



# BeyondTrust

## **Privilege Management for Mac 5.5.x ePO Extension Installation Guide**

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## Introduction

This guide assumes that you have set up your ePO server and you now need to install the Privilege Management ePO Extension.

This guide shows you how to install the Privilege Management ePO Extension, create a Client Task to deploy Privilege Management for Mac to your endpoints, configure your ePO server for Privilege Management for Mac tasks, and install BeyondTrust Privilege Management Reports.



If you are upgrading an existing BeyondTrust Privilege Management ePO Extension, see section "[Install the Privilege Management ePO Extension](#)" on page 5.

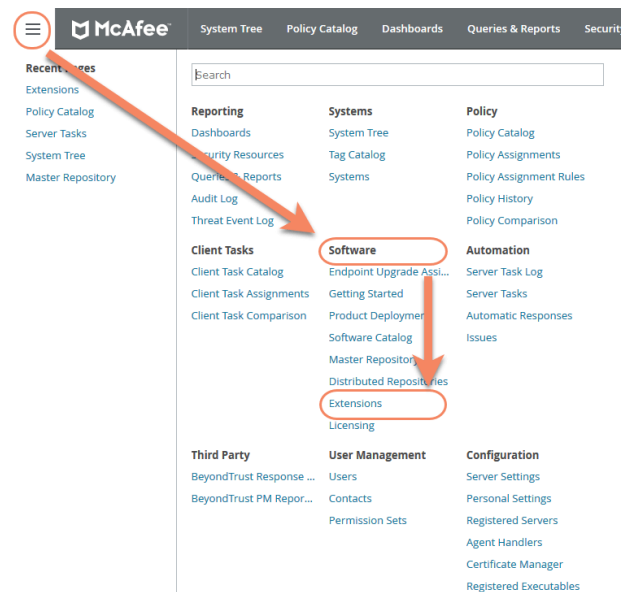
# Install the Privilege Management ePO Extension

The Privilege Management ePO Extension allows you to use McAfee ePolicy Orchestrator to manage your endpoint(s).

The Privilege Management ePO Extension is a zip file and includes the build number in its name. The zip file includes the policy editor and BeyondTrust Privilege Management Reporting, if you choose to configure it.

To install the Privilege Management ePO Extension extension:

1. Log in to McAfee ePolicy Orchestrator and navigate to **Menu > Software > Extensions**.



2. Click **Install Extension** in the top-left corner. The **Install Extension** dialog box appears.
3. Enter or browse to the location of the Privilege Management server extension package **Defendpoint\_x\_x\_x\_xx.zip** and click **OK**.
4. On the **Install Extension** summary screen, click **OK** in the bottom-right corner to proceed with the installation.

The BeyondTrustPrivilege Management ePO Extension has now been installed on your ePO Server.

## Configure ePO Permissions

There are four permission sets in ePO by default. You can view these at **Menu > User Management > Permission Sets**, on the left menu. Installing the Privilege Management ePO Extension grants some privilege management permissions to the following default ePO permissions sets:

- **Executive Reviewer:** Privilege Management Policy Permission: View and Change Settings



**Note:** This will enable the user to access the policy catalog, but not to view or change the policy. The user will need **Run permission for BeyondTrust Privilege Management** under **BeyondTrust Privilege Management** to view policy.

- **Global Reviewer:** Privilege Management Policy Permission: View Settings



**Note:** This will enable the user to access the policy catalog, but not to view or change the policy. The user will need **Run permission for BeyondTrust Privilege Management** under **BeyondTrust Privilege Management** to view policy.

- **Group Admin:** No Privilege Management permissions.
- **Group Reviewer:** No Privilege Management permissions.



**Note:** Users need to be members of the permission sets required for Privilege Management. Please refer to McAfee documentation for how to add users to permission sets.

Alternatively, you can create your own permission sets in ePO by selecting **New Permission Set**. After this is selected, you can name the permission set and assign users. Once you click **Save**, you can apply permissions.



**Note:** If a user needs to view or change BeyondTrust policies, they will need the **Run permission for BeyondTrust Privilege Management** permission under **BeyondTrust Privilege Management** and the **View settings** or **View and change settings** permission under **BeyondTrust Privilege Management Policy**.

## Configure Additional Permissions

Other user permissions you, as an admin, may wish to consider granting include those below, in order to:

- Modify deployment of the Privilege Management endpoint client
- Access the **System Tree** tab
- Edit the groups and systems within the System Tree
- Wake and deploy agents
- Assign policies or client tasks to a group
- Create client tasks with the software or with the Software Catalog

To edit the permissions, navigate to **Menu > User Management > Permission Sets** and click the appropriate Permission Set in the menu on the left. Alternatively, you may create a new permission set by clicking the **New Permission Set** button. A list of settings you may edit appear in the right panel. Click **Edit** on the appropriate setting to edit it. Once finished, click **Save**.

### McAfee Agent: Policy & McAfee Agent: Tasks

A user may need **McAfee Agent** permissions if they need to view or change client deployment tasks of Privilege Management for Windows or Privilege Management for Mac.

### Systems

A user may need the **Systems** permission so they can access the **System Tree** tab, wake up agents, edit the groups and systems in the System Tree, and deploy agents.

### System Tree

A user may need the **System Tree access** permission if they need access to certain groups. For example, to assign policies or client tasks to a group.

### Software & Software Catalog

A user may need the **Software** and **Software Catalog** permissions if they need to create client tasks with software.

User Management  
Permission Sets

**Edit Permission Set for Group Admin: McAfee Agent**

<b>McAfee Agent : Policy</b>	<input type="radio"/> No permissions <input type="radio"/> View settings <input checked="" type="radio"/> View and change settings
<b>McAfee Agent : Tasks</b>	<input type="radio"/> No permissions <input type="radio"/> View settings <input checked="" type="radio"/> View and change settings

User Management  
Permission Sets

**Edit Permission Set for Group Admin: Systems**

**System Tree:**  View System Tree tab  
Note: Visibility of groups and systems within the tree is controlled by the System Tree Access permission set action.

**Actions:**  Wake up agents, view Agent Activity Log  
 All operations, view groups and systems  
 Deploy agents  
Note: Ability to deploy is also controlled by the Agent Handler permission set action. Deploy Agent also needs McAfee Agent/Policy Change Settings Access for some deployment methods.

**Tag sets:**  Apply, activate, and other tags

**Tag ratings:**  No permissions  
 Create and edit tags and tag groups  
 Create and edit tags, tag groups and tag criteria (also requires "Create and edit private queries" permission)

User Management  
Permission Sets

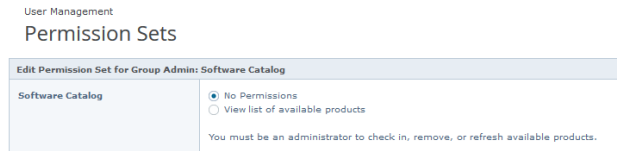
**Edit Permission Set for Group Admin: System Tree access**

- My Organization
  - Lost and Found
  - Pav
  - Omar
  - Graham
  - Jon G

User Management  
Permission Sets

**Edit Permission Set for Group Admin: Software**

<b>Master Repository</b>	<input type="radio"/> No permissions <input type="radio"/> View packages <input checked="" type="radio"/> Add, remove, and change packages; perform pull tasks
<b>Distributed Repositories</b>	<input type="radio"/> No permissions <input type="radio"/> View repositories <input checked="" type="radio"/> Add, remove, and change repositories; perform replication tasks



## Upgrade Privilege Management for Mac



**Note:** ePO will not recognize Privilege Management for Mac if you upgrade the Privilege Management for Mac clients before the Privilege Management ePO extension. In addition, ePO Threat events will be rejected if this order is not followed, although they can be recovered once the upgrade to the Privilege Management ePO Extension has been completed.

Version 5 of the Privilege Management ePO Extension is compatible with older Privilege Management for Mac clients.

The recommended order to upgrade BeyondTrust Privilege Management for Mac software is:

- Upgrade the Privilege Management ePO Extension
- Upgrade Privilege Management Reporting (if in use)
- Upgrade Privilege Management Clients



**Note:** If you have a requirement to upgrade BeyondTrust software in a different order to that listed above, please contact your BeyondTrust representative.

## Upgrade the Privilege Management ePO Extension

When you are upgrading, the newer version of the Privilege Management ePO Extension recognizes the existing Privilege Management ePO Extension installation and prompts you to upgrade it. We recommend upgrading as removing the installed Privilege Management ePO Extension will delete your settings.

To upgrade the Privilege Management ePO Extension you need to use ePO to install the latest extension from **Software > Extensions**. When you upload the new Privilege Management ePO Extension, ePO will prompt you that this newer version of the ePO Extension will replace the previous extension. Click **OK** to upgrade the Privilege Management ePO Extension. You do not need to restart ePO for the upgrade to take effect. Your Registered Servers, Client Tasks and Server Tasks are not affected.

