Quest® Archive Manager for Exchange 8.9

Auditing Guide

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Legend

CAUTION: A caution icon indicates potential damage to hardware or loss of data if instructions are not followed.

IMPORTANT, NOTE, TIP, MOBILE OR VIDEO: An information icon indicates supporting information.

Quest® Archive Manager for Exchange Auditing Guide
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1

Introduction

Auditing is a component of Archive Manager for Exchange. It allows the administrator to log all actions in the Archive Manager Administration Center and ArchiveWeb. Auditing logs all user actions in the email archive and the auditor has an overview of user actions as archiving, retrieving, restoring and fulltext searches in Outlook and ArchiveWeb.

2

Installation

Requirements

NOTE: If *Express installation* was used to install Archive Manager for Exchange, the auditing database must be configured with the Configuration tool. If *Advanced installation* was used to install Archive Manager for Exchange, the database configuration is done automatically.

Supported databases:

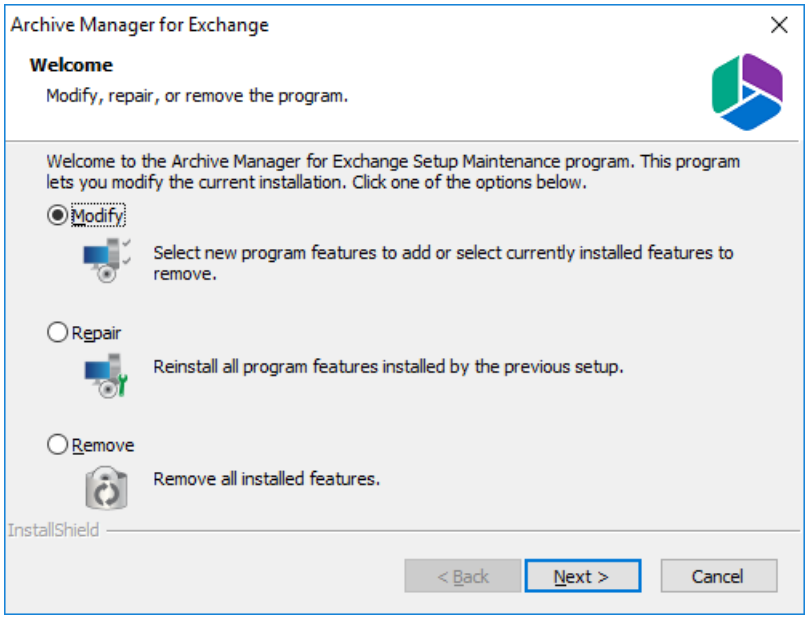
- SQL Server 2016 or higher
- Azure SQL Database
- Oracle 19c or higher

The database will be configured after the installation using the Configuration tool (as described later).

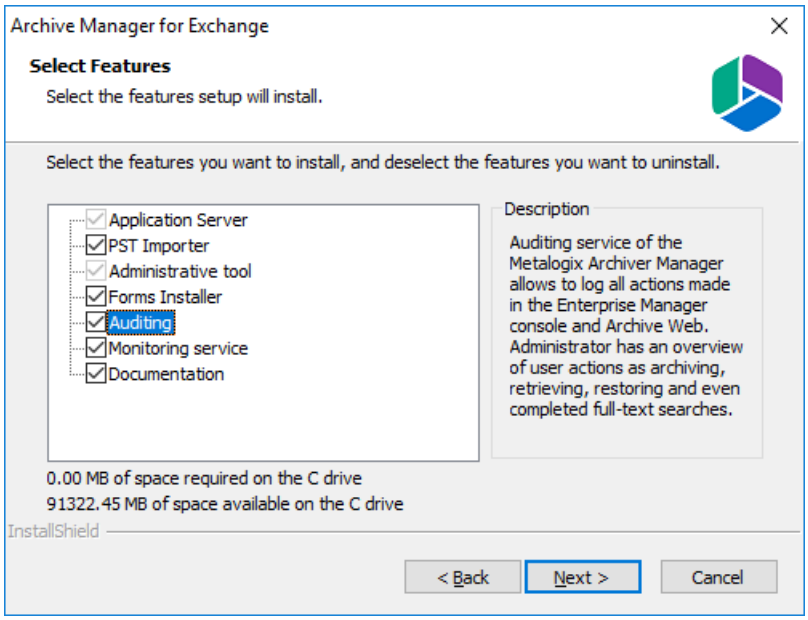
Installation

Auditing can be installed on the Archive Manager server or on a separate machine. The instruction presented here assume that the Auditing feature will be installed on the same server where the Archive Manager server is installed.

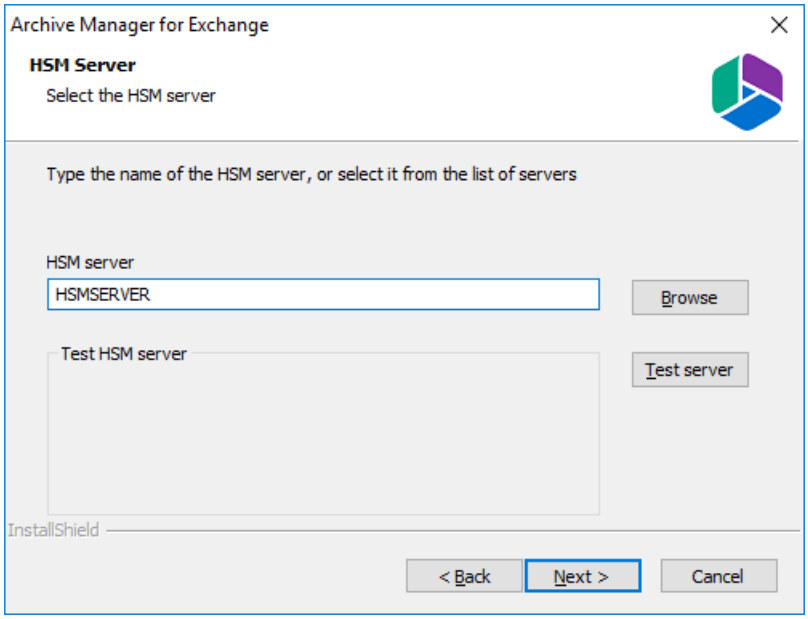
1. Login to the Archive Manager for Exchange (Archive) server with the credentials of the superuser.
2. Run the Archive Manager setup. the default path is `C:\Quest\Archive Manager Installation Package\Exchange\Archive Manager for Exchange Setup.exe`
3. Allow the system checks to complete.
4. From the *Welcome* window select **Modify**.



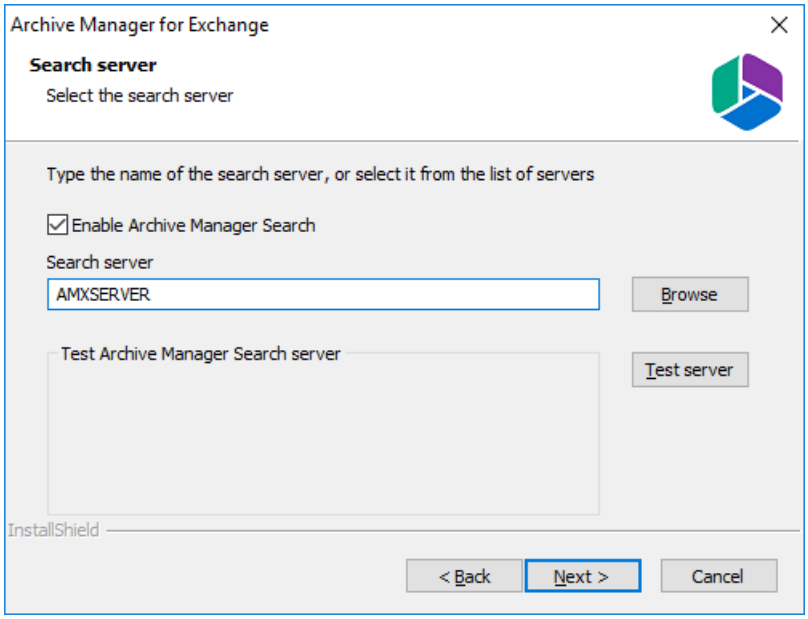
5. Click **Next**. The *Select Features* window opens. Select the **Auditing** check box.



