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Deploying PAM360 Agent in Endpoints using Microsoft System Center Configuration Manager (SCCM)

System Center Configuration Manager (SCCM), developed by Microsoft, streamlines IT management in large-scale environments by deploying agents to centrally manage and monitor devices. The bulk agent installations are crucial for saving time and ensuring consistency, especially in extensive IT infrastructures. SCCM's capabilities empower administrators to deploy client agents to multiple endpoints simultaneously, maintaining a standardized and secure computing environment.

Note: This deployment method is applicable only for Windows resources/Windows agents.

1. Installing PAM360 Agent using SCCM

Follow the below steps to install the PAM360 agent in bulk using SCCM:

1. To begin the PAM360 agent installation process, log in to PAM360 and navigate to 'Admin >> PAM360 Agents'.
2. Download the **Windows Agent** to the preferred network path and ensure to copy the **Agent Key** value.
3. Next, [download](#) the agent installation script file zip and extract the script files to the preferred folder.

Ensure the below SHA256 value upon downloading the file:

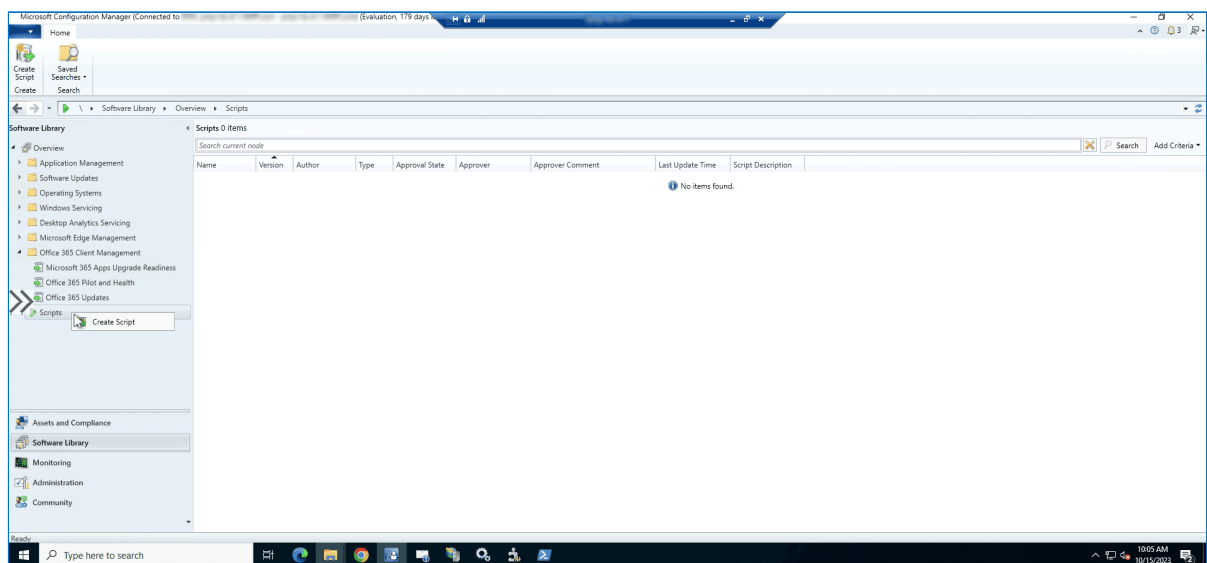
SHA256 Checksum:

88133a952631c51a40450613703d0a1ebefa675b92b07ef024ce2c7fab80bcd1

4. Open the **PAM360AgentInstallation.ps1** script file in an editor from the extracted folder and do the steps as follows:
 - i. Enter the network path in the **\$AgentZipSource** variable where the PAM360 Windows Agent is downloaded. For example -
"`\\zylker.com\PAM360\PAM360_WindowsAgent_CS.zip`".

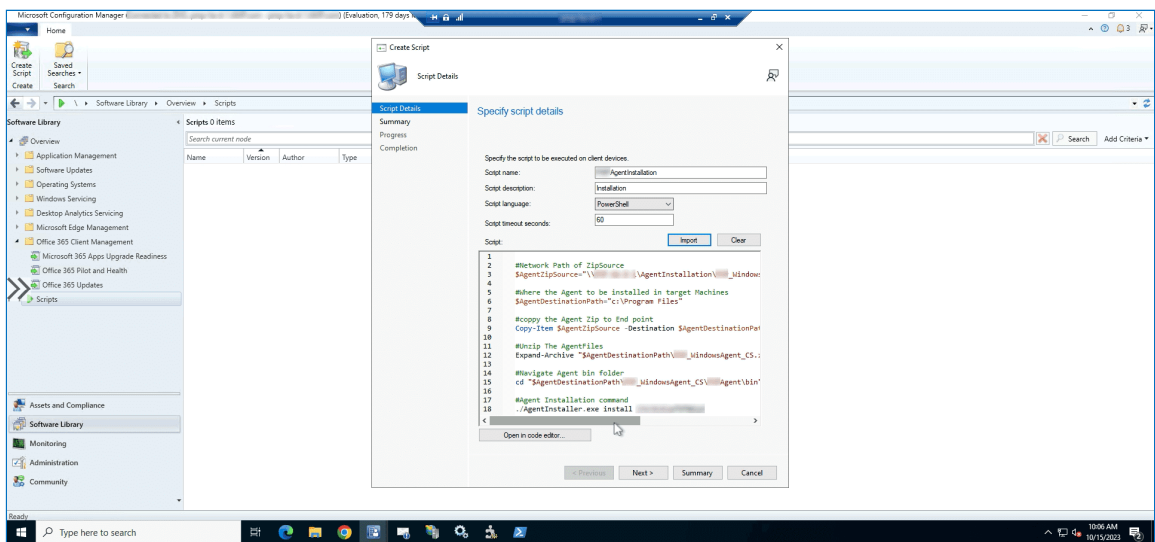
Agent Installation in Multiple Endpoints - Windows

- ii. Add a destination path of the endpoints or target machines in the **\$AgentDestinationPath** variable, for example, **c:\Program Files**. This is the location where the agent will be installed in the target endpoints, so ensure that this path is available in all the target machines.
 - iii. Enter the copied **Agent Key** and the agent module as required to complete the **PAM360AgentInstallation.ps1** script file updates:
 - a. If you are installing the agent as a service for password management, self-service privilege elevation, and zero trust implementation, enter 1,2,3. For example, **"/AgentInstaller.exe install <a560f6385298754c> 1,2,3"**
 - b. If you are installing the agent as a service for password management, enter 1. For example, **"/AgentInstaller.exe install <a560f6385298754c> 1"**
 - c. If you are installing the agent as a service for self-service privilege elevation, enter 2. For example, **"/AgentInstaller.exe install <a560f6385298754c> 2"**
 - d. If you are installing the agent as a service for zero trust implementation, enter 3. For example, **"/AgentInstaller.exe install <a560f6385298754c> 3"**You can also enter a different combination based on your agent's installation requirements.
5. Now, open the **Microsoft Configuration Manager Console** and select **Software Library**.
 6. On the page that changes, navigate to **Overview >> Office 365 Client Management >> Script** and select **Create Script**.

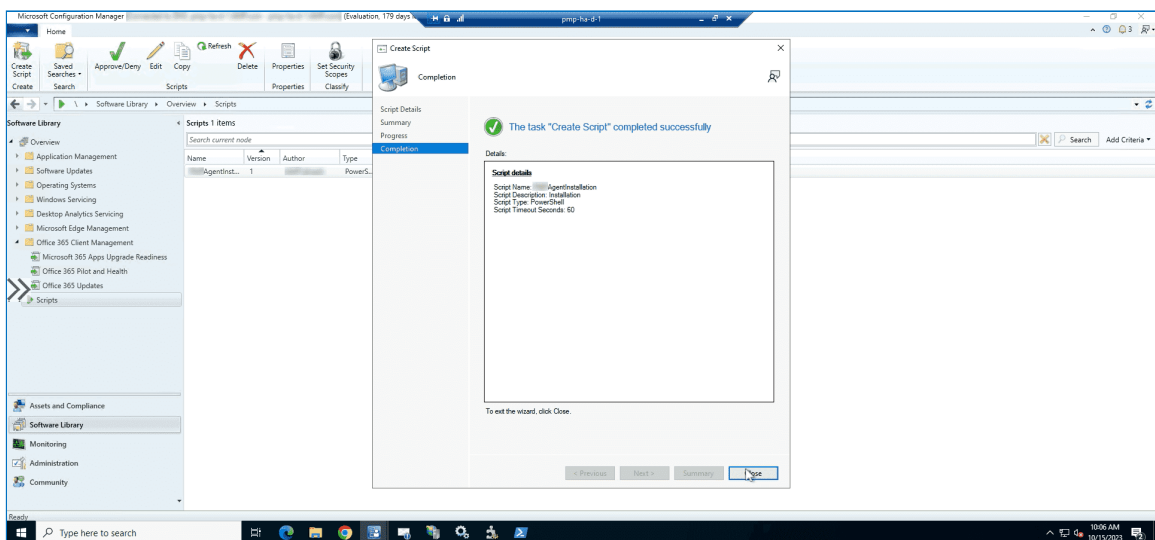


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7. In the script dialogue box that opens,
 - a. Enter the **Script name**. For example, **PAM360AgentInstallation**
 - b. Enter the **Script description**. For example, **PAM360 Resource Agent Installation in Endpoints**.
 - c. Select the Script language as **PowerShell** and set the Script timeout seconds as required, preferably to **60**.
 - d. Use the **Import** button to import the updated **PAM360AgentInstallation.ps1** script file.

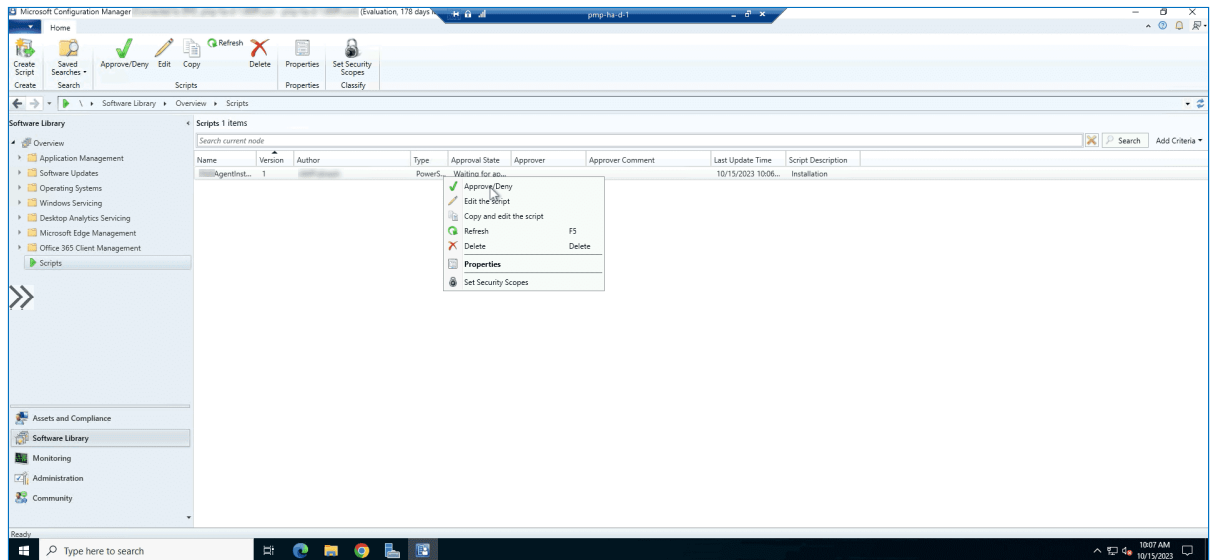


- e. Validate the details and click **Next >** to complete the script creation process.

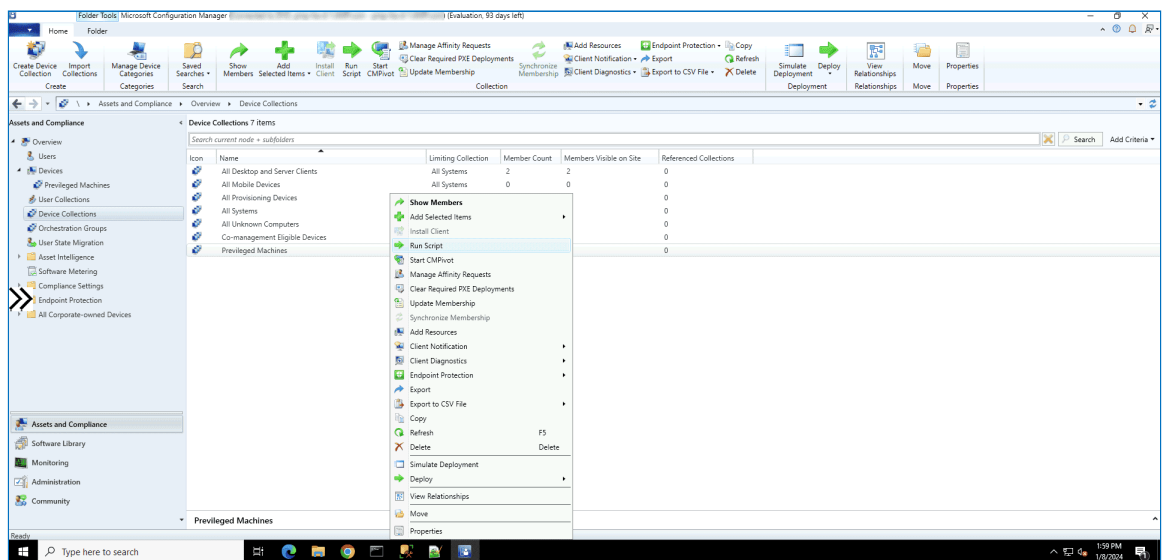


8. Inform another user with the Microsoft administrator privilege to validate (**Approve/Deny**) and approve the created script for bulk agent installation.