## Upgrade Privilege Management Reporting (if in use)

To upgrade the Reporting database you need to be on the server where the database is installed.



If you cannot do this or the database is in the cloud, see "[Manual Database Upgrade](#)" on page 1 for more information.

Please use the following process to upgrade the Privilege Management Reporting database and event parser:

1. Stop the **McAfee ePolicy Orchestrator Event Parser Service**. You need to check that all events have finished being processed. Any events that are received after these tables are empty will be queued on the ePO Server until the service is restarted at the end of this process.

Query the following tables first to check that they are empty:




- dbo.Staging
- dbo.Staging\_ServiceStart
- dbo.Staging\_ServiceStop
- dbo.Staging\_UserLogon


Subsequently, query the following tables:

- dbo.StagingTemp
- dbo.StagingTemp\_ServiceStart
- dbo.StagingTemp\_ServiceStop
- dbo.StagingTemp\_UserLogon

Once the tables are all empty all remaining events have been processed.

2. Disable the **Copy from Staging** task. The easiest way to do this is to use **SQL Server Management Server** and navigate to your **Reporting database > Service Broker > Queues**.
3. Right-click on the **PGScheduledJobQueue** and click **Disable Queue**.
4. You need to disable any of the ePO Server Tasks that rely on the Reporting database while you are upgrading it. For example, the **Staging Server Task** and **Purge Server Task**. These tasks will fail as the database will be offline for a period of time.
5. Open **SQL Server Reporting Configuration Manager** and connect to your database. Navigate to the Reporting link and use the drop-down to delete the top level folder.
6. Run the Privilege Management for Mac database installer to upgrade the database. Ensure you point the installer to your existing database server and Privilege Management for Mac database name when prompted.
7. Enable any Server tasks that you previously disabled as they relied on the Reporting database.
8. Enable the **Copy From Staging** task. The easiest way to do this is to use SQL Server Management Server and navigate to **Reporting database > Service Broker > Queues**.
9. Right-click on the **PGScheduledJobQueue** and click **Enable Queue**.
10. Start the **McAfee ePolicy Orchestrator Event Parser Service** service. Any incoming events will now be processed.
11. You need to log off and on again to the ePO Server to ensure the new database version is recognized. However, an ePO Server restart is not required.

 **Note:** If you installed Reporting from version 5.4 onwards, the default name for the database is **BeyondTrustReporting**. If you installed a previous version of Reporting the default name is **AvectoReporting** (vs 5.1-5.3), or **AvectoPrivilegeGuard** for older versions. Alternatively, you may have chosen a different database name.

 **Note:** If you see an error message that states 'Please stop CopyFromStaging from running before upgrading the database', make sure that no new events are being processed by querying the above tables and try again.

This upgrade path can be applied to both standalone Reporting configurations and to configurations spread over multiple machines.

## Upgrade Privilege Management for Mac Clients

You can upload a newer version of the Privilege Management for Mac client to ePO and deploy it as required.



For more information, please see the [Privilege Management ePO Extension Installation Guide](https://www.beyondtrust.com/docs/privilege-management/mac.htm), at <https://www.beyondtrust.com/docs/privilege-management/mac.htm>.

Depending on the type of installation, a restart of the endpoint may be required. When installing in silent mode, a reboot occurs automatically.

The Privilege Management ePO Extension maintains backwards compatibility with the Privilege Management for Mac client. You can use a later version of the Privilege Management ePO Extension with an earlier version of the Privilege Management for Mac client. However, not all features in the Privilege Management ePO Extension will be supported with earlier versions of the client.

## Delete Old Application Definitions (Upgrade from 5.4)

Once all machines are running version 5.5, it is safe to delete the OLD application definitions created in Step 1 and to push that configuration out.

## Manual Database Upgrade

Use these instructions to upgrade the Privilege Management Reporting database where you cannot use the installer or need to do a manual installation. For example, PMC in Azure. SQL scripts are provided to manage these upgrades.

To upgrade a Privilege Management Reporting database using SQL scripts:

1. The SQL scripts are provided as part of the Reporting installers. Alternatively, you can contact BeyondTrust Technical Support for them.



**Note:** There is a README file provided in this directory to assist you.

2. Run the following SQL query to find the current version of the database. This will return the version of the database.

```
select * from DatabaseVersion
```



**Note:** This SQL query will work for Privilege Management Reporting databases 4.5 and newer.

3. Execute the upgrade script where the name is the next version number and carry on applying these until the desired version is reached.

For example, if your current database version is **4.3.16** and you want to upgrade to version **5.0.0**, execute the following scripts in order:

1. **Script\_4.5.0\_Updates.sql**
2. **Script\_5.0.0\_Updates.sql**

Please check the SQL log for any errors and contact BeyondTrust Technical Support if necessary.

# Privilege Management for Mac Deployment

You need to import the Privilege Management client for ePO into the ePO Server and create a Client Task to deploy it to your endpoints.

- "Import Privilege Management for Mac Package into ePO" on page 11
- "Privilege Management for Mac with McAfee Endpoint Security (ENS)" on page 11
- "Create the Client Task" on page 12
- "Assign and Run the Client Task" on page 12
- "Verify the Privilege Management for Mac Deployment" on page 13

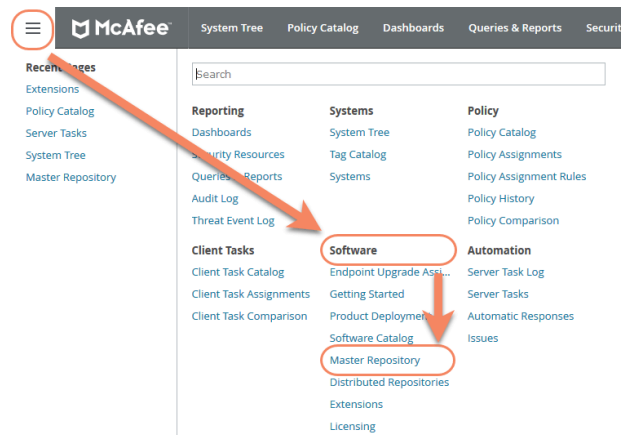
## Import Privilege Management for Mac Package into ePO

If you use McAfee ePolicy Orchestrator to deploy Privilege Management for Mac to your endpoints, you need the Privilege Management zip file package for your operating system.

The client package for Mac is a zip file that includes the Privilege Management client for Mac and the ePO Mac adapter.

To install the Defendpoint package:

1. Log in to **ePolicy Orchestrator** and navigate to **Menu > Software > Master Repository**.



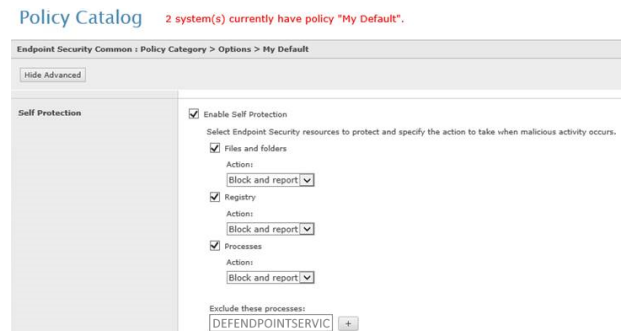
2. Click **Check In Package** at the top-left of the screen. The **Check In Package** wizard appears.
3. Leave **Package Type** as the default of **Product or Update (.ZIP)** and click **Browse**.
4. Navigate to and select the Privilege Management for Mac package that you want to use on your local machine.
5. Click **Open** and then click **Next** at the bottom-right of the screen.
6. Leave the **Branch** option as **Current** and click **Save** at the bottom-right of the screen to save the client package to the master repository.

The Privilege Management for Mac package will be displayed in the **Packages in Master Repository** list.

## Privilege Management for Mac with McAfee Endpoint Security (ENS)

If you are using **McAfee Endpoint Security (ENS)**, you need to do an additional task. Follow the steps below to configure Privilege Management for Mac with **McAfee Endpoint Security**. If you're not using ENS you can skip this section.

1. Navigate to **Policy Catalog** and select **McAfee Endpoint Security** from the **Product** drop-down menu.
2. In the **Self Protection** section, if the **Enable Self Protection** box is checked:
  - Check the three boxes below for **Files and folders**, **Registry** and **Processes**.
  - Type **DEFENDPOINTSERVICE.EXE** into the **Exclude these processes** text box and click **Save**.



## Create the Client Task

Privilege Management for Mac is deployed to client computers using **ePolicy Orchestrator** Client Tasks. Client tasks are assigned to groups within the **System Tree**. This section will guide you through the creation of a client task for Privilege Management for Mac, and the assignment of the client task to the group in the **System Tree**.