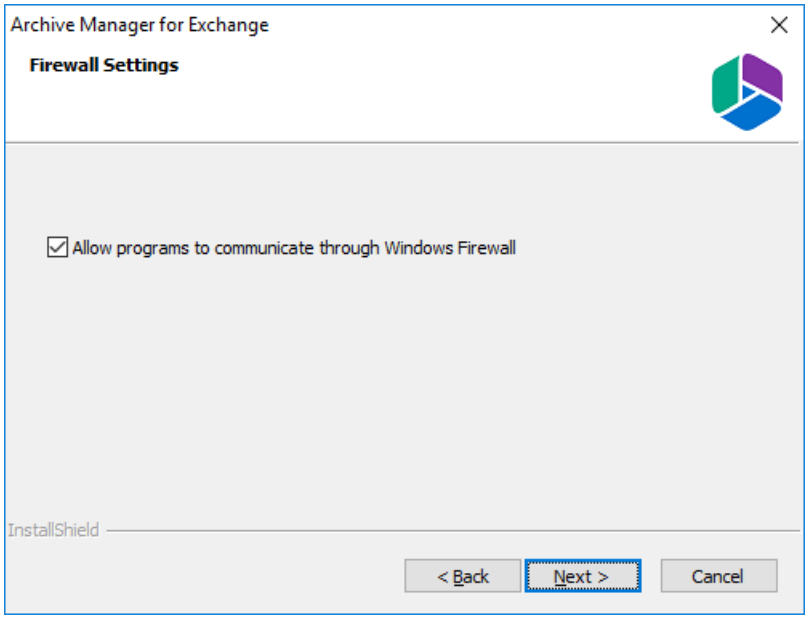
6. Click **Next**. The *HSM Server* window opens. Specify the server name or click **Browse** to locate the HSM server. Click **Test server** to verify the server connectivity.



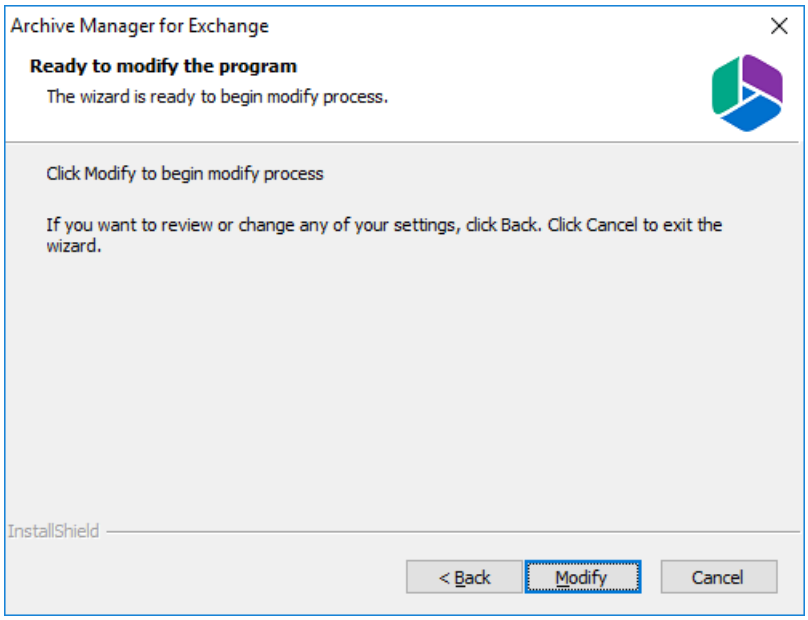
7. Click **Next**. The *Search server* window opens. Specify the server name or click **Browse** to locate the Search server. Click **Test server** to verify the server connectivity.



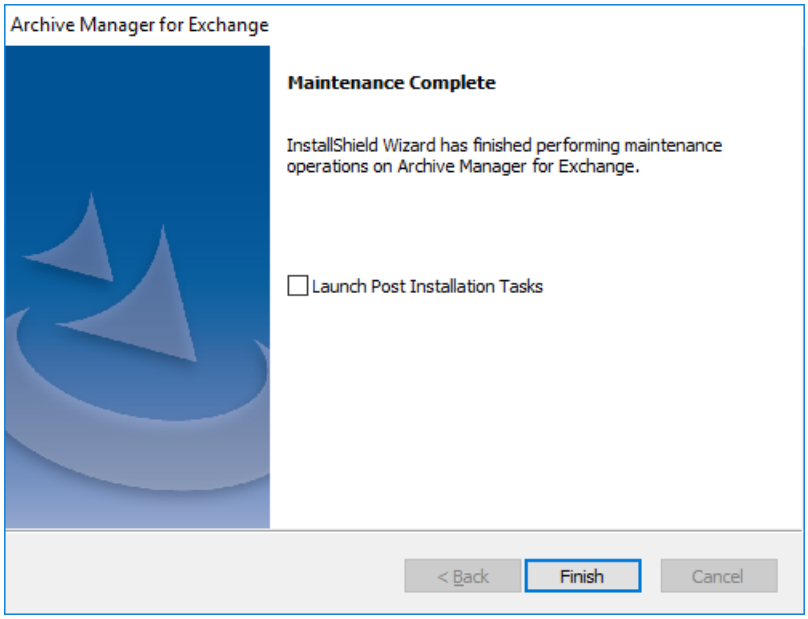
8. Click **Next**. The *Firewall Settings* window opens. Select the check box to allow communications through server firewalls.



9. Click **Next**. The *Ready to modify the program* window opens.



10. When the Auditing feature is installed, the *Maintenance Complete* window opens.



11. Clear the **Launch Post Installation Tasks** check box and click **Finish**.

3

Configuration

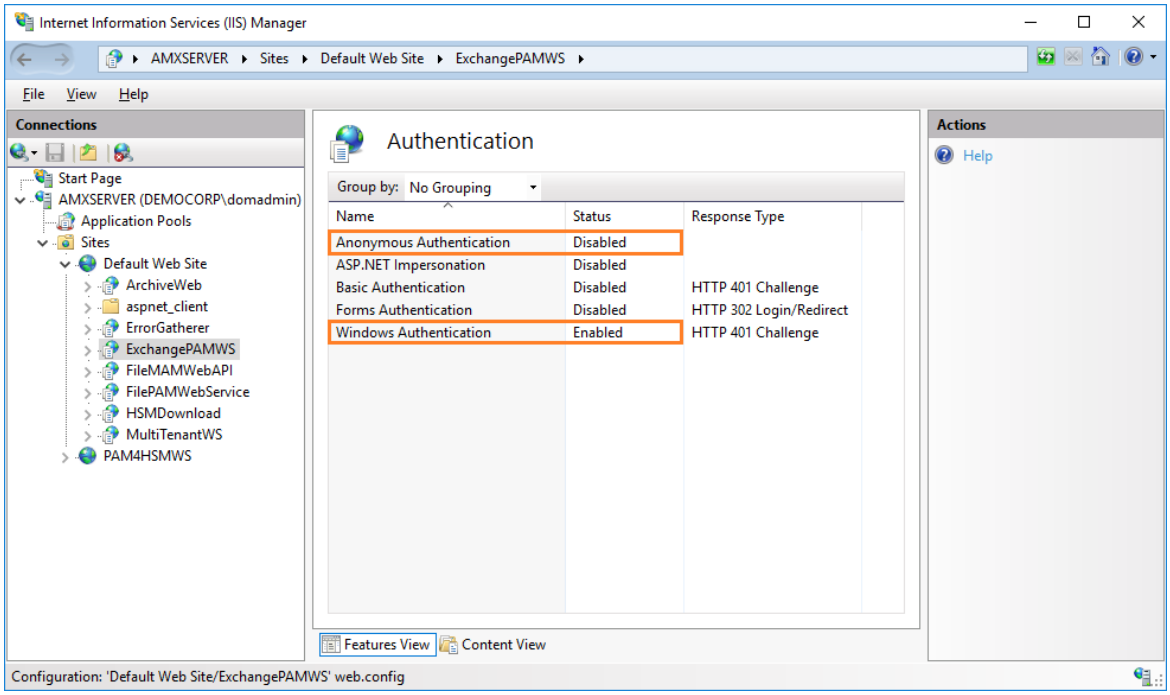
In this chapter:

1. Configure ExchangePamWS
2. Configure Database
3. Configure Log targets
4. Activate auditing
5. Add audit users
6. Configure auditing service
7. Start auditing service

