MES DATABASE UTILITY

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Update History			
Date	Doc Version	Description	Product Version
	1.0	Release	Release
07/10/2019	1.1	Microsoft SQL Server Management Studio Update	2017

PURPOSE

The Database Utility is designed to simplify the creation and maintenance of Paper-Less MES SQL databases for one or more Paper-Less MES environments. The database utility allows you to: Save, Save-As, Restore, Delete, Rename, Create New, Compact and Upgrade the MES SQL databases.

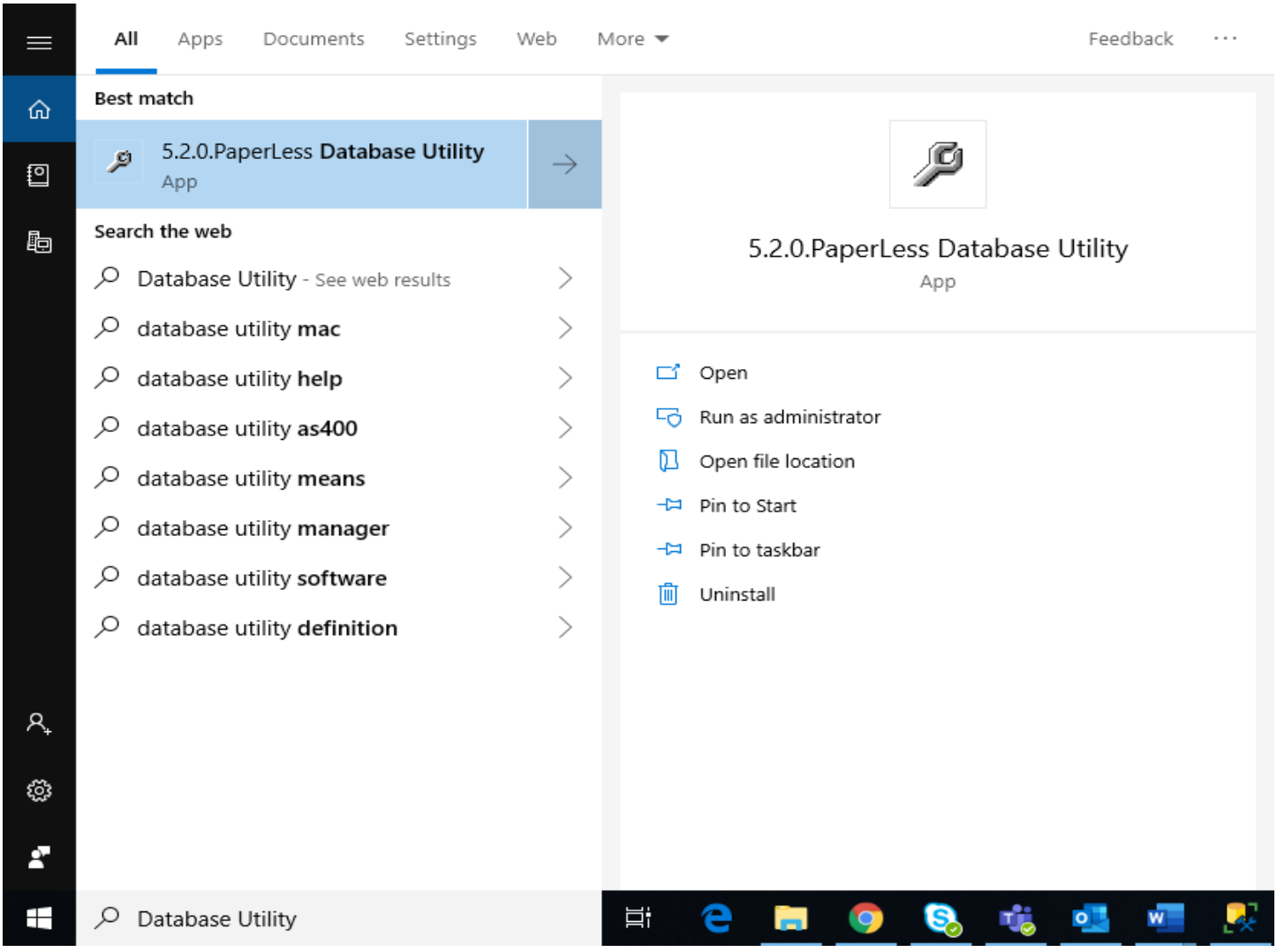
NOTES

IMPORTANT: When a new Paper-Less MES SQL database is created, it is highly recommended that a SQL Server database maintenance plan be created to automatically truncate the database transaction logs on a scheduled basis. **Failure to do this will result in the database transaction log growing indefinitely, consuming all available hard drive space.**

IMPORTANT: If a database transaction log grows too large (greater than 40 GB), **it can prevent the MES Suite Client from starting** because SQL Server is unable to expand the transaction log before a timeout is reached.

ACCESSING THE DATABASE UTILITY

The Paper-Less MES database Utility installs on the Paper-Less MES Server, under C:\All Programs\Paper-Less MES Server\MES Database Utility.



INITIALIZING

A splash screen will be displayed to indicate that the program is initializing.
Once initialization is completed, the splash screen will automatically close.

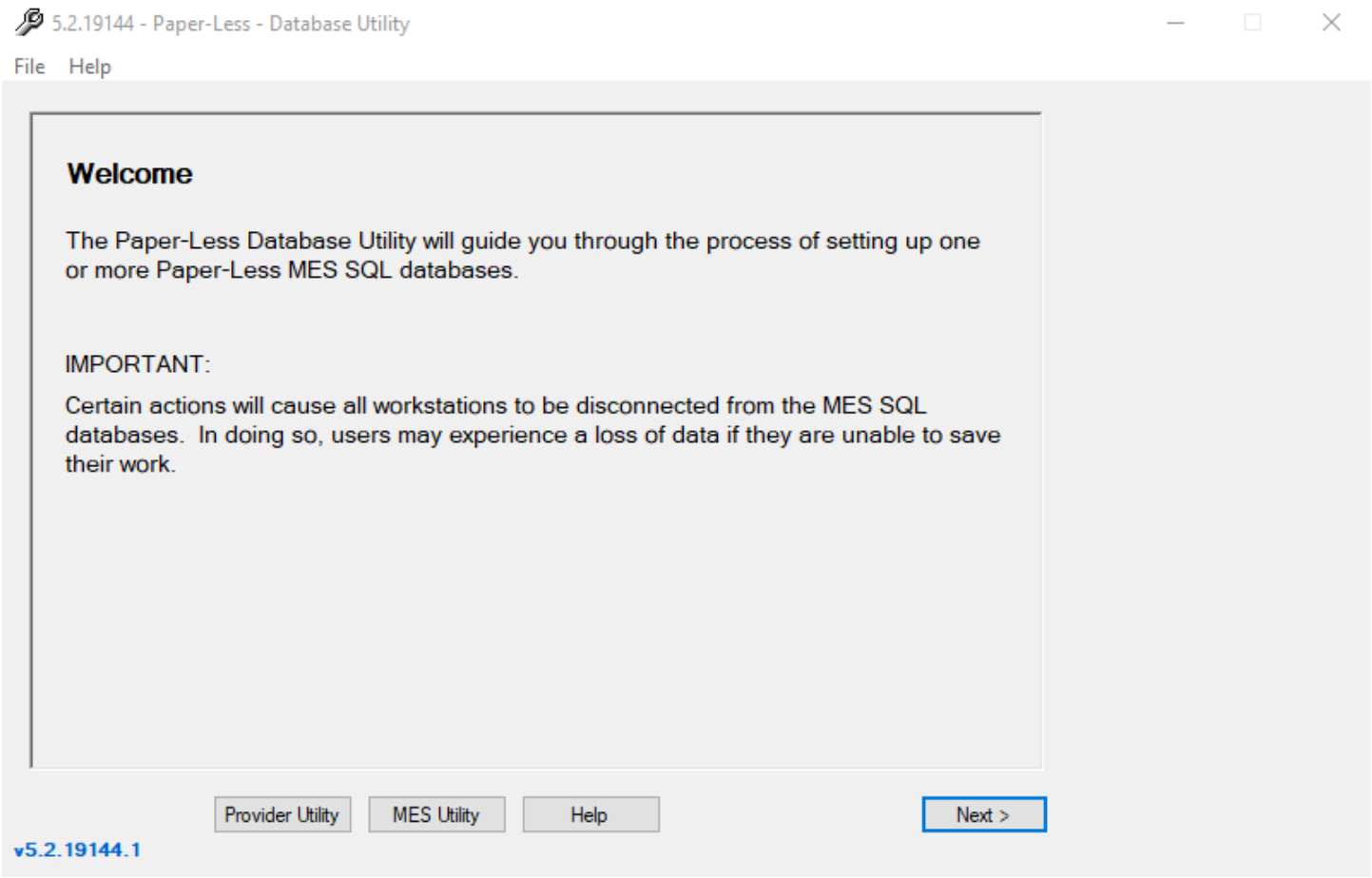
WELCOME

The Paper-less Database Utility will guide you through the process of setting up one or more Paper-Less MES SQL databases. On the bottom of the screen are three buttons that provide easy access to MES database configuration settings. These buttons will be available throughout the Database Utility to provide quick and easy navigation between utilities.

Provider Utility: Opens the user to the Provider Utility (OAGIS, for example). The Provider application must be installed.

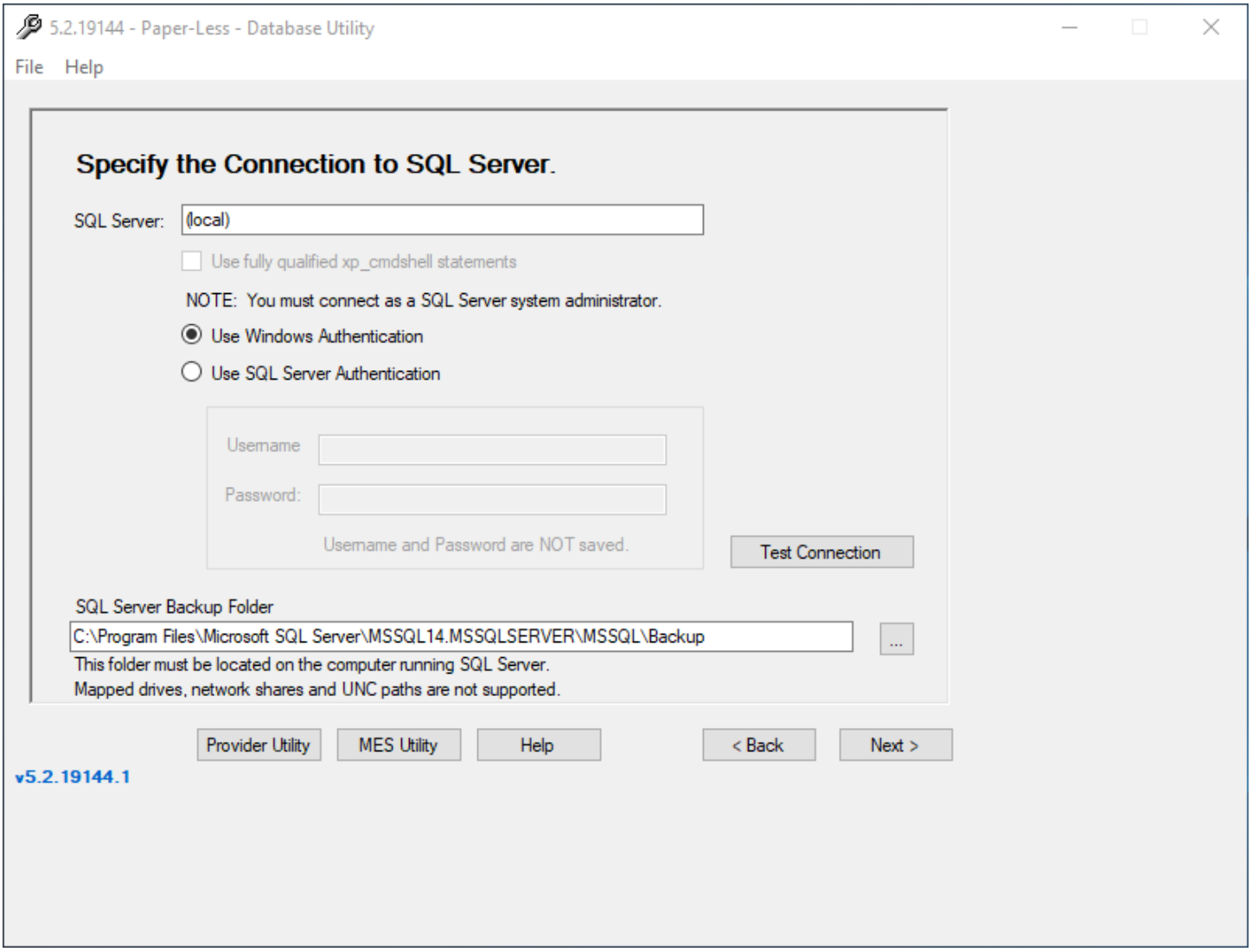
MES Utility: Opens the user to the Virtual Directory Settings Utility for Paper-Less MES.

Help: Opens the Database Utility help documentation.



Click the Next button to continue.

SQL SERVER



SQL Server: The name of the SQL Server instance to connect to. If the Paper-Less MES Server is installed on this computer, the SQL Server name will be automatically filled in.

To connect to SQL Server on this computer, use (local) or the name of this computer.
To connect to SQL Server on another computer, use the name of the computer.
To connect to a named instance of SQL Server, include a backslash and instance name.

For example: ComputerName\InstanceName

Authentication: You must connect to SQL Server as a SQL Server system administrator.

> **Use Windows Authentication:** The Windows user account (or one of the Windows groups that this Windows account is a member of). The user account must also be a SQL Server system administrator.

Use SQL Authentication: The SQL user account. The user account must be a SQL Server system administrator.

Username: Specify the SQL login's username.
Password: Specify the SQL login's password.

NOTE: The SQL login's username and password are not saved.

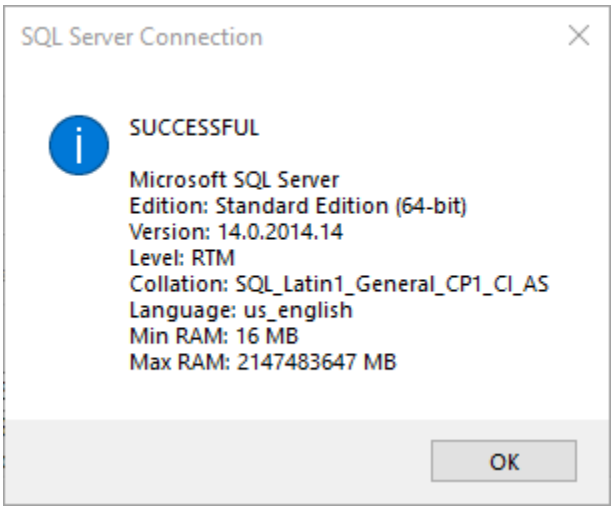
SQL Server Backup Folder: Several actions involve backing up the Paper-Less MES SQL databases. The folder specified here must exist on the computer running SQL Server. Mapped drives, network shares and UNC paths are not supported.

IMPORTANT: The SQL Server service runs under an account that must have sufficient privileges to access the SQL backup folder.

IMPORTANT: Depending on the action being performed, the Database Utility will delete and/or overwrite SQL backup files. It is highly recommended that you choose a different location than the folder used for normal backups and disaster recovery. At a minimum, create a subfolder (i.e. MES DBU) for exclusive use by the Database Utility.

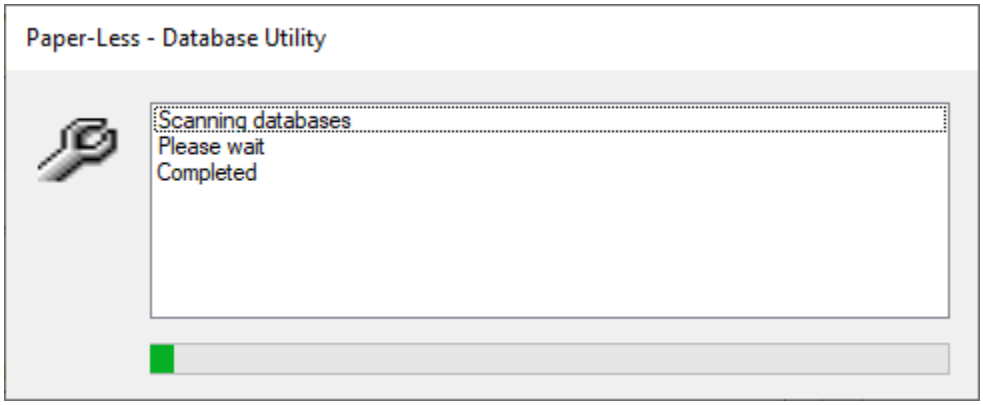
Test Connection: SQL Server connection information and backup folder location are automatically validated when the Next button is clicked. To see the validation results, click "Test Connection".

If the SQL Server information is valid, the following screen will be displayed:



Click **OK**.

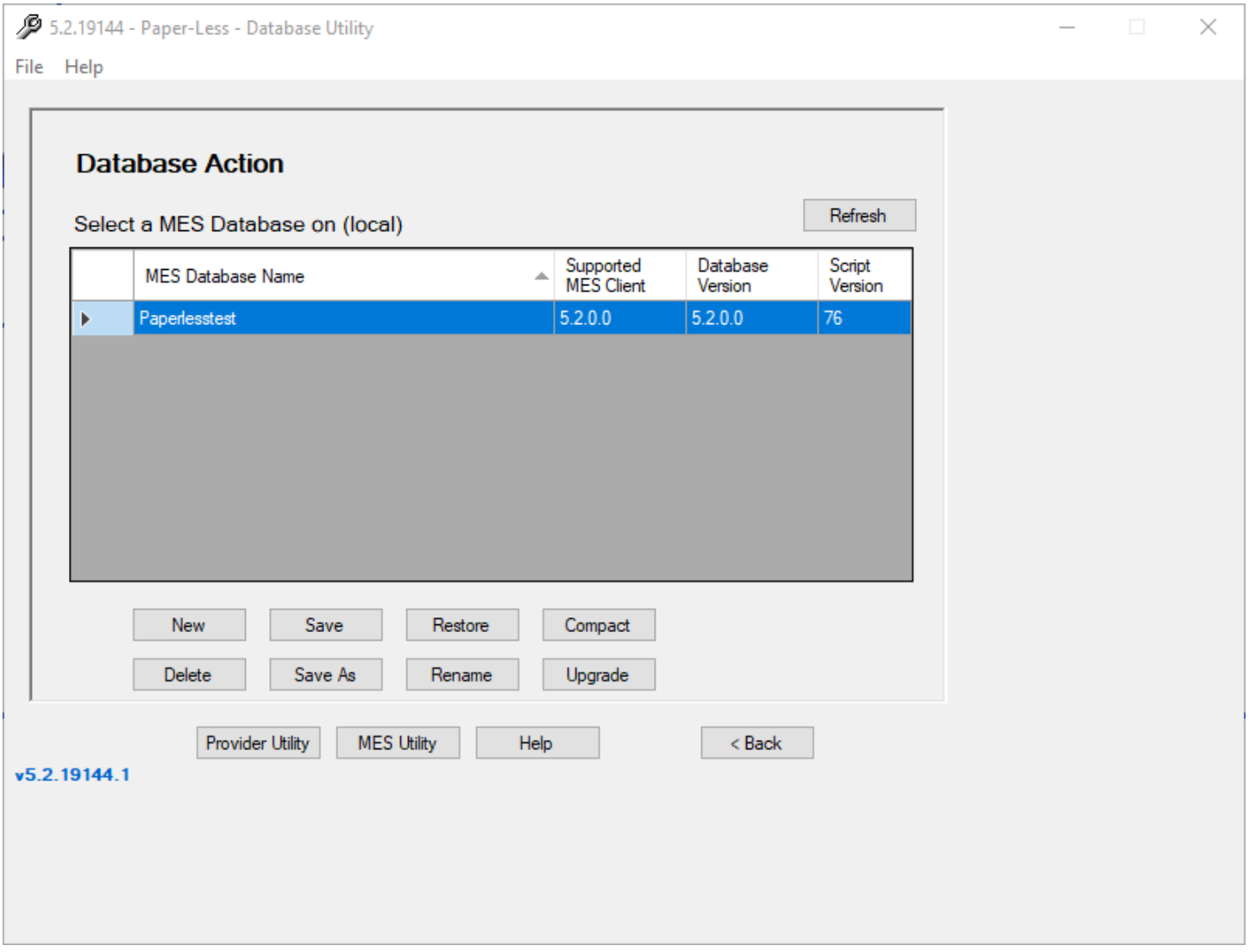
Click **Next** to continue.



Scanning the list of SQL databases can take several seconds to complete depending on the total number of SQL databases that are present in the instance of SQL Server being scanned.

When completed, this progress screen will automatically close.

DATABASE ACTION



Select one or more (if possible) MES SQL databases.

Click the desired action—**New**, **Delete**, **Save**, **Save As**, **Restore**, **Rename**, **Compact** or **Upgrade**.

Follow the instructions to complete the action or click **Back** to return here.

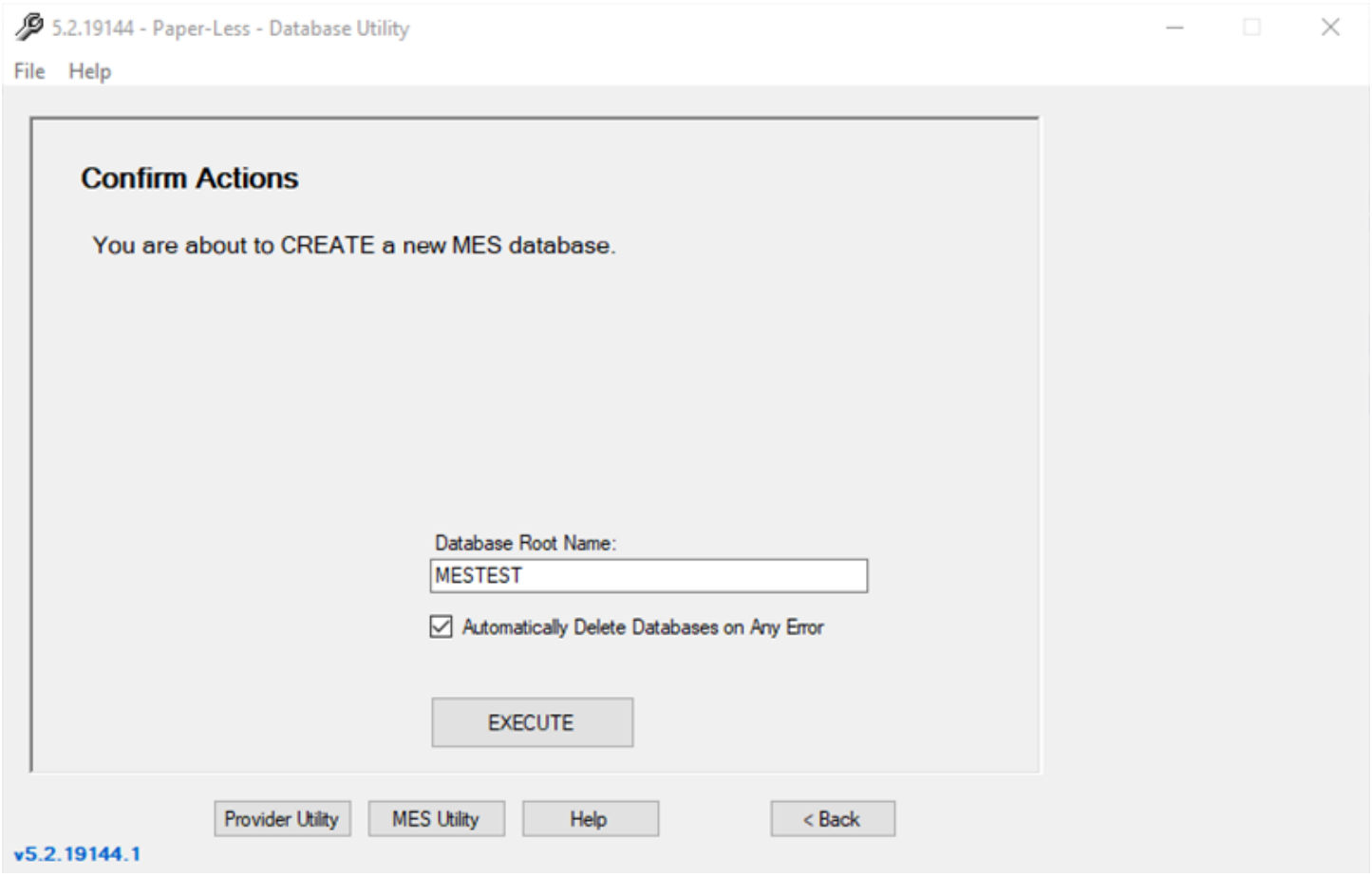
Click **Refresh** at any time to refresh the list of MES SQL databases.

If one or more of the selected MES SQL databases is at a release level that is not supported by this version of the Database Utility, a dialog will display.

If you have another installation of the MES Server at a higher release level, use that version of the Database Utility to work with the selected MES SQL databases. Otherwise, upgrade MES Server.

DATABASE UTILITY ACTIONS

NEW

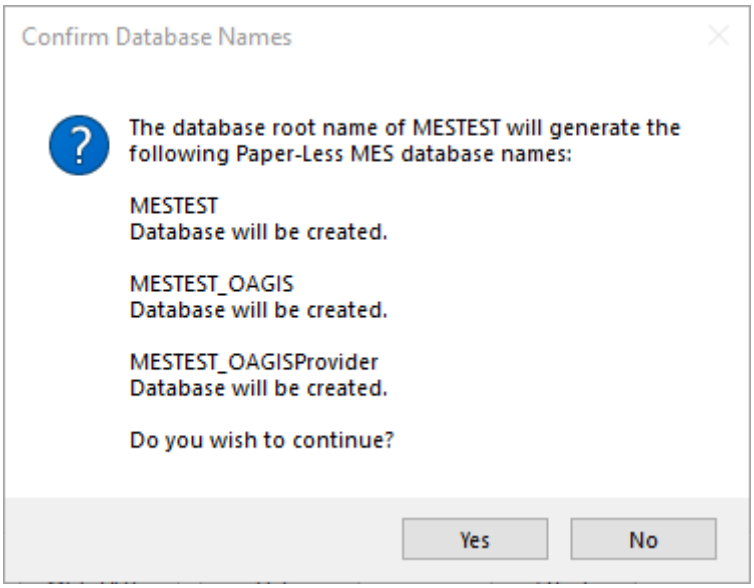


This action will create a new MES SQL database and it's supporting SQL databases.

Database Root Name: Used to generate the names of the MES SQL databases.

If you enter a database root name of MES, the following SQL databases will be created:

MESTEST
MESTEST _OAGIS
MESTEST _OAGISProvider



When you execute the action, the Database Utility will use the database root name to generate the Paper-Less MES SQL database names.

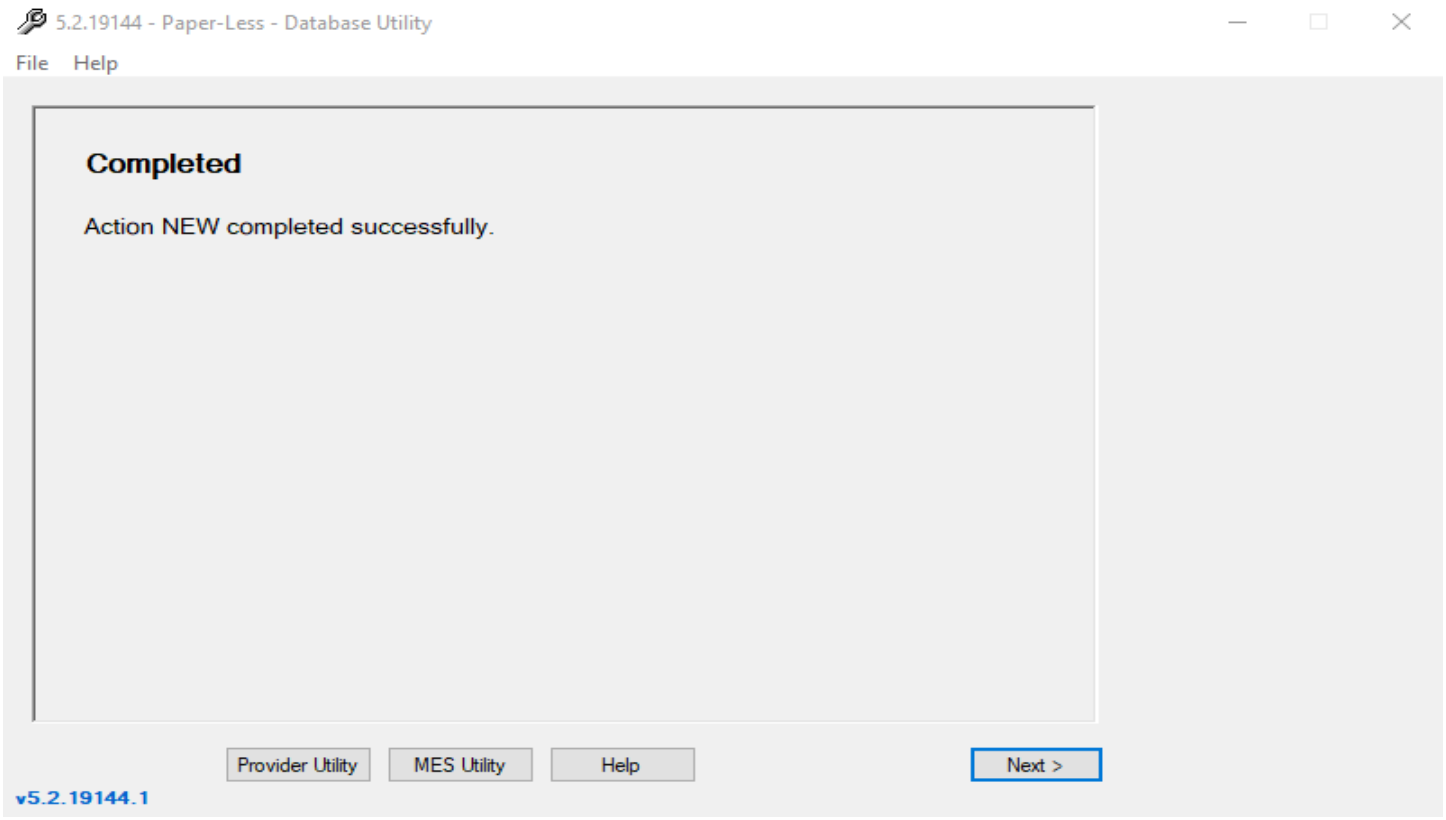
Then, it will check to see if the SQL databases already exist and/or any SQL backup files exist.

Click **Yes** to create the new database.

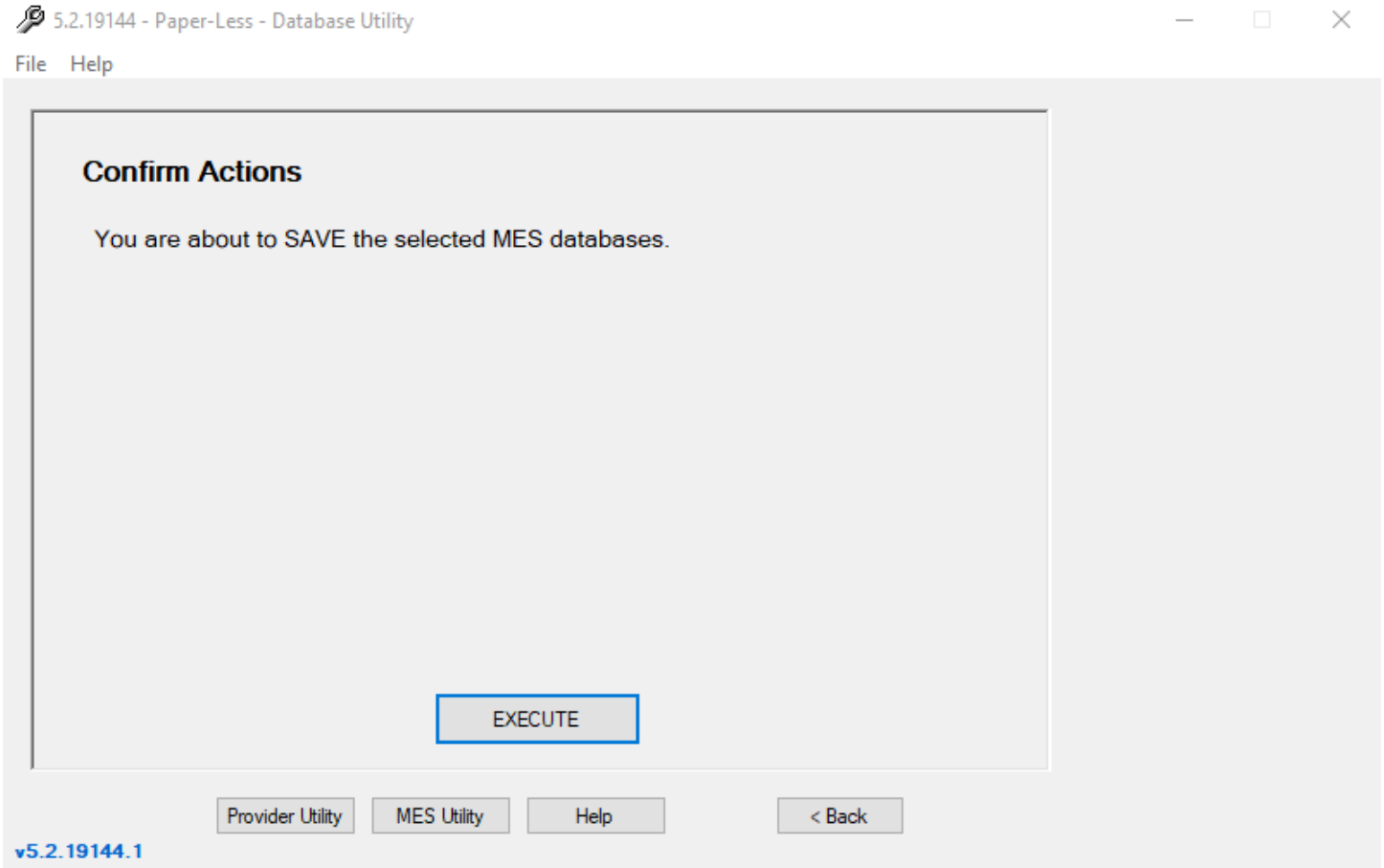
If the database names already exist, the database Utility will make you aware of it, asking you whether or not you'd like to continue and overwrite the existing ones.

Click **Yes** to continue.

A message will display once the new database has been completed successfully. Press Next to return to the Database Utility main page.


5.2.19144 - Paper-Less - Database Utility
File Help
Completed
Action NEW completed successfully.
Provider Utility
MES Utility
Help
Next >
v5.2.19144.1

SAVE


5.2.19144 - Paper-Less - Database Utility
File Help
Confirm Actions
You are about to SAVE the selected MES databases.
EXECUTE
Provider Utility
MES Utility
Help
< Back
v5.2.19144.1

This action will backup the selected Paper-Less MES SQL databases and their supporting SQL databases.

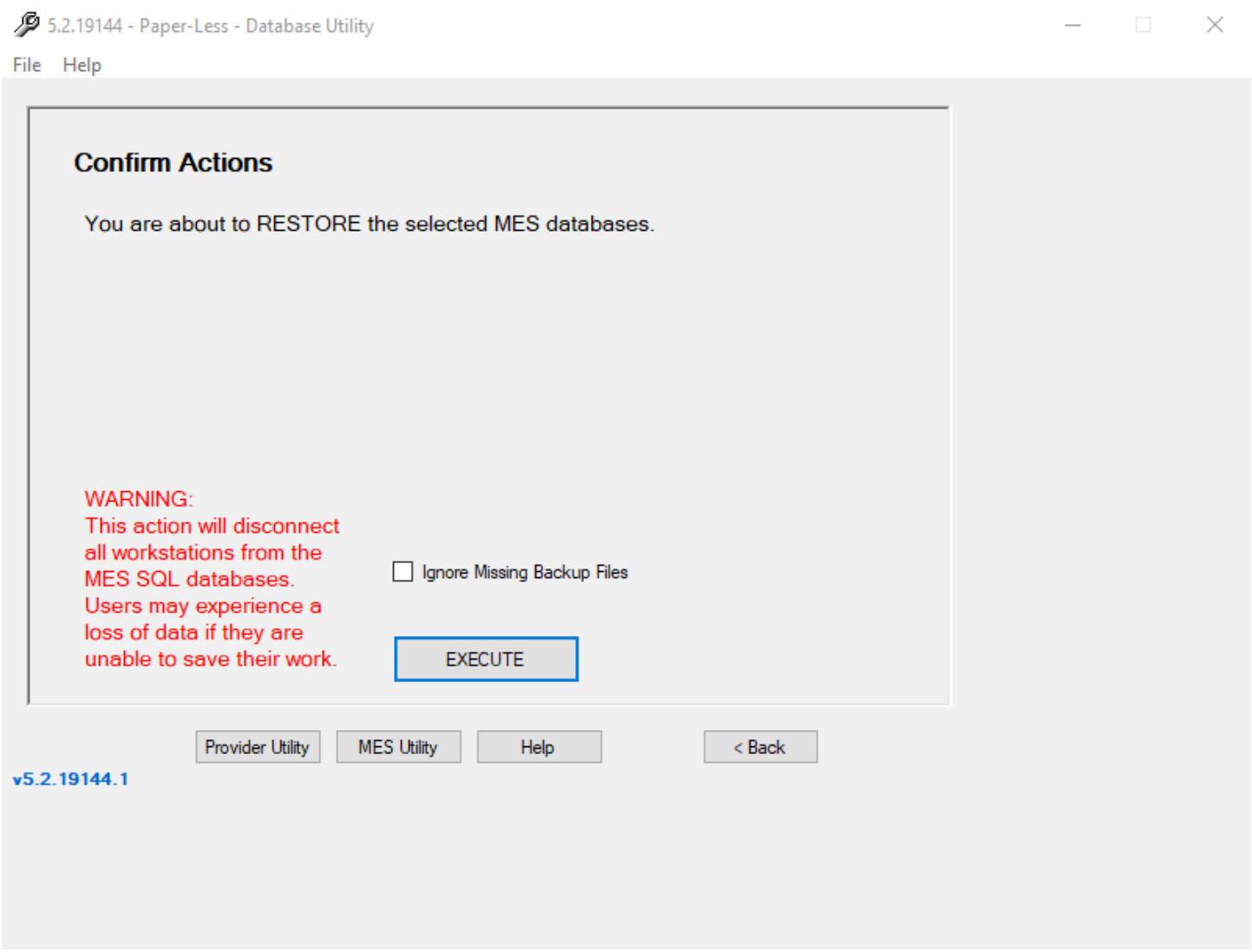
A folder is automatically created with the same name as the database root name.

For simplicity, a SQL backup file will contain only one backup set. Multiple copies of the same MES SQL databases are not supported. Therefore, any existing SQL backup files with the same names in the specified folder are overwritten.

For example:

C:\Program Files\Microsoft SQL Server\MSSQL\BACKUP ←SQL Backup Folder
\MES ←Database Root Name Folder
MESTEST.BAK ←Main MES SQL database
MESTEST_OAGIS.BAK ←Supporting MES SQL database
MESTEST_OAGISProvider.BAK ←Supporting MES SQL database

RESTORE



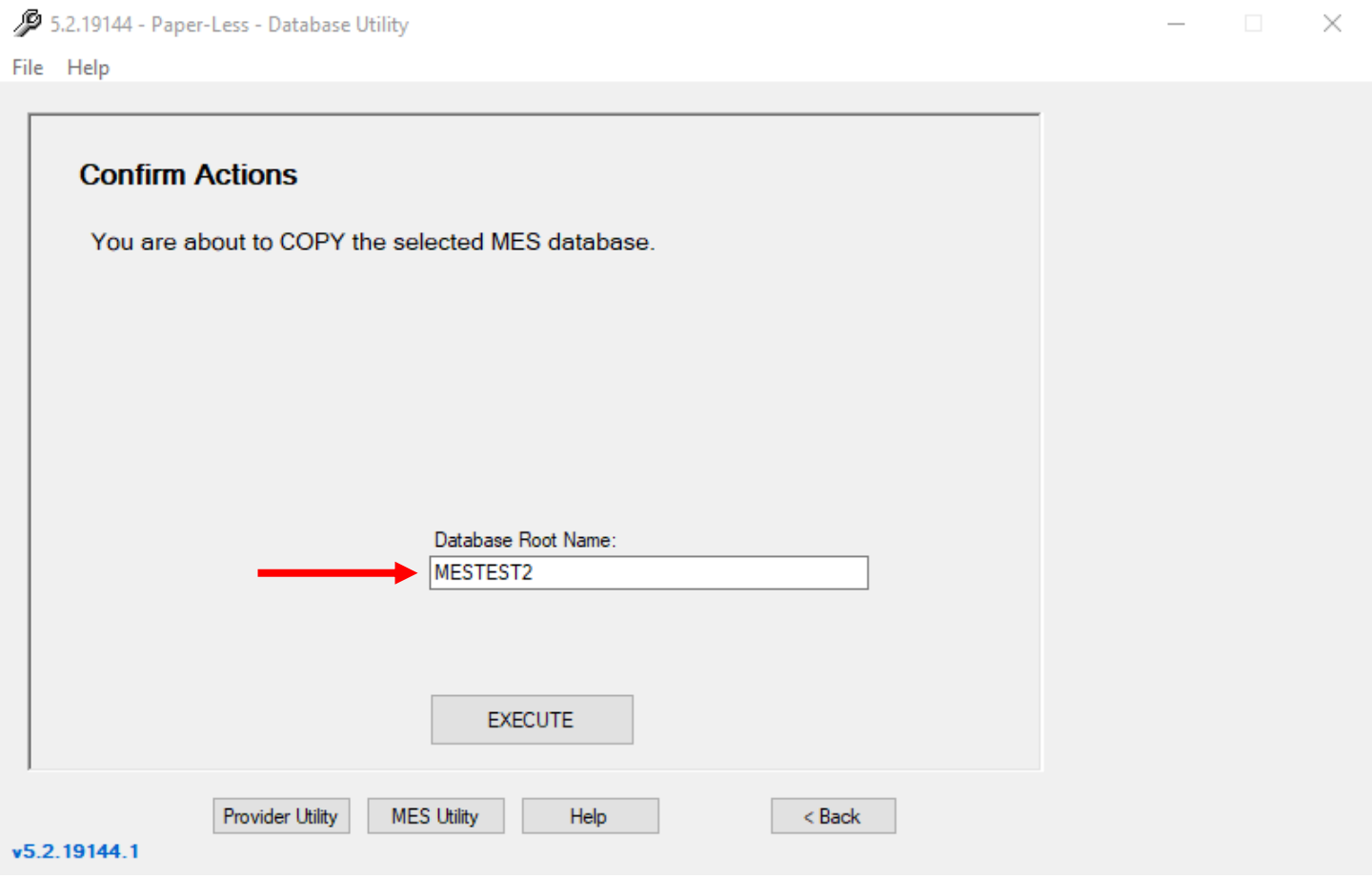
This action will restore the selected Paper-Less MES SQL databases and their supporting SQL databases.
No-one should be connected to Paper-Less MES when a SQL database is restored.
If a Paper-Less MES connection is left open and is working with data, unpredictable results can occur when it attempts to make use of the data it has in memory.
For example, test results are being entered in test entry for a specific manufacturing order. After the SQL databases are restored, the manufacturing order as well as the test header information may no longer exist causing the test entry screen to display an error message. Simply restart the Paper-Less MES session.

In order to restore a database, SQL Server must be able to obtain an exclusive lock on the database which means that no other users can be connected to the database. Therefore, all users will be disconnected from the selected SQL databases so that the databases can be restored successfully.