To create a client task for Privilege Management for Mac package:

1. Log in to **ePolicy Orchestrator** and navigate to **Menu > Client Tasks > Client Task Catalog**.
2. Select **McAfee Agent > Product Deployment** from the left-hand pane and click **New Task** on the top-left of the page.
3. Select **Product Deployment** from the **Task Types** drop-down menu and click **OK**.
4. Enter the following options:

Field	Description
Task Name	Name the task <b>Privilege Management x.x.xxx</b> , where <b>x</b> represents the full version of Privilege Management you're deploying.
Description	This is an optional field you can use if required.
Target platforms	This is the operating system of your endpoints. Check the <b>Mac</b> box.
Products and components	Select <b>BeyondTrust Privilege Management for Mac x.x.xxx</b> from the drop-down menu. Leave the <b>Action</b> as <b>Install</b> , the <b>Language</b> as <b>English</b> and the <b>Branch</b> as <b>Current</b> .
Postpone Deployment	Use this option to allow your users to postpone the deployment of Privilege Management on their machines.

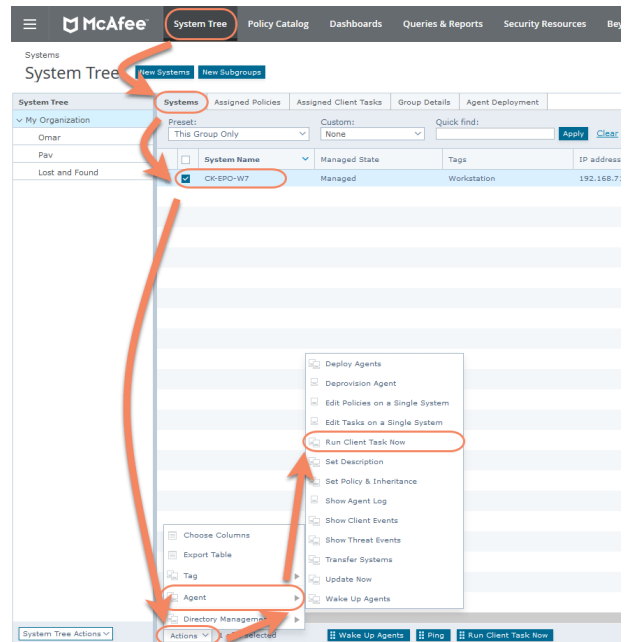
6. Click **Save** to finish creating the client task.

The client task will be displayed in the **Product Deployment** list, and is now ready for assignment to a group or client computer in the **System Tree** prior to running it.

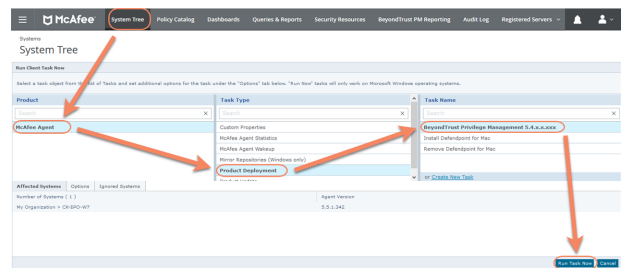
## Assign and Run the Client Task

The McAfee Agent must be installed on your endpoints prior to installing Privilege Management for Mac.

1. Navigate to the **System Tree > Systems** tab and select the endpoint or group containing your endpoints. You may need to drill down to the location using the tree on the left.
2. Click **Actions** on the bottom of the screen and select **Agent > Run Client Task Now**.



3. Leave the **Product** as **McAfee Agent**.
4. Select **Product Deployment** from the **Task Type**.
5. Select your Privilege Management for Mac client from the **Task Name** list. This is the name of the client task that you created to deploy Privilege Management for Mac .
6. Your list of endpoints is shown in the bottom panel. Click **Run Task Now**.
7. The **Running Client Task Status** page appears. The **Status** bar may not show completed until the client computer has been restarted.



Once you have deployed the Privilege Management for Mac package, the endpoints automatically send a manifest of product information to the ePO Server. This information is stored as a property of the client computer in the **System Tree** in the **Products** tab.

## Verify the Privilege Management for Mac Deployment

You can verify the Privilege Management for Mac deployment from the server and client.

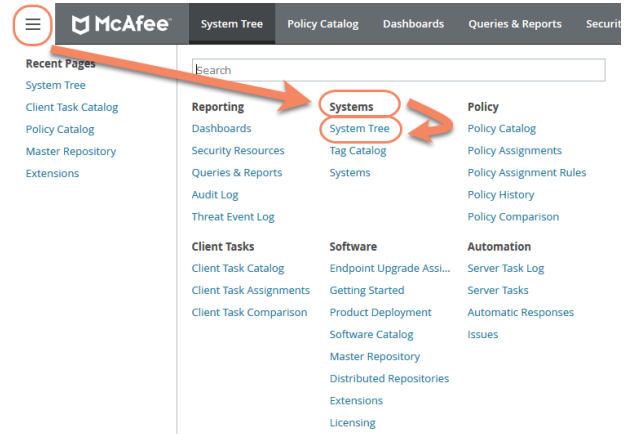


**Note:** You may not be able to verify deployments if your endpoints are pending a restart.

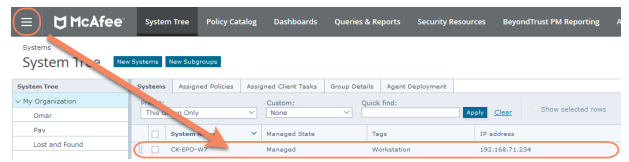
## Server Verification

To verify that the Privilege Management for Mac package has been successfully deployed:

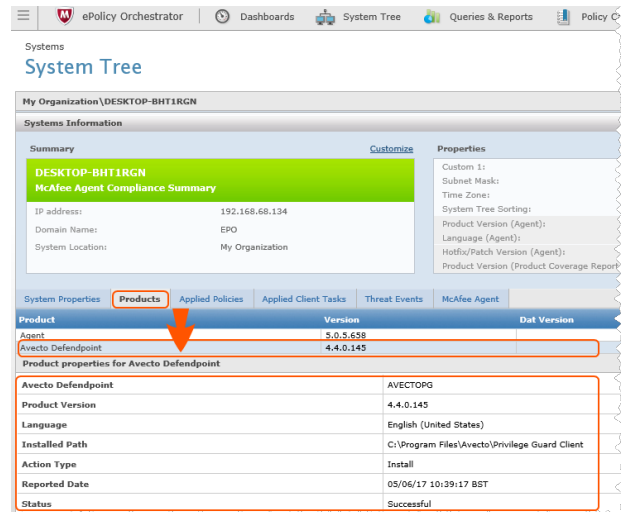
1. Log in to **ePolicy Orchestrator** and navigate to **Systems** > **System Tree**. The **System Tree** is also available as a shortcut in ePO on the top-menu bar.



2. The **Systems** tab is the default view, click the row of the client computer you want to check.



3. Click the **Products** tab and then select **BeyondTrust Privilege Management** for Mac from the product list. Here you can check the status of the deployment and deployed files.



**Note:** In certain cases there may be a delay in the client connecting back to the ePO Server. Click **Wake Up Agents**, check the **Force complete policy and task update** box, and click **OK** to force the connection.

## Client Verification

To verify that the Privilege Management client is connected to the ePO Server:

1. The Mac endpoint will not have a McAfee agent monitor unless it has McAfee ENS installed.
2. To update the policy on the endpoint or send properties, you can use command line switches to do so. The user will use the **cd** command to navigate to the **/Library/McAfee/Agent/bin** folder.



For a list of switches that may be used, please see the [McAfee command line switches article](https://kc.mcafee.com/corporate/index?page=content&id=KB52707) at <https://kc.mcafee.com/corporate/index?page=content&id=KB52707>.



**Note:** Sometimes there is a delay in the client connecting to the ePO Server. Click **Check New Policies** and select **Enforce Policies** to force a policy update. If you see the endpoint receiving policies from the ePO Server then the connection is successful.

## Events and Reporting

There are two types of reporting for Privilege Management for Mac in ePO:

- McAfee ePO Reporting, threat events only.

**i** For more information, please see "[McAfee ePO Reports](#)" on page 17

- Privilege Management Reporting, threat and report events.

**i** For more information, please see "[BeyondTrust Reporting](#)" on page 18.

**Threat Events** are McAfee specific and are the default reporting option. Threat Events are used by the **Dashboards** and **Queries and Reports** pages.

**i** To configure reporting on Threat Events only, please see "[McAfee ePO Reports](#)" on page 17.

**Report Events** contain additional information to Threat Events and can be viewed in the **BeyondTrust Reporting** page as well as the **Queries and Reports** pages.

