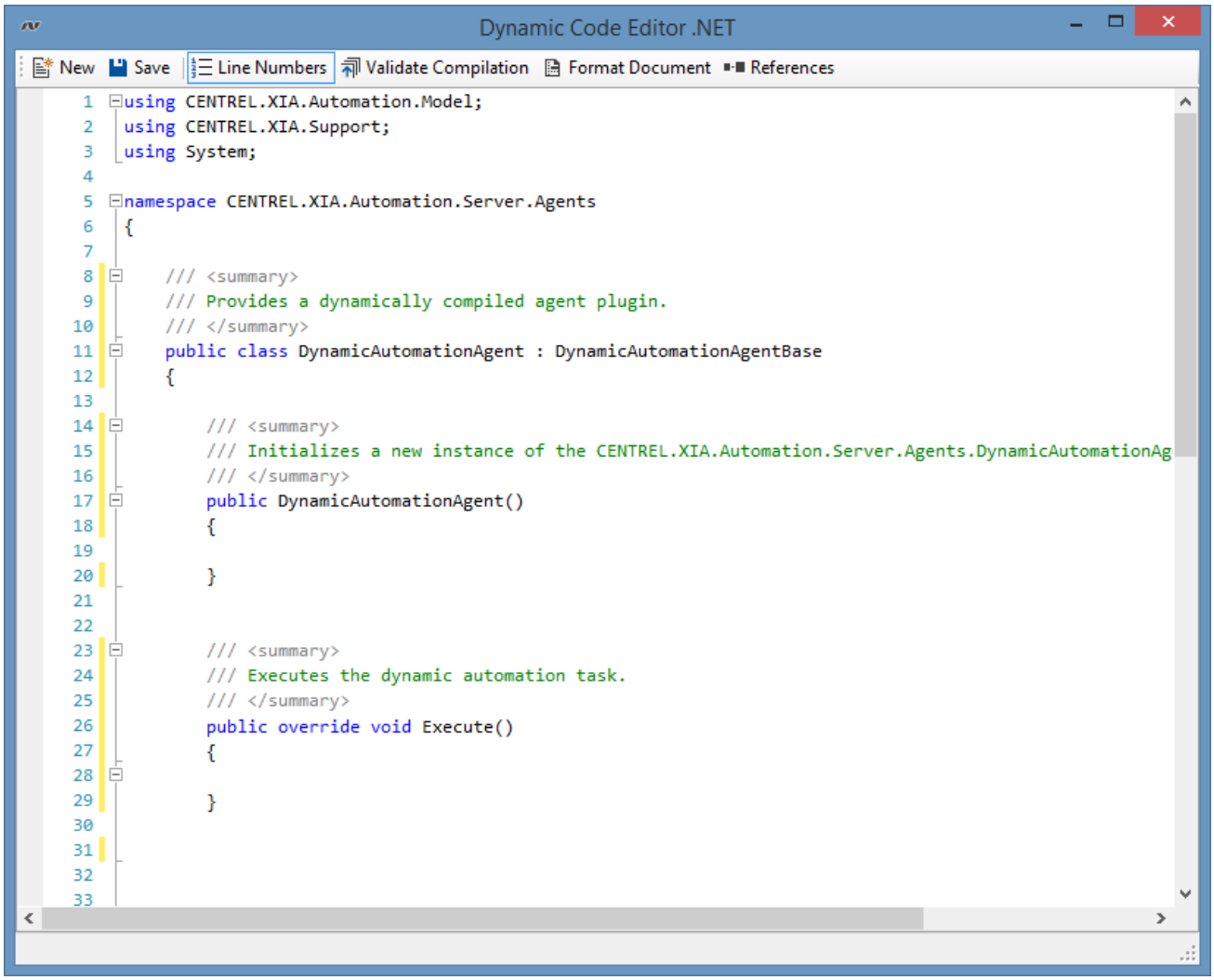
Path
The path for the remote connection, by default this is "/wsman".

Protocol
The protocol to use to connect to the PowerShell remoting session - automatic, HTTP, or HTTPS.

Shell URI
The uniform resource identifier for the shell to load, this is configured by the endpoint. This shell may set security, run scripts and load snap-ins automatically.

Dynamic Code Editor

The dynamic code editor allows the creation of dynamic automation tasks and variable definitions in Microsoft C# to expand the functionality of XIA Automation Server.



New
Creates a new document.

Save
Saves the current settings.

Line Numbers
Determines whether to display the line numbers.

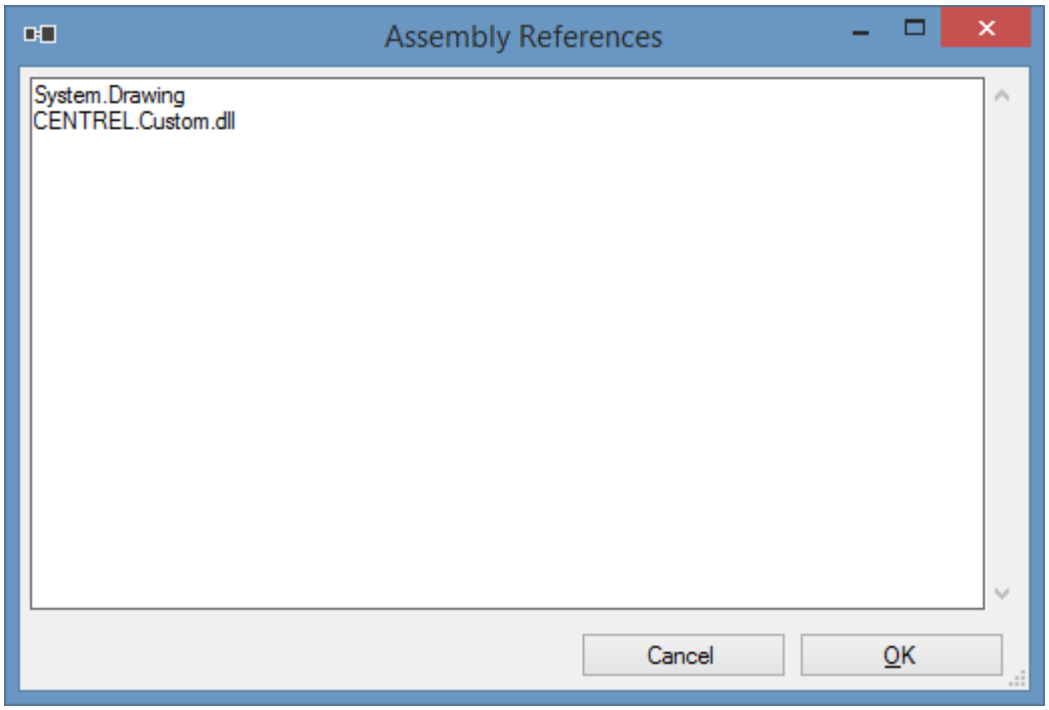
Validate Compilation
Validates the compilation of the code.

Format Document
Formats the layout of the document.

References
The assembly references for the compilation.

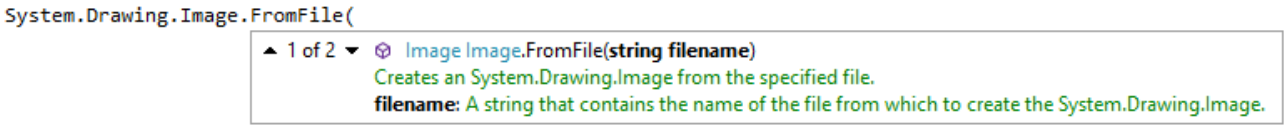
Assembly References

Both assemblies included in the .NET framework and 3rd party assemblies may be referenced using assembly references.



- Enter the full name of the external assembly references including the ".dll" file extension.
- For built in .NET assemblies enter the assembly name **without** the extension.

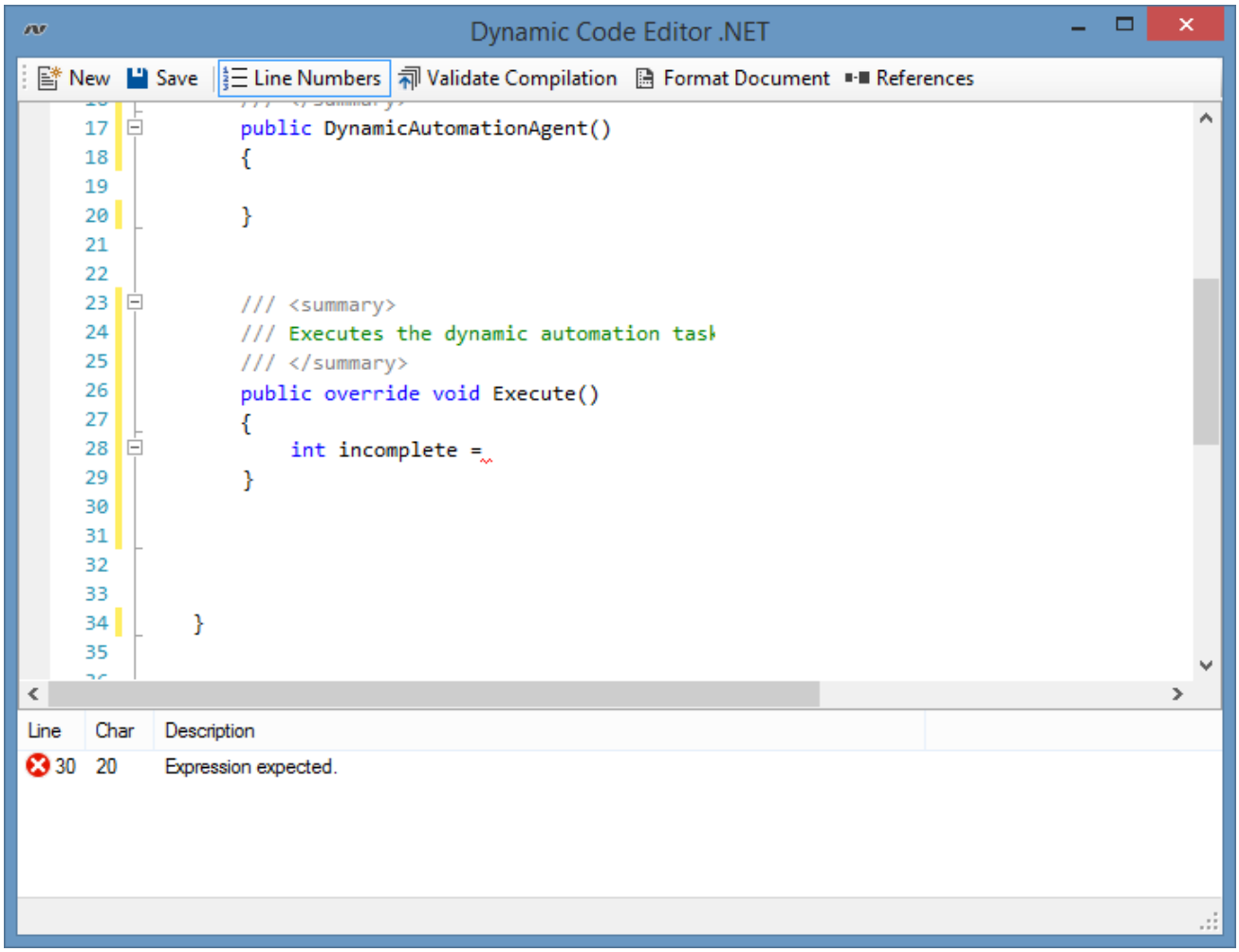
The dynamic code editor automatically loads the assembly and provides IntelliSense style support.



Error List

The dynamic code editor automatically displays an syntax errors in the error list. The error list does not display compiler errors, to validate compilation click the validate compilation button in the toolbar.

Double clicking an error in the error lists moves the caret to the position of that error.



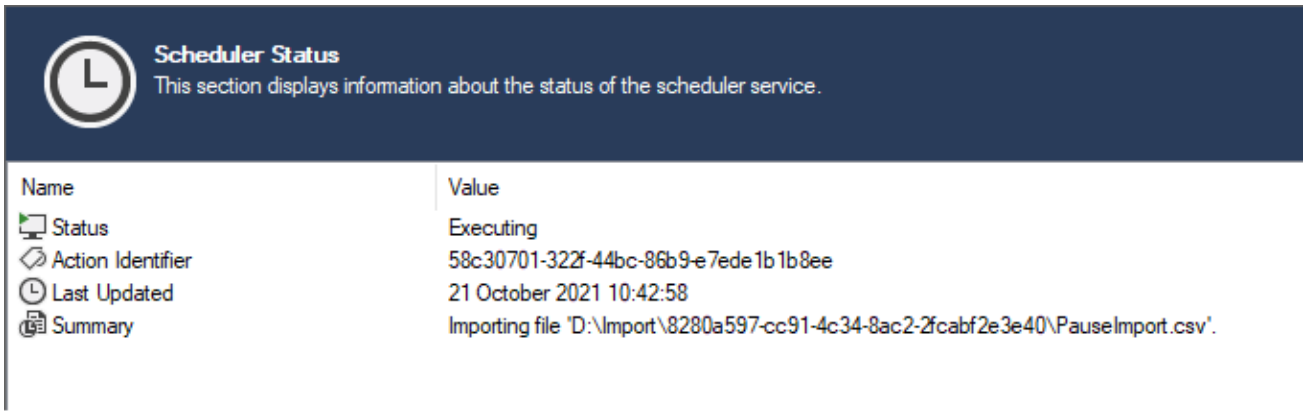
Line
The line in the code where the error was detected.

Char
The character in the line in the code where the error was detected.

Description
A description of the error.

Scheduler Status

The scheduler status user interface displays the status of the scheduler service.



Status
Determines whether the scheduler service is currently executing.

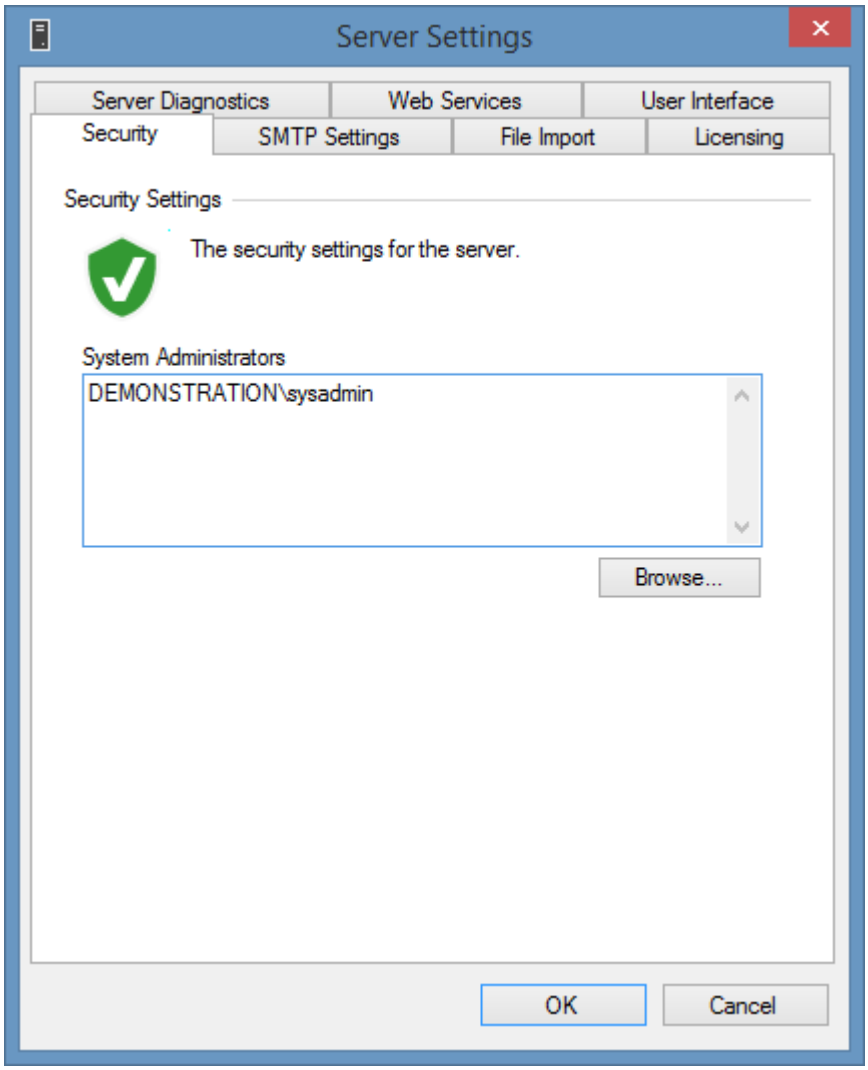
Action Identifier
The unique identifier of the action being performed in GUID format.

Last Updated
The date and time that the status was last updated.

Summary
A summary of the action being performed by the scheduler service.

Server Settings

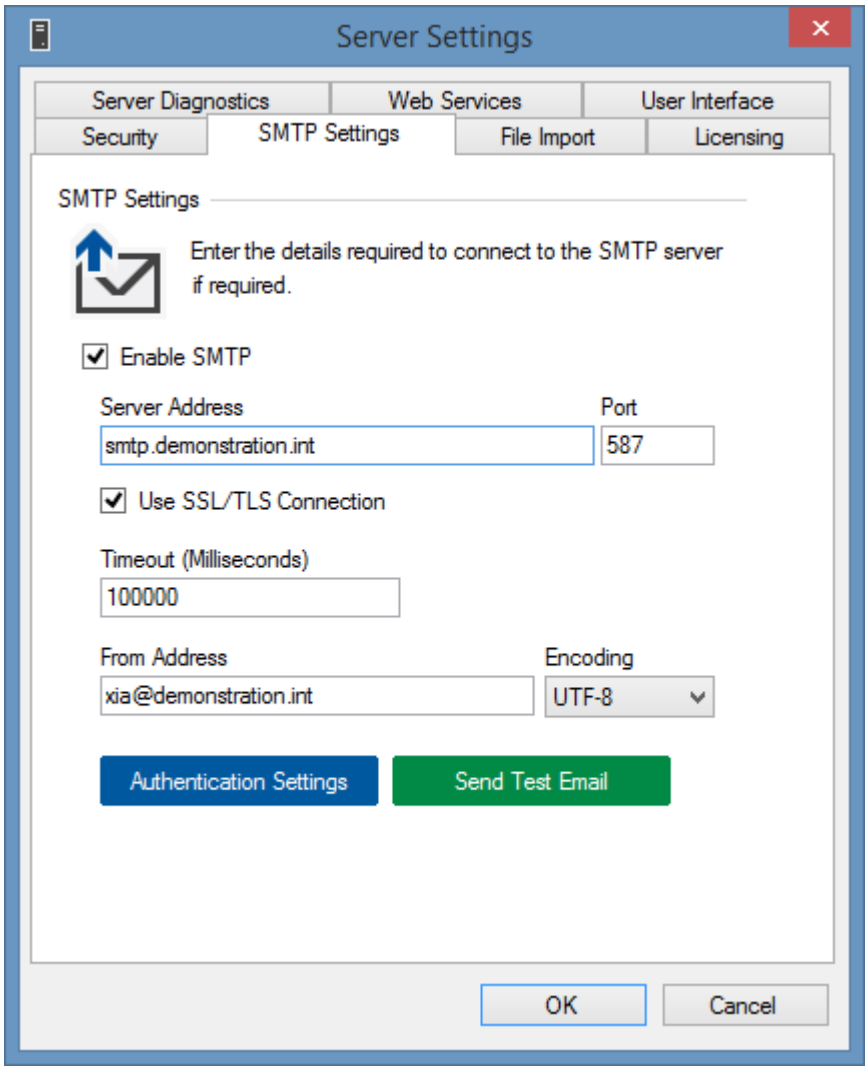
The server configuration settings form allows system administrators to configure the XIA Automation Server settings.



System Administrators
The configured system administrators.

SMTP Settings

The SMTP settings tab allows XIA Automation Server to send emails using the simple mail transfer protocol (SMTP).



Enable SMTP
Determines whether SMTP should be enabled.

Server Address
The hostname or IP address of the SMTP server.

Port
The TCP port that should be used for communication.

Use SSL/TLS Connection
Determines whether an SSL or TLS connection should be used.

Timeout (Milliseconds)
The timeout for the SMTP connection in milliseconds.

From Address

A valid email address that is accepted by the SMTP server.