NOTE: If the SQL backup files are missing or inaccessible, a dialog will be displayed.

Ensure that the SQL backup files are located in the correct folder with the correct filename. The full path and filename are shown in the dialog. Remember, the folder shown here must exist on the computer running SQL Server.

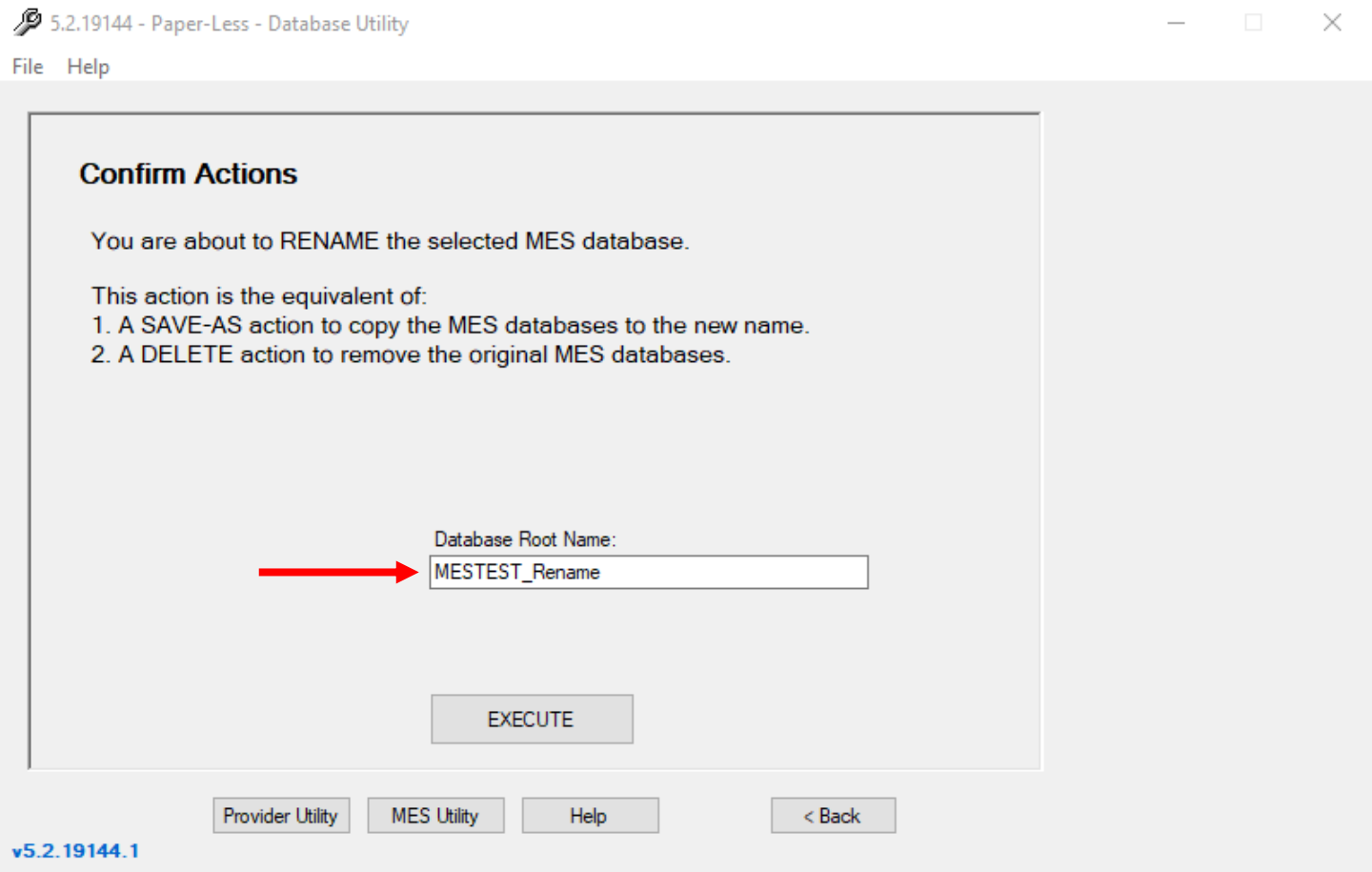
SAVE-AS



This action will copy the selected MES SQL database and it's supporting SQL databases.
The Database Utility will perform a SAVE action using the new database root name followed by a RESTORE action.

Database Root Name: Refer to the NEW action.

RENAME

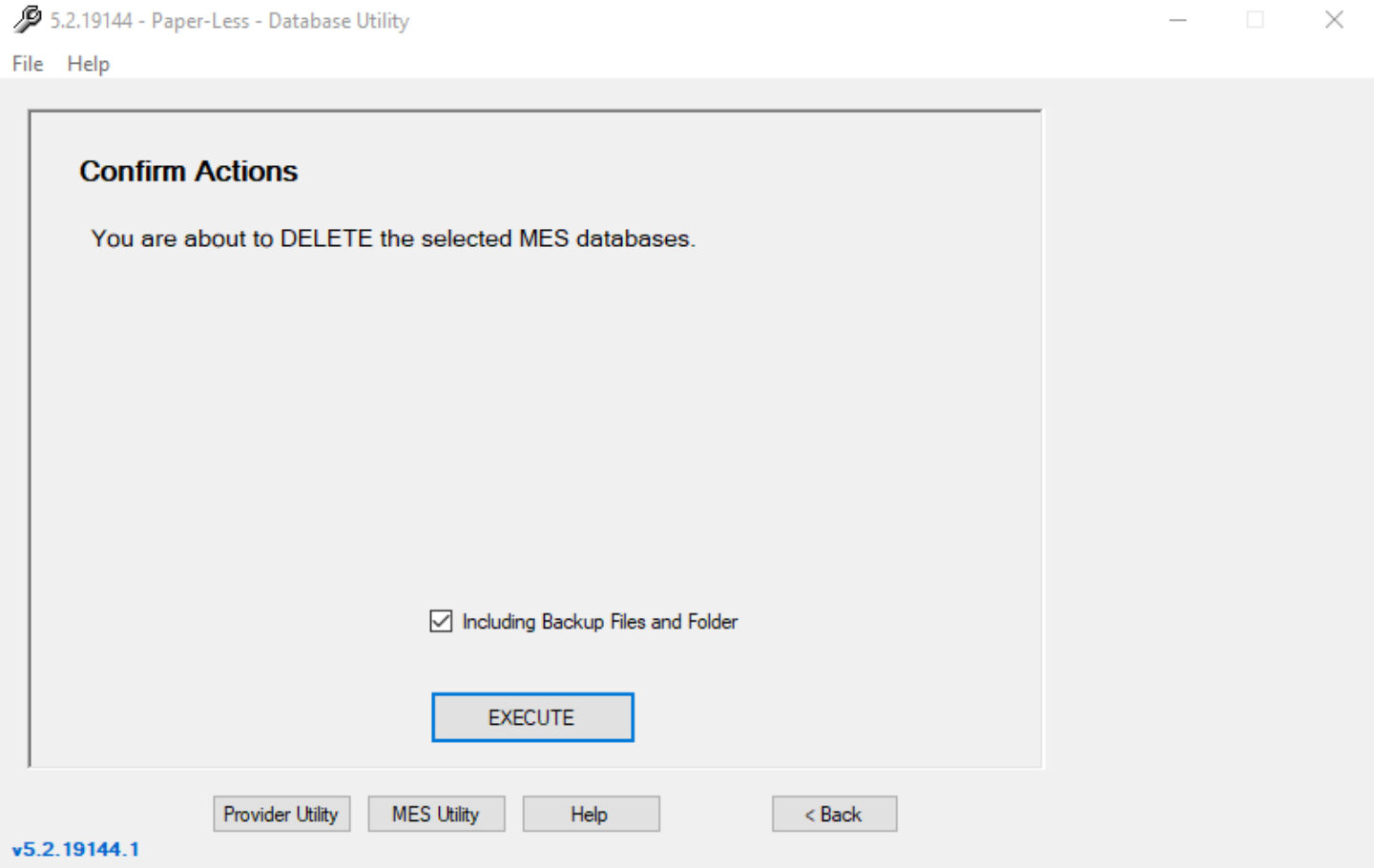


This action will rename the selected MES database and it's supporting SQL databases.

The Database Utility will perform a SAVE-AS action using the new database root name followed by a DELETE action.

Database Root Name: Refer to the NEW action.

DELETE



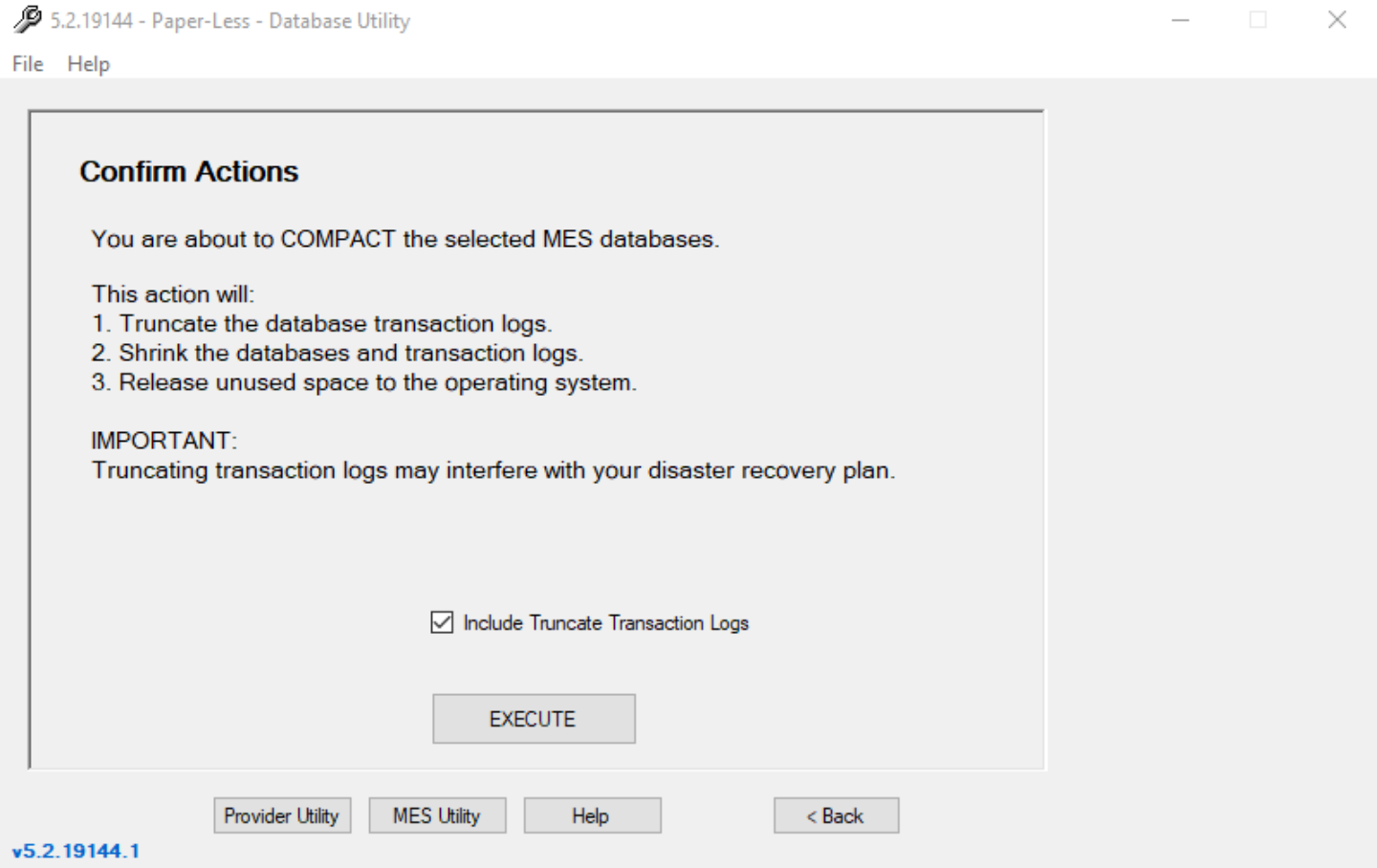
This action will delete the selected MES SQL databases and their supporting SQL databases.

Including Backup Files: Select this option to delete any backup files that are present in the SQL backup folder that was specified when connecting to SQL Server.

IMPORTANT: Any file that ends with a BAK extension will be deleted from the folder. If the folder is empty, the folder will be deleted.

IMPORTANT: It is highly recommended that you choose a different location than the folder used for normal backups and disaster recovery. At a minimum, create a subfolder (i.e. MES DBU) for exclusive use by the Database Utility.

COMPACT

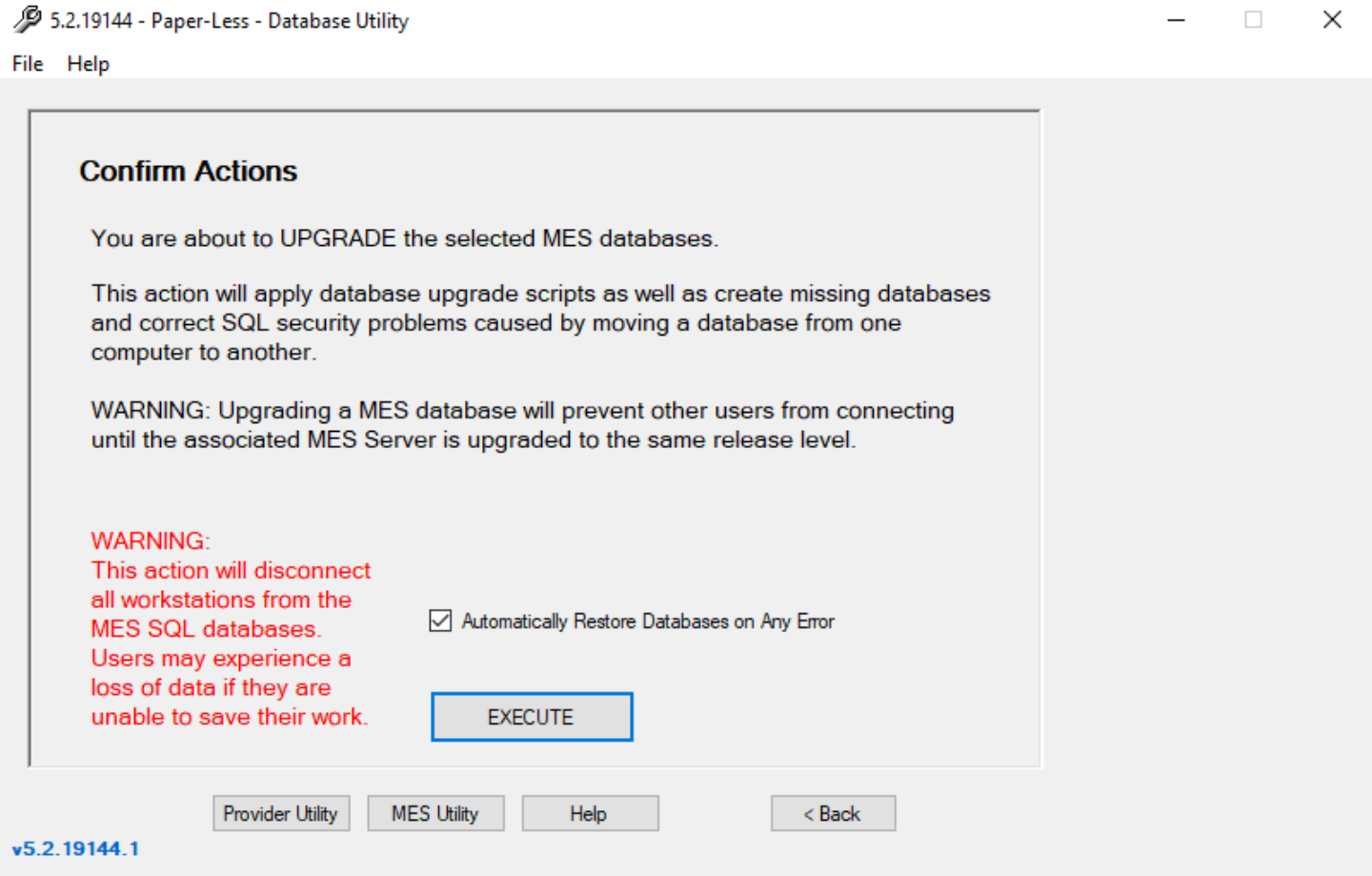


This action will compact the selected MES SQL databases and their supporting SQL databases.

Include Truncate Transaction Logs: Select this option to include the truncation of the database transaction logs.

IMPORTANT: Choosing to truncate the database transaction logs has consequences. It will free the most hard drive space but could leave the MES databases exposed to data loss in the event of a hardware failure, etc. It is highly recommended that a **SAVE** action be done immediately afterwards and the backup files be relocated to another computer or media as soon as possible. Ideally, these SQL backup files should be placed with the normal database backups as they become the primary means of restoring the MES SQL databases until the next regularly scheduled backup is completed.

UPGRADE



This action will upgrade the selected MES SQL databases and their supporting SQL databases. The MES SQL databases will be upgraded to the same release level as the MES Server.

TIP: After a successful upgrade, it is highly recommended that a **SAVE** action is performed so that a future **RESTORE** action does not revert the MES SQL databases to an earlier release level. If this happens, simply perform the **UPGRADE** action again.

IMPORTANT: The MES SQL databases are automatically backed up before any upgrade is done. The SQL backup files are stored in the same folder location as a SAVE action. However, they are named differently so as to not to interfere with the normal **SAVE** and **RESTORE** actions of the Database Utility.

The SQL backup filenames for an **UPGRADE** action are prefixed with a date and timestamp.

For example:

2009-06-05_09.24.28_MES.BAK
2009-06-05_09.24.28_MES_OAGIS.BAK
2009-06-05_09.24.28_MES_OAGISProvider.BAK

DATABASE MAINTENANCE PLANS

OVERVIEW

It is crucial that you incorporate a regularly scheduled backup strategy for the MES SQL databases. Without this, you are placing your MES data at risk. Your company's IT Department, IS Department or SQL Server DBA is the recommended authority to put this strategy in place. It is strongly recommended that a database professional be used to implement this critical operation. In the absence of this, we have provided a guide that will get you started.

The purpose of this tutorial is to configure SQL Server to backup the Paper-Less MES SQL databases. This tutorial is intended for customers that do not have a SQL Server database administrator to configure a backup policy.

The following tutorial assumes that you have used the default "MES" Database Root Name. Substitute your Database Root Name for "MES" if you have used a different Database Root Name.

Note: Only Microsoft SQL Server 2005 & 2008 are currently supported. Microsoft SQL Server 2000 is no longer supported.

IMPORTANT:

1. The Database Maintenance Plans illustrated here are not designed to be your sole backup strategy or disaster recovery plan. Refer to SQL Server Books Online and other third party reference materials for assistance in developing a backup strategy and disaster recovery plan.

2. If you are using third party backup software that meets your backup strategy and disaster recovery planning, the backup portion of plan 1 may be skipped. However, the other portions of plan 1 that deal with reorganization, integrity checking and database shrinking should be implemented to keep the MES SQL databases optimized.

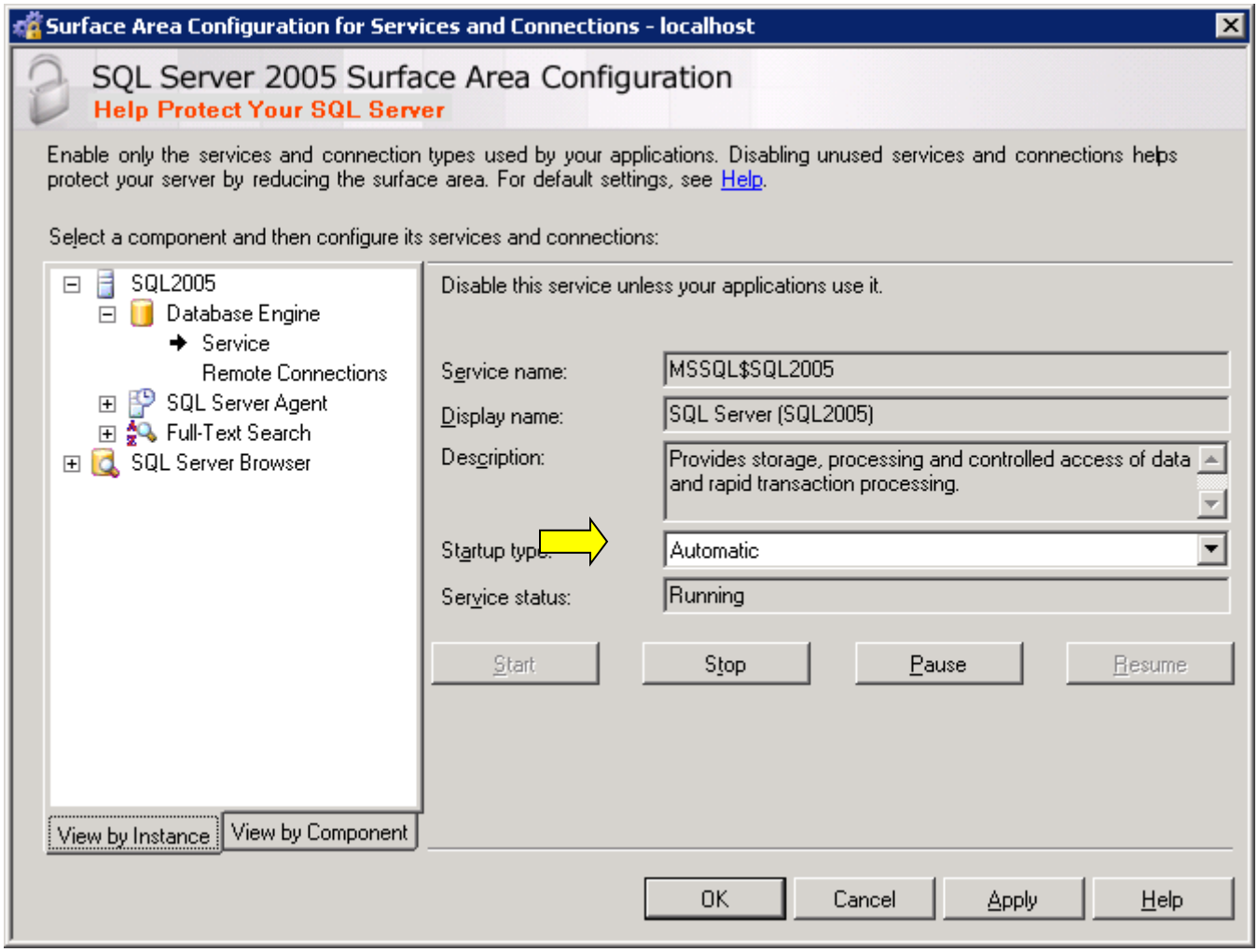
3. **Plan 2 must be implemented to prevent the database transaction logs from consuming all available hard drive space and/or shutting down the MES Suite due to the inability of SQL Server to expand the database transaction log.**
   For example: If a database transaction log is 50GB and is set to grow automatically by 10 percent, then SQL Server would need 5GB of hard drive space the next time the database transaction log is expanded.

SQL SERVER 2005 AND SQL SERVER AGENT

Database maintenance plans as well as other SQL Server jobs are executed by the SQL Server Agent. You must ensure that SQL Server and the SQL Server Agent are running and set to automatically start with the operating system.

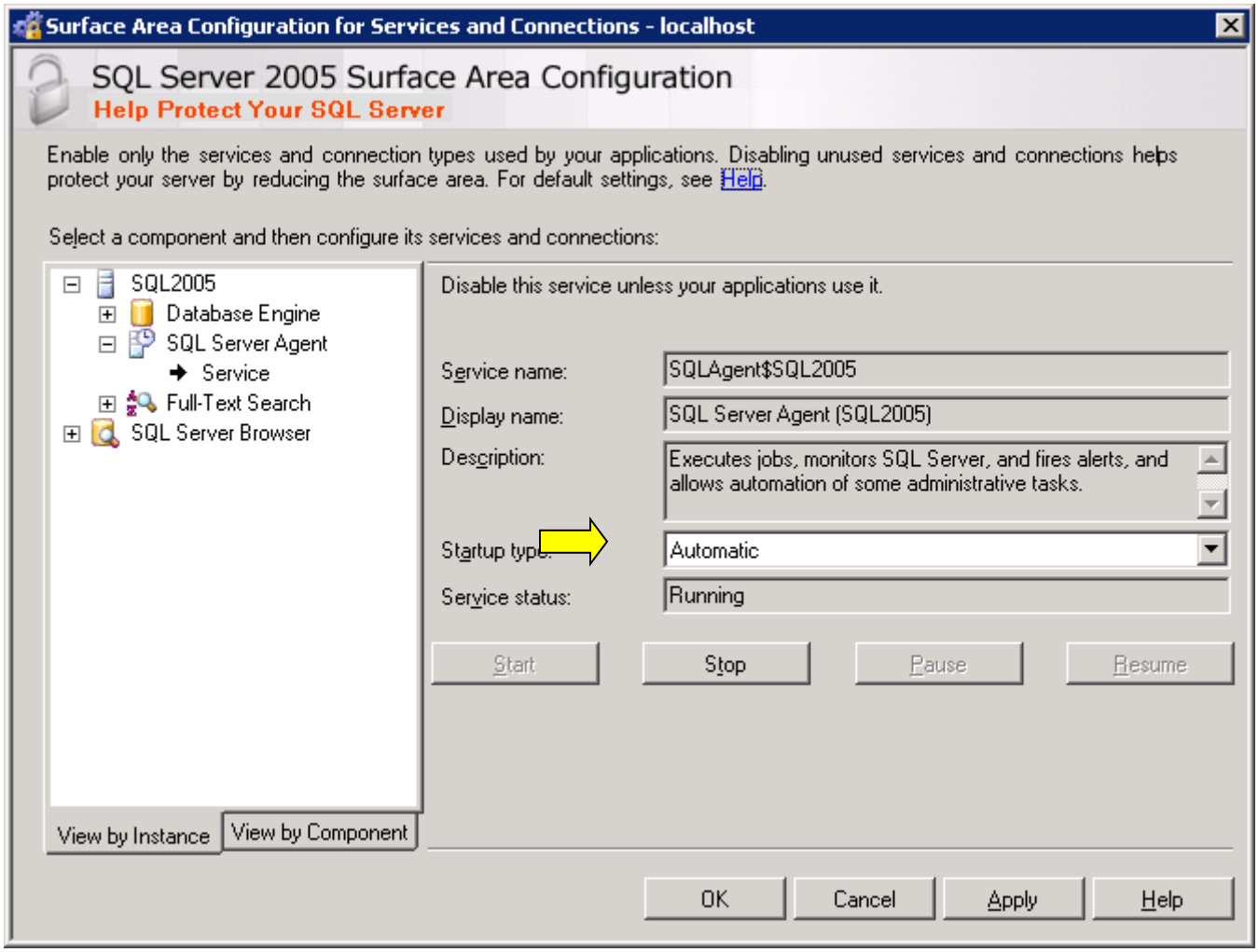
In SQL Server 2005 Surface Area Configuration:

Click **Surface Area Configuration for Services and Connections**.



Select **Service** under the **Database Engine** component.
Select **Automatic** for the Startup Type.
If the database engine is not running, click **Start**.

NOTE: The name of the SQL Server 2005 computer does vary.
The default instance of SQL Server running on this computer is (local) or the name of the computer.
The default instance of SQL Server running on another computer is the name of the computer.
A named instance of SQL Server is ComputerName\InstanceName.



Select **Service** under the **SQL Server Agent** component.
Select **Automatic** for the Startup Type.
If the SQL Server Agent is not running, click **Start**.

Click **OK**.

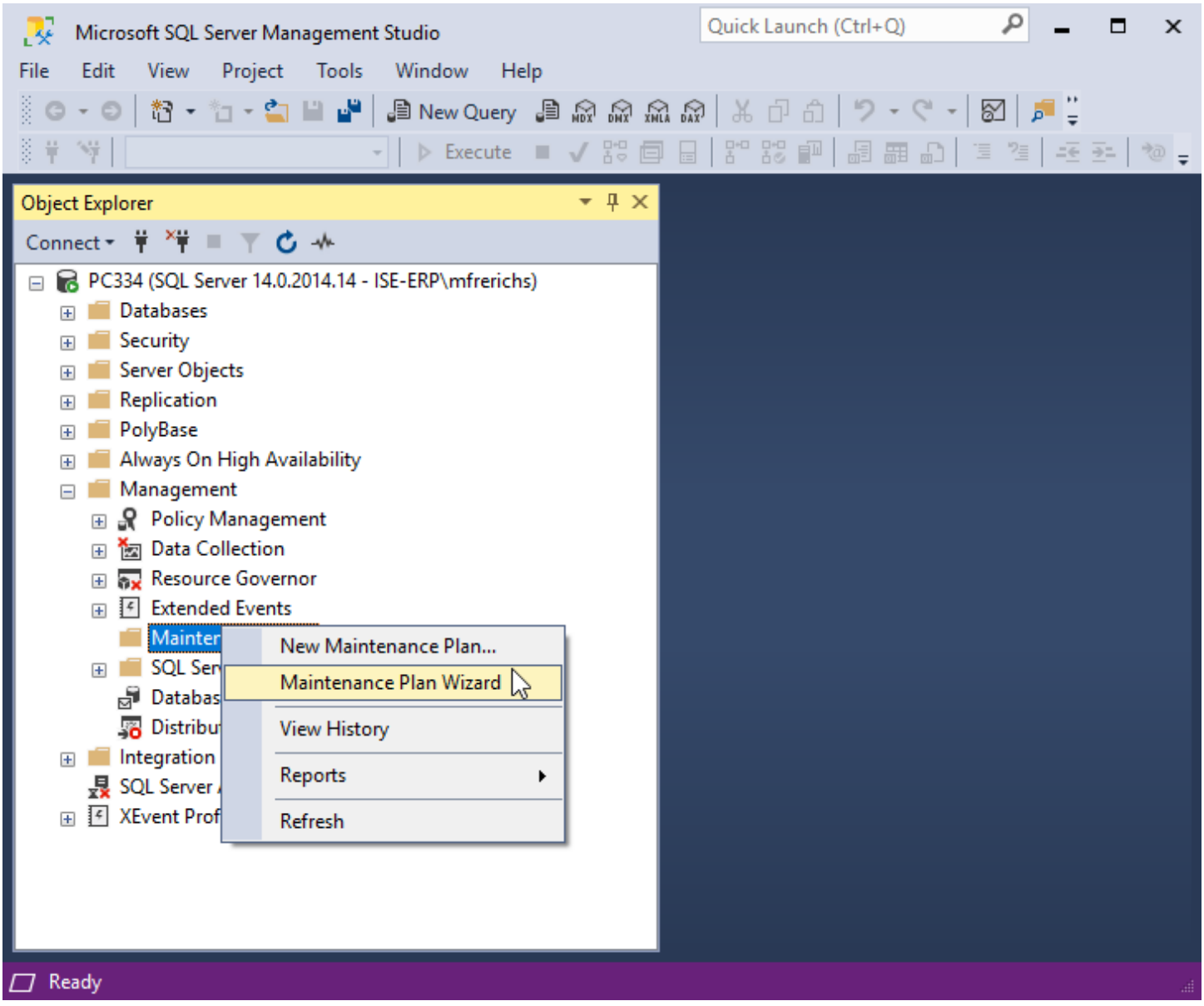
Both SQL Server and SQL Server Agent are now set to automatically start with the operating system.

PLAN 1 – BACKUP, RE-ORGANIZE AND INTEGRITY CHECK

The purpose of this database maintenance plan is to provide general backup, data and index page reorganization, and integrity checking of the MES SQL databases.

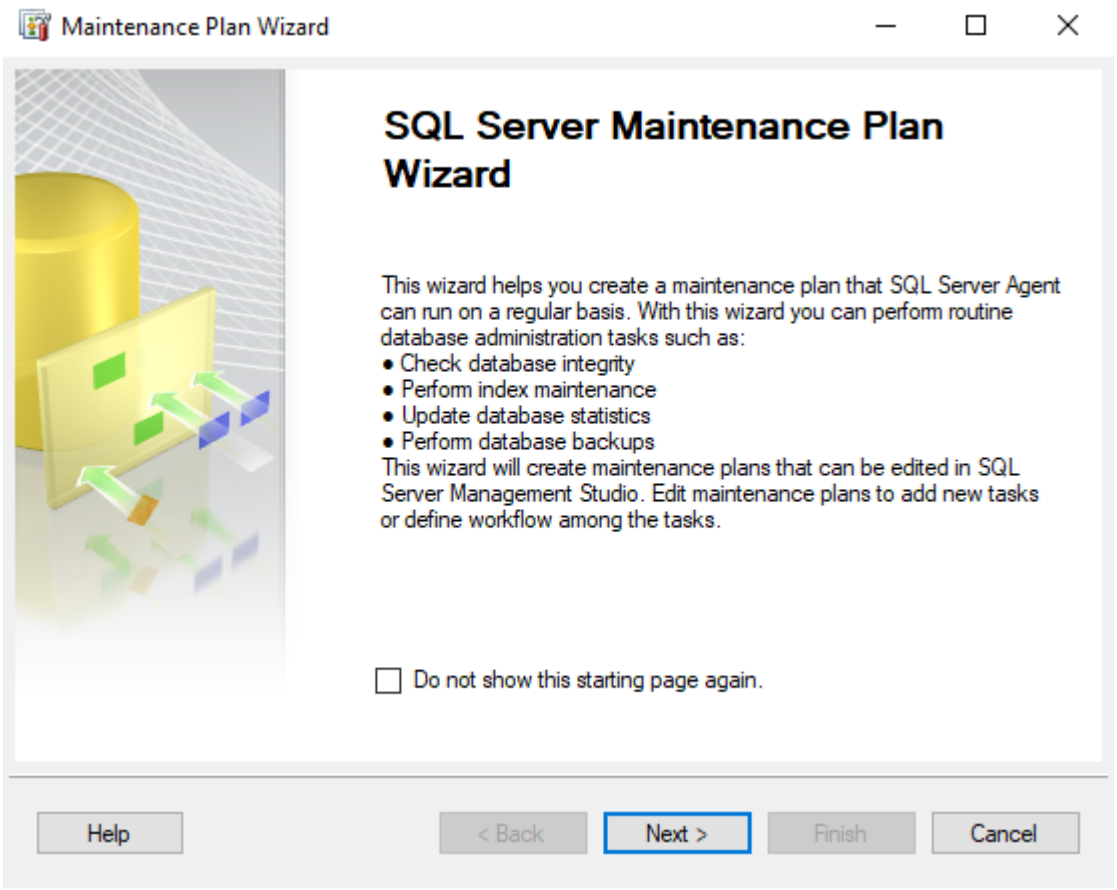
- Every day at 12:00 AM
    1. Check Database Integrity
    2. Rebuild Index
    3. Shrink Database
    4. Update Statistics
    5. Back Up Database (Full)
    6. Clean Up History

NOTE: This is not designed to be your sole backup strategy or disaster recovery plan.



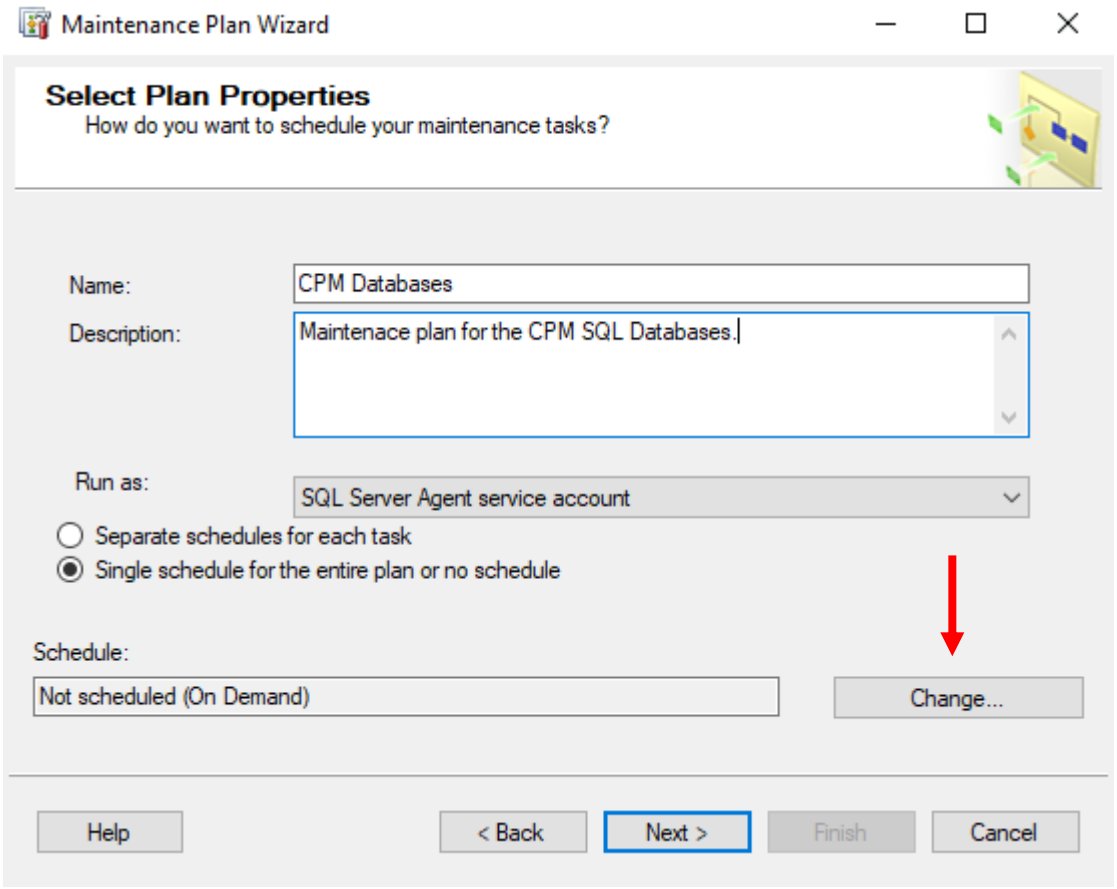
In Microsoft SQL Server Management Studio:

Expand the **Management** folder.
Right-click on **Maintenance Plans** and select **Maintenance Plan Wizard.** This will start the **SQL Server Maintenance Plan Wizard**.

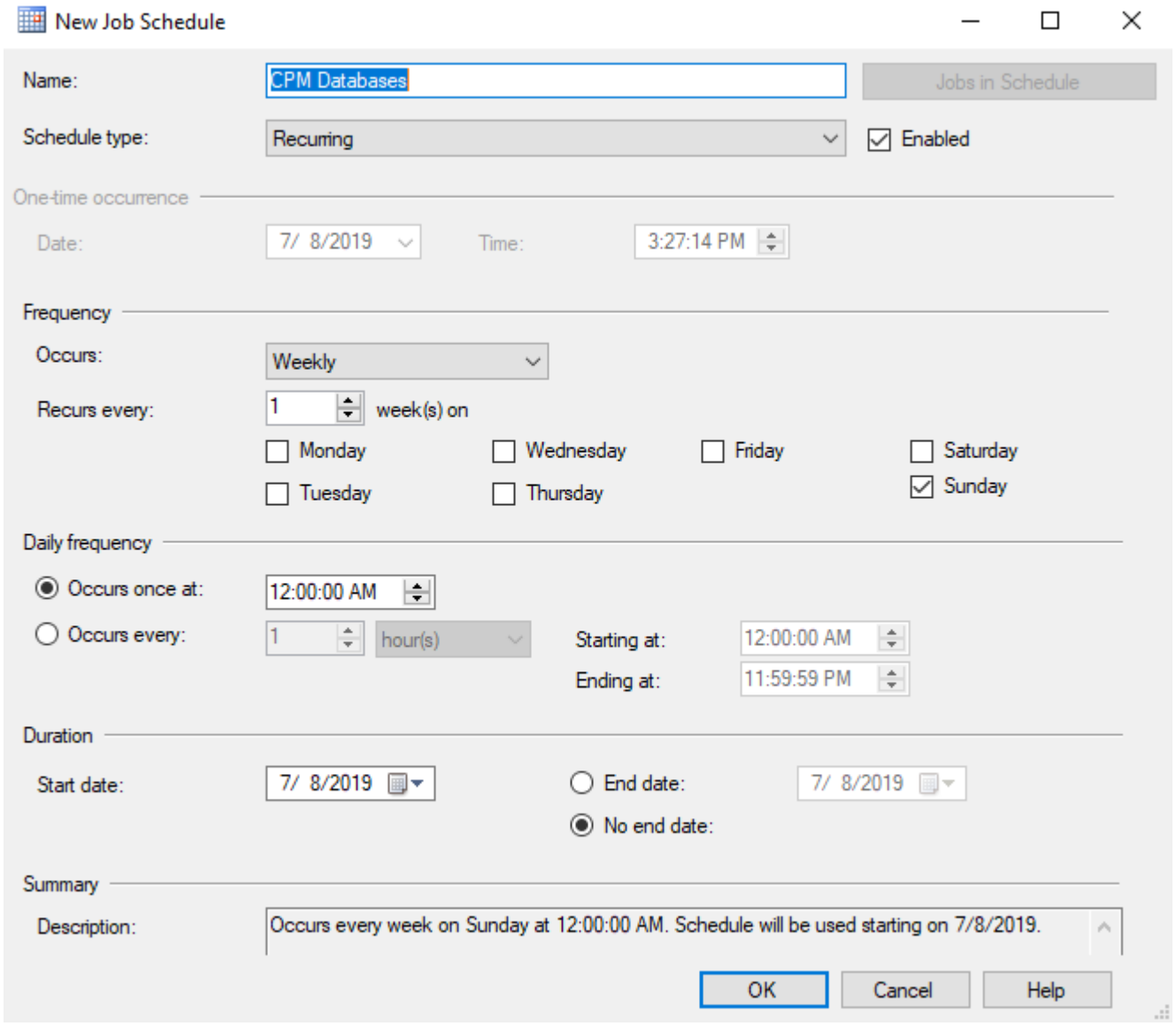


Click **Next**.

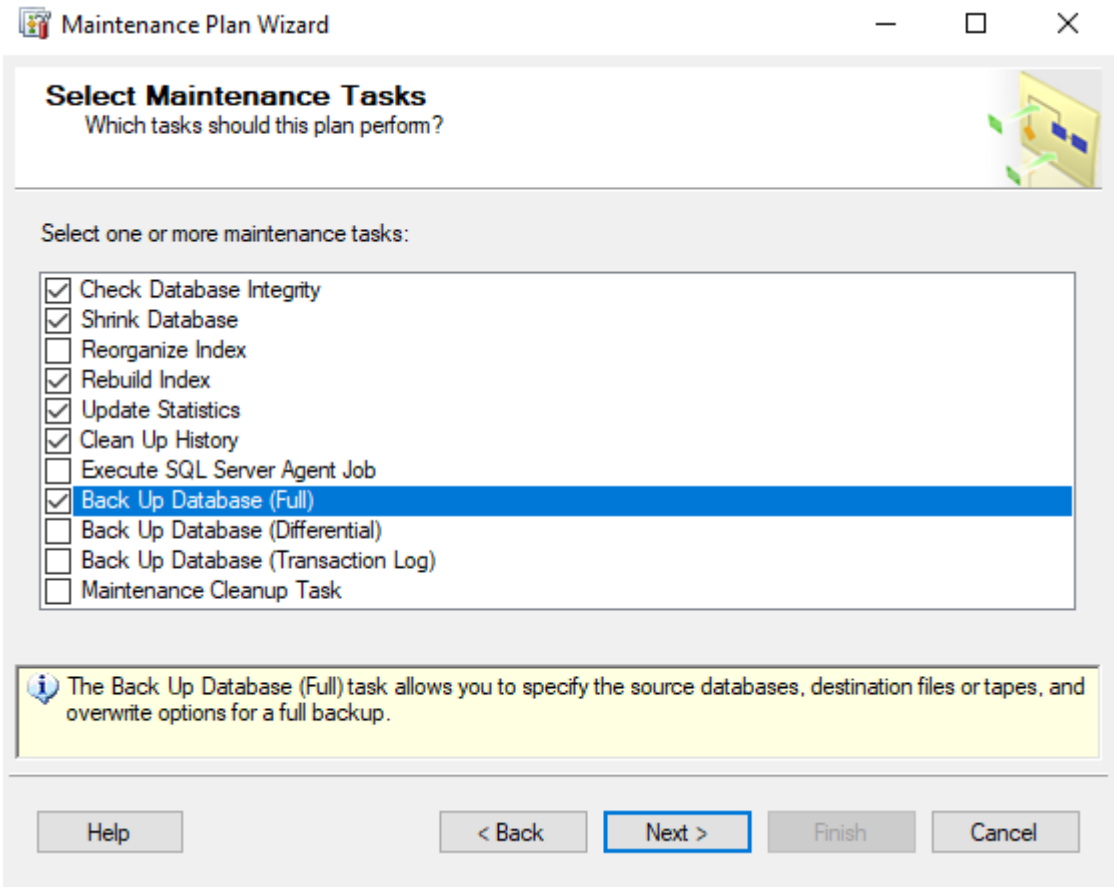
Enter a **Name**. For example: MES Databases.
Enter a **Description**.