**i** For more information, please see "[BeyondTrust Reporting](#)" on page 18.

**BeyondTrust Privilege Management Reporting** is an optional Reporting suite that is integrated into ePO. If you are **not** using **BeyondTrust Privilege Management Reporting** you do not need to complete the steps in this section. BeyondTrust Reporting reports on Report Events.

BeyondTrust Privilege Management Reporting is available in two places in the ePO Server interface:

- **Queries and Reports** page
  - The **Queries and Reports** page can display Report Events providing that you have configured a **Database Server Registered Server**.

**i** For more information, please see "[Configure the Database Server Registered Server](#)" on page 27.


- **BeyondTrust Reporting** page
  - The **BeyondTrust Privilege Management Reporting** page requires the Privilege Management database to be installed. In addition you need to configure both the **BeyondTrust Staging** and **BeyondTrust Reporting Registered Servers**. You can use this page to access detailed dashboards and drill-through reports.

**i** For more information, please see "[Configure the BeyondTrust Reporting Registered Server](#)" on page 24 and "[Configure the BeyondTrust Privilege Management Reporting Staging Registered Server](#)" on page 25.



To use BeyondTrust Privilege Management Reporting, events are inserted into the Privilege Management database from the ePO database. You can also insert applications directly into your application groups in your Privilege Management for Mac policy using BeyondTrust Privilege Management Reporting.

BeyondTrust Privilege Management Reporting integrates with Intel Security Threat Intelligence Exchange (TIE) so it has additional support for application reputation using Data Exchange Layer (DXL) and VirusTotal.

 **Note:** Times on reports are shown using the time zone of the ePO server. All events are stored in the database in UTC.

## McAfee ePO Reports

No additional configuration is required to use McAfee ePO Reporting.

ePO Reporting is available by default and allows you to build complex queries to analyze your data. ePO Reporting uses Threat events in the **Queries and Dashboards** page and the **Dashboards** page.

ePO Reporting can also report on Report events in the **Queries and Dashboards** page if the **BeyondTrust Reporting** is configured.

There are four **Dashboards** and twelve default **Queries and Reports** available by default for BeyondTrustPrivilege Management for Mac. You can configure dashboards, charts, and tabular reports in the **Dashboards** and **Queries and Reports** pages. These can incorporate data from other ePO Server products in ePO.

All the events are stored in the ePO database.

## BeyondTrust Reporting

**BeyondTrust Reporting** is an optional Reporting suite that is integrated into ePO.

BeyondTrust Reporting is available in two places in the ePO Server interface:

- Queries and Reports page
- BeyondTrust Privilege Management Reporting page

BeyondTrust Privilege Management Reporting integrates with Intel Security Threat Intelligence Exchange (TIE) so it has additional support for application reputation using Data Exchange Layer (DXL) and VirusTotal.



**Note:** Times on reports are shown using the time zone of the ePO server. All events are stored in the database in UTC.

## Set up a New SQL Server Instance for BeyondTrust Privilege Management Reporting

For **BeyondTrust Privilege Management Reporting** functionality you can either use the same installation of SQL Server as the ePO Server or you can use a different SQL installation. A new database is created for BeyondTrust Privilege Management Reporting by the BeyondTrust Database Installation.

The following SQL Server versions are supported:

- SQL 2012 Standard or Enterprise
- SQL 2014 Standard or Enterprise
- SQL 2016 Standard or Enterprise
- Azure SQL Server



**Note:** Express SQL versions may be used for evaluation and demonstration purposes.



Please refer to the SQL documentation to create a new installation of SQL Server if required.

## Create the Required User Accounts

You can either use a system administration account for the registered servers required for BeyondTrust Privilege Management Reporting or you can use the default user accounts that are configured as part of the Privilege Management database installation. This section describes using the least privilege default user accounts that are configured by the Privilege Management database installer.

If you plan on using a system administration account for the BeyondTrust reporting registered servers, you do not need to complete the steps in this section.

We recommend that you use the accounts that the Privilege Management database installer configures. These are:

- **ReportReader** user
- **EventParser** user

- **DataAdmin** user

In addition to the users that the Privilege Management database installer configures, you need to choose the user that you'll use to install the Privilege Management database. This is known as the **DatabaseCreator** user.

This account must be able to execute installers on the machine with administrative privileges. Alternatively, you can use a SQL account for the **DatabaseCreator** user. This can be configured in the installer when you run it.

The Database Creator user also needs SQL sysadmin permissions.

To grant the *sysadmin* permission for the DatabaseCreator user:

1. Open SQL Server Management Studio and connect to the SQL instance that you're going to use for the BeyondTrust Privilege Management Reporting installation.
2. Navigate to the **Security > Logins** folder.
3. You need to add your user to this folder if it hasn't previously been used to authenticate with SQL Server. To do this:
  - a. Right-click on the **Logins** folder and click **New Login**.
  - b. Click **Search** to the right of the **Login name** option. If you know the domain and user name you need to add you can type it here, then click **Check Name**. If you're not sure about the user's details you can click **Advanced** to browse to the user you want to use. Click **OK** and **OK** again to finish adding the user.
4. In the **Logins** folder, right-click on the user that you will be using as the **DatabaseCreator** and select **Properties**.
5. Click **Server Roles** from the left menu and check the **sysadmin** box.
6. Click **OK** to add the **sysadmin** privilege to the user.



**Note:** If Windows Authentication is specified for the SQL connection, and you're not using an admin account, the user must have **Alter Any Login** and **Create Any Database** permissions on the SQL Server instance, in order for the **Reporting Services Instance User** to be created. If you receive error 15247, verify these permissions have been granted

## ReportReader User

The **ReportReader** user is a Windows or SQL account that is used by the Privilege Management ePO Extension to read Report Events from the Privilege Management database. The Registered Server **BeyondTrust Privilege Management Reporting** uses this user so you should make a note of it.

If this is a Windows account you need to grant the following permission:

- Requires the **Allow Log on Locally** permission to the server hosting SSRS. This is granted automatically if the user is in the **Administrators** user group.

Some domain groups have this permission set. It's up to you how you configure this user as long as they have the **Allow log on Locally** permission granted through group membership or as an exception.

## EventParser User

The **EventParser** user is used by the Privilege Management ePO Extension to read data from the ePO database and write it to the Privilege Management Reporting database. The Registered Server **BeyondTrust Staging** uses this user so you should make a note of it.

This account needs to be able to authenticate on the database machine. If the two databases are on different machines then this account needs to be on a shared domain.

## DataAdmin User

The **DataAdmin** user is a Windows or SQL account that is used by the Privilege Management ePO Extension to write to the Privilege Management for Mac database. The Registered Server **BeyondTrust Purge** uses this user by default.

If this is a Windows account you need to grant the following permission:

- Requires the **Allow Log on Locally** permission to the server hosting SSRS. This is granted automatically if the user is in the **Administrators** group.

Some domain groups have this permission set. It's up to you how you configure this user as long as they have the **Allow log on Locally** permission granted through group membership or as an exception.

## Install the Privilege Management Reporting Database

To install Privilege Management Reporting database, run the Privilege Management Reporting Database installation package with the **Database Creator** user that you set up in section "[Create the Required User Accounts](#)" on page 18.

If you are running the installer on the same machine as the database, use:

- Privilege Management**ReportingDatabase.msi**

If you are running the installer on a client machine, use:

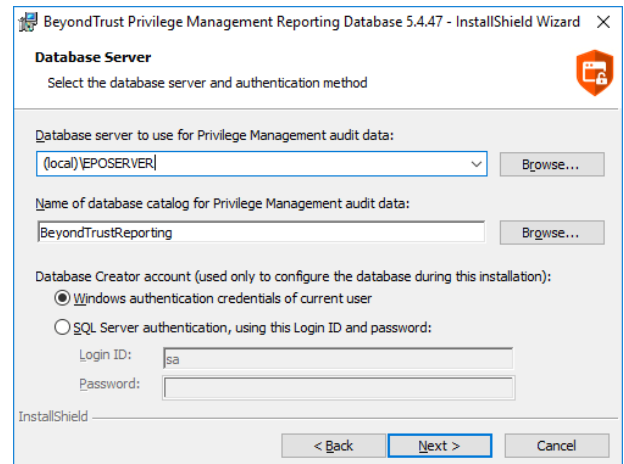
- Privilege Management **ReportingDatabase.exe**
  - This includes the SQL Native Client Redistributable package



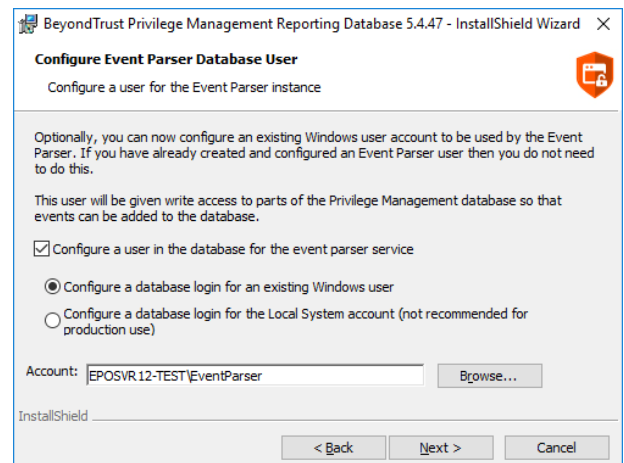
**Note:** The Privilege Management Reporting Database installer assigns specific privileges to the user accounts that you created previously. See for more information.