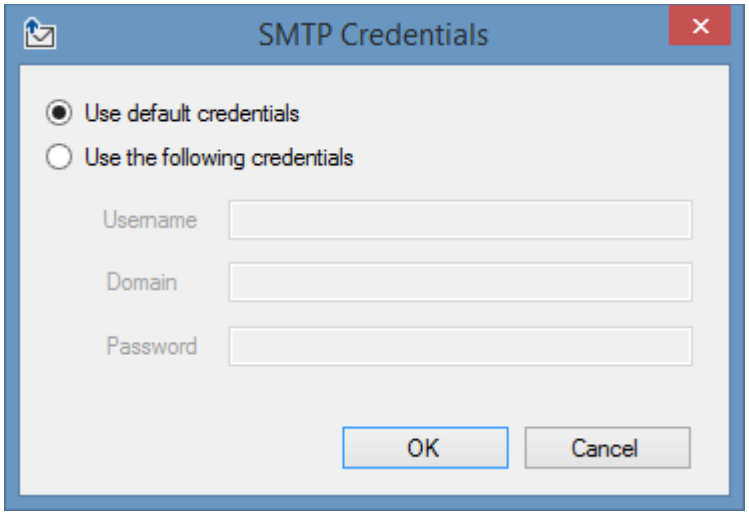
Encoding
The encoding to use for the message body. The available settings are UTF-8 (default), Unicode (UTF-16), or ASCII encoding.

Authentication Settings
The authentication settings for the SMTP connection.

Send Test Email
Displays the send test email dialog.

Authentication Settings

The credentials to use for SMTP connections.



Use Default Credentials
Determines whether the connection to the SMTP server should use the web server application pool account.

Use Specific Credentials
Determines whether to use the specified credentials.

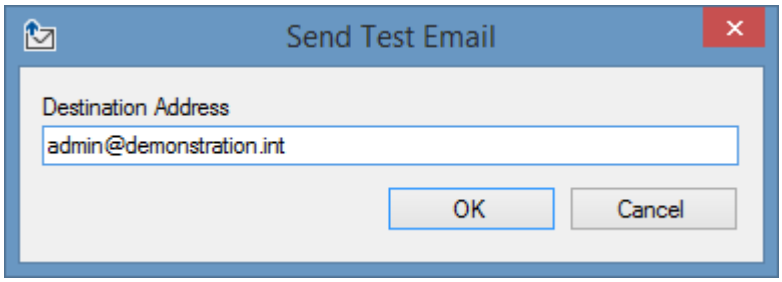
Username
The username to use for the connection.

Domain
The domain name to use for the connection. If specifying an email address for the username, the domain field can be left blank.

Password
The password to use for the connection.

Send Test Email

The send test email dialog sends a test email via SMTP from the XIA Automation Server using the specified SMTP settings.



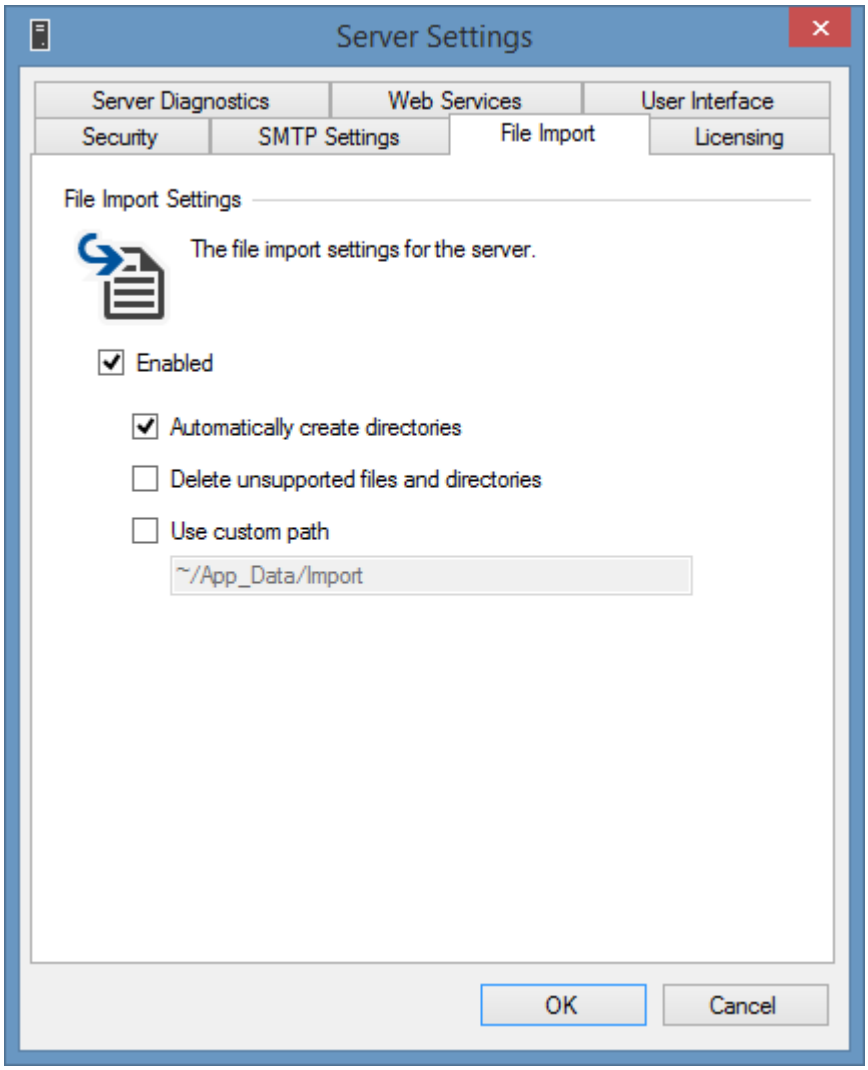
Destination Address
The email address to which the test email should be sent.

File Import

The scheduler service provides the ability to poll a directory on the file system and automatically import files within that directory.

For more information see the automatically import files section.

NOTE: This section will be disabled if the *enable scheduler access web service* option is unchecked on the web services tab.



Enabled
Determines whether the file import is enabled.

Automatically create directories
Determines whether a directory should be created in the import directory for each automation profile for which file import is enabled.

Delete unsupported files and directories
Determines whether unsupported files and directories should be deleted from the import directory.

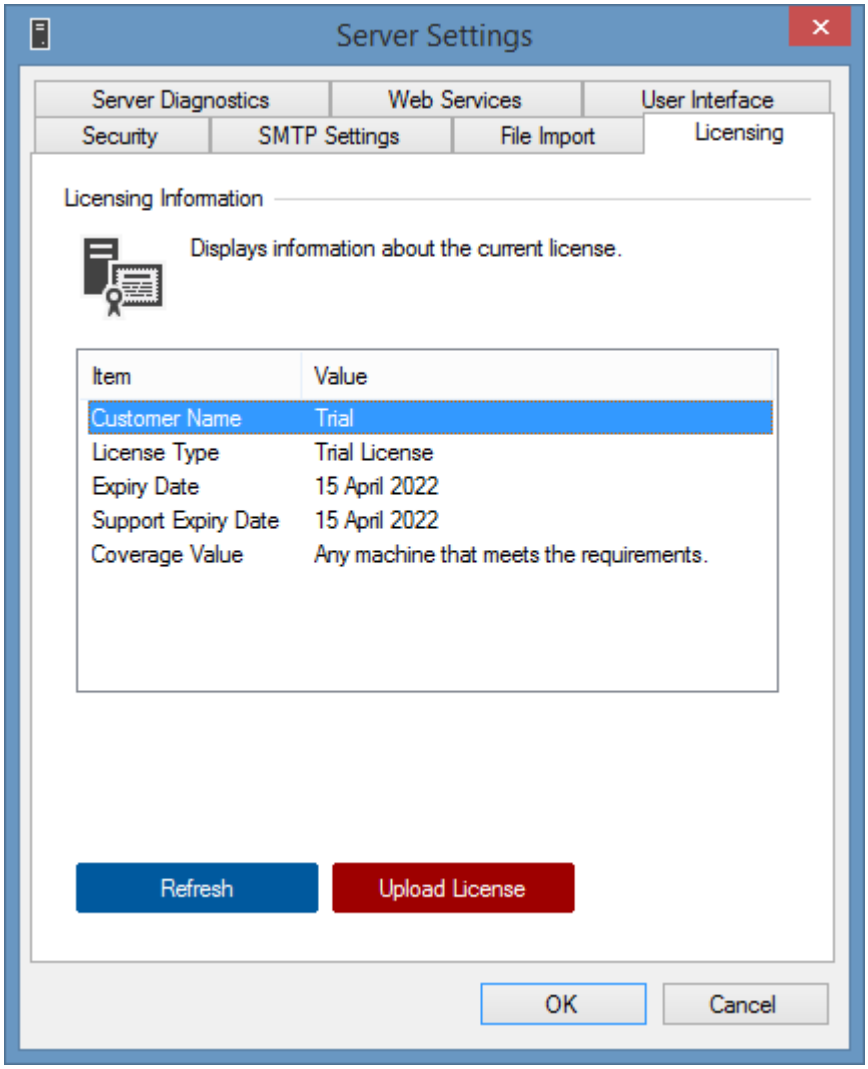
Use custom path

The absolute or virtual path to use for the import directory.

By default this is the following directory.
C:\Program Files\CENTREL Solutions\XIA Automation\XIA Automation Server\App_Data\Import

Licensing

The licensing tab displays information about the licensing of the XIA Automation Server.



Customer Name
The name of the customer to which the license is assigned.

License Type
The type of license installed.

Expiry Date
The date on which the license expires and can no longer be used.

Support Expiry Date
The date on which the support of the license expires.

Coverage Value
Information about the Active Directory domain name, computer NetBIOS name, or other value to which the license applies.

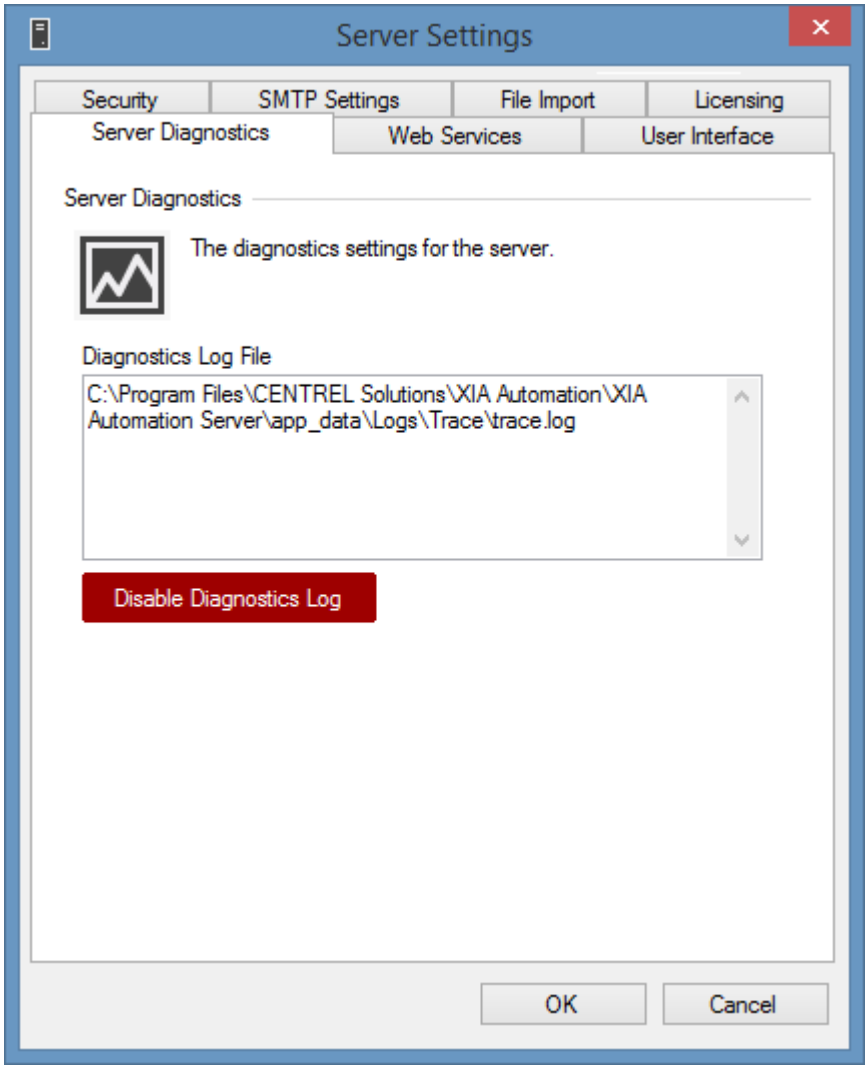
Refresh

Reloads the licensing information.

Upload License
Allows the user to select and upload a new license in .licx format.

Server Diagnostics

The server diagnostics allows diagnostics information generated by the XIA Automation Server to be written to a diagnostics log file.
NOTE: This is separate from the information generated by the administration tools diagnostics.



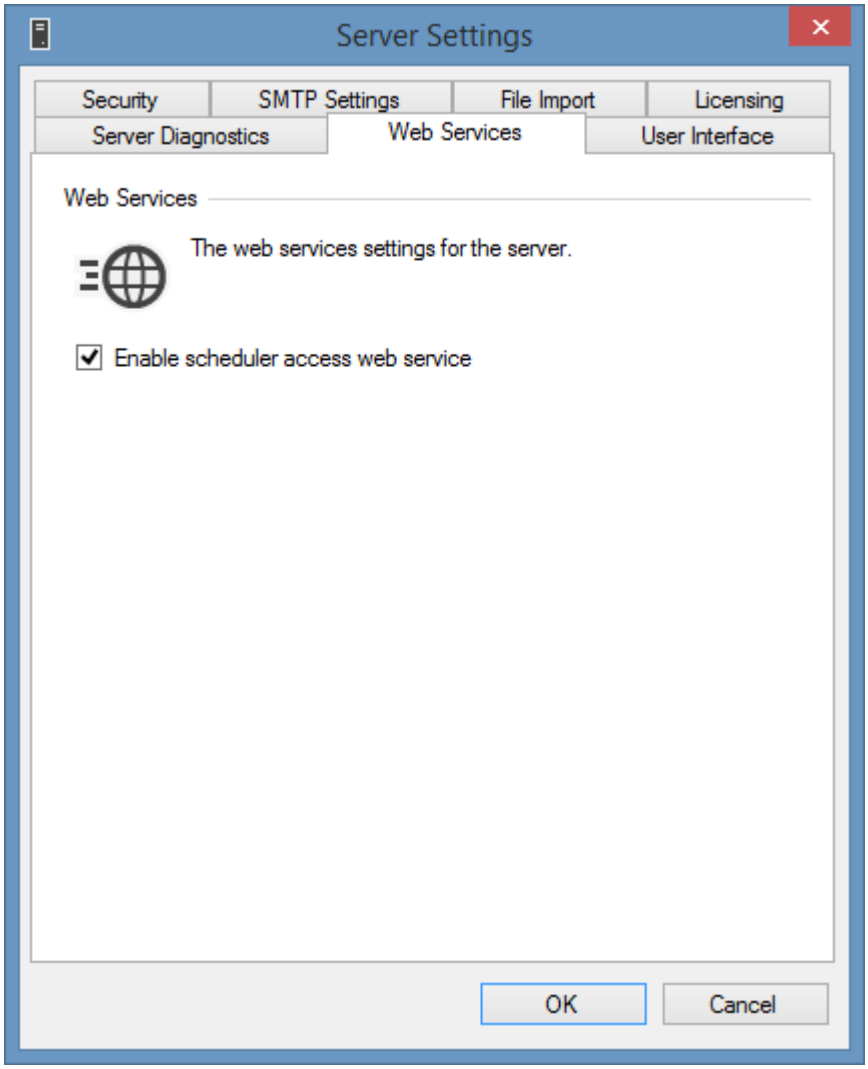
Diagnostics Log File
The absolute local path on the XIA Automation Server of the diagnostics log file.

Enable Diagnostics Log
Enables the server diagnostics log.

Disable Diagnostics Log
Disables the server diagnostics log.

Web Services

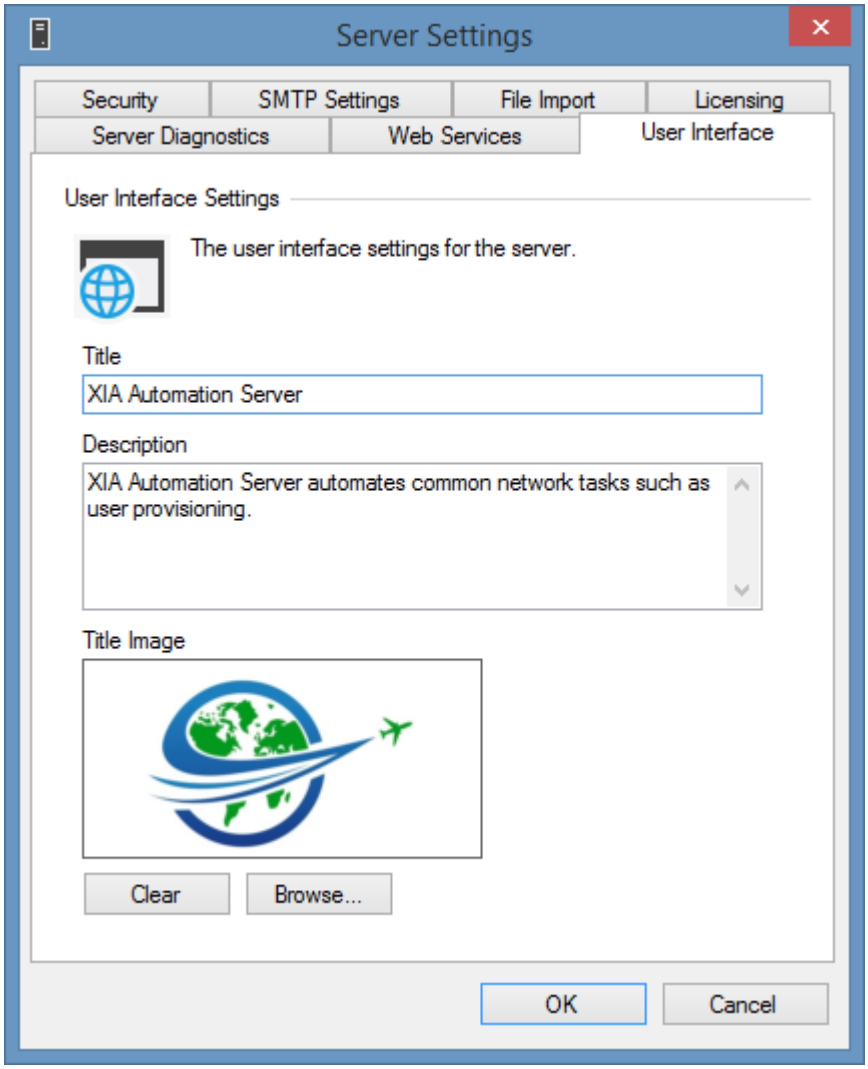
Determines the web services which are enabled on the XIA Automation Server.



Enable scheduler access web service
Determines whether the scheduler web service is enabled.
This is required for the operation of the scheduler service.

User Interface

Determines the web user interface settings for the XIA Automation Server.