Configure ExchangePamWS

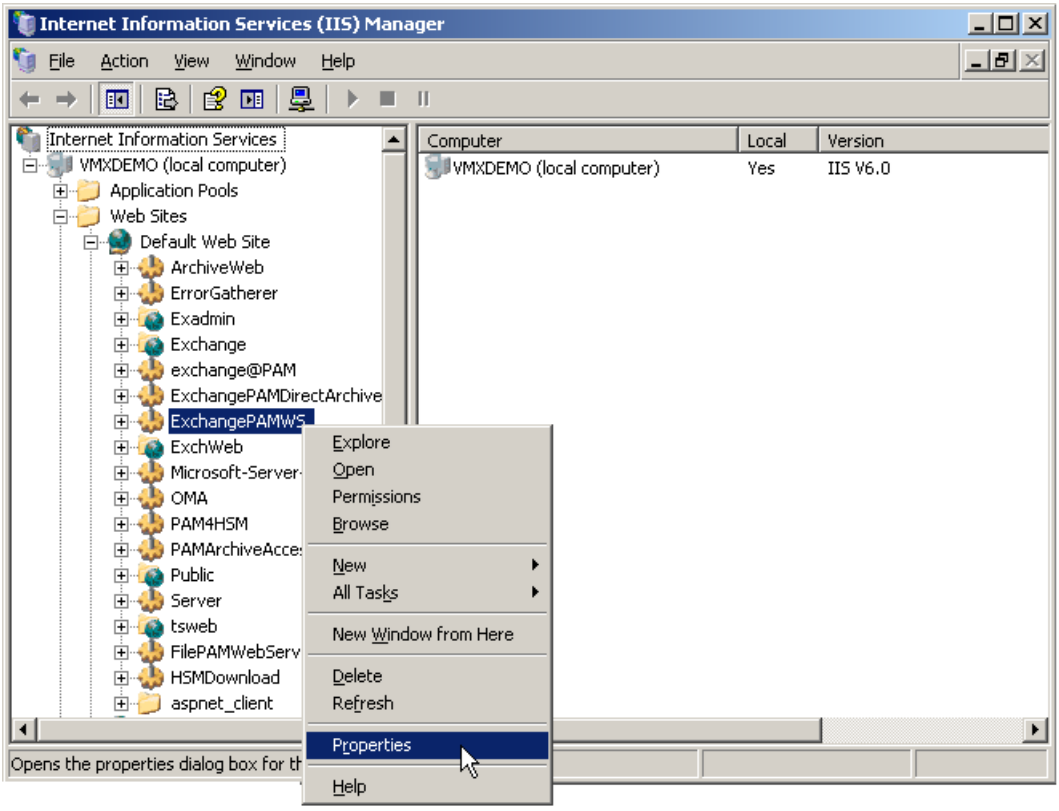
For IIS 8

1. Open IIS Manager from Control Panel > System and Security > Administrative Tools > Internet Information Services (IIS) Manager.
2. From the *Connection* pane expand the nodes [*archive-manager-server-name*] > Sites > Default Web Site.
3. Select **ExchangePAMWS**.
4. Double-click **Authentication** in the *IIS* section of the *Workspace*.
5. In the Authentication pane, set the following properties:
   a. Right-click **Anonymous Authentication** and select **Disabled** from the context menu.
   b. Right-click **Windows Authentication** and select **Enabled** from the context menu.



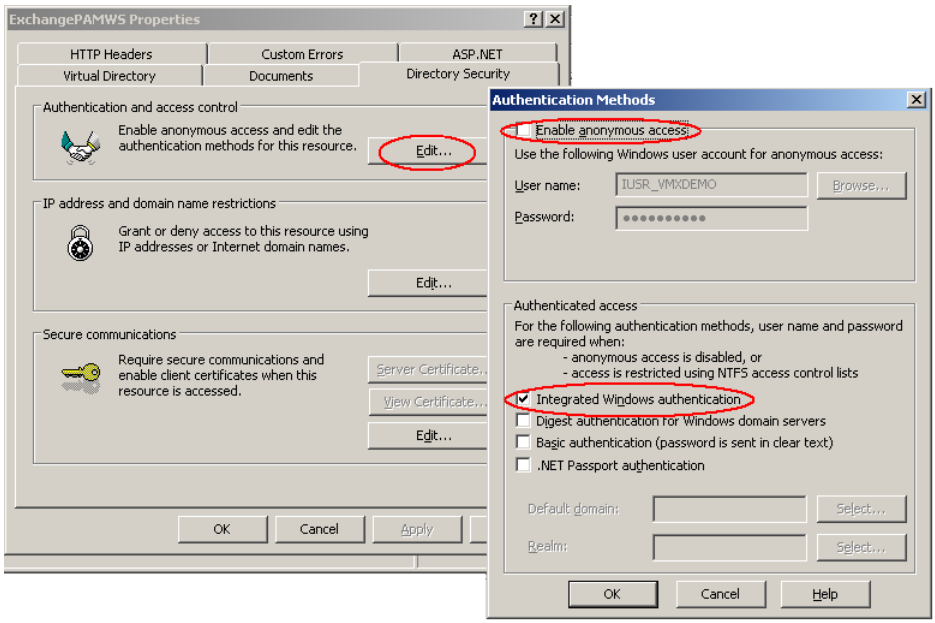
For IIS 7

1. Open IIS Manager from Start > All programs > Administrative tools > IIS Manager
2. In the Connection pane expand [exchange-server-name] > Web Sites > Default Web Site.
3. Right-click the **ExchangePamWS** and select **Properties** from the context menu.



4. Open the **Directory Security** tab and click **Edit** in the *Authentication and access control* section.

5. In the *Authentication Methods* window set the following properties;
6. Clear the check box **Enable anonymous access**.
7. Select the check box **Integrated Windows authentication**.



Configure Database

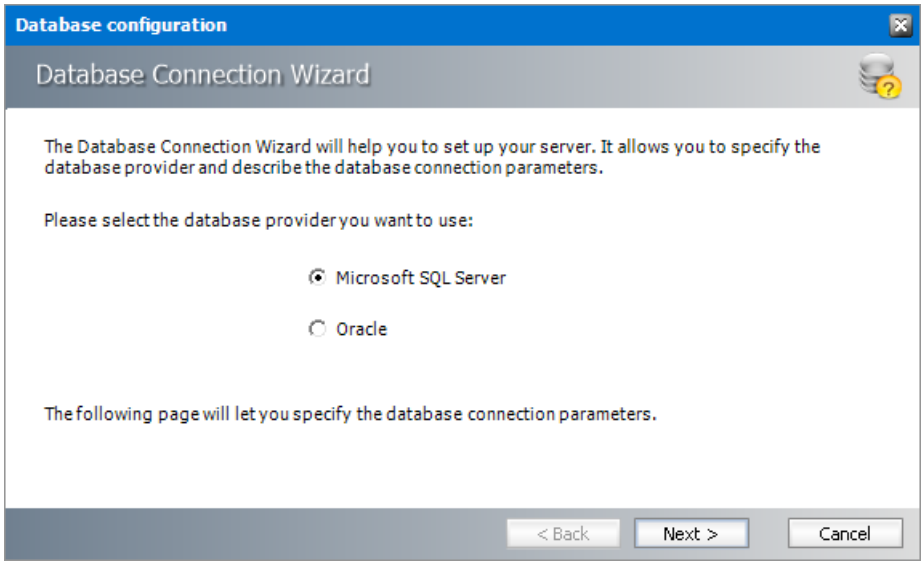
> **NOTE:** If *Express installation* was used to install Archive Manager for Exchange, the auditing database must be configured with the Configuration tool. If *Advanced installation* was used to install Archive Manager for Exchange, the database configuration is done automatically.

In this topic:

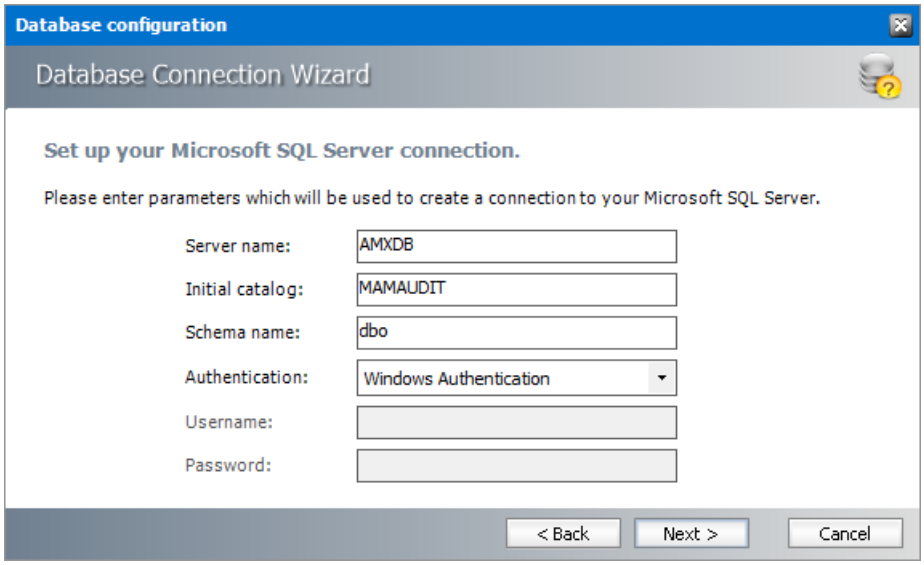
- Steps to configure the Auditing database
- Steps to install the Auditing database
- Steps to configure the connection setting

Steps to configure the Auditing database

1. When the installation completes, the *Configuration* wizard opens. If it does not open automatically, click **Start** > **Quest** > **Archive Manager Configuration**.
2. From the feature panel on the left, click **Auditing** and select the **Database** tab.
3. Click **Configure**. The *Database Connection Wizard* opens.



4. Select either **Microsoft SQL Server** or **Oracle** and click **Next**. If you choose **Microsost SQL Server**, the *Database Connection* window opens for the Microsoft SQL Server connection information.



For Microsoft SQL Server

a. **Server name** - name of the SQL server (eg. **AMXDB**)

b. **Initial catalog** - name of the HSM database (e.g. **MAMAUDIT** which is the default name of the HSM database)

c. **Schema name** - name of the SQL Schema (e.g. **dbo**)

d. **Authentication** – authentication type used for the database. Choose either **Windows authentication** or **SQL Server authentication**

e. **Username** - database login username if *SQL Server authentication* is the selected as the authentication mode.

f. **Password** - password of the database user if *SQL Server authentication* is the selected as the authentication mode.

For Oracle

a. **Oracle net name** - net service name that describes the network address of the database server in your `tnsnames.ora` file.

b. **Schema** - name of the Oracle schema from your `tnsnames.ora` file.