Agent Installation in Multiple Endpoints - Windows



9. Once the created script is validated by another administrator, you can execute the script on the relevant target devices/device groups to install the PAM360 agent. To do so,
 - a. Navigate to **Overview >> Device Collections** from the **Assets and Compliance** section.
 - b. Right-click over the required device group and click **Run Script** to execute the script in the selected endpoints or target machines in bulk.



10. Upon successful completion, the agent will be installed with the respective modules in the target devices or endpoints available in the selected device group.

2. Uninstalling PAM360 Agent using SCCM

Agent Installation in Multiple Endpoints - Windows

Follow the below steps to uninstall the PAM360 agent in bulk using SCCM:

1. Open the **Microsoft Configuration Manager Console** and select **Software Library**.
2. On the page that changes, navigate to **Overview >> Office 365 Client Management >> Script** and select **Create Script**.
3. In the script dialogue box that opens,
 - a. Enter the **Script name**. For example, **PAM360AgentUninstallation**
 - b. Enter the **Script description**. For example, **PAM360 Resource Agent Uninstallation from Endpoints**.
 - c. Select the Script language as **PowerShell** and set the Script timeout seconds as required, preferably to **60**.
 - d. Use the **Import** button to import the **PAM360AgentUninstallation.ps1** script file.
 - e. Validate the details and click **Next >** to complete the script creation process.
4. Inform another user with the Microsoft administrator privilege to validate (**Approve/Deny**) and approve the created script for bulk agent uninstallation.
5. Once the created script is validated by another administrator, you can execute the script on the relevant target devices/device groups to uninstall the PAM360 agent. To do so,
 - a. Navigate to **Overview >> Devices** from the **Assets and Compliance** section.
 - b. Right-click over the required device group and click **Run Script** to execute the script in the selected endpoints or target machines in bulk.
6. Upon successful completion, the agent will be uninstalled from the target devices or endpoints available in the selected device group.

Deploying PAM360 Agent in Endpoints via Windows Group Policy Objects (GPO)

1. Installing the PAM360 Agent via Windows Group Policy Objects (GPO)

This section details the steps needed to install the PAM360 Agent in multiple endpoints using Windows Group Policy Objects (GPO). [Download](#) the **PAM360-Agent-Script** zip and extract the script files **PAM360AgentInstallationScript.ps1** and **PAM360AgentUninstallationScript.ps1**.

Ensure the below SHA256 value upon downloading the file:

SHA256 Checksum:

08ea77d7fc414f5a36772e881f07e04b406052f98c6ed8643629cfdce769f7d4

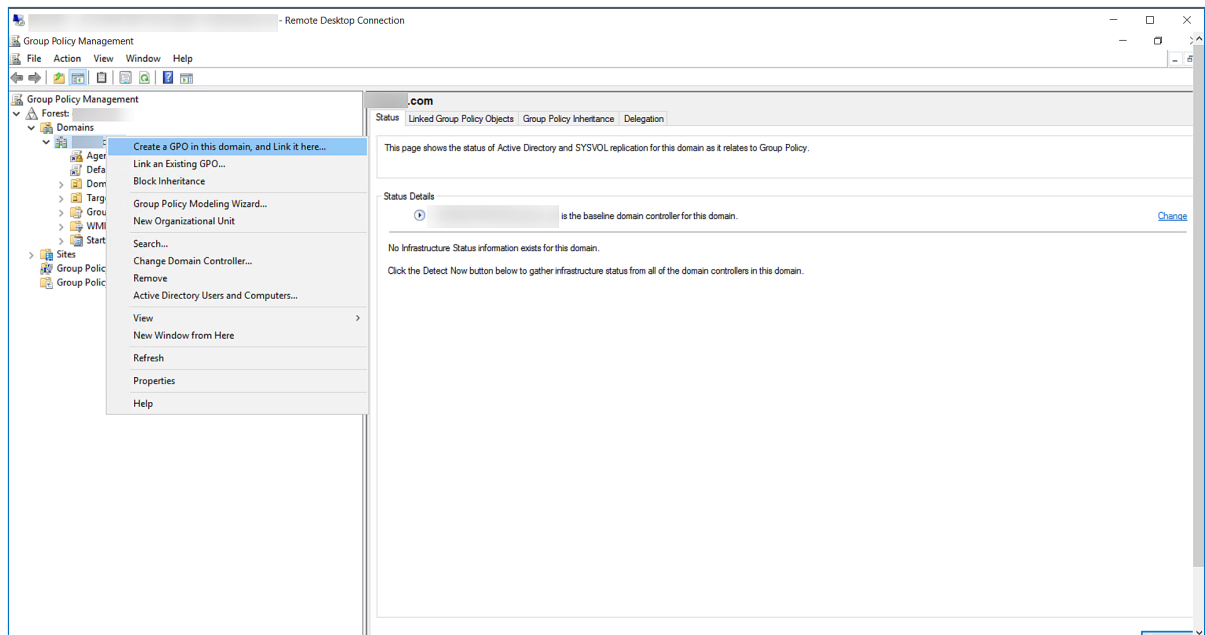
a. Prerequisites

- Refer to the steps detailed in [this](#) help page, download the PAM360 agent installation zip from the PAM360 interface, and copy the **Agent Key**. Save the key in a secure location—this must be added to the PAM360 PowerShell script later.
- If you already have agents installed in the endpoints, follow [these](#) steps to uninstall the agents in bulk using the uninstallation script. This script will uninstall both the C++ and C agents.
- Create a Domain with all the target machines that need to be included in the GPO to be the endpoints where the agent is to be installed.

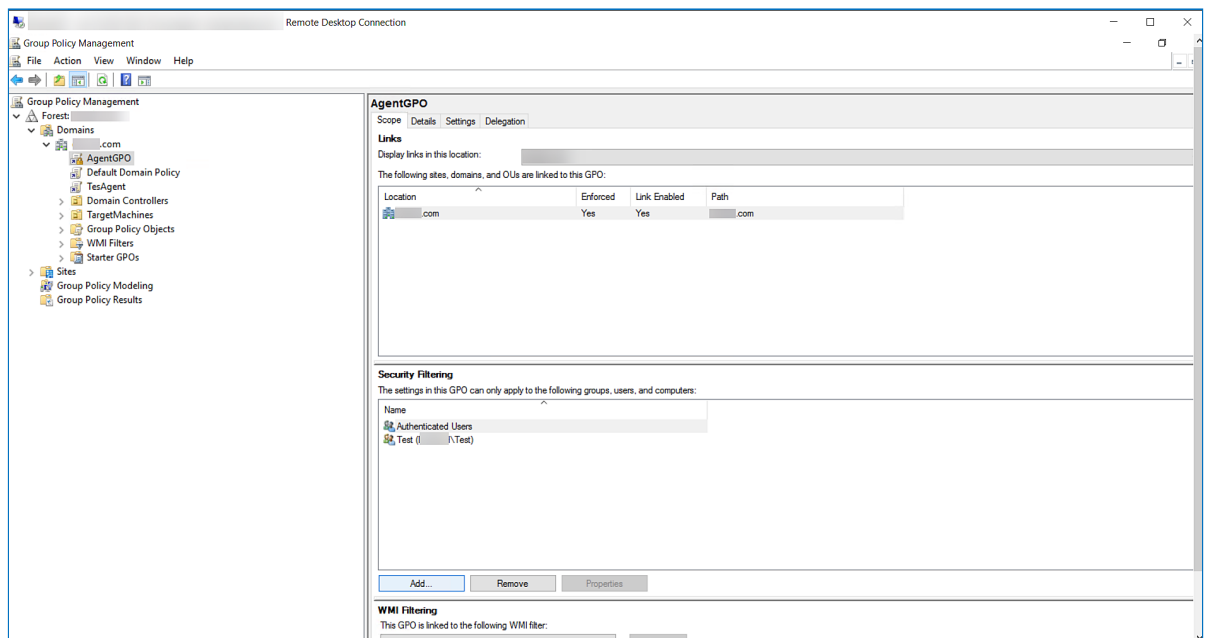
b. Steps to Create a GPO in the Domain and to Add Target Machines

1. Open the **Server Manager** and navigate to **Tools >> Group Policy Management** from the top right corner.
2. Right-click the domain name, click **Create a GPO in this domain, and Link it here..**

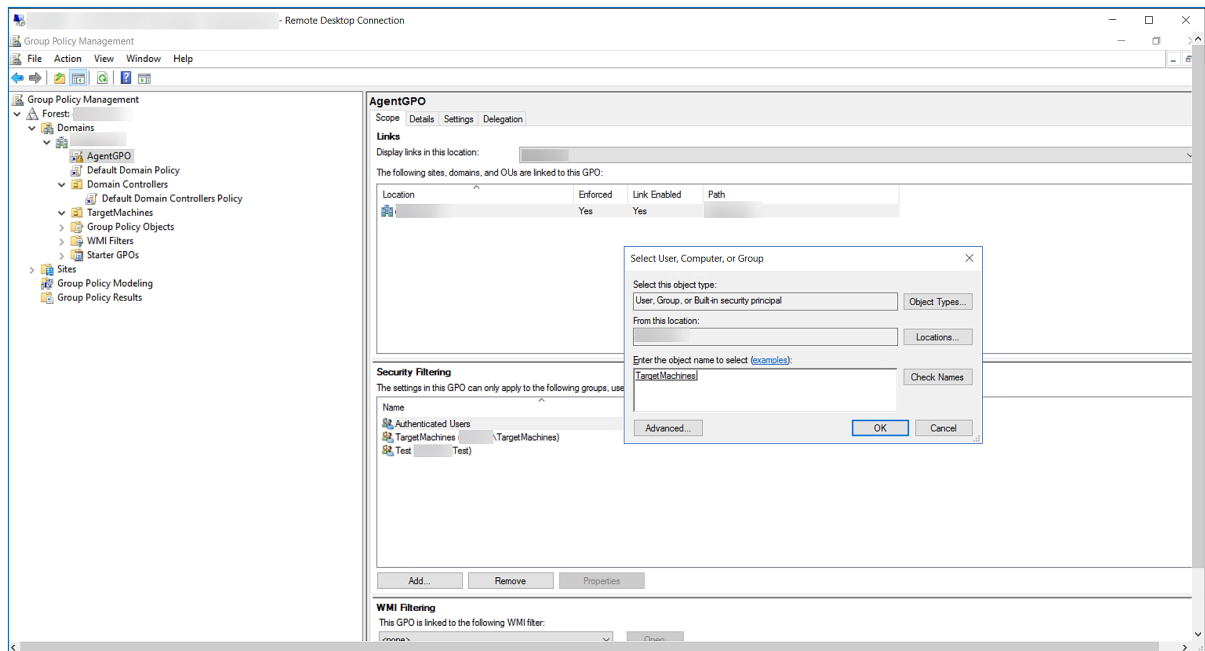
Agent Installation in Multiple Endpoints - Windows



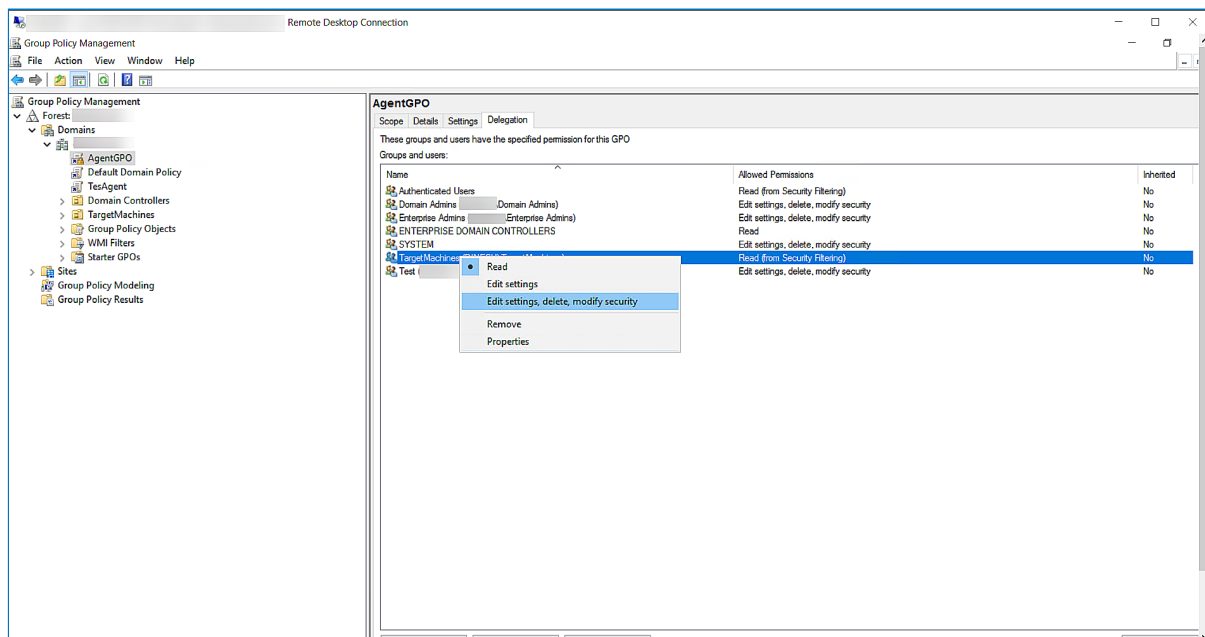
3. Enter a name for the new GPO and save - AgentGPO. Provide a name for the new GPO, for example, AgentGPO. Now, click the newly created GPO under **Scope >> Security Filtering**, and click **Add**. In the **Select User, Computer, or Group** window, enter the target machine names or the name of the group name that contains all the target endpoints or the names of the target machines individually and click **OK**.