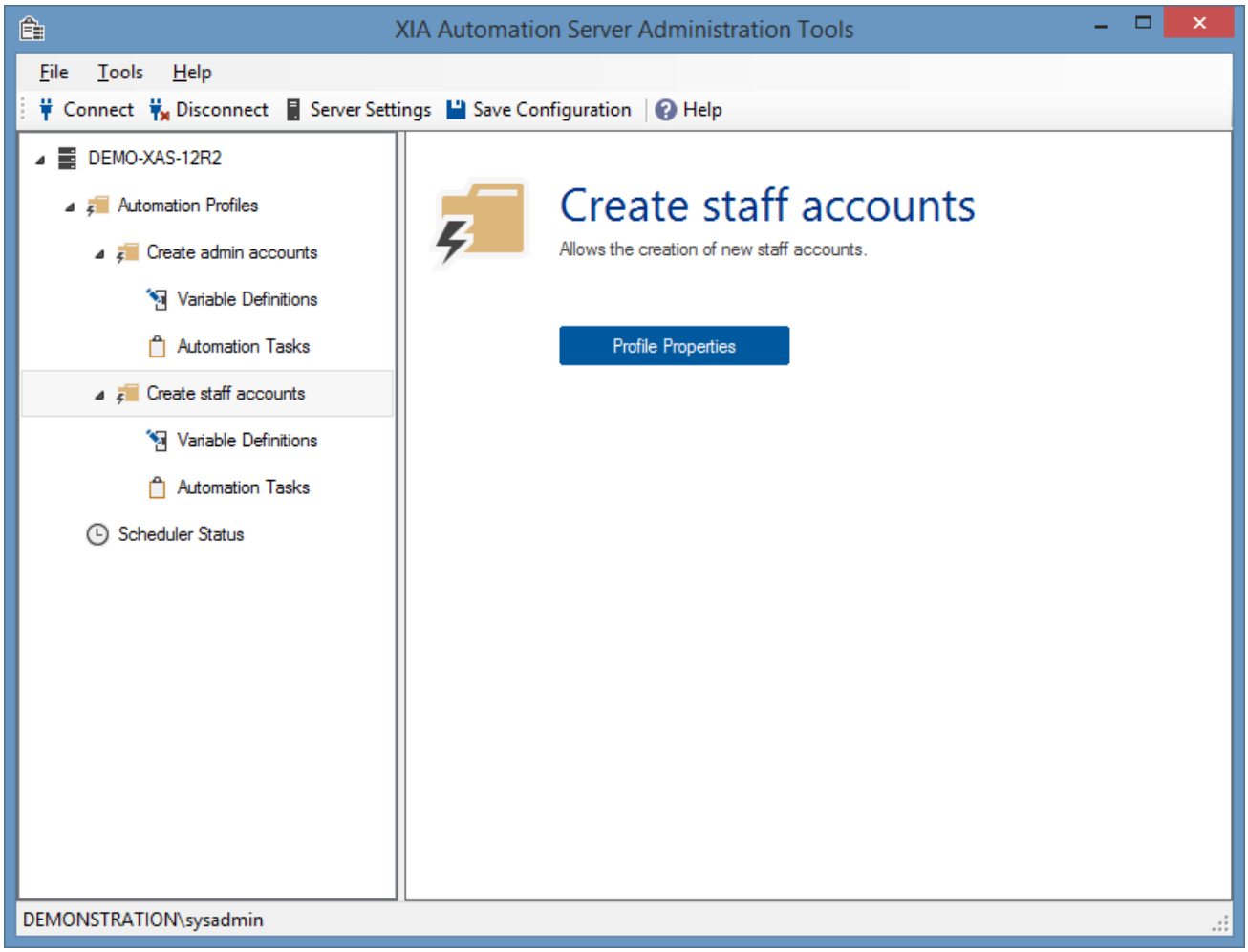
Title
The title to display in the web interface and web browser.

Description
The description of the XIA Automation Server to display in the web interface.

Title Image
The image or logo to display in the web interface.

User Interface

The user interface of the XIA Automation administration tools comprises of the following.



Menu

The main dropdown menu.

Treeview

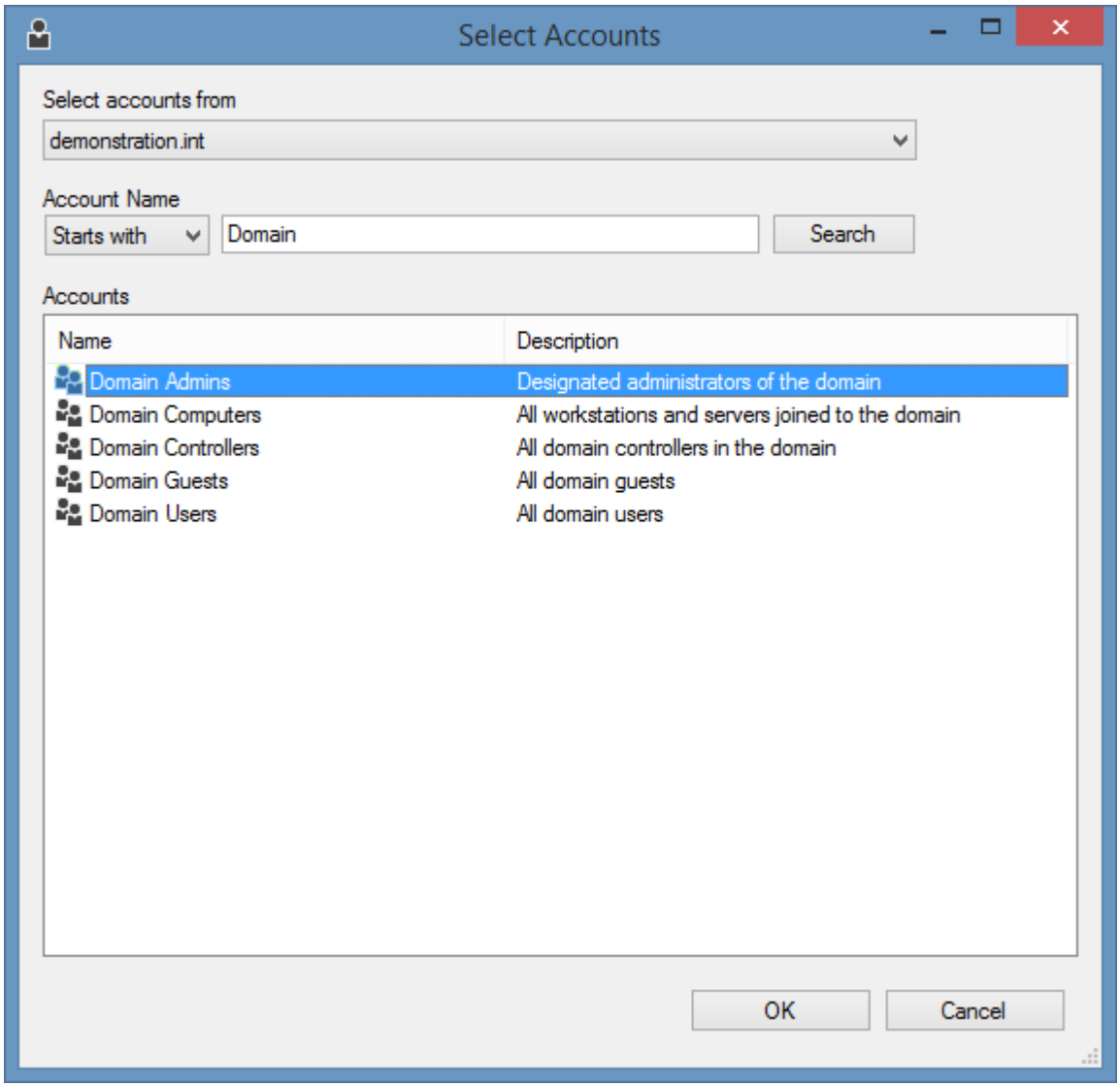
The treeview control.

Toolbar

The main toolbar.

Account Browser

The account browser allows you to select user and group accounts that are accessible to the XIA Automation Server.



Select accounts from
The Active Directory domain or computer from which the accounts are to be selected.

Starts with
Searches for accounts that start with the specified text.

Contains
Searches for accounts that contain the specified text.

Is Exactly
Searches for accounts that match the specified text exactly.

Search
Performs a search of the specified Active Directory domain.

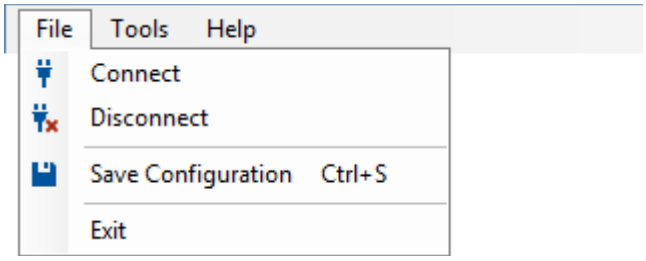
Accounts
The accounts from which the selection can be made.

Menu

The drop down menu displayed in the user interface.

File Menu

The file menu provides the following options.



Connect
Displays the connection form and allows the user to connect to the XIA Automation Server.

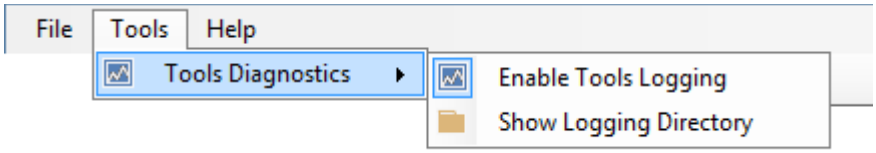
Disconnects
Disconnects from the XIA Automation Server.

Save Configuration
Saves the current configuration from the administration tools to the XIA Automation Server.

Exit
Exits the application.

Tools Menu

The tools menu provides the following options.

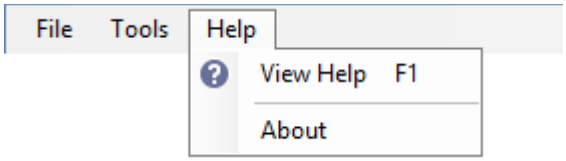


Enable Tools Logging
Enables the administration tools diagnostic log.

Show Logging Directory
Opens the administration tools diagnostic log directory.

Help Menu

The help menu provides the following options.

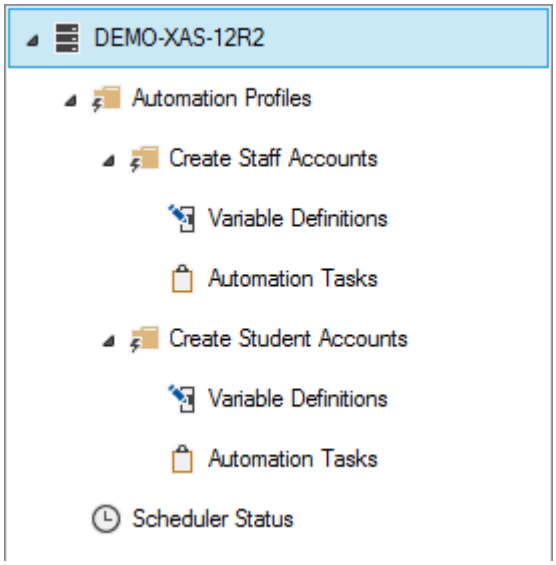


View Help
Displays the help.

About
Displays the about dialog.

Treeview

The treeview displays the following components.



Server
Right clicking the server node displays the server context menu.

Automation Profiles
Displays the automation profiles including their variable definitions and automation tasks.

Scheduler Status
Displays the scheduler status user interface.

Server Context Menu

Right clicking the server node in the treeview displays the server context menu.

Open Web Browser
Displays the server web interface in the default web browser.

Server Settings
Displays the server settings.

Toolbar

The toolbar user interface has the following

Connect
Displays the connection form to connect to the XIA Automation Server.

Disconnect
Disconnects from the XIA Automation Server.

Server Settings
Displays the server configuration settings.

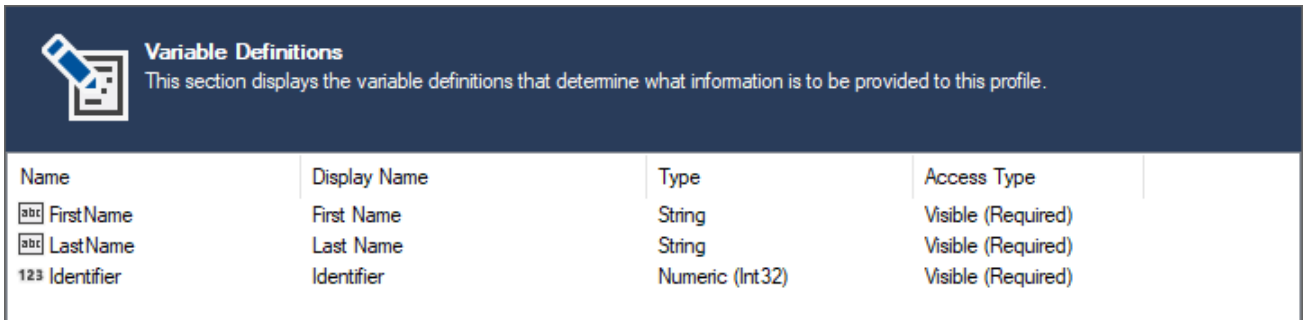
Save Configuration
Saves the current configuration to the XIA Automation Server.

Help
Displays the help.

Variable Definitions

Variables allow the user to specify values for the automation tasks executed by an automation profile to use.

The variable definitions are displayed to the user in the order specified.



Variable definitions are grouped into the types

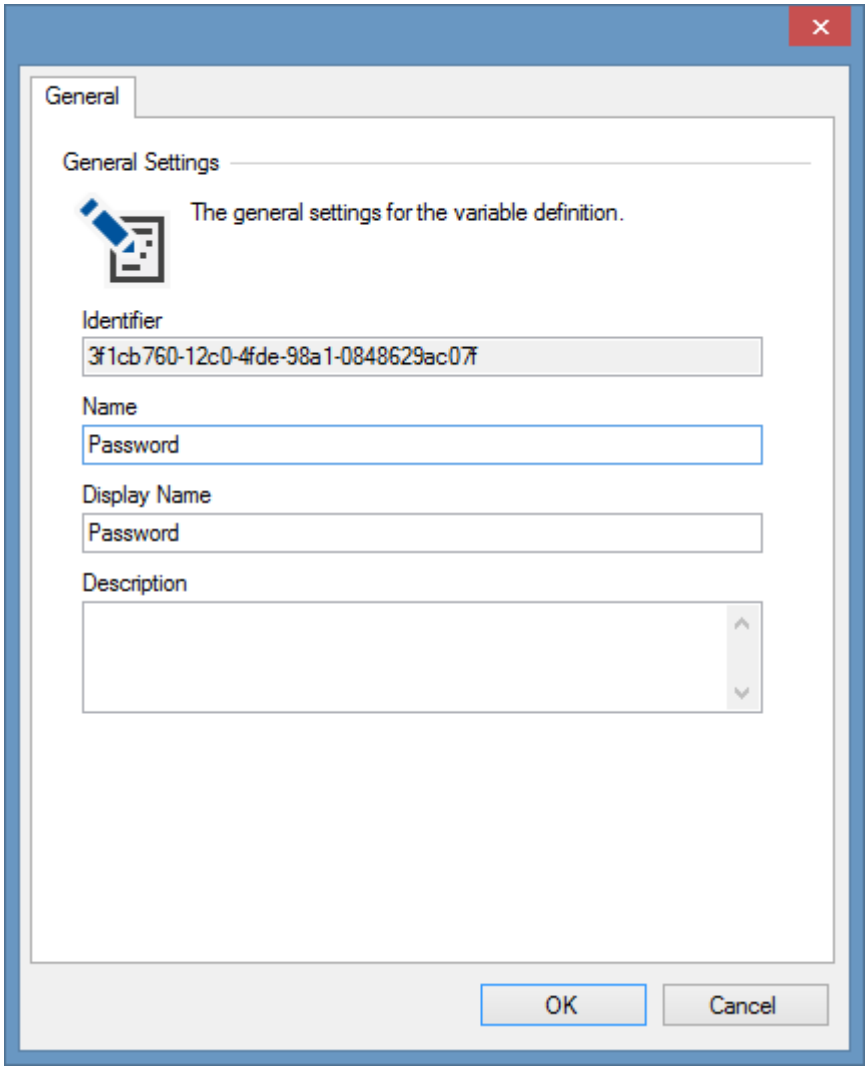
Standard Variable Definitions

These are static input types such as text (string) or numeric (integer) types.

Dynamic Variable Definitions

These are dynamically generated lists from which the user can select.

General Settings



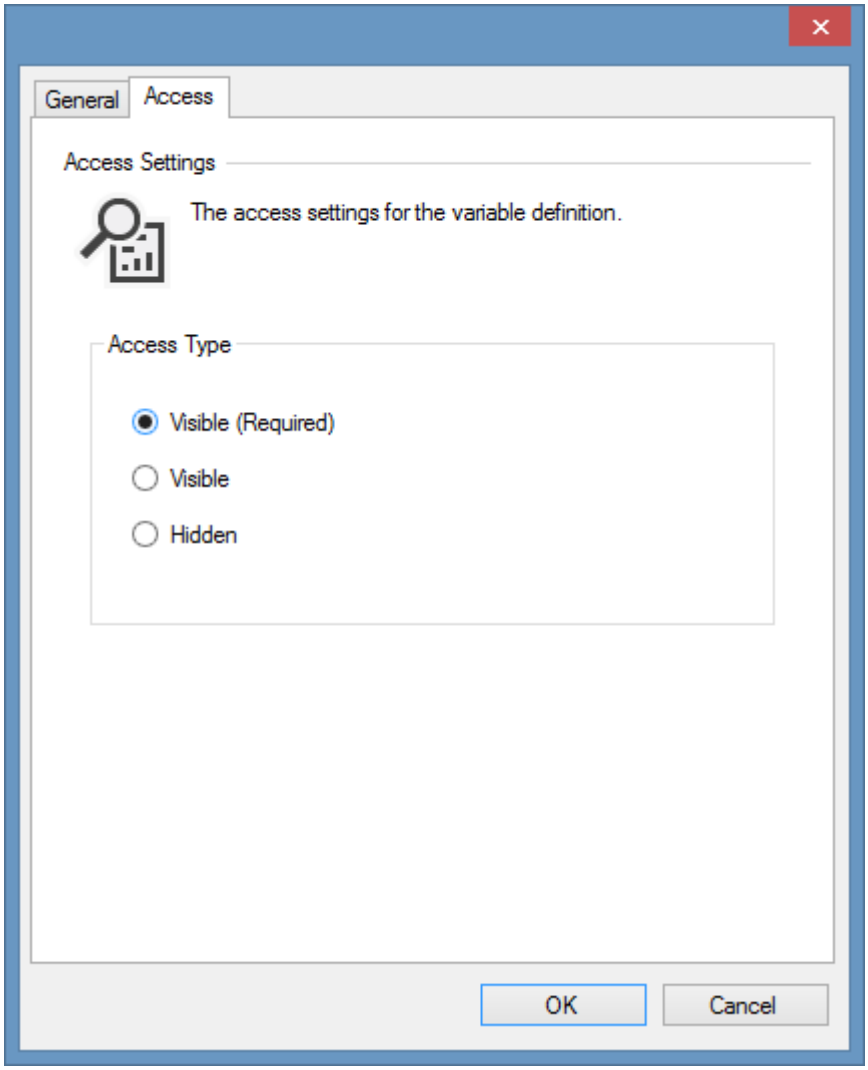
Identifier
The unique identifier of the variable definition in GUID format.

Name
The unique name of the variable definition. This is used in automation properties.
The name can contain uppercase and lowercase letters, numbers, hyphens, and underscores.

Display Name
The unique display name of the variable definition. This is displayed to users in the user interface.

Description
The description of the variable definition.

Access Settings



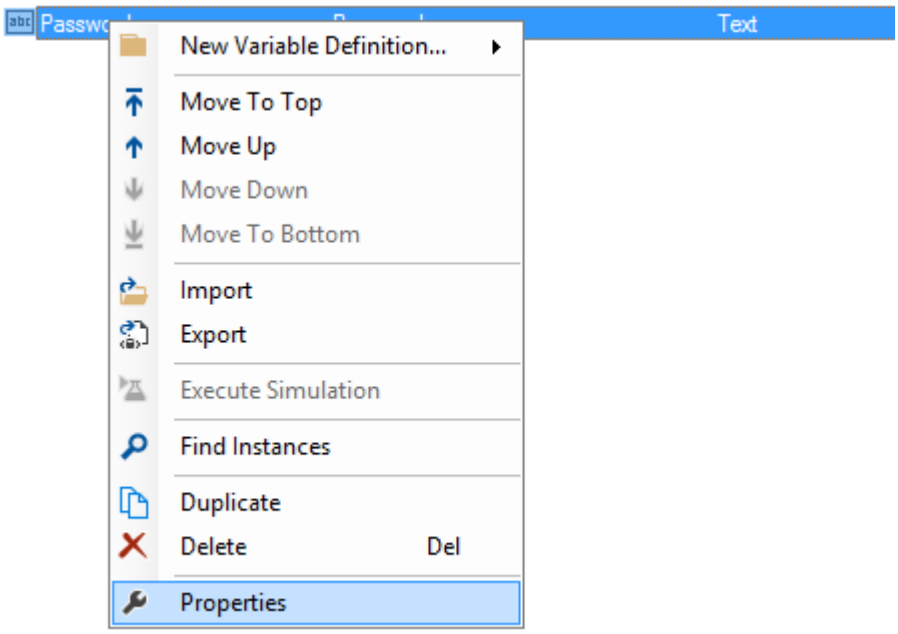
Visible (Required)
Determines whether the variable definition is visible and a value must be provided by the user or the default value.