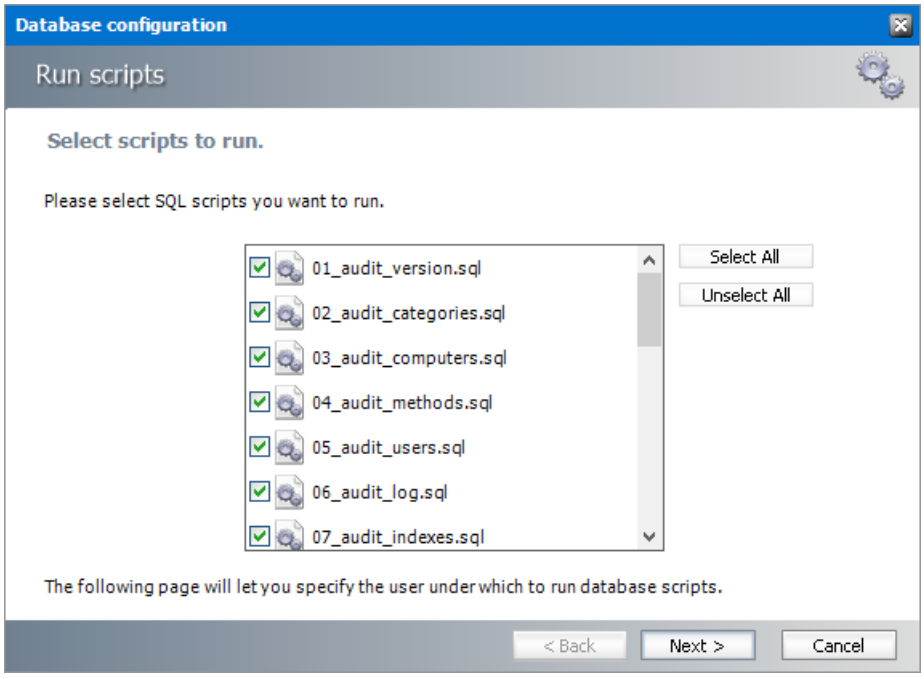
c. **Username** - database login username.

d. **Password** - password of the database user.

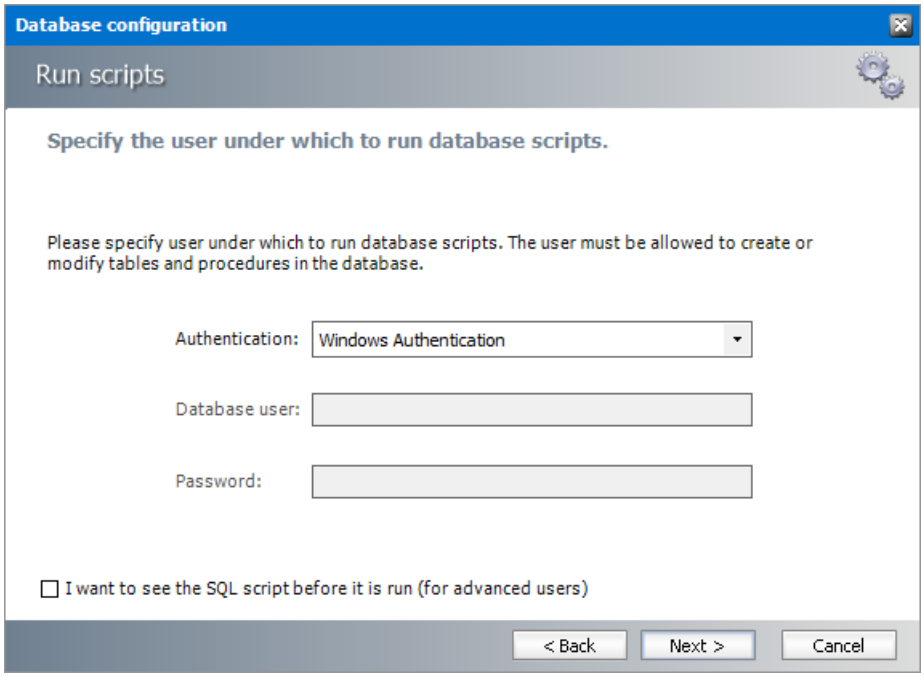
5. Click **Next** and then click **Yes** on the confirmation dialog that opens.
6. If the database connection is setup successfully, the configuration completion window opens.
7. Click **Finish** to close the *Database Connection* wizard.

Steps to install the Auditing database

1. From the feature panel on the left in the *Configuration* tool, click **Auditing** and then select the **Database** tab.
2. Verify that the database connection information is as expected. Then click **Run Scripts**.



3. Click **Select All** and then click **Next**. The script installer wizard opens.



4. Enter the following information:

   a. **Authentication** - authentication type used for the database. Choose either **Windows authentication** or **SQL Server authentication**

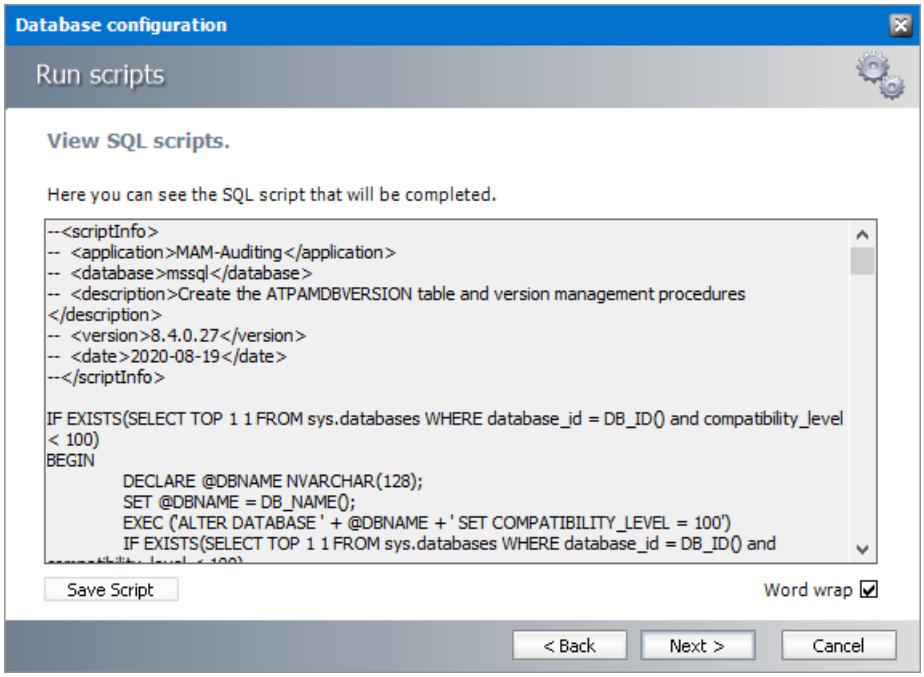
   a. **Database user** - database login username if *SQL Server authentication* is the selected as the authentication mode.

   b. **Password** - password of the database user if *SQL Server authentication* is the selected as the authentication mode.

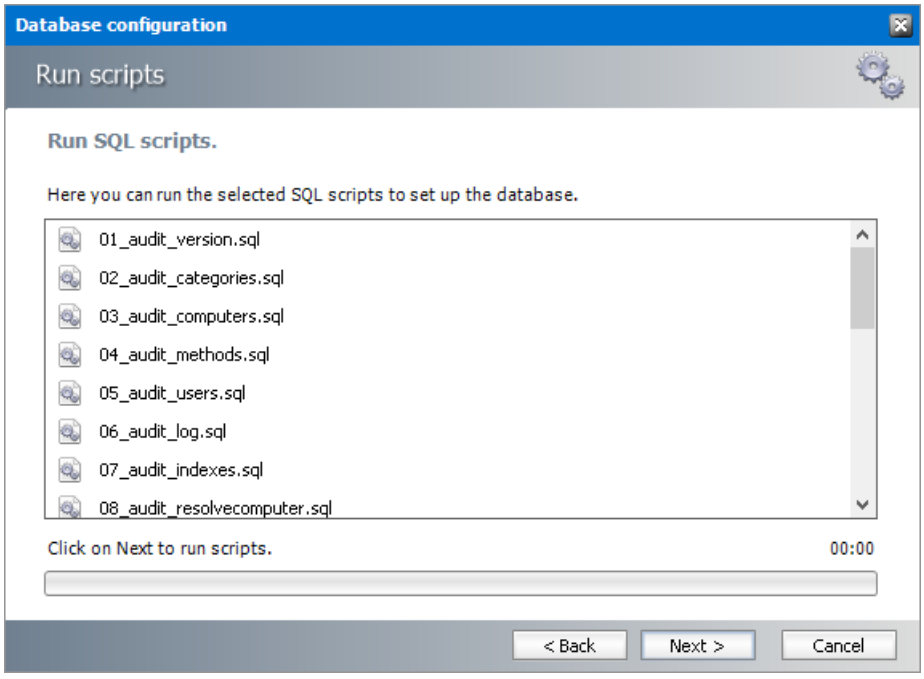
   c. **I want to see the SQL script before it is run (for advanced users)** - select this check box to review the SQL scripts.