Click on the Change button to open the Job Schedule Properties and make changes.



Once the schedule has been set, click **Next**.



Select the desired Maintenance Tasks.

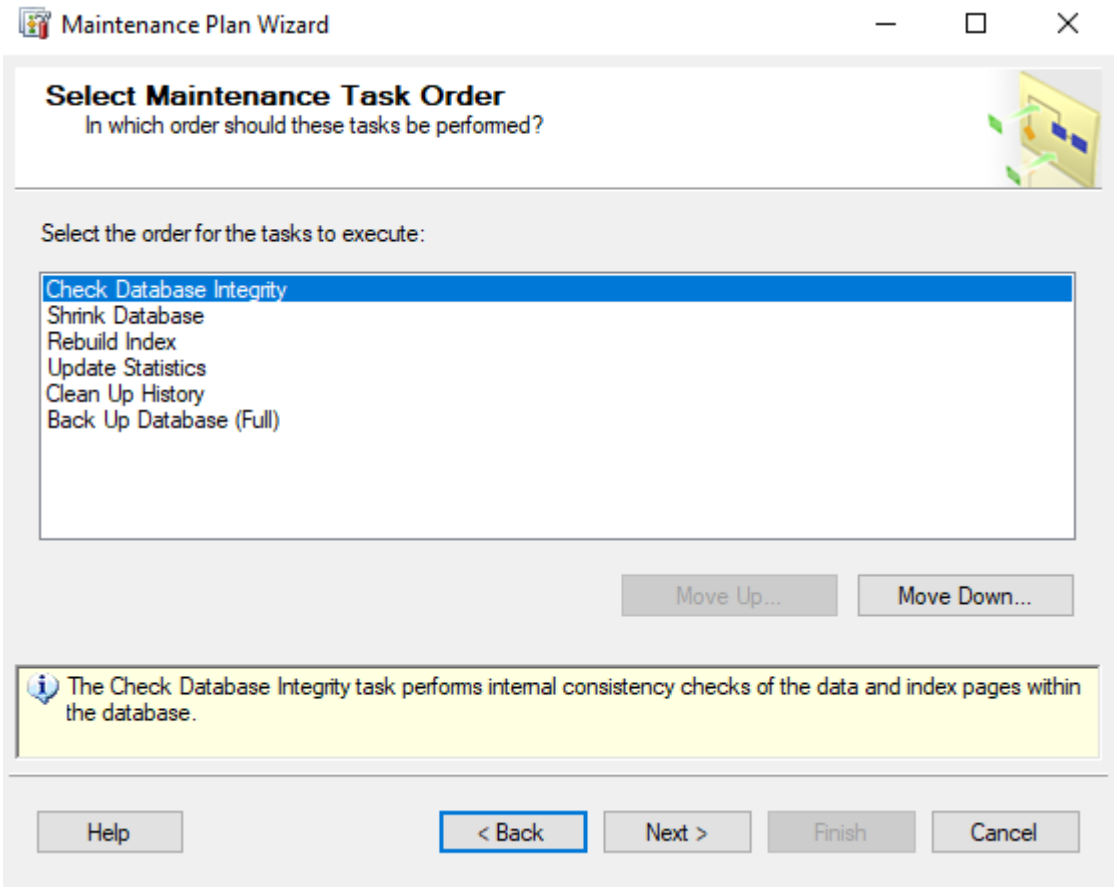
It is highly recommended that the following Maintenance Tasks be performed:

- Check Database Integrity
- Shrink Database
- Rebuild Index
- Update Statistics
- Clean Up History
- Back Up Database (Full)

NOTE: For simplicity, all of the maintenance tasks are done in one maintenance plan. Each situation is different and when combined with company policies, it is quite common to divide the Maintenance Tasks and create several database maintenance plans on different schedules and frequencies.

For example: In a large database, rebuilding the indexes may be done once per week or month while reorganize index is done daily. It may be desirable to shrink the database less frequently and/or choose to retain the extra free space to eliminate database file fragmentation on the hard disk drive.

Click **Next**.

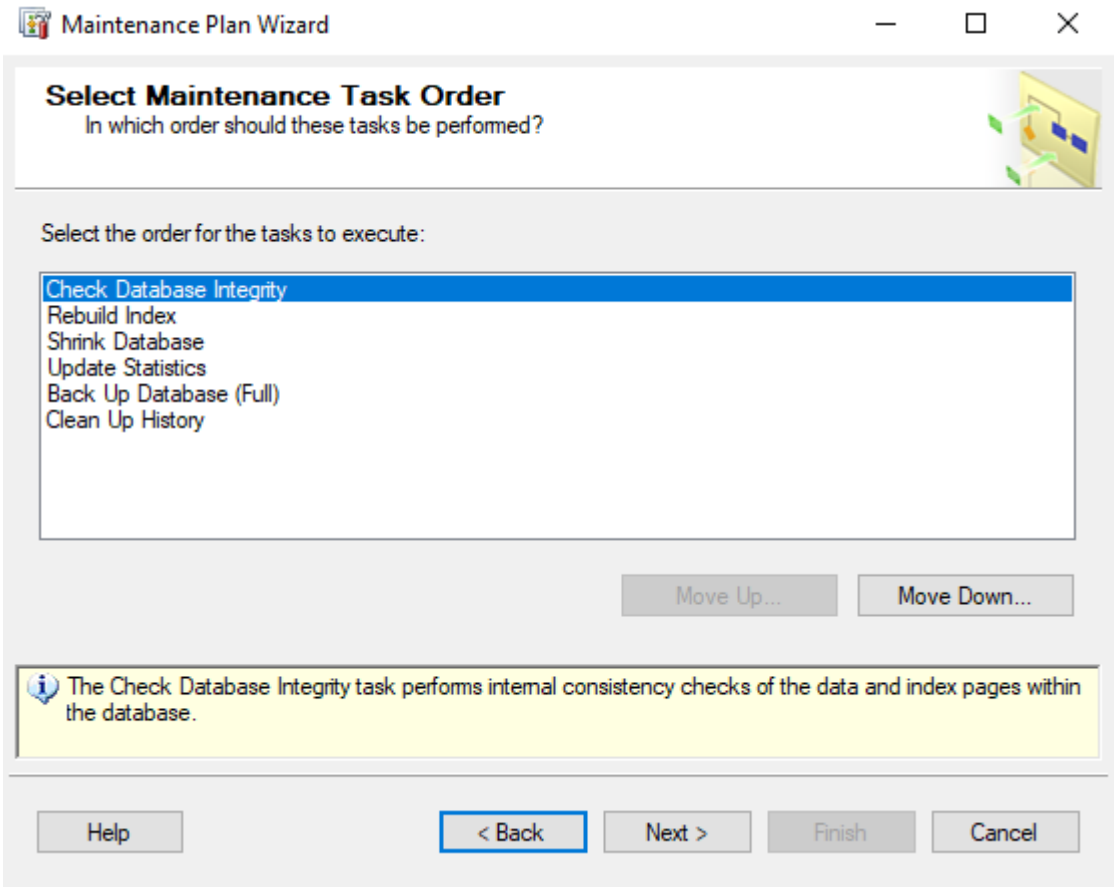


Select a Maintenance Task.

Click **Move Up** and **Move Down** to change the maintenance task order.

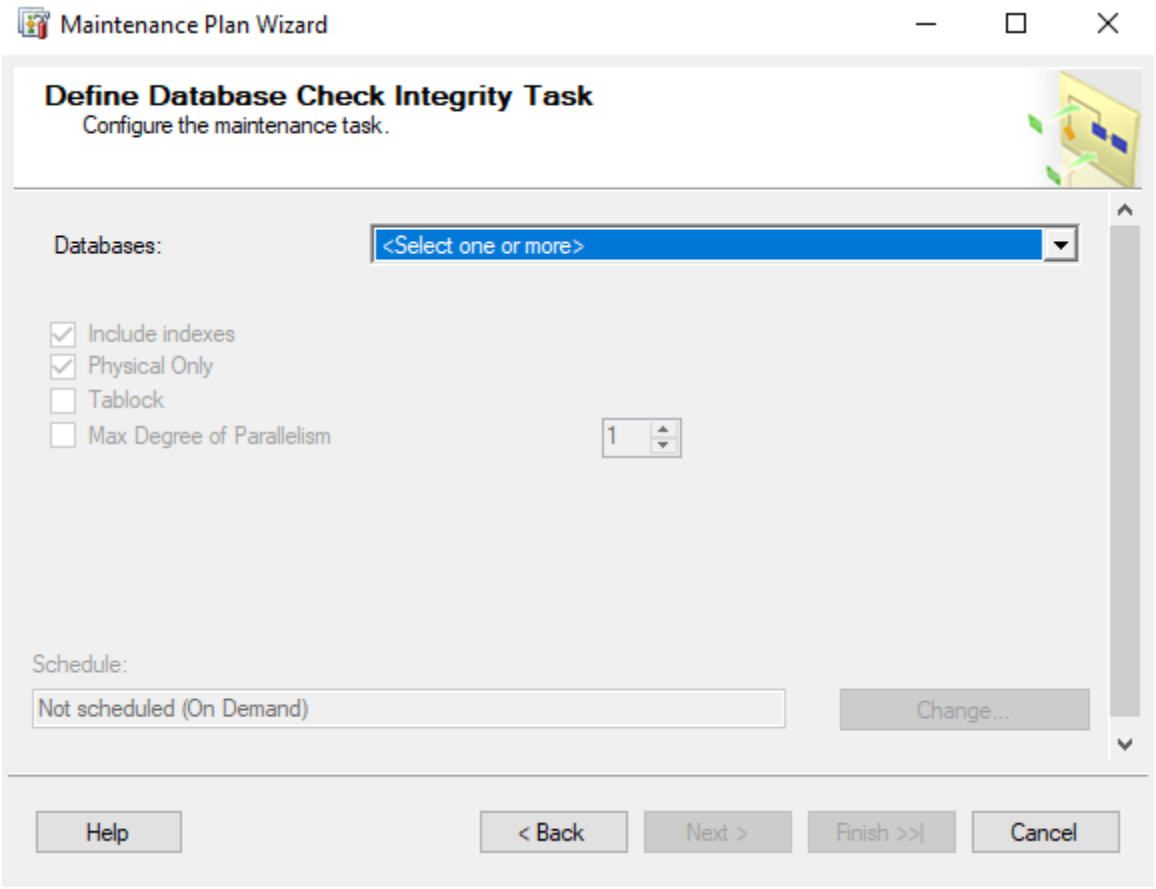
It is recommended that the Maintenance Tasks be done in the following order:

1. Check Database Integrity
2. Rebuild Index
3. Shrink Database
4. Update Statistics
5. Back Up Database (Full)
6. Clean Up History

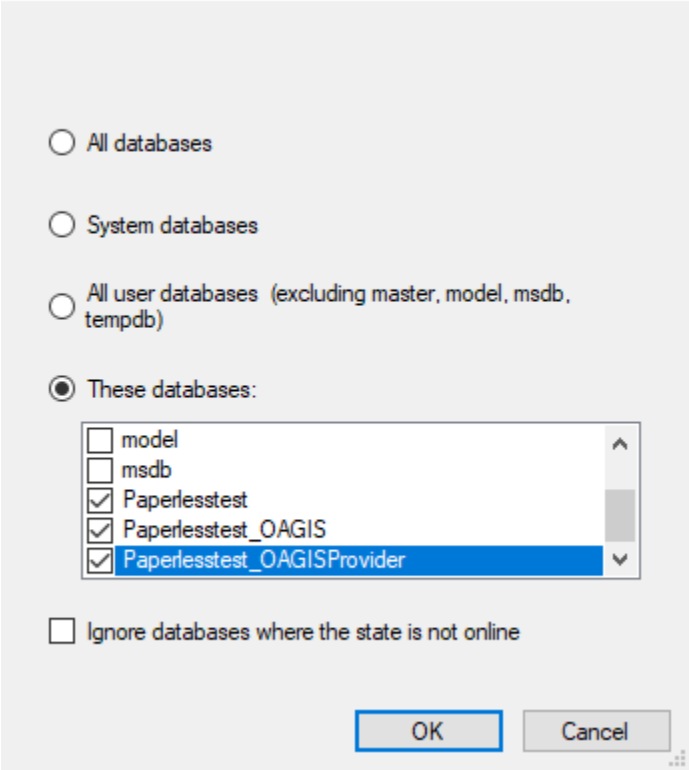


NOTE: For simplicity, all of the maintenance tasks are done in one maintenance plan. Each situation is different and when combined with company policies, it is quite common to change the order of the Maintenance Tasks.

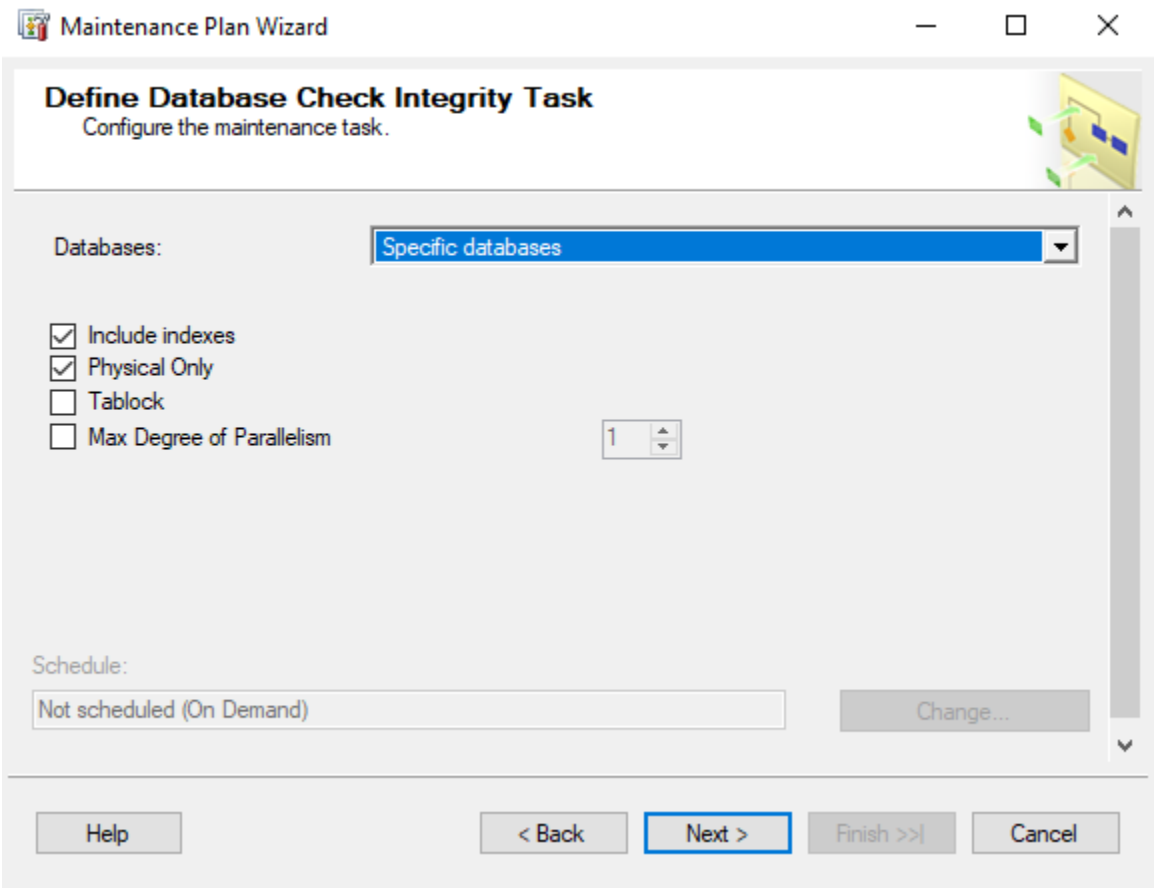
Click **Next**.



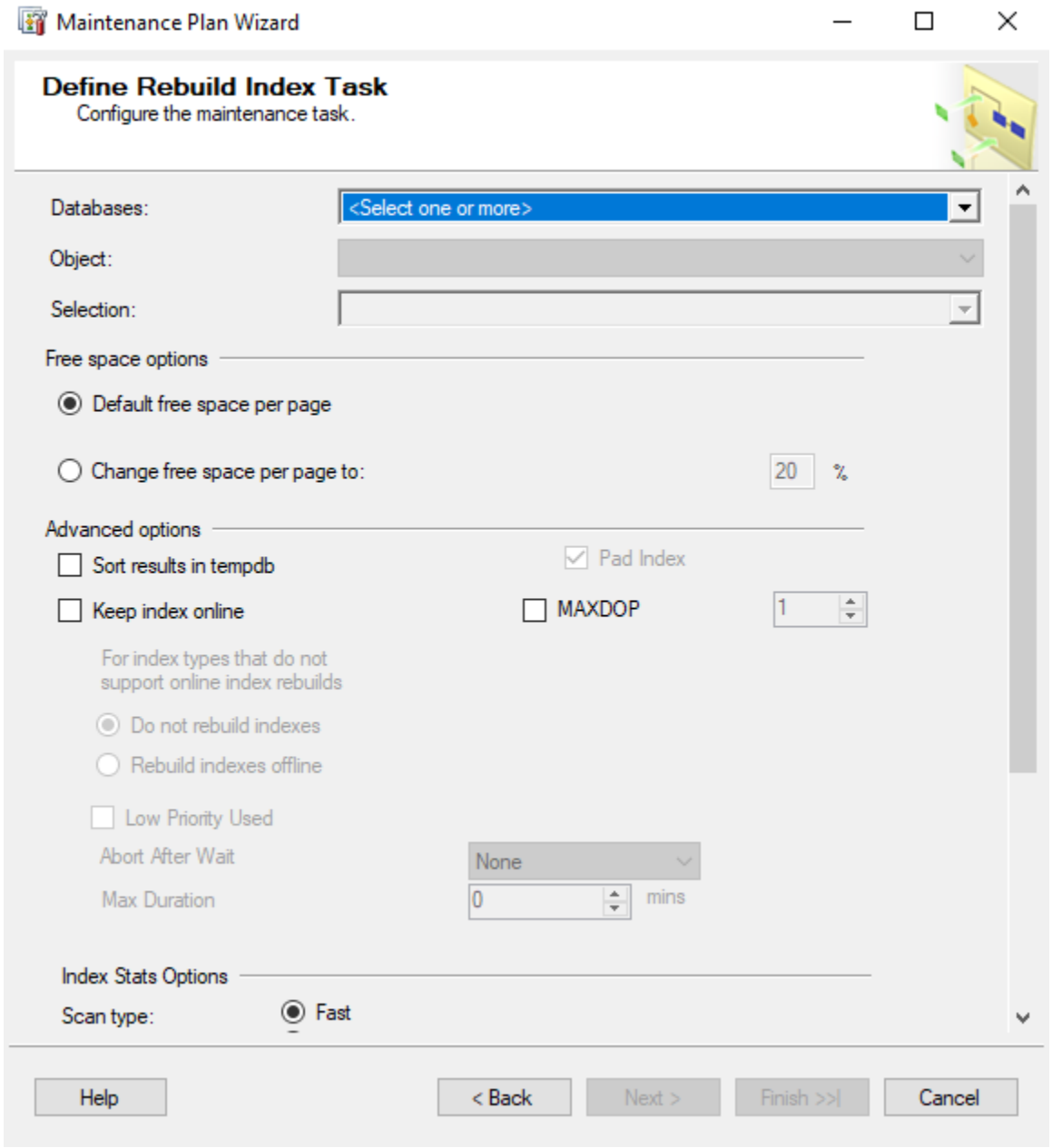
Click **<Select one or more>** databases.



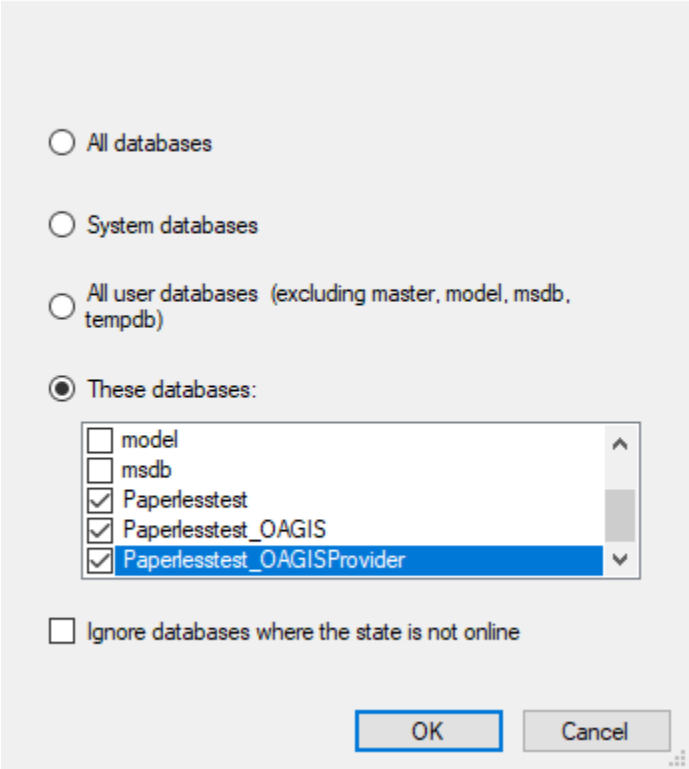
Select **These databases**.
Select the MES SQL databases.
NOTE: The names of your MES SQL databases may be different than shown above.
NOTE: If you have multiple environments, select all MES SQL databases.
Click **OK**.



Click **Next**.

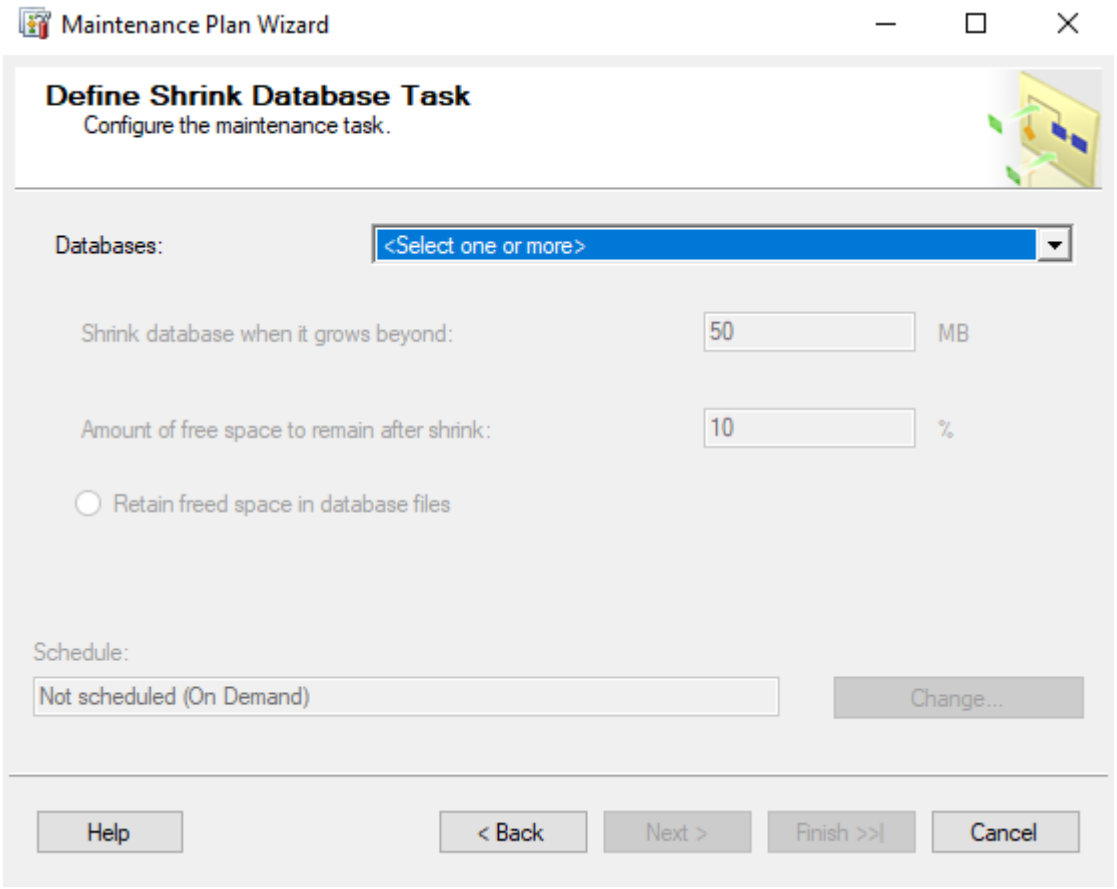


Click **<Select one or more>** databases.

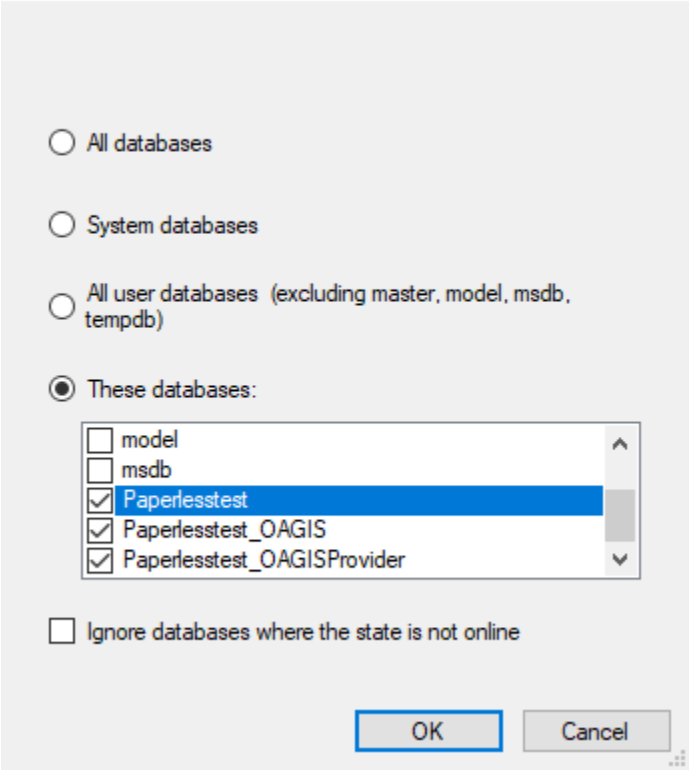


Select **These databases**.
Select the MES SQL databases.
NOTE: The names of your MES SQL databases may be different than shown above.
NOTE: If you have multiple environments, select all MES SQL databases.
Click **OK**.

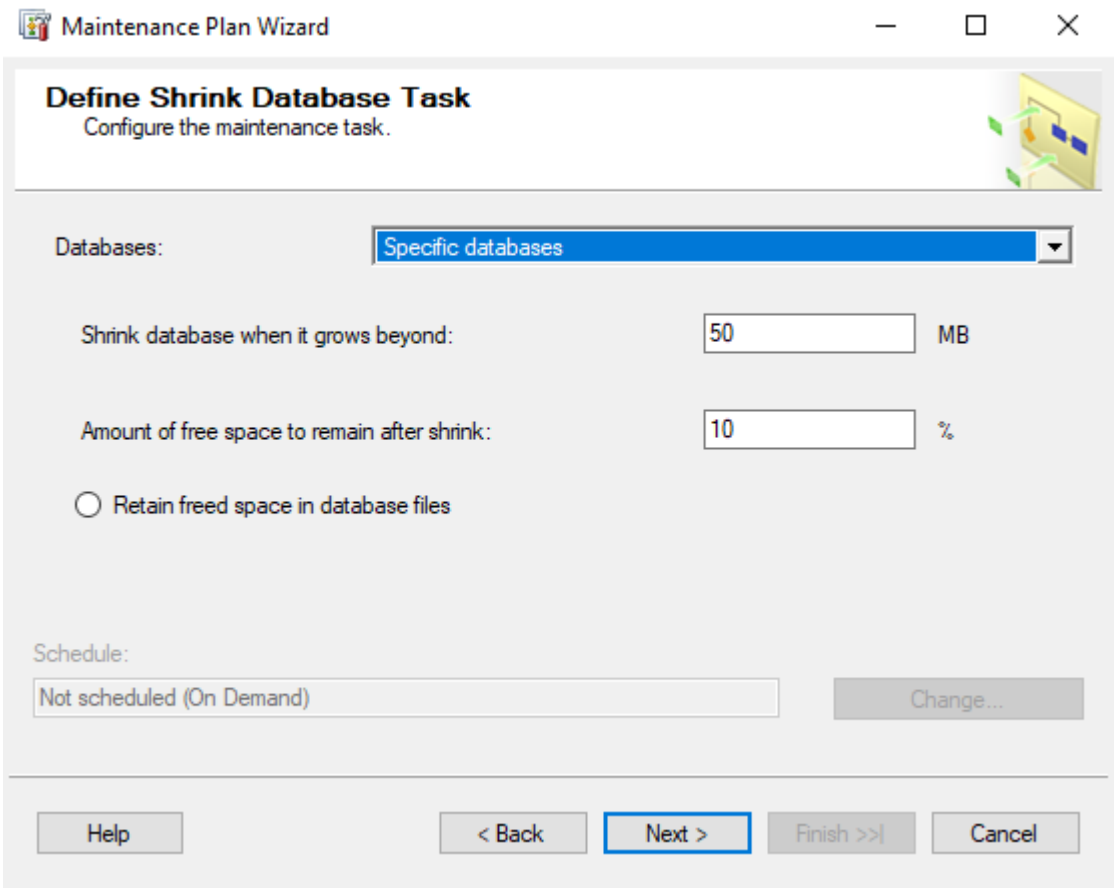
Click **Next**.



Click **<Select one or more>** databases.



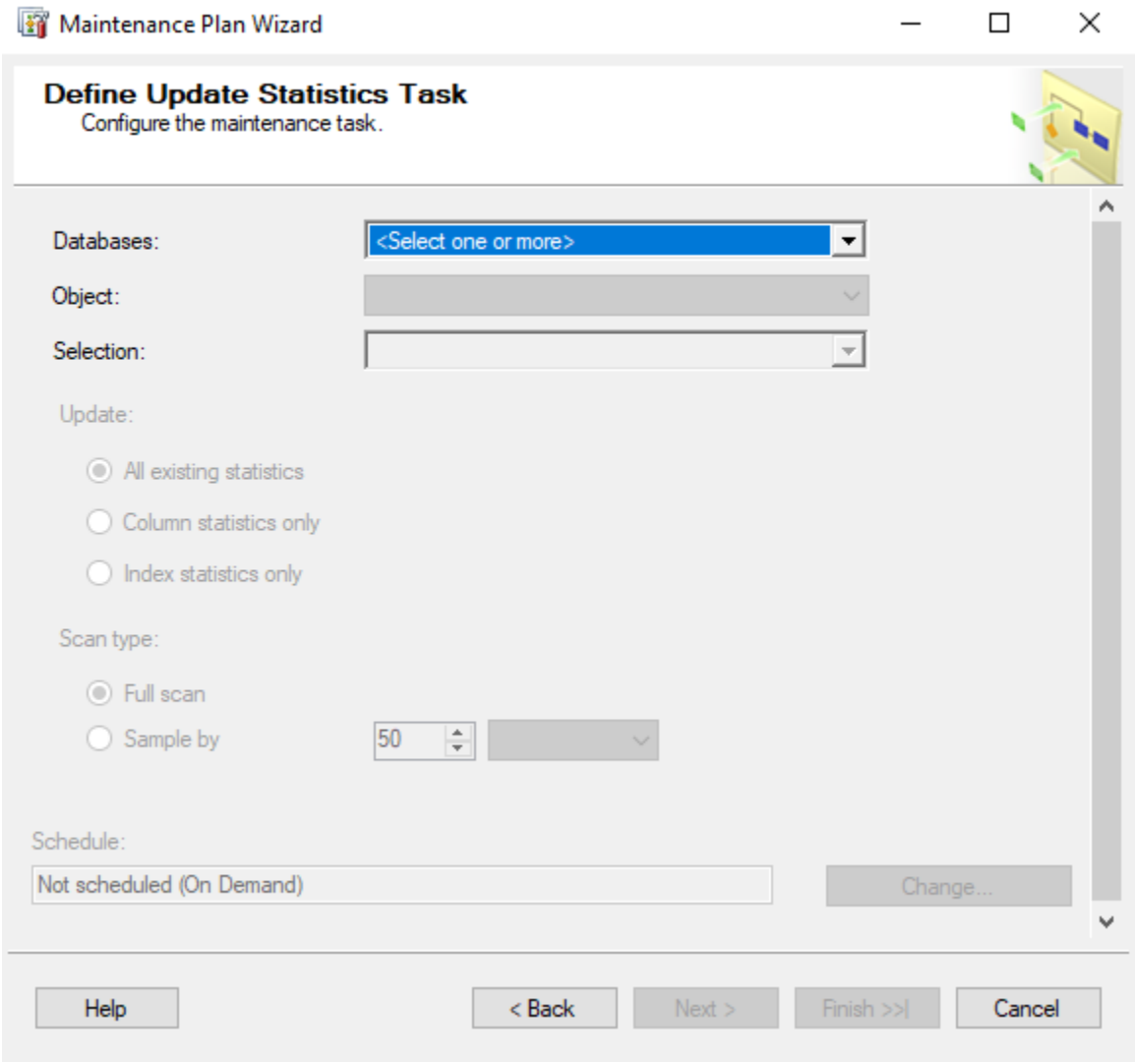
Select **These databases**.
Select the MES SQL databases.
NOTE: The names of your MES SQL databases may be different than shown above.
NOTE: If you have multiple environments, select all MES SQL databases.
Click **OK**.



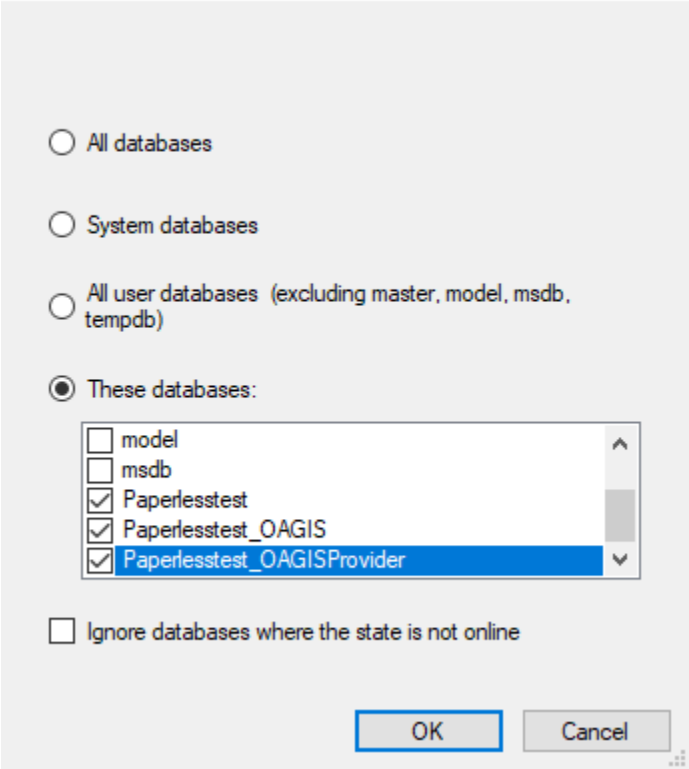
If desired, change the amount of free space to remain after shrink.

Choose whether or not to retain the freed space.

Click **Next**.

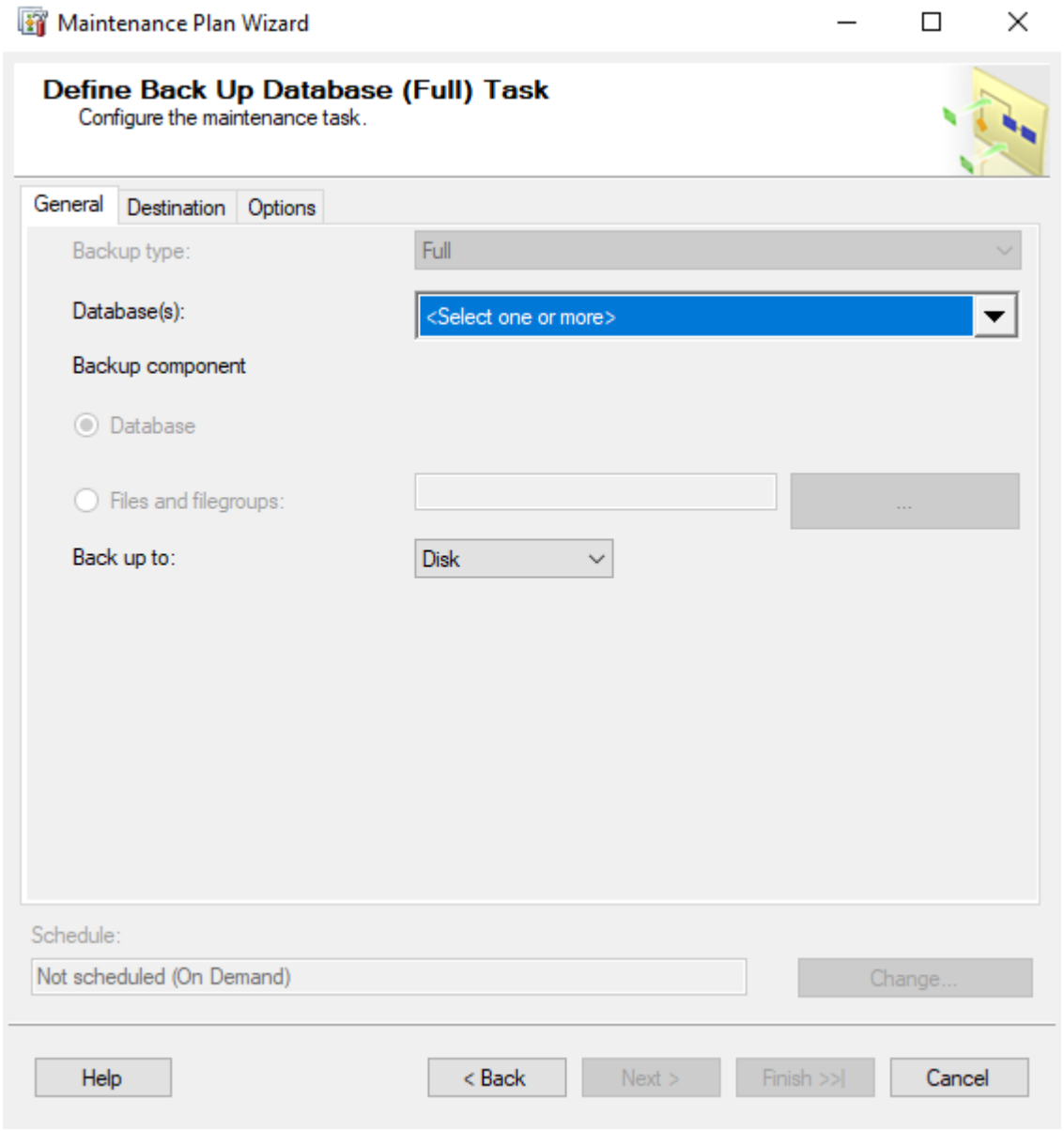


Click **<Select one or more>** databases.

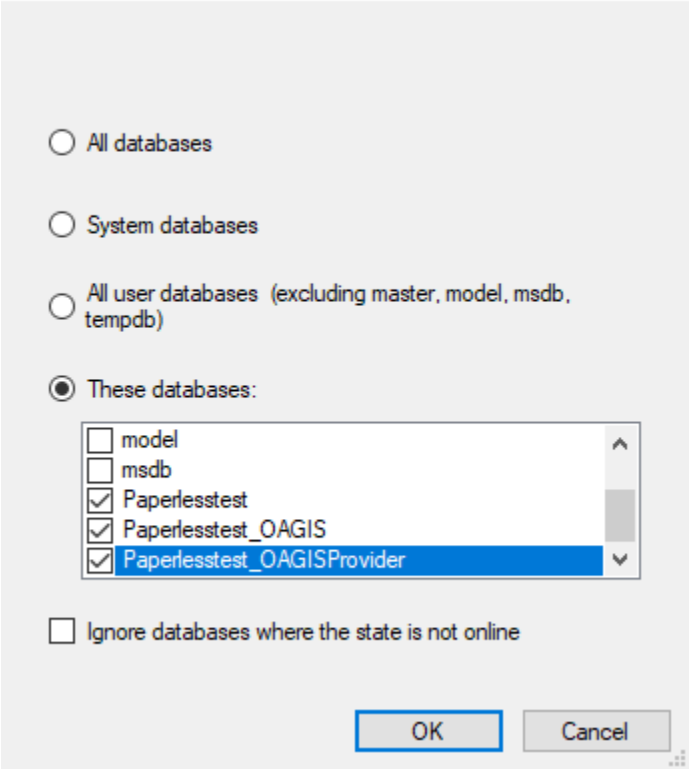


Select **These databases**.
Select the MES SQL databases.
NOTE: The names of your MES SQL databases may be different than shown above.
NOTE: If you have multiple environments, select all MES SQL databases.
Click **OK**.

Click **Next**.



Click **<Select one or more>** databases.