Visible
Determines whether the variable definition is visible though a value is not required. This option does not apply to the integer variable definition and boolean variable definition.

Hidden
Determines whether the variable definition is hidden from user input. This option does not apply to list variable definitions or dynamic variable definitions.

Variable Definitions Context Menu

Right clicking the variable definitions listview displays the variable definitions context menu.



New Variable Definition
Creates a new variable definition of the selected variable definition type.

Move To Top
Moves the selected variable definition to the top of the list.

Move Up
Moves the selected variable definition up the list.

Move Down
Moves the selected variable definition down the list.

Move To Bottom
Moves the selected variable definition to the bottom of the list.

Import
Displays the open file dialog to import an variable definition from an XML file.

Export
Exports the currently selected variable definition to XML.

Execute Simulation
Executes a simulation of the selected dynamic variable definition and displays the results in the dynamic variable simulation dialog.

Find Instances
Finds instances of the selected variable definition and displays them in the variable instances dialog.

Duplicate
Creates a duplicate of the currently selected variable definitions.

Delete
Deletes the currently selected variable definitions.

Properties
Displays the properties of the selected variable definition.

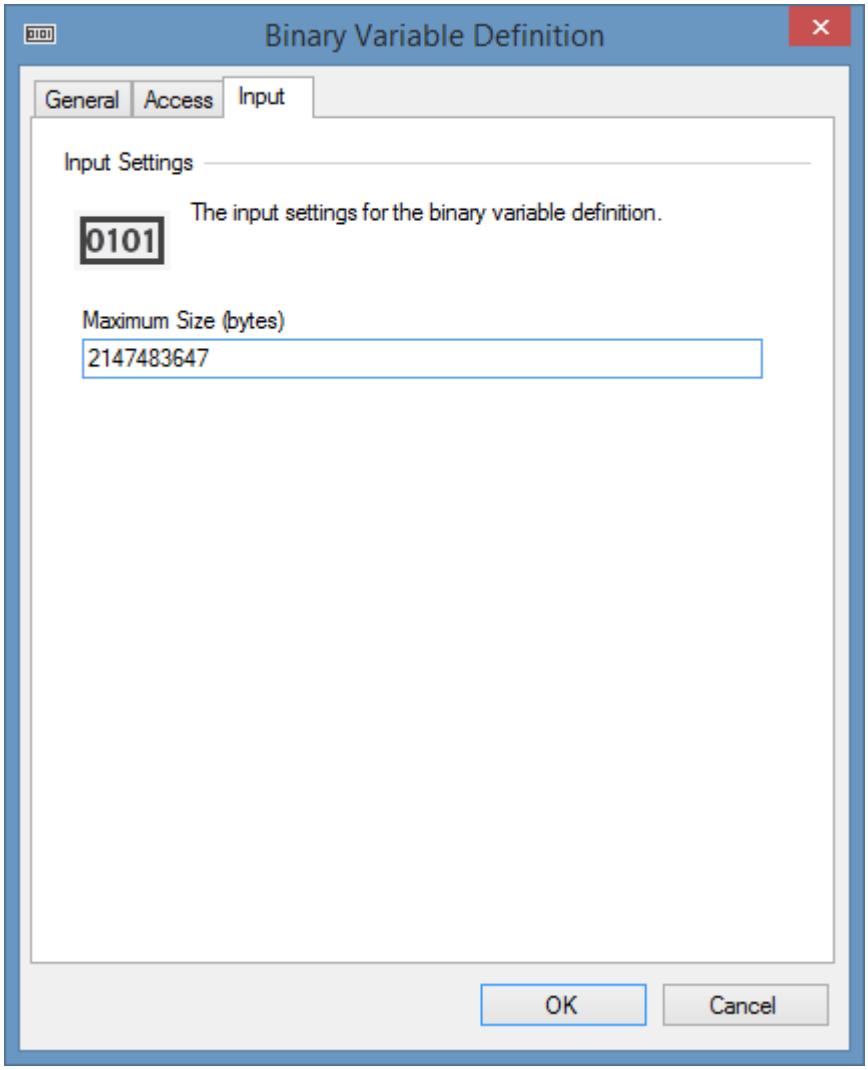
Standard Variable Definitions

Standard variable definitions allow the user to specify values for the automation tasks executed by an automation profile to use.

Binary Variable Definition

The binary variable definition allows the user to specify binary data in the form of a byte array.

Input



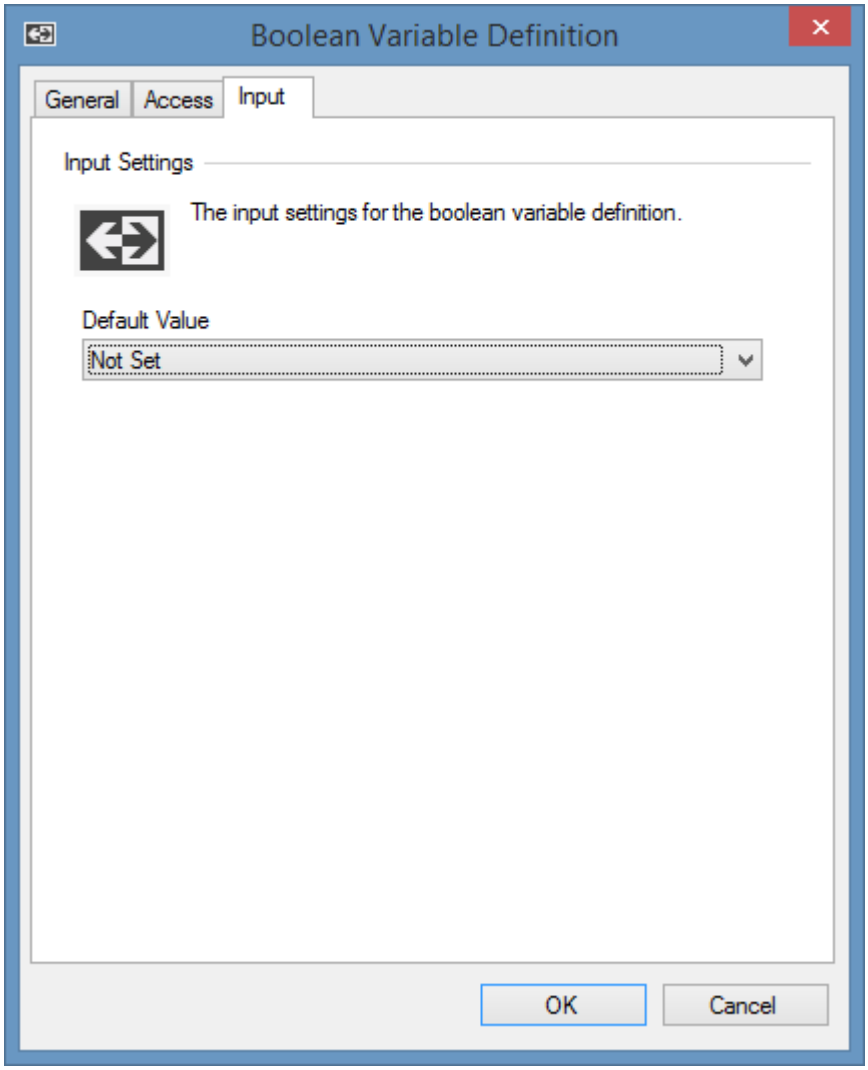
Maximum Size (bytes)
The maximum size the user can input in bytes.

NOTE: The input settings are not available when the variable definition is configured as hidden in the access settings.

Boolean Variable Definition

The boolean variable definition allows the user to specify a System.Boolean (true/false) value.

Input



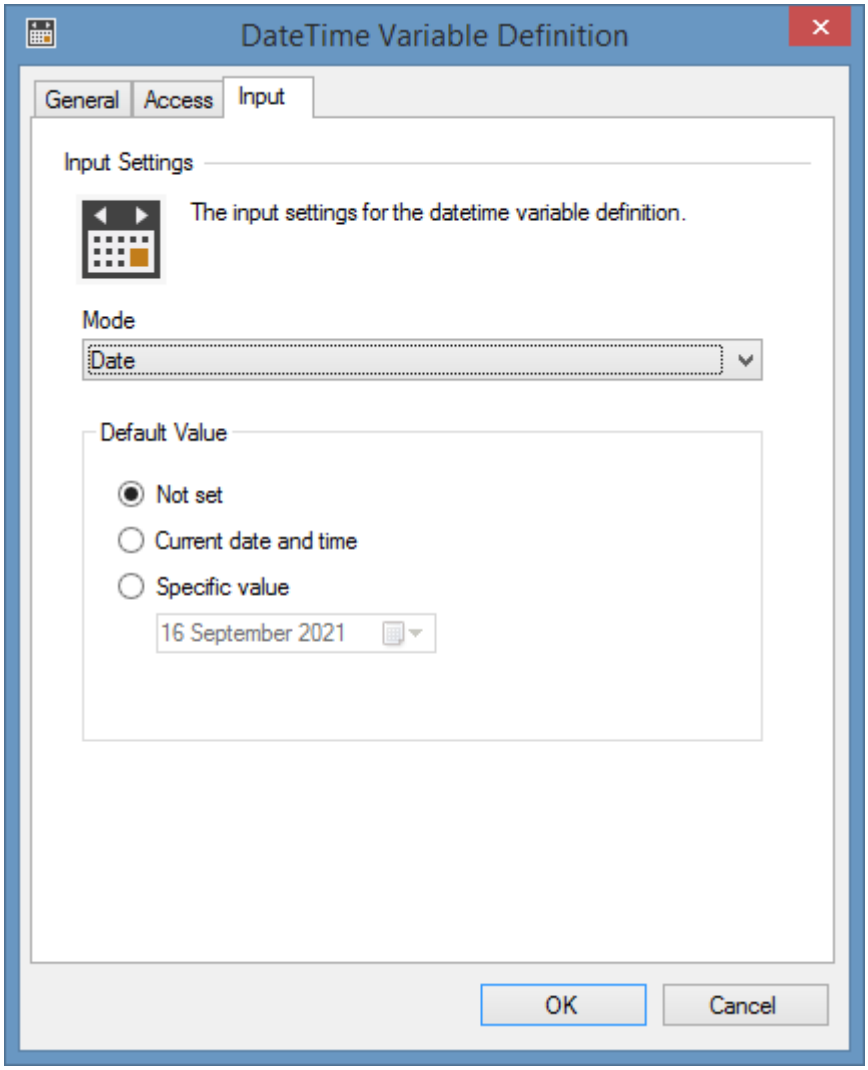
Default Value
The default value to display to the user.

NOTE: The input settings are not available when the variable definition is configured as hidden in the access settings.

DateTime Variable Definition

The datetime variable definition allows the user to specify a System.DateTime value.

Input



Mode
The input mode

- Date
- Time
- DateTime

Default Value
The default value to display to the user.

- Not set
  The default value is not set.
- Current date and time
  The date and time at the time the input is presented to the user.

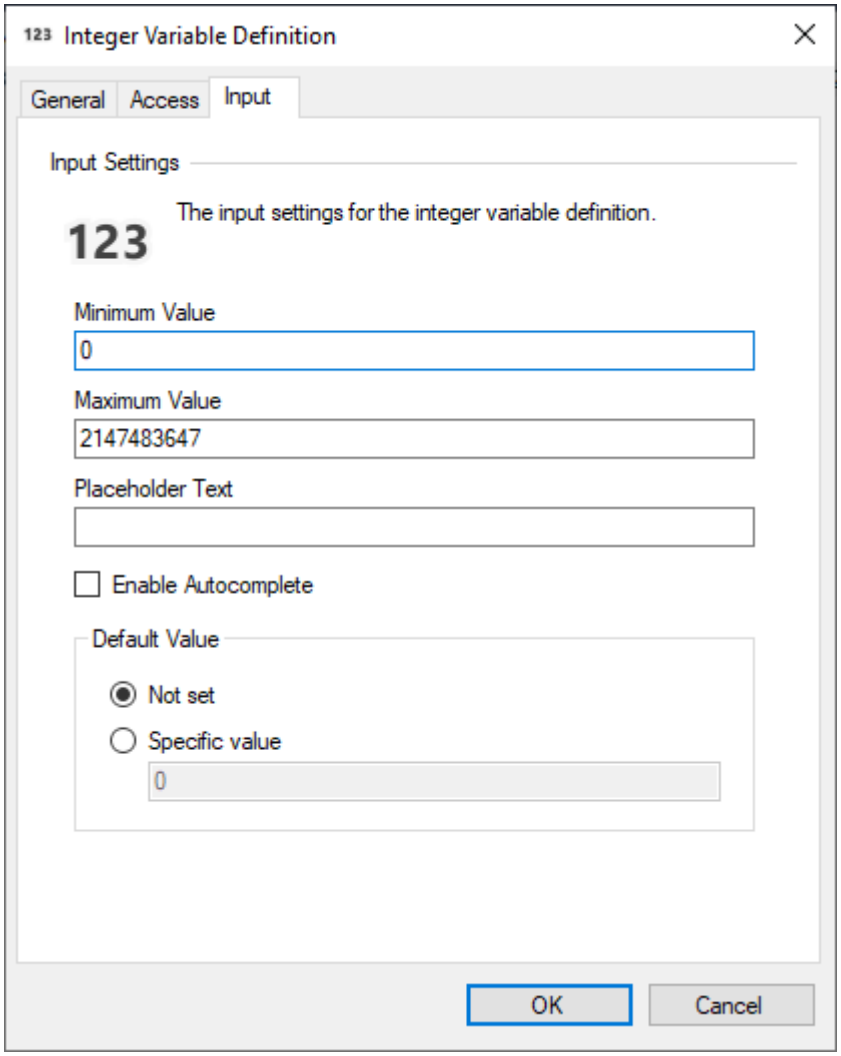
- Specific value
  The value specified by the system administrator.

NOTE: The input settings are not available when the variable definition is configured as hidden in the access settings.

Integer Variable Definition

The integer variable definition allows the user to specify a System.Int32 value.

Input



Minimum Value
The minimum valid integer value.

Maximum Value
The maximum valid integer value.

Placeholder Text
The placeholder text to display to the user.

Enable Autocomplete
Determines whether autocomplete is enabled when in using form input.

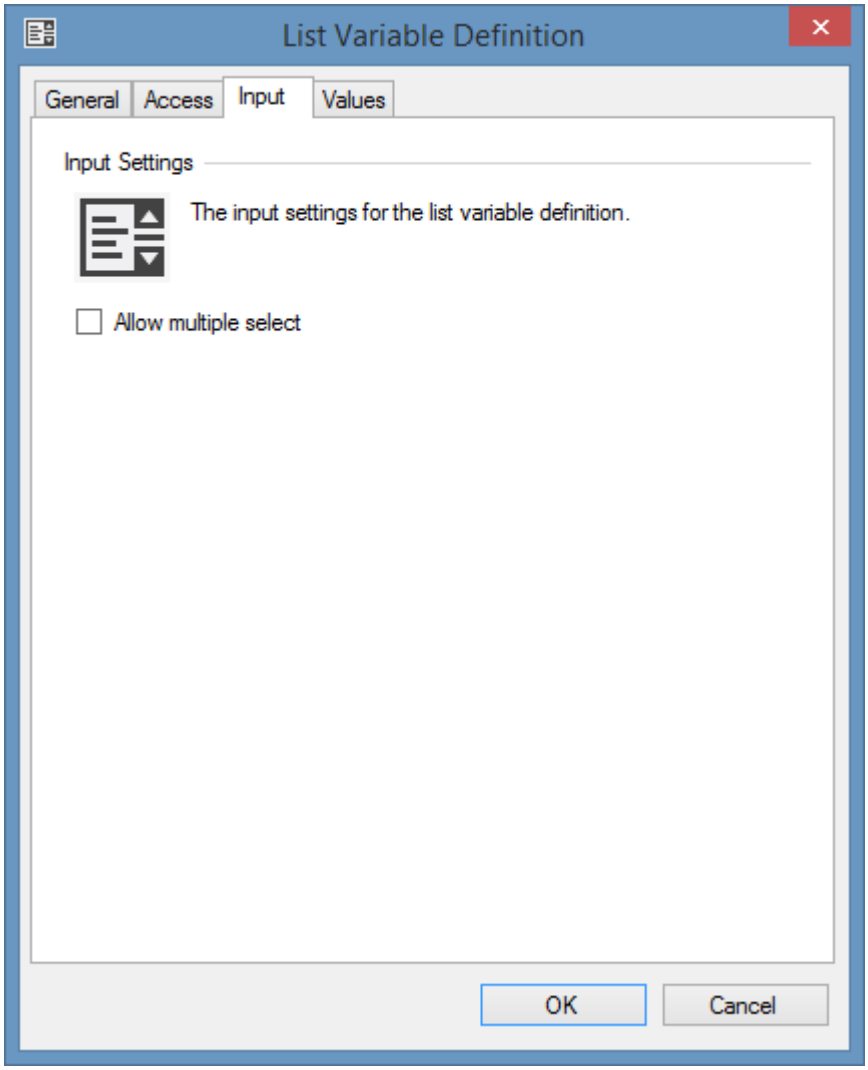
Default Value
Determines whether to provide the user with a default integer value.
If specified, this value must be between the specified minimum and maximum values.

NOTE: The input settings are not available when the variable definition is configured as hidden in the access settings.

List Variable Definition

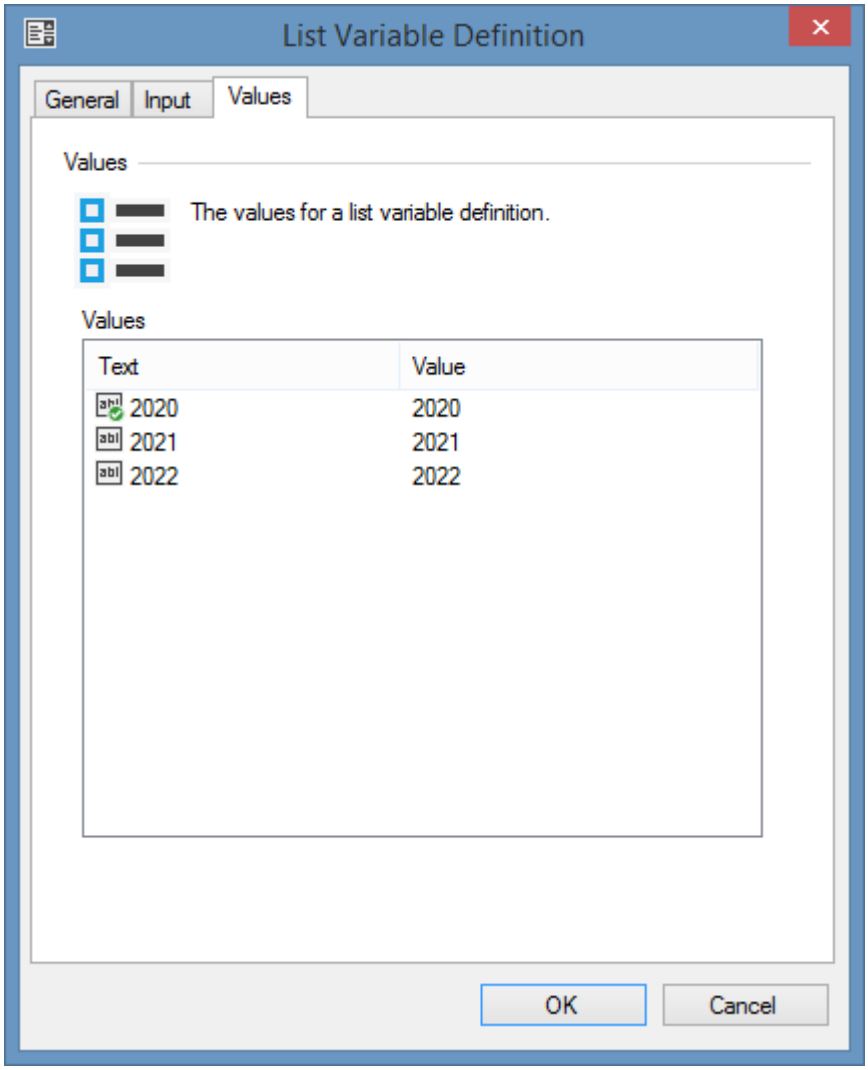
The list variable definition allows the user to specify a single System.String value, or multiple System.String values, from a predefined list.