Agent Installation in Multiple Endpoints - Windows



4. Switch to the **Delegations** tab. Right-click the group you have added and provide full access permission as shown below.



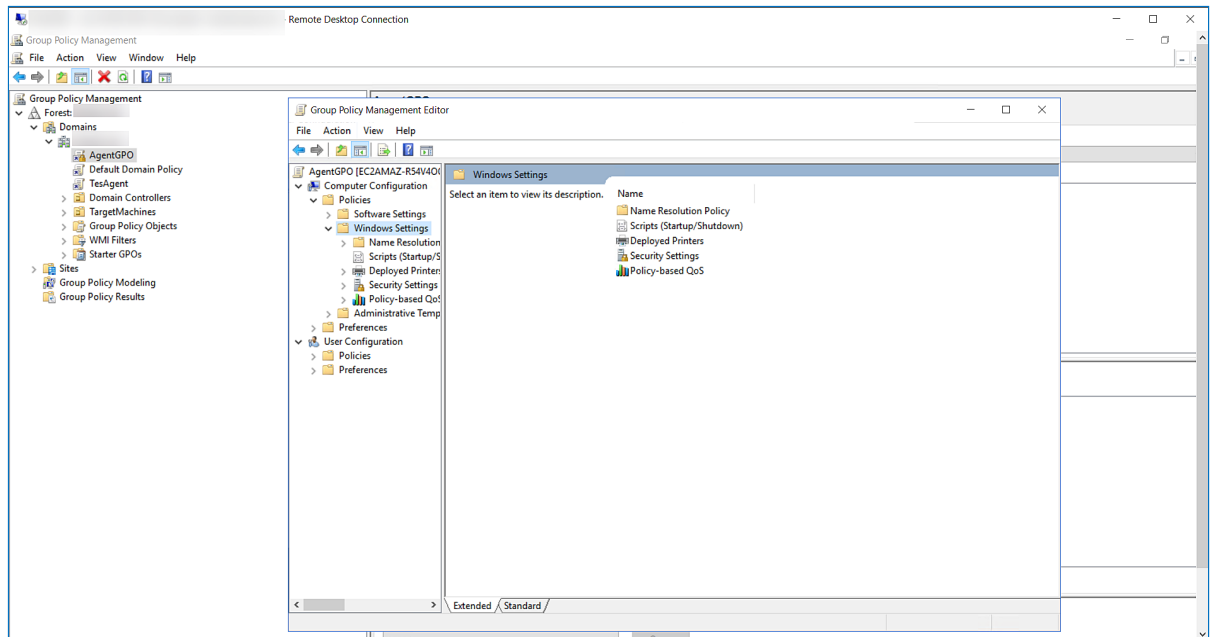
You have successfully created a **Group Policy** and added the target machines where the PAM360 agent is to be installed.

c. Steps to Add the Installation Script and Agent Installation Zip in the GPO

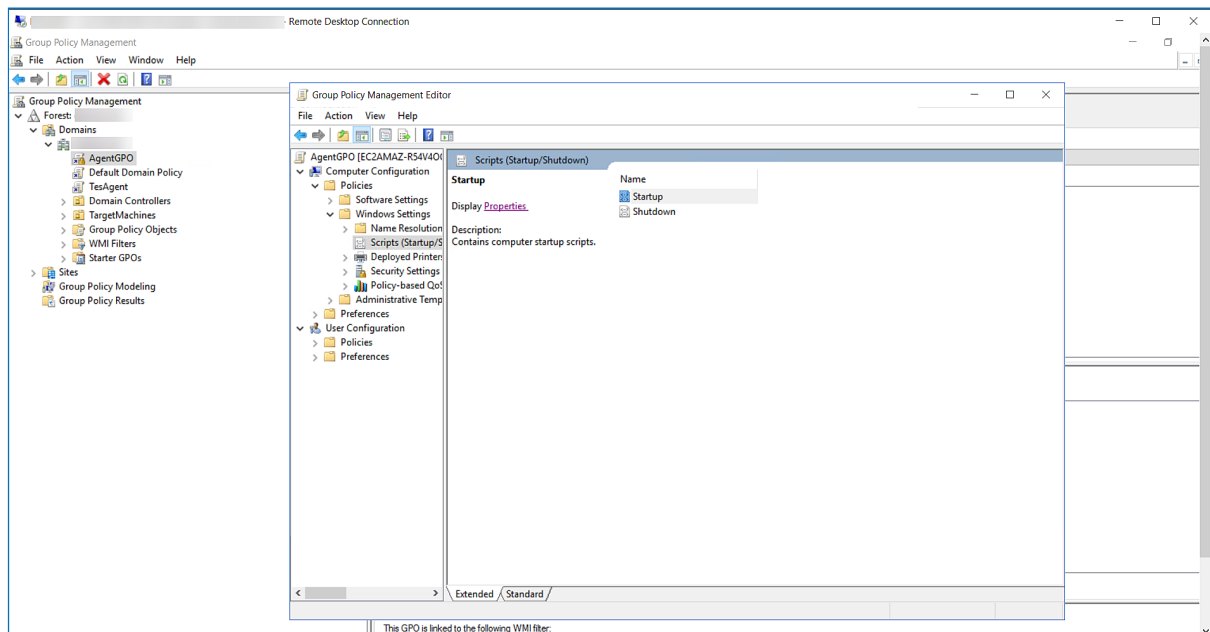
1. Now right-click the GPO name from the left pane and click **Edit settings, delete,**

Agent Installation in Multiple Endpoints - Windows

modify security. The Group Policy Management Editor window will open.

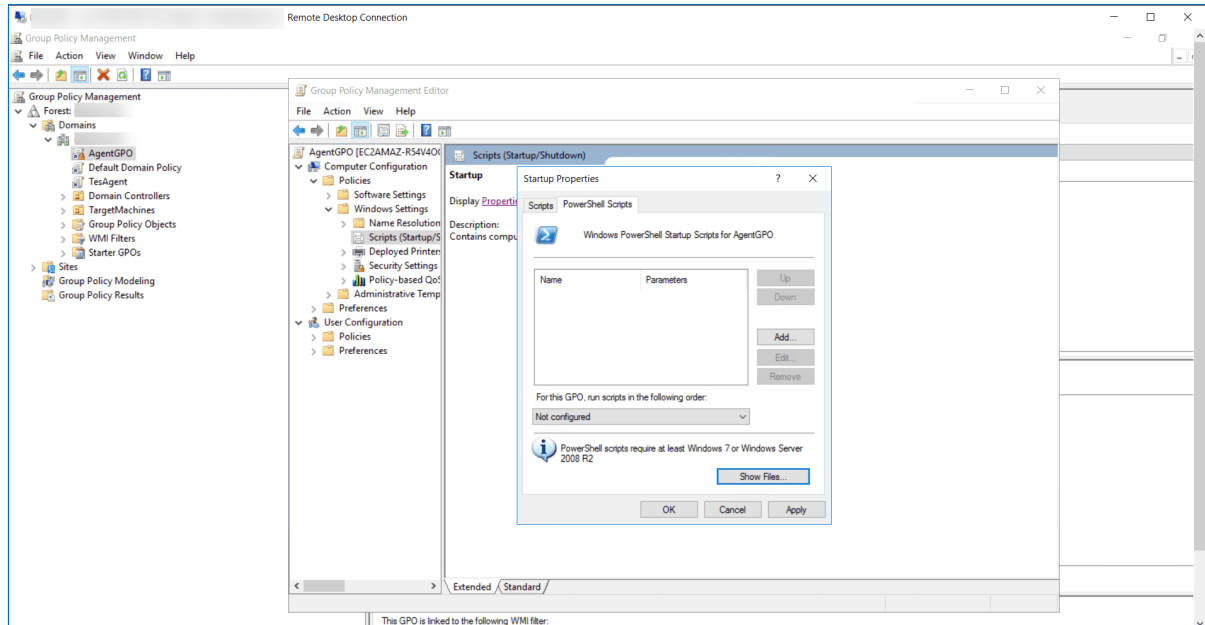


2. Navigate to the **Policies >> Windows Settings** folders. Double-click **Scripts**. In the Scripts window, click **Startup** and then click **Properties**.



3. Switch to the **PowerShell Scripts** tab and click **Show Files**. The network directory will open. Now, copy the path of the network location.

Agent Installation in Multiple Endpoints - Windows

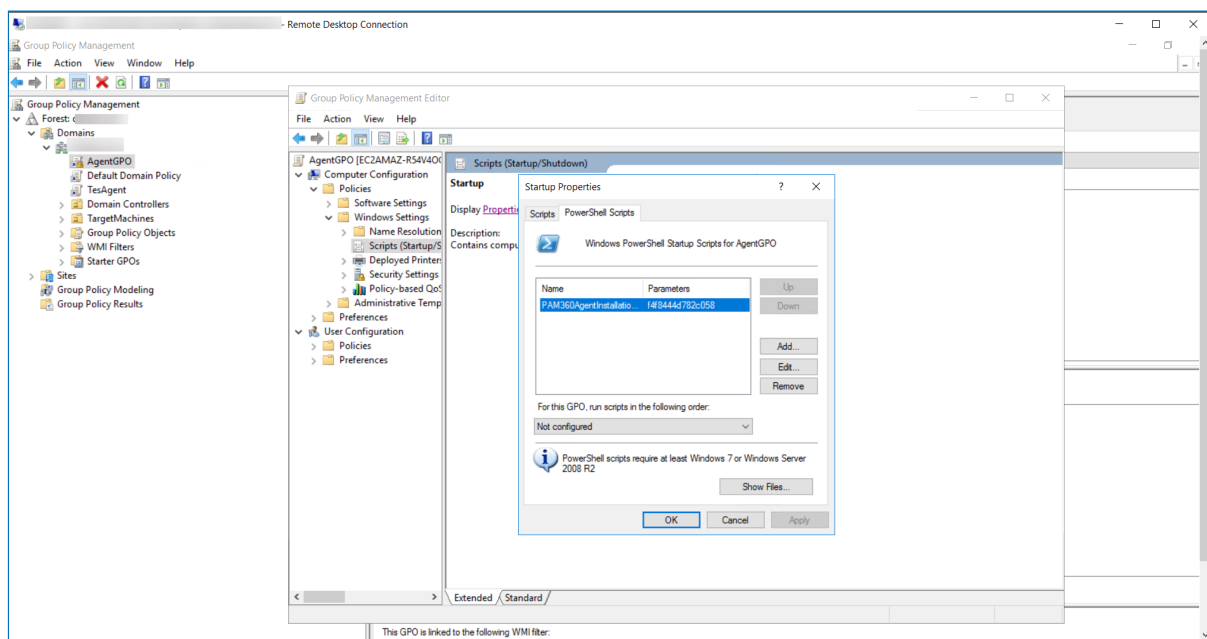
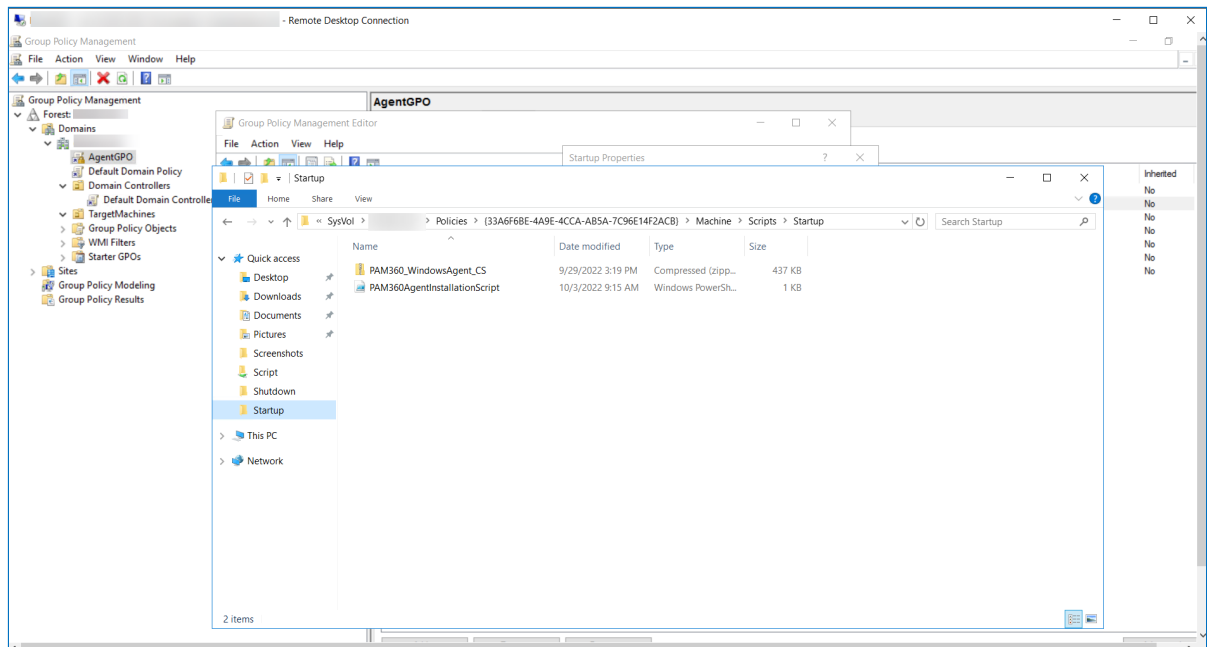


4. Open the extracted **PAM360AgentInstallationScript.ps1** file and do the steps as follows:
 - i. Add the network location path copied in the previous step as the source variable. for example - "**\\lzyiker.com \SysVollzyiker.com\Policies\{33A6F6BE-4A9E-4CCA-AB5A-7C96E14F2ACB}\Machine\Scripts\Startup\PAM360_WindowsAgent_CS.zip**".
 - ii. Add a desired destination path, for example, **c:\Program Files**. This is the location where the agent will be installed in the target endpoints, so ensure that this path is available in all the target machines.
 - iii. Append the following data beside **./AgentInstaller.exe install \$args** as required:
 - a. If you are installing the agent as a service for password management, self-service privilege elevation, and zero trust implementation, enter 1,2,3. For example, **./AgentInstaller.exe install \$args 1,2,3**
 - b. If you are installing the agent as a service for password management, enter 1. For example, **./AgentInstaller.exe install \$args 1**
 - c. If you are installing the agent as a service for self-service privilege elevation, enter 2. For example, **./AgentInstaller.exe install \$args 2**
 - d. If you are installing the agent as a service for zero trust implementation, enter 3. For example, **./AgentInstaller.exe install \$args 3**

Agent Installation in Multiple Endpoints - Windows

You can also enter a different combination based on your agent installation requirements.