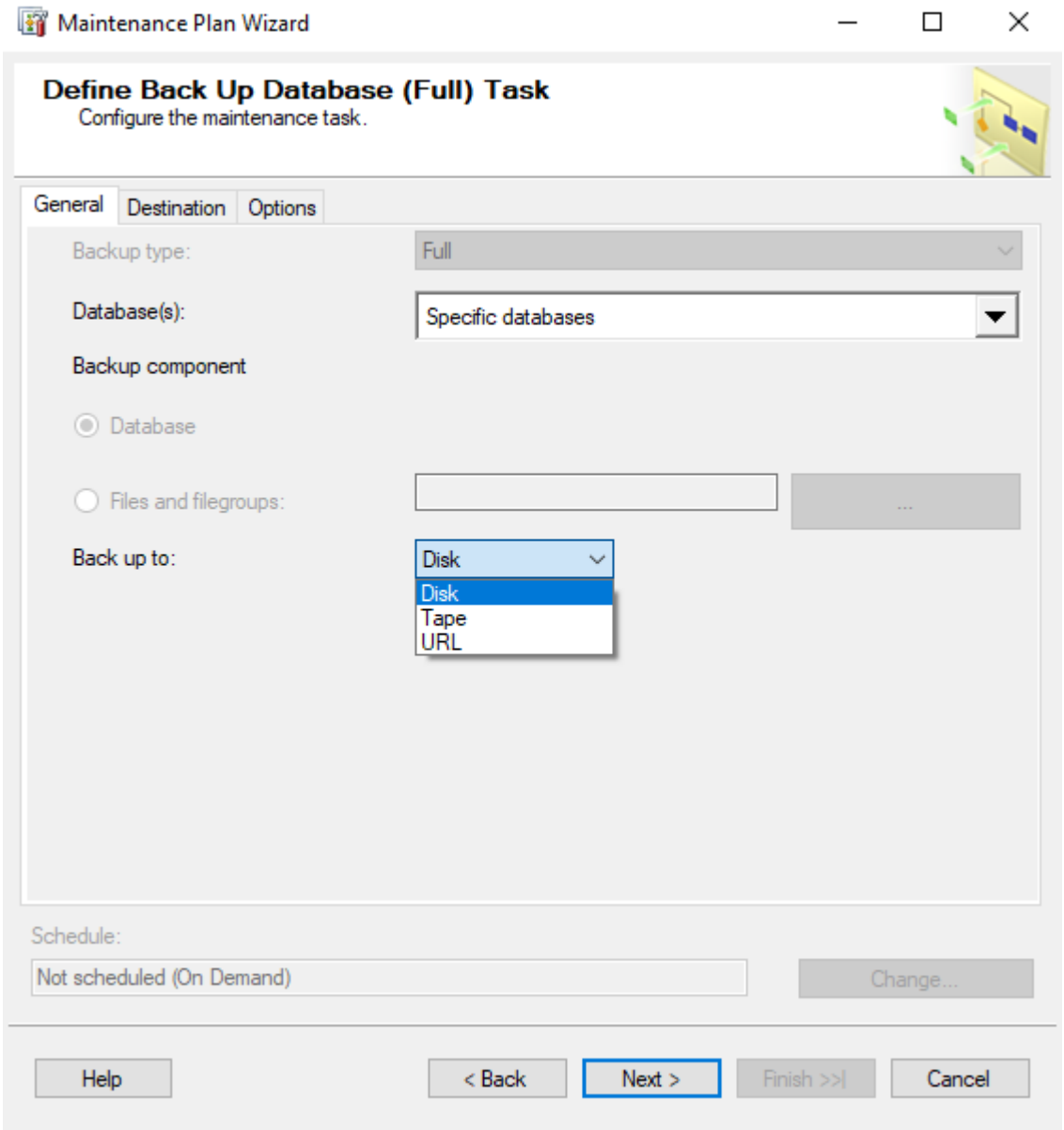
Select **These databases**.

Select the MES SQL databases.

NOTE: The names of your MES SQL databases may be different than shown above.

NOTE: If you have multiple environments, select all MES SQL databases.

Click **OK**.

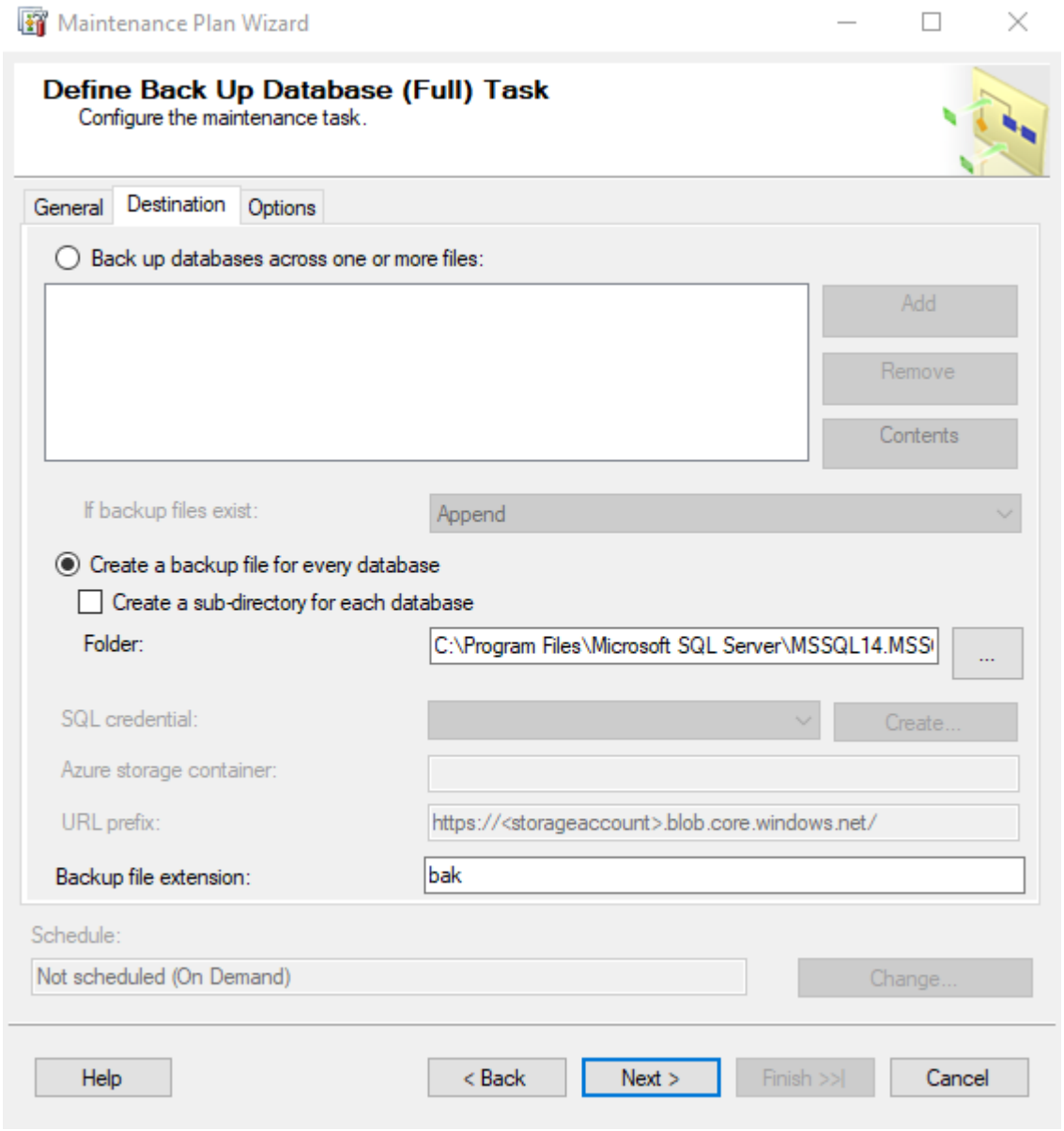


Select the backup destination—**Disk** or **Tape**.

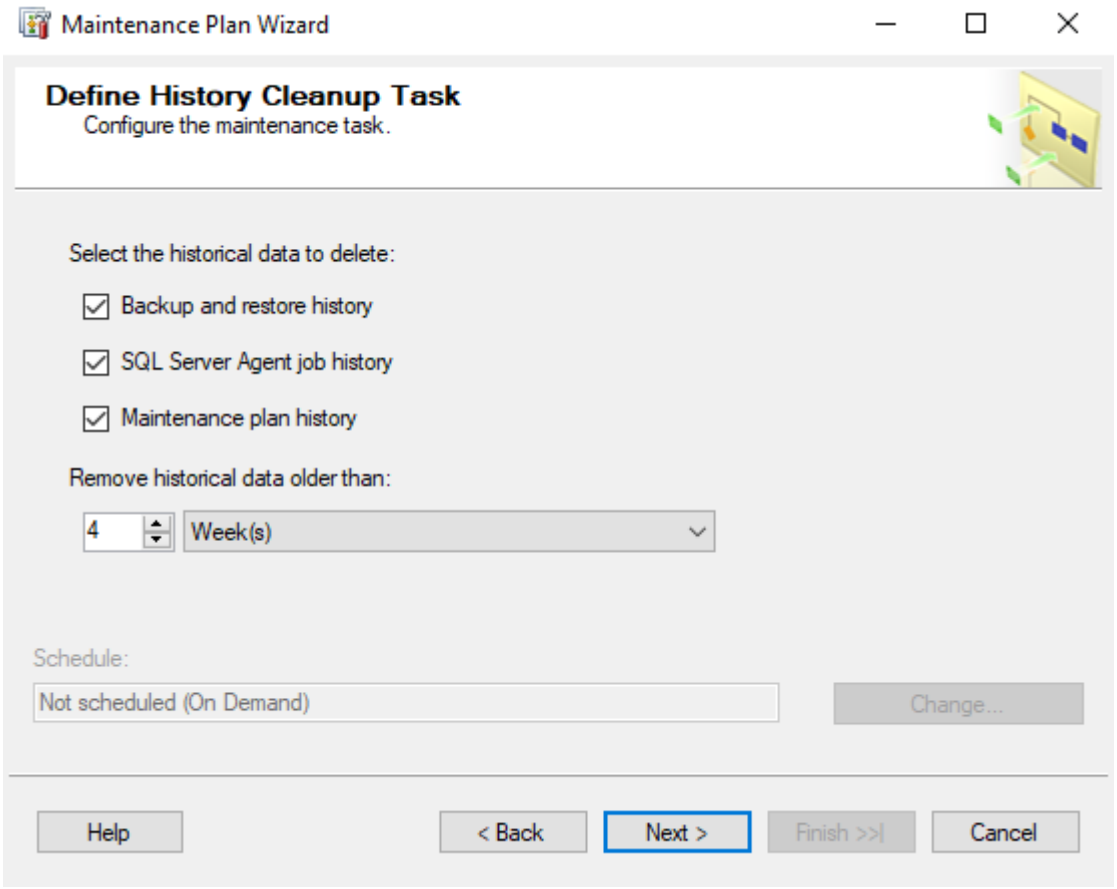
Specify the appropriate information for either a disk or tape backup.

For easier organization, select **Create a sub-directory for each database**.

Select **Verify backup integrity** to ensure the database can be restored from the media.


Maintenance Plan Wizard
Define Back Up Database (Full) Task
Configure the maintenance task.
General
Destination
Options
Back up databases across one or more files:
Add
Remove
Contents
If backup files exist:
Append
Create a backup file for every database
Create a sub-directory for each database
Folder:
C:\Program Files\Microsoft SQL Server\MSSQL14.MSSI
...
SQL credential:
Create...
Azure storage container:
URL prefix:
https://<storageaccount>.blob.core.windows.net/
Backup file extension:
bak
Schedule:
Not scheduled (On Demand)
Change...
Help
< Back
Next >
Finish >>|
Cancel

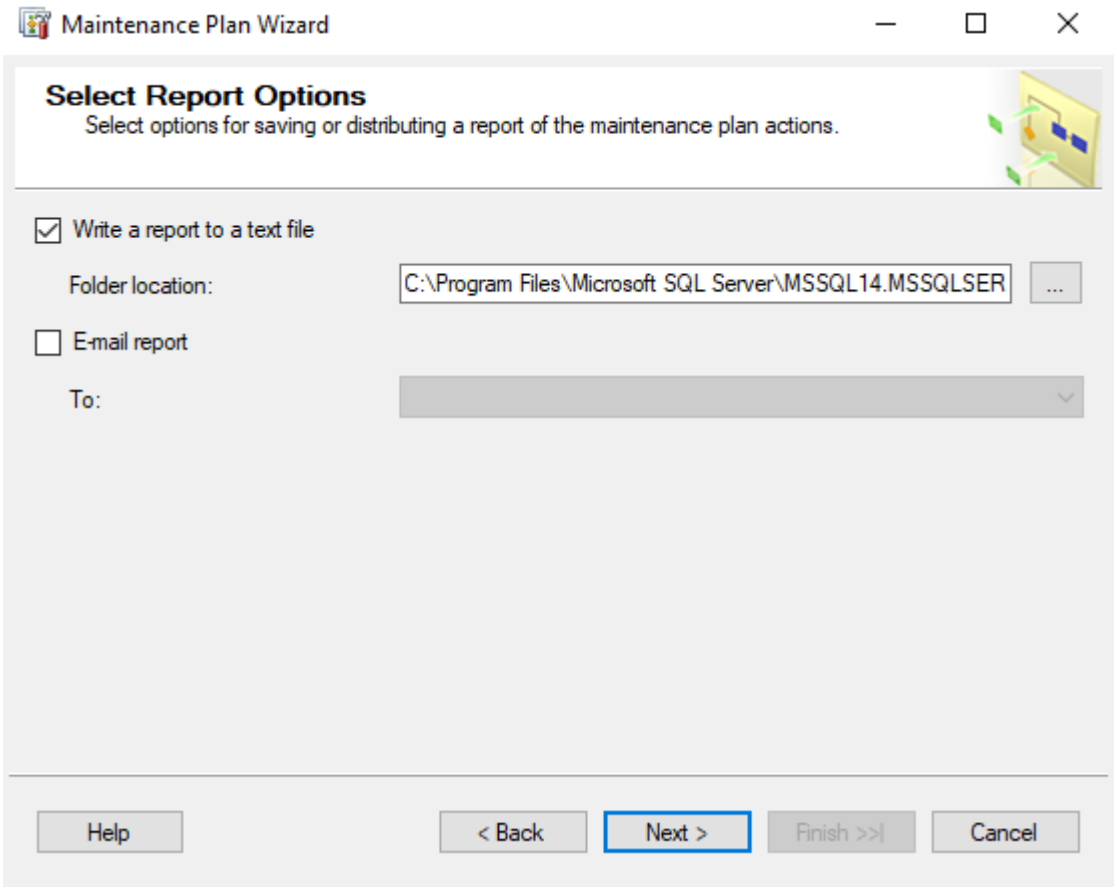
Click **Next**.



Select the desired historical data to delete.

Select the desired retention period.

Click **Next**.



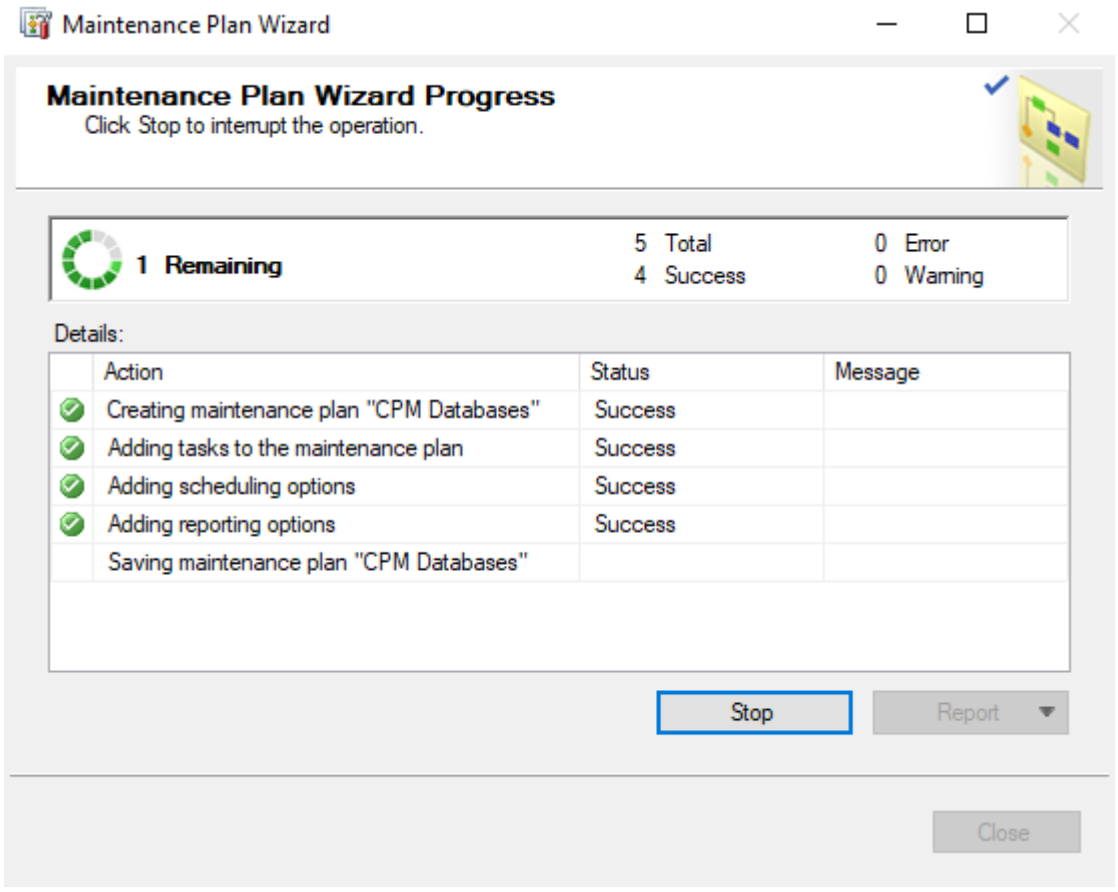
If you wish to Write a report to a text file, define the folder location.

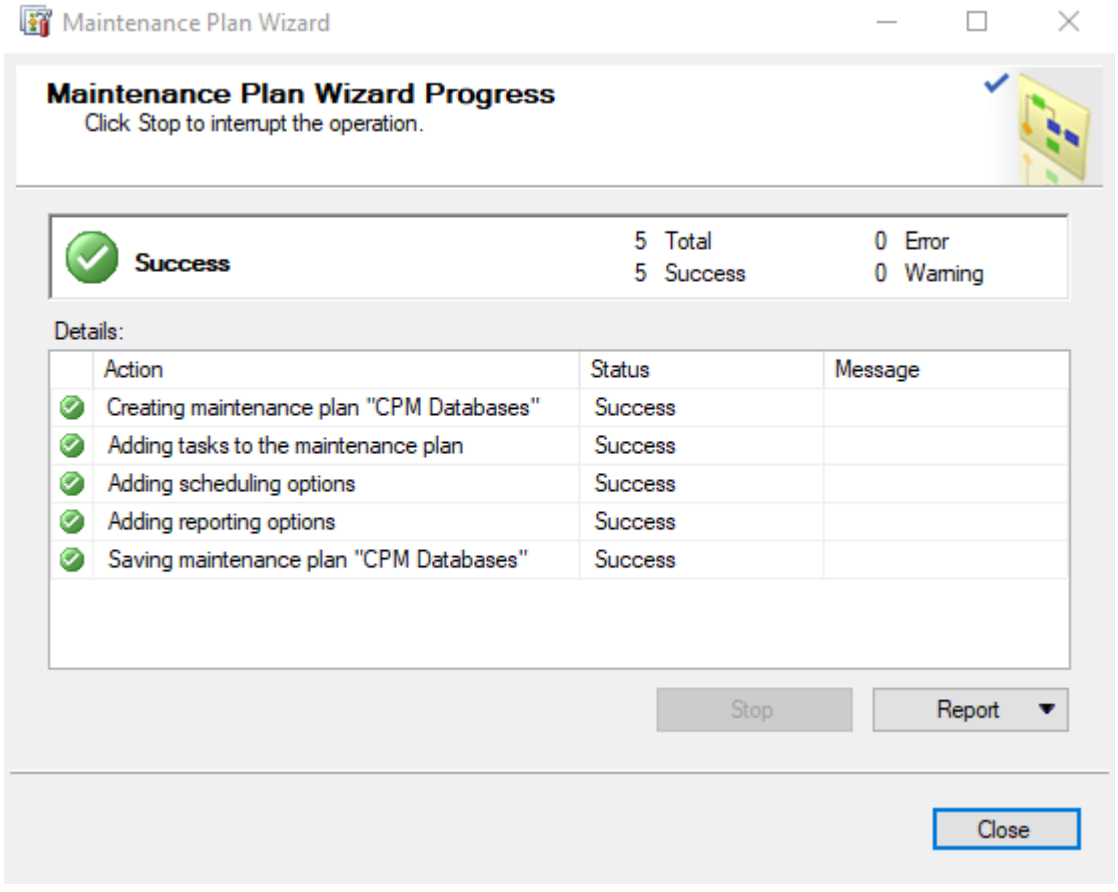
Select the report options as desired.

TIP: To send an e-mail report, configure SQL Server 2005's Database Mail and a SQL Server Agent Operator first. Refer to SQL Server 2005 Books Online.

Click **Next**.

On the **Complete the Wizard** screen, review the Maintenance Plan.
Click **Finish**.


Maintenance Plan Wizard
Maintenance Plan Wizard Progress
Click Stop to interrupt the operation.
1 Remaining
5 Total
4 Success
0 Error
0 Warning
Details:
Action
Status
Message
Creating maintenance plan "CPM Databases"
Success
Adding tasks to the maintenance plan
Success
Adding scheduling options
Success
Adding reporting options
Success
Saving maintenance plan "CPM Databases"
Stop
Report
Close


Maintenance Plan Wizard
Maintenance Plan Wizard Progress
Click Stop to interrupt the operation.
Success
5 Total
5 Success
0 Error
0 Warning
Details:
Action
Status
Message
Creating maintenance plan "CPM Databases"
Success
Adding tasks to the maintenance plan
Success
Adding scheduling options
Success
Adding reporting options
Success
Saving maintenance plan "CPM Databases"
Success
Stop
Report
Close

Click **Close**.

This maintenance plan will create one SQL Server Agent Job.

To view the SQL Server Agent Jobs:

1. Expand **SQL Server Agent**.
2. Click **Jobs**.
3. If the jobs do not appear, right-click in the right pane and select **Refresh**.

NOTE: SQL Server Agent must be running for the scheduled jobs to execute.

TIP: Refer to **Backing Up and Restoring Databases** in SQL Server 2005 Books Online for additional information.

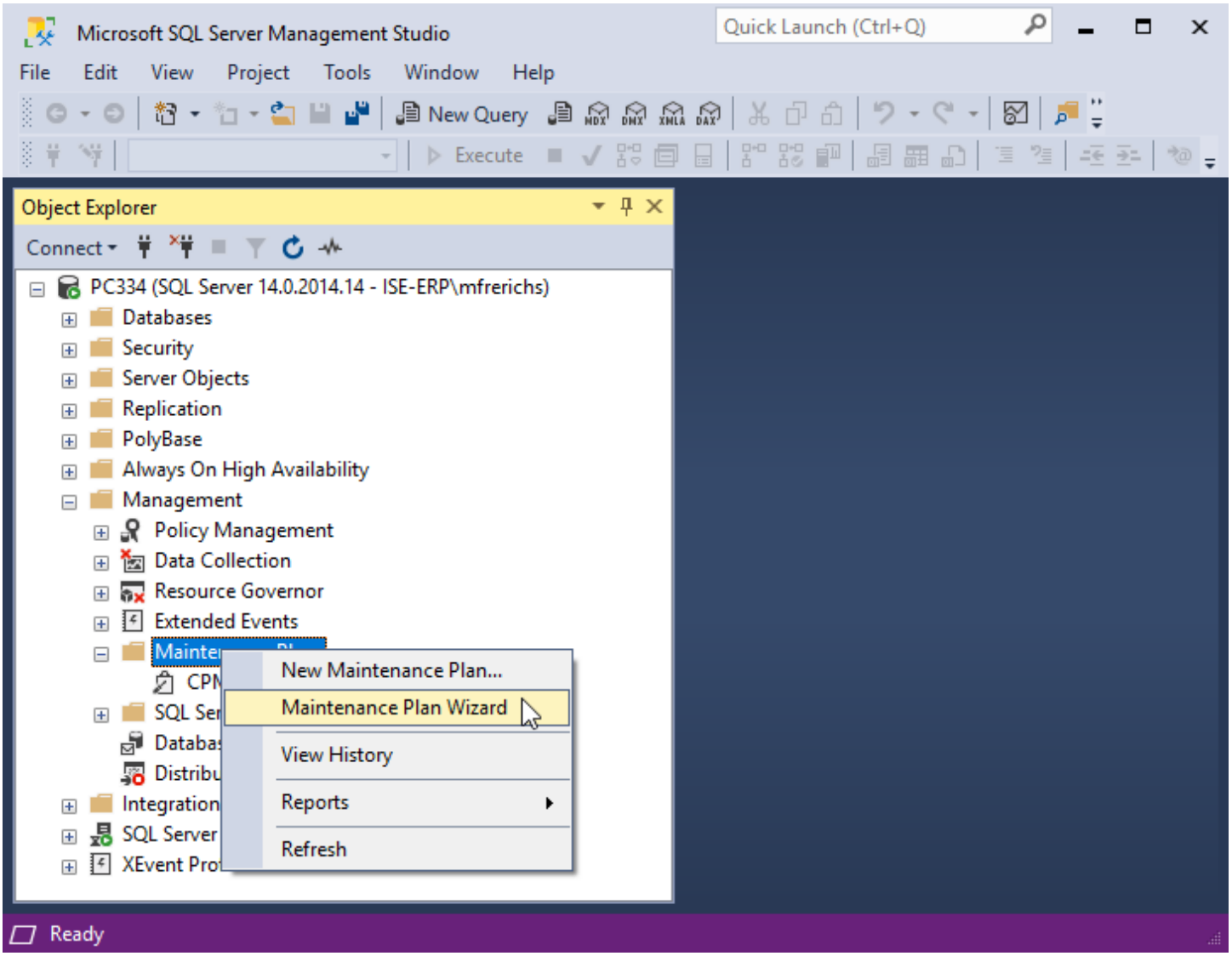
PLAN 2 – TRANSACTION LOG BACKUP

The purpose of this database maintenance plan is to provide a transaction log backup of all MES SQL databases.

- Every Sunday at 2:00 AM, Transaction Log Backup.

NOTE: This is not designed to be your sole backup strategy or disaster recovery plan.

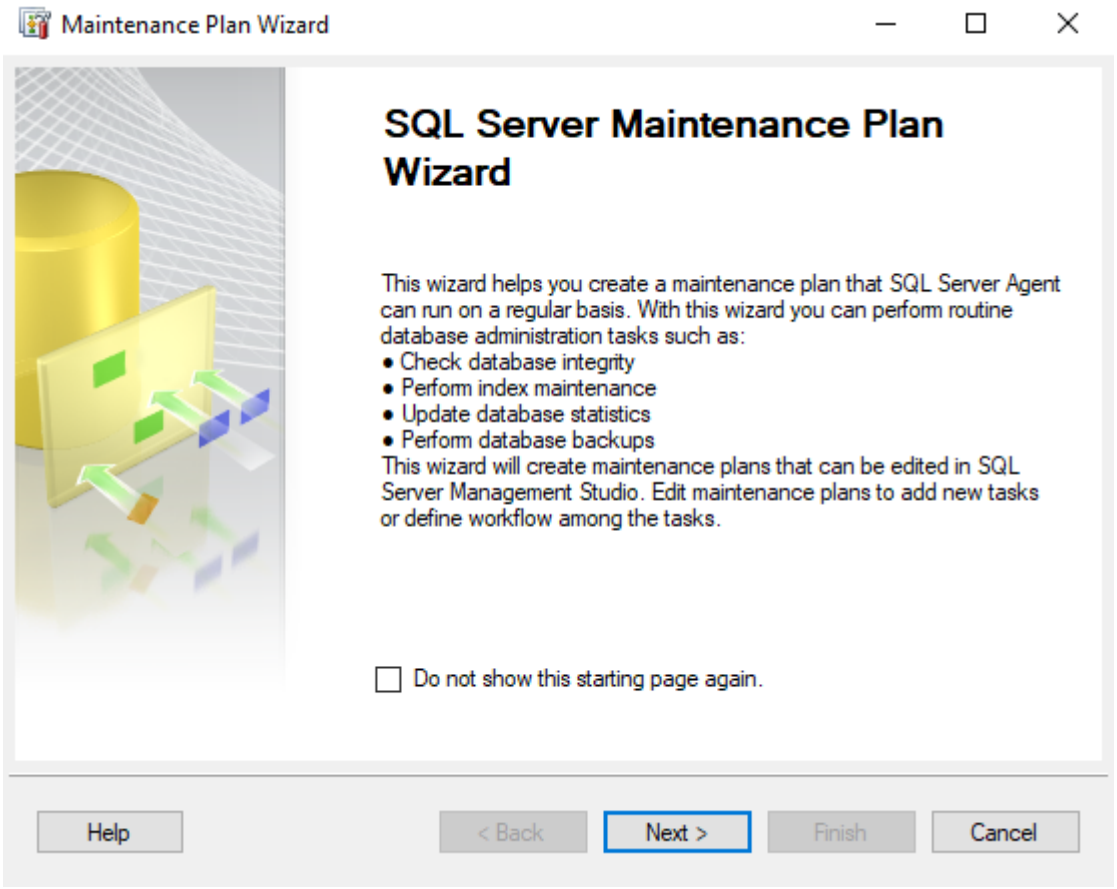
In Microsoft SQL Server Management Studio:



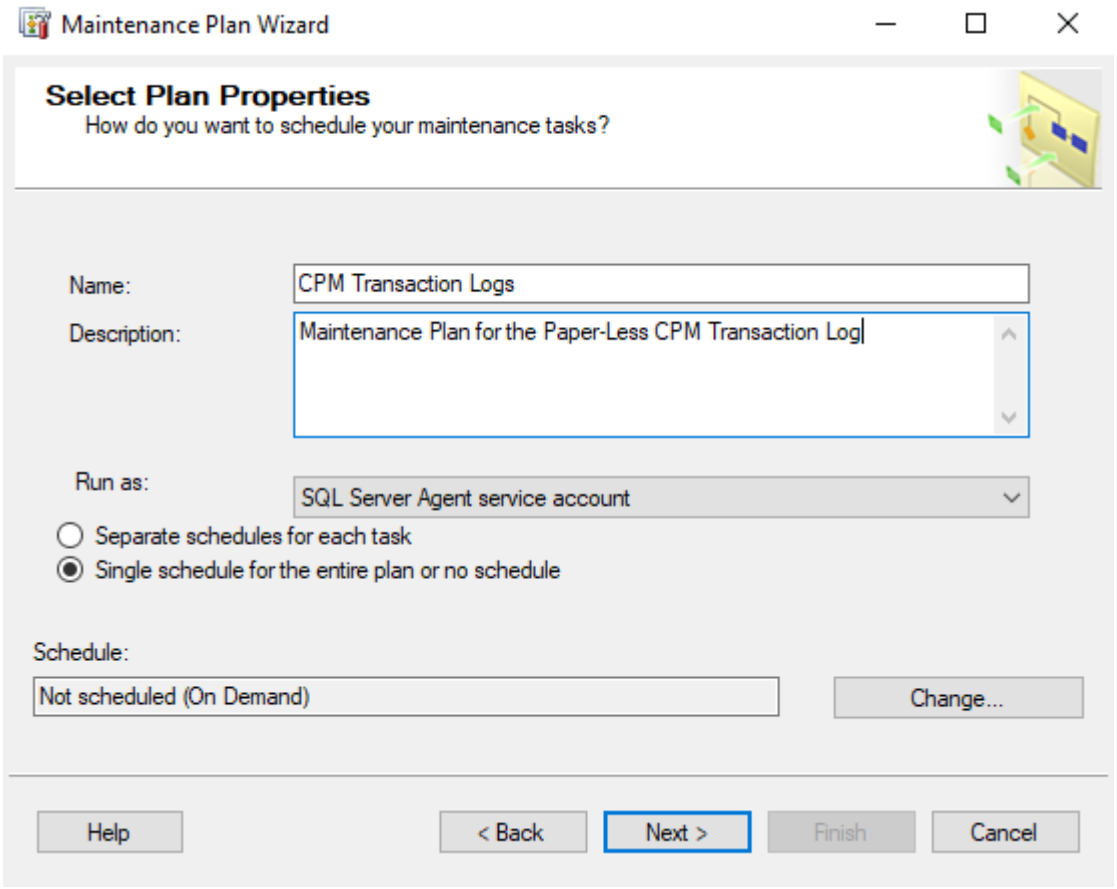
Expand the **Management** folder.

Right-click on **Maintenance Plans** and select **Maintenance Plan Wizard.**

This will start the **SQL Server Maintenance Plan Wizard**.


Maintenance Plan Wizard
SQL Server Maintenance Plan Wizard
This wizard helps you create a maintenance plan that SQL Server Agent can run on a regular basis. With this wizard you can perform routine database administration tasks such as:
• Check database integrity
• Perform index maintenance
• Update database statistics
• Perform database backups
This wizard will create maintenance plans that can be edited in SQL Server Management Studio. Edit maintenance plans to add new tasks or define workflow among the tasks.
Do not show this starting page again.
Help
< Back
Next >
Finish
Cancel

Click **Next**.

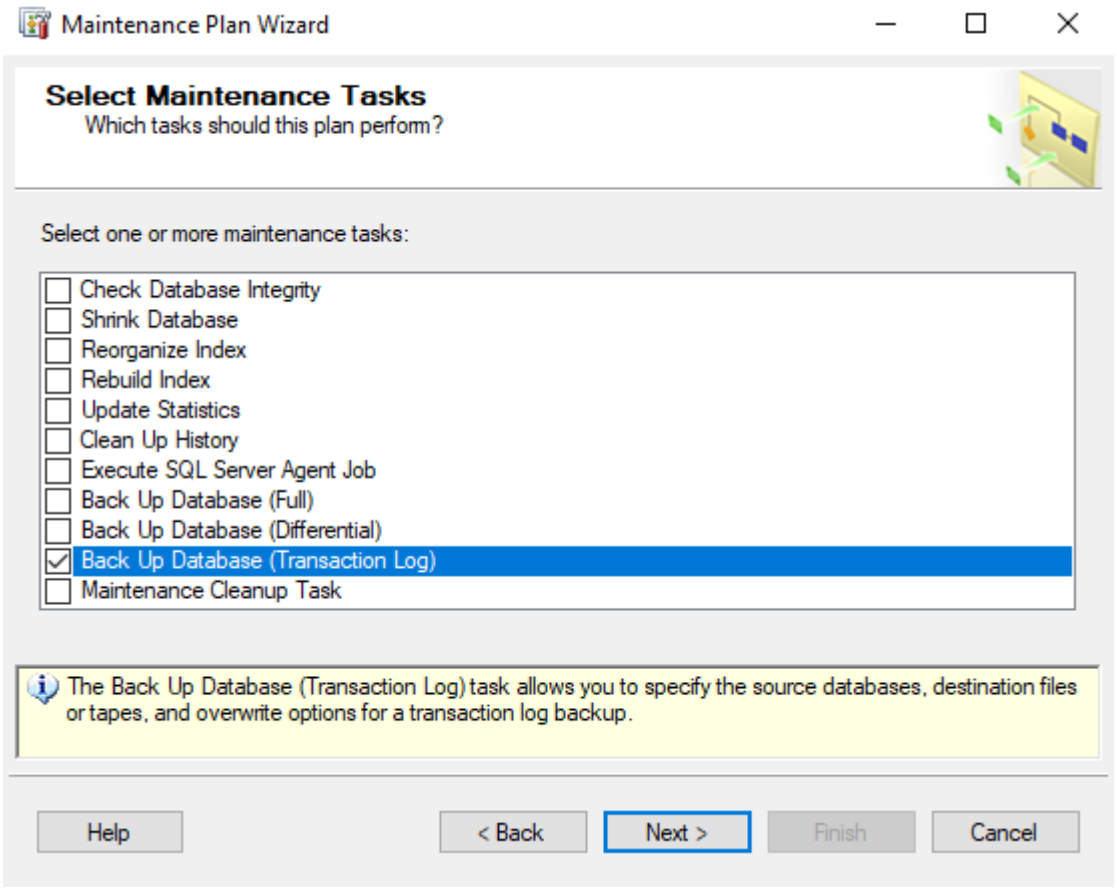


Enter a **Name**. For example: MES Transaction Logs.

Enter a **Description**.

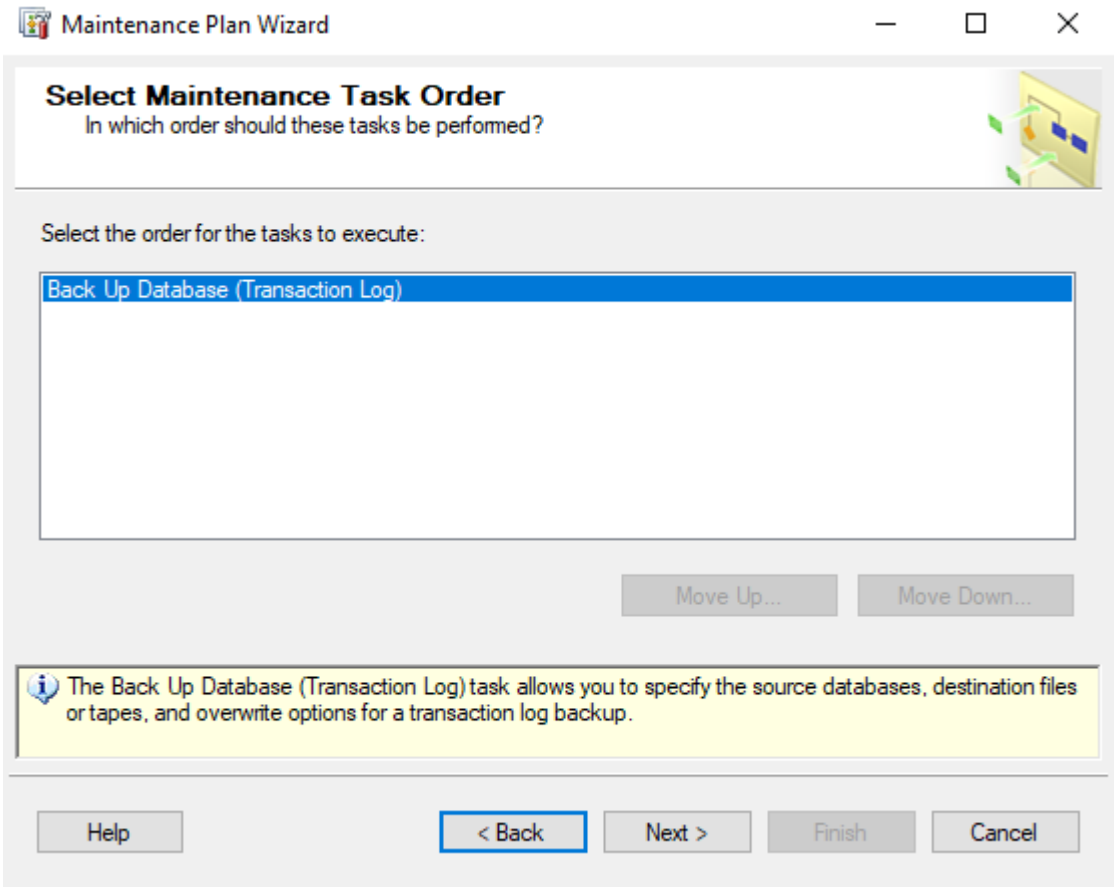
Select **Authentication** method.

Click **Next**.

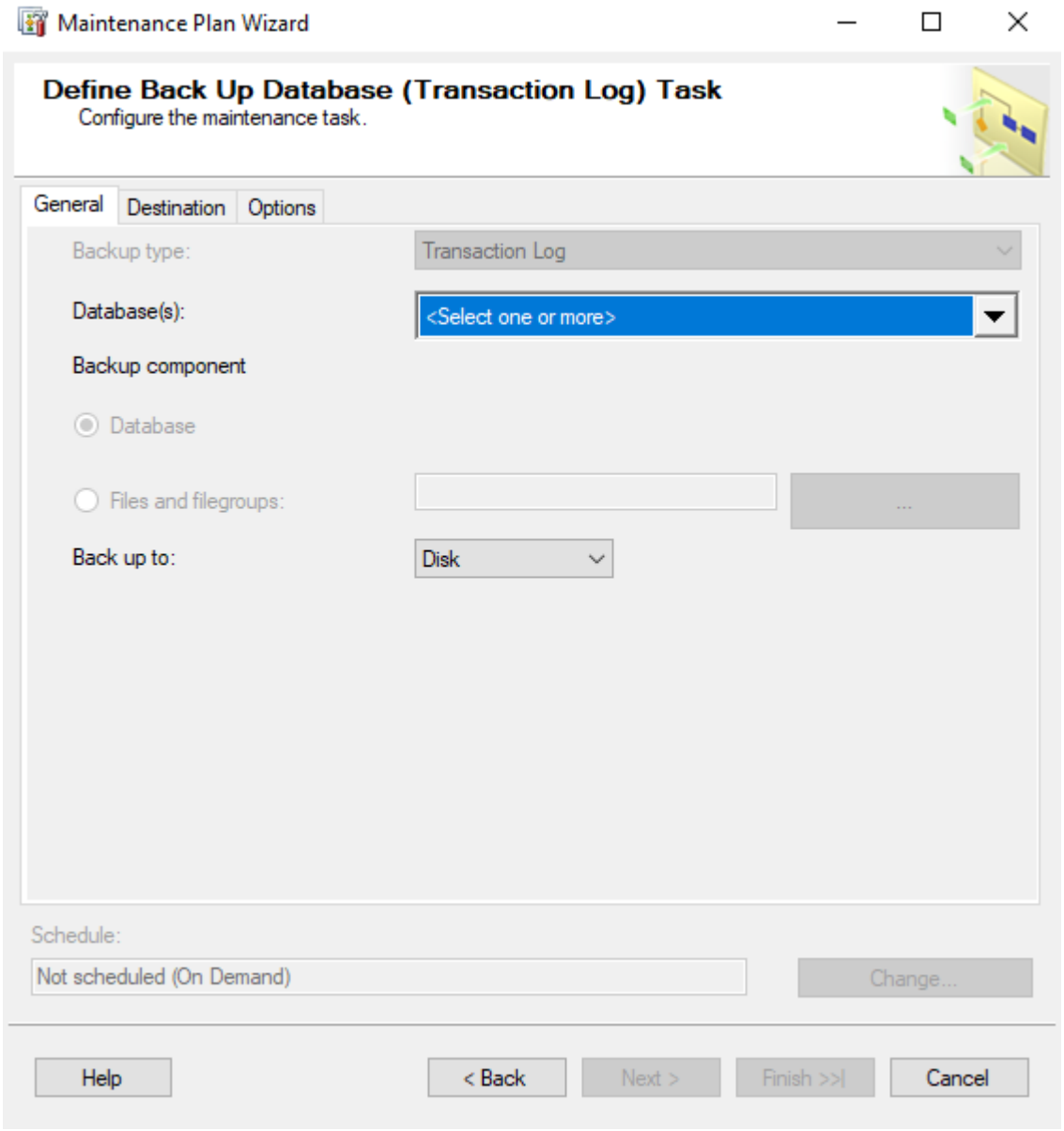


Select **Back Up Database (Transaction Log)** maintenance task.

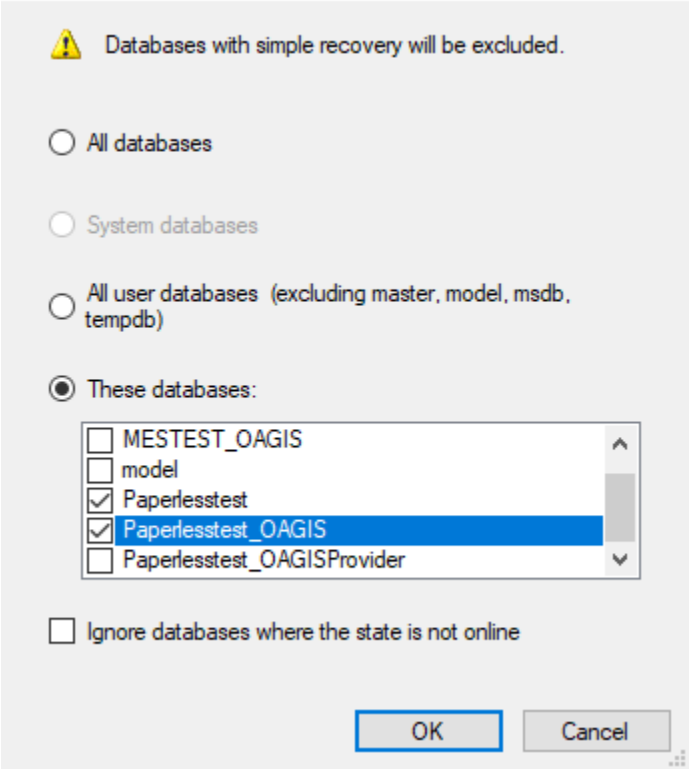
Click **Next**.