5. Click **Next**.

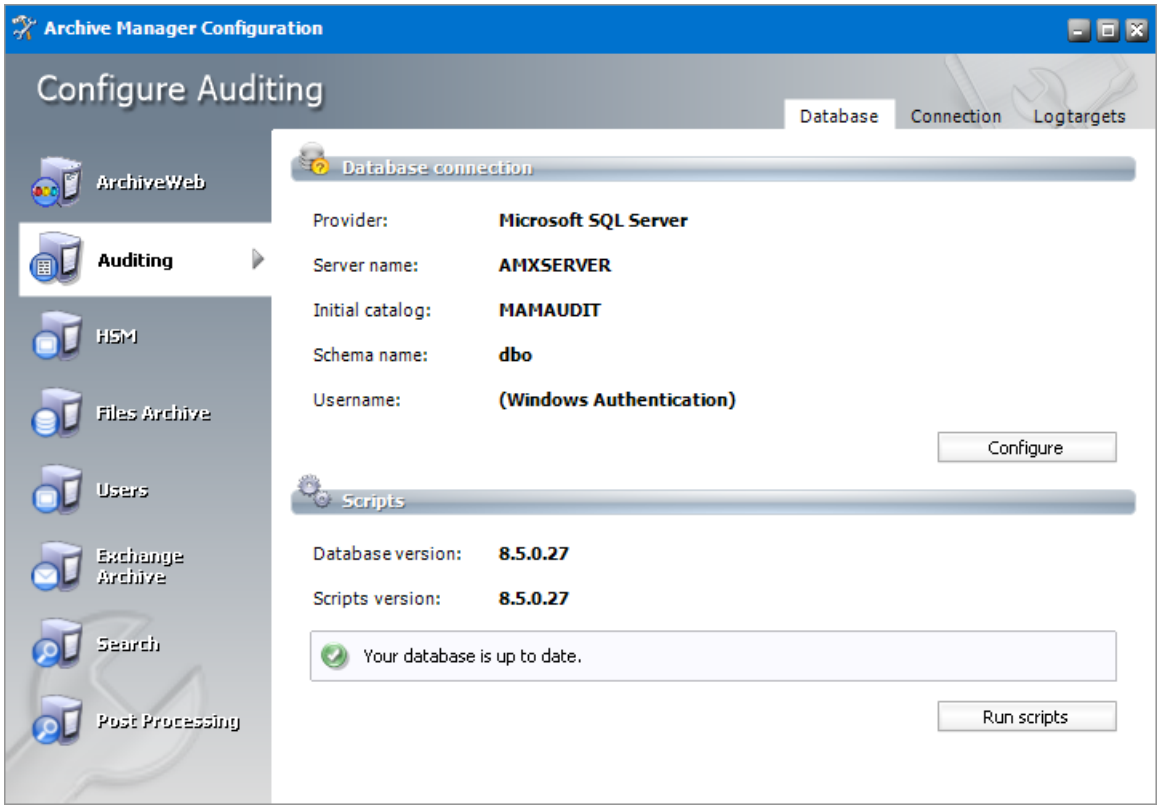
6. If the **I want to see the SQL script before it is run (for advanced users)** check box was selected in the previous step the *View SQL Scripts* window opens.



7. Click **Next** or if the **I want to see the SQL script before it is run (for advanced users)** check box was not selected, the *Run SQL Scripts* window opens.

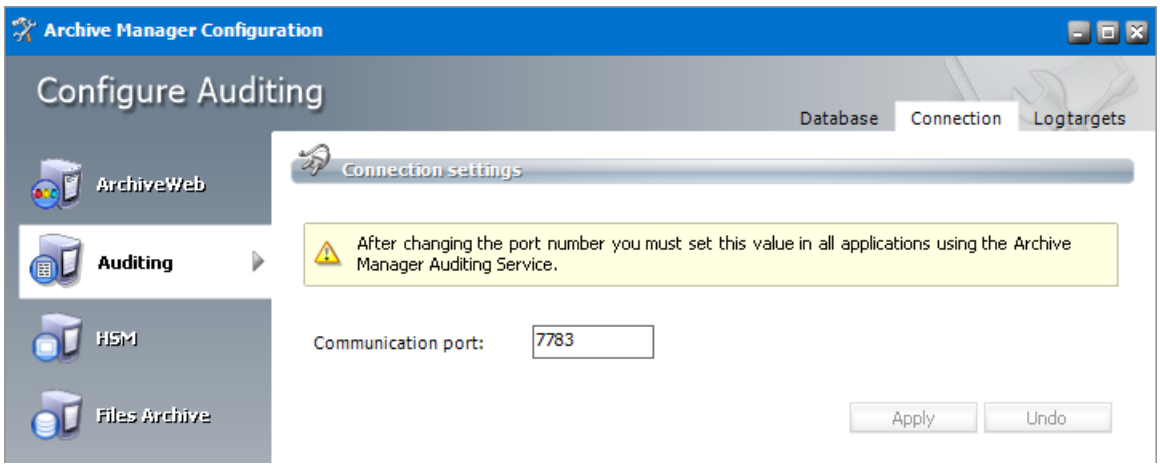


8. Click **Next**. to run the scripts.
9. Click **Finish** to close the script installer. The *Scripts* section of the *Configuration* tool displays the status and version of the scripts(the version of the scripts you install may differ from the version shown in the image below).



Steps to configure the connection setting

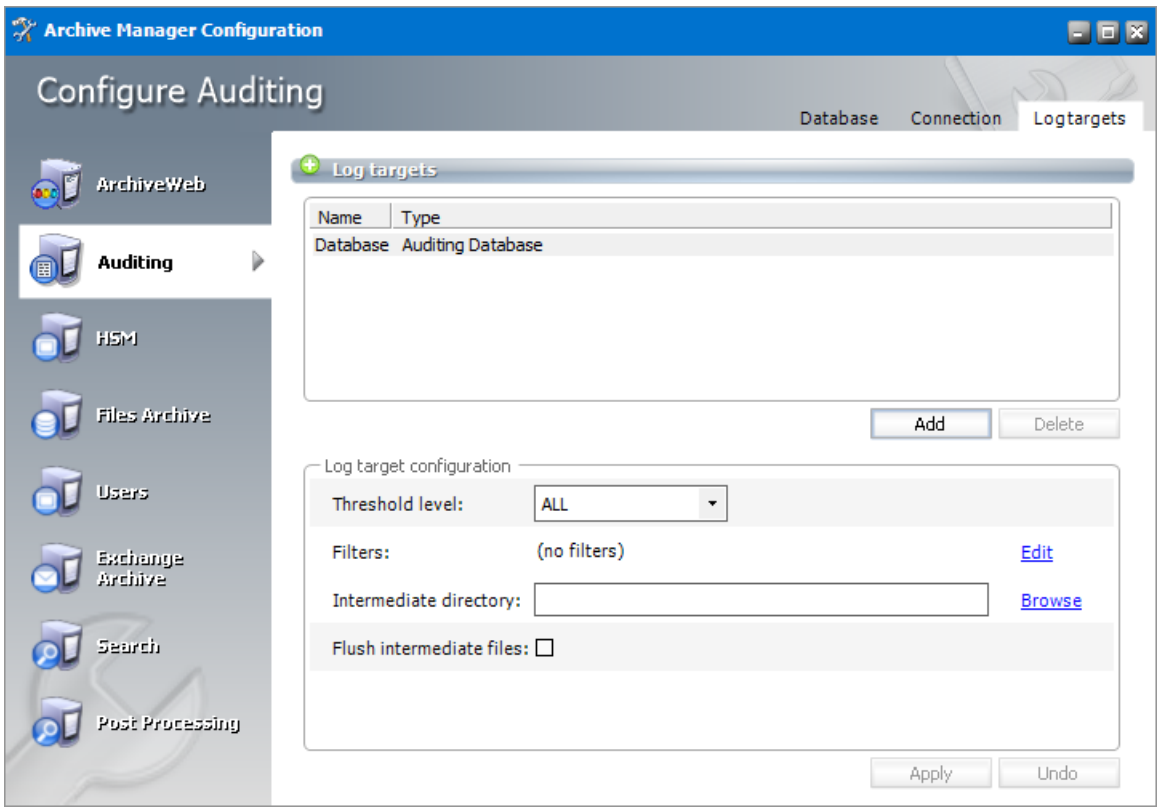
1. From the feature panel on the left in the *Configuration* tool, click **Auditing** and then select the **Connection** tab.