Input



Allow multiple select
Determines whether the user can select multiple values.

Values

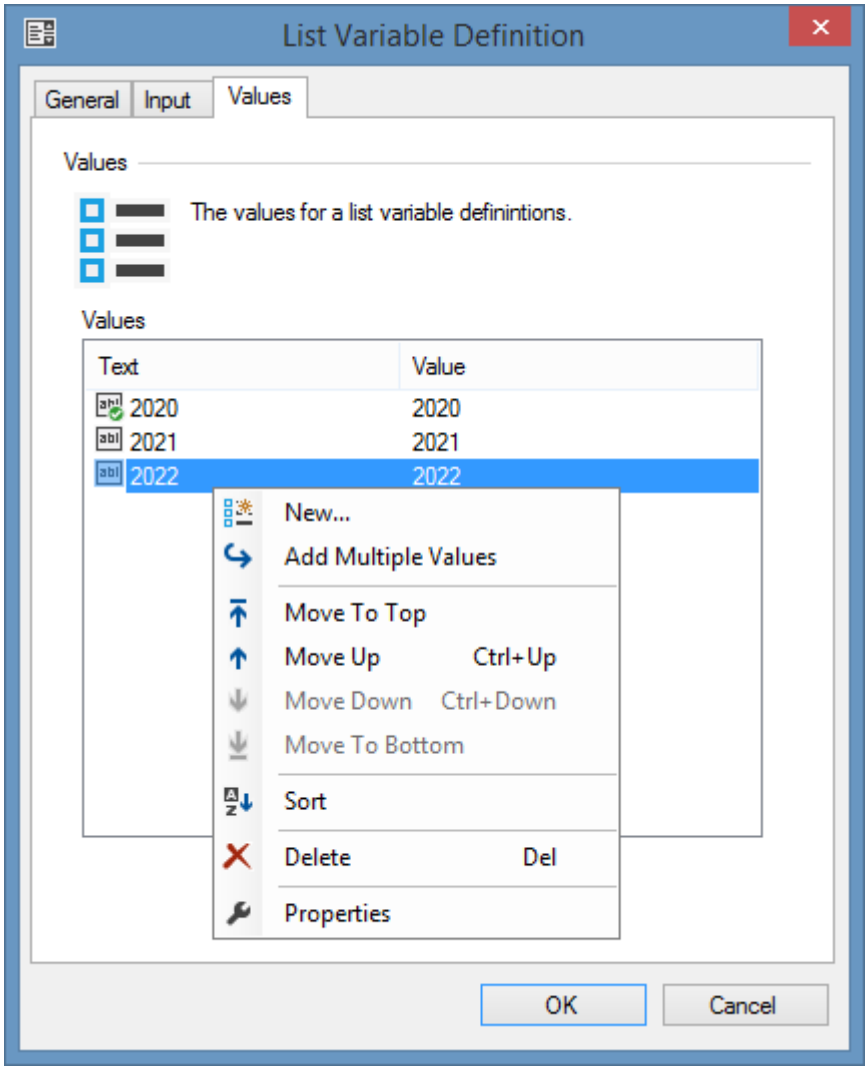


Values
The values to display in the list variable definition.
The values are displayed to the user in the order specified.

- The values can include square brackets [].

Right clicking the listview displays the values context menu.

Values Context Menu



New
Displays a new value in the list variable definition value form.

Add Multiple Items
Displays the list variable definition values form.

Move To Top
Moves the currently selected value to the top of the list.

Move Up
Moves the currently selected value up the list.

Move Down
Moves the currently selected value down the list.

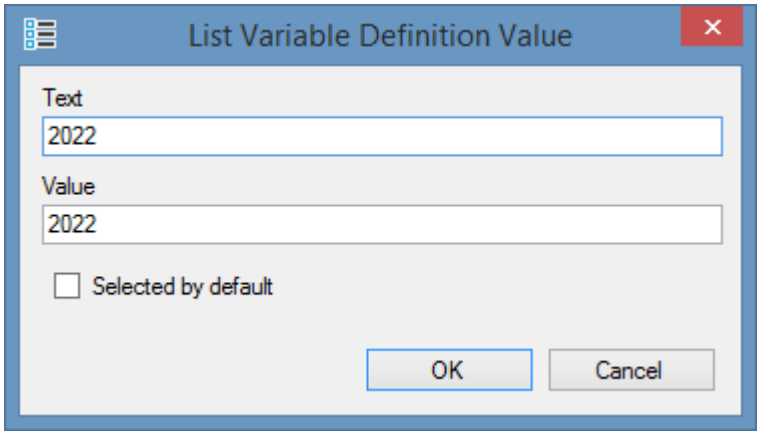
Move To Bottom
Moves the currently selected value to the bottom of the list.

Sort
Sorts the values in the list in ascending alphabetical text order.

Delete
Deletes the currently selected values.

Properties
Displays the currently selected value in the list variable definition value form.

List Variable Definition Value Form



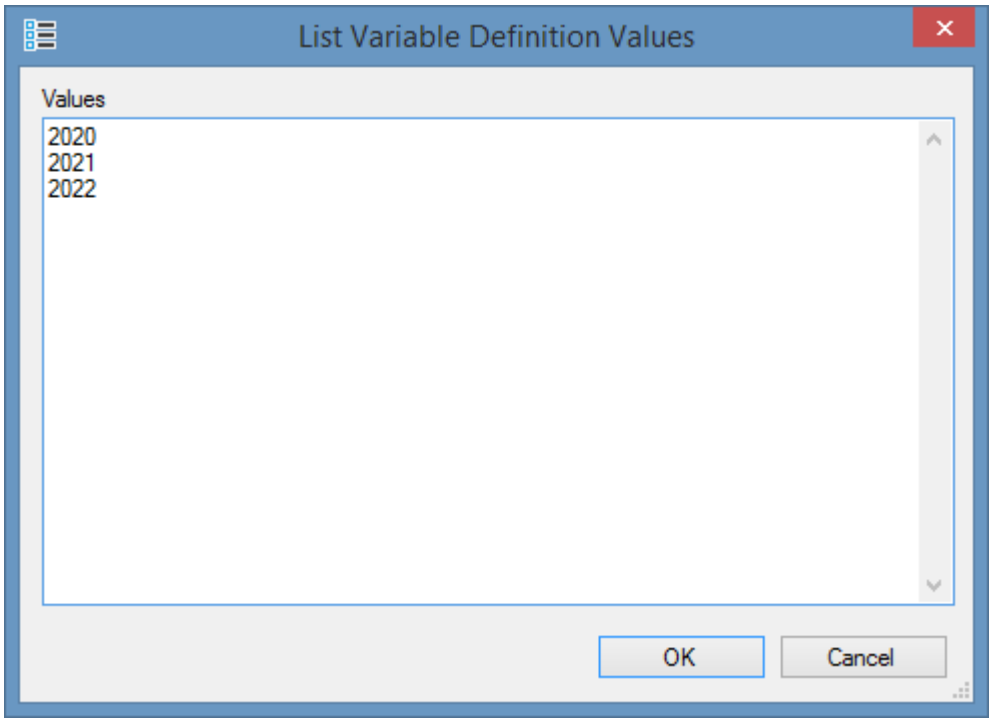
Text
The text to display to the user.

Value
The value to assign to the variable.

Selected by default
Determines whether the specified value should be selected by default.
The *allow multiple select* option on the input tab determines whether multiple values can be selected.

List Variable Definition Values Form

The list variable definition values form allows multiple values to be added to a list variable definition.



Values should be added one per line in the following format

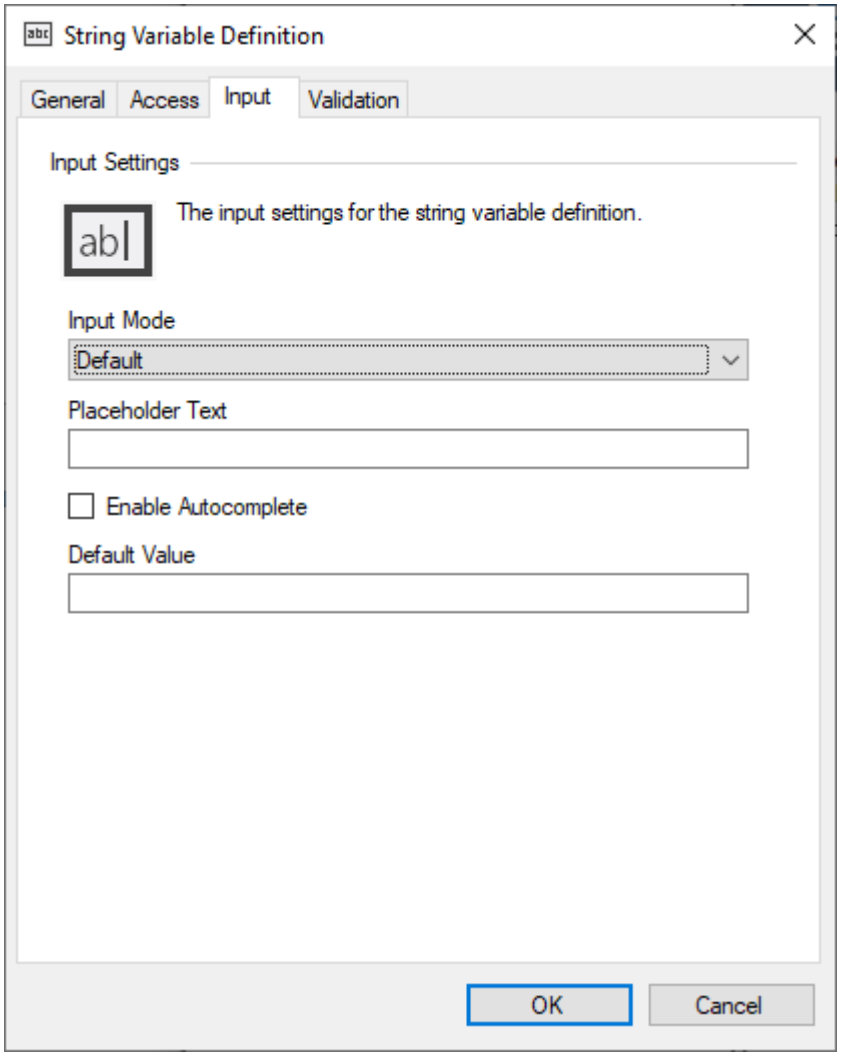
[Text], [Value], [Selected by default]

- If the list variable definition already contains a matching value it is overwritten.
- If the value field is not specified then the value is set to text value.
- If the selected by default field is not specified then the value is not selected by default.
- The *allow multiple select* option on the input tab determines whether multiple values can be selected.

String Variable Definition

The string variable definition allows the user to specify a single System.String value.

Input



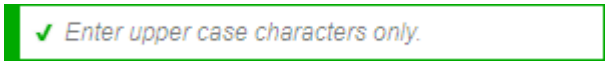
Input Mode
The input mode.

- Default
  A single line text input.

- Multiline
  A multiline text input.

- Password
  A password text input.

Placeholder Text
The placeholder text to display to the user.



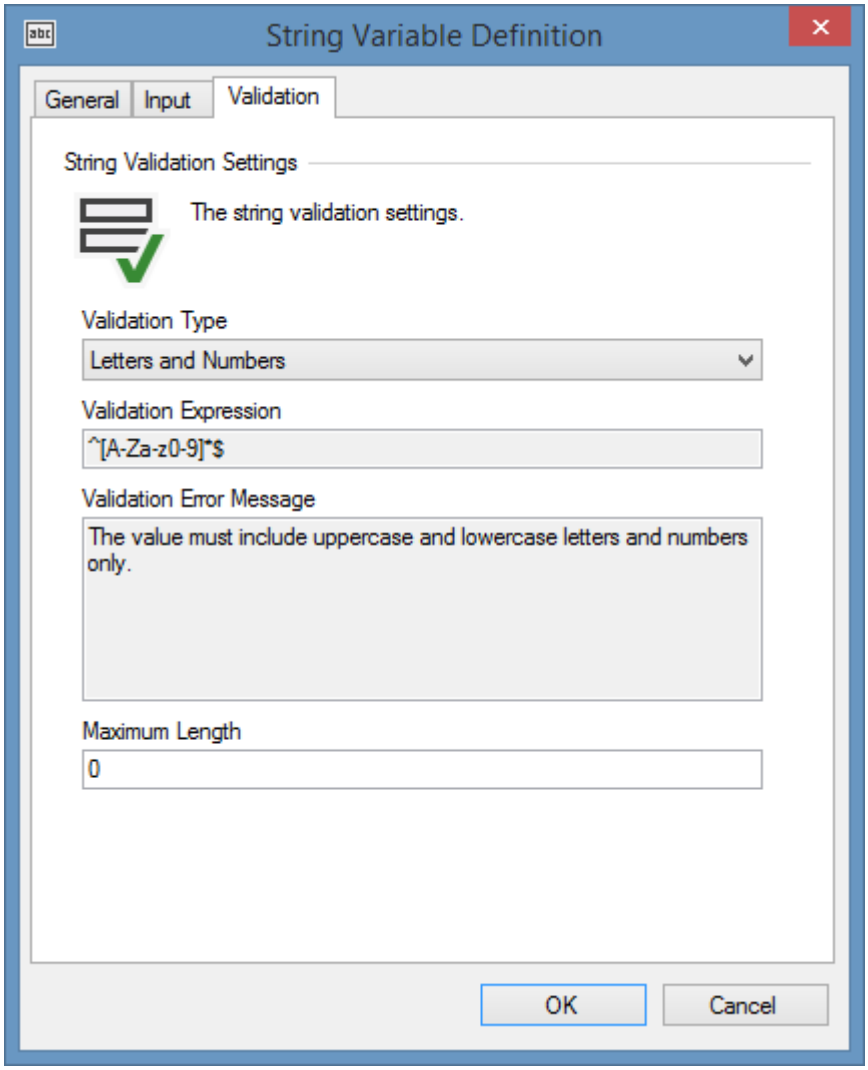
Enable Autocomplete

Determines whether autocomplete is enabled when in using form input. This does not apply when the input mode is set to password.

Default Value
The default value. This does not apply when the input mode is set to password.

NOTE: The input settings are not available when the variable definition is configured as hidden in the access settings.

Validation



Validation Type
Determines whether to use a built-in or custom validation type.

Validation Expression
The regular expression to validate the string input.

Validation Error Message
The error message to display if the validation fails. This doesn't apply when using form input.

Maximum Length
The maximum length of the string value. A value of zero indicates no maximum length.

Validation Types

None
No validation is performed.

Custom
Custom validation is performed.

Letters and Numbers
The value must include uppercase and lowercase letters and numbers only.

Letters
The value must include uppercase and lowercase letters only.

Numbers
The value must be numeric.

Email Address
The value must be a valid email address.

Lower Case Letters
The value must include lowercase letters only.

Password
The value must be between 8 and 20 characters long and include at least one uppercase letter, one lowercase letter, one number, and one special character.

Upper Case Letters
The value must include uppercase letters only.

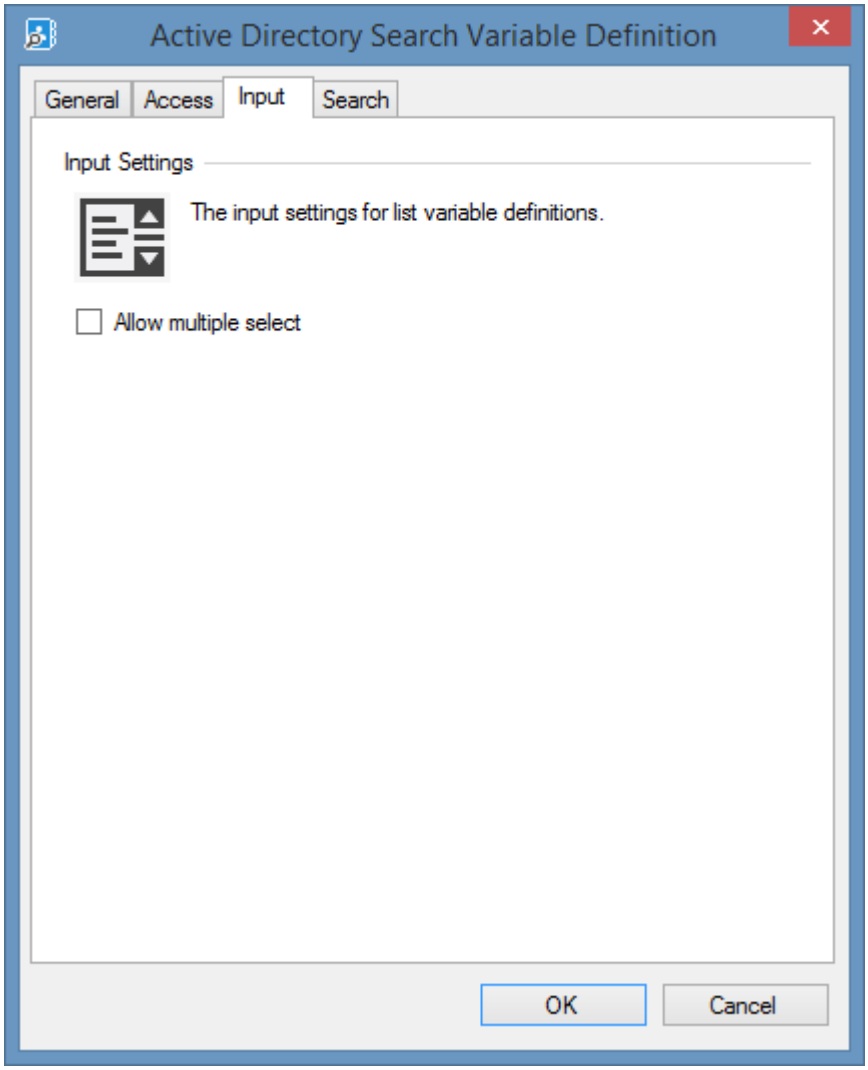
Dynamic Variable Definitions

Dynamic variable definitions allow the user to select values for the automation tasks executed by an automation profile to use from a dynamically generated list.

Active Directory Search Variable Definition

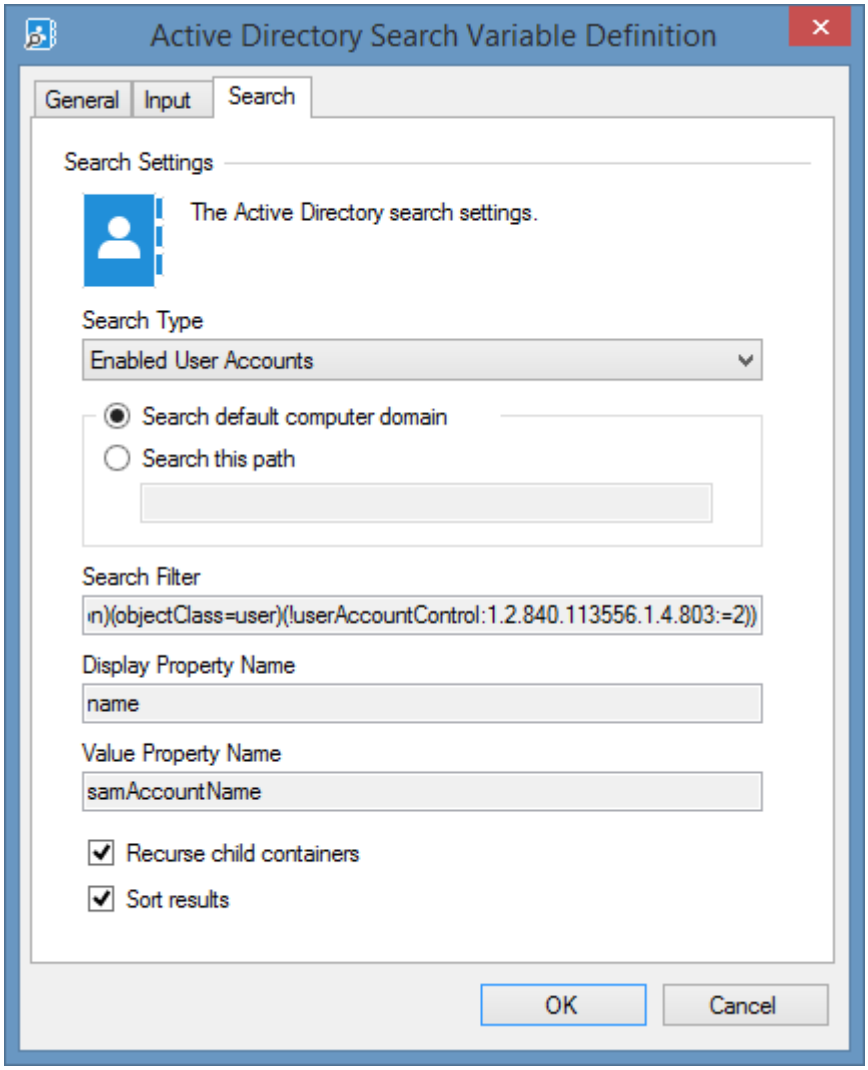
The Active Directory search variable definition allows the user to select values returned from a search of Active Directory.