Maintenance Plan Wizard
Select Maintenance Task Order
In which order should these tasks be performed?
Select the order for the tasks to execute:
Back Up Database (Transaction Log)
Move Up...
Move Down...
The Back Up Database (Transaction Log) task allows you to specify the source databases, destination files or tapes, and overwrite options for a transaction log backup.
Help
< Back
Next >
Finish
Cancel

Click **Next**.



Click **<Select one or more>** databases.

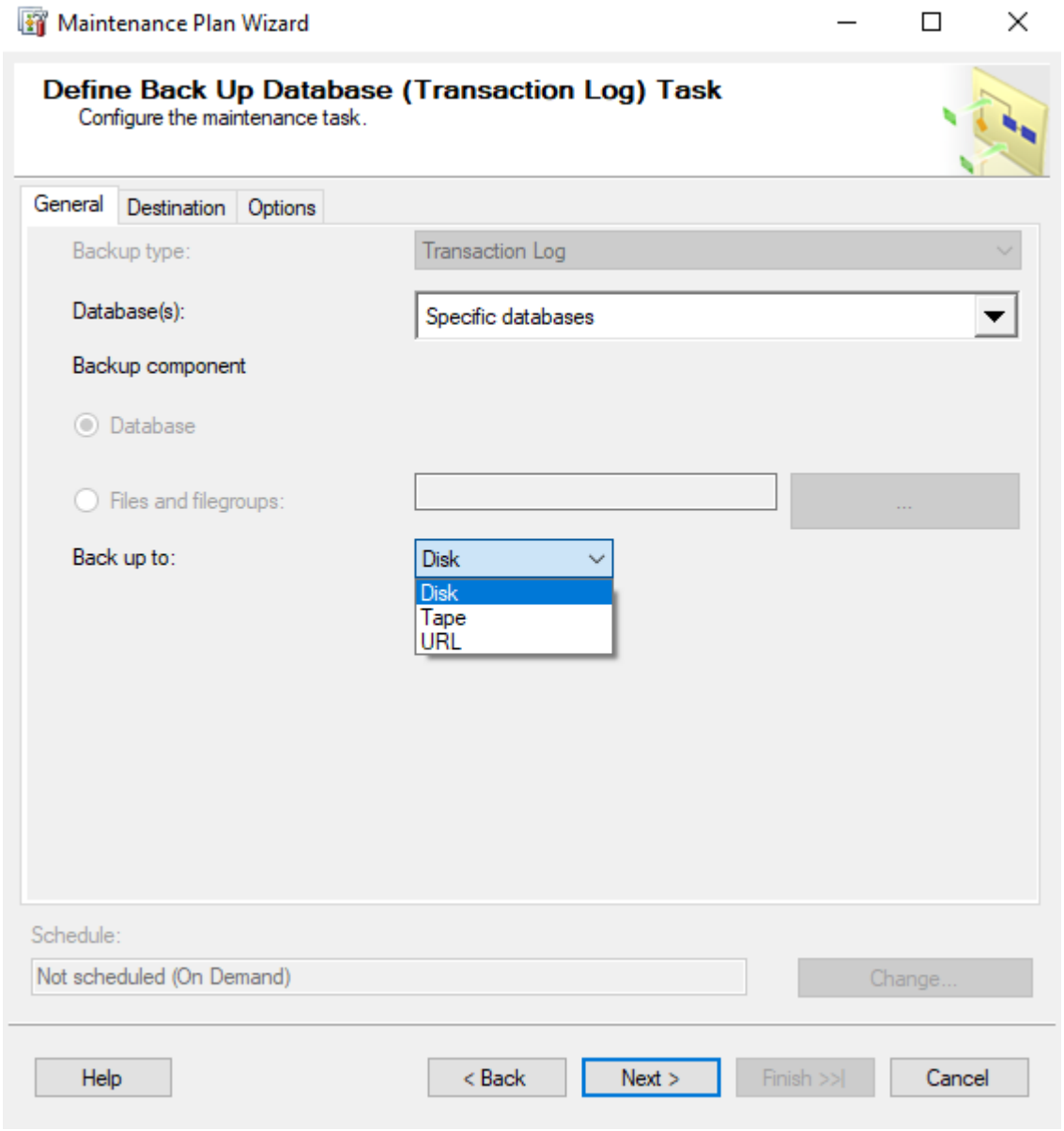


Select **These databases**.
Select the MES SQL databases.

NOTE: The names of your MES SQL databases may be different than shown above.
NOTE: If you have multiple environments, select all MES SQL databases.

IMPORTANT: Do NOT select the MES_InforXA (or <database root name>_InforXA) databases. Only databases that are set to use SQL Server's FULL recovery model can have their transaction log backed up. MES_InforXA database is usually set to SIMPLE recovery model and therefore, its transaction log cannot be backed up.

Click **OK**.



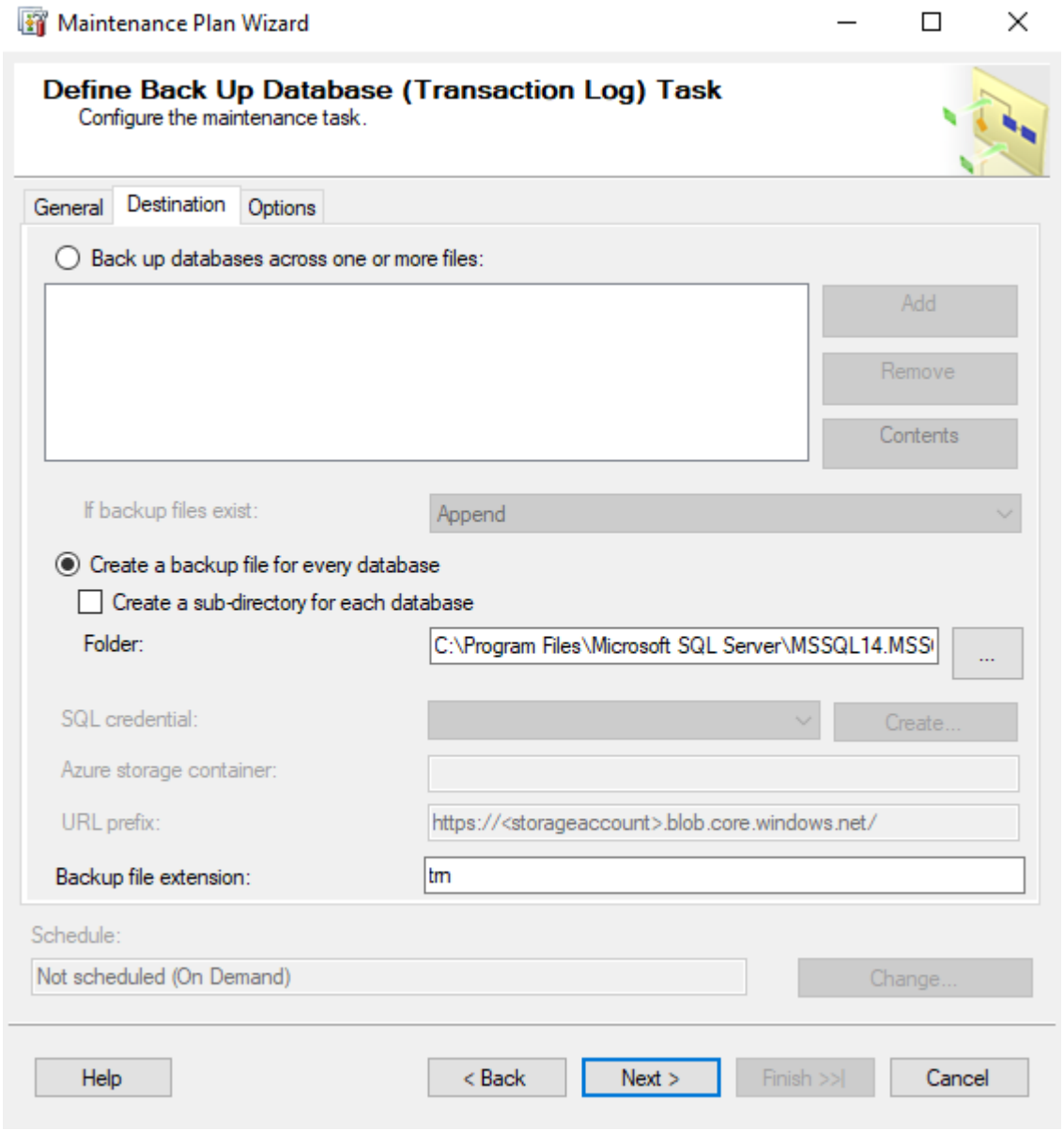
Select the backup destination—**Disk** or **Tape**.
Specify the appropriate information for either a disk or tape backup.

If the transaction log backups are being kept for disaster recovery purposes:

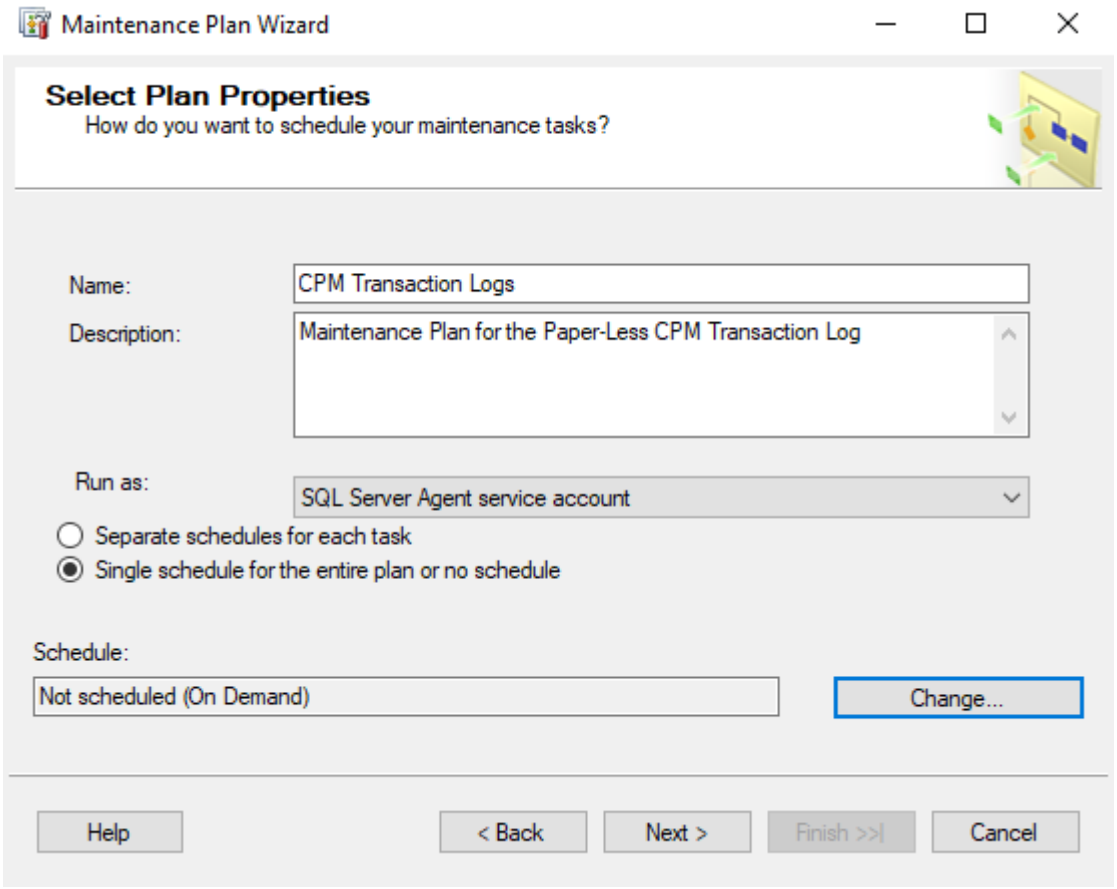
For easier organization, select **Create a sub-directory for each database**.
Select **Verify backup integrity** to ensure the database can be restored from the media.

If the transaction log backups are being immediately discarded:

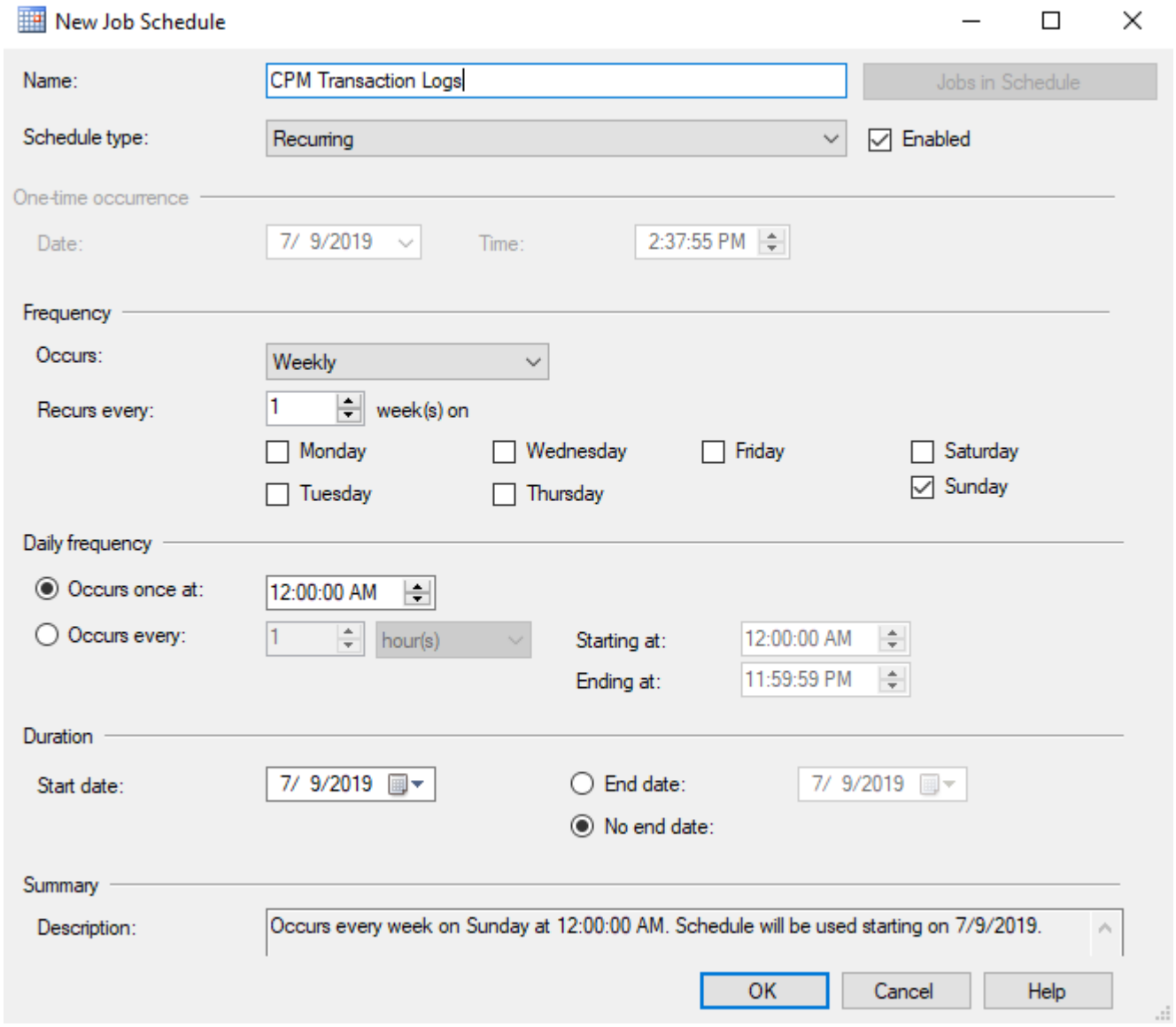
Select **Back up databases across one or more files**.
Click **Add** to add a backup file location.
Select to **Overwrite** the backup file if it exists.
Unselect **Verify backup integrity**.



Click **Back** (Until you reach this screen).



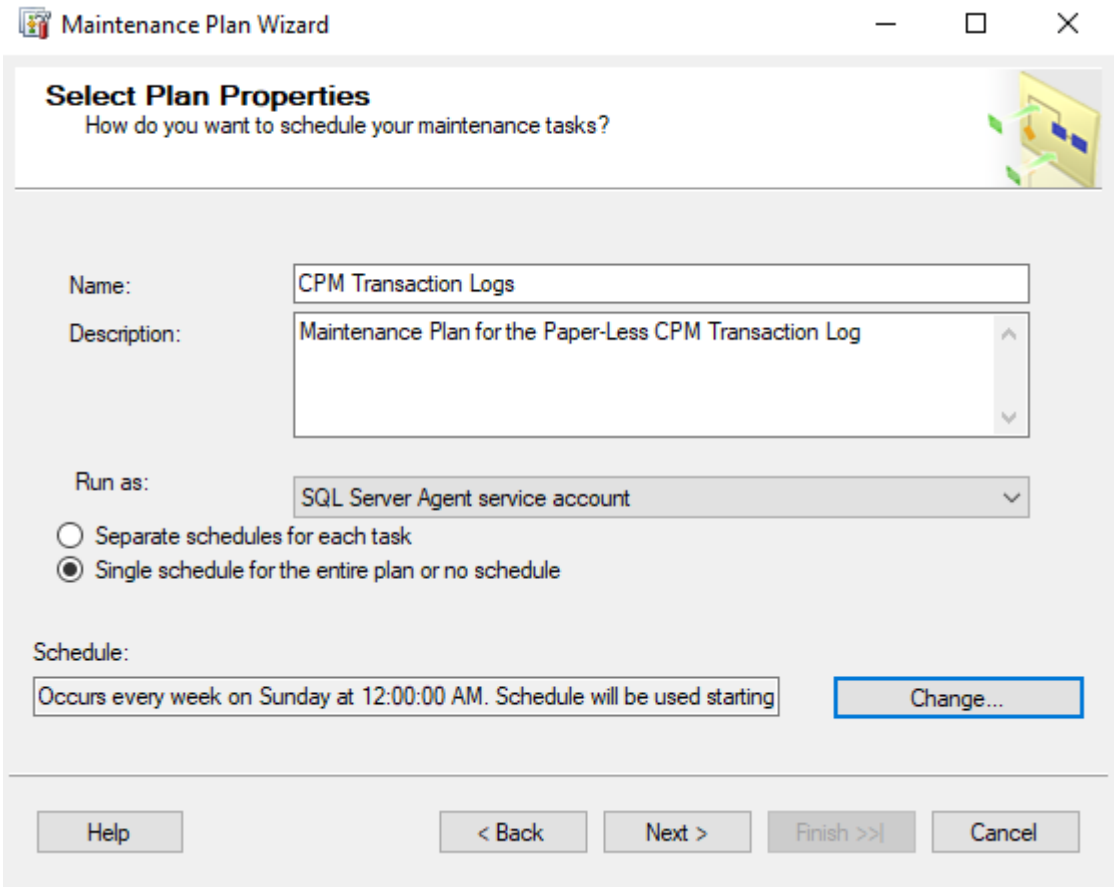
Click **Change**.



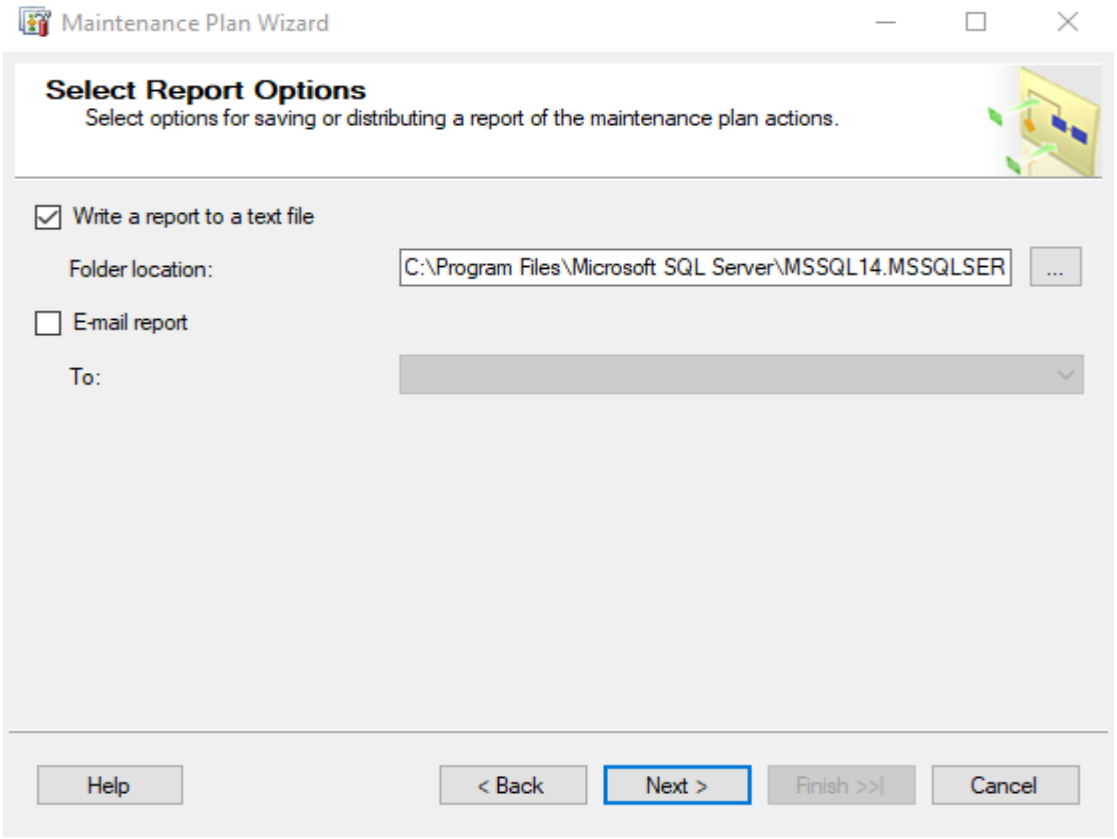
Enter a job schedule **Name**.
Change the **Frequency** as desired.
NOTE: The schedule shown here will backup the transaction logs on Sunday at 2:00 AM.
NOTE: Based on the server's overall job schedule, adjust the time accordingly.
NOTE: Frequency of the Transaction Log Backup is dependent on backup strategy and disaster recovery planning.

1. If you have established a daily backup of the MES SQL databases, this schedule may be changed to once per week or month because its primary purpose is to truncate the database transaction logs and prevent them from growing uncontrollably. The preceding statement is superseded if you wish to execute multiple transaction log backups throughout the day.
2. If you have established a weekly backup of the MES SQL databases, this schedule should be changed to daily. At a minimum, you should backup the transaction logs once per day. For added protection, the daily frequency can be changed as deemed necessary.

NOTE: If you intend to rely on transaction log backups, you must relocate the transaction log backup files to another computer or media as soon as possible. Failure to do so expose the MES SQL databases to loss of data in the event the MES SQL databases need to be restored to a point in time.
Click **OK** to close the **New Job Schedule** window.



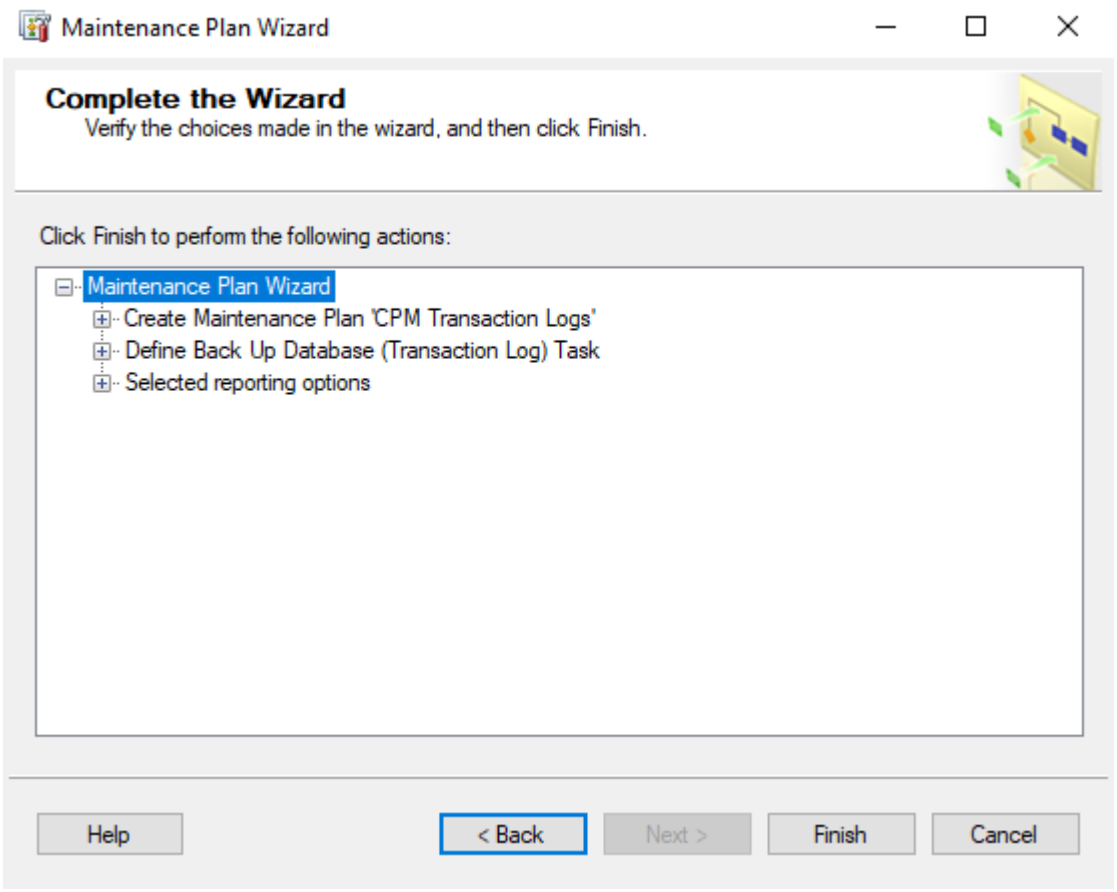
Click **Next** (Until you reach this screen).



Select the report options as desired.

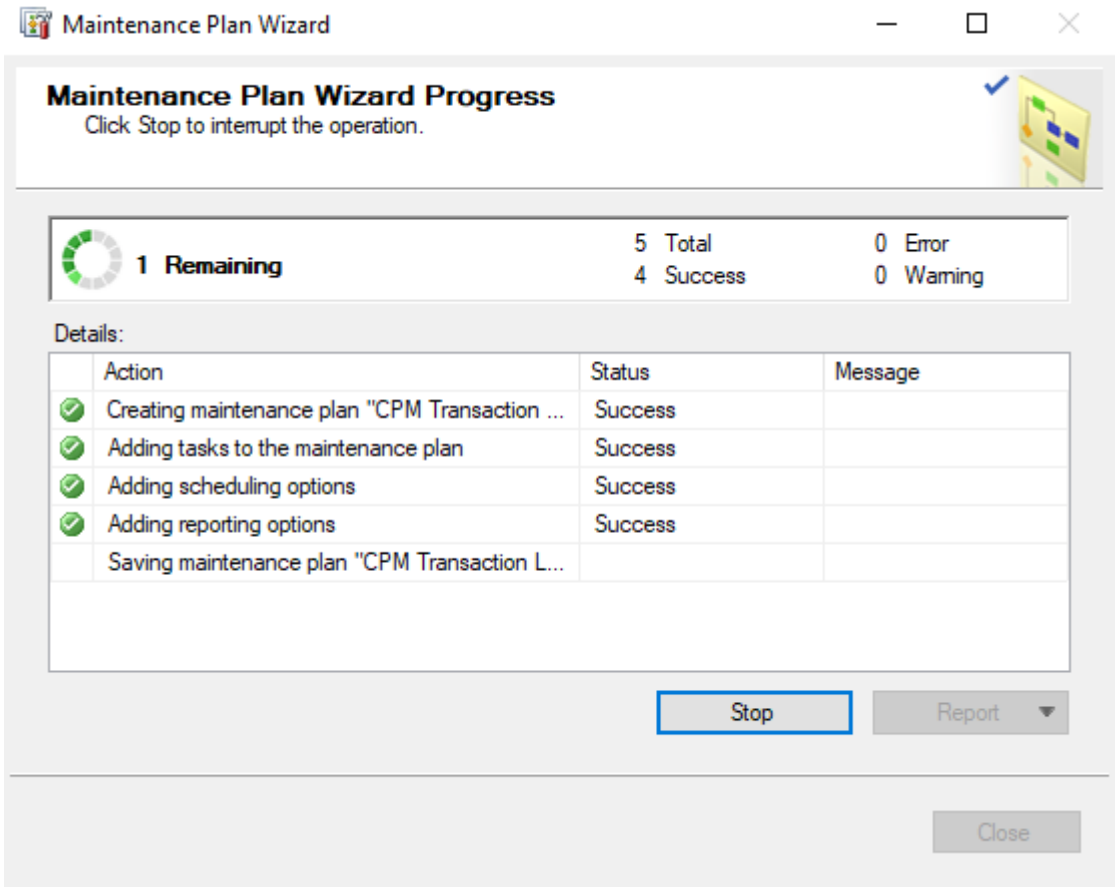
TIP: To send an e-mail report, configure SQL Server 2005's Database Mail and a SQL Server Agent Operator first. Refer to SQL Server 2005 Books Online.

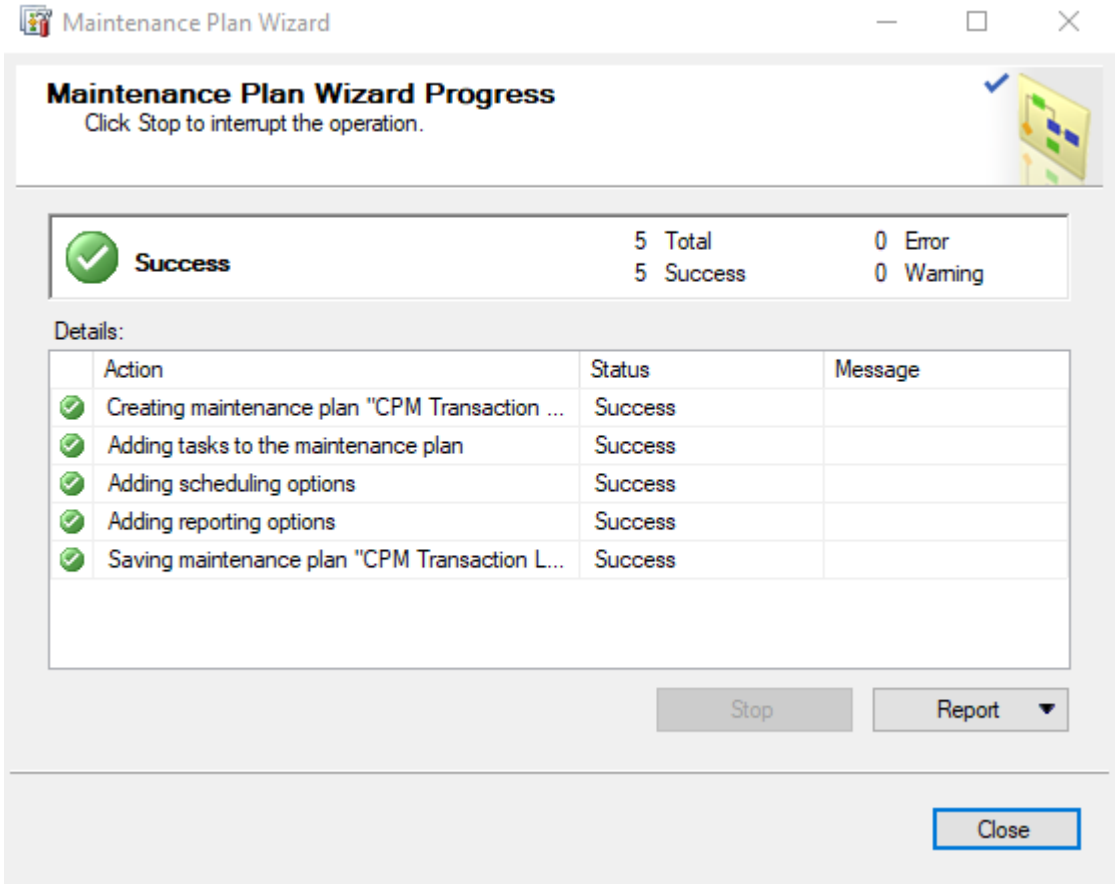
Click **Next**.



Review the Maintenance Plan.

Click **Finish**.


Maintenance Plan Wizard
Maintenance Plan Wizard Progress
Click Stop to interrupt the operation.
1 Remaining
5 Total
4 Success
0 Error
0 Warning
Details:
Action
Status
Message
Creating maintenance plan "CPM Transaction ...
Success
Adding tasks to the maintenance plan
Success
Adding scheduling options
Success
Adding reporting options
Success
Saving maintenance plan "CPM Transaction L...
Stop
Report
Close


Maintenance Plan Wizard
Maintenance Plan Wizard Progress
Click Stop to interrupt the operation.
Success
5 Total
5 Success
0 Error
0 Warning
Details:
Action
Status
Message
Creating maintenance plan "CPM Transaction ...
Success
Adding tasks to the maintenance plan
Success
Adding scheduling options
Success
Adding reporting options
Success
Saving maintenance plan "CPM Transaction L...
Success
Stop
Report
Close

Click **Close**.
This maintenance plan will create one SQL Server Agent Job.

To view the SQL Server Agent Jobs:

1. Expand **SQL Server Agent**.
2. Click **Jobs**.
3. If the jobs do not appear, right-click in the right pane and select **Refresh**.

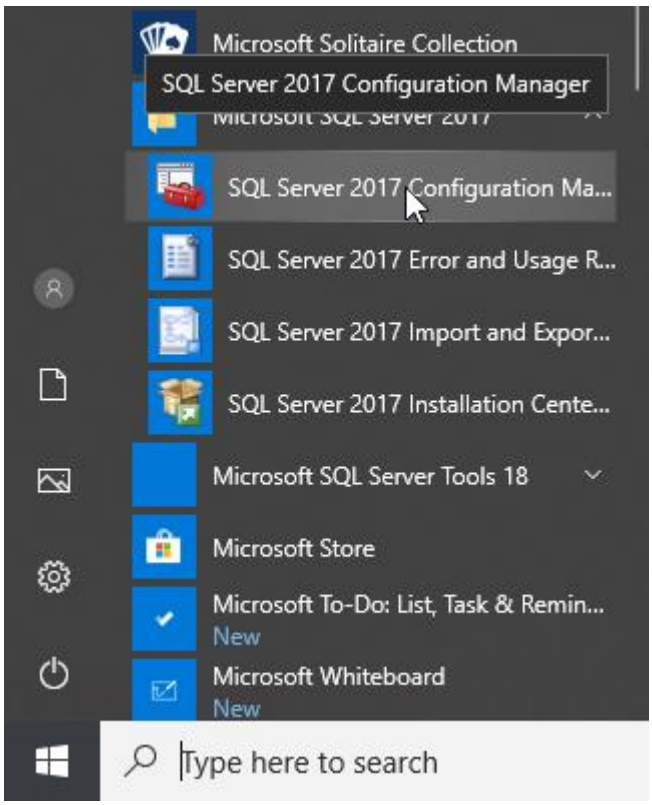
NOTE: SQL Server Agent must be running for the scheduled jobs to execute.

TIP: Refer to **Backing Up and Restoring Databases** in SQL Server 2005 Books Online for additional information.

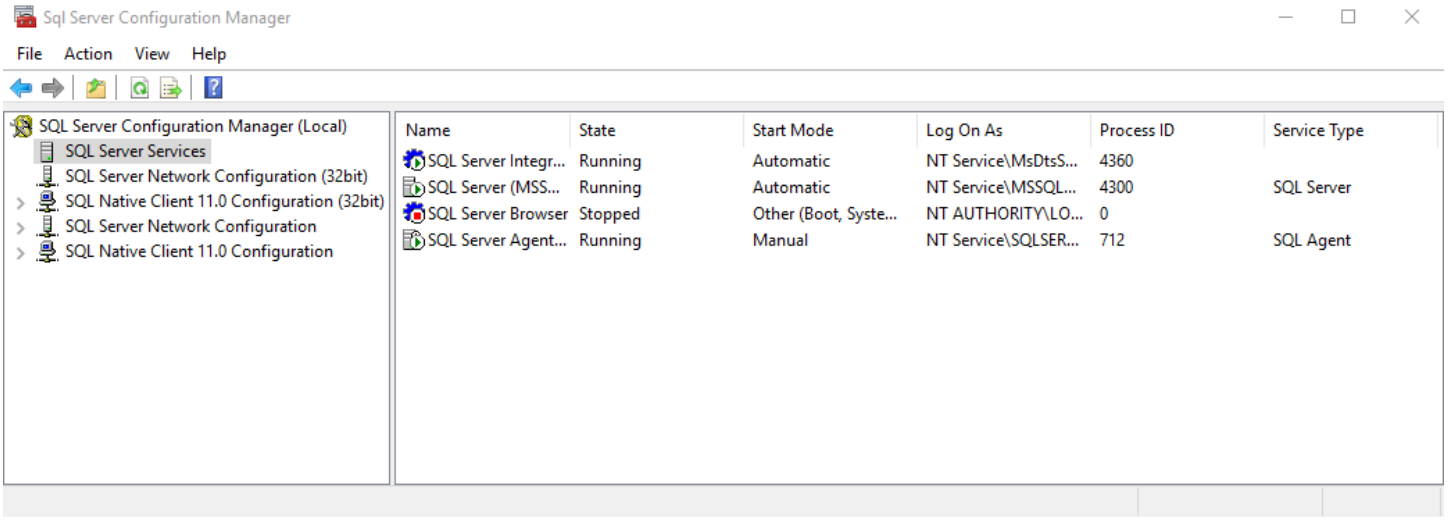
SQL SERVER 2017 AND SQL SERVER AGENT

Database maintenance plans as well as other SQL Server jobs are executed by the SQL Server Agent. You must ensure that SQL Server and the SQL Server Agent are running and set to automatically start with the operating system.

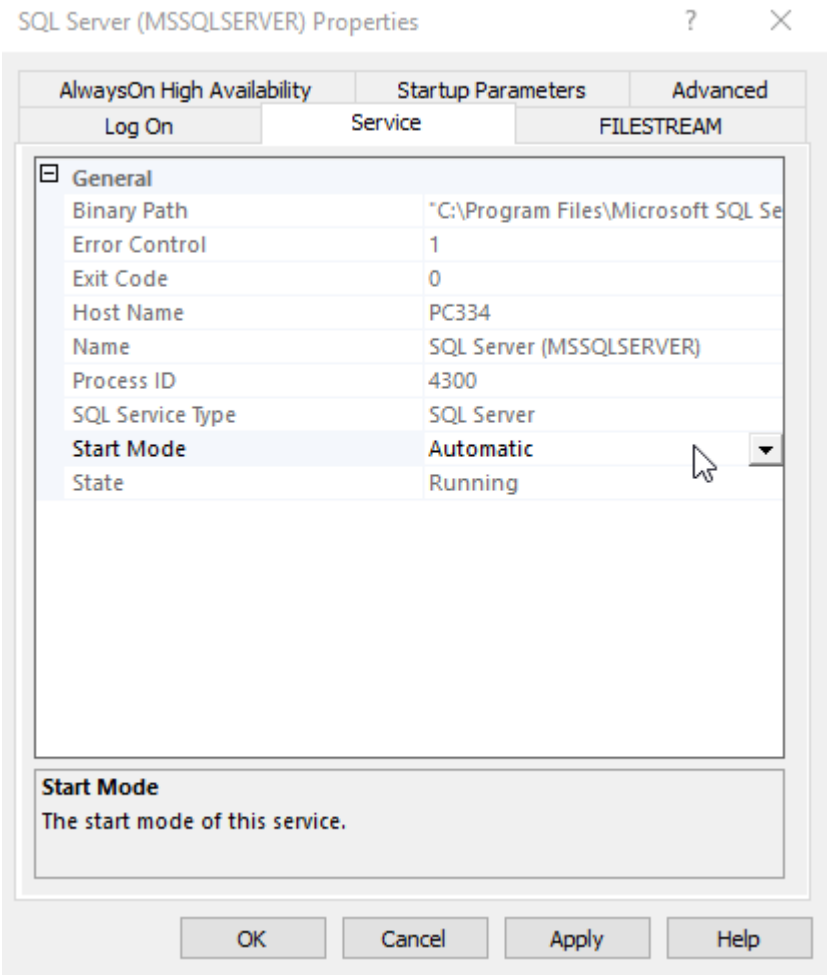
In SQL Server Configuration Manager:



Click **SQL Server Services.**

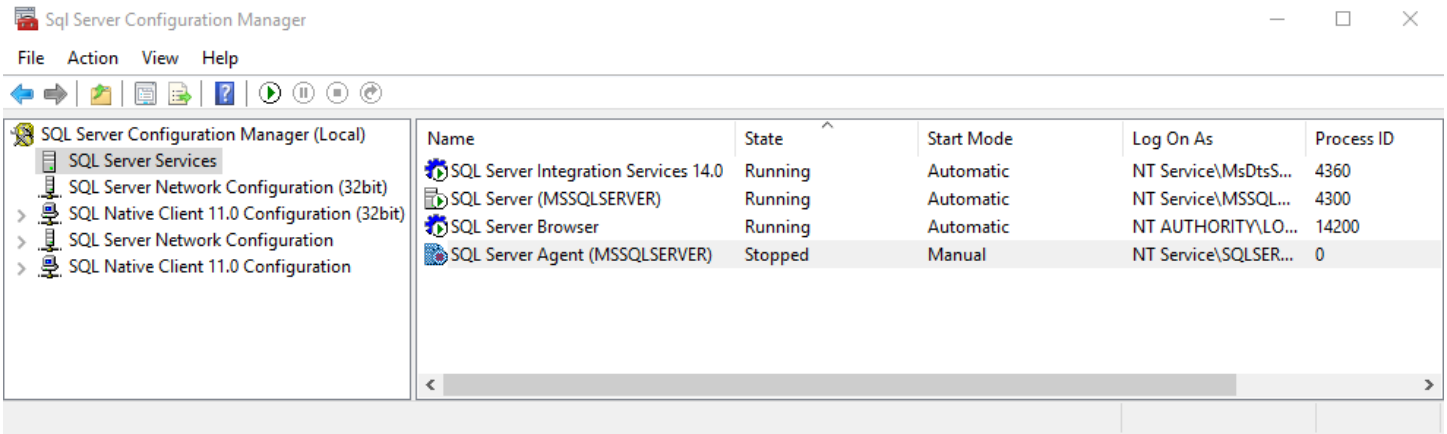


Select **SQL Server (MSSQLSERVER)** under SQL Server Services.
Double click on the SQL Server Service to open the Properties box.
If the database engine is not running, click **Start**.
On the Service Tab, verify that the Star Mode is set to Automatic.



Click **OK** to validate your changes.

NOTE: The name of the SQL Server 2017 computer does vary.
The default instance of SQL Server running on this computer is (local) or the name of the computer.
The default instance of SQL Server running on another computer is the name of the computer.
A named instance of SQL Server is ComputerName\InstanceName.



Select **SQL Server (MSSQLSERVER)** under SQL Server Services.
Double click on the SQL Server Service to open the Properties box.
If the database engine is not running, click **Start**.
On the Service Tab, verify that the Star Mode is set to Automatic.

Click **OK**.

