Metasys Database Manager Help

Building Technologies & Solutions

www.johnsoncontrols.com

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Release 11.0

Contents

Introduction

Use the following information when you want the Metasys Database Manager to interact with and monitor the trend, alarm (event), audit, and annotation databases on the following servers:

- Application and Data Server (ADS)
- Extended Application and Data Server (ADX)
- Open Application Server (OAS)

The Metasys Database Manager supports all versions of Microsoft® SQL Server® software.

Note: In this document, ADS/ADX includes the ADS-Lite, unless noted otherwise.

The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to Metasys Release 11.0.

You can use the following options to install the Metasys Database Manager:

- Add the Metasys Database Manager to the ADS, ADX, ODS, or OAS computer at any time before or after the initial ADS, ADX, ODS, or OAS installation.
- Install the Metasys Database Manager on the database server computer of a split ADX.

Important: If you need to perform an out-of place upgrade, see Performing an out-of-place upgrade.

All versions of the ADS, ADX, ODS, and OAS support the Metasys Database Manager, including the ADX and ODS that run the *Metasys* Advanced Reporting System, and the ADXs for Metasys for Validated Environments (MVE), extended architecture. (The ODS or OAS do not support MVE.)

Note: Annotations entered for events and audits are stored in the JCIEvents and JCIAuditTrails databases. The JCIItemAnnotation database is installed with every ADS/ADX/ODS/OAS and stores annotations for other system items.

Summary of changes

The following information is new or revised:

- Added support for Windows Server® 2019.
- Removed support for Windows Server ® 2012.
- Removed support for Windows 7®.
- Updated supported operating systems in Required access rights

No additional technical changes were made to the document for this release.

Metasys Database Manager overview

The Metasys Database Manager provides both Managing databases and Monitoring databases functions, which are handled in two separate windows.

On a unified ADS/ADX/ODS/OAS computer, the default path of the Metasys Database Manager is `C:\Program Files (x86)\Johnson Controls`. If you have a split ADX, you must install the Metasys Database Manager on the database server computer. Refer to the *Metasys Database Manager Installation Guide (LIT-12011553)* for details on installation.

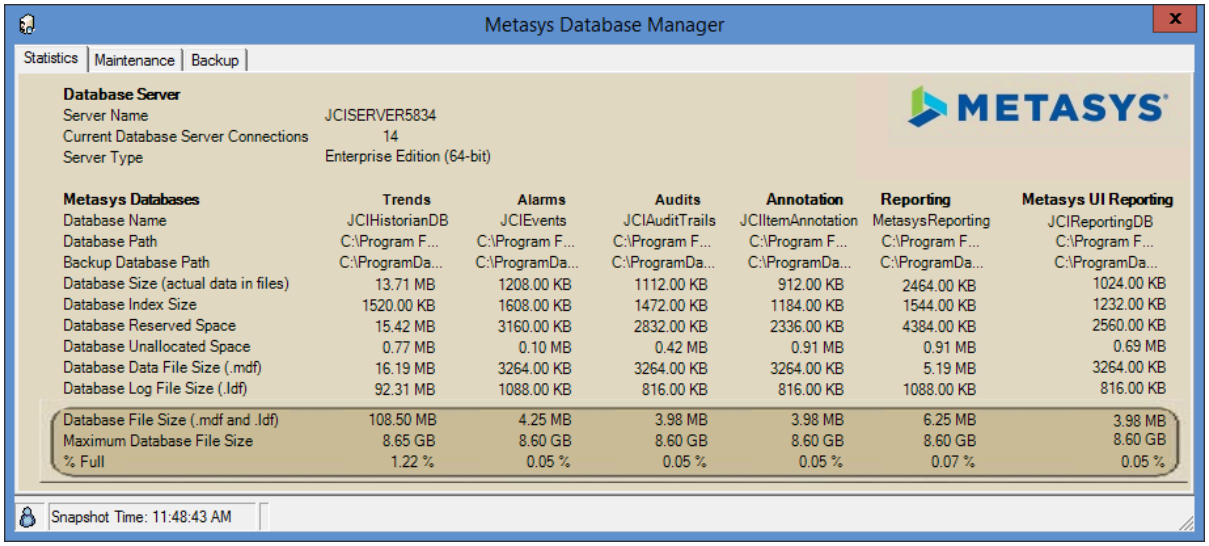
Database Management

The ADS/ADX and OAS Metasys servers include trend, alarm (event), audit, annotation, and reporting databases. The Metasys system also provides summarized information about these databases and database operations. Database Manager lets you back up, purge, restore, and rename field contents in the various databases.