Input



Allow multiple select
Determines whether the user can select multiple values.

Search



Search Type
Determines whether to use a built-in or custom search.

Search default computer domain
Determines whether the search should be performed against the Active Directory domain to which the computer running XIA Automation Server is a member.

Search this path
The canonical path from which the search should be performed - for example LDAP://demonstration.int/Staff/HR.

Search Filter
The LDAP search filter to use.

Display Property Name
The name of the Active Directory property to use to generate the text to display to the user.

Value Property Name
The name of the Active Directory property to use to generate the value.

Recurse child containers
Determines whether the search should recurse child containers.

Sort results
Determines whether the values in the list should be sorted in ascending alphabetical text order.

Built-In Active Directory Search Types

Custom
The user defined search settings are used.

Accounts With "Password Never Expires" Set
Returns Active Directory user accounts with the password never expires set.

Disabled User Accounts
Returns disabled Active Directory user accounts.

Empty Security Groups
Returns Active Directory security groups that contain no members.

Enabled User Accounts
Returns enabled Active Directory user accounts.

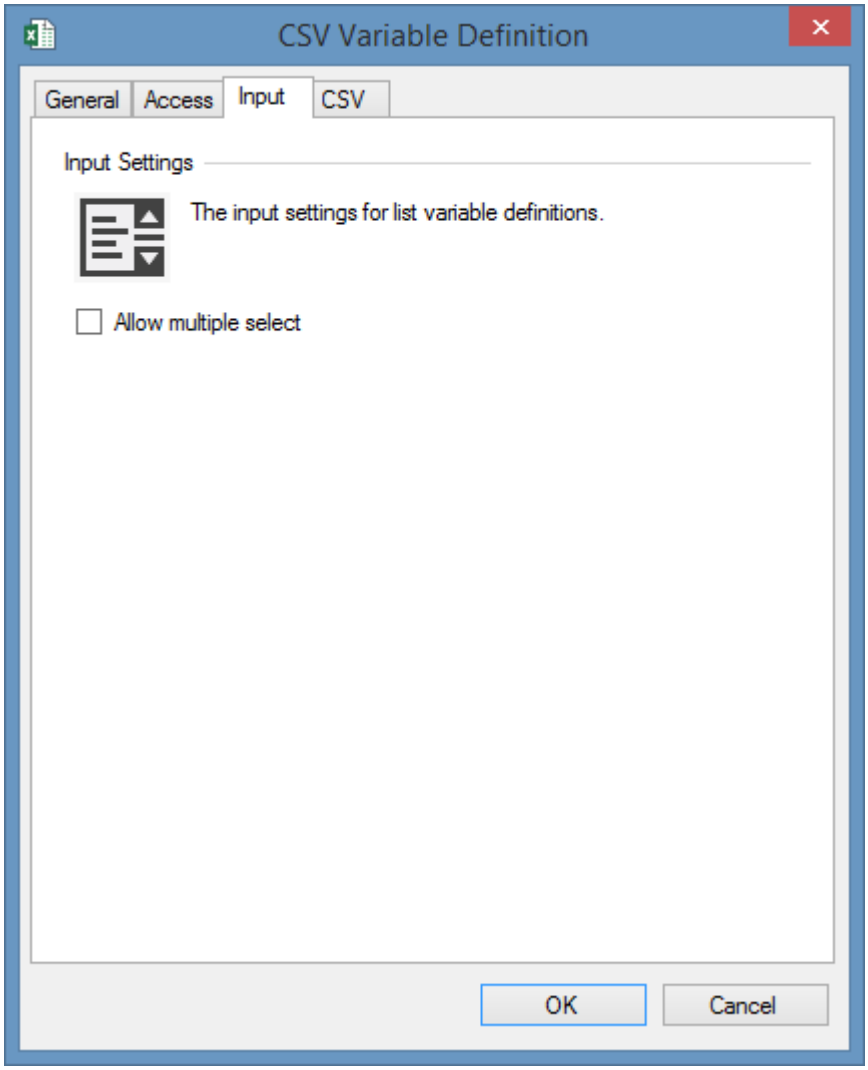
Exchange Servers
Returns Microsoft Exchange On-Premises servers.
This query requires that the search path be set to the configuration container - for example LDAP://demonstration.int/Configuration

Security Groups
Returns Active Directory security groups.

CSV Variable Definition

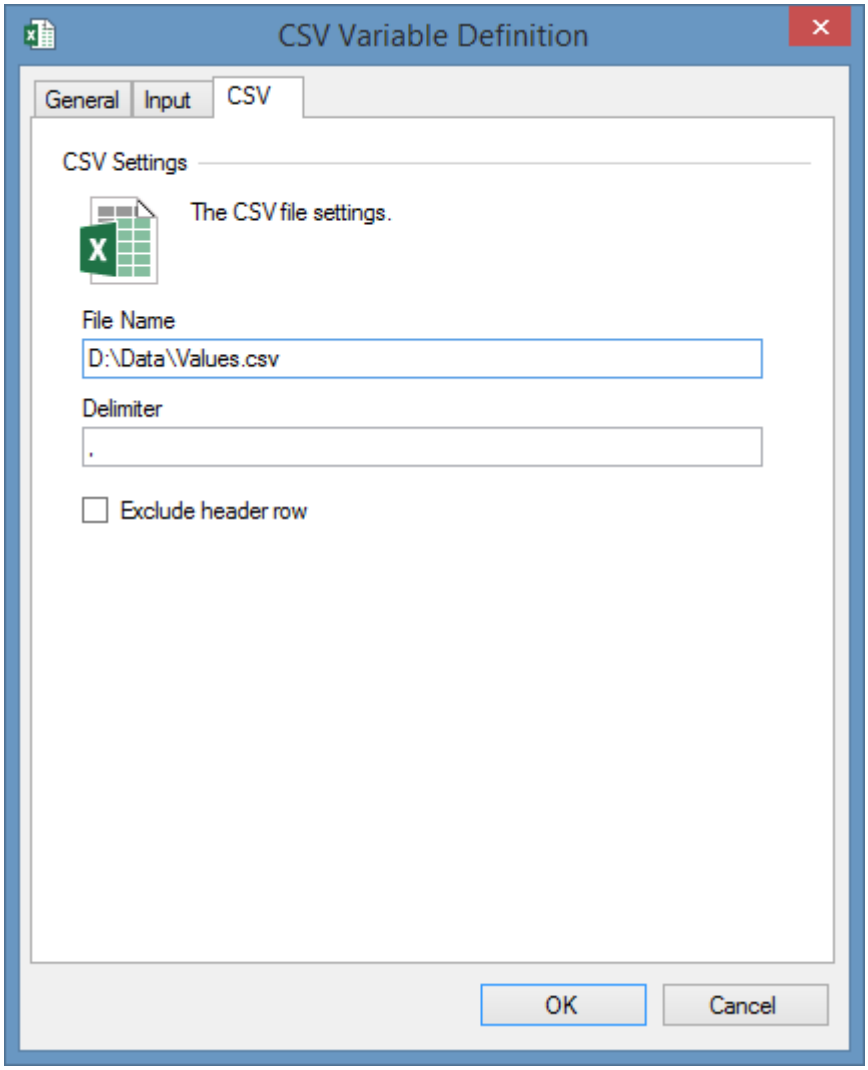
The CSV variable definition allows the user to select values returned from a comma separated volume (CSV) file.

Input



Allow multiple select
Determines whether the user can select multiple values.

CSV



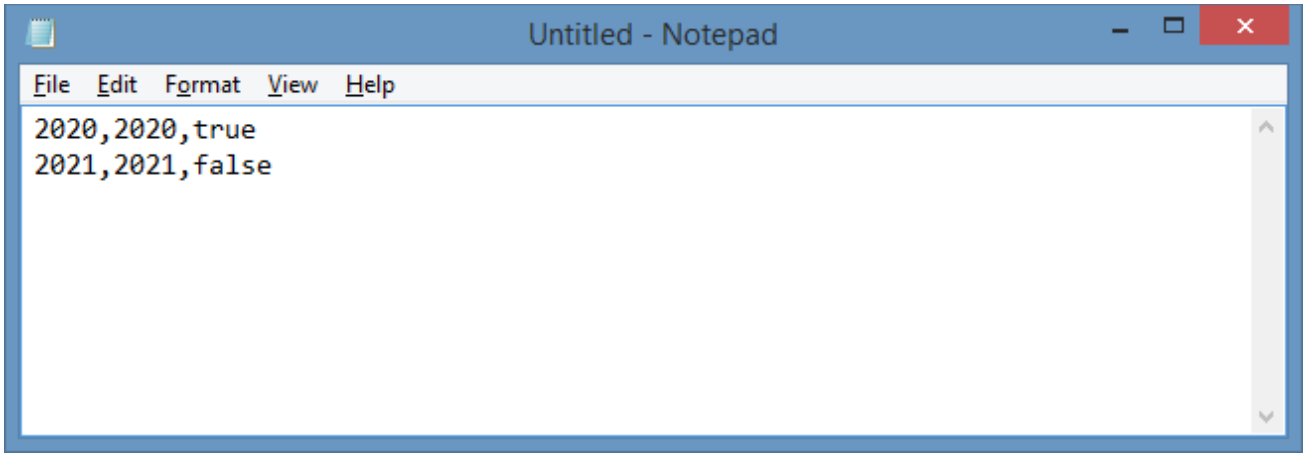
File Name
The absolute path to the CSV file to read.
This must be accessible to the machine running XIA Automation Server and the web server application pool account.

Delimiter
The delimiter character such as a comma.
To use a tab character as the delimiter enter \t.

Exclude header row
Determines whether the CSV file includes a header row which should be ignored.

CSV File Format

The following describes the format of the CSV file used by the CSV variable definition.



Values should be added one per line in the following format

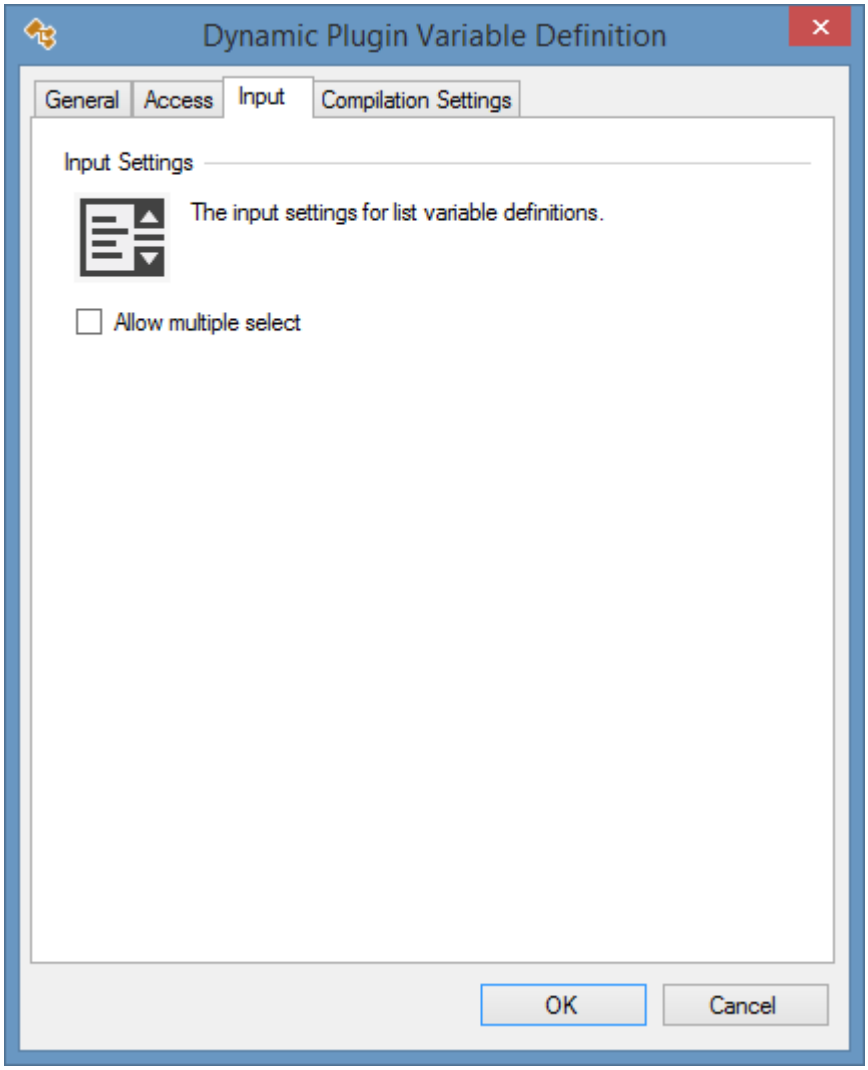
[Text], [Value], [Selected by default]

- If the value field is not specified then the value is set to text value.
- If the selected by default field is not specified then the value is not selected by default.
- The *allow multiple select* option on the input tab determines whether multiple values can be selected.
- A delimiter other than the comma can be specified on the CSV tab.

Dynamic Plugin Variable Definition

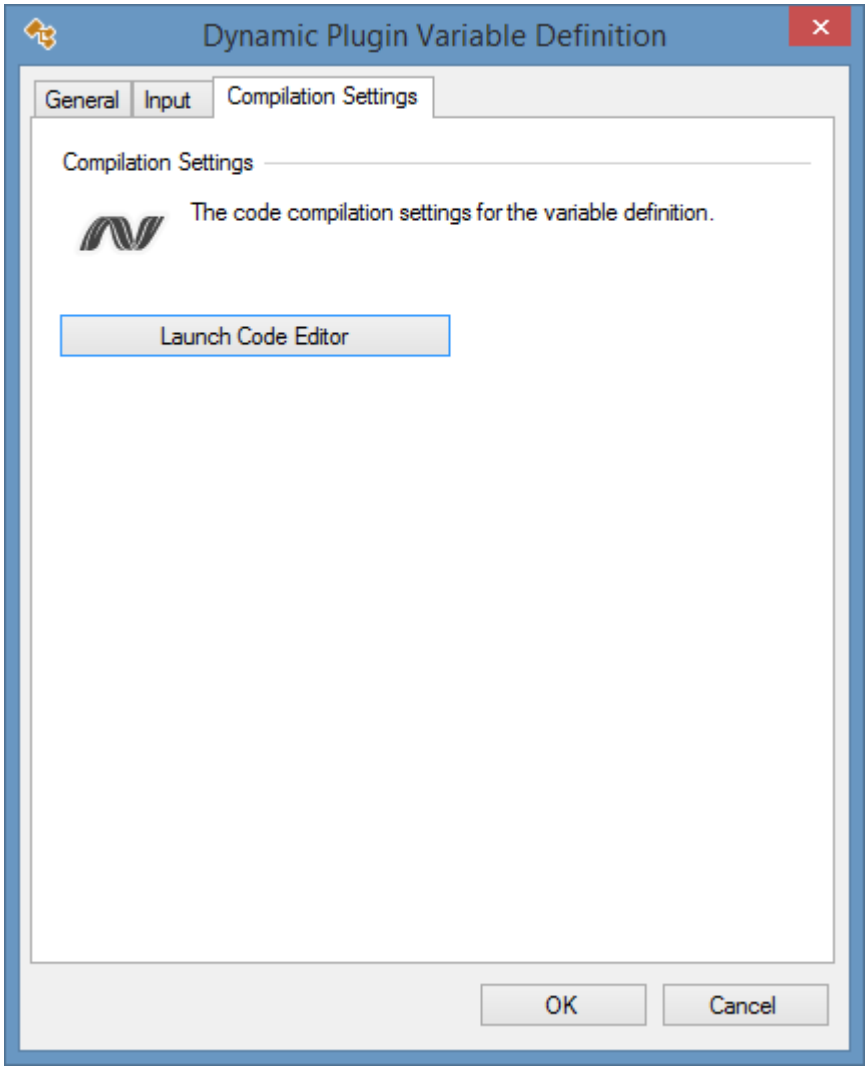
The dynamic plugin variable definition allows the user to select values returned from custom plugins written using Microsoft C#.

Input



Allow multiple select
Determines whether the user can select multiple values.

Compilation Settings



Launch Code Editor
Open the built-in dynamic code editor.

VariableDefinition Property

The VariableDefinition parameter in the dynamic code editor allows access to the executing dynamic plugin variable definition.

```
/// <summary>
/// Executes the plugin and returns the list variable definition values.
/// </summary>
/// <returns>The CENTREL.XIA.Automation.Model.ListVariableDefinitionValues.</returns>
public override ListVariableDefinitionValues Execute()
{
	if (VariableDefinition.Input.AllowMultipleSelect)
	{
		// Determines whether multiple items can be selected.
	}
}
```

Return Value

The dynamic plugin variable definition should populate and return the CENTREL.XIA.Automation.Model.ListVariableDefinitionValues that should be displayed to the user.

```
/// <summary>
/// Executes the plugin and returns the list variable definition values.
/// </summary>
/// <returns>The CENTREL.XIA.Automation.Model.ListVariableDefinitionValues.</returns>
public override ListVariableDefinitionValues Execute()
{
      ListVariableDefinitionValues values = new ListVariableDefinitionValues();
      values.Items.Add("2020", "2020", true);
      values.Items.Add("2021", "2021", true);
      values.Items.Add("2022", "2022", true);
      return values;
}
```

- If the value is not specified then the value is set to the text value.
  `values.Items.Add("2022");`

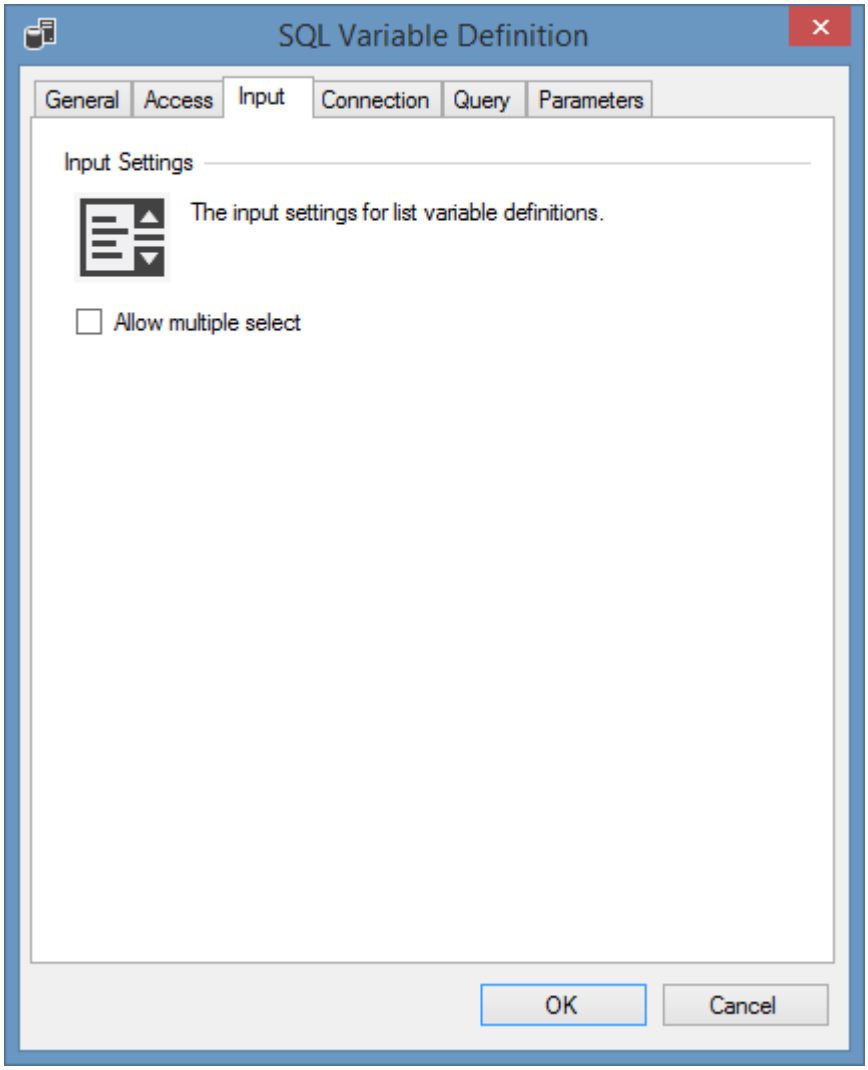
- If isSelected is not specified then the value is not selected by default.