1. Run the installation package and click **Next** to continue. The **License Agreement** dialog box appears.
2. To accept the agreement, select **I accept the terms in the license agreement** and click **Next**. The **Database Server** dialog box appears.
3. Set the **Database server to use for Privilege Management audit data** as **(local)** if you are using the same machine for your database server and you didn't create an instance. If you did create an instance, you need to add it here, for example **(local)\BeyondTrustReporting** where the instance is **BeyondTrustReporting**. The database servers are available from the drop-down menu.
4. Type a new name in the **Name of database catalog for Privilege Management audit data** field.

5. Select to either use the Windows credentials of the current user or you can use SQL Server authentication. If you choose SQL Server authentication you need to enter the **Login ID** and **Password** before you can proceed.



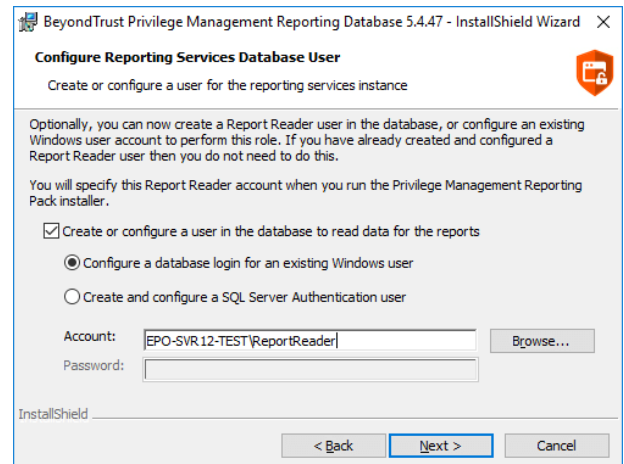
6. Click **Next**. The **Configure Event Parser Database User** dialog box appears.
7. If you are using the default Privilege Management Reporting Database users for BeyondTrust Reporting, check the **Configure a user in the database for the event parser service** box. Select your **EventParser** user. In this example we are using a Windows user that we've previously created.
8. Click **Browse** and navigate to the **Event Parser** user that you created in section "EventParser User" on page 19.




 **Note:** Once you have selected a local or domain machine, ensure you select a user that you know exists in that location, otherwise the installation will fail.

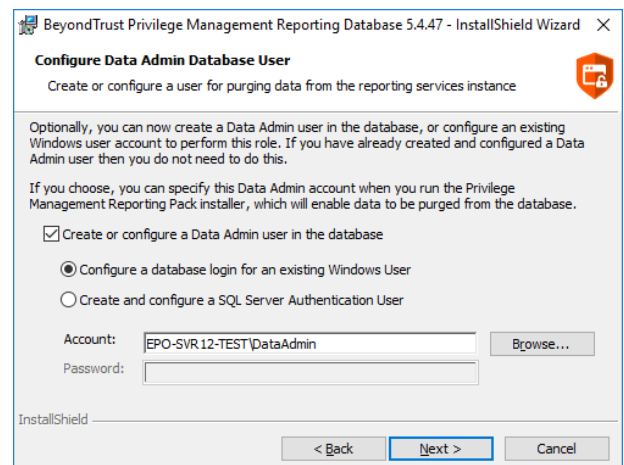
9. Click **Next**. The **Configure Reporting Services Database User** dialog box appears.
10. If you are using the default Reporting users for BeyondTrust Reporting, check the **Create or configure a user in the database to read data for the reports** box. Select to either use an existing Windows user or create a new SQL Server user. In this example we are using a Windows user that we've previously created.

- Click **Browse** to navigate to the **ReportReader** user that you created in section "**ReportReader User**" on page 19.




 **Note:** Once you have selected a local or domain machine, ensure you select a user that you know exists in that location otherwise the installation will fail.

- Click **Next**. The **Configure Data Admin Database User** dialog box appears.



- If you are using the default Reporting users for BeyondTrust Reporting, check the **Create or configure a Data Admin user in the database** box. Select to either use an existing Windows user or create a new SQL Server user. In this example we are using a Windows user that we've previously created.
- Click **Browse** to navigate to the **DataAdmin** user that you created in section "**DataAdmin User**" on page 20.

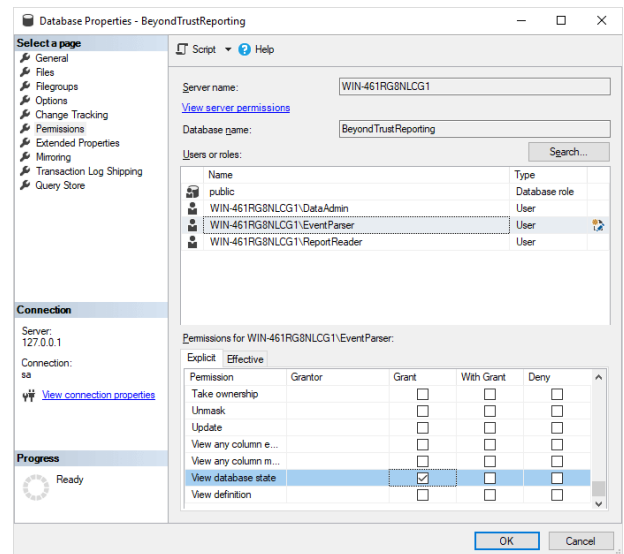
 **Note:** Ensure you select a user that you know exists on the domain or local machine that you've selected otherwise the installation will fail.

- Click **Next** and then **Install** to finish the installation. You have now installed the Privilege Management Reporting Database.

## Configure the EventParser User

You need to grant the **View database state** permission on the Reporting database for the **EventParser** user that you created during the database installation. This permission is already granted on the ePO database by the installer.

1. Open SQL Server Management Studio and connect to your Reporting database.
2. Right-click on your Reporting database and select **Properties** from the Reporting database and click **Permissions** on the left-hand menu.
3. Select your **EventParser** user from the **Users or roles** section.
4. Check the **Grant** box for the **View database state** permission.



## Create the Registered Servers

There are three Registered Servers you can configure in the Privilege Management ePO Extension for Reporting. What you need to configure will depend on your setup.

### Compulsory: BeyondTrust Privilege Management Reporting Reporting

You need to configure this registered server if you are using Privilege Management Reporting.

Server Tasks that user the Reporting Registered Server:

- BeyondTrust Privilege Management Reporting Pre-Caching to move events from the ePO database to the Reporting database.
- BeyondTrust Privilege Management Reputation Update to update the reputation.

This registered server uses the **ReportReader** account that was configured by the Privilege Management database installer. Alternatively, you can use a system administration account.

**i** For information on how to set up your BeyondTrust Reporting registered server, please see "[Configure the BeyondTrust Reporting Registered Server](#)" on page 24.

## Optional: BeyondTrust Reporting Staging

This Registered Server allows you to use the **EventParser** user to move events to the staging table.

Server Tasks that user the Reporting Registered Server:

- BeyondTrustPrivilege ManagementReporting Event Staging. If it's not configured, it uses the BeyondTrust Reporting Registered Server.

This registered server uses the **EventParser** user account that was configured by the Privilege Management database installer. Alternatively, you can use a system administration account.

**i** For information on how to set up your BeyondTrust Reporting registered server, please see "[Configure the BeyondTrust Privilege Management Reporting Staging Registered Server](#)" on page 25.

## Optional: BeyondTrust Admin

This Registered Server allows you to use the **DataAdmin** user to manage the purging of data.

Server Tasks that user the Reporting Registered Server:

- BeyondTrustReporting Purge. If it's not configured, it uses the BeyondTrust Staging Registered Server if it's been configured, if not it uses the Reporting Server Registered Server user.

This registered server uses the **DataAdmin** account that was configured by the Privilege Management database installer. Alternatively, you can use a system administration account.