- Now, paste the PAM360 agent PowerShell script file and the Agent installation zip in the GPO network location.

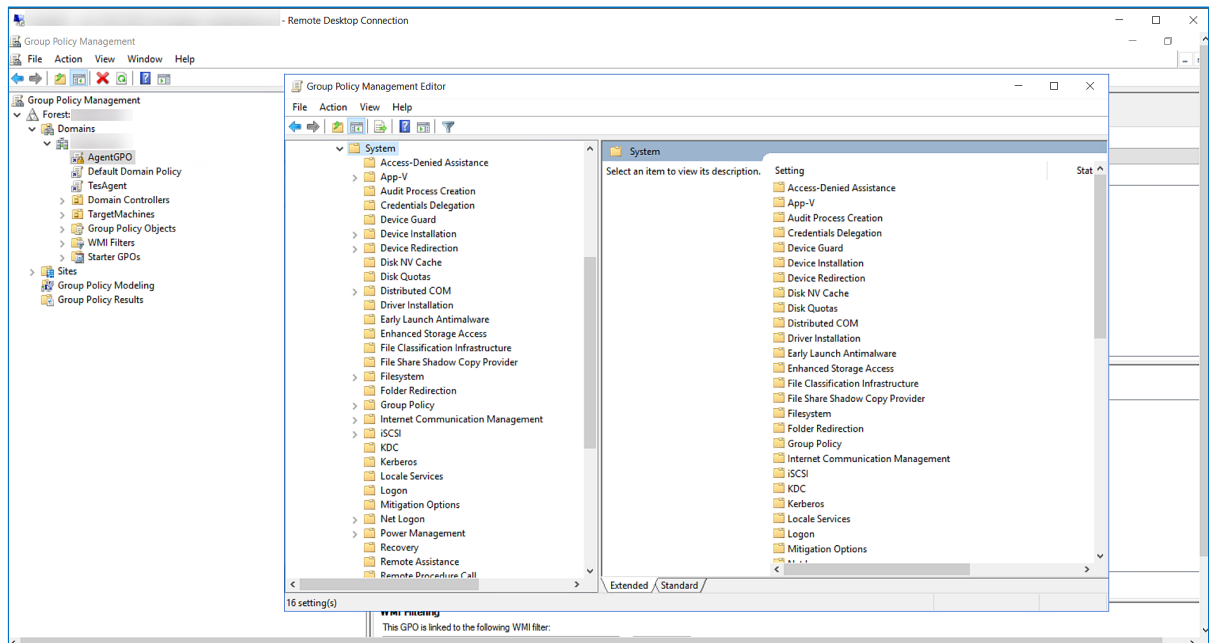
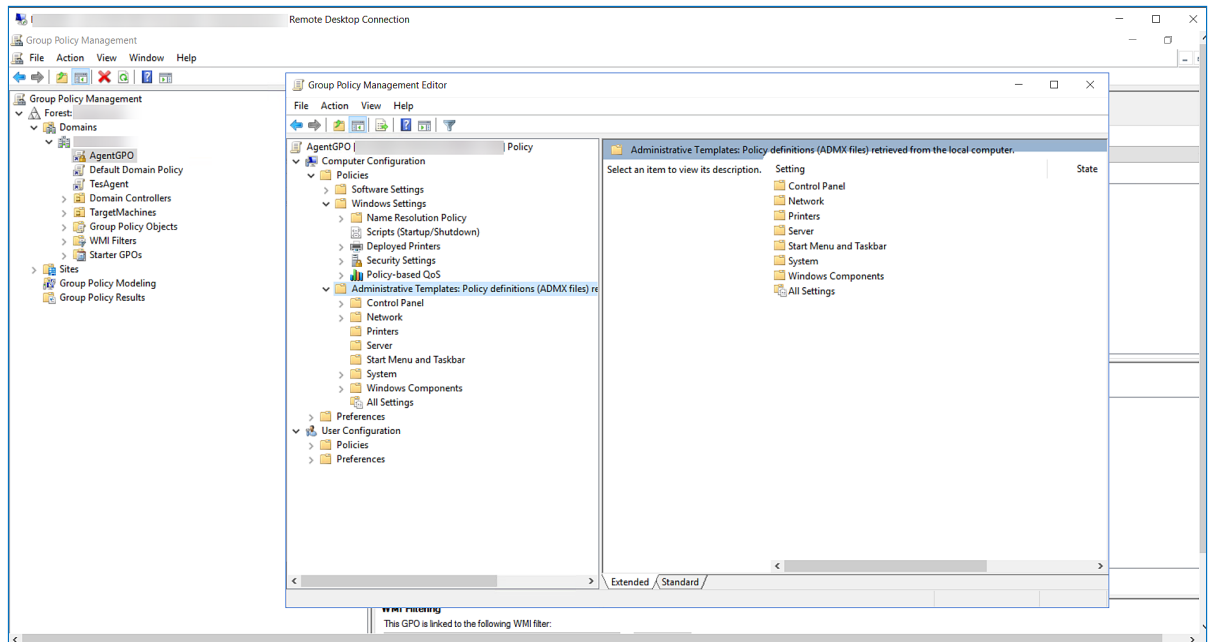


- Click **Add** and add the **PAM360AgentInstallationScript** file name under **Script Name** and the agent installation key copied from PAM360 under **Script Parameters**. Click **Apply** and **OK** again to save the settings.
- In the **Group Policy Management Editor**, navigate to **Administrative Templates**

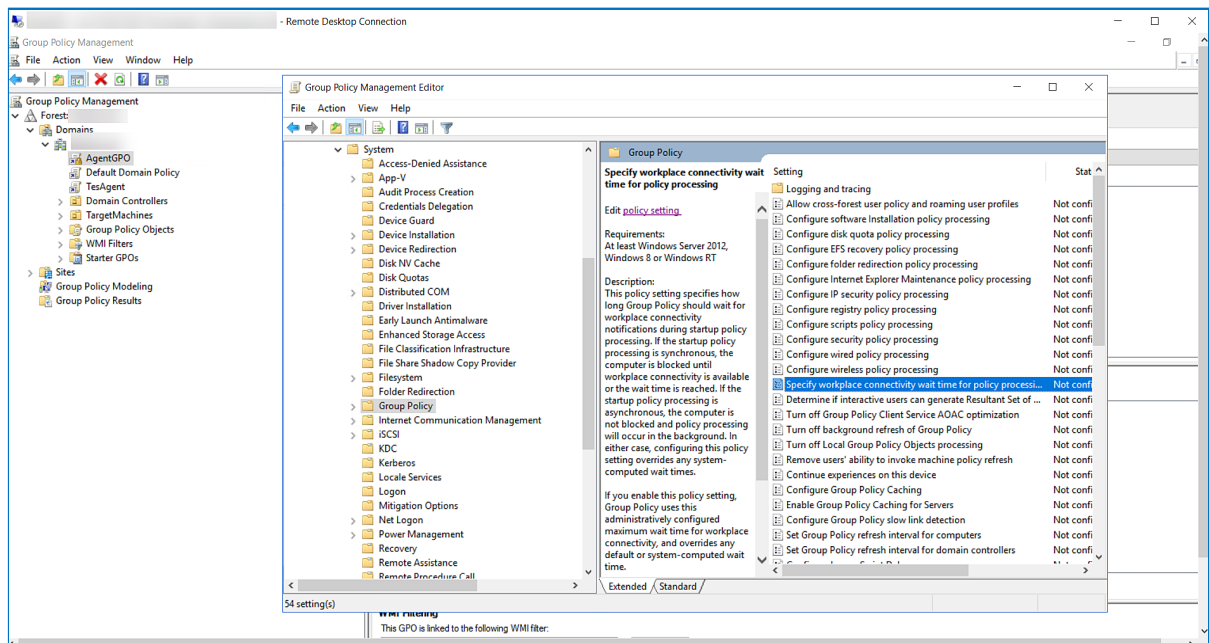
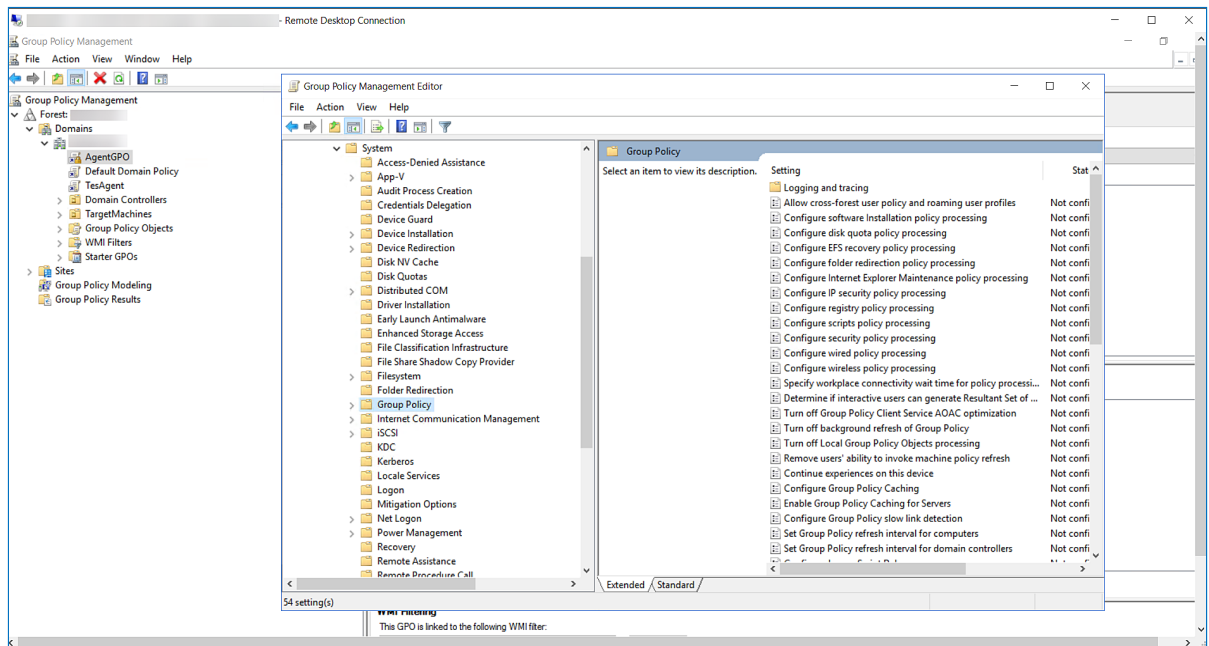
Agent Installation in Multiple Endpoints - Windows

>> System and open the Group Policy.

8. Under the Group Policy folder, right-click **Specify workplace connectivity** wait time for policy processing.

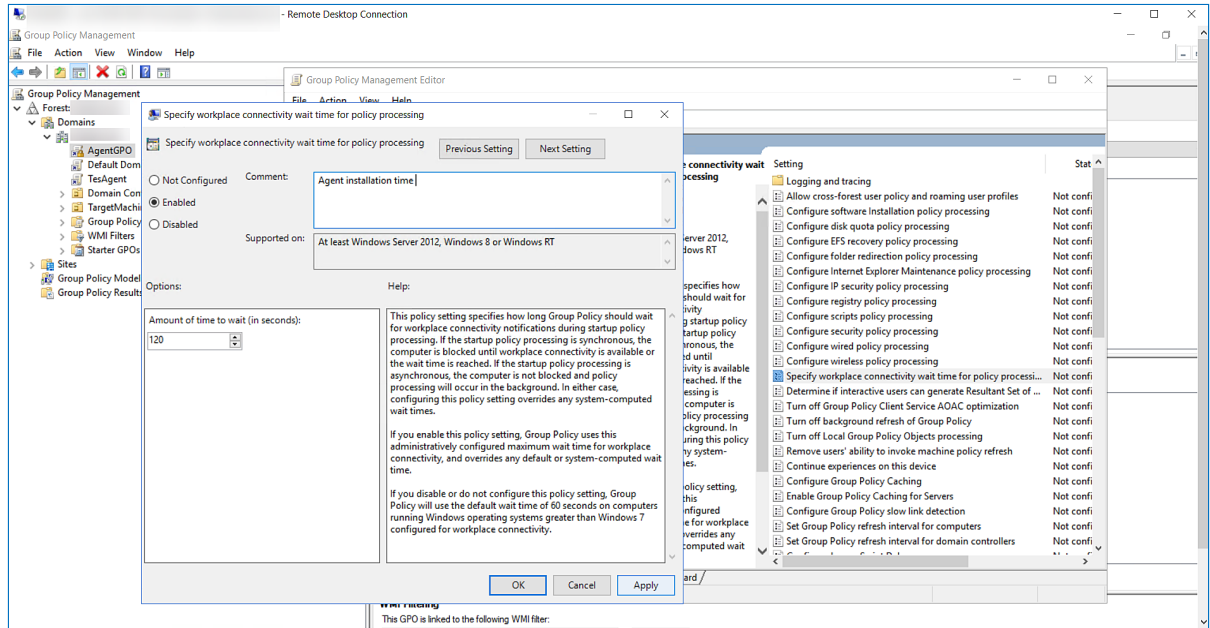


Agent Installation in Multiple Endpoints - Windows



9. From this window, click the **Enabled** option. Enter the **Amount of time to wait** as 120 seconds and click **Apply** and **OK** to save the settings.