Three new SQL databases: `MetasysValue`, `MetasysFault`, and `MetasysFaultTriage` have been introduced at Metasys Release 11.0. To activate the databases, license the associated Metasys features, these include, potential problem areas, fault detection, and fault triage. The `MetasysValue`and `MetasysFault` databases self-maintain and store a rolling seven days' worth of data. These databases are not monitored or managed by Metasys Database Manager.

Note: The Restore and Rename functions are available in Expert Mode only. See Expert mode.

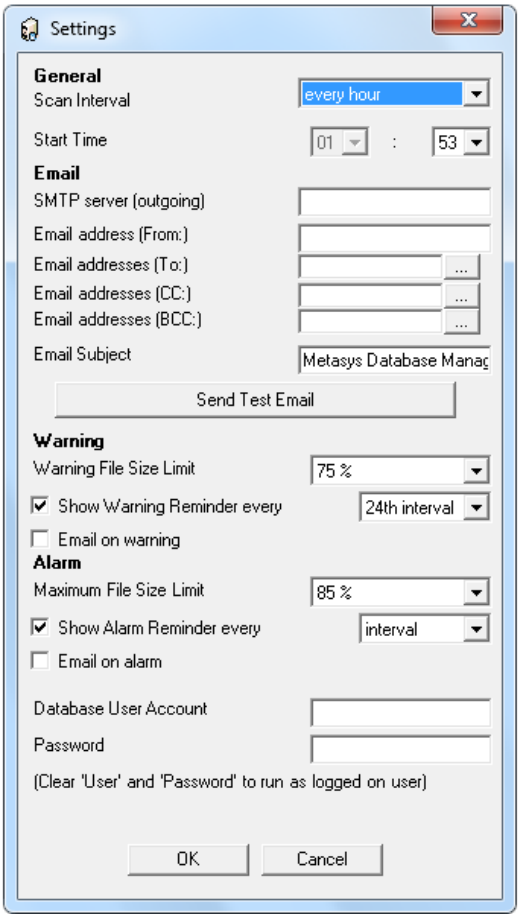
Figure 1: Managing Window



Database Monitoring

The monitoring feature continually reads database information and provides alerts on the taskbar, by email, or using both methods, based on user-configurable warning and alarm levels.

Figure 2: Monitoring Window



For more information about the Metasys Database Manager, see these sections:	To start using the Metasys Database Manager, see these sections:
Required access rights	Checking database statistics
Taskbar icon	Backing up a database
Status bar	Purging a database
Tabs	Restoring a database
Expert mode	Renaming field contents in Metasys databases
Monitoring settings	Managing databases
Split ADX considerations	Accessing/Starting monitoring settings
Interaction with the Metasys system	Choosing monitoring settings
Settings.xml	Stopping database monitoring
Log file	Viewing the log file

Required access rights

The content that you can view and the steps that you can perform in the *Metasys* Database Manager depend on your Microsoft Windows® access rights and on the Microsoft SQL Server privileges assigned to your Windows login.

Table 1: Windows Access Rights

Operating System	Operating System Access Rights	Corresponding SQL Server Access Rights (If Using Windows Authentication to Access SQL)	Functionality
Windows® 10 Pro and Windows 10 Enterprise Editions versions 1903, 1909, and 2004 (64-bit). For all future Windows 10 updates after version 2004, we will evaluate and certify that Metasys software can support the updates before we provide guidance on support. Windows® 8.1 Pro and Windows 8.1 Enterprise Editions with Update (KB2919355) (64-bit) Windows® Server® 2016 with Update (KB4512495) (64-bit) Windows® Server® 2019 (version 1903) (64-bit)	Administrator	System Administrator	You are able to see and do everything in the *Metasys* Database Manager.
	Member of Administrator Group	Public User	You can view only the Statistics tab, you cannot use Expert Mode, and you cannot access the Settings window.
		System Administrator	You are able to see and do everything in the *Metasys* Database Manager.
	Standard User	Public User	You can view only the Statistics tab, you cannot use Expert Mode, and you cannot access the Settings window.