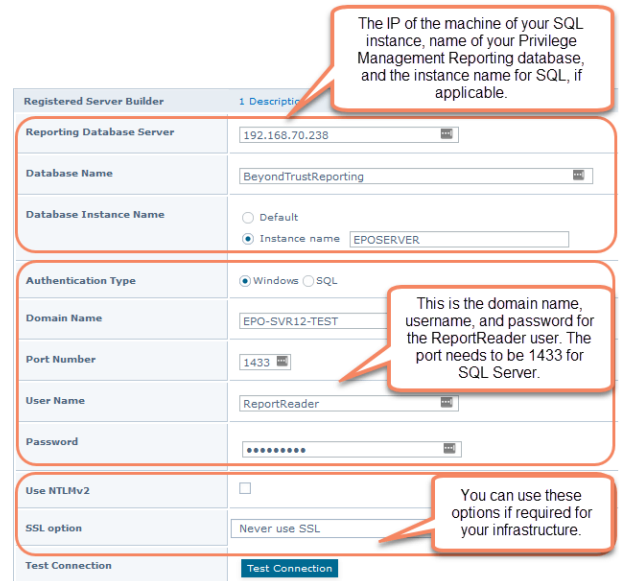
**i** For information on how to set up your BeyondTrust Reporting registered server, please see "[Configure the BeyondTrust Admin Registered Server](#)" on page 26.

## Configure the BeyondTrust Reporting Registered Server

1. Log in to **ePolicy Orchestrator**, navigate to **Menu > Configuration > Registered Servers**, and select **New Server**.




- On the next page, select **BeyondTrust Privilege Management Reporting** from the **Server type** drop-down menu and enter an appropriate name, for example **BeyondTrust Reporting ER Server**. Click **Next**.




The screenshot shows the 'Registered Server Builder' configuration page. The fields are as follows:

- Reporting Database Server:** 192.168.70.238 (Callout: The IP of the machine of your SQL instance, name of your Privilege Management Reporting database, and the instance name for SQL, if applicable.)
- Database Name:** BeyondTrustReporting
- Database Instance Name:**  Default,  Instance name: EPOSERVER
- Authentication Type:**  Windows,  SQL
- Domain Name:** EPO-SVR12-TEST (Callout: This is the domain name, username, and password for the ReportReader user. The port needs to be 1433 for SQL Server.)
- Port Number:** 1433
- User Name:** ReportReader
- Password:** [Redacted]
- Use NTLMv2:**
- SSL option:** Never use SSL (Callout: You can use these options if required for your infrastructure.)
- Test Connection:** [Test Connection button]

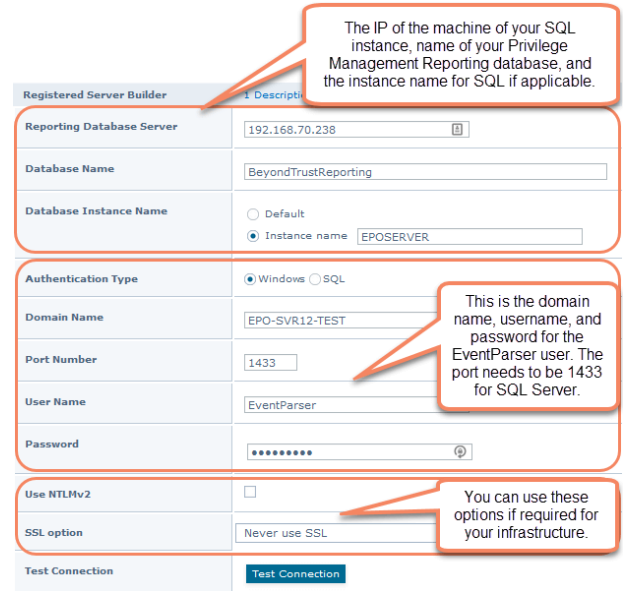
 **Note:** This screen shot shows example data.

- Complete the configuration page with your server details. The **Port Number** should be set to 1433.
- Complete the configuration page and click **Test Connection**. On successful connection, click **Save**.

## Configure the BeyondTrust Privilege Management Reporting Staging Registered Server

 **Note:** If this is an upgrade, and you do not have a registered server for BeyondTrust Privilege Management Reporting Staging, the server tasks will attempt to use the Reporting registered server. Please see "[Configure the BeyondTrust Reporting Registered Server](#)" on page 24. This is for backwards compatibility and additional permissions are required.

The screen shot shows example data.



The IP of the machine of your SQL instance, name of your Privilege Management Reporting database, and the instance name for SQL if applicable.

This is the domain name, username, and password for the EventParser user. The port needs to be 1433 for SQL Server.

You can use these options if required for your infrastructure.

1. Log in to **ePolicy Orchestrator**, navigate to **Menu > Configuration > Registered Servers**, and click **New Server**.
2. On the next page select **BeyondTrust Privilege Management Reporting Staging** from the **Server type** drop-down menu and enter an appropriate name, for example **BeyondTrust Staging Server**. Click **Next**.
3. Complete the configuration page and click **Test Connection**. On successful connection, click **Save**.

## Configure the BeyondTrust Admin Registered Server

1. Log in to **ePolicy Orchestrator**, navigate to **Menu > Configuration > Registered Servers**, and click **New Server**.
2. On the next page select **BeyondTrust Privilege Management Reporting Admin** from the **Server type** drop-down menu and enter an appropriate name, for example **BeyondTrust Admin Purge Server**. Click **Next**.

This screen shot shows example data.



The IP of the machine of your SQL instance, name of your Privilege Management Reporting database, and the instance name for SQL, if applicable.

This is the domain name, username, and password for the DataAdmin user. The port needs to be 1433 for SQL Server.

You can use these options if required for your infrastructure.

- Complete the configuration page and click **Test Connection**. On successful connection, click **Save**.

## Configure the Database Server Registered Server

A Database Server Registered Server allows you to query Privilege Management events in the Privilege Management database using the **Queries and Reports** capability in ePO.

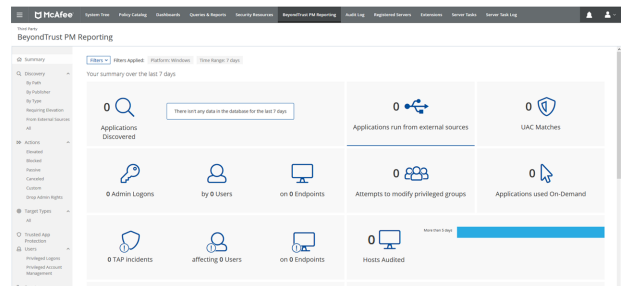
**Note:** This screen shot shows example data.

- Log into **ePolicy Orchestrator**, navigate to **Menu > Configuration > Registered Servers**, and click **New Server**.
- On the next page select **Database Server** from the **Server type** drop-down menu and enter an appropriate name, for example **Privilege Management Database Server**. Click **Next**.

- Complete the configuration page and click **Test Connection**. On successful connection, click **Save**.

## View BeyondTrust Privilege Management Reporting

Once you have configured the registered servers you can click **BeyondTrust Privilege Management Reporting** from the top menu bar in ePO to check that it has been configured correctly. The screen will look similar to the one depicted here.



No data will be available initially, as you need to configure and run the BeyondTrust Privilege Management Reporting Event Staging server tasks to get the events from the ePO database and insert them into the Privilege Management Reporting database.

The next step is to configure the Server Tasks to populate the data.

For more information, please see **"ePO Server Tasks"** on page 28.

## ePO Server Tasks

You use ePO Server Tasks to create an automated schedule of tasks that you want your ePO Server to perform. The following ePO Server Tasks are used for Privilege Management for Mac:

- **Create the BeyondTrust Privilege Management Reporting Event Staging Server Task:** Required to move events from the ePO database to the Reporting database for BeyondTrust Privilege Management Reporting.
- **Create the BeyondTrust Privilege Management Reporting Purge Server Task:** Optional, but recommended to maintain your database.
- **Create the BeyondTrust Privilege Management Reputation Update Server Task:** Optional to update the reputation from VirusTotal and/or TIE.
- **Create the Purge Threat Event Log Server Task:** Optional to purge the ePO Threat event log.



For more information, please see the following:

- "Create the Privilege Management Reporting Event Staging Server Task" on page 28
- "Create the Privilege Management Reporting Purge Server Task" on page 29
- "Create the Privilege Management Reporting Reputation Update Server Task" on page 30
- "Create the Purge Threat Event Log Server Task" on page 30

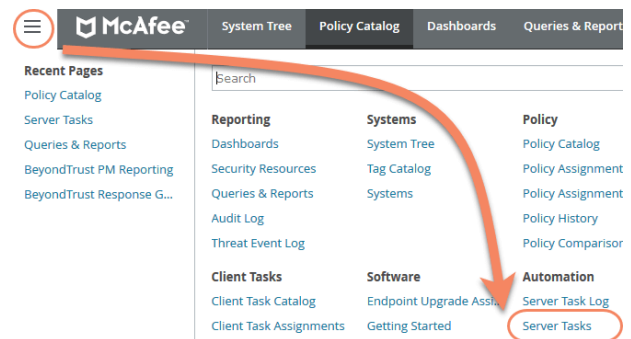
There is an additional Server Task that you can create if you have a business need to purge the events from the BeyondTrust table in the ePO database only.