Agent Installation in Multiple Endpoints - Windows



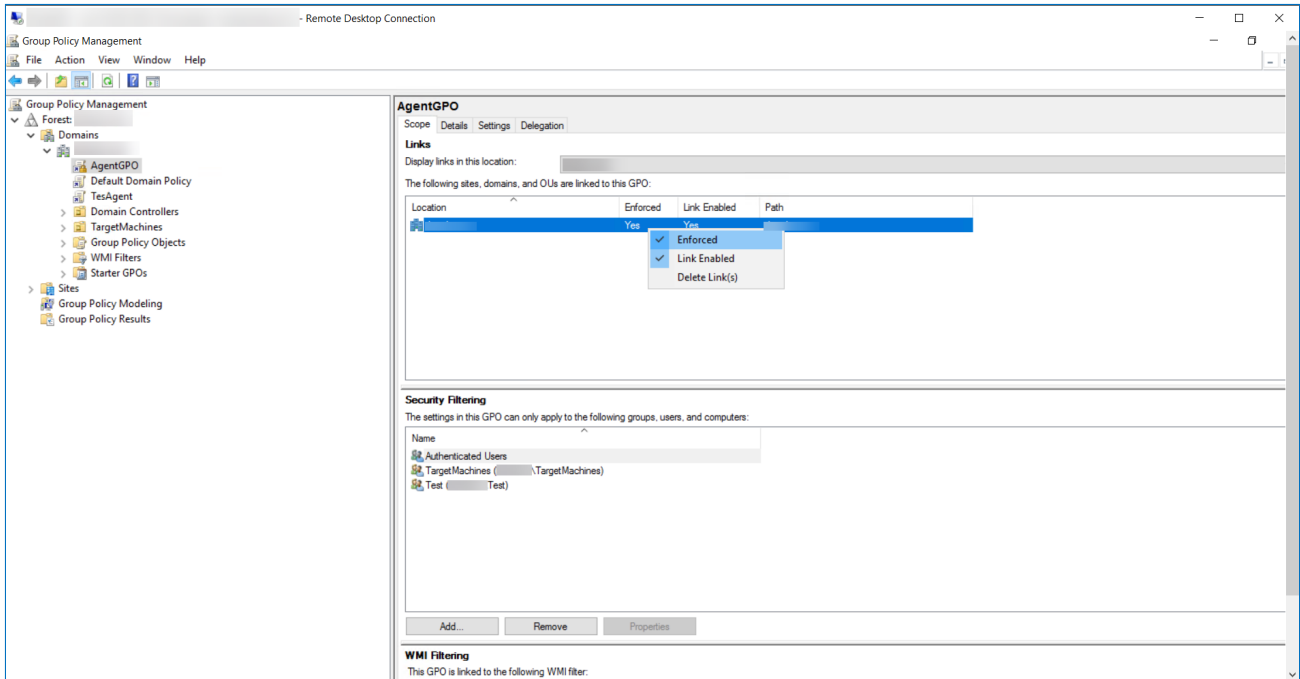
10. The GPO will be applied. Once you restart all the target endpoints, the PAM360 Agent PowerShell script will be invoked, and the agent will be installed in the target machines.
11. After the successful installation of the agent, disable the startup script for the GPO you created (AgentGPO in this example). This will ensure that the script is not invoked every time the target machines are restarted.

d. Troubleshooting Steps

Ensure that the AgentGPO has a higher precedence than the other GPOs. This is to make sure that the other GPOs do not override the permissions of the AgentGPO.

To check this, click the GPO name, right-click the **Enforced** option, and check if it is enabled.

Agent Installation in Multiple Endpoints - Windows

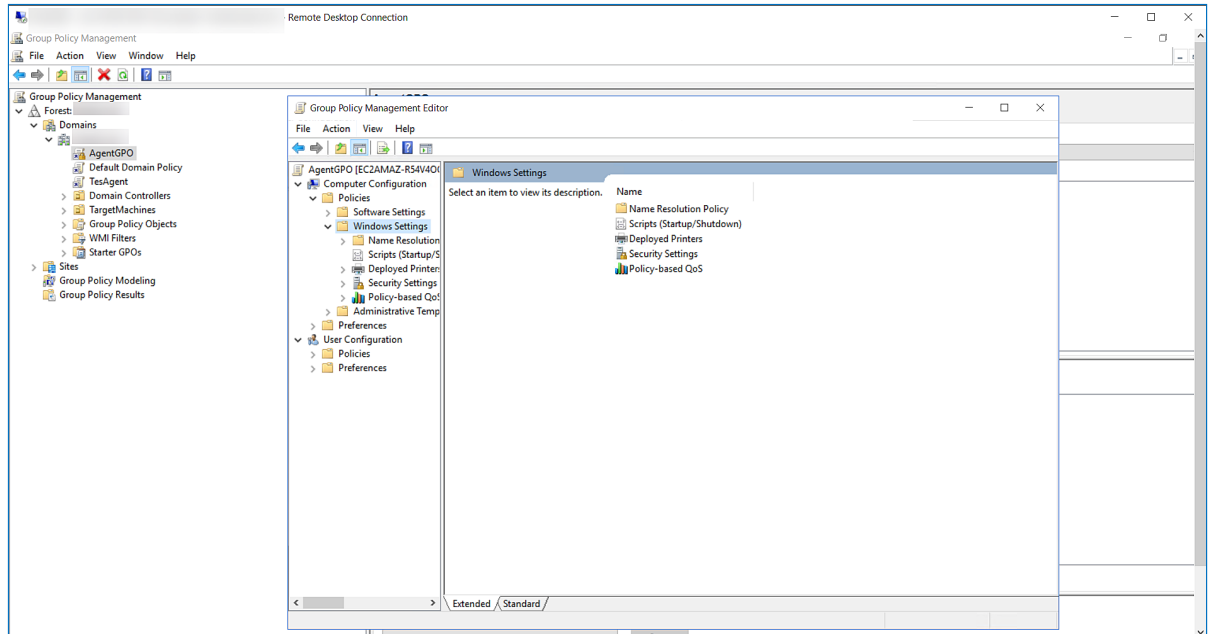


2. Uninstalling the PAM360 Agent via Windows Group Policy Objects (GPO)

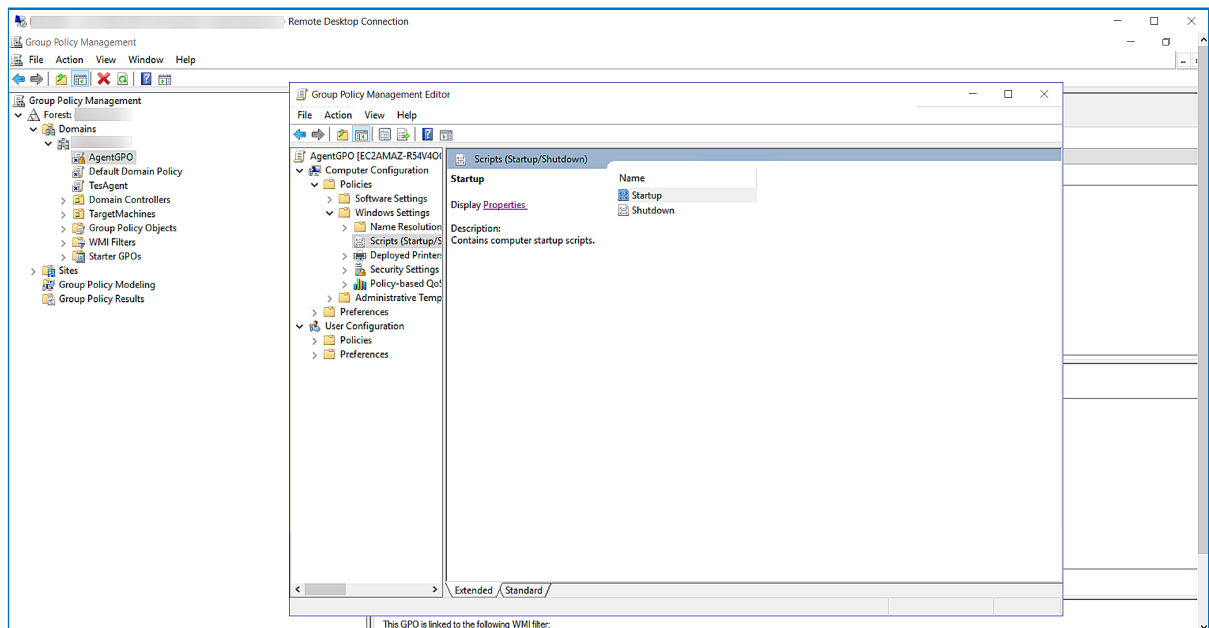
a. Steps to Add the Uninstallation Script in the GPO

1. Right-click the name of the GPO you created from the left pane and click **Edit settings, delete, modify security**. The **Group Policy Management Editor** window will open.

Agent Installation in Multiple Endpoints - Windows

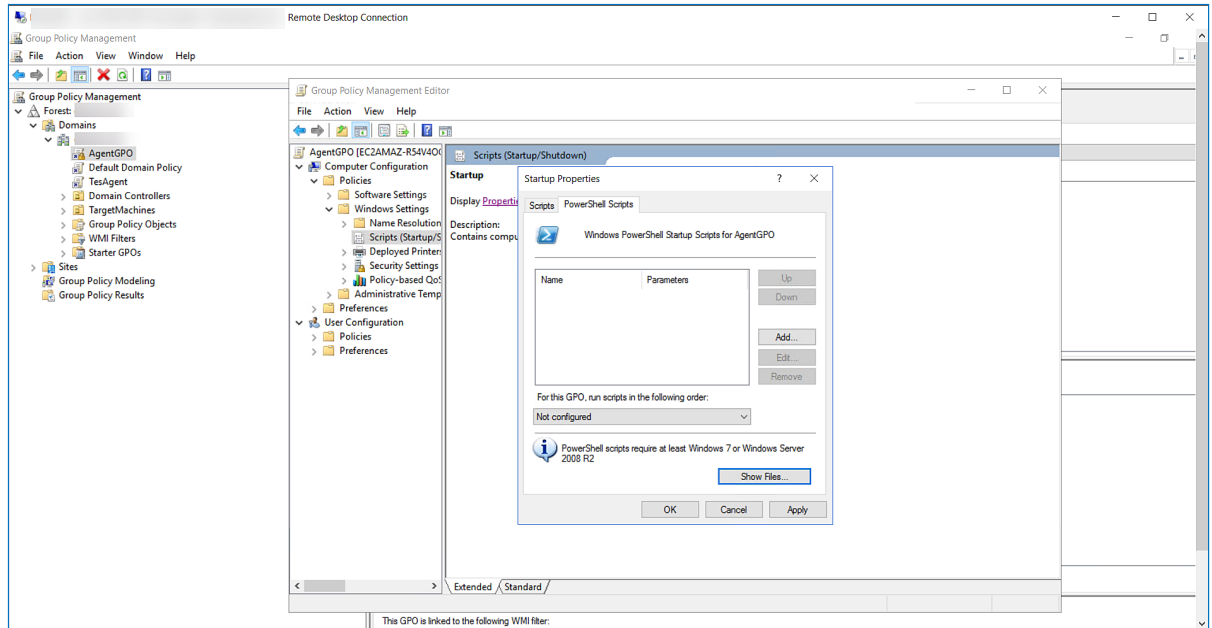


2. Navigate to the **Policies >> Windows Settings** folders and double-click the **Scripts**. In the Scripts window that opens, click **Startup** and then click **Properties**.