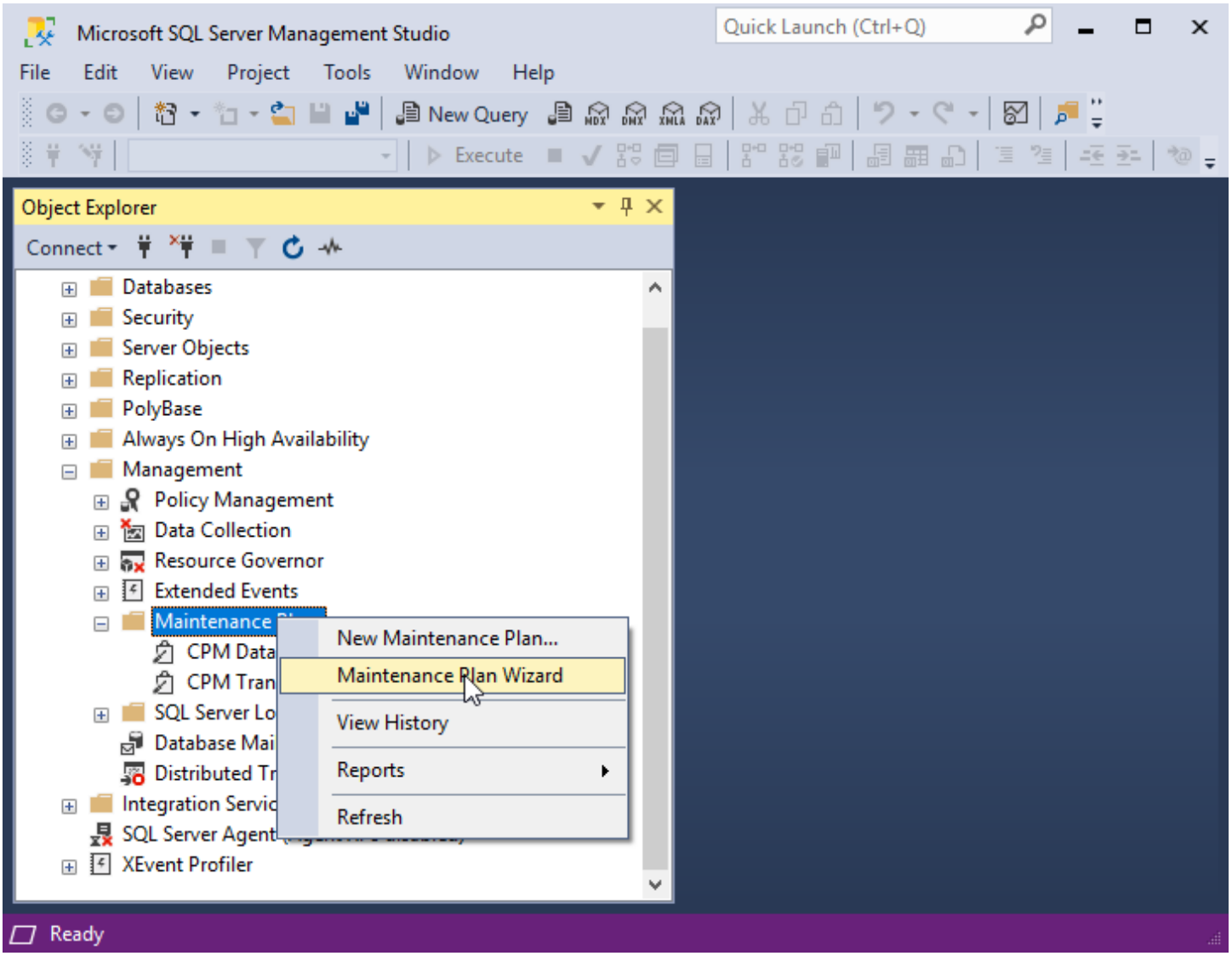
Both SQL Server and SQL Server Agent are now set to automatically start with the operating system.

PLAN 1 – BACKUP, RE-ORGANIZE AND INTEGRITY CHECK

The purpose of this database maintenance plan is to provide general backup, data and index page reorganization, and integrity checking of the MES SQL databases.

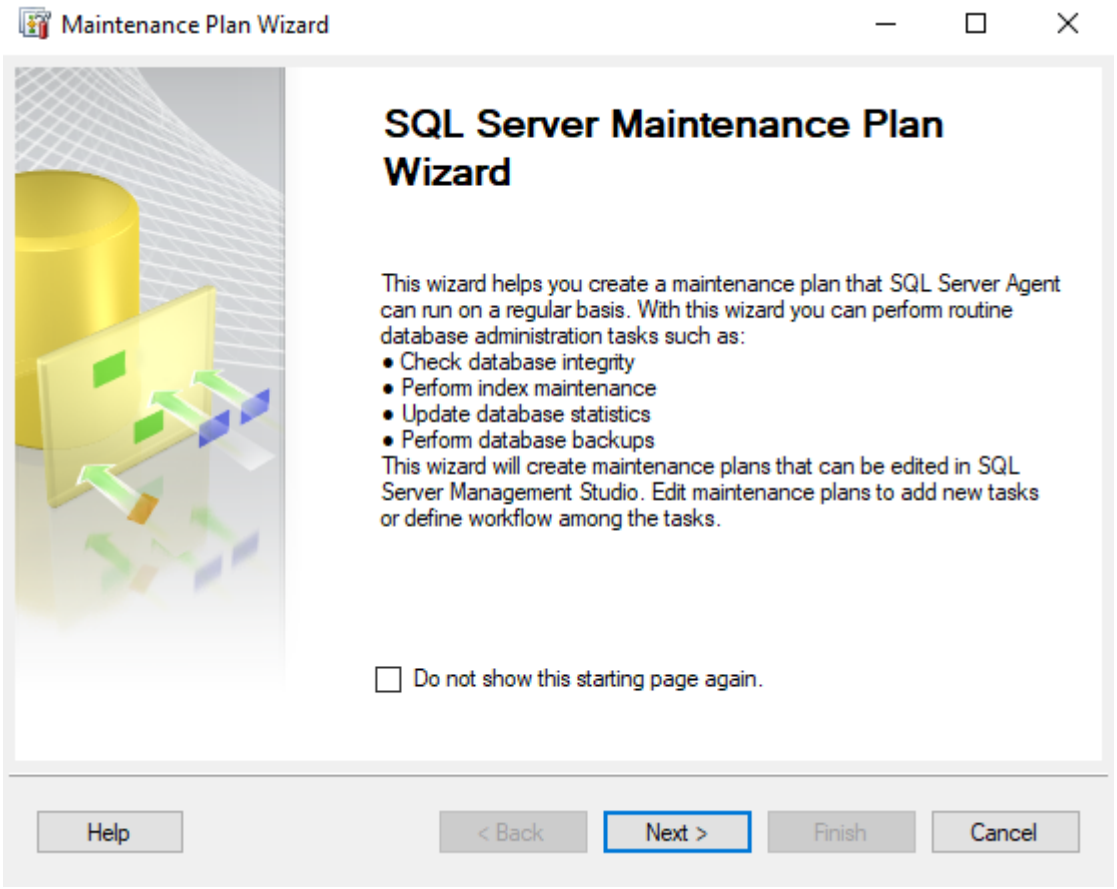
- Every day at 12:00 AM
    7. Check Database Integrity
    8. Rebuild Index
    9. Shrink Database
    10. Update Statistics
    11. Back Up Database (Full)
    12. Clean Up History

NOTE: This is not designed to be your sole backup strategy or disaster recovery plan.



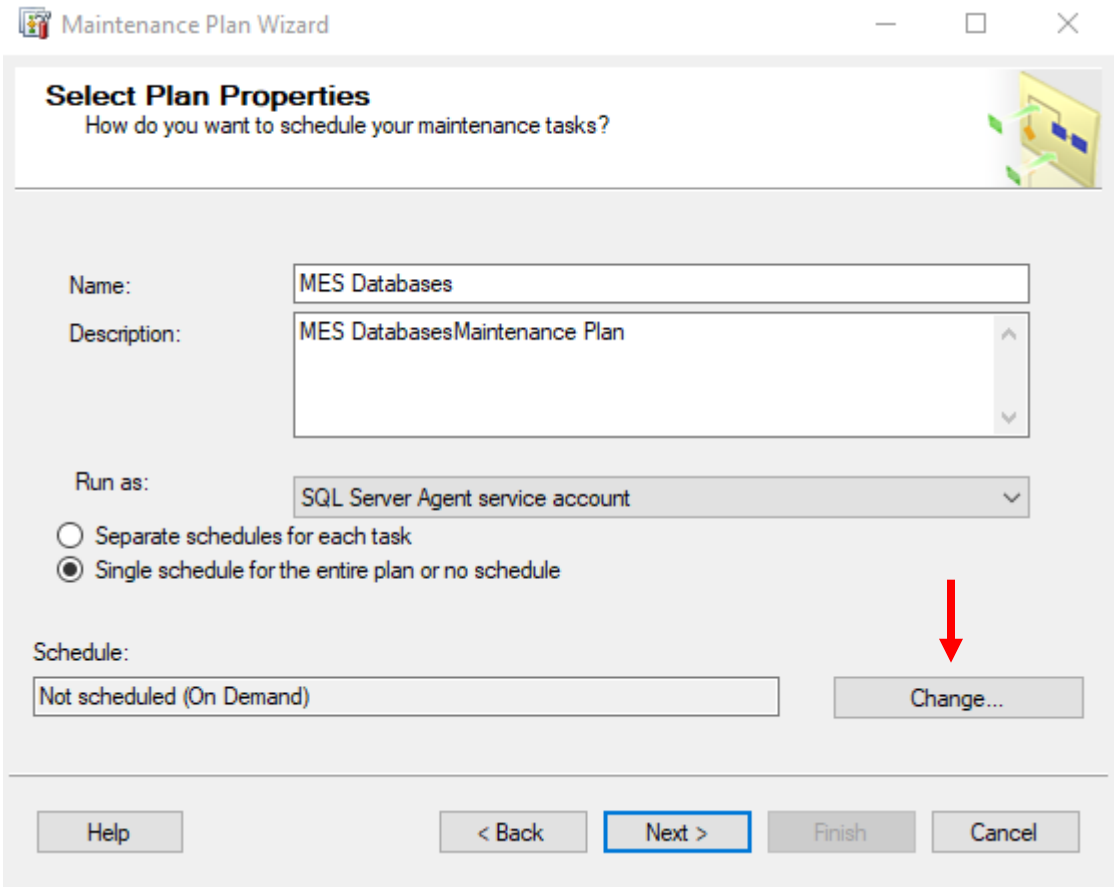
In Microsoft SQL Server Management Studio:

Expand the **Management** folder.
Right-click on **Maintenance Plans** and select **Maintenance Plan Wizard.** This will start the **SQL Server Maintenance Plan Wizard**.

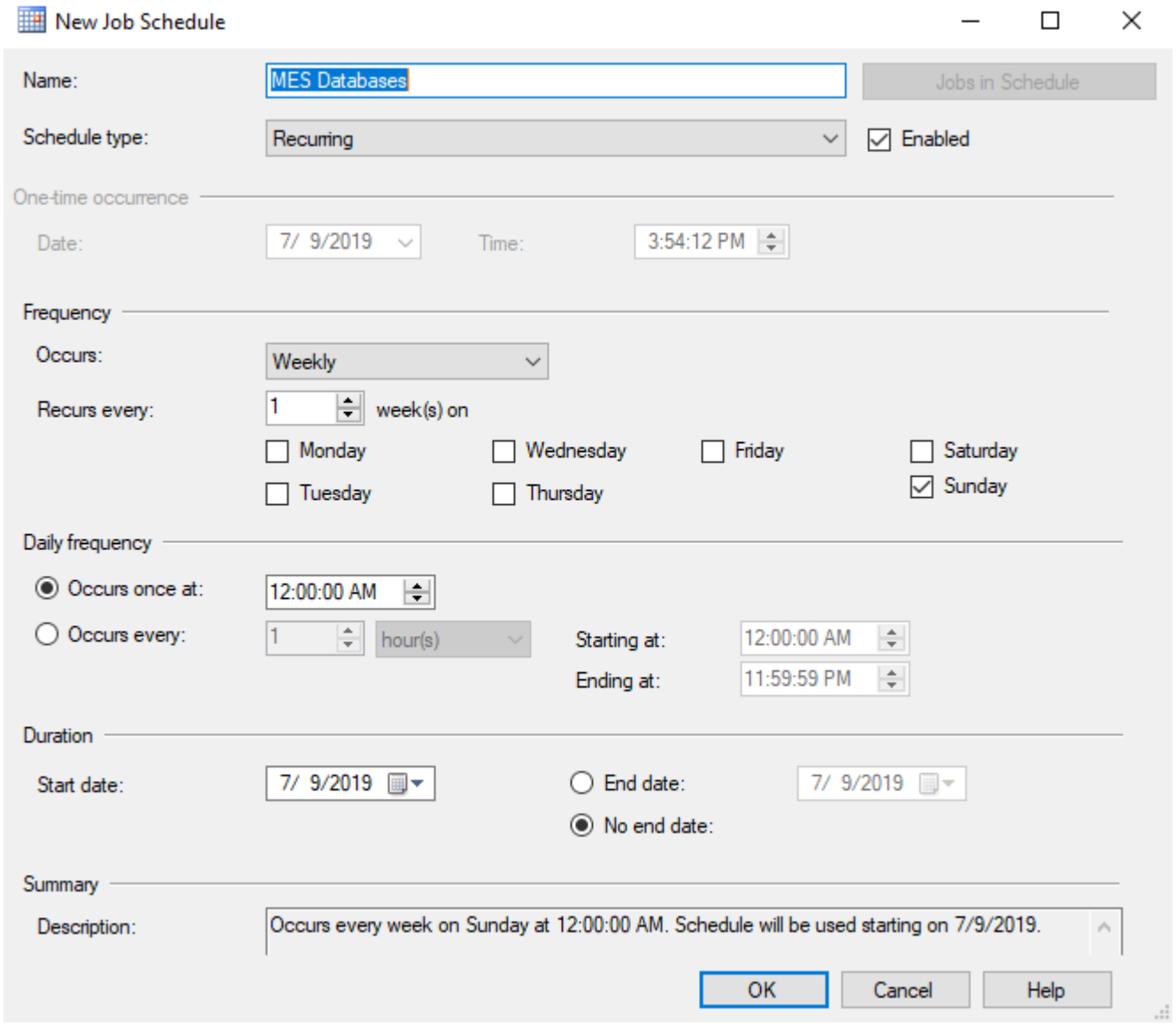


Click **Next**.

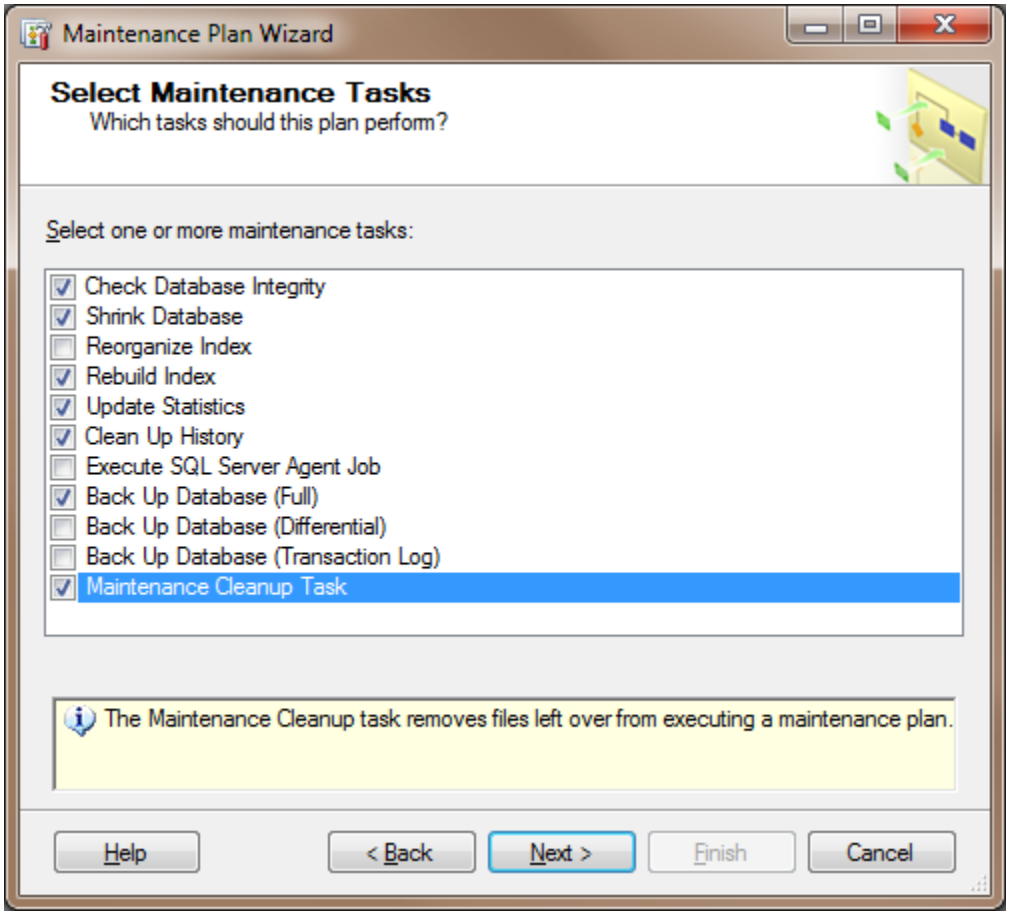
Enter a **Name**. For example: MES Databases.
Enter a **Description**.



Click on the Change button to open the Job Schedule Properties and make changes.



Once the schedule has been set, click **Next**.



Select the desired Maintenance Tasks.

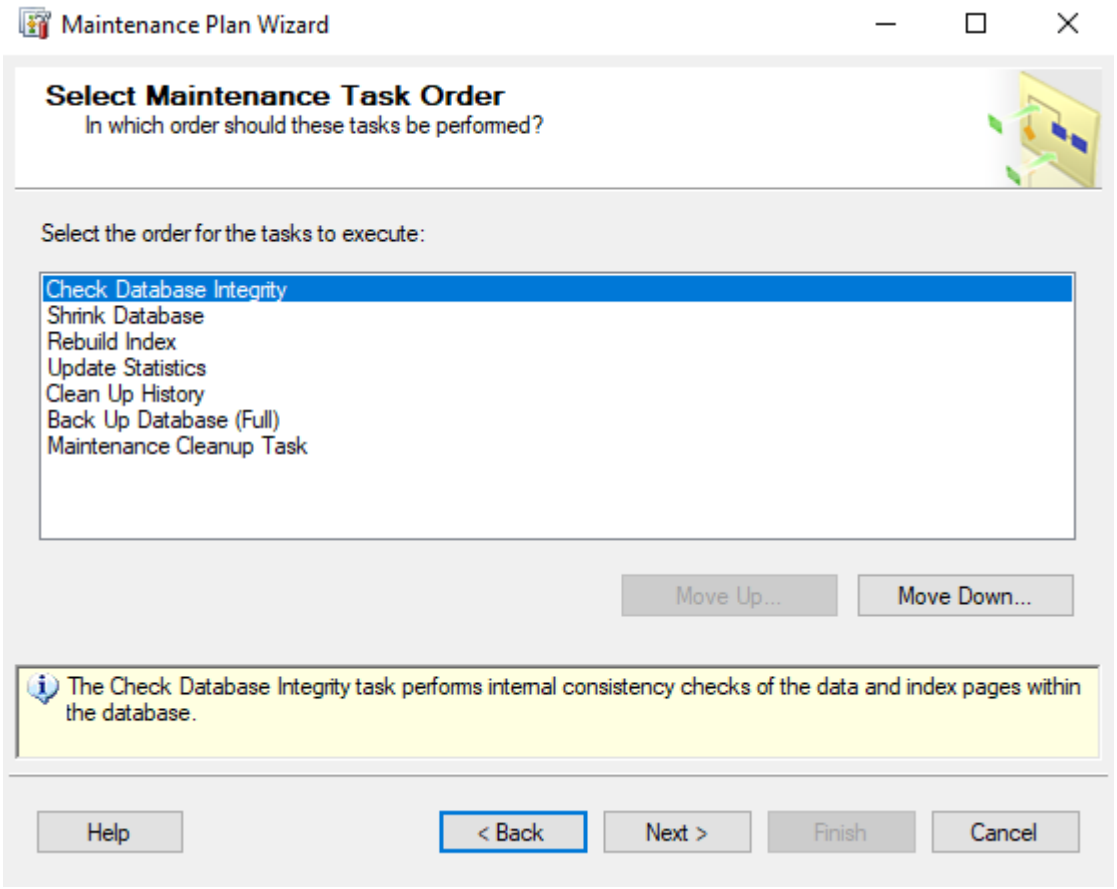
It is highly recommended that the following Maintenance Tasks be performed:

- Check Database Integrity
- Shrink Database
- Rebuild Index
- Update Statistics
- Clean Up History
- Back Up Database (Full)
- Maintenance Cleanup Task

NOTE: For simplicity, all of the maintenance tasks are done in one maintenance plan. Each situation is different and when combined with company policies, it is quite common to divide the Maintenance Tasks and create several database maintenance plans on different schedules and frequencies.

For example: In a large database, rebuilding the indexes may be done once per week or month while reorganize index is done daily. It may be desirable to shrink the database less frequently and/or choose to retain the extra free space to eliminate database file fragmentation on the hard disk drive.

Click **Next**.

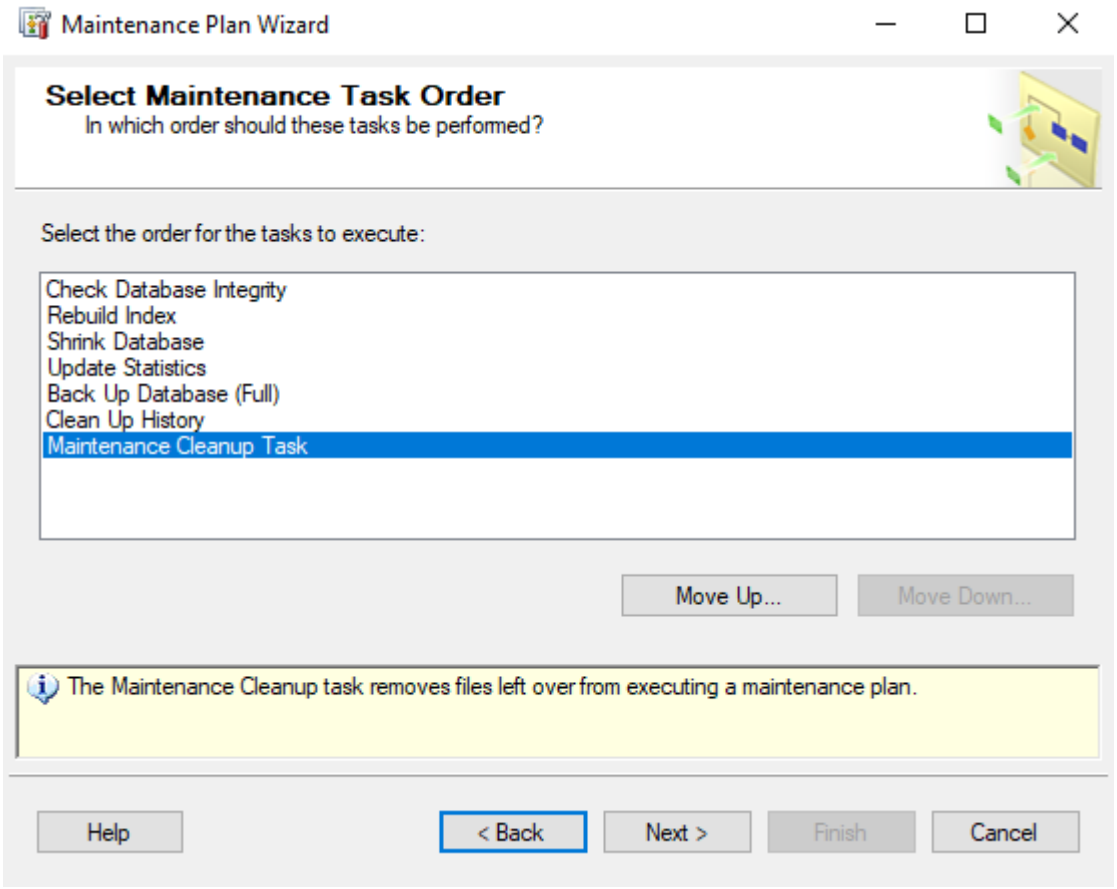


Select a Maintenance Task.

Click **Move Up** and **Move Down** to change the maintenance task order.

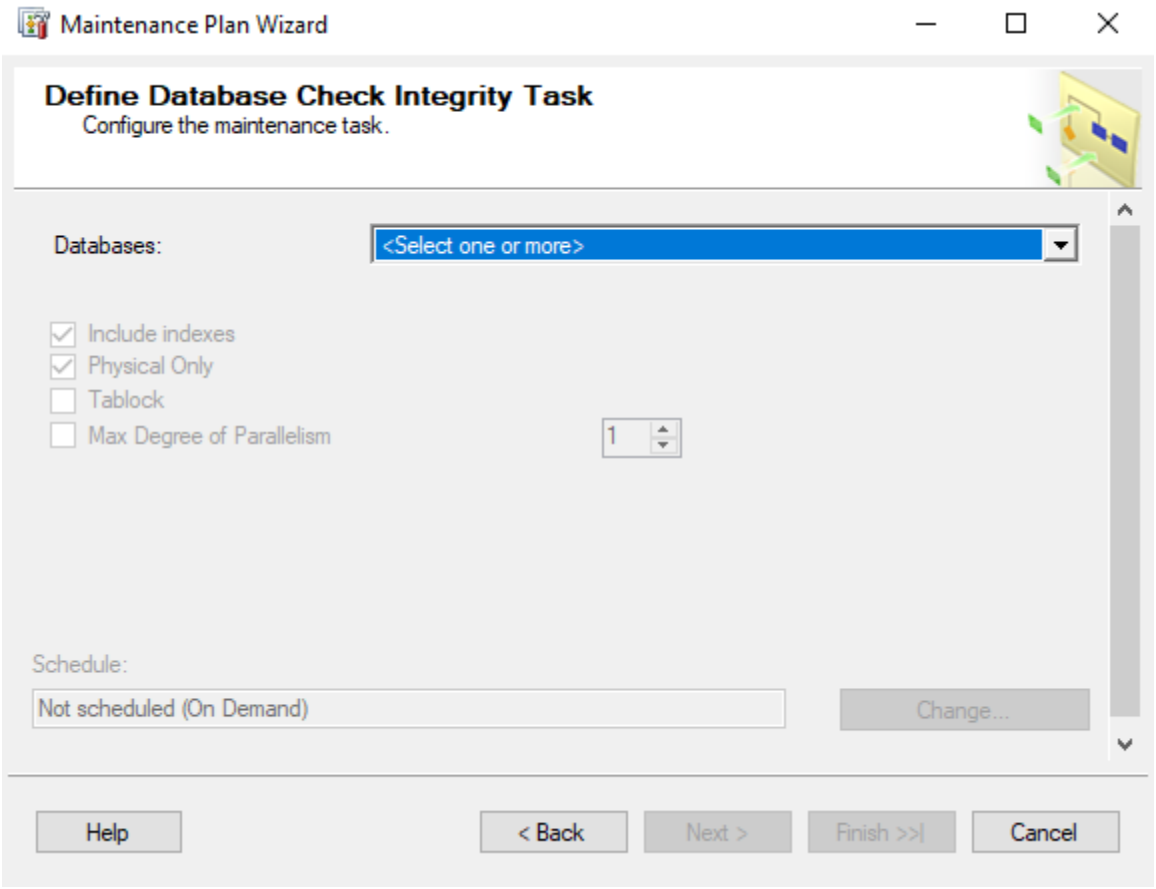
It is recommended that the Maintenance Tasks be done in the following order:

7. Check Database Integrity
8. Rebuild Index
9. Shrink Database
10. Update Statistics
11. Back Up Database (Full)
12. Clean Up History
13. Maintenance Cleanup Task

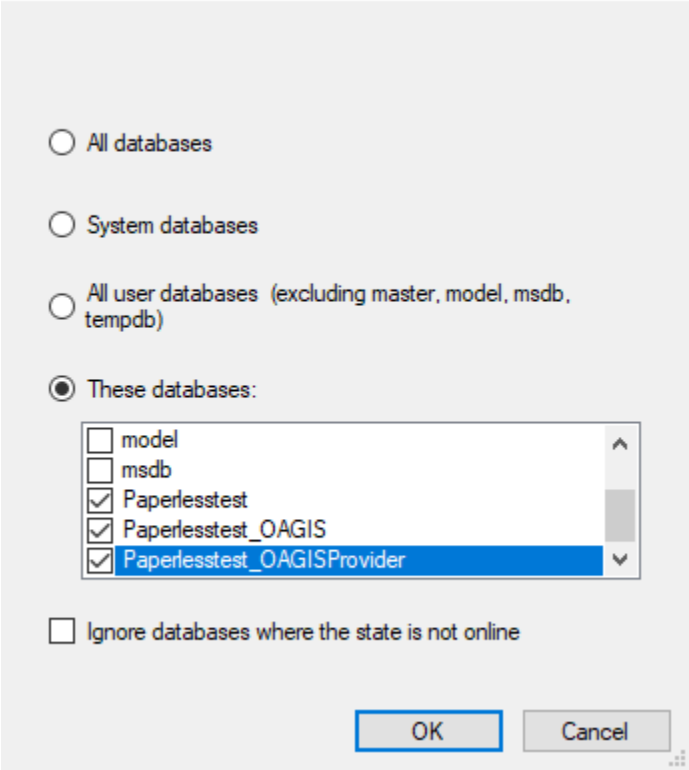


NOTE: For simplicity, all of the maintenance tasks are done in one maintenance plan. Each situation is different and when combined with company policies, it is quite common to change the order of the Maintenance Tasks.

Click **Next**.

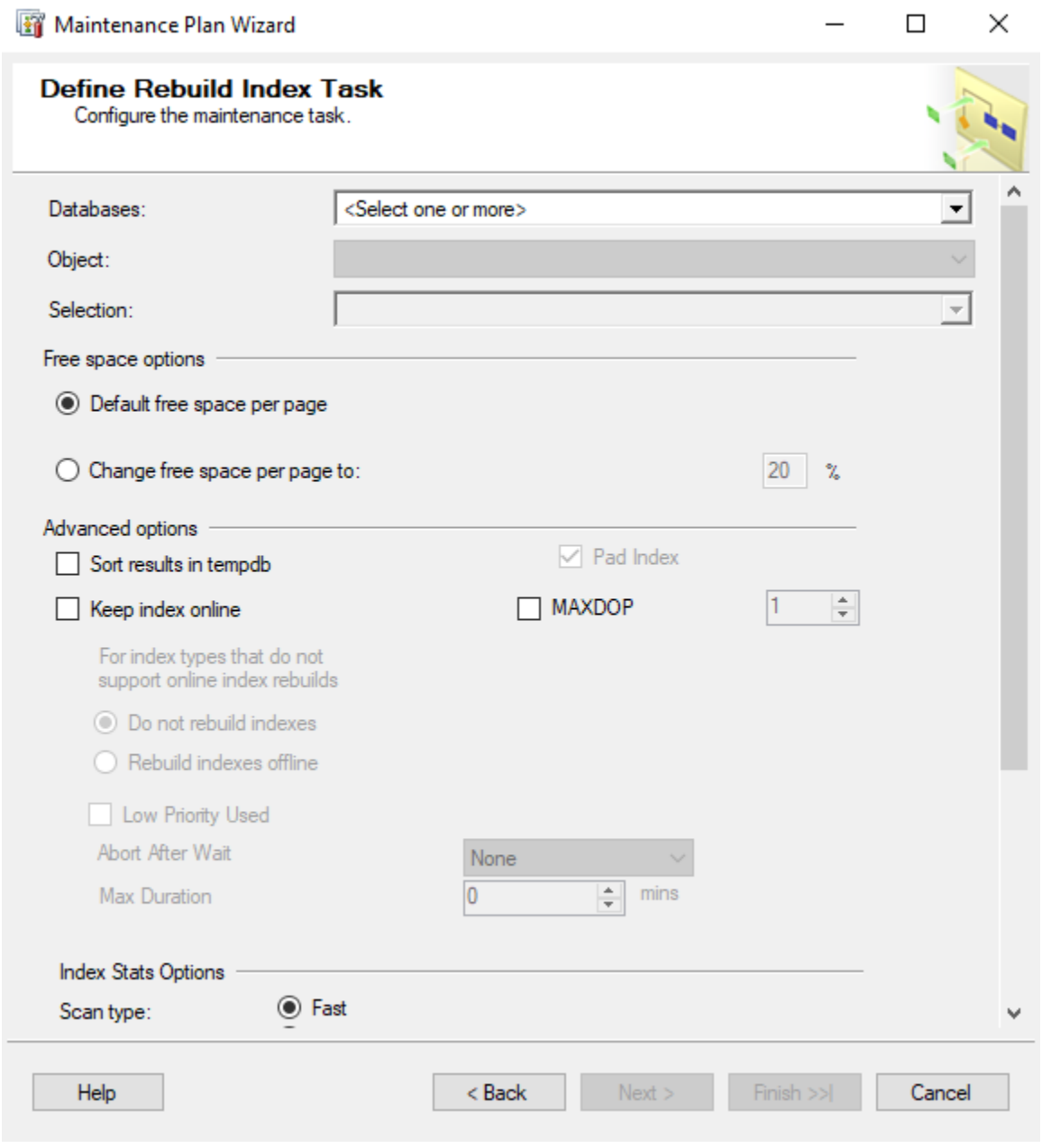


Click **<Select one or more>** databases.

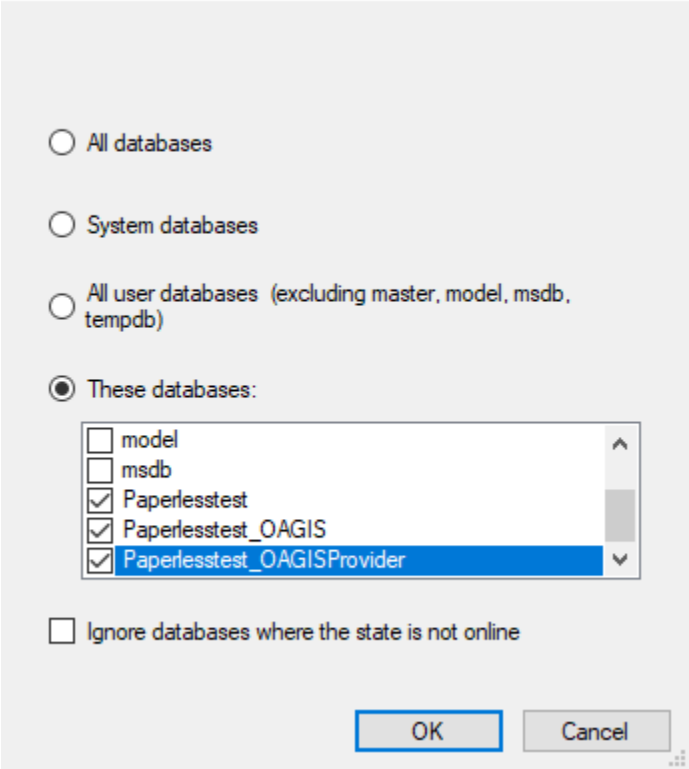


Select **These databases**.
Select the MES SQL databases.
NOTE: The names of your MES SQL databases may be different than shown above.
NOTE: If you have multiple environments, select all MES SQL databases.
Click **OK**.

Click **Next**.



Click **<Select one or more>** databases.



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NOTE: The names of your MES SQL databases may be different than shown above.
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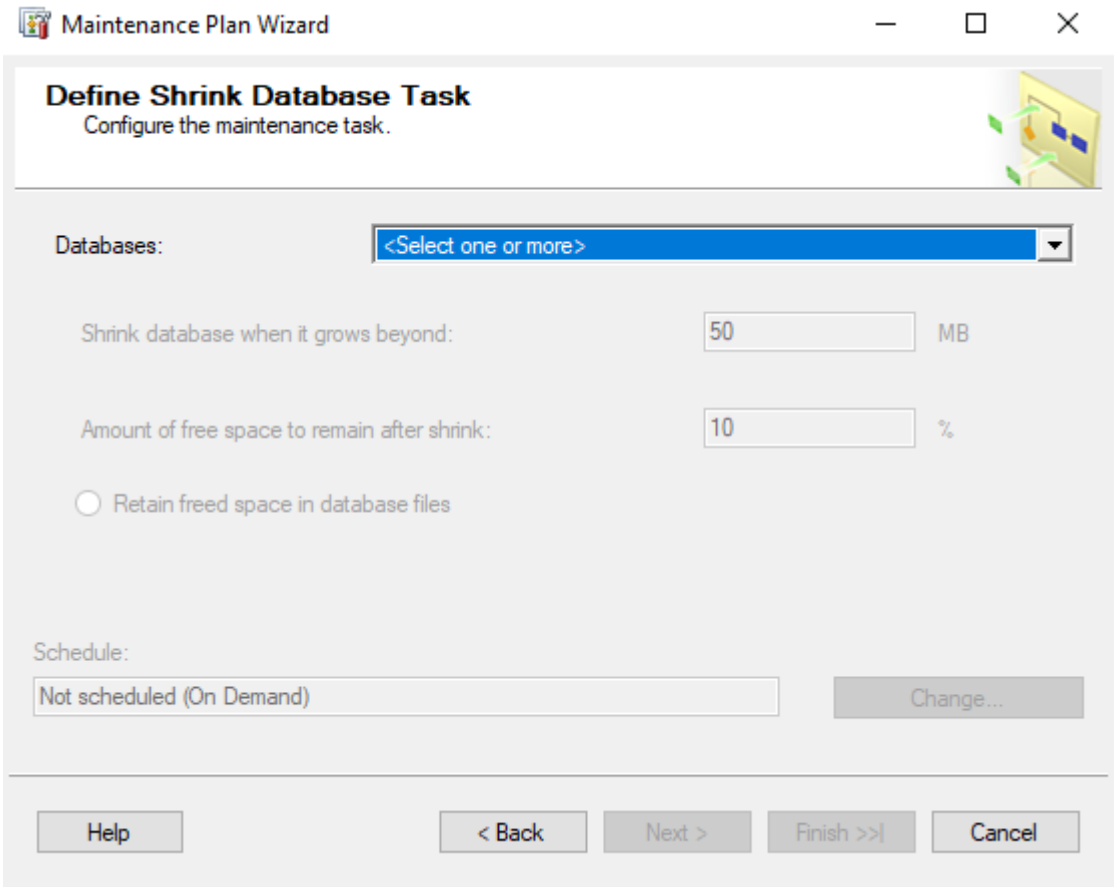
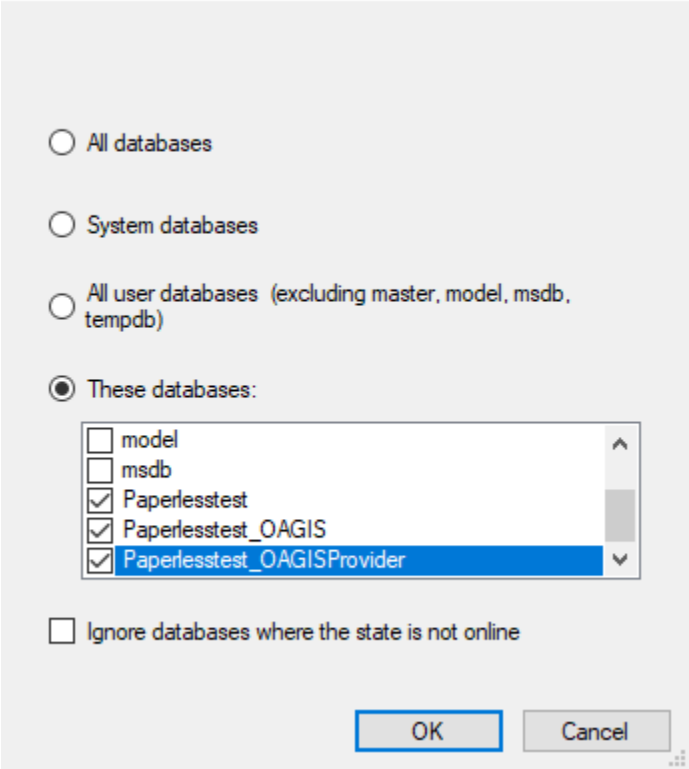
Click **OK**.

Click **Next**.



Click **<Select one or more>** databases.



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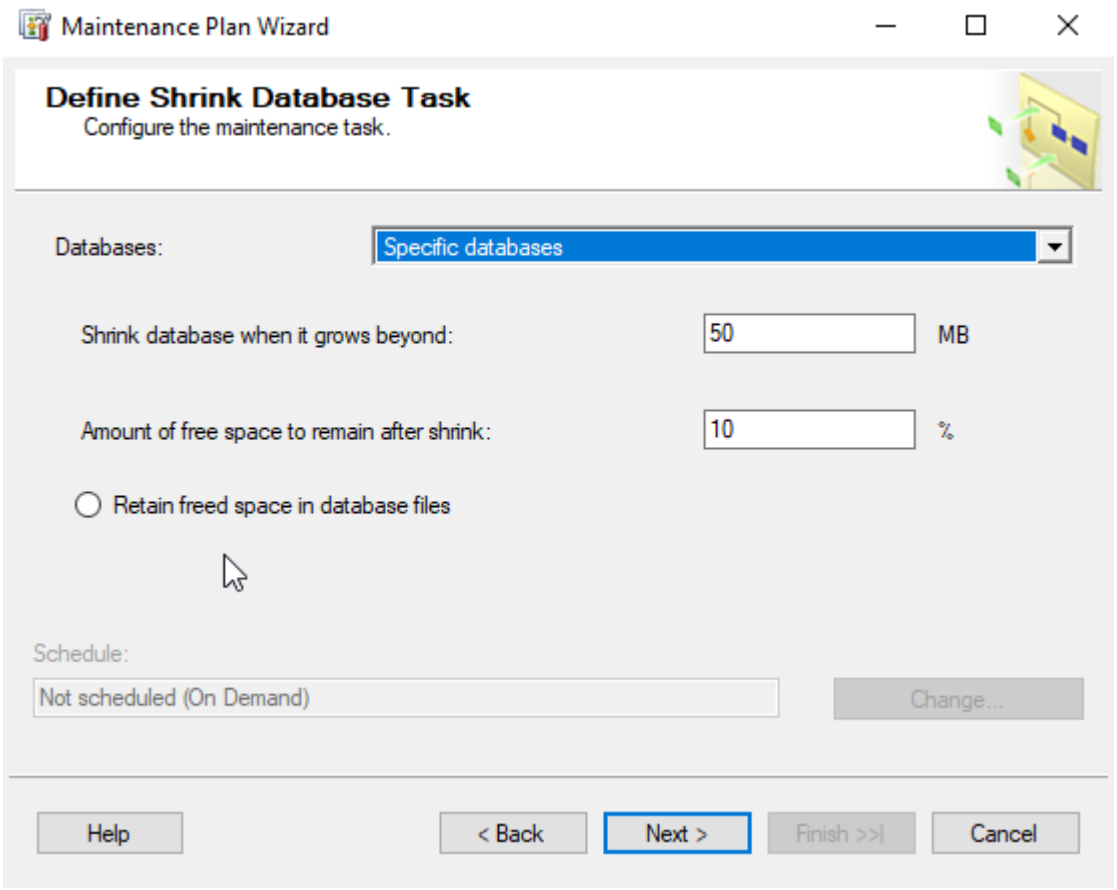
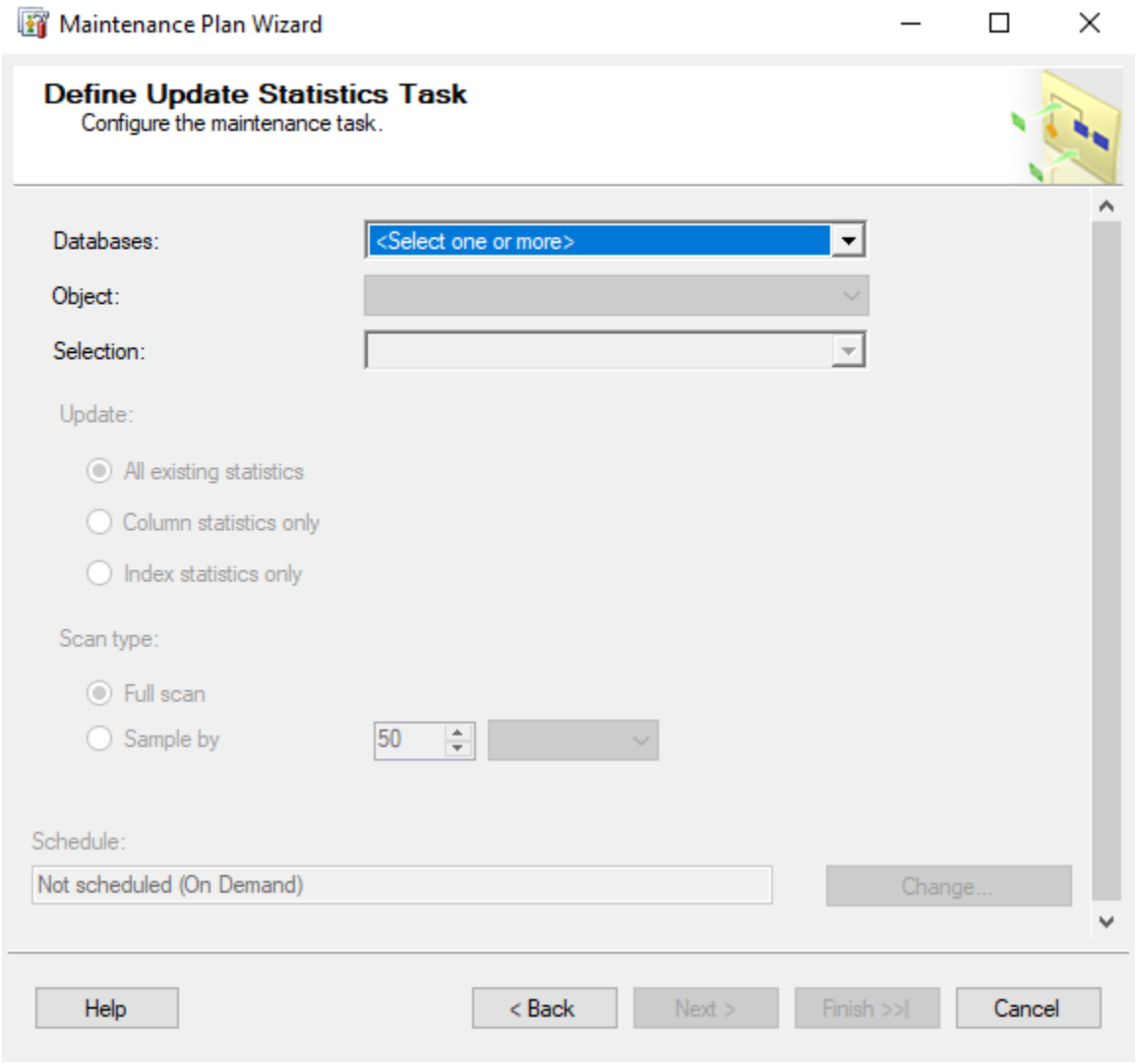
NOTE: The names of your MES SQL databases may be different than shown above.
NOTE: If you have multiple environments, select all MES SQL databases.
Click **OK**.