We recommend you use the built-in ePO Server Task called **Purge Rolled up Data** rather than this Server Task. This will remove all the events from the BeyondTrust table in the ePO database and the Privilege ManagementReporting Database.

### Create the Privilege Management Reporting Event Staging Server Task

The **Reporting Event Staging** Server Task takes Report Events from the ePO database and inserts them into the BeyondTrust Privilege Management Reporting database. You need to create this task to view BeyondTrust Reports.

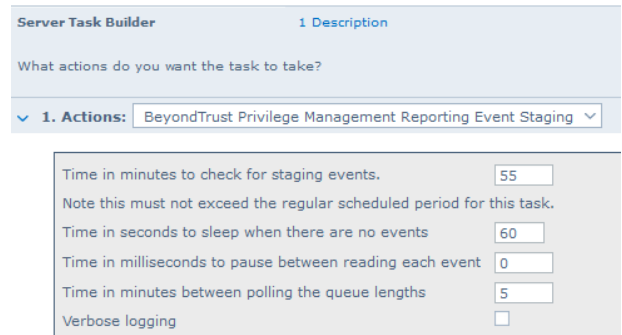
1. Select **Menu > Automation > Server Tasks** and select **New Task**.



2. Enter an appropriate name, for example, **BeyondTrust Event Staging**, leave the **Schedule status** as **Enabled**, and click **Next**.
3. Select **BeyondTrust Privilege Management Reporting Event Staging** from the **Actions** drop-down menu and click **Next**.

- Adjust the times to check for events to suit your environment and click **Next**. We recommend the values depicted in the screenshot.

## Server Tasks

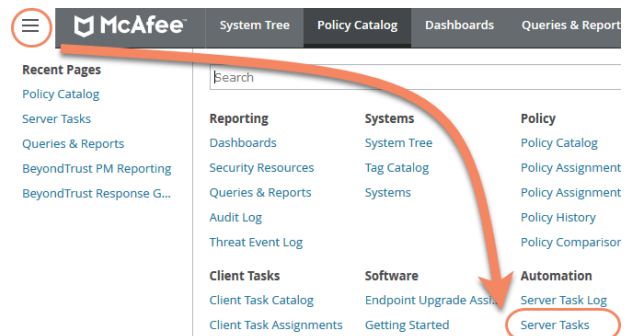


- On the **Schedule** page, set the **Schedule type** to your preference.
- Select your **Start date** and **End date** if required. By default, **No end date** is selected.
- Adjust the time that you want the schedule to run. This is the time of the machine running your ePO Server. Click **Next**. You are presented with a summary of the Server Task.
- Select **Save** to finish creating the Server Task.

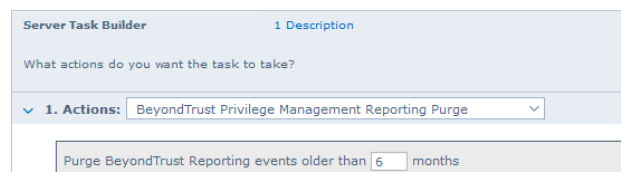
## Create the Privilege Management Reporting Purge Server Task

You can purge Reporting database events that are older than a defined period in order to manage the size of your database.

- Select **Menu > Automation > Server Tasks** and select **New Task**.



- Enter an appropriate name, for example, **BeyondTrust Purge**, leave **Schedule status** as **Enabled**, and click **Next**.
- Select **BeyondTrust Privilege Management Reporting Purge** from the **Actions** drop-down menu.
- Choose the number of months that you will purge events older than.

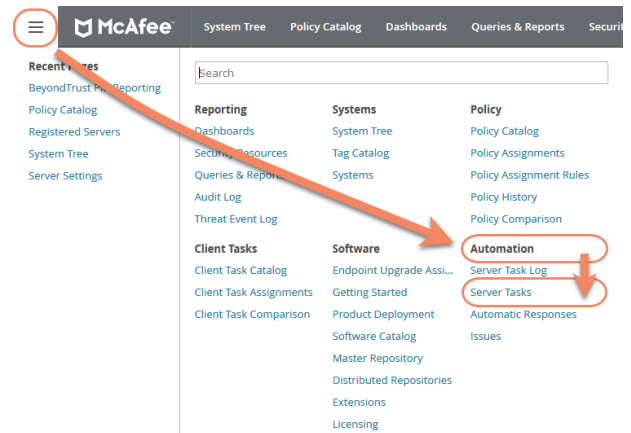


- On the **Schedule** page set the **Schedule type** to your preference.
- Select your **Start date** and **End date** if required. By default **No end date** will be selected.
- Adjust the time that you want the schedule to run. This is the time of the machine running your ePO Server. Click **Next**. You are presented with a summary of the Server Task.
- Select **Save** to finish creating the Server Task.

## Create the Privilege Management Reporting Reputation Update Server Task

You can update the reputation providing it is configured using this server task.

1. Select **Menu > Automation > Server Tasks** and select **New Task**.



2. Enter an appropriate name, such as **BeyondTrust Reputation Update**, leave **Schedule status** as **Enabled**, and click **Next**.
3. Select **BeyondTrust Privilege Management Reputation Update** from the **Actions** drop-down menu.
4. Check the boxes adjacent to the reputations you want to update. You can then select from **Add Reputation to entries with no reputation** or **Update Reputation for entries with old reputation**. If you select the latter option you can choose the number of days. Click **Next**.
5. On the **Schedule** page set the **Schedule type** to your preference.
6. Select your **Start date** and **End date** if required. By default **No end date** will be selected.
7. Adjust the time that you want the schedule to run. This is the time of the machine running your ePO Server. Click **Next**. You are presented with a summary of the Server Task.
8. Select **Save** to finish creating the Server Task.

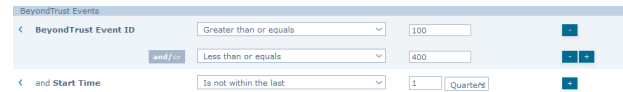
## Create the Purge Threat Event Log Server Task

You can purge threat events from the event log using this server task. Before you use this server task you need to create a query for it to use.

### Create the Purge Threat Event Log Query

1. Click **Queries and Reports** and click **New Query**.
2. From the left-hand side click **BeyondTrust Privilege Management** and click **Next**.
3. Select **List > Table** from the left-hand side and click **Next**.
4. Click **Next** on the **Select Columns** page.
5. On the **Filter** page click **BeyondTrust Event ID**.
6. Select **Greater than or equals** and enter 100 for the **Value**.
7. Click the plus symbol (+) and change the filter to **and**.
8. Select **Less than or equals** and enter 400 for the **Value**.
9. On the same **Filter** page, click **Start Time**.

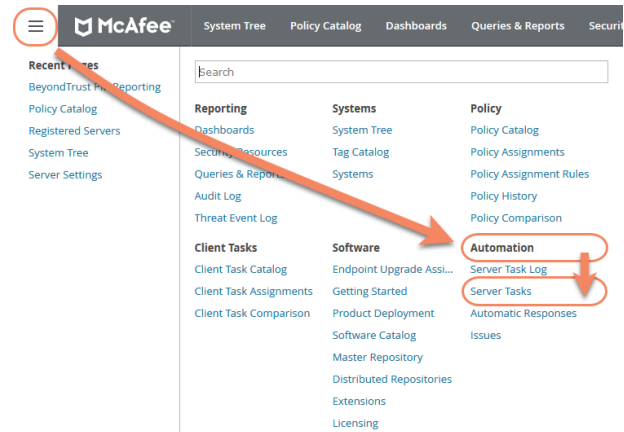
10. Select **Is not within the last** and configure the time period to say how many days/months/years of data you want to keep.



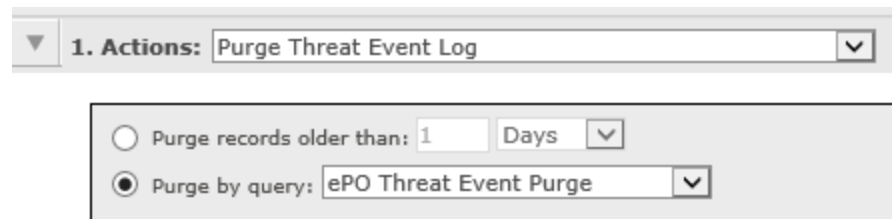
11. Click **Save** and give the query a name, such as **ePO Purge Threat Event**.