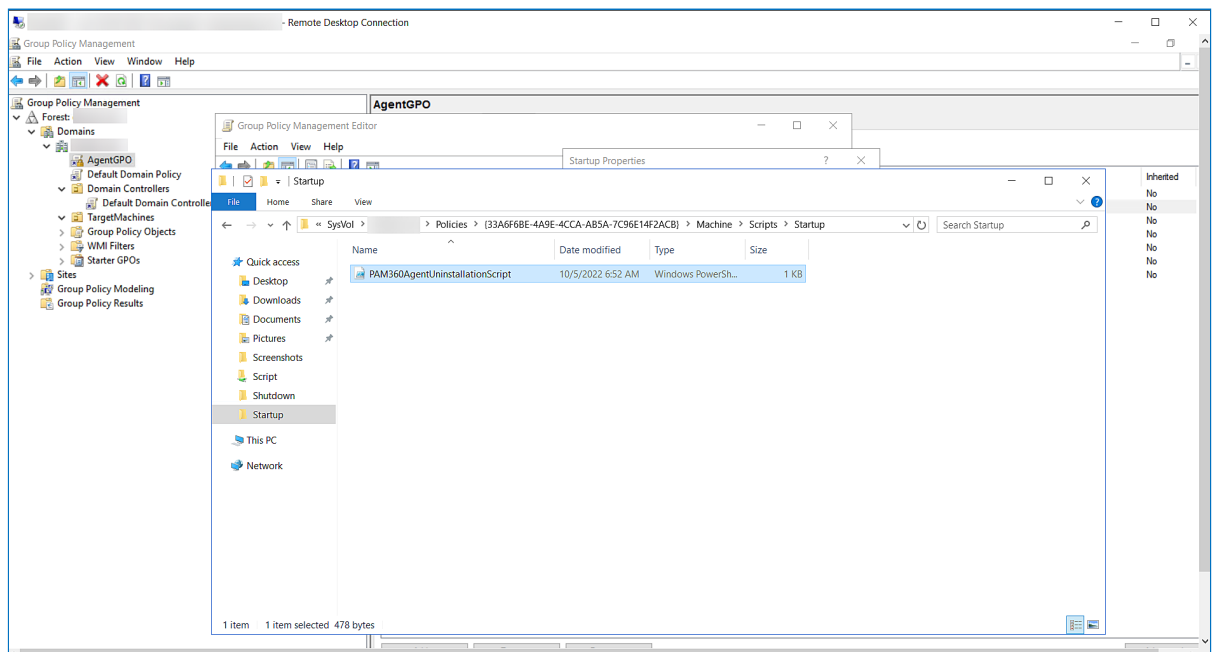


3. Switch to the **PowerShell Scripts** tab and click **Show Files**. The network directory will open.

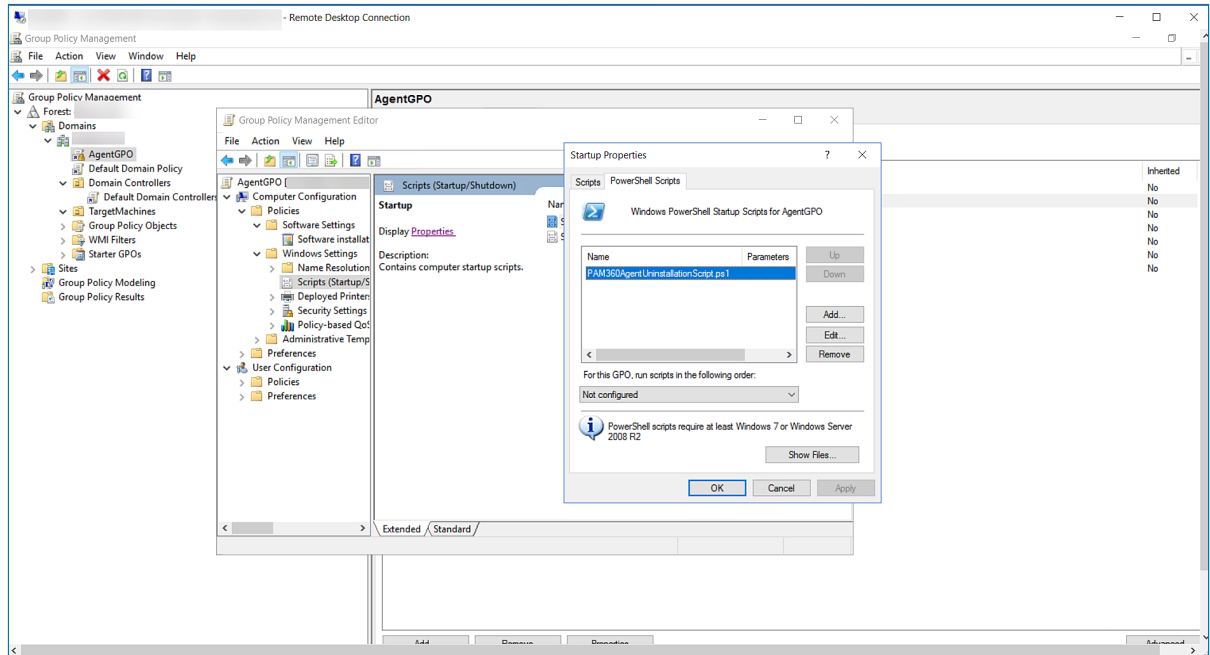
Agent Installation in Multiple Endpoints - Windows



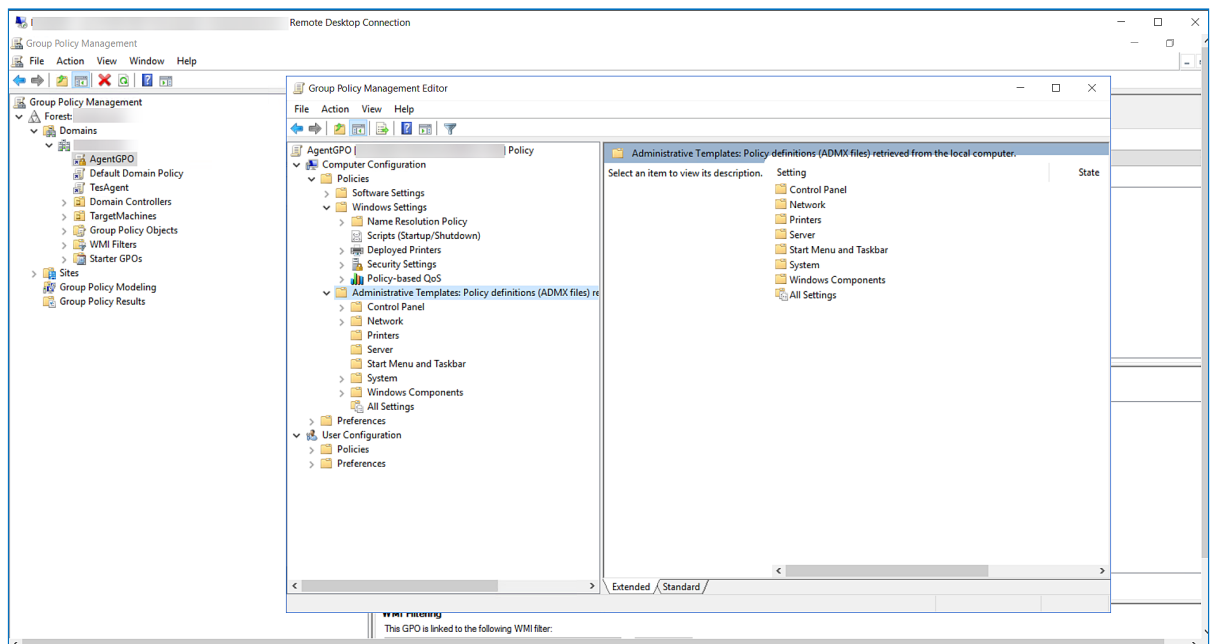
4. Now, paste the PAM360 agent Uninstallation PowerShell script file in the GPO network location.



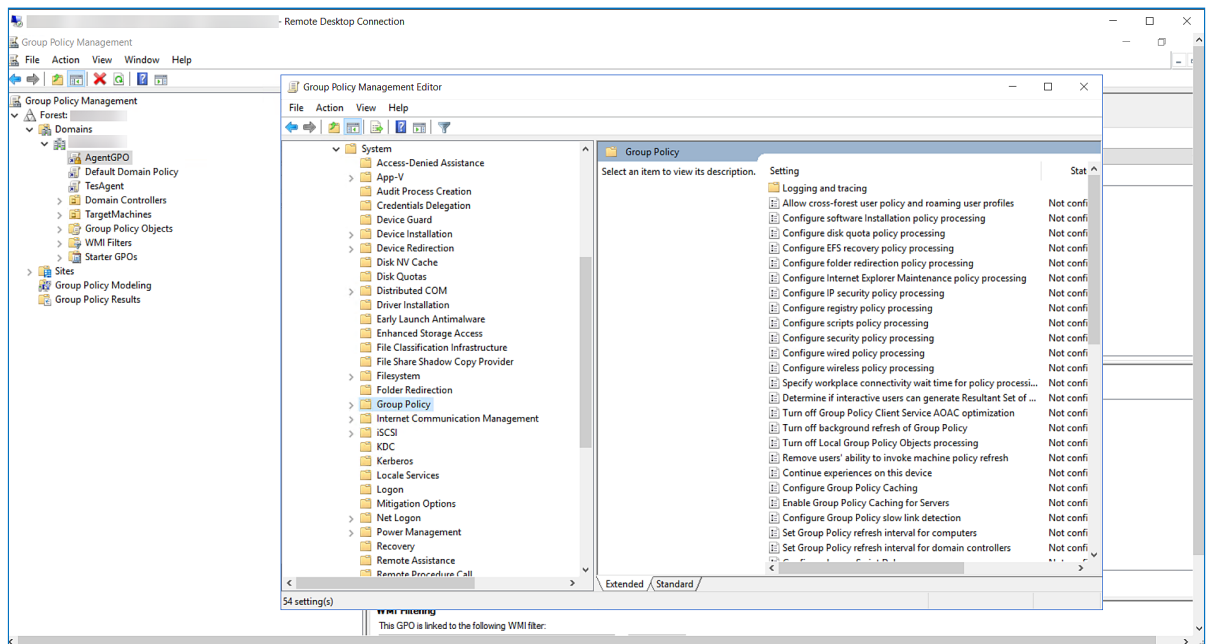
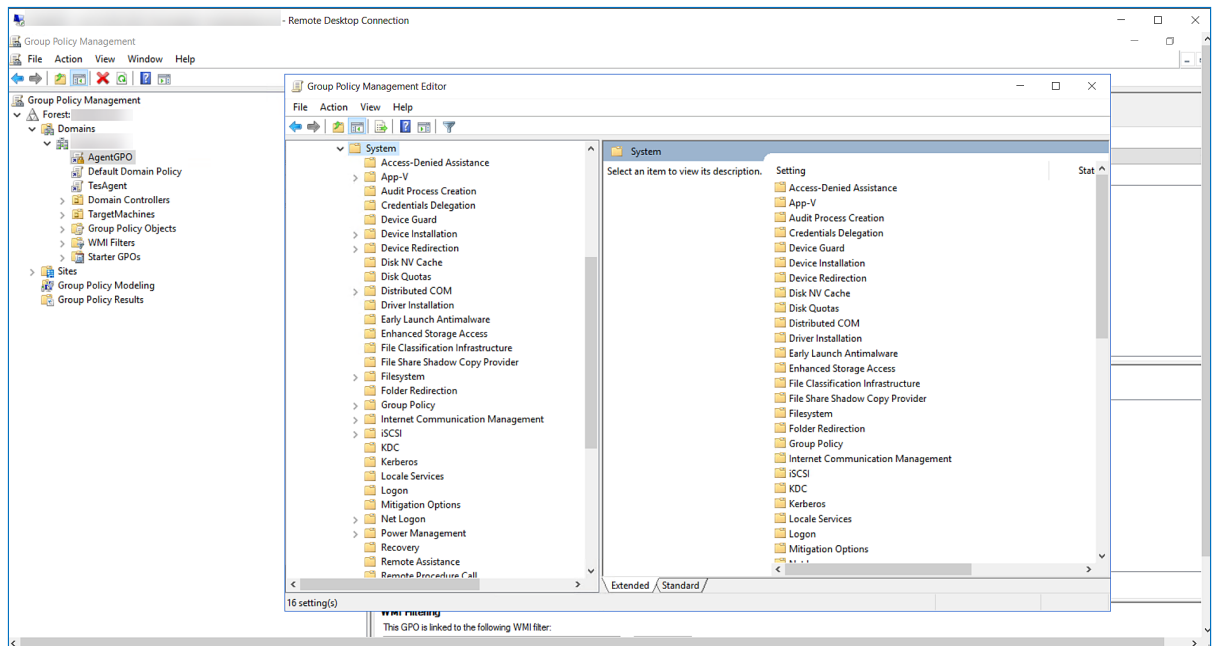
Agent Installation in Multiple Endpoints - Windows



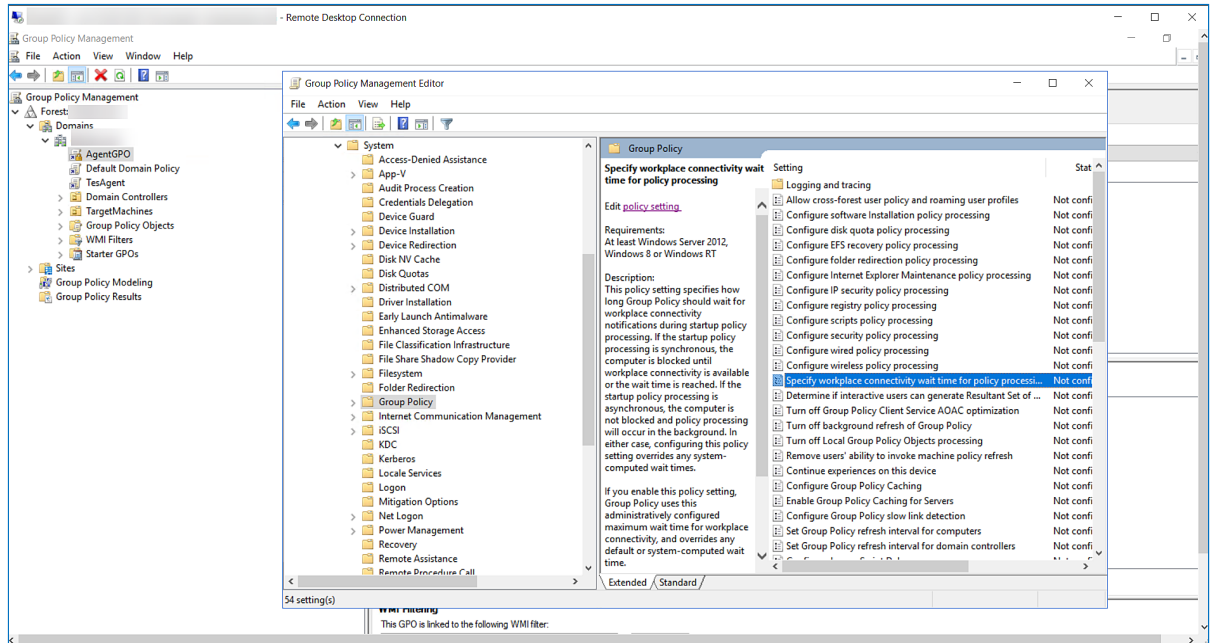
5. Click **Add** and add the PAM360AgentUninstallationScript file name under the **Script Name**. Click **Apply** and **OK** again to save the settings.
6. In the **Group Policy Management Editor**, navigate to **Administrative Templates >> System** and open the **Group Policy**.
7. Under the **Group Policy** folder, right-click **Specify workplace connectivity wait time for policy processing**.