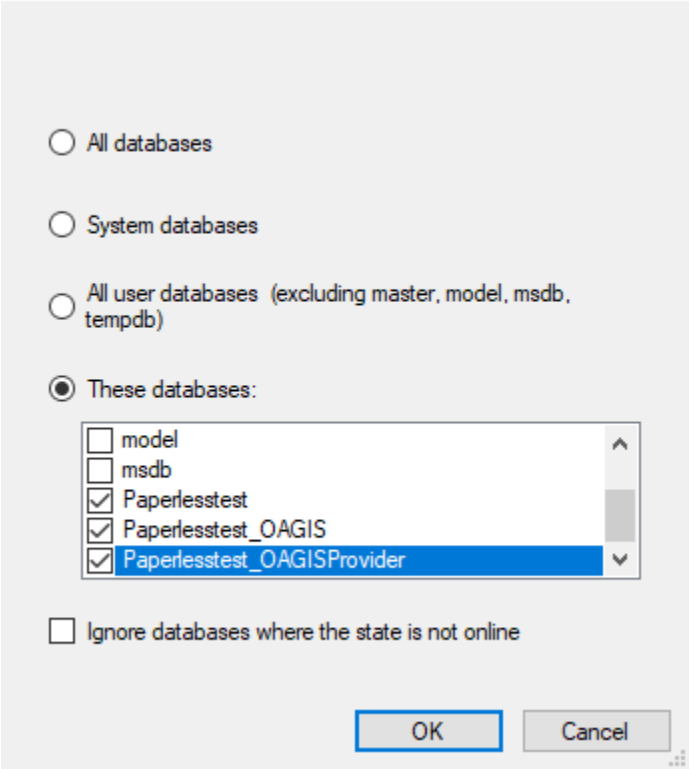
If desired, change the amount of free space to remain after shrink.

Choose whether to retain the freed space or return the freed space to the operating system.

Click **Next**.



Click **<Select one or more>** databases.



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NOTE: The names of your MES SQL databases may be different than shown above.
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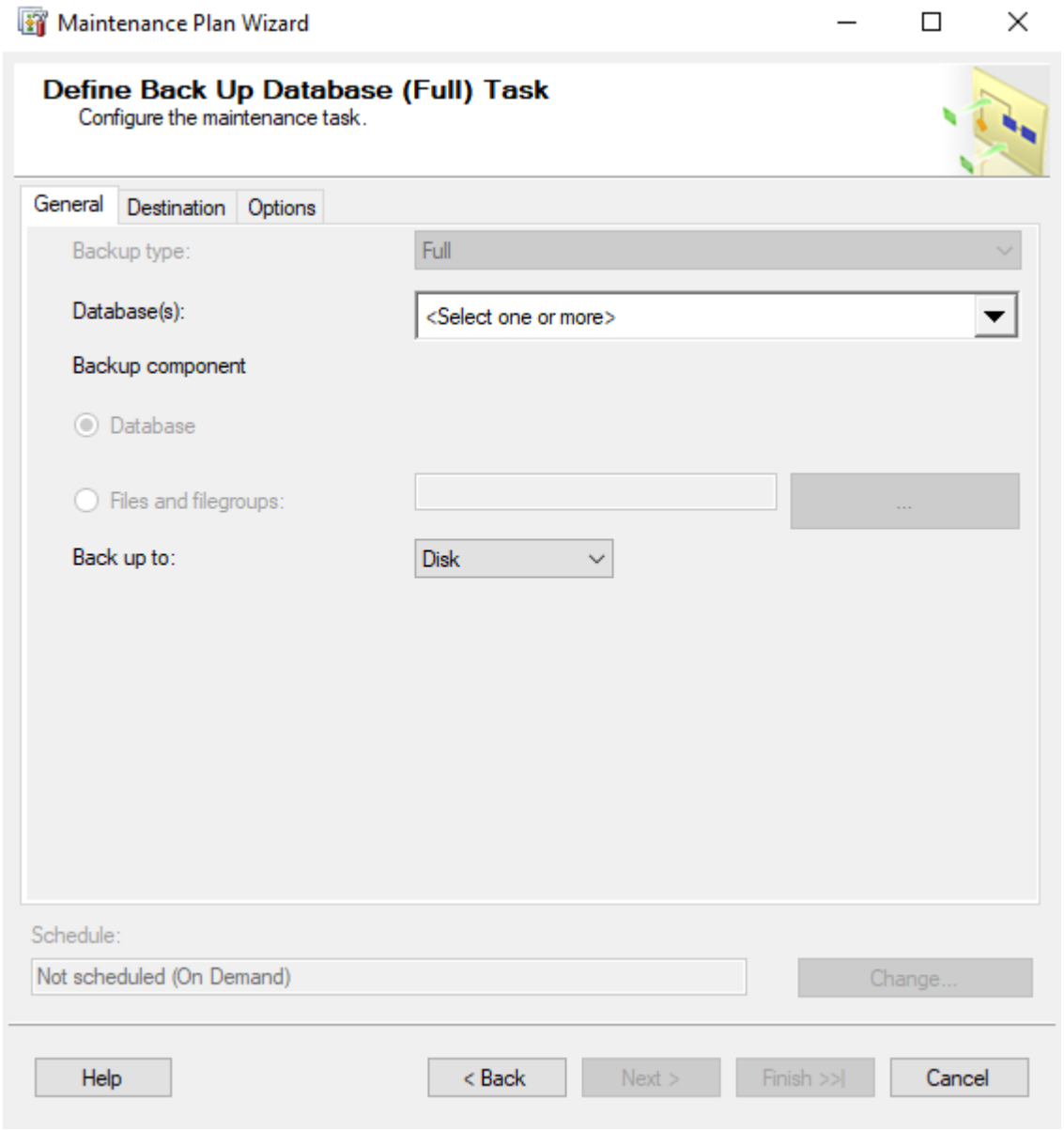
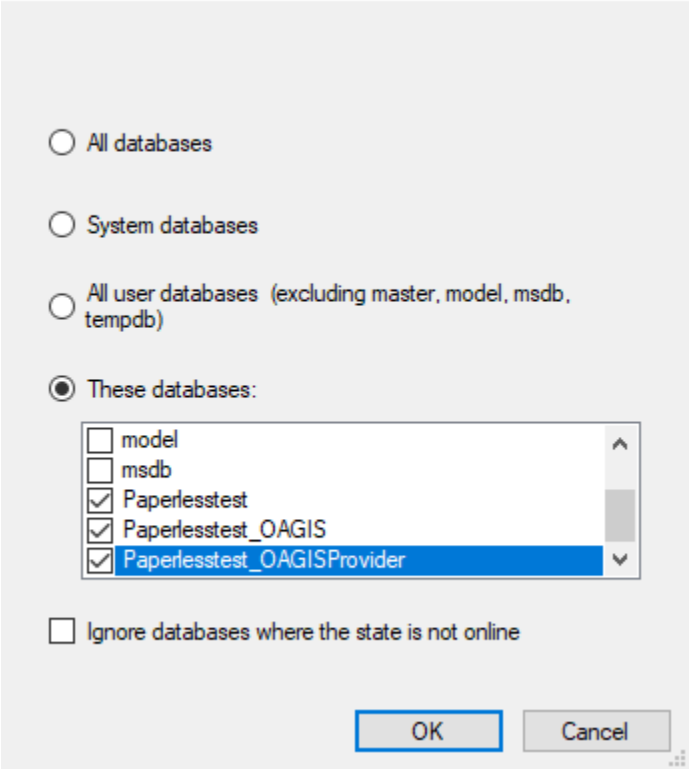
Click **OK**.

Click **Next**.



Click **<Select one or more>** databases.



Select **These databases**.

Select the MES SQL databases.

NOTE: The names of your MES SQL databases may be different than shown above.

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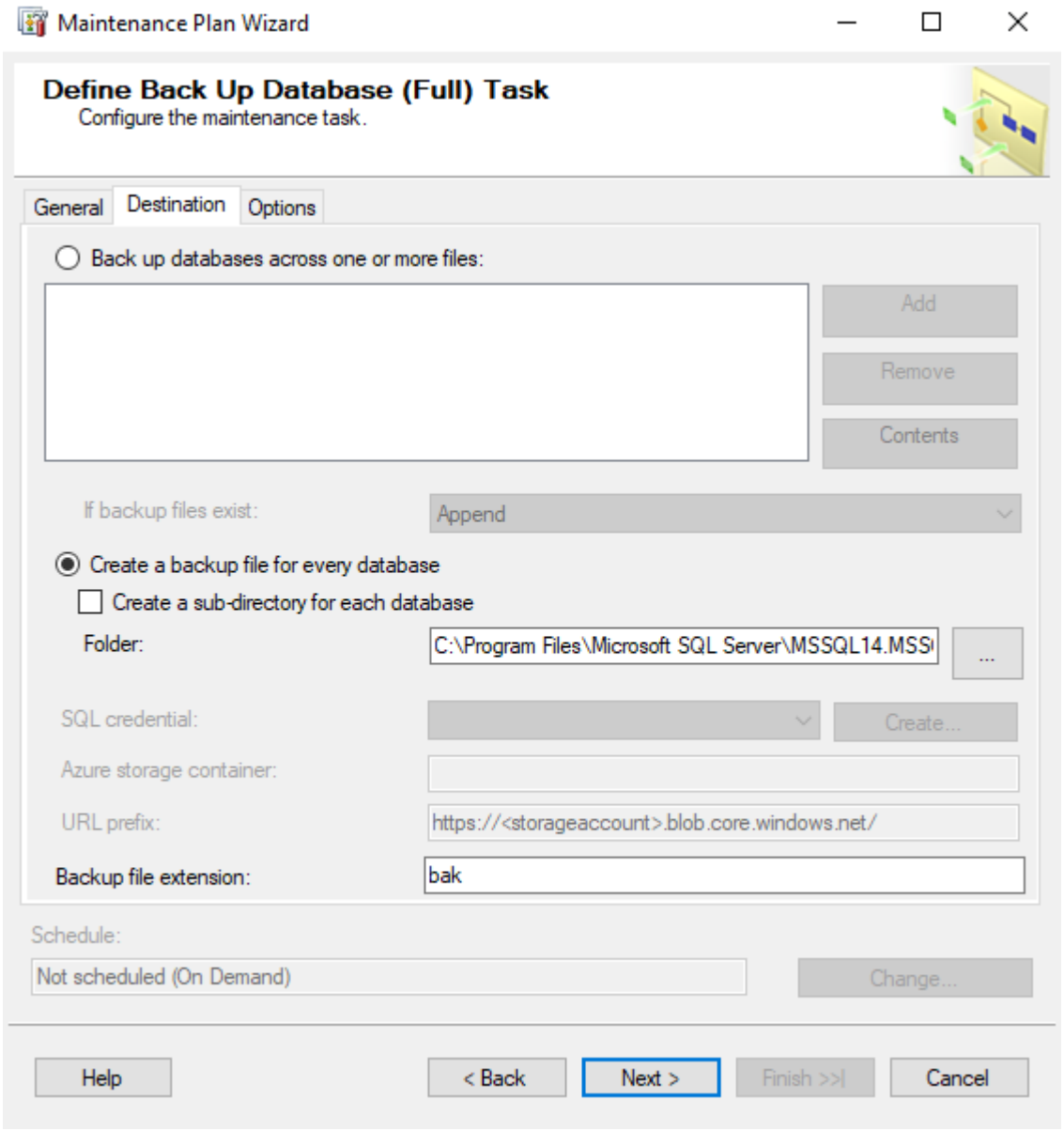
Click **OK**.



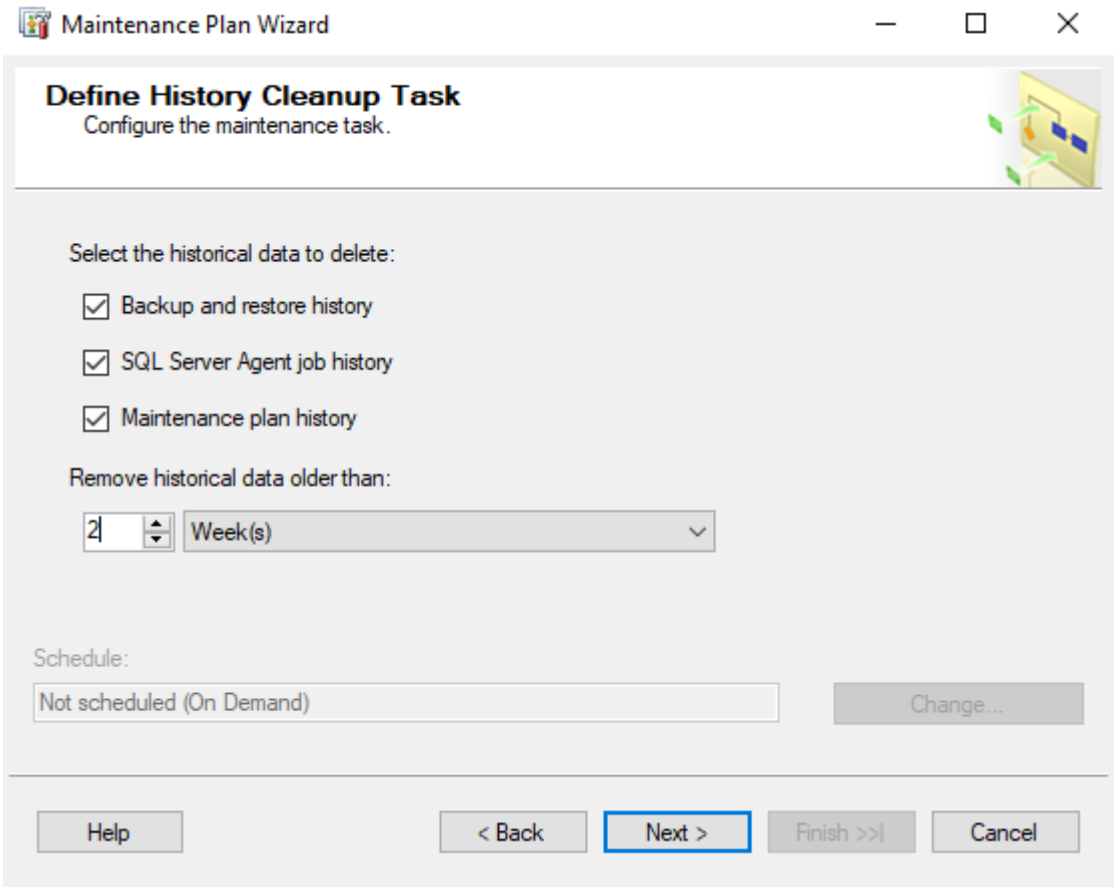
Select the backup destination—**Disk** or **Tape**.

Specify the appropriate information for either a disk or tape backup.

For easier organization, select **Create a sub-directory for each database**.

Select **Verify backup integrity** to ensure the database can be restored from the media.

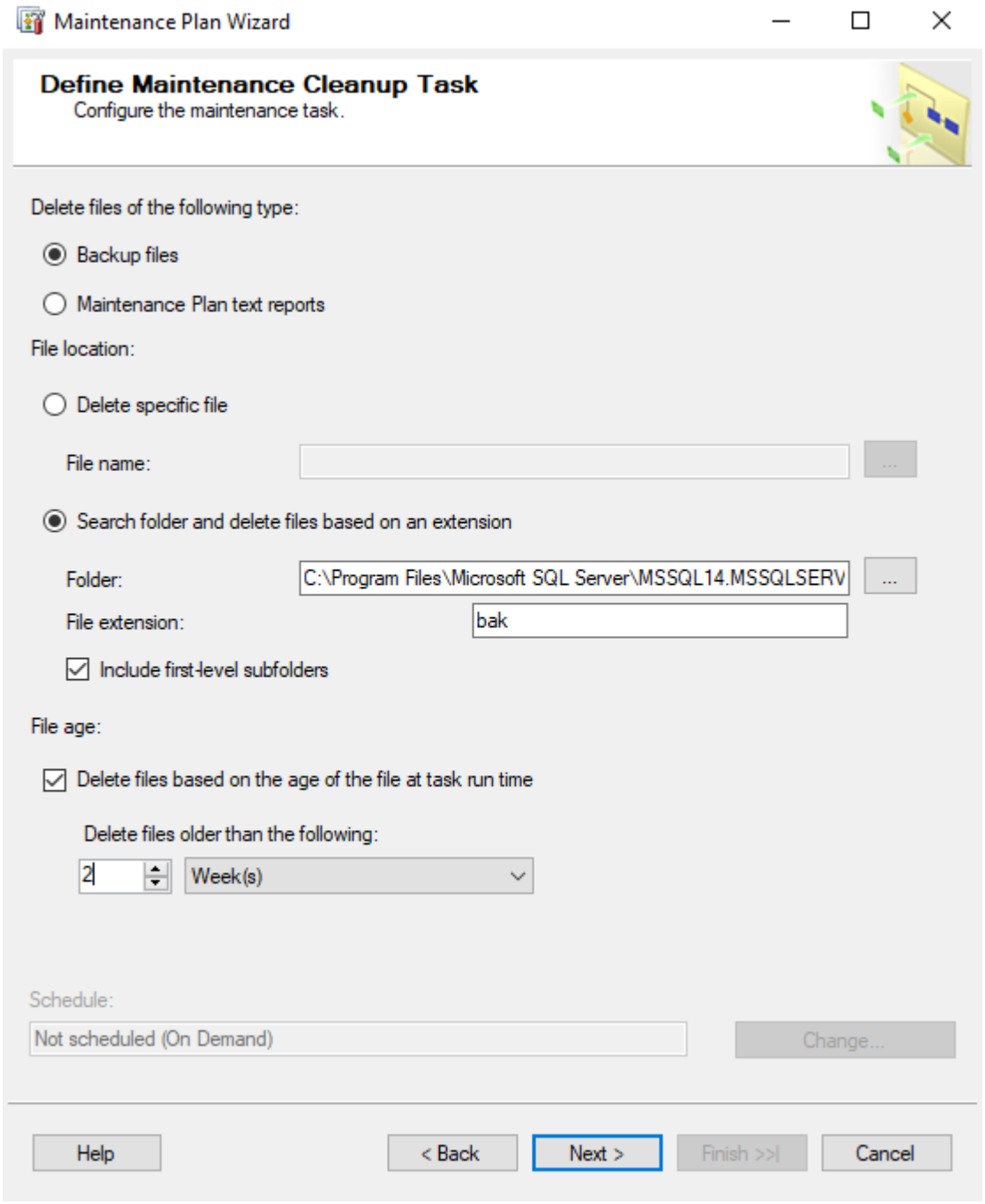
Click **Next**.



Select the desired historical data to delete.

Select the desired retention period.

Click **Next**.

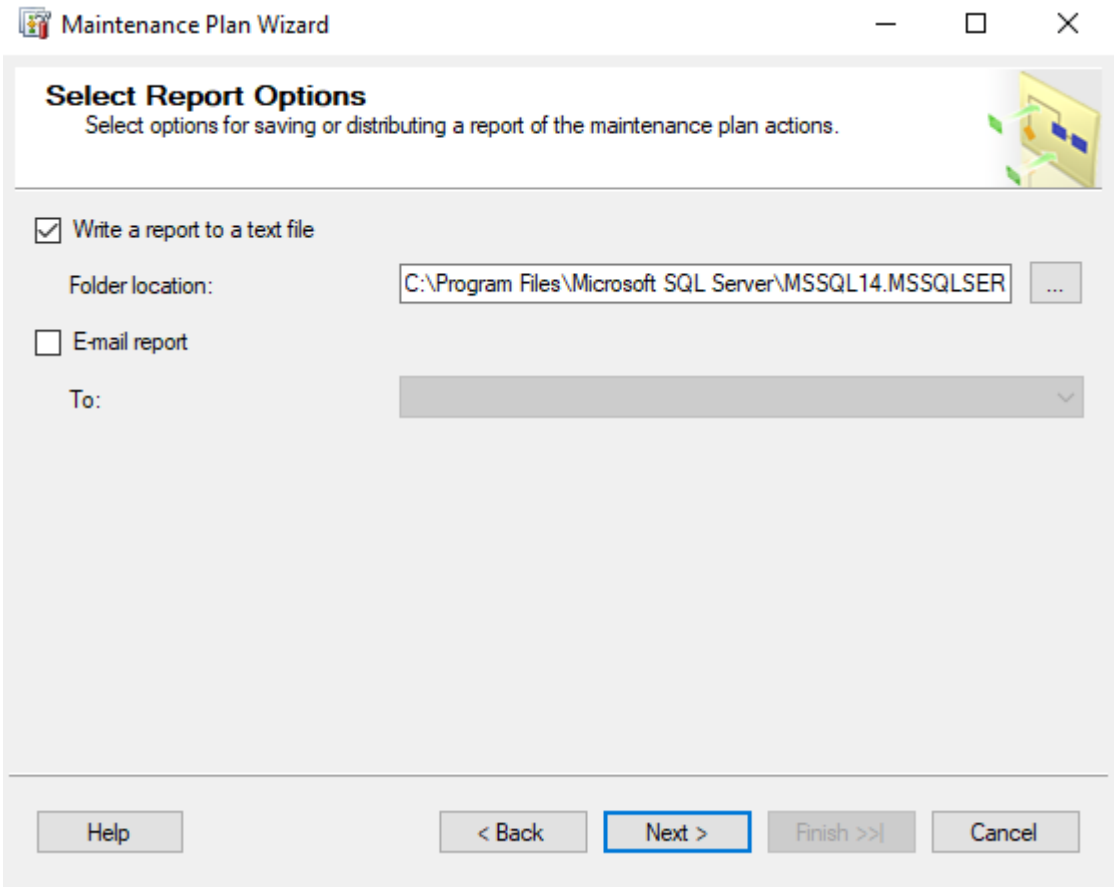


Define the SQL Server Backup folder location.

Check **Include first-level subfolders**.

Define the desired retention period.

Click **Next.**



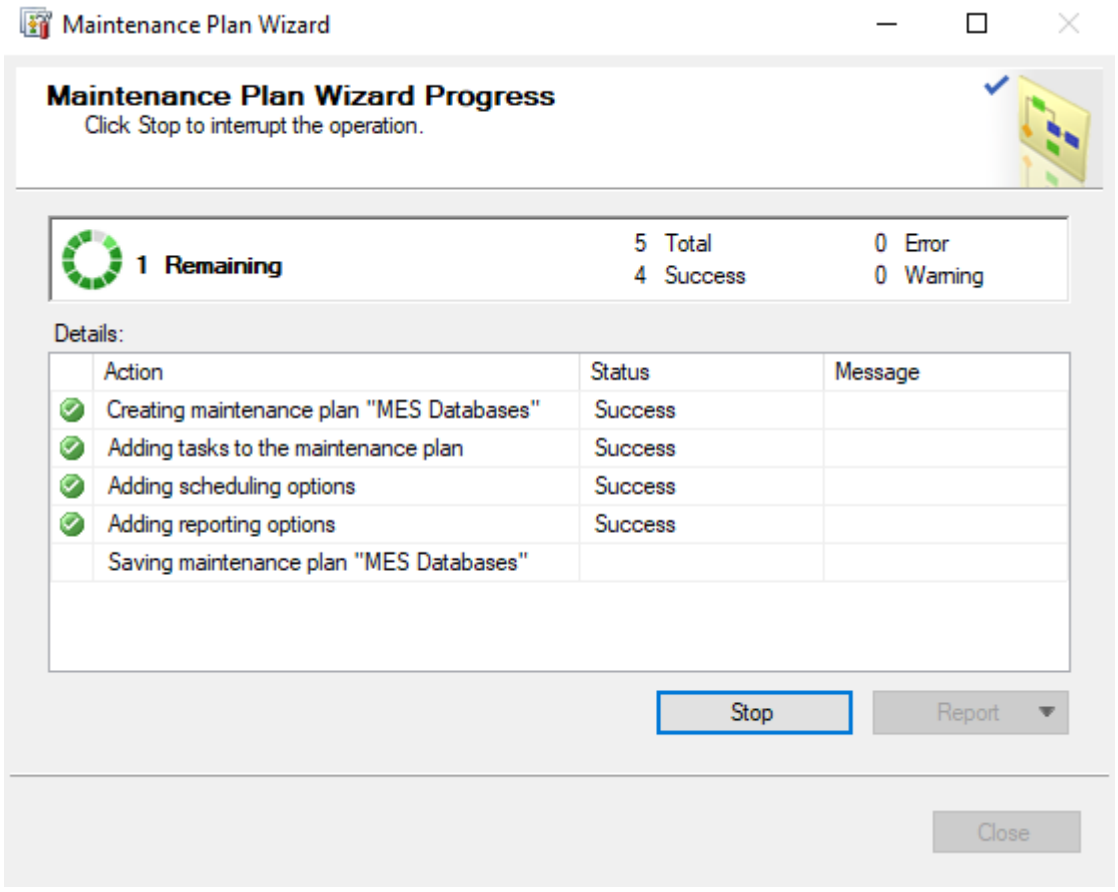
If you wish to Write a report to a text file, define the folder location.

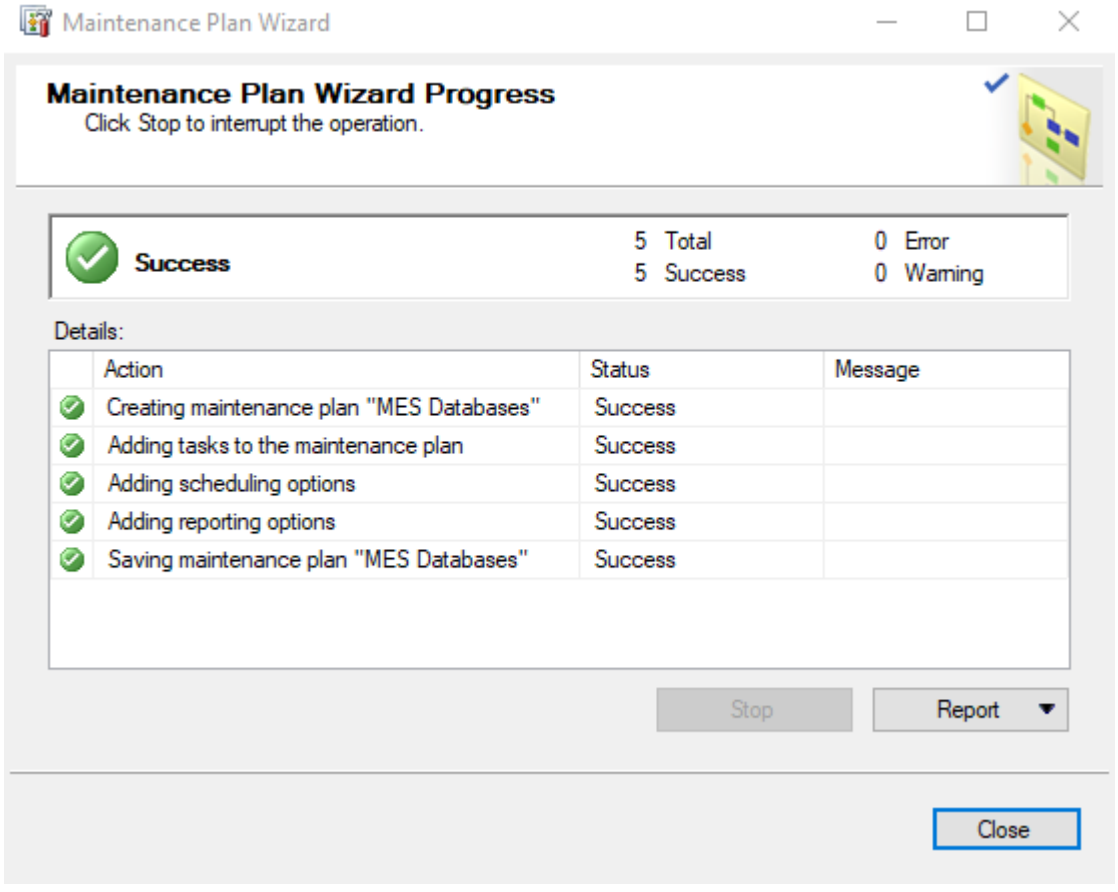
Select the report options as desired.

TIP: To send an e-mail report, configure SQL Server 2017's Database Mail and a SQL Server Agent Operator first. Refer to SQL Server 2017 Books Online.

Click **Next**.

On the **Complete the Wizard** screen, review the Maintenance Plan.
Click **Finish**.


Maintenance Plan Wizard
Maintenance Plan Wizard Progress
Click Stop to interrupt the operation.
1 Remaining
5 Total
4 Success
0 Error
0 Warning
Details:
Action
Status
Message
Creating maintenance plan "MES Databases"
Success
Adding tasks to the maintenance plan
Success
Adding scheduling options
Success
Adding reporting options
Success
Saving maintenance plan "MES Databases"
Stop
Report
Close


Maintenance Plan Wizard
Maintenance Plan Wizard Progress
Click Stop to interrupt the operation.
Success
5 Total
5 Success
0 Error
0 Warning
Details:
Action
Status
Message
Creating maintenance plan "MES Databases"
Success
Adding tasks to the maintenance plan
Success
Adding scheduling options
Success
Adding reporting options
Success
Saving maintenance plan "MES Databases"
Success
Stop
Report
Close

Click **Close**.

This maintenance plan will create one SQL Server Agent Job.

To view the SQL Server Agent Jobs:

4. Expand **SQL Server Agent**.
5. Click **Jobs**.
6. If the jobs do not appear, right-click in the right pane and select **Refresh**.

NOTE: SQL Server Agent must be running for the scheduled jobs to execute.

TIP: Refer to **Backing Up and Restoring Databases** in SQL Server 2005 Books Online for additional information.

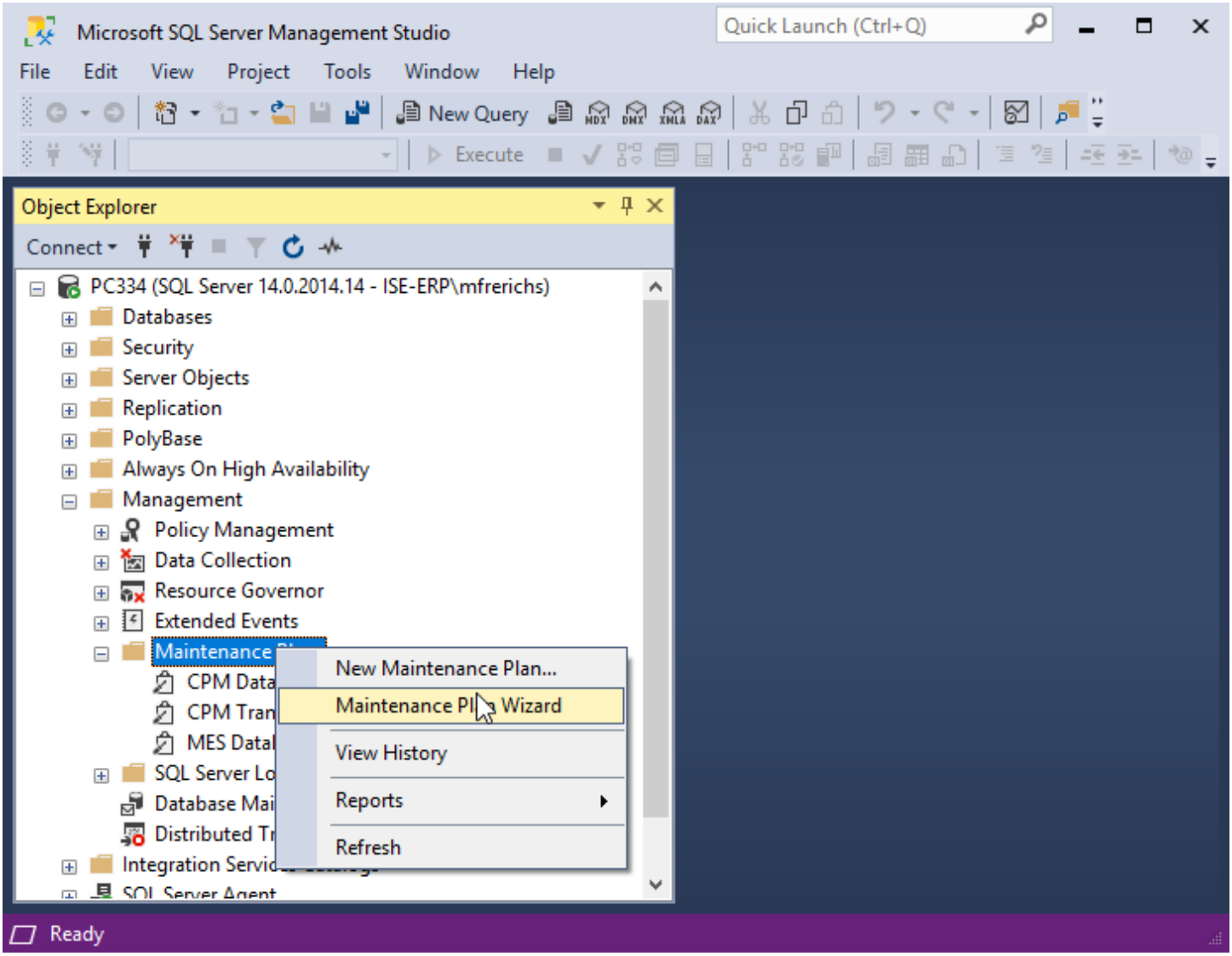
PLAN 2 – TRANSACTION LOG BACKUP

The purpose of this database maintenance plan is to provide a transaction log backup of all MES SQL databases.

- Every Tuesday, Thursday and Saturday at 2:00 AM, Transaction Log Backup.

NOTE: This is not designed to be your sole backup strategy or disaster recovery plan.

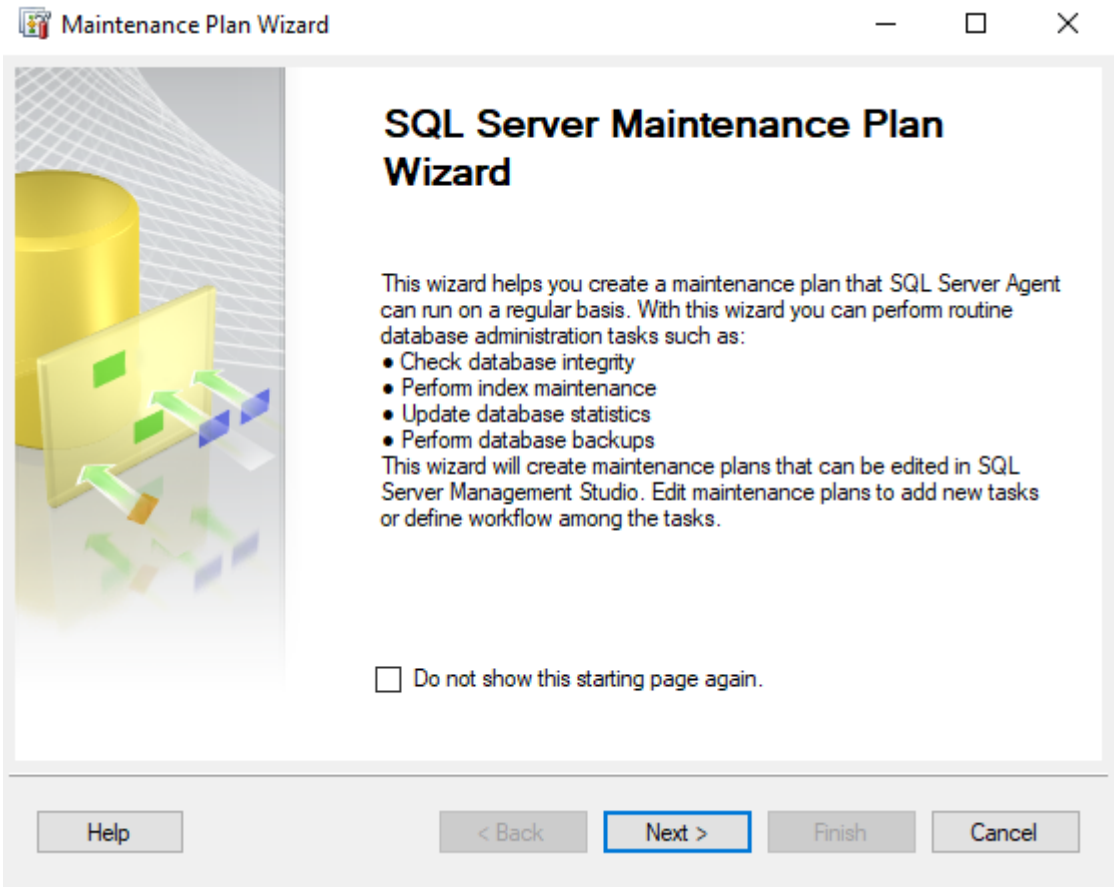
In Microsoft SQL Server Management Studio:



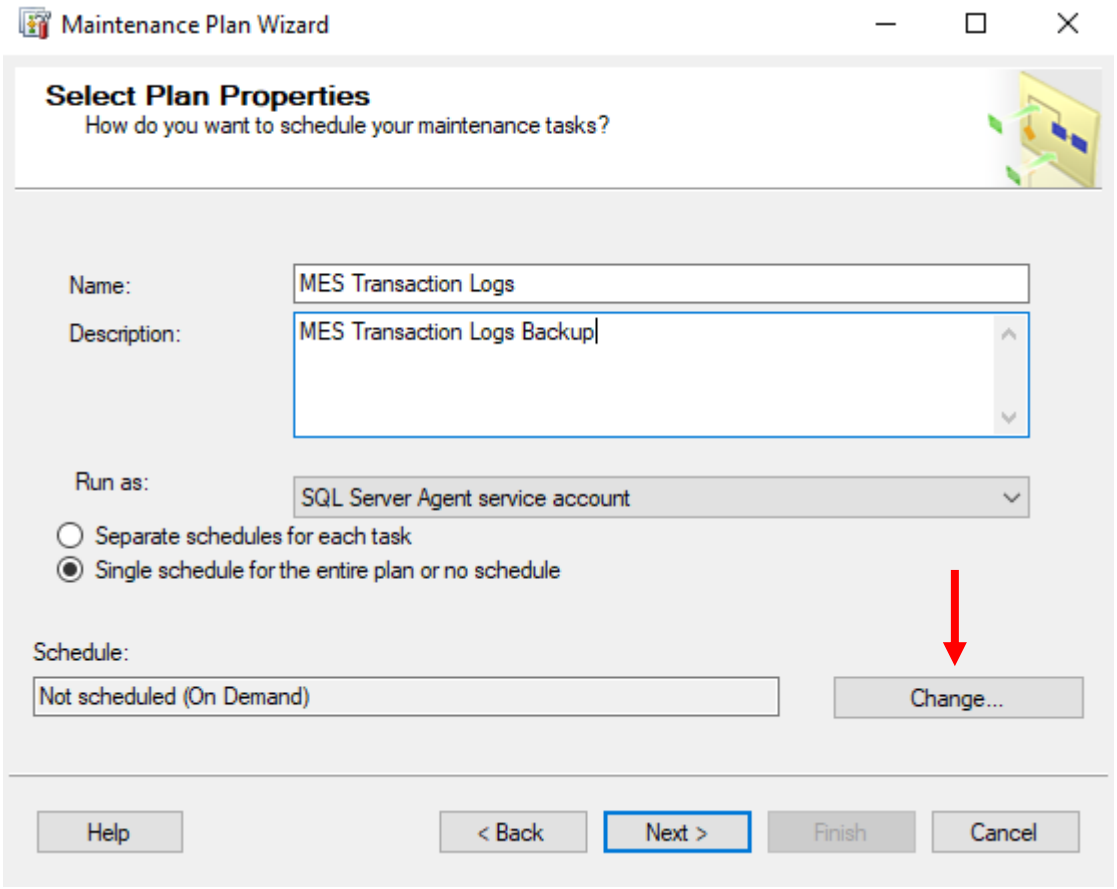
Expand the **Management** folder.

Right-click on **Maintenance Plans** and select **Maintenance Plan Wizard.**

This will start the **SQL Server Maintenance Plan Wizard**.


Maintenance Plan Wizard
SQL Server Maintenance Plan Wizard
This wizard helps you create a maintenance plan that SQL Server Agent can run on a regular basis. With this wizard you can perform routine database administration tasks such as:
• Check database integrity
• Perform index maintenance
• Update database statistics
• Perform database backups
This wizard will create maintenance plans that can be edited in SQL Server Management Studio. Edit maintenance plans to add new tasks or define workflow among the tasks.
Do not show this starting page again.
Help
< Back
Next >
Finish
Cancel

Click **Next**.