Configure Log targets

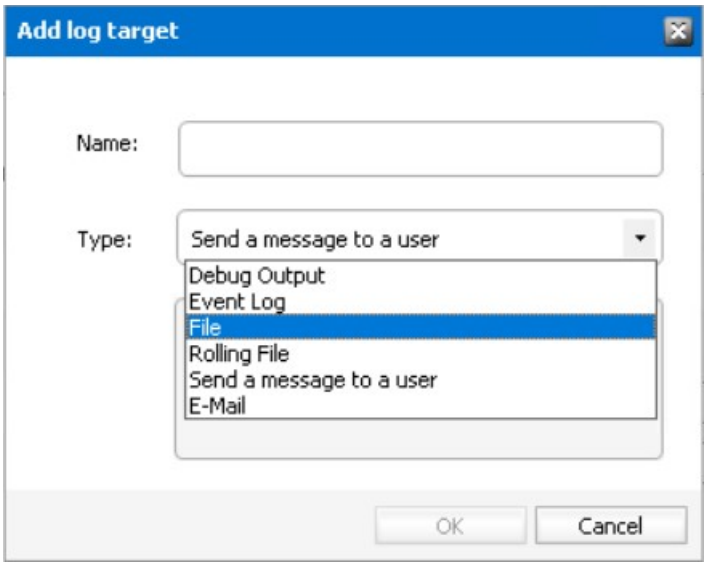
In the *Log targets* tab you can configure multiple types of log targets. The default and mandatory log target is the log database. Other targets are optional, depending on administrator's needs. Multiple log targets can be defined and their usage can be conditional. Logging events of

different severity can be logged to different targets or entries containing a specific string can be omitted.



Steps to add a new log target

1. From the feature panel on the left in the *Configuration* tool, click **Auditing** and then select the **Logtargets** tab.
2. Click **Add**. The *Add log target* window opens.



Enter the information as described below:

a. **Name** - name of the log target.

b. **Type** - type of the log target. Choose from one of the following options:

- **Debug Output** - writes log entries into the debug output; it can be used only for debugging purposes, since it does not keep the entries
- **Event log** - writes log entries into the system event log; it is recommended to use this target for critical errors and events only
- **File** - writes log entries into the specified file
- **Rolling File** - Writes log entries into files and rolls log files based on size or date or both
- **Send a message to a user** - sends log entries as network messages; it can be used for notification purposes in case of critical errors
- **Email** - sends log entries as e-mails; it can be used for notification purposes in case of critical errors

3. Click **OK** to add the new log target to the *Log targets* list view.

Steps to configure log targets

The target selected in the *Log targets* list can be configured in the *Log target configuration* section. You can configure it in the Log target configuration section. For each log target you can define:

- Threshold level
- Filters
- Layout (not applicable for database)

Additionally, every log target has its specific properties as described further.

Threshold Level

Threshold level specifies the threshold level for the selected log target. All logging events with lower level than the threshold level are ignored. If **Off** is selected, nothing will be logged for the selected target.

Filters

User can define a set of filters for each logging target. Filters form a chain that the logging event has to pass through. Any filter along the way can accept the event and stop processing, deny the event and stop processing, or allow the event on to the next filter. If the event gets to the end of the filter chain without being denied it is implicitly accepted and will be logged.

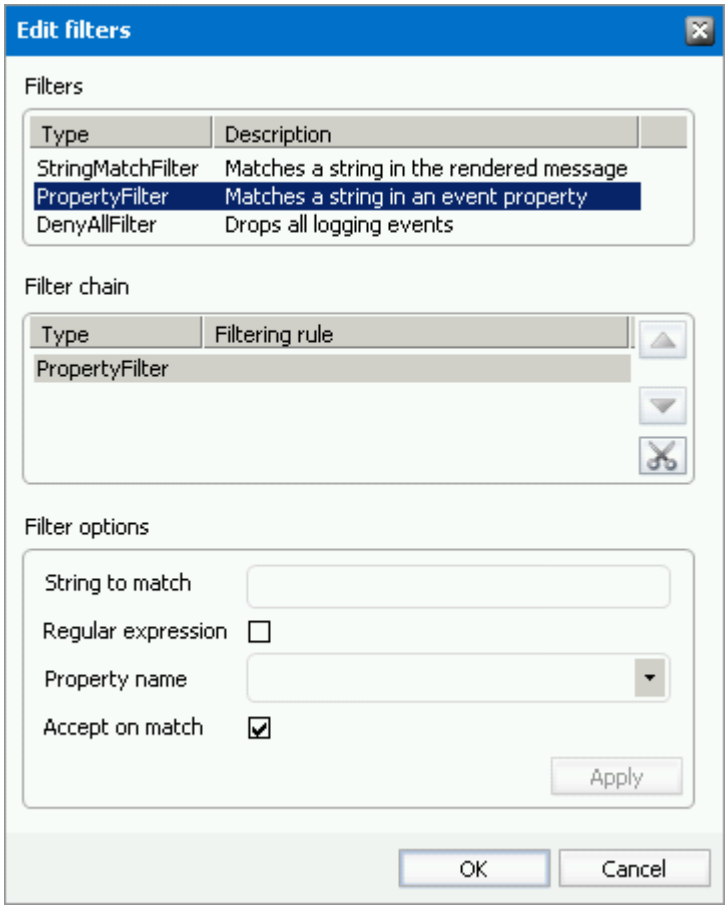
The available filter types are:

- **StringMatchFilter** – matches a string (or regular expression) in the rendered message

- **PropertyMatchFilter** – matches a string (or regular expression) in the value for a specific event property
- **DenyAllFilter** – this filter drops all logging events

To define a filter for a log target:

1. Select the log target in the *Log targets* list view.
2. In the *Filters* section click **Edit**.
3. In the Edit filters dialog double-click the filter type.
4. In the filters options specify filter settings.
5. Click **Apply**.



Example:

If you want to allow through only messages that have a specific substring (e.g. 'database') then you need to specify the following filters:

- StringMatchFilter, String to match: ‘database’, Accept on match: true
- DenyAllFilter

If you do not want to log events having substring ‘debug’, you need to specify the following filter:

- StringMatchFilter, String to match: ‘debug’, Accept on match: false

Layout

User can define the layout of a log entry (line) for log targets, except of the Auditing Database. The layout is the sequence of property values separated by arbitrary characters. The available properties are:

- Product – product generating the logging event
- Category – category of the logging event
- Level – level of the logging event
- Message – application supplied message associated with the logging event
- Method – method name where the logging request was issued
- Data – data associated with the logging event
- Computer – name of the computer where the logging request was issued
- User – name of the user generating the logging request
- Date – date of the logging event
- Newline – platform dependent line separator character or characters

Specific Log target Properties

Auditing database	
Intermediate directory	For minimizing the logging overhead, this log target operates in asynchronous mode, i.e. the entries are not written into the database directly, but they are held in an internal list and continually written into the database. In case of crash or other unpredictable situations the entries from the memory are lost, so there is an option to persist them to a file. By specifying the intermediate directory the intermediate file creation is activated. For each logging event a file is created, holding the event data. These files are deleted after the log entry was written to the database.
Flush intermediate files	Determines whether to flush the intermediate files immediately. If this option is set to false, then the underlying stream can defer persisting the entry to a later time, so it is likely that not the whole log entry will be written to the disk when the application exits, thus becoming the entry unusable and lost.

Event log	
Application name	Specifies the Application name. This appears in the event logs when logging.
Log name	Specifies the name of the log where log entries will be stored. This is the name of the log as it appears in the Event Viewer tree. The default value is to log into the Application log, this is where most applications write their events. However if you need a separate log for your application (or applications) then you should specify the log name.
Level mapping	Specifies the mapping between a logging level (severity) and an event log entry type.

File	
Log file	Specifies the path to the file that logging will be written to.
File creation	Indicates whether the file should be appended to or overwritten.
Locking model	Specifies the locking model used to handle locking of the file. When minimal locking is set, the system locks the file only for the minimal amount of time when logging each message. The exclusive locking locks the file from the start of logging to the end.
Immediate flush	Specifies whether to flush the log file immediately. Avoiding the flush operation at the end of each log writing results in a performance gain of 10 to 20 percent. However, there is safety trade-off involved in skipping flushing. Indeed, when flushing is skipped, then it is likely that the last few log events will not be recorded on disk when the application exits.

Rolling File	
Log file	Specifies the path to the file that logging will be written to.

Rolling File	
Backup file count	Specifies the maximum number of backup files that are kept before the oldest is erased
Rolling style	Specifies the rolling style; the possible values are the following: • Once - roll files once per program run • Size - roll files based only on the size of the file • Date - roll files based only on the date • Composite - roll files based on both the size and date of the file
Roll log files by size	Specifies the maximum size in bytes that the output file is allowed to reach before being rolled over to backup files.
Roll log files every	Specifies the interval when a log file is being rolled over to backup files.
File creation	Indicates whether the file should be appended to or overwritten.
Locking model	Specifies the locking model used to handle locking of the file. When minimal locking is set, the system locks the file only for the minimal amount of time when logging each message. The exclusive locking locks the file from the start of logging to the end.
Immediate flush	Specifies whether to flush the log file immediately. Avoiding the flush operation at the end of each log writing results in a performance gain of 10 to 20 percent. However, there is safety trade-off involved in skipping flushing. Indeed, when flushing is skipped, then it is likely that the last few log events will not be recorded on disk when the application exits.