ⓘ **Note:** To allow a member of the OS Administrator group to function as a SQL Server System Administrator, you must take special steps. For database management using *Metasys* Database Manager, you must click **Yes** in the User Account Control window that appears when you attempt to open the *Metasys* Database Manager. See Opening the Metasys database manager to manage your databases. To view and change database monitoring settings in *Metasys* Database Manager, close the *Metasys* Database Monitor, right-click **Metasys Database Monitor** from the Start menu, select **Run as Administrator**, and click **Yes** in the User Account Control window. See Accessing/Starting monitoring settings. The Detailed procedures section mentions these special steps when needed.)

Taskbar icon

The taskbar icon ( or  or ) represents the status of your databases graphically and allows you to access the *Metasys* Database Manager and its monitoring settings. When the icon is present, regardless of color, the *Metasys* Database Manager is actively monitoring your databases.

- Icon colors
- Icon right-click menu
- Opening the Metasys database manager to manage your databases
- Accessing/Starting monitoring settings

Icon colors

The *Metasys* Database Manager taskbar icon changes color and size to alert you if a database exceeds the limits defined in the monitoring settings (see Choosing monitoring settings). When you click the icon, a balloon offers more details on the status of the databases.

The icon represents three states:

Normal 

A small green database icon appears when all databases are within their limits. When you click the icon, a balloon displays the following text:

```
Status: Normal
All Metasys Databases are within acceptable file size limits.
```

When you click the balloon, the Statistics tab of the *Metasys* Database Manager appears.

Warning 

A medium-sized yellow database icon appears when one or more databases exceed their warning limits. When you click the icon, a balloon displays the following text:

```
Status: Warning
The following Databases are past their warning limits: DatabaseName
```

When you click the balloon, the Maintenance tab of the *Metasys* Database Manager appears so that you can maintain the database.

To define the Warning settings, see Choosing monitoring settings.

Alarm 

A large red database icon appears when:

- One or more databases exceed their alarm limits.
- The *Metasys* Database Manager cannot connect with the SQL Server database.
- The *Metasys* Database Manager is installed before the ADS/ADX/ODS/OAS and no historical databases are present. In this situation, the *Metasys* Database Manager opens in Expert Mode, showing the Restore tab so that you can restore the databases. See Expert mode.

ⓘ **Note:** The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to *Metasys* Release 11.

When you click the icon, a balloon displays the following text:

```
Status: Alarm
The following databases need to be maintained: DatabaseName
```

When you click the balloon, the Maintenance stab of the *Metasys* Database Manager appears so that you can maintain the database.

To define the Alarm settings, see Choosing monitoring settings.

Icon right-click menu

The *Metasys* Database Manager icon right-click menu allows you to access the *Metasys* Database Manager and its monitoring settings (Table 2).

Table 2: Taskbar Icon Menu

Selection	Description
Open	Opens the *Metasys* Database Manager. See Managing databases.
Settings	Displays the Settings window where you can view and modify the monitoring parameters. See Monitoring databases.
View Log File	Launches the Windows Event Viewer. See Log file.
Help	Opens the *Metasys* Database Manager Help.
About	Displays version information.
Exit	Stops all database monitoring and removes the taskbar icon. To start monitoring again and restore the icon, see Monitoring databases.

Status bar

The status bar provides information on the current activity of the *Metasys* Database Manager and is visible at the bottom of all tabs (Figure 3). The status bar is not present on the Monitoring Settings window.