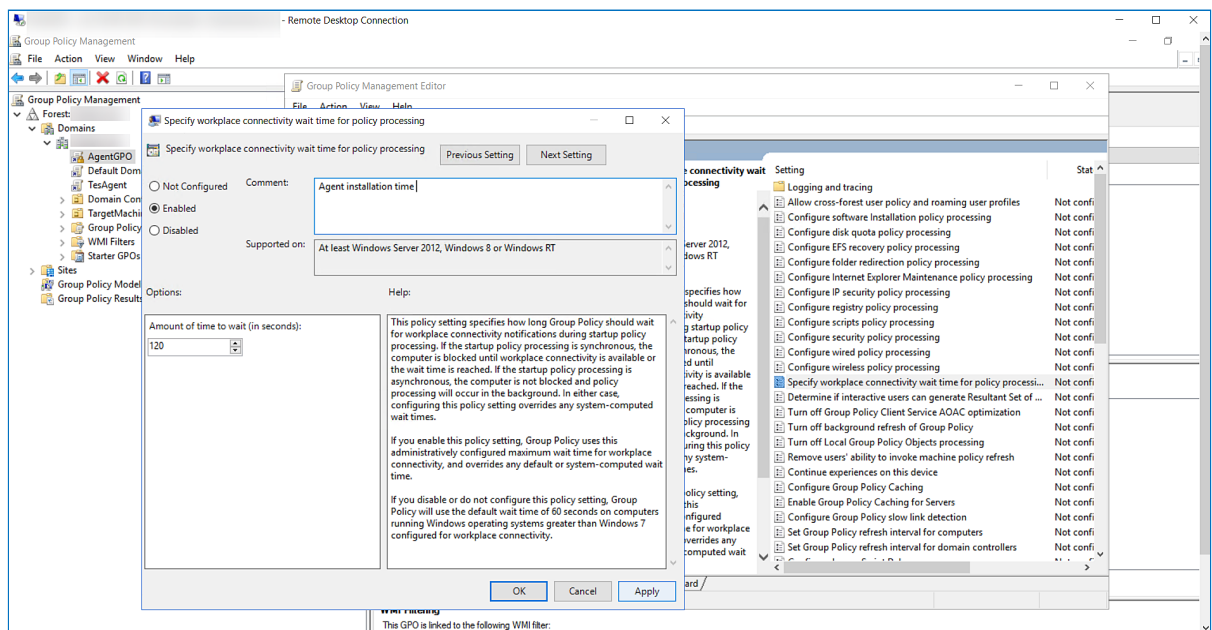
Agent Installation in Multiple Endpoints - Windows



Agent Installation in Multiple Endpoints - Windows



- From this window, click the **Enabled** option. Enter the **Amount of time to wait** as 120 seconds. Click **Apply** and **OK** to save the settings.



- The GPO will be applied. Once you restart all the target endpoints, the PAM360 Agent PowerShell script will be invoked and the agent will be uninstalled in the target machines.
- After successful uninstallation, disable the startup script for the GPO you created (AgentGPO in this example). This will ensure that the script is not invoked every time the target machines are restarted.

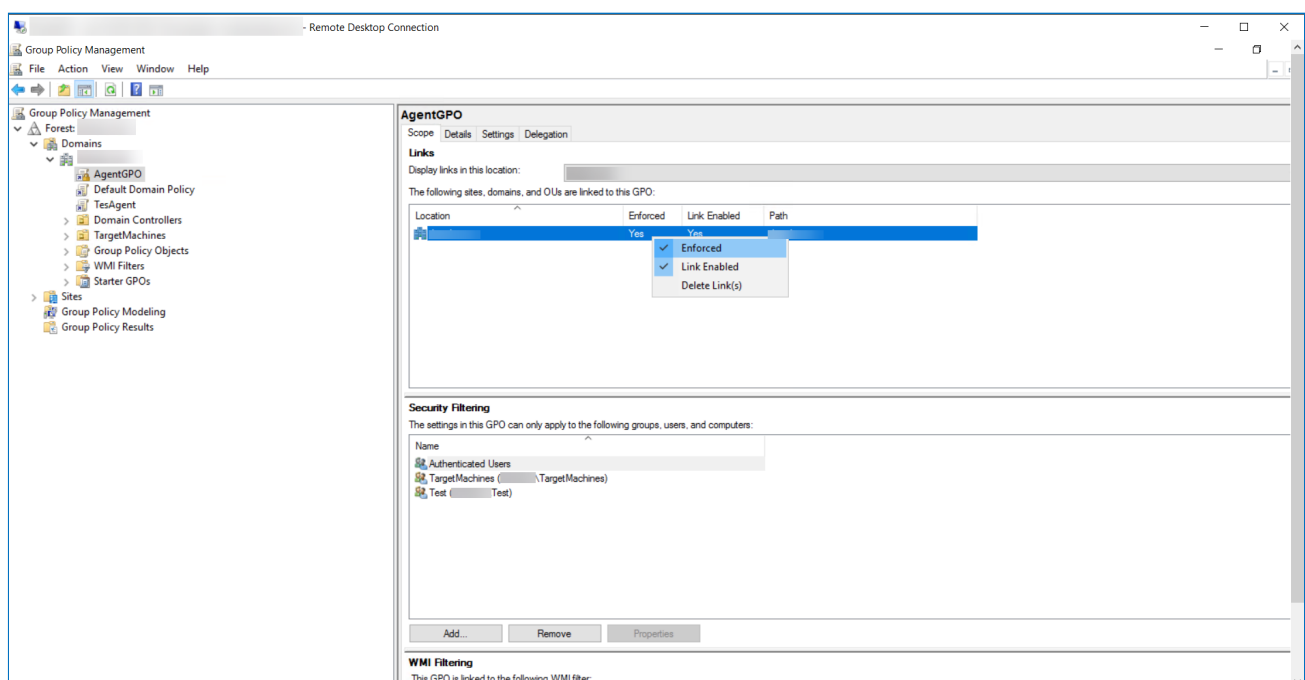
Agent Installation in Multiple Endpoints - Windows

Once you have uninstalled the old agents, follow the steps in [this](#) link to install the C#/Go agent using GPO.

b. Troubleshooting Steps

Ensure that the AgentGPO has a higher precedence than the other GPOs. This is to make sure that the other GPOs do not override the permissions of the AgentGPO.

To check this, click the GPO name, right-click the **Enforced** option and check if it is enabled.



Deploying PAM360 Agent in Endpoints using Endpoint Central

Endpoint Central (formerly Desktop Central) is a Windows Desktop Management solution that allows users to deploy software, patch management, configurations, etc. PAM360 now allows users to install and uninstall PAM360 Agent in bulk using Endpoint Central.

Notes:

- This deployment method is applicable only for Windows resources/Windows agents.
- The PAM360 web console should have access to the target machine.

1. Installing PAM360 Agent using Endpoint Central

Follow the below steps to install the PAM360 agent in bulk using Endpoint Central:

- a. Upload a script file in the Endpoint Central
- b. Create a collection and deploy

a. Upload a Script File in the Endpoint Central

1. To begin the PAM360 agent installation process, log in to PAM360 and navigate to '**Admin >> PAM360 Agents**'. Download the **Windows Agent** and ensure to copy the **Agent Key** value.
2. Next, [download](#) the script file zip and extract its contents to your preferred folder. Ensure the below SHA256 value upon downloading the file:

SHA256 Checksum:

b61f52a1cc213ba69dc7a369074d5d294247954f78110f049483805bde10958a

In the extracted script file folder, take the following steps in the respective files based on your agent installation type:

- a. For resource agent installation, open the **ResourceAgentBulkInstallation.bat** file with administrative privileges. Update the following attributes:

Agent Installation in Multiple Endpoints - Windows

- i. Enter your PAM360 **Agent Key**.
- ii. Input the numbers next to the **Agent Key** based on the desired services. Use **1, 2,3** to indicate the agent installations for **Password Management, Self-Service Privilege Elevation, and Zero Trust Implementation**. Installation scenarios can include **1,2,3** or **1** or **2** or **3** or **1,2** or **1,3** or **2,3**. For example:

```
1 AgentInstaller.exe install 275b68f389c09c70g 1,2,3
```

- b. For user agent installation, open the **UserAgentBulkInstallation.bat** file with administrative privileges. Update the following attributes:
 - i. Enter the user machine names where the user agent to be installed along with the respective PAM360 user names to establish a mapping for trust score calculation in Zero Trust.

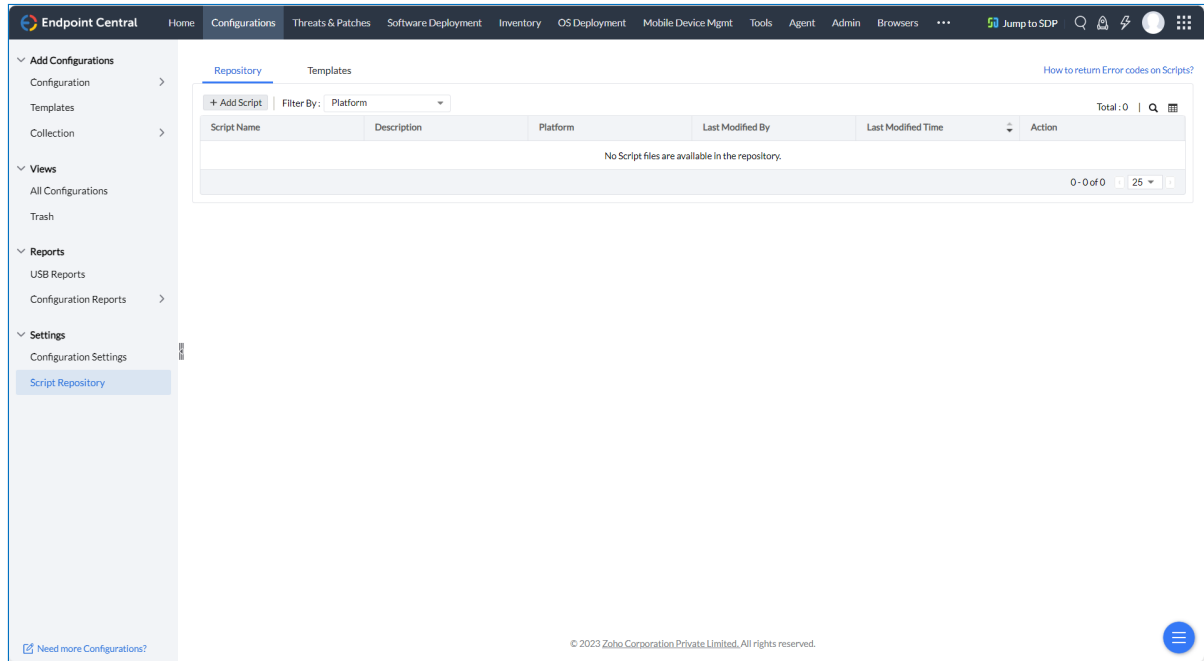
Note: Ensure that the machine names used by the user and the PAM360 usernames are identical, including case-sensitive words.

- ii. Enter your PAM360 **Agent Key**. For example:

```
1 set input_string=johndoe-266=John Doe,emilydavis-451=Emily
   Davis,ashley-094=Ashley Taylor,Chirs-650=Chris Williams
2 .
3 .
4 .
5 AgentInstaller.exe install 275b68f389c09c70g userdevice %result%
```

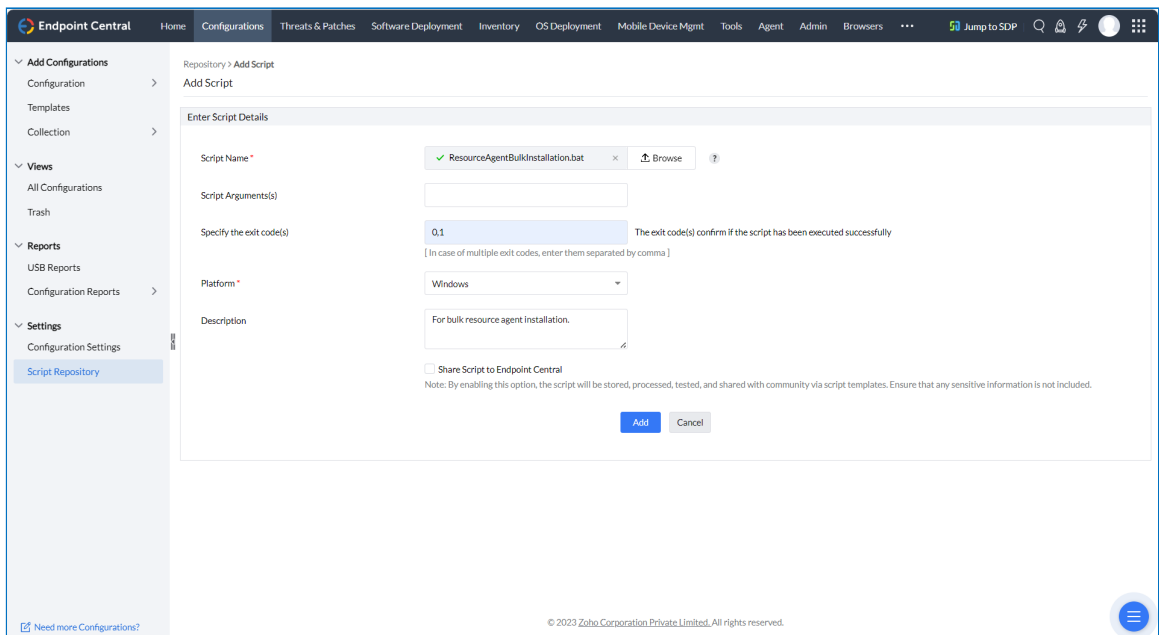
3. Log in to **Endpoint Central** and navigate to '**Configurations >> Settings >> Script Repository**'.