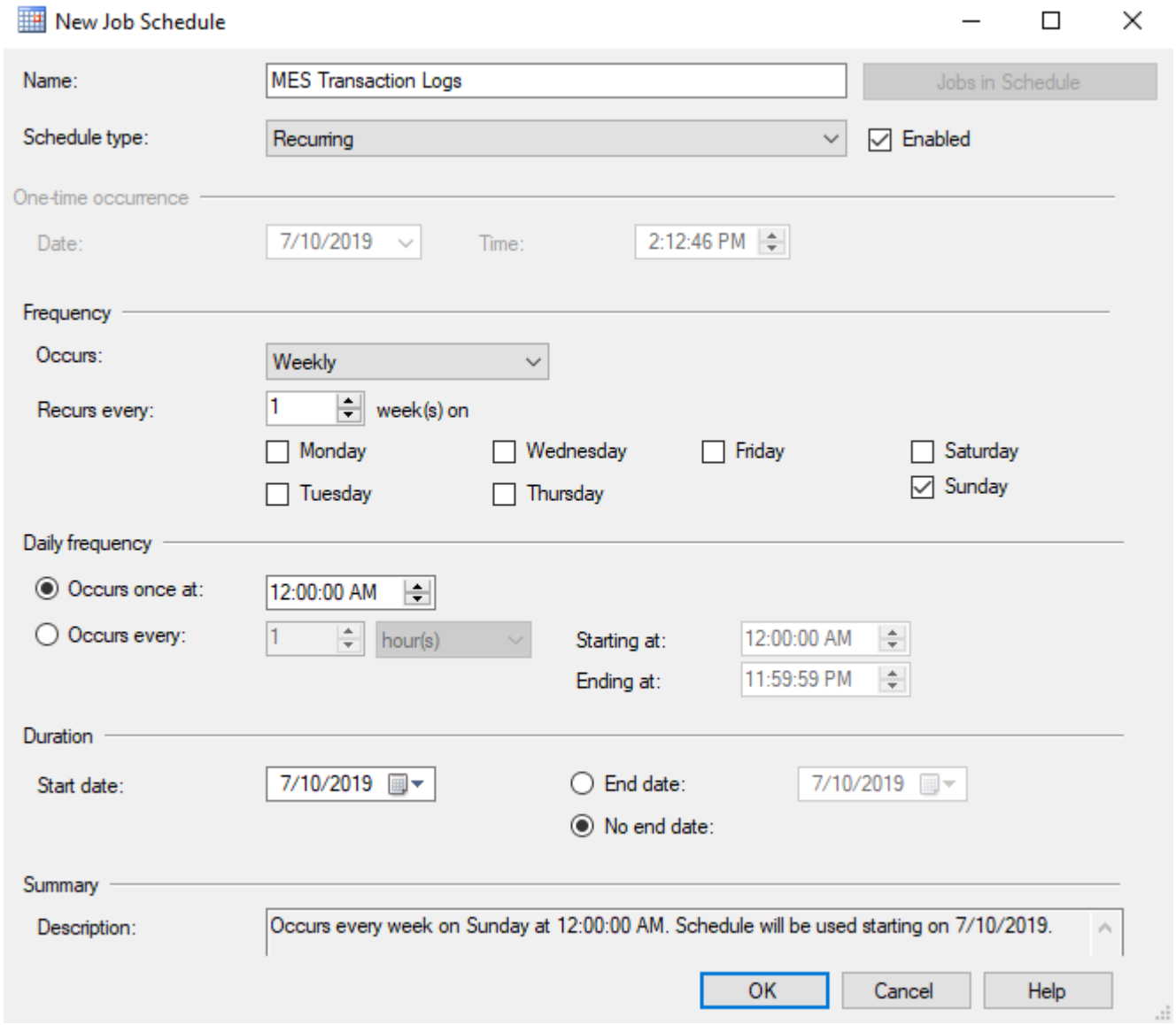


Enter a **Name**. For example: MES Transaction Logs.

Enter a **Description**.

Select **Authentication** method.

Click on the **Change** button to open the Job Schedule Properties and make changes.



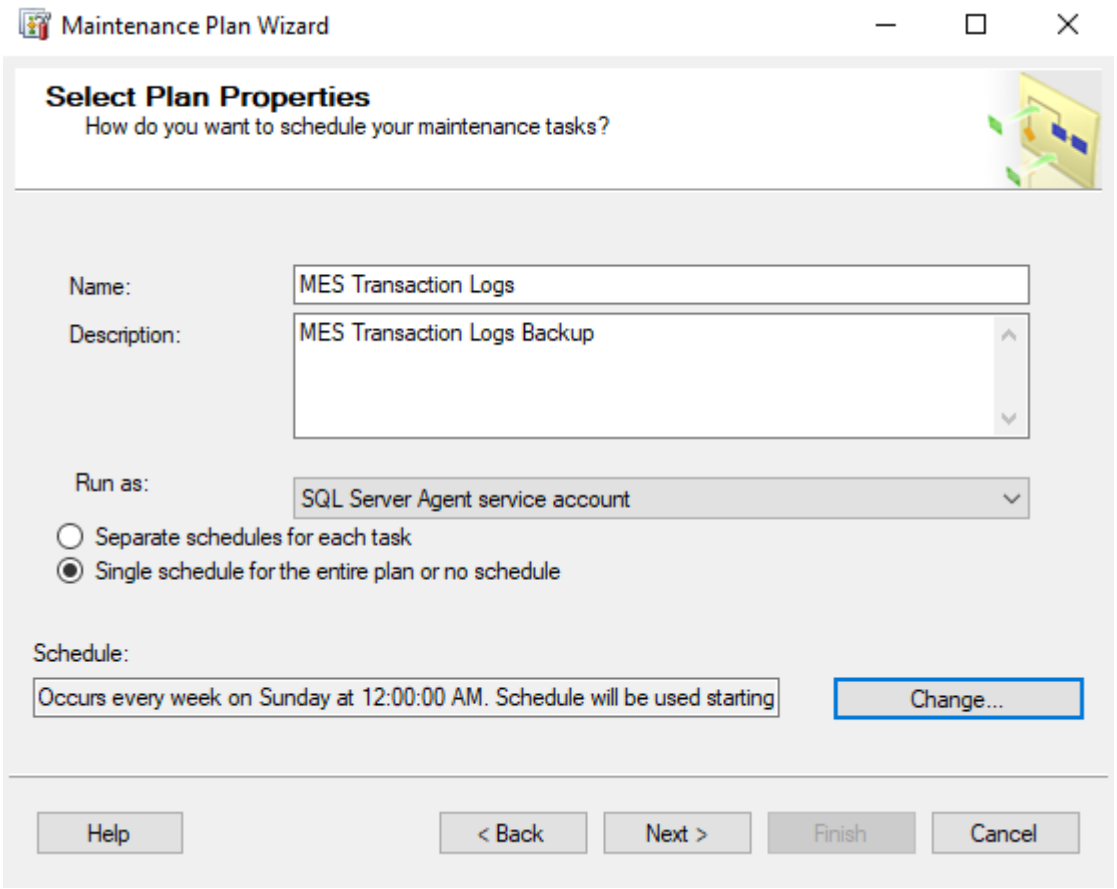
Enter a job schedule **Name**.
Change the **Frequency** as desired.
NOTE: The schedule shown here will backup the transaction logs on Tuesday, Thursday & Saturday at 2:00 AM.
NOTE: Based on the server's overall job schedule, adjust the time accordingly.
NOTE: Frequency of the Transaction Log Backup is dependent on backup strategy and disaster recovery planning.

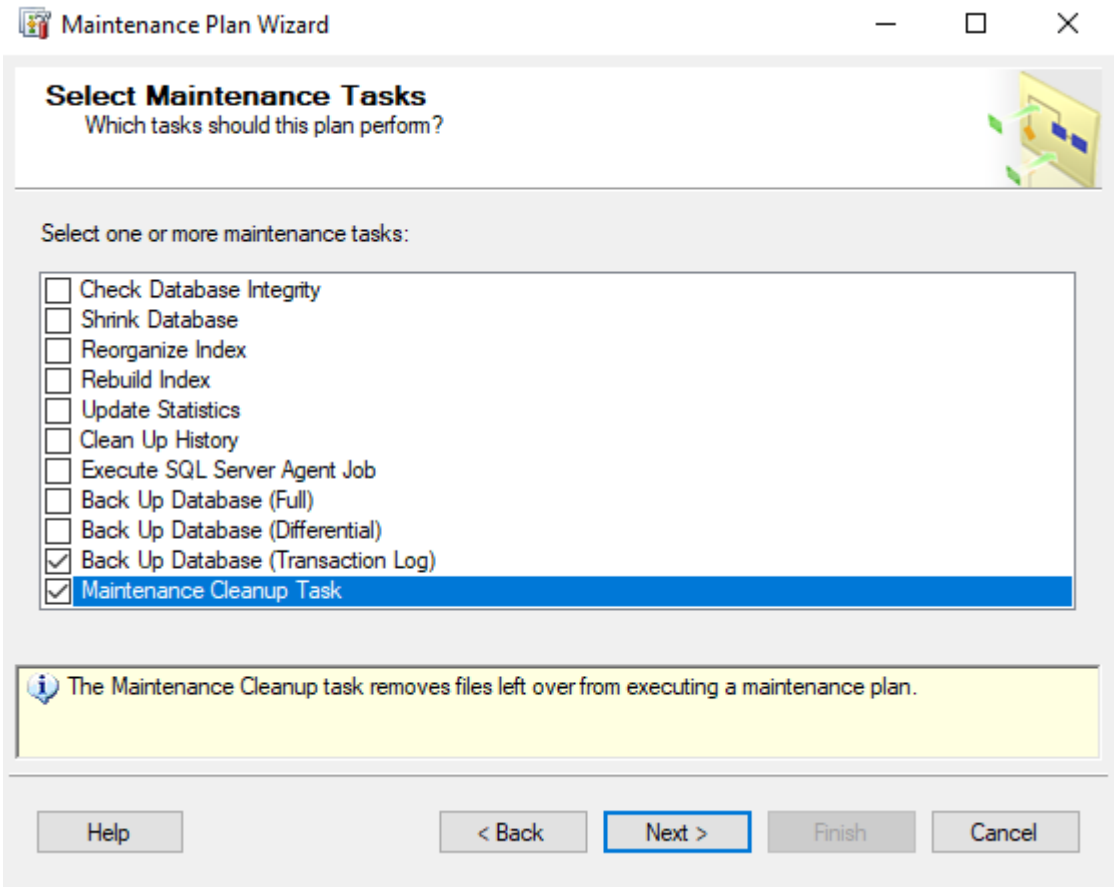
3. If you have established a daily backup of the MES SQL databases, this schedule may be changed to once per week or month because its primary purpose is to truncate the database transaction logs and prevent them from growing uncontrollably. The preceding statement is superseded if you wish to execute multiple transaction log backups throughout the day.
4. If you have established a weekly backup of the MES SQL databases, this schedule should be changed to daily. At a minimum, you should backup the transaction logs once per day. For added protection, the daily frequency can be changed as deemed necessary.

NOTE: If you intend to rely on transaction log backups, you must relocate the transaction log backup files to another computer or media as soon as possible. Failure to do so expose the MES SQL databases to loss of data in the event the MES SQL databases need to be restored to a point in time.

Click **OK** to close the **New Job Schedule** window.

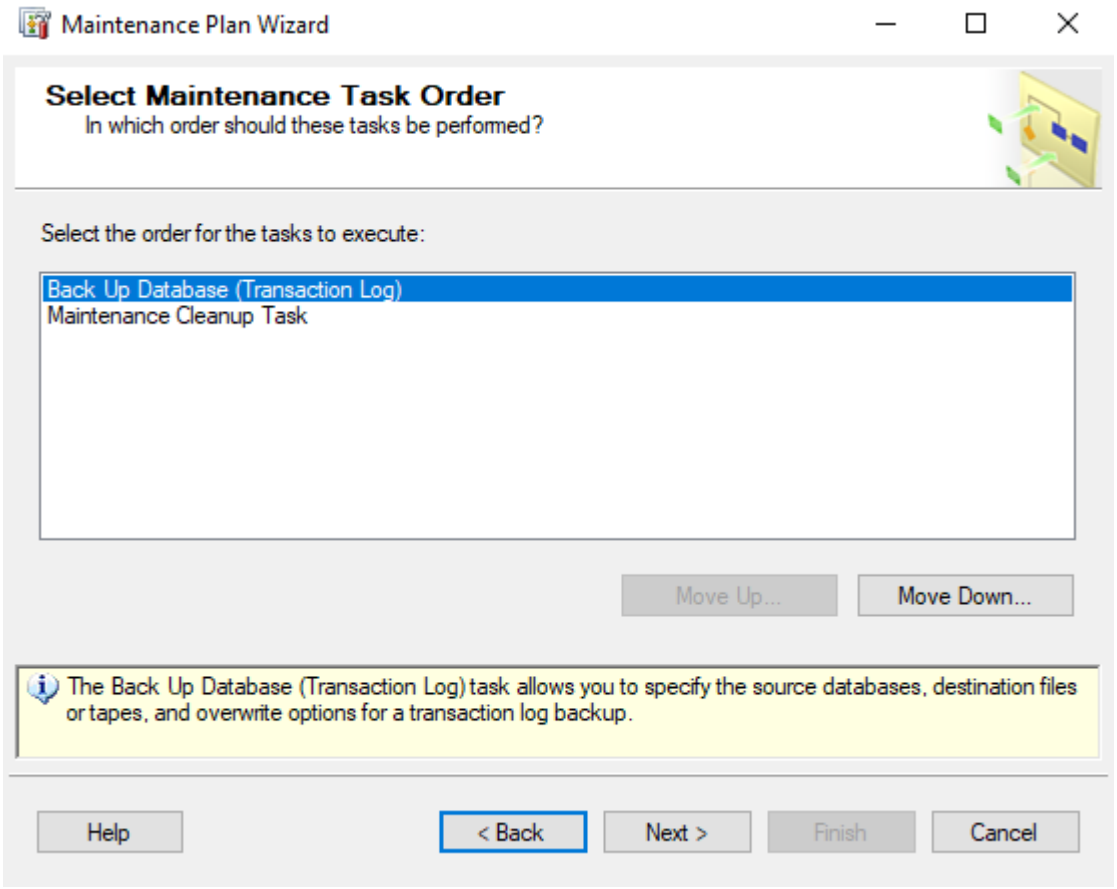
Click **OK.**



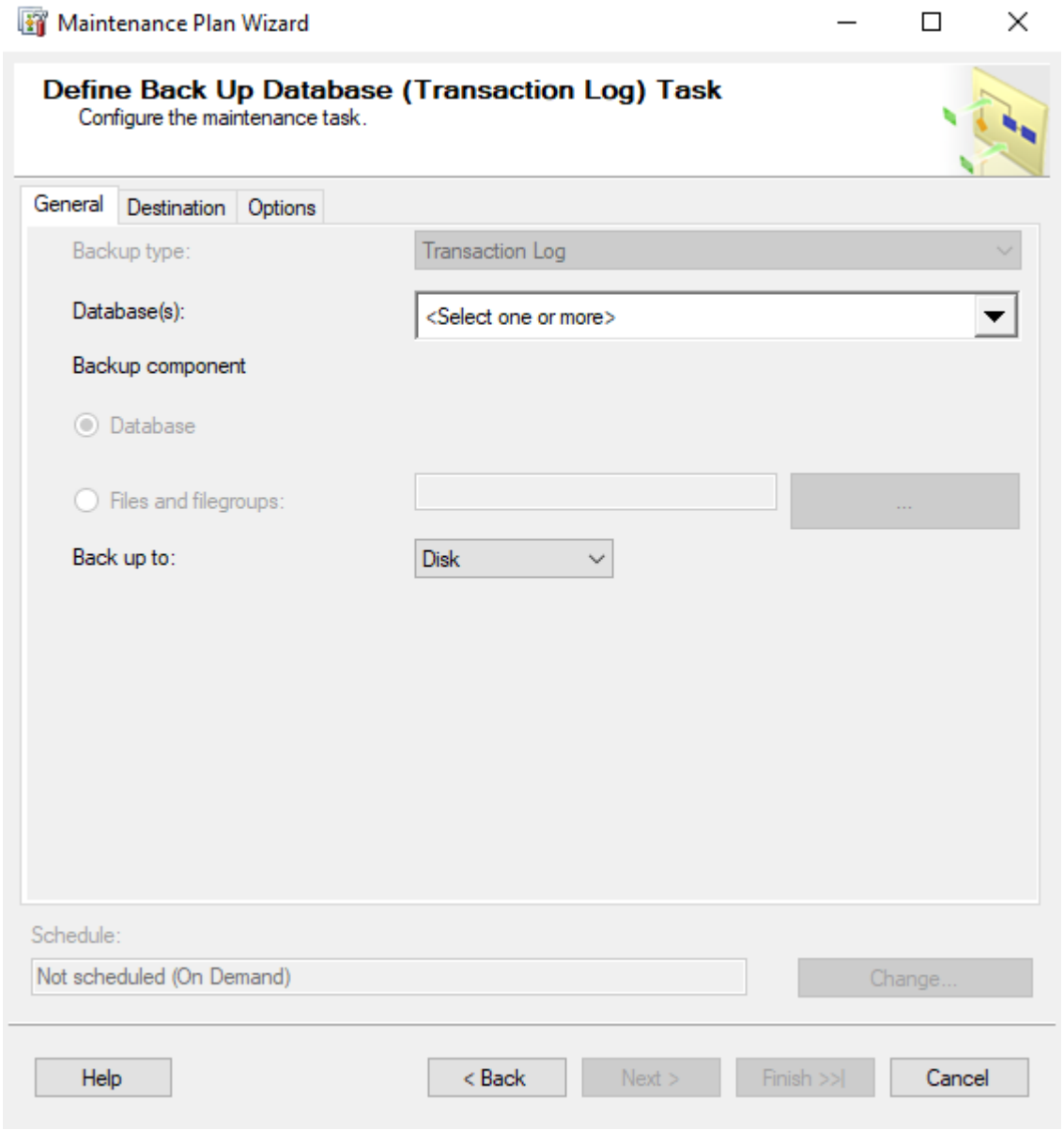


Select **Back Up Database (Transaction Log)** maintenance task & **Maintenance Cleanup Task**.

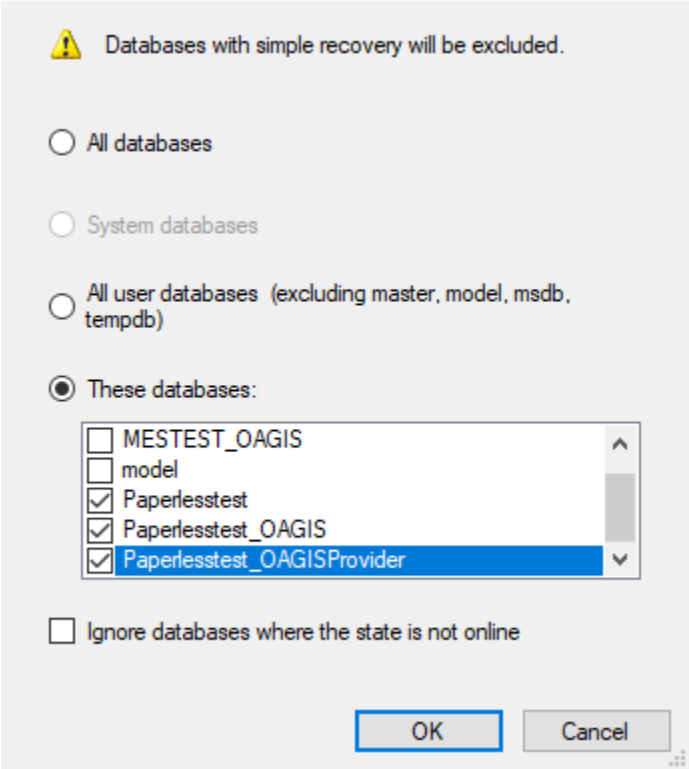
Click **Next**.


Maintenance Plan Wizard
Select Maintenance Task Order
In which order should these tasks be performed?
Select the order for the tasks to execute:
Back Up Database (Transaction Log)
Maintenance Cleanup Task
Move Up...
Move Down...
The Back Up Database (Transaction Log) task allows you to specify the source databases, destination files or tapes, and overwrite options for a transaction log backup.
Help
< Back
Next >
Finish
Cancel

Click **Next**.



Click **<Select one or more>** databases.

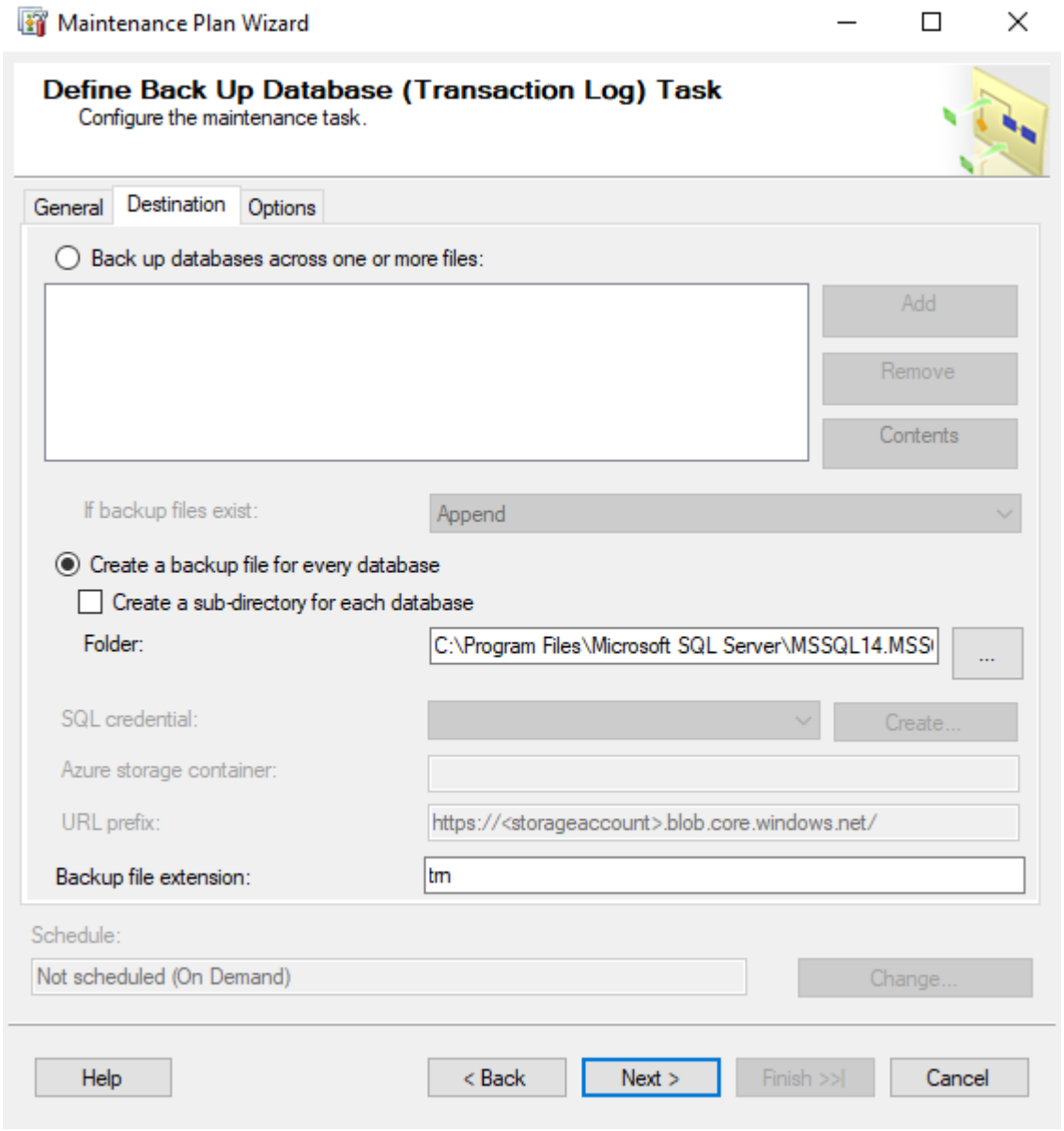


Select **These databases**.
Select the MES SQL databases.

NOTE: The names of your MES SQL databases may be different than shown above.
NOTE: If you have multiple environments, select all MES SQL databases.

IMPORTANT: Do NOT select the MES_InforXA (or <database root name>_InforXA) databases. Only databases that are set to use SQL Server's FULL recovery model can have their transaction log backed up. MES_InforXA database is usually set to SIMPLE recovery model and therefore, its transaction log cannot be backed up.

Click **OK**.



Select the backup destination—**Disk** or **Tape**.
Specify the appropriate information for either a disk or tape backup.

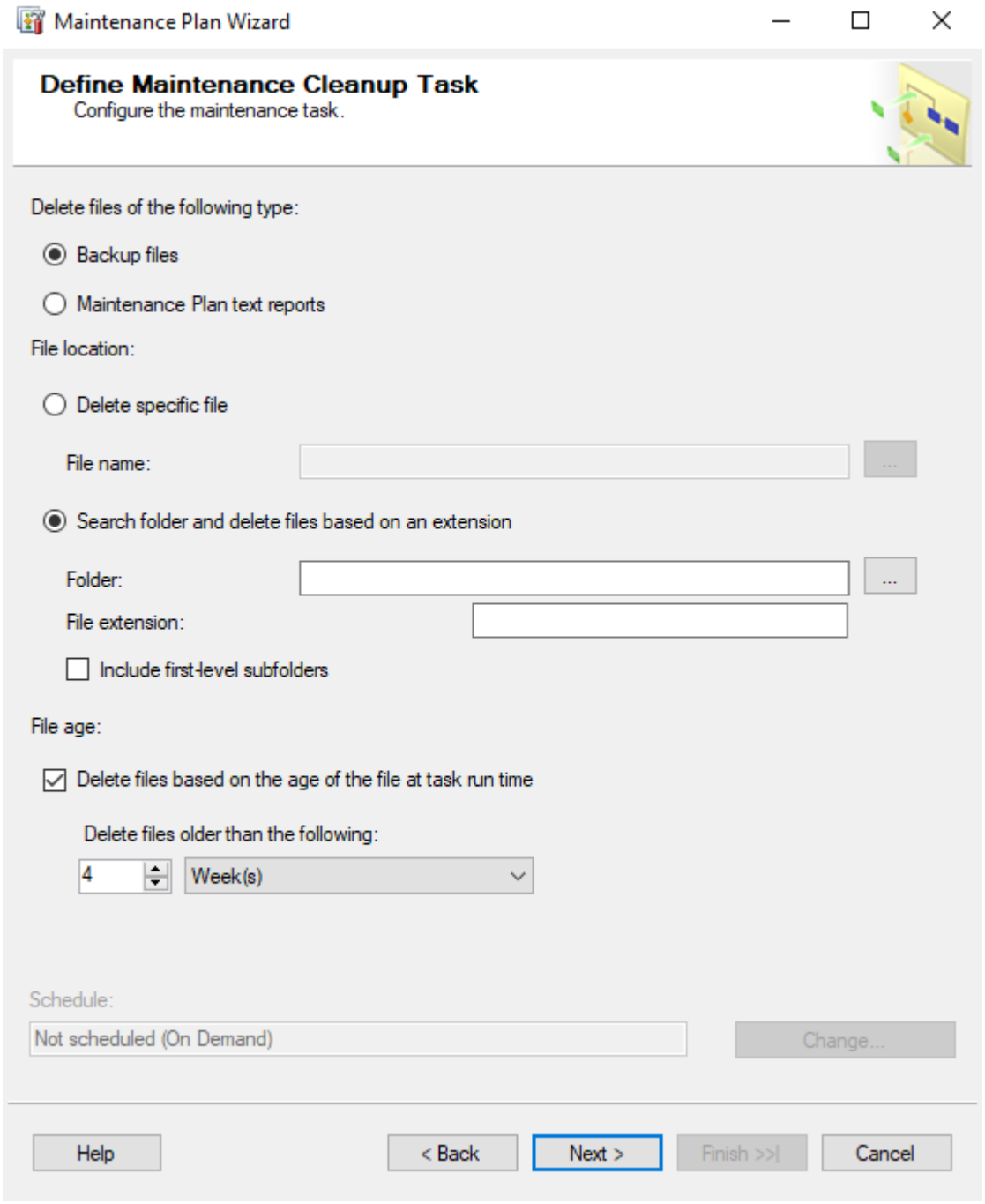
If the transaction log backups are being kept for disaster recovery purposes:

For easier organization, select **Create a sub-directory for each database**.
Select **Verify backup integrity** to ensure the database can be restored from the media.

If the transaction log backups are being immediately discarded:

Select **Back up databases across one or more files**.
Click **Add** to add a backup file location.
Select to **Overwrite** the backup file if it exists.
Unselect **Verify backup integrity**.

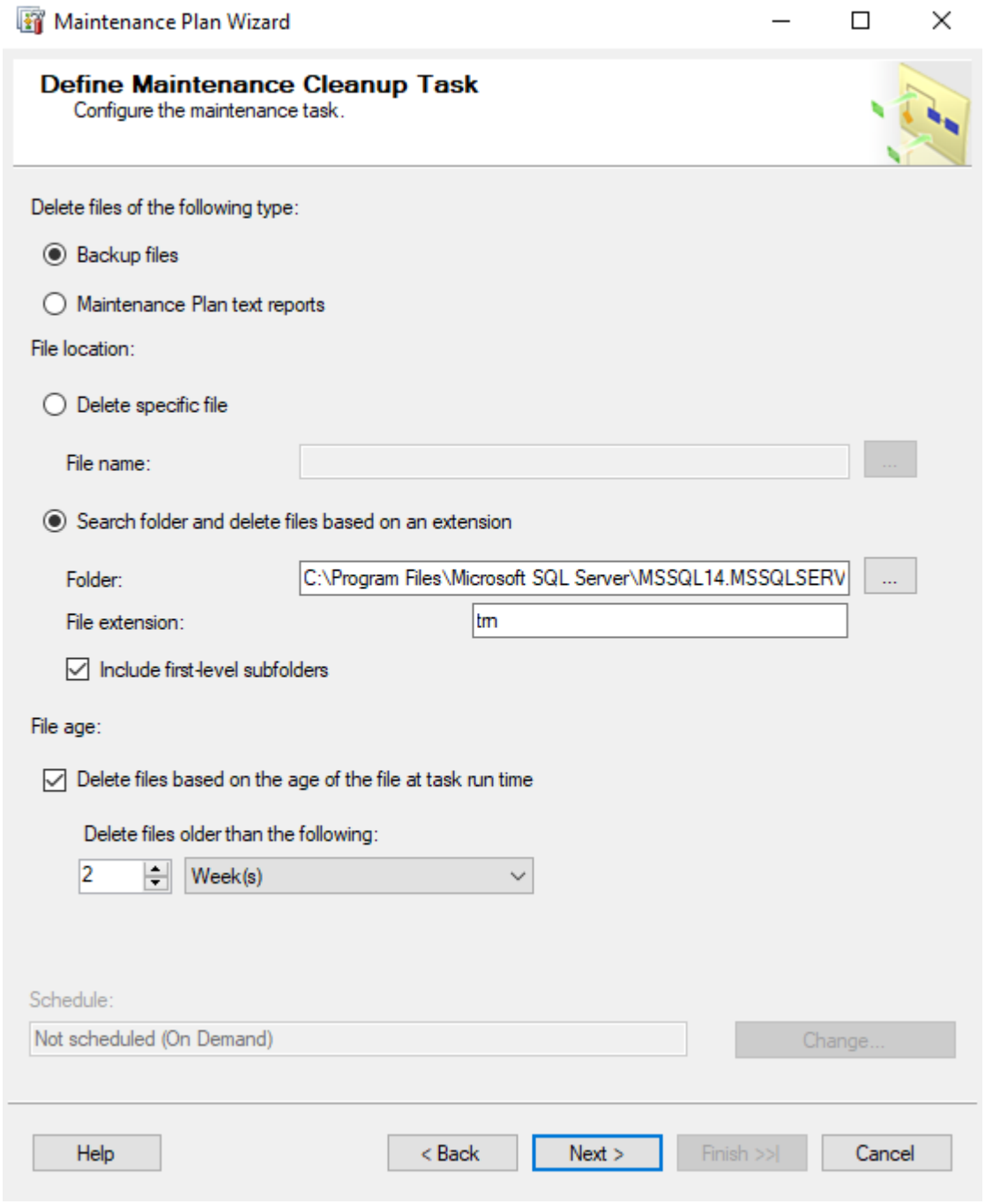
Click **Next**.



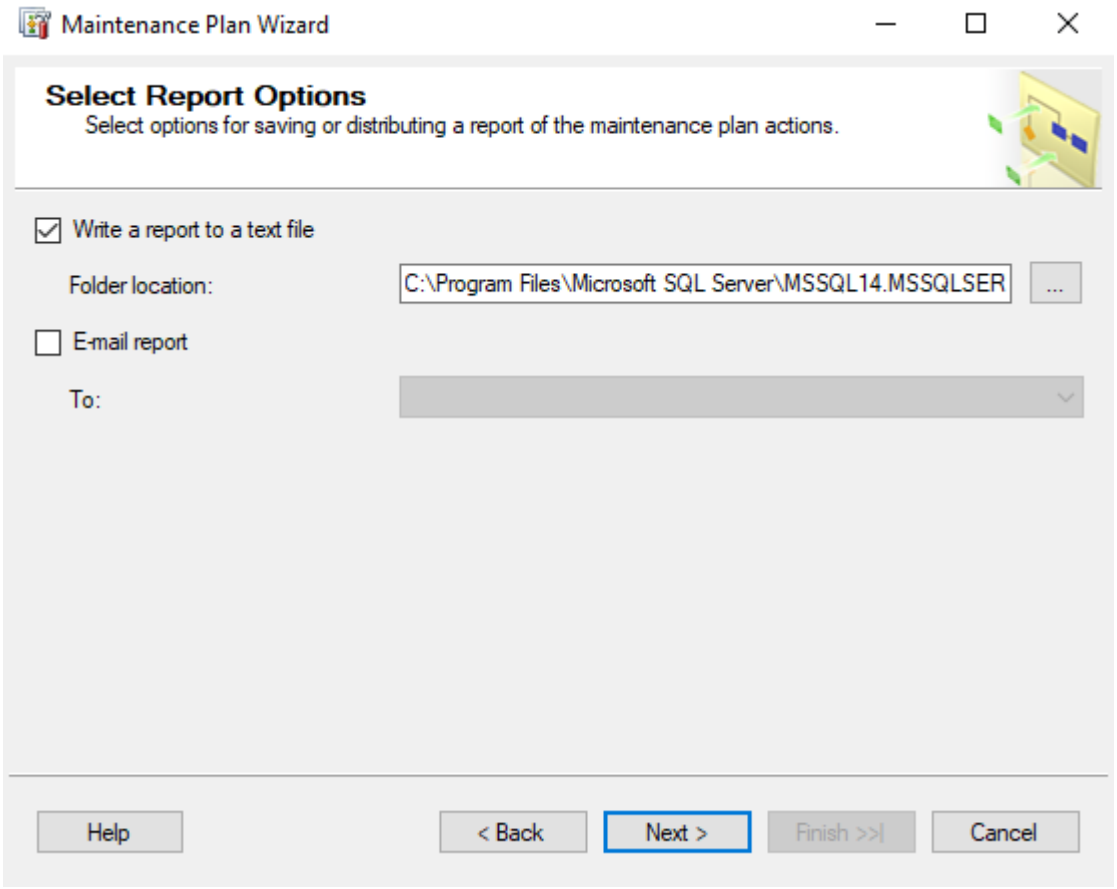
Define the SQL Server Backup folder location.

Check **Include first-level subfolders**.

Define the desired retention period.


Maintenance Plan Wizard
Define Maintenance Cleanup Task
Configure the maintenance task.
Delete files of the following type:
Backup files
Maintenance Plan text reports
File location:
Delete specific file
File name:
Search folder and delete files based on an extension
Folder:
C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERV
File extension:
tm
Include first-level subfolders
File age:
Delete files based on the age of the file at task run time
Delete files older than the following:
2
Week(s)
Schedule:
Not scheduled (On Demand)
Change...
Help
< Back
Next >
Finish >>|
Cancel

Click **Next.**

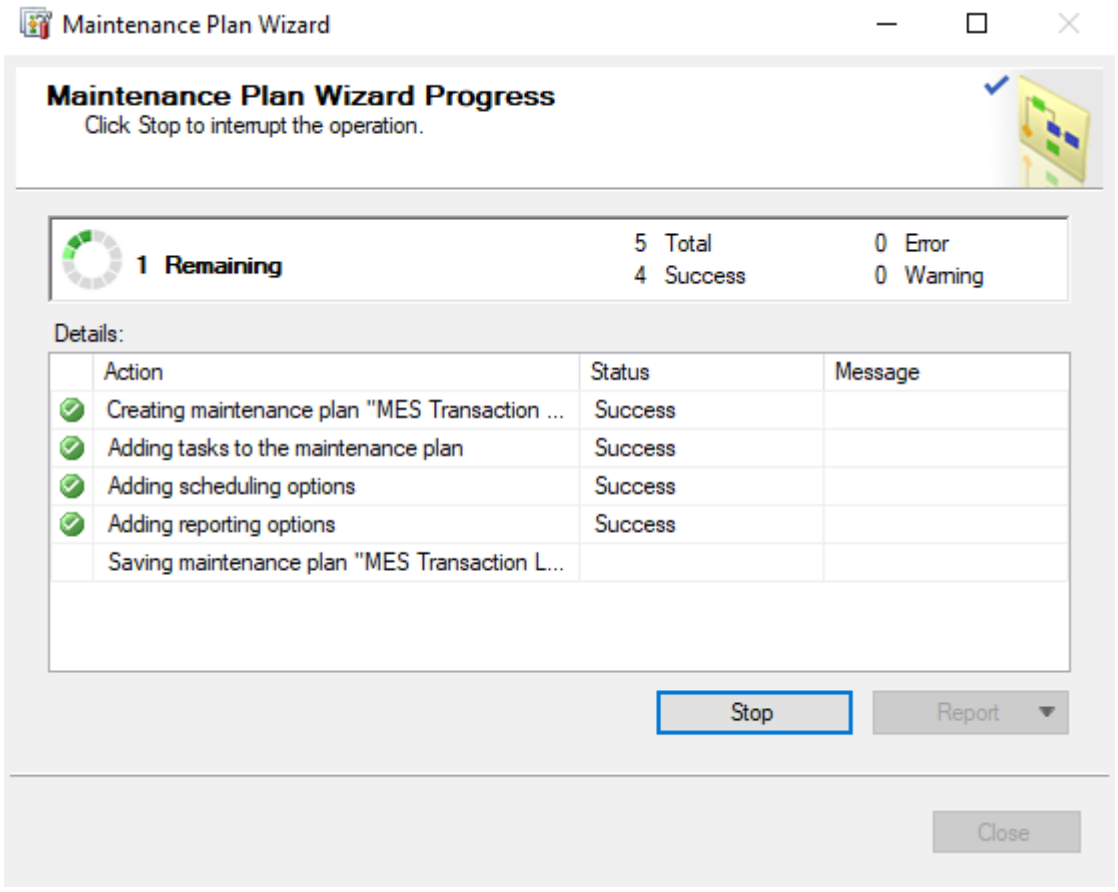


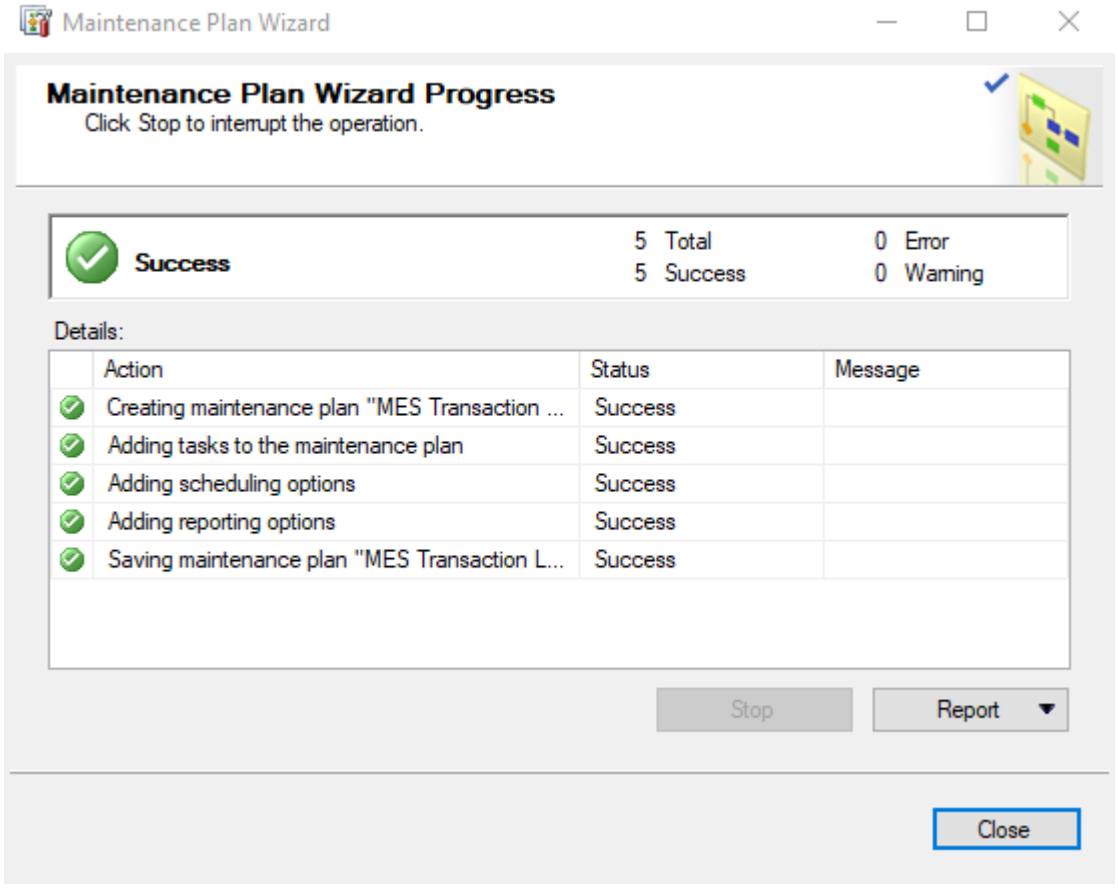
If you wish to Write a report to a text file, define the folder location.

Select the report options as desired.

TIP: To send an e-mail report, configure SQL Server 2017's Database Mail and a SQL Server Agent Operator first. Refer to SQL Server 2017 Books Online.

Click **Next**.


Maintenance Plan Wizard
Maintenance Plan Wizard Progress
Click Stop to interrupt the operation.
1 Remaining
5 Total
4 Success
0 Error
0 Warning
Details:
Action
Status
Message
Creating maintenance plan "MES Transaction ...
Success
Adding tasks to the maintenance plan
Success
Adding scheduling options
Success
Adding reporting options
Success
Saving maintenance plan "MES Transaction L...
Stop
Report
Close


Maintenance Plan Wizard
Maintenance Plan Wizard Progress
Click Stop to interrupt the operation.
Success
5 Total
5 Success
0 Error
0 Warning
Details:
Action
Status
Message
Creating maintenance plan "MES Transaction ...
Success
Adding tasks to the maintenance plan
Success
Adding scheduling options
Success
Adding reporting options
Success
Saving maintenance plan "MES Transaction L...
Success
Stop
Report
Close

Click **Close**.
This maintenance plan will create one SQL Server Agent Job.

To view the SQL Server Agent Jobs:

4. Expand **SQL Server Agent**.
5. Click **Jobs**.
6. If the jobs do not appear, right-click in the right pane and select **Refresh**.

NOTE: SQL Server Agent must be running for the scheduled jobs to execute.

TIP: Refer to **Backing Up and Restoring Databases** in SQL Server 2005 Books Online for additional information.