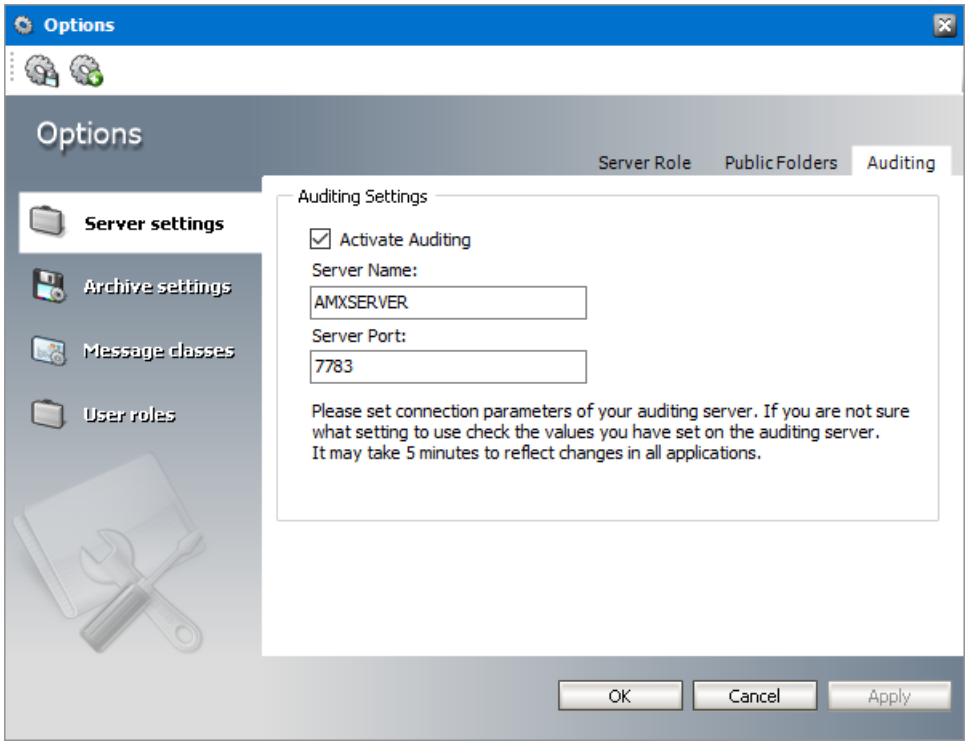
Send a message to a user	
Server	Specifies the DNS or NetBIOS name of the remote server on which the Net Send to run.

Send a message to a user	
Recipient	Specifies the message alias to which the message should be sent.

Email	
To	Specifies the e-mail address of the message recipient by semicolon-separated list of e-mail addresses.
From	Specifies the e-mail address of the sender.
Subject	Specifies the subject line of the e-mail message.
Smtp host	Specifies the name of the SMTP relay mail server to use to send the e-mail messages.
Buffer size	Specifies the size of the cyclic buffer used to hold the logging events. When the specified buffer size is reached, oldest events are deleted as new events are added to the buffer. The buffer is used to keep the logging context; when a message is sent, the whole content of the buffer is included. If the buffer size is set to a value less than or equal to 1 then no buffering will occur and the messages are sent immediately.

Activate auditing

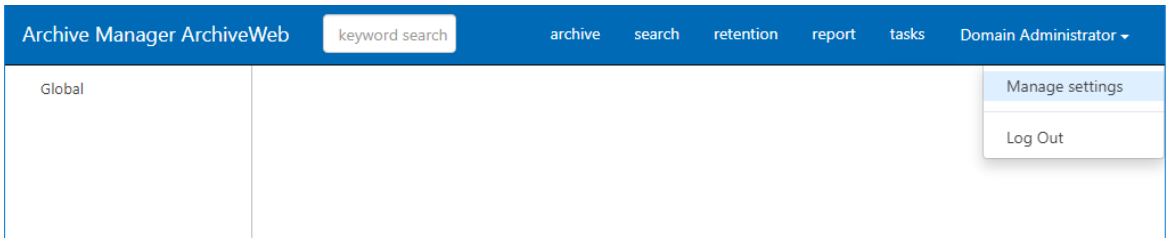
1. In the Archive Manager Administration Center, open Tools > Options > Server settings > Auditing.
2. Select the **Activate Auditing** check box.
3. In the **Server Name** enter the name of the machine where the Auditing feature is installed
4. Specify the **Server Port** or leave the default.
5. Click **Apply**.



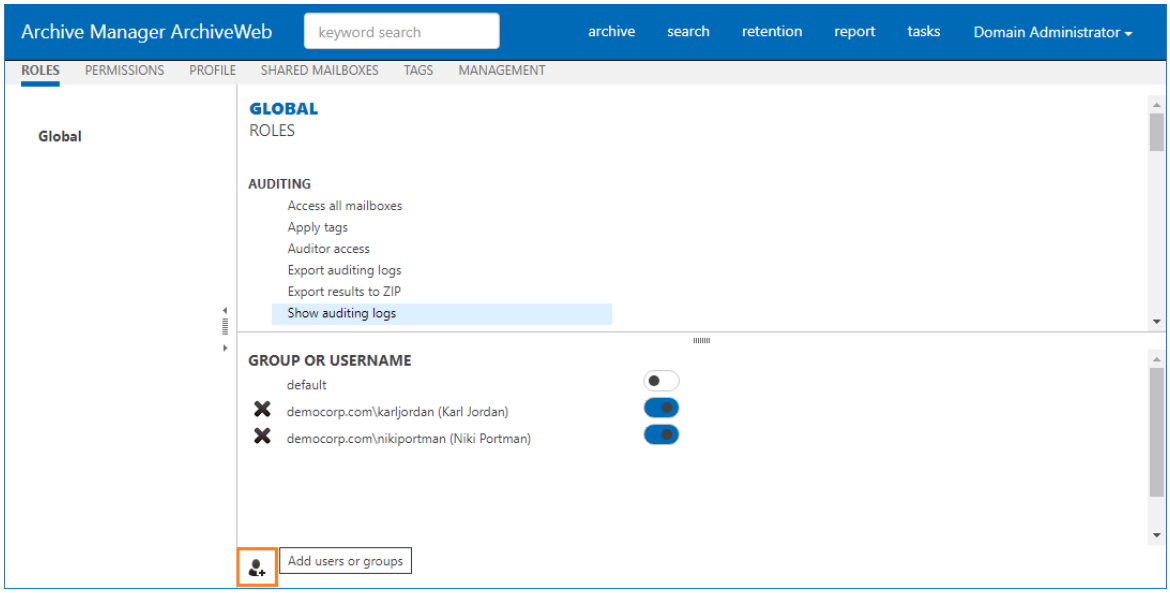
Add audit users

As the default, only the super-user has auditing rights, i.e. only the super-user can browse the auditing logs in ArchiveWeb. If you want other users to have access to auditing logs in ArchiveWeb, specific auditing roles must be granted.

1. Log on to ArchiveWeb with the super-user credentials.
2. Click the logged on user display name in the right upper corner. From the dropdown menu select **Manage** settings. Then click **Roles** on the grey sub-bar.



3. In the left pane select the server for which the roles should apply. Or select **Global** option. ArchiveWeb roles appear in the main pane. List of roles is split into sections – Exchange Archive features are listed under **Exchange** roles, search features under **Search** roles etc. The **Auditing** roles are listed at the end.
4. Select the **Show auditing logs** role. All users with this role are displayed under the list. To add another user, click the **Add users and groups** icon ( ) to add it to the list. Then click the **Allow** toggle.



Configure auditing service

Finally you need to make sure that the Auditing service is correctly configured. As default it can be found under

<Common Files>\PAM\Services\PAMAuditing\PAMAuditingSv.exe.config

Ensure that the service is using secure channels:

<channels>

<channel ref="tcp" name="PamAuditing" port="7783" **secure="true"** />

</channels>

Start auditing service

Open Windows **Services** and start the Auditing service (MAM Auditing) if it is not already running. In case you have made changes to its configuration in the previous step, you must restart it.