Agent Installation in Multiple Endpoints - Windows



4. Click + Add Script.

- i. Click **Browse** under **Script Name** and upload the following file as required:
 - a. **ResourceAgentBulkInstallation.bat** - For bulk resource agent installation
 - b. **UserAgentBulkInstallation.bat** - For bulk user agent installation
- ii. Now, **Specify the exit code(s)** as **0,1**.
- iii. Select the **Platform** as **Windows** and click **Add**.

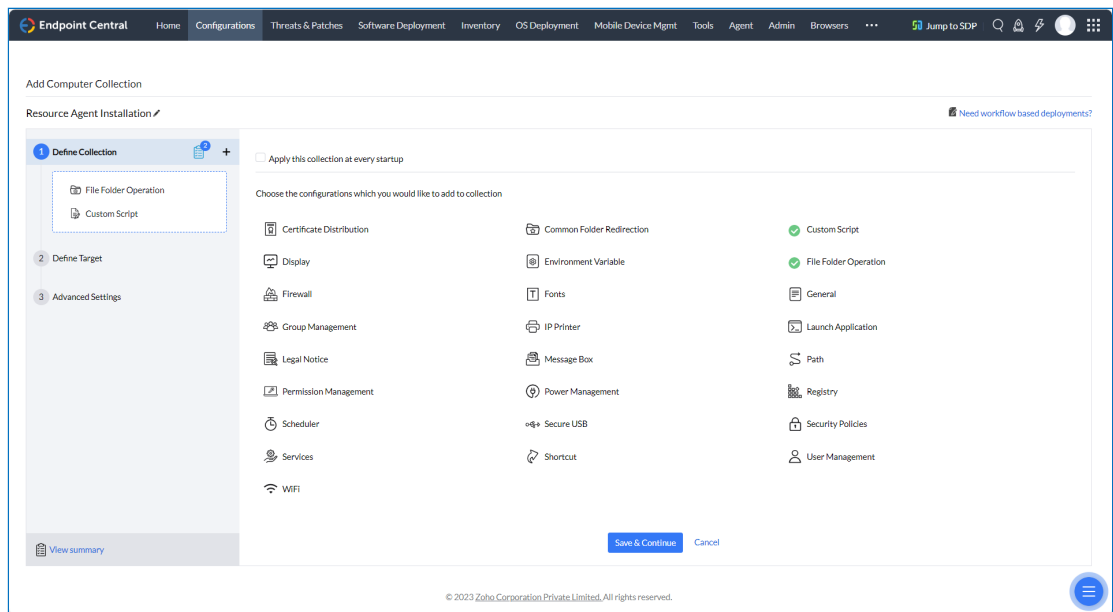


5. Now, you have successfully uploaded a script file to **Endpoint Central**.

Agent Installation in Multiple Endpoints - Windows

b. Create a Collection

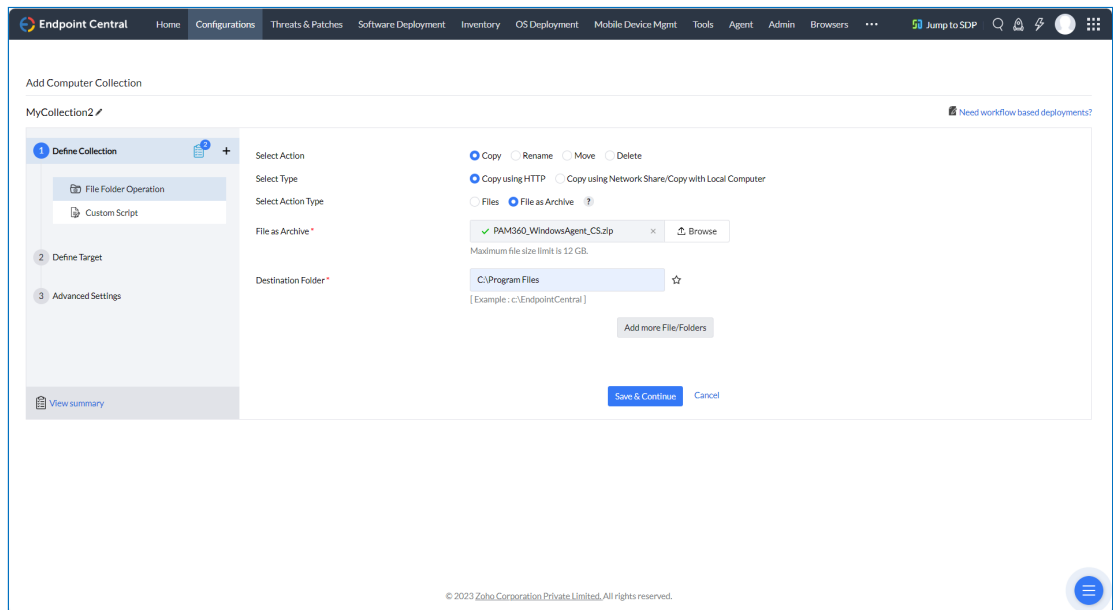
1. In **Endpoint Central**, navigate to '**Configurations >> Add Configurations >> Collections >> Computer Collections**'.
2. In the GUI that appears, edit the name of the collection and do the steps that follow:
 - i. In **Define Collection**,
 - a. **Select Custom Script and File Folder Operation.**



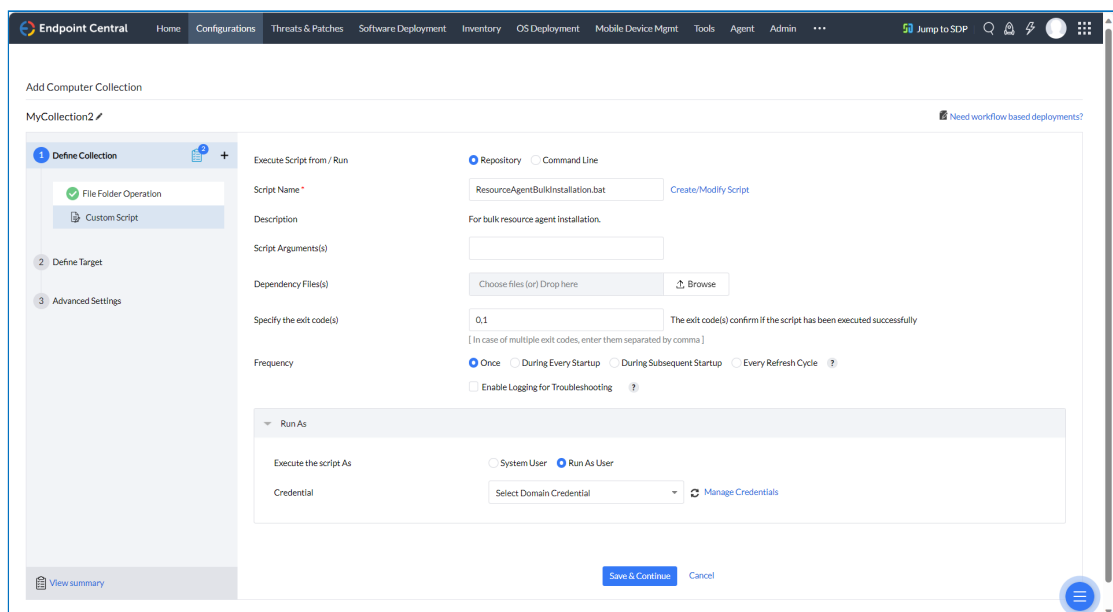
- b. Now, under **Define Collection** on the left, click **File Folder Operation**.
- c. **Browse** and upload the downloaded **WindowsAgent.zip** in the **Files** field.
- d. Enter the **Destination Folder** file path (E.g., *"C:\Program Files"*) to unzip, and click **Save & Continue**.

Note: Kindly make sure that the **Destination Folder** file path mentioned is the same as that of the path mentioned in the **Agent.bat**

Agent Installation in Multiple Endpoints - Windows

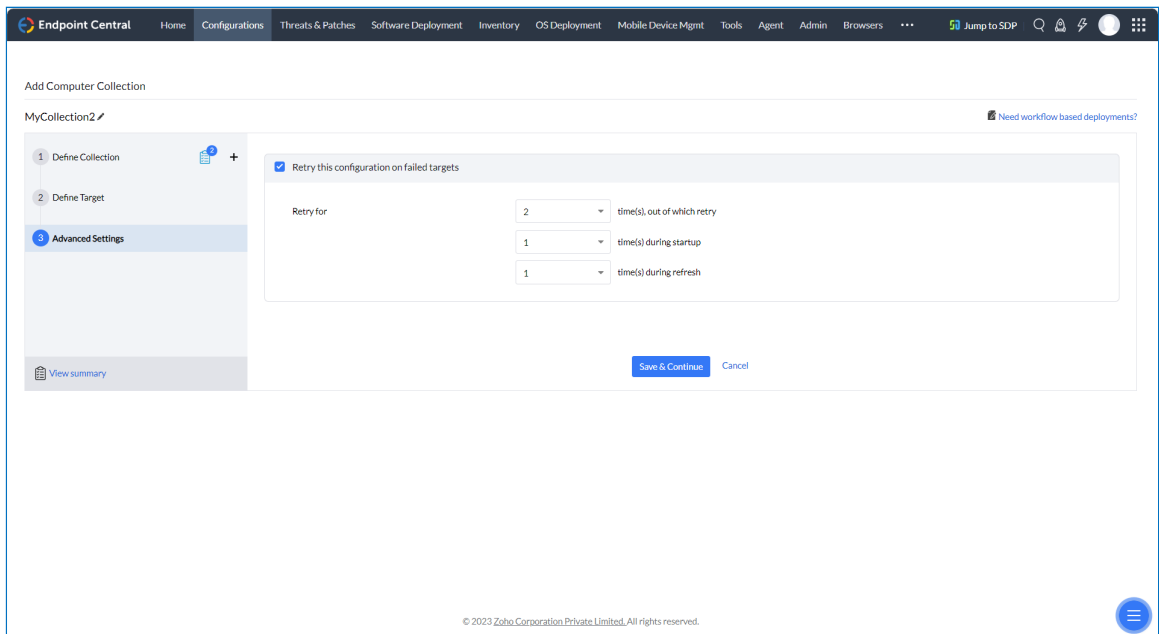


- e. Now, under **Custom Scripts**, select **Repository** in the **Execute Script from/Run** field.
- f. Search and select **ResourceAgentBulkInstallation.bat** or **UserAgentBulkInstallation.bat** (uploaded in step 1) as the **Script Name**.
- g. Specify the **exit code(s)** as **0,1** and enable the **Enable Logging for Troubleshooting** checkbox.
- h. Under **Run As**, select the **Execute the Script** field with **Run as User** and mention the credentials of the domain account with relevant permissions.
- i. Click **Save and Continue**.



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- ii. Now, under **Define Target**,
 - a. Select the required **Remote Office/Domain** from the dropdown.
 - b. Click the filter icon and under **Filter Computers based on**, select **Computer** and select the desired machine.
 - c. Click **Save and Continue**.
- iii. Under **Advanced Settings**, enable **Retry this configuration on failed targets** and click **Save and Continue** to deploy.



3. Now, you have successfully deployed the PAM360 Agent using Endpoint Central. To check the status of your deployment, navigate to '**Configuration >> Views >> All Configuration**'.

2. Uninstalling PAM360 Agent using Endpoint Central

Follow the below steps to uninstall the PAM360 agent in bulk using Endpoint Central:

- a. Upload a script file in the Endpoint Central
- b. Create a collection and deploy

a. Upload a Script File in the Endpoint Central

1. Log in to **Endpoint Central** and navigate to '**Configurations >> Settings >> Script Repository**'.

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2. Click **Add Script**.
 - i. Click **Browse** under **Script Name** and upload the **UninstallAgent.bat** file available from the extracted script files zip.
 - ii. Now, **Specify the exit code(s)** as **0,1**.
 - iii. Select the **Platform** as **Windows** and click **Add**.
3. Now, you have successfully uploaded a script file to **Endpoint Central**.

b. Create a Collection

1. In **Endpoint Central**, navigate to '**Configurations >> Add Configurations >> Collections >> Computer Collections**'.
2. In the GUI that appears, edit the name of the collection and do the steps that follow:
 - i. In **Define Collection**,
 - a. Select **Custom Script**.
 - b. Now, under **Custom Scripts** on the left, select **Repository** in the **Execute Script from/Run** field.
 - c. Search and select **UninstallAgent.bat** (uploaded in step 1) as the **Script Name**.
 - d. **Specify the exit code(s)** as **0,1** and enable the **Enable logging for Troubleshooting** checkbox.
 - e. Click **Save and Continue**.
 - ii. Now, under **Define Target**,
 - a. Select the required **Remote Office/Domain** from the dropdown.
 - b. Click the filter icon and under **Filter Computers based on**, select **Computer** and select the desired machine.
 - c. Click **Save and Continue**.
 - iii. Under **Advanced Settings**, enable **Retry this configuration on failed targets** and click **Save and Continue** to deploy.
3. Now, you have successfully uninstalled the PAM360 Agent using Endpoint Central.