- The *allow multiple select* option on the input tab determines whether multiple values can be selected. This can be accessed programmatically using the VariableDefinition property.

SQL Variable Definition

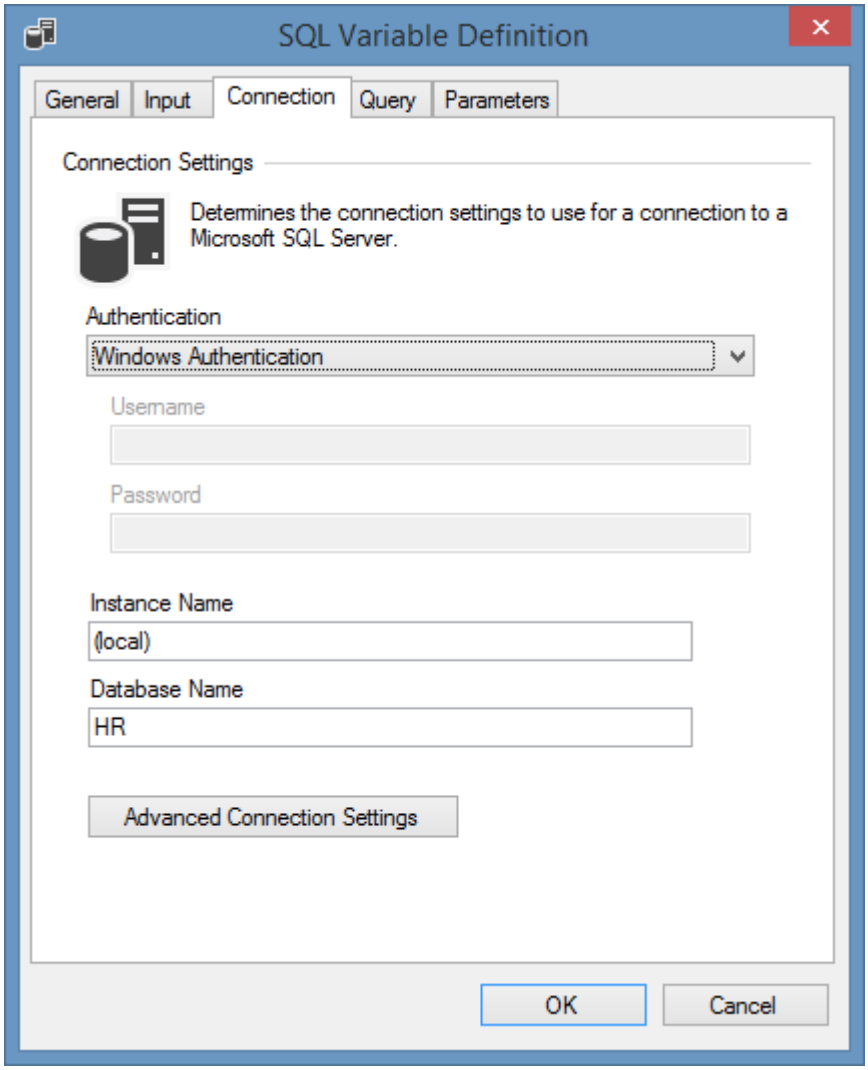
The SQL variable definition allows the user to select values returned from a Microsoft SQL server or Microsoft Azure SQL Database.

Input



Allow multiple select
Determines whether the user can select multiple values.

Connection



Authentication
Determines the type of authentication to use.

- Azure Active Directory Password
- Azure Active Directory Integrated
- Windows Authentication
  The connection will be made as the web server application pool account.
- SQL Password

Username
The username to use when Azure Active Directory Password or SQL password is selected as the authentication type.

Password
The password to use when Azure Active Directory Password or SQL password is selected as the

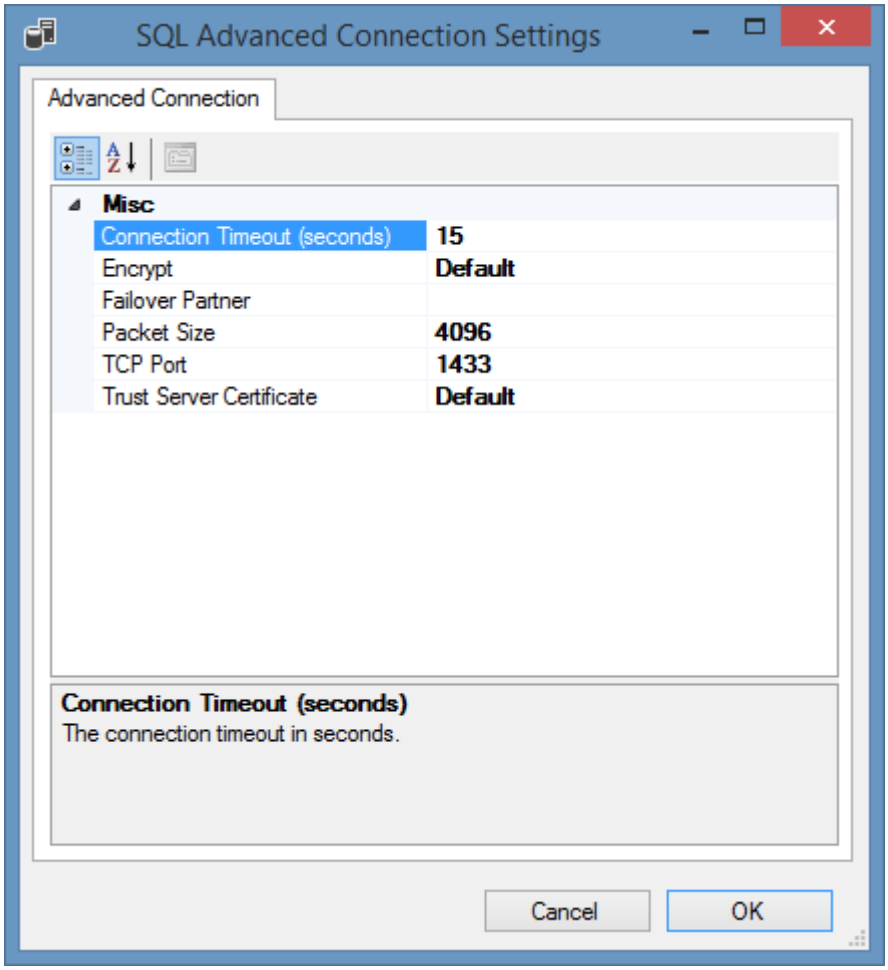
authentication type.

Instance Name
The name of the SQL instance to connect to.

Database Name
The name of the database from which to read the values.

Advanced Connection Settings
Displays the advanced connection settings dialog.

Advanced Connection Settings



Connection Timeout (Seconds)
The connection timeout in seconds.

Encrypt
Determines whether to encrypt the connection.

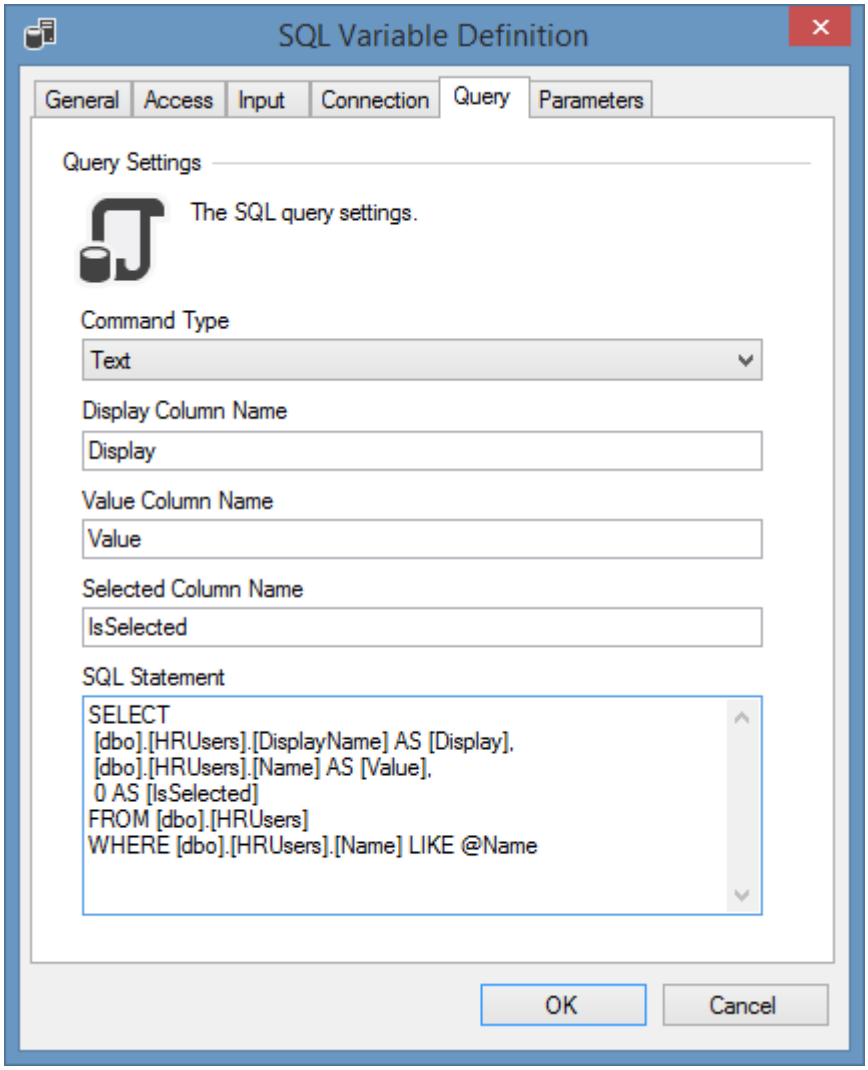
Failover Partner
The name of the failover partner if required.

Packet Size
The size of the network packets used to communicate with an instance of SQL server in bytes.

TCP Port
The TCP port to connect to - by default this is 1433.

Trust Server Certificate
Determines whether the client trusts the server certificate.

Query



Command Type
Determines the command type

- Text
- Stored Procedure

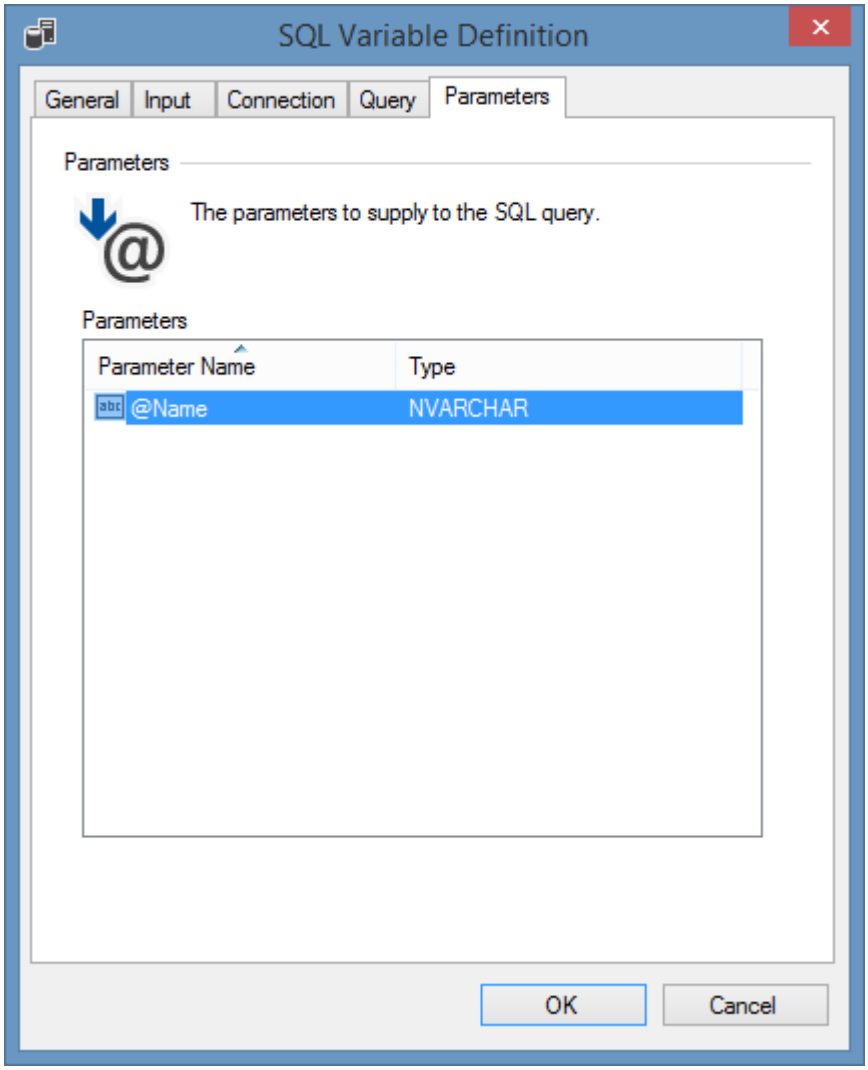
Display Column Name
The VARCHAR or NVARCHAR column name returned from the query that contains the text to display to the user.

Value Column Name
The VARCHAR or NVARCHAR column name returned from the query that contains the value use.

Value Column Name
The BIT column name returned from the query that contains the boolean value that indicates whether the value should be selected by default.

SQL Statement
The T-SQL statement or stored procedure name to execute. This can include parameters.

Parameters

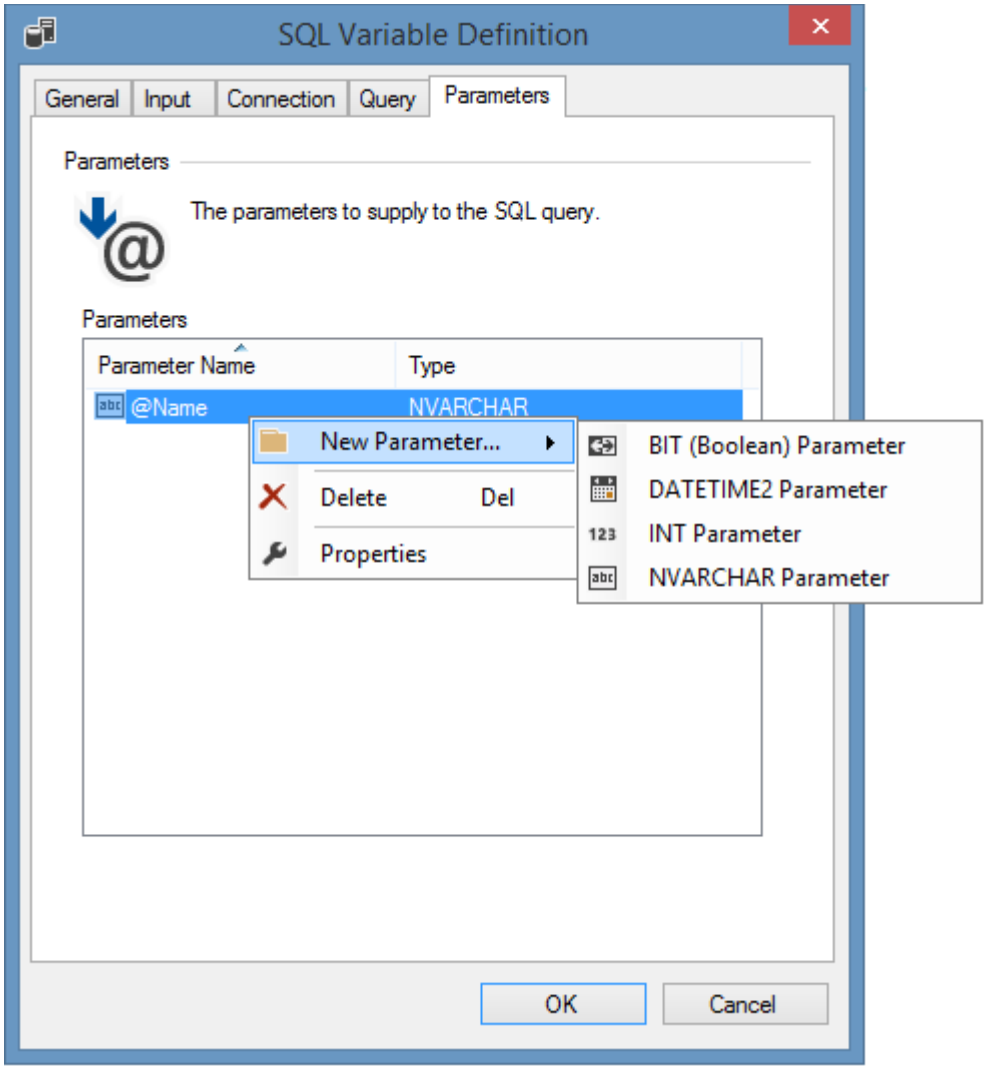


Parameters
The T-SQL parameters to pass to the query or stored procedure specified on the query tab.

Right clicking the parameters listview displays the parameters context menu.

Parameters Context Menu

The parameters context menu is displayed when the user right clicks the parameters listview.



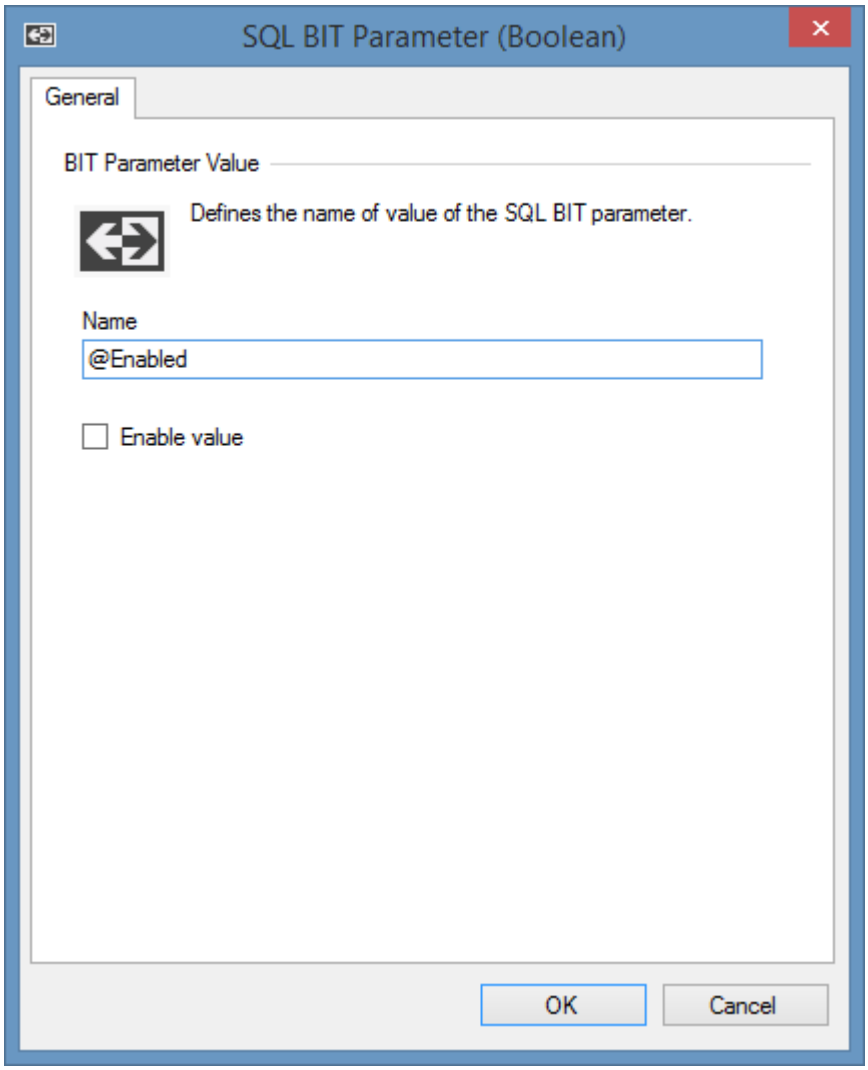
New Parameter
Displays the new parameter dialog for the appropriate parameter type.