## Create the ePO Purge Threat Event Server Task

1. Select **Menu > Automation > Server Tasks** and select **New Task**.



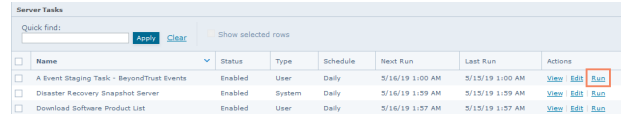
2. Enter an appropriate name e.g. **Purge Threat Event Log**, leave **Schedule status** as **Enabled** and click **Next**.
3. Select **Purge Threat Event Log** from the **Actions** drop-down menu.
4. Select from **Purge records older than** or **Purge by query** and choose your criteria.



5. On the **Schedule** page set the **Schedule type** to your preference.
6. Select your **Start date** and **End date** if required. By default **No end date** will be selected.
7. Adjust the time that you want the schedule to run. This is the time of the machine running your ePO Server. Click **Next**. You are presented with a summary of the Server Task.
8. Select **Save** to finish creating the Server Task.

## Run the Server Tasks

You can run the server tasks you have created from the **Server Tasks** page in ePO. This lists all the server tasks. You can run a task by clicking the **Run** link on the right-hand side of the row:



Name	Status	Type	Schedule	Next Run	Last Run	Actions
A Event Staging Task - BeyondTrust Events	Enabled	User	Daily	5/15/19 1:00 AM	5/15/19 1:00 AM	View Edit <b>Run</b>
Disaster Recovery Snapshot Server	Enabled	System	Daily	5/15/19 1:59 AM	5/15/19 1:59 AM	View Edit Run
Download Software Product List	Enabled	User	Daily	5/15/19 1:57 AM	5/15/19 1:57 AM	View Edit Run

## Privileges Assigned by Installer

The following privileges are assigned to your user accounts by the Privilege Management Reporting Database Installer.

User Account	Privileges Assigned by the Installer
EventParser	Write access to certain database tables Membership of local <b>Event Log Readers</b> group
ReportReader	Read and Execute on the appropriate database objects
DataAdmin	Read and Execute on the appropriate database objects

## Privilege Management Permissions

Permissions that can be configured for each Privilege Management for Mac permission set are:

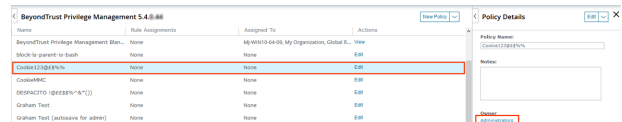
- Privilege Management
- Privilege Management Policy
- Policy Assignment Rule
- Policy Management

To configure user permissions for Privilege Management for Mac in the ePO Server:

### Set Owner

Users who administer Privilege Management Reports or Workstyles need to be members of the permission sets that you configure.

1. In **McAfee ePolicy Orchestrator**, navigate to **Menu > Policy > Policy Catalog**.
2. Select the policy row of the policy you wish to configure (do not click **Edit** - click the row of the policy). A **Policy Details** tab opens to the right, with a clickable **Owner** link.
3. Click the **Owner** link. The **Policy Ownership** page opens.
4. Check the boxes of the users you wish to make owners of the policy.
5. Click **Save**.



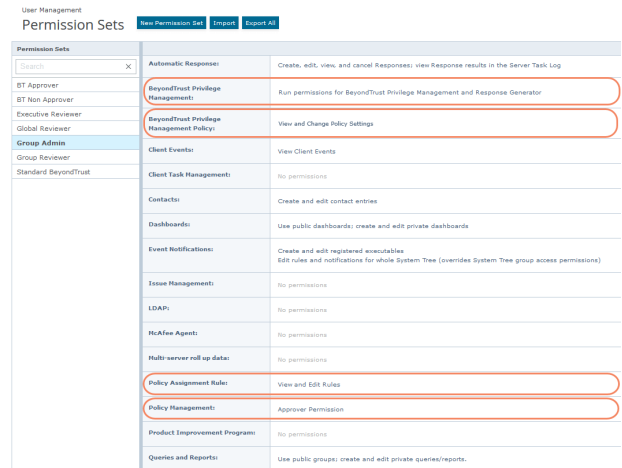
Name	Rule Assignments	Assigned To	Actions
BeyondTrust Privilege Management Eas...	None	M/W/10:44-09, My Organization, Global R...	View Edit <b>Owner</b>
Block by parent or path	None	None	Edit
Clipboard	None	None	Edit
Clipboard	None	None	Edit
DISPATCHED (DESKTOP)*(*C)	None	None	Edit
Graham Test	None	None	Edit
Graham Test (archive for admin)	None	None	Edit

### Configure Permissions

1. In **McAfee ePolicy Orchestrator**, navigate to **Menu > User Management > Permission Sets**.



2. Select the permission set that you want to configure from the left-hand side.



Permission Sets		
Automatic Responses:		Create, edit, view, and cancel Responses; view Response results in the Server Task Log
BT Approver		
BT Non Approver		
Executive Reviewer		
Global Reviewer		
<b>Group Admin</b>		
Group Reviewer		
Standard BeyondTrust		
<b>BeyondTrust Privilege Management</b>		Run permissions for BeyondTrust Privilege Management and Response Generator
<b>BeyondTrust Privilege Management Policy</b>		View and Change Policy Settings
Client Events:		View Client Events
Client Task Management:		No permissions
Contacts:		Create and edit contact entries
Dashboards:		Use public dashboards; create and edit private dashboards
Event Notifications:		Create and edit registered executables; Edit rules and notifications for whole System Tree (overrides System Tree group access permissions)
Issue Management:		No permissions
LDAPs:		No permissions
McAfee Agents:		No permissions
Multi-server roll up data:		No permissions
<b>Policy Assignment Role:</b>		View and Edit Roles
<b>Policy Management:</b>		Approver Permission
Product Improvement Program:		No permissions
Queries and Reports:		Use public groups; create and edit private queries/reports.

## Privilege Management

1. Locate **BeyondTrust Privilege Management** in the list and click **Edit** on the right-hand side.
2. If users in this group will be administering Privilege Management Reporting only:
  - Select **Run permission for BeyondTrust Privilege Management** and click **Save** on the bottom-right.
3. If users in this group will be administering the Privilege Management ePO Response Generator only:
  - Select **Run permission for BeyondTrust Response Generator** and click **Save** on the bottom-right
4. If users in this group will be administering both Privilege Management Reporting and the Privilege Management ePO Response Generator:
  - Select **Run permissions for BeyondTrust Privilege Management and for Response Generator**, and click **Save** on the bottom-right.
5. If you don't want users in this group to be able to administer Privilege Management Reports or the Privilege Management ePO Response Generator:
  - Select **No permissions** and click **Save** on the bottom-right.

## Privilege Management Policy

1. Locate **BeyondTrust Privilege Management Policy** in the list and click **Edit** on the right-hand side.
2. If users in this group will be editing Privilege Management policy and Workstyles:
  - Select **View and change task settings** and click **Save** on the bottom-right.
3. If users in this group will be reading but not editing the Privilege Management policy and Workstyles:
  - Select **View settings** and click **Save** on the bottom-right.
4. If you don't want users in this group to be able to read or edit Privilege Management policy and Workstyles:
  - Select **No permissions** and click **Save** on the bottom-right.

## Policy Assignment Rule

1. Locate **Policy Assignment Rule** in the list and click **Edit** on the right-hand side.
2. If users in this group will be administering policy rules:
  - Select **View and Edit Rules** in the list and click **Save** on the bottom-right.
3. If users in this group will be viewing but not administering policy rules:
  - Select **View Rules** in the list and click **Save** on the bottom-right.
4. If you don't want users in this group to be able to view or administer policy rules:
  - Select **No permissions** and click **Save** on the bottom-right.

You have now added the permissions you require to administer Privilege Management Workstyles and the Privilege Management ePO Response Generator.

## Policy Management

This allows you to define which users can make policy changes independently, including the ability to approve or reject policy change requests.

1. Locate **Policy Management** in the list and click **Edit** on the right-hand side.
2. If users in this group won't have permission to make policy changes independently:
  - Select **No Permission - Users with this permission must submit policy changes for approval** and click **Save** on the bottom-right.
3. If users in this group will be able to make policy changes independently and can approve or reject policy requests:
  - Select **Approver Permission - Users with this permission can make policy changes independently. This includes the ability to approve or reject policy change requests** and click **Save** on the bottom-right.

## Performance Tuning

The default configuration of an ePO Server allows two concurrent tasks that share a single processor core. For larger systems, this may have a performance implication. Your ePO Server can be configured to make better use of the processor cores for scheduled tasks.

1. Select **Menu > Server Settings > Scheduler Tasks**.
2. Click **Edit**.
3. From **Total maximum tasks**, select **Absolute maximum calculation**.

This ensures you are not restricted to using only one core for calculations.



**Note:** Your ePO Server must be restarted for these changes to take effect.