Figure 3: Status Bar

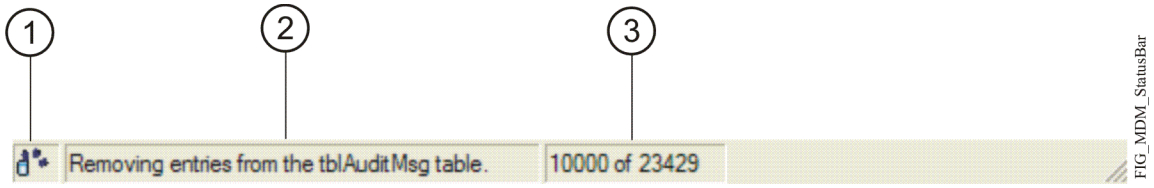


Table 3: Status Bar Components

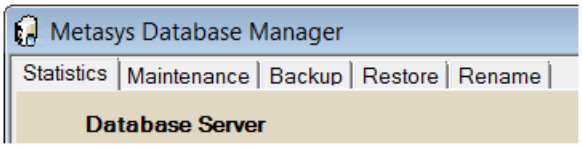
Callout	Part	Description
1	Icon	Displays an icon that depicts the status of a *Metasys* Database Manager action:  - ready  - purging records from a database  - action failed  - refreshing statistics  - restoring a database  - shrinking a database and shrinking database files  - backing up a database  - resetting Internet Information Services (IIS)  - starting the *Metasys* Device Manager ⓘ **Note:** During some maintenance operations, the *Metasys* Device Manager shuts down to avoid possible database read/write conflicts. This process restarts the *Metasys* Device Manager so that the *Metasys* user interface is once again available to users.  - shutting down the *Metasys* Device Manager ⓘ **Note:** During some maintenance operations, the *Metasys* Device Manager shuts down to avoid possible database read/write conflicts. The *Metasys* user interface is unavailable to users during this time.  - action successful
2	Text	Includes text that describes the action currently taking place. If the *Metasys* Database Manager is not currently performing a task, this part of the status bar shows when the data was gathered from the database (when the snapshot was taken).
3	Additional Text	Provides additional status description text. For example, when purging records, this part of the status bar displays the number of records deleted from the total number of records.

Tabs

The *Metasys* Database Manager contains a Status bar and five tabs (Figure 4). Click one of the following links to learn more about the contents of that tab.

- Statistics tab
- Maintenance tab
- Backup tab
- Restore tab
- Rename tab

Figure 4: Tabs in the *Metasys* Database Manager



Note: The Restore tab and the Rename tab are available in Expert Mode only. See Expert mode.

Statistics tab

The Statistics tab contains information about the SQL Server software loaded on the *Metasys* ADS/ADX/ODS/OAS computer and displays database information for each of the trend, alarm (event), audit, annotation, and reporting databases.

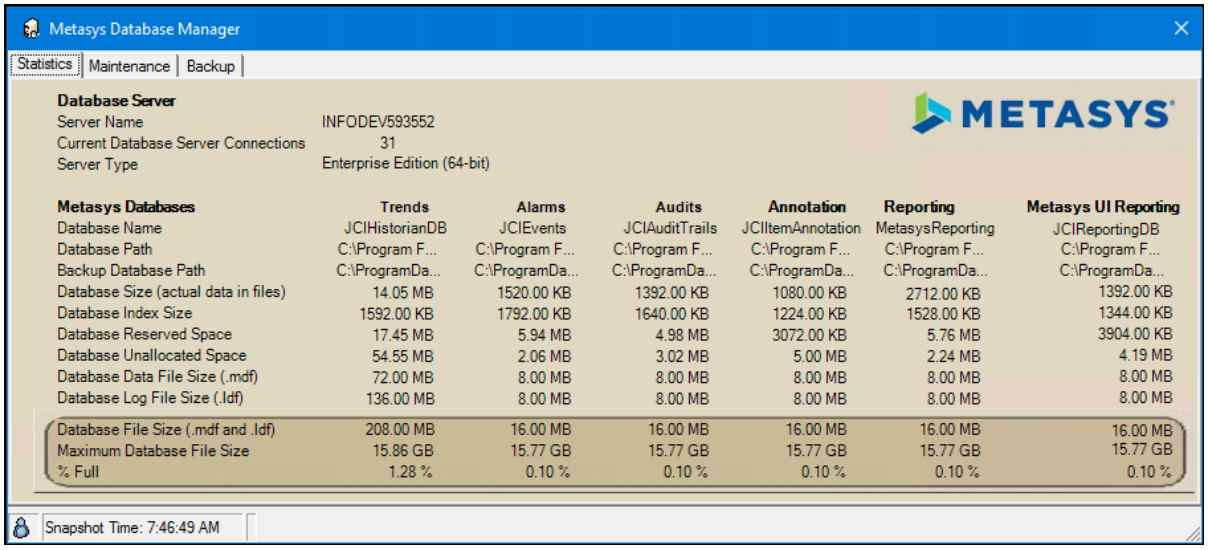
Note: The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to *Metasys* Release 11.

The Statistics tab is divided into two sections (Figure 5):

- Database server
- Metasys databases

See Status bar for information on the status bar.

Figure 5: Statistics Tab



Database server

The Database Server section displays information on the SQL Server software. See Table 4.

Table 4: Database Server Section Contents

Field	Description
Server Name	Displays the name of the local running SQL Server software.
Current Database Server Connections	Displays the number of connections to SQL Server software at the time you launch the *Metasys* Database Manager. If the value of this field is 0, you are using the *Metasys* Database Manager in a limited capacity (read-only) because the user running the tool is not a SQL Server database administrator. This value is not refreshed.
Database Server Type	Displays the type of SQL Server software that has been installed. For example, this field may contain Express Edition.

Metasys databases

The *Metasys* Databases section contains statistical information about the trend, alarm (event), audit, and annotation databases (Table 5). The SQL Server software directly supplies all of the information on the tab. For more information on the fields in the tab, refer to your SQL Server software documentation.

Table 5: *Metasys* Databases Section Fields

Field	Description
Database Name	The SQL Server software database name.
Database Path	The system path where the database exists. When you place your cursor over the path, the entire path appears in a tooltip.
Backup Database Path	The current directory where database backups are created. When you place your cursor over the path, the entire path appears in a tooltip.

Table 5: *Metasys* Databases Section Fields

Field	Description
Database Size	The physical size of the data (and only the data) inside the database. For the size of the file that contains the database, see Database Data File Size.
Database Index Size	The physical size of the index for the database.
Database Reserved Space	The physical size of space in the .mdf and .ldf file reserved for future use by objects within the database. This typically is space assigned to individual tables and indexes and log buffer space.
Database Unallocated Space	The physical size of space in the database .mdf and .ldf files that has **not** been reserved for use by objects within the database. The database can use this space to grow tables or logs without growing the physical file size on the hard disk.
Database Data File Size*	The size of the data file for the database (.mdf file) that takes up room on the computer. The *Metasys* Database Manager uses this value and the value in Database Log File Size to calculate the % Full for the database.
Database Log File Size*	The size of the log file for the database (.ldf file) that takes up room on the computer. The *Metasys* Database Manager uses this value and the value in Database Log File Size to calculate the % Full for the database.
Database File Size*	The physical space taken up by the entire database. The entire database includes *.mdf and .ldf files. The size of the .mdf file is indicated in Database Data File Size. The size of the .ldf file is indicated in Database Log File Size.
Maximum Database File Size*	The size of the database, depending on the server type: • Express Edition: The maximum size is 10 GB (SQL Server 2019 Express, SQL Server 2017 Express with CU17, or SQL Server 2016 Express SP2 CU10) • All others: The maximum size is half the physical size of the free disk space for the location of the database minus the size in the Database File Size field. Half the free space is required for a backup; therefore, the database can only take up half the free space.
% Full*	The percent of the maximum database file size that the database currently uses.

Note: The background of these attributes marked with an asterisk change color when they exceed the warning or alarm limits defined in Choosing Monitoring Settings. The attributes in Figure 5 are within their limits. However, a yellow background indicates that the warning limit has been exceeded, and a red background indicates that the alarm limit has been exceeded or that the Database Manager cannot connect to the SQL Server database.

Maintenance tab

The Maintenance tab provides an easy way to purge records from the trend, alarm (event), audit, and annotation databases. Figure 6 shows the Maintenance tab. (If you cannot see this tab, see Required access rights.)

Note: We recommend that you purge records before you rename field contents. Doing so will speed the renaming process. See Renaming field contents in Metasys databases.

See Interaction with the Metasys system for information on ADS/ADX/ODS/OAS disruption during database maintenance.

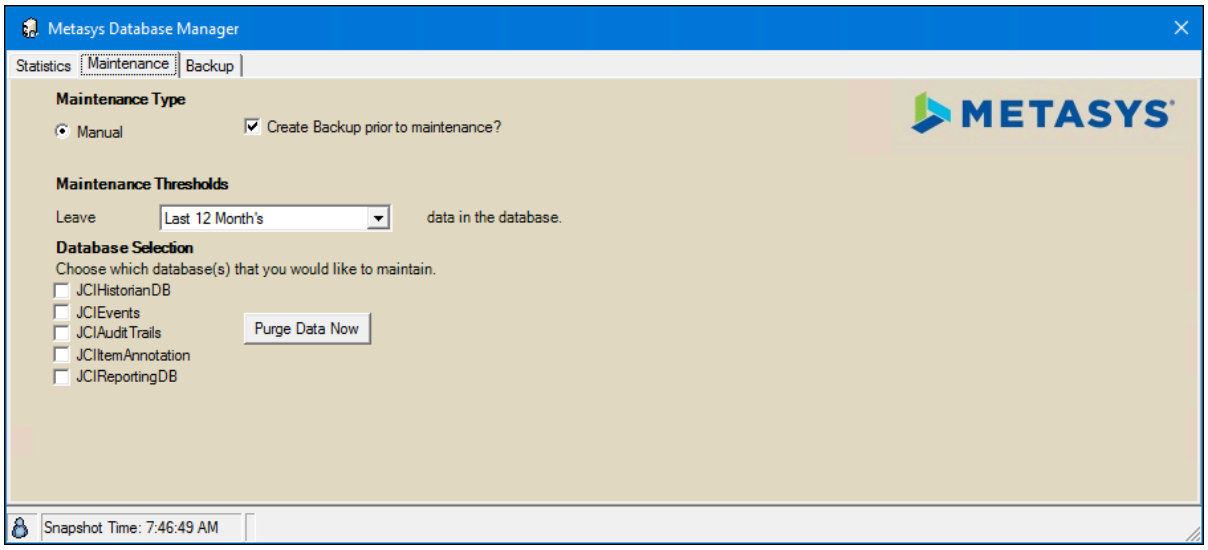
Note: The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to *Metasys* Release 11.

The Maintenance tab is divided into three sections (Figure 6):

- Maintenance type
- Maintenance thresholds
- Database selection

See Status bar for information on the status bar.

Figure 6: Maintenance Tab



You can back up a database before you purge it. Backing up a database ensures that you can restore purged data, if necessary. See Backing up a database.

Maintenance type

The Maintenance Type section allows you to create a backup prior to maintenance (Table 6).

Table 6: Maintenance Type Selections

Selection	Description
Manual	Requires you to choose a threshold (see Maintenance thresholds), choose databases (see Database selection), and click **Purge Data Now** to purge the database. ⓘ **Note:** Currently, this is the only option available to maintain your databases. It cannot be deselected.
Create Backup Prior to Maintenance?	When selected, creates a backup file before data is purged from the databases. ⓘ **Note:** The backup fails if there is not sufficient disk space at the backup destination.

Maintenance thresholds

Use the maintenance thresholds section to purge the databases while retaining a set number of days' worth of data. Select the number of days' worth of data you want to retain. Choose from the following options:

- No data (No)
- Current Month's data
- Last Month's data
- Last 2 Month's data
- Last 3 Month's data
- Last 6 Month's data
- Last 12 Month's data
- Last 24 Month's data
- Last 36 Month's data
- Last 60 Month's data
- Custom Cutoff Date

If you want to delete all records, choose No.

Database selection

The Database Selection section allows you to choose which of the following databases you want to purge:

- JCIHistorianDB - trends
- JCIEvents - alarms (events)
- JCIAuditTrails - audits
- JCIItemAnnotation - annotations
- JCIReportingDB - *Metasys* UI Reporting

ⓘ **Note:**

- The JCIHistorian database also contains information for Energy Essentials. This database contains some aggregated consumption data that may be used for Energy Essentials reports.

- MetasysReporting does not appear on this list because it is self-maintaining.

The background of the database name changes color if the database has exceeded the warning or alarm limits defined in the Choosing monitoring settings. A yellow background indicates that the warning limit has been exceeded, and a red background indicates that the alarm limit has been exceeded or that the *Metasys* Database Manager cannot connect to the SQL Server database.

This section also contains the **Purge Data Now** button that triggers the purge. You must make selections in the Backup file path and Database selection sections and select a database to purge before you click **Purge Data Now**.

Backup tab