Delete
Deletes the currently selected parameter.

Properties
Displays the parameter dialog for the currently selected parameter.

BIT (Boolean) Parameter

The BIT (boolean) parameter passes a BIT value to the query or stored procedure specified on the query tab.

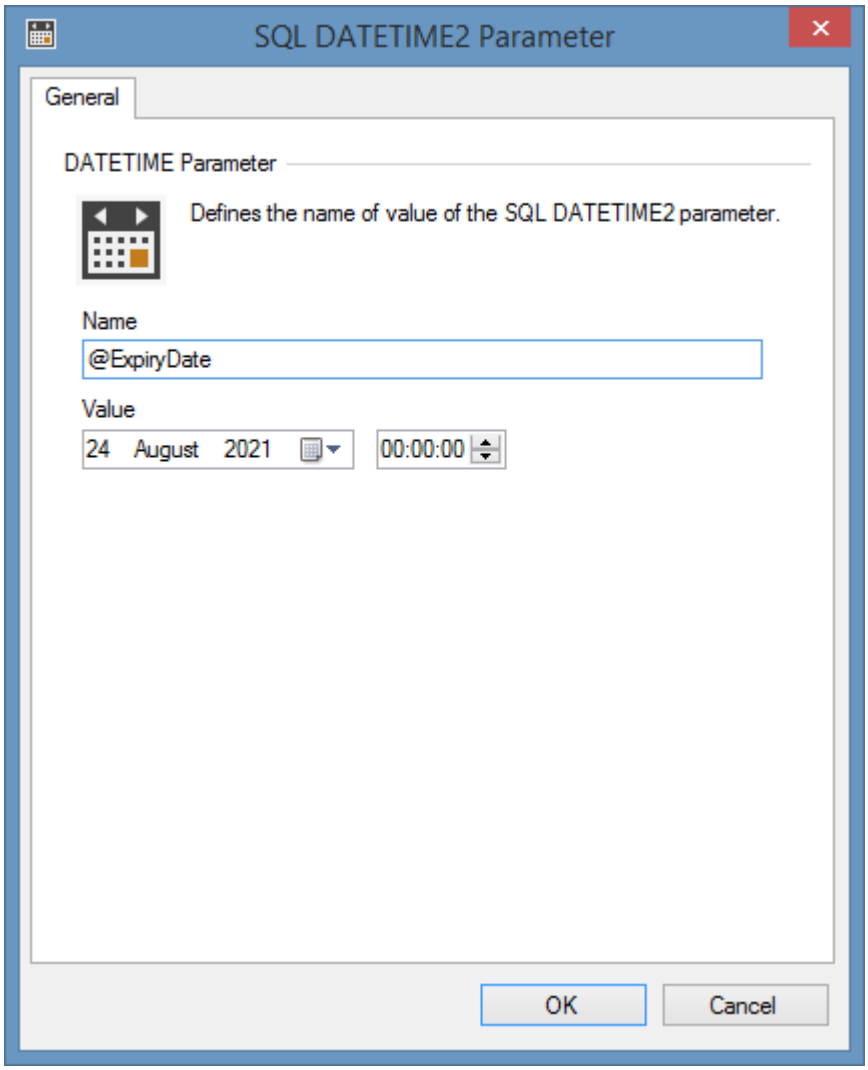


Name
The name of the parameter.

Enable value
Determines whether the BIT value is enabled (true) or false.

DATETIME2 Parameter

The DATETIME2 parameter passes a DATETIME2 value to the query or stored procedure specified on the query tab.

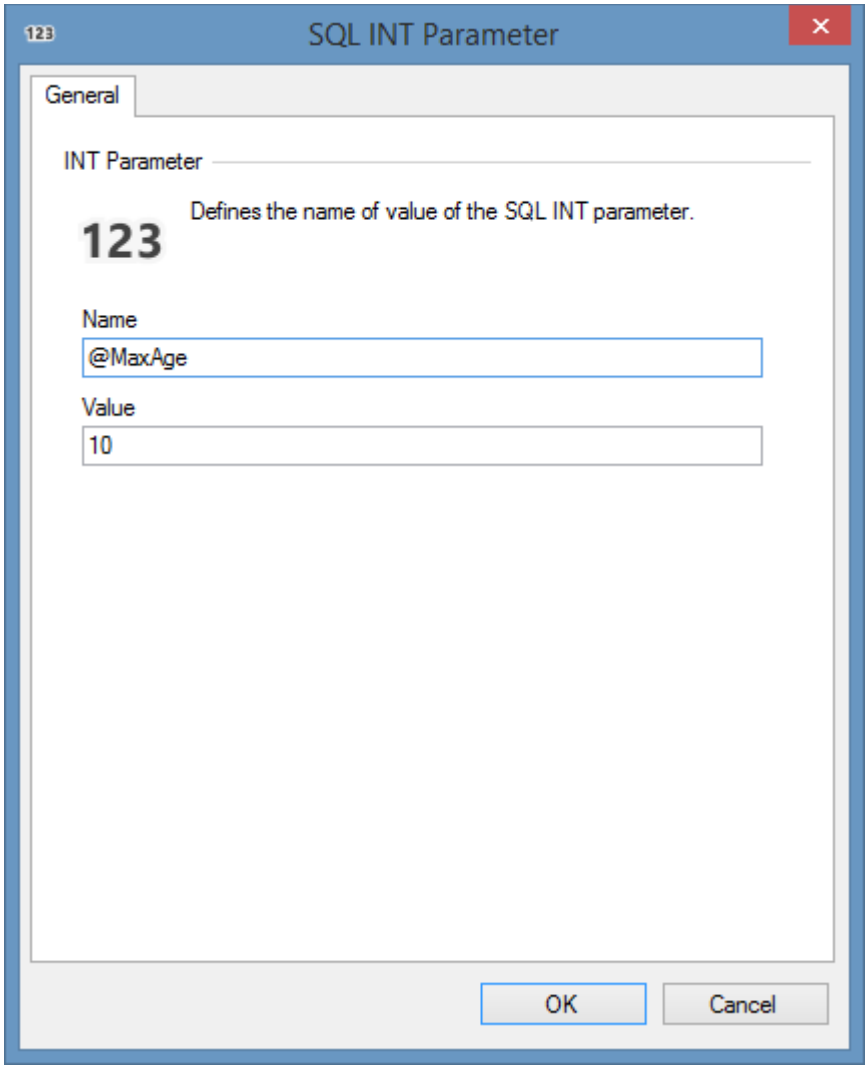


Name
The name of the parameter.

Value
Determines the DATETIME2 value.

INT Parameter

The INT parameter passes an INT value to the query or stored procedure specified on the query tab.

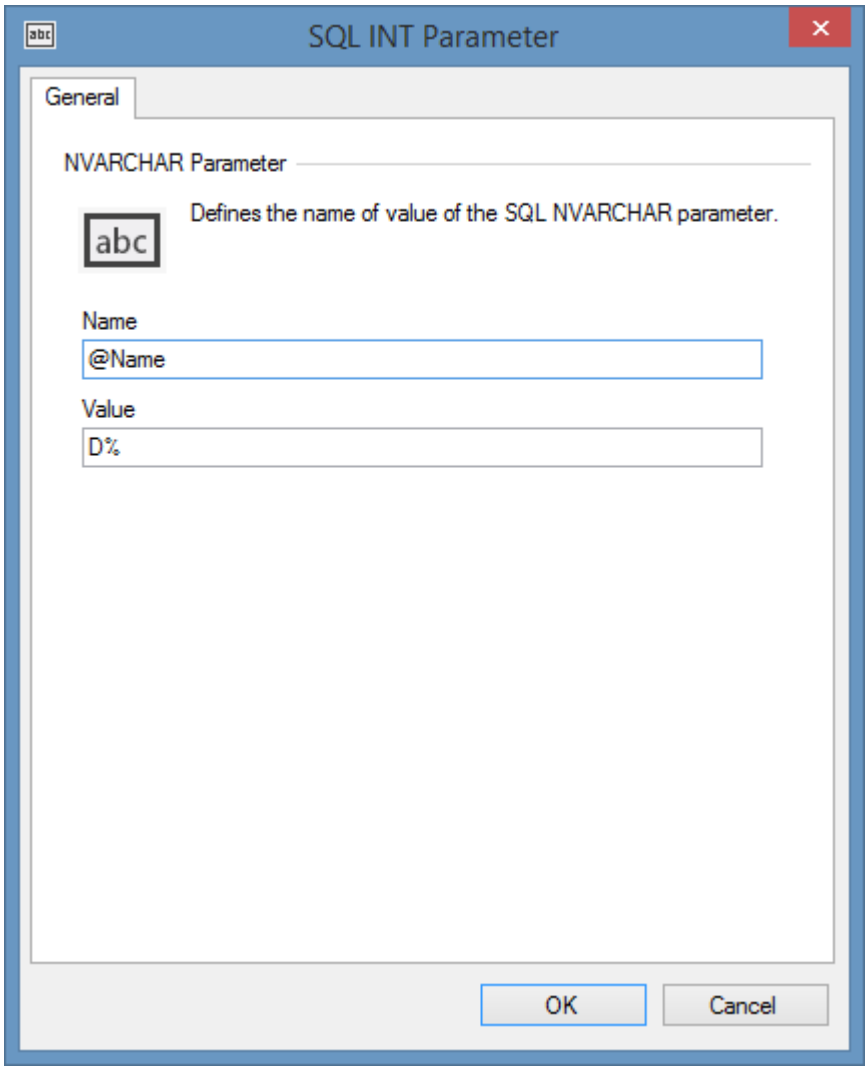


Name
The name of the parameter.

Value
Determines the INT value.

NVARCHAR Parameter

The NVARCHAR parameter passes an NVARCHAR value to the query or stored procedure specified on the query tab.



Name
The name of the parameter.

Value
Determines the NVARCHAR value.

Troubleshooting

This section highlights the known issues for the SQL variable definition and provides details of the solutions.

Unable to load adalsql.dll

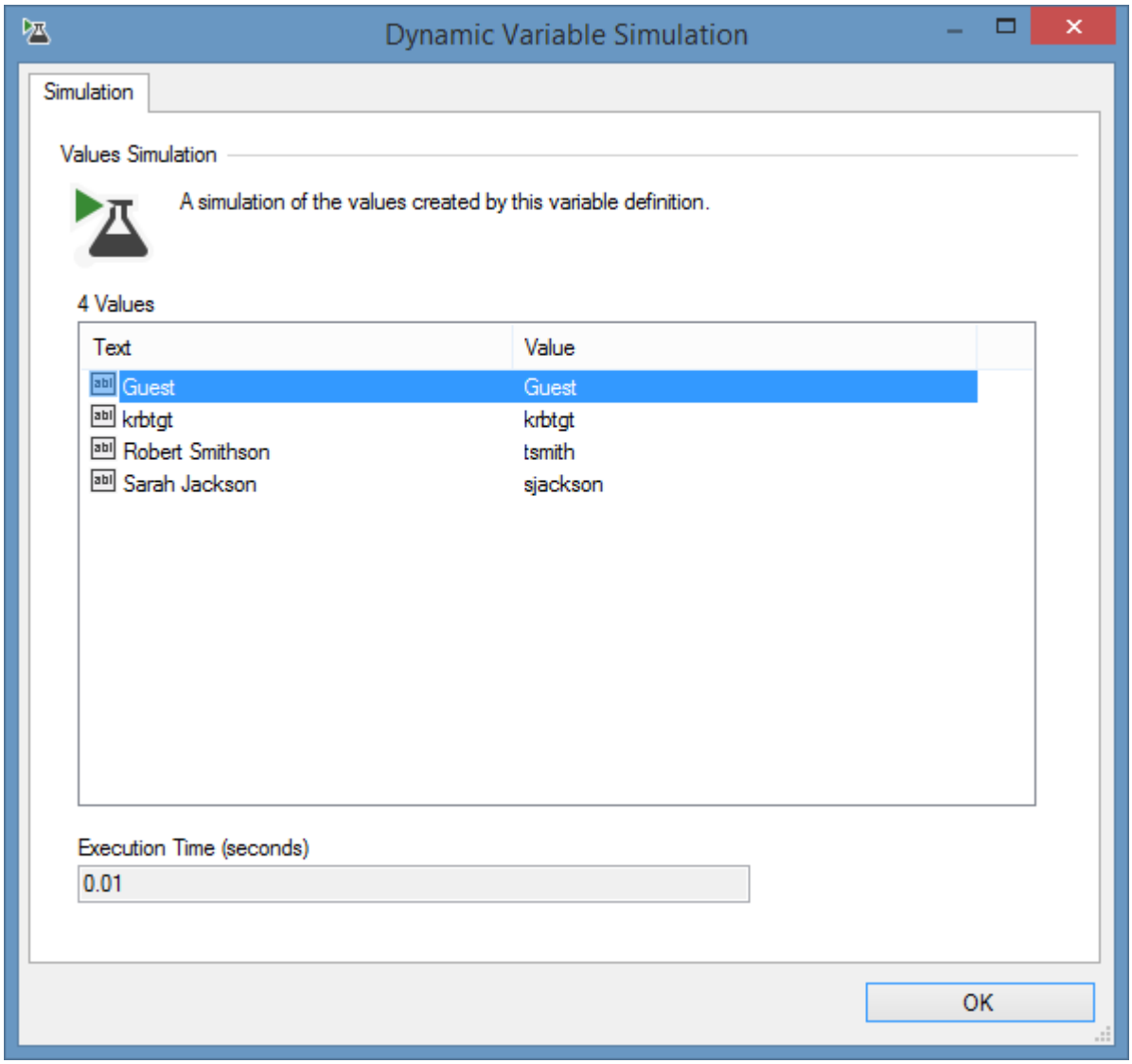
Symptoms
When executing an SQL variable definition you receive the following error.
Failed to connect to server *servername*. Unable to load adalsql.dll.

Cause
The Microsoft Active Directory Authentication Library for Microsoft SQL Server has not been installed.

Resolution
Download and install the Microsoft Active Directory Authentication Library for Microsoft SQL Server on the machine running XIA Automation Server.

Dynamic Variable Simulation

The dynamic variable simulation dialog executes a dynamic variable definition and displays the values that would be displayed to the user.



Values
The values that would be displayed to the user by the dynamic variable definition.

Execution Time (seconds)
The time taken to execute the dynamic variable definition in seconds.

System Variables

System variables are built-in variable definitions managed by XIA Automation Server and can be identified as they start with the $ character.

$ComputerDomainName
The fully qualified domain name of the Active Directory domain to which the machine running XIA Automation Server is a member - for example "demonstration.int".

$DateShortString
The current date in the short date format.
The short date format is determined by the Windows regional settings configured for the machine running XIA Automation Server.

$DateString
The current date in the long date format.
The long date format is determined by the Windows regional settings configured for the machine running XIA Automation Server.

$Now
The current date and time in System.DateTime format.

$TimeShortString
The current time in the short time format.
The short time format is determined by the Windows regional settings configured for the machine running XIA Automation Server.

$TimeString
The current time in the long time format.
The time date format is determined by the Windows regional settings configured for the machine running XIA Automation Server.

$MachineName
The NetBIOS name of the machine running XIA Automation Server.

$ProfileIdentifier
The unique identifier of the automation profile being executed in GUID format.

$ProfileName
The unique name of the automation profile being executed.

$ServiceAccount
The account name of the web server application pool account - for example DEMONSTRATION\XiaAutomation.

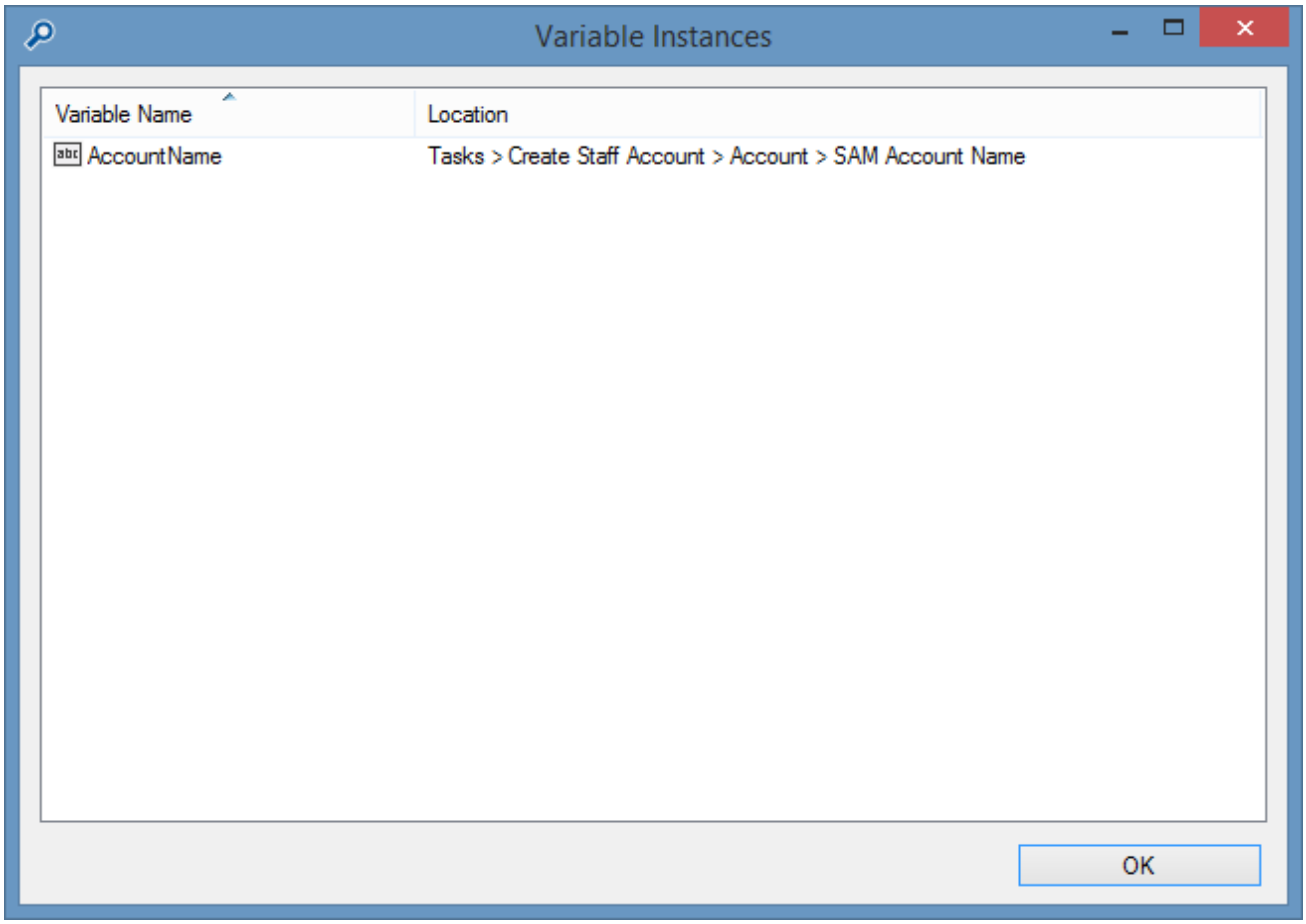
$UserAccount
The account name of the user executing the automation profile - for example DEMONSTRATION\Tariq.Razzaq.

$Username
The user name of the user executing the automation profile without the domain name - for example Tariq.Razzaq.

$Version
The version of XIA Automation Server for example 4.0.1.12.

Variable Instances

The variable instances dialog displays where in the configuration of an automation profile the specified variable definitions are implemented.



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Last revised 22nd May 2025

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