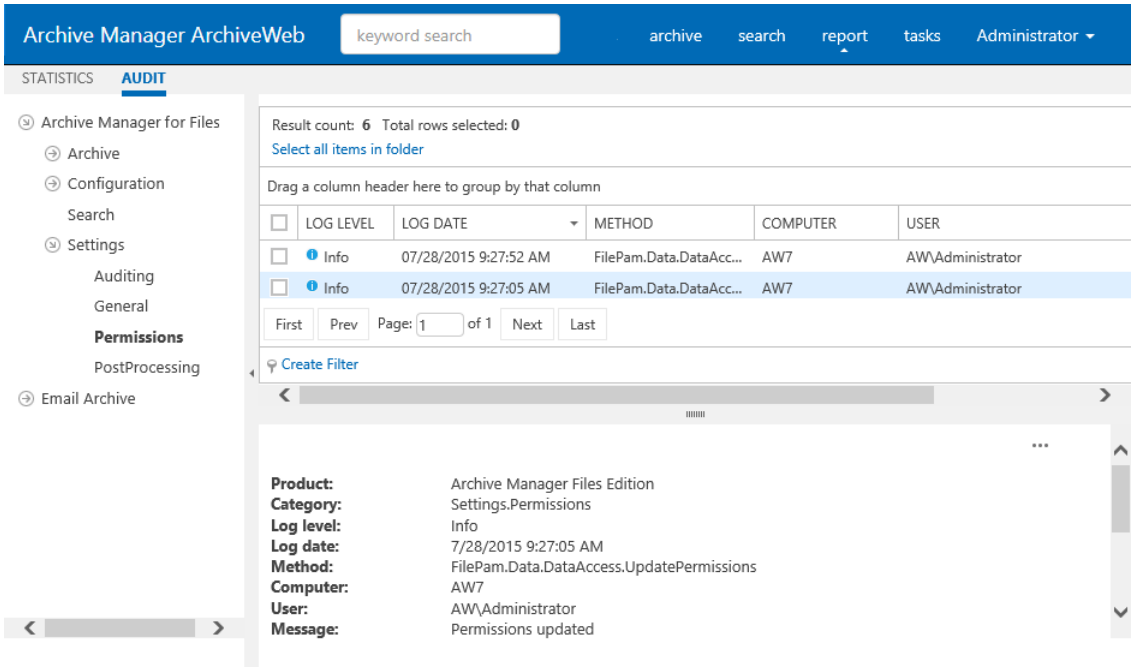
4

Auditing in ArchiveWeb

The Auditing tab is accessible in ArchiveWeb if Auditing is configured properly. Auditing feature allows administrator (or other users defined in web config) to log defined user actions in the email archive, i.e. the administrator has an overview of archived / restored / retrieved emails and performed fulltext searches. Even all actions made in Enterprise Manager console (Exchange / Files) are logged.

To view the logs, from the main pane click Report, then Audit from the grey sub-bar. Then expand the Email Archive node to access the Archive Manager for Exchange logs or Archive Manager for Files node (or "Archive Manager Files Edition" node - both may be present in case older version has been upgraded) to access the Archive Manager for Files logs. Then you can browse through different types of logs – archive actions (Archive node), retrieve actions (Retrieve node) etc.

NOTE: Not all Auditing tab functions may be available for the logged-on user. The functions must be allowed for the user under <LoggedOnUser>/ Manage Settings/ Roles and Permissions sections. For instance, user sees by default only its own search result logs displayed under Email Archive/ Search. Auditors must have Access all mailboxes permission to view search logs of other users (under <LoggedOnUser>/ Manage Settings/ Roles).



NOTE: [OFFLINE] text next to the file server in the left tree-view indicates that the given server has been decommissioned in your environment and is accessible only via

ArchiveWeb. This access must be configured under Manage settings/Profile/File Archive Servers section.

The log entries of the selected action are displayed in the main pane. Data of the log entry selected in the main pane are displayed below the list view (see the screenshot above).

List view functions are the same as in other ArchiveWeb lists:

- Change the column sorting order by selecting the given column header and clicking its down/up arrow on the right (in case the arrow is not visible adjust the width of the column by dragging the line)
- Group table data by any column. To do so, drag the column header to the bar right above the table. Generated groups can be expanded by clicking the arrows next to them. As usual, the sorting order can be changed by clicking the little arrow in the dragged column header.
- Create filters.

Any audit entry can be downloaded or tags can be added or removed from it. All tasks are available through the More actions menu. Click the More actions menu button located on the bottom right just below the list view. Then you can e.g:

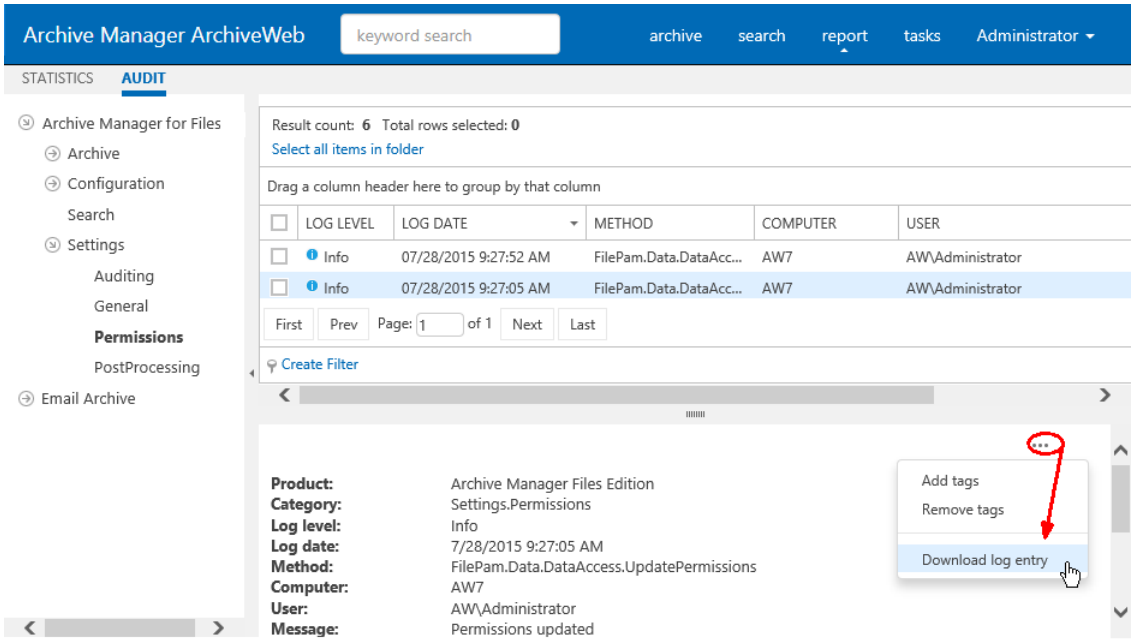
- **Add tags or Remove tags** - these options allow you to add or remove tags from selected items
- **Export results to ZIP** - for search results only. This option will export search result items with summary to Excel file and allow to download the created ZIP to user's local machine.

  NOTE: This function is only available if the user has “Export results to ZIP” role allowed for Audit (under <LoggedOnUser>/ Manage Settings/

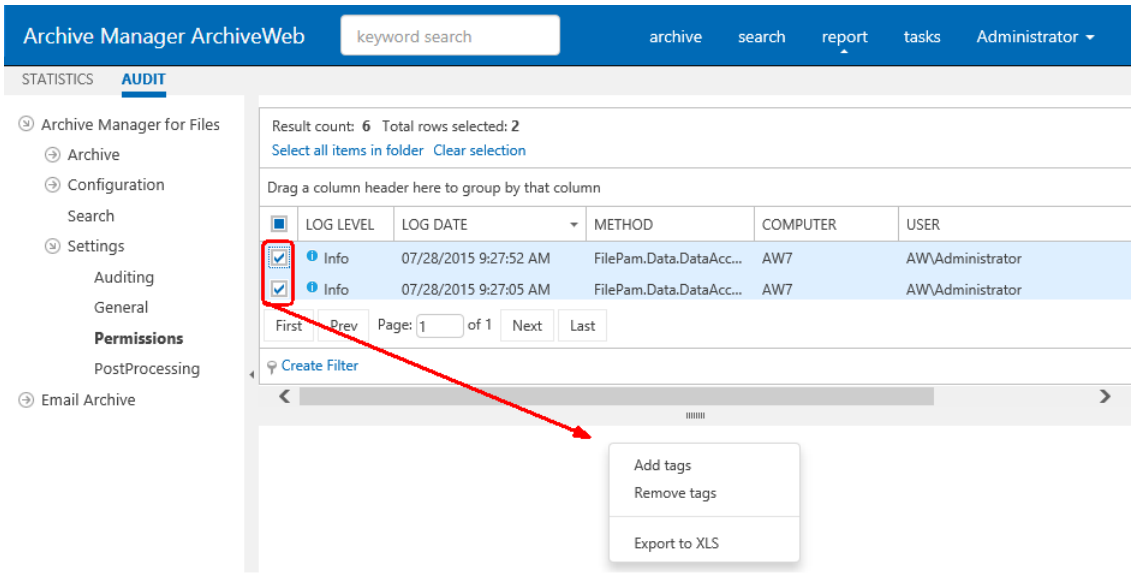
- **Export to XLS** - this option will export the selected items to XLS file on the user's local machine and provide a download link to the same file.

  NOTE: When downloading large amount of items it is reasonable to split the data in more XLS files. To do this value for the key "ItemsPerXLS" needs to be changed in ArchiveWeb's web.config file. The default value is "500000" and represents number of rows for single XLS file during the export. In order to set correct value for the key please refer to Excel limits on the page https://support.office.com/en-us/article/excel-specifications-and-limits-1672b34d-7043-467e-8e27-269d656771c3.

- Download log entry: this option will download single log entry in log file format on user local machine.



When two or more items be checked, the More actions menu appears automatically under the list view (see the screenshot below).



5

About Us

Quest creates software solutions that make the benefits of new technology real in an increasingly complex IT landscape. From database and systems management, to Active Directory and Office 365 management, and cyber security resilience, Quest helps customers solve their next IT challenge now. Around the globe, more than 130,000 companies and 95% of the Fortune 500 count on Quest to deliver proactive management and monitoring for the next enterprise initiative, find the next solution for complex Microsoft challenges and stay ahead of the next threat. Quest Software. Where next meets now. For more information, visit www.quest.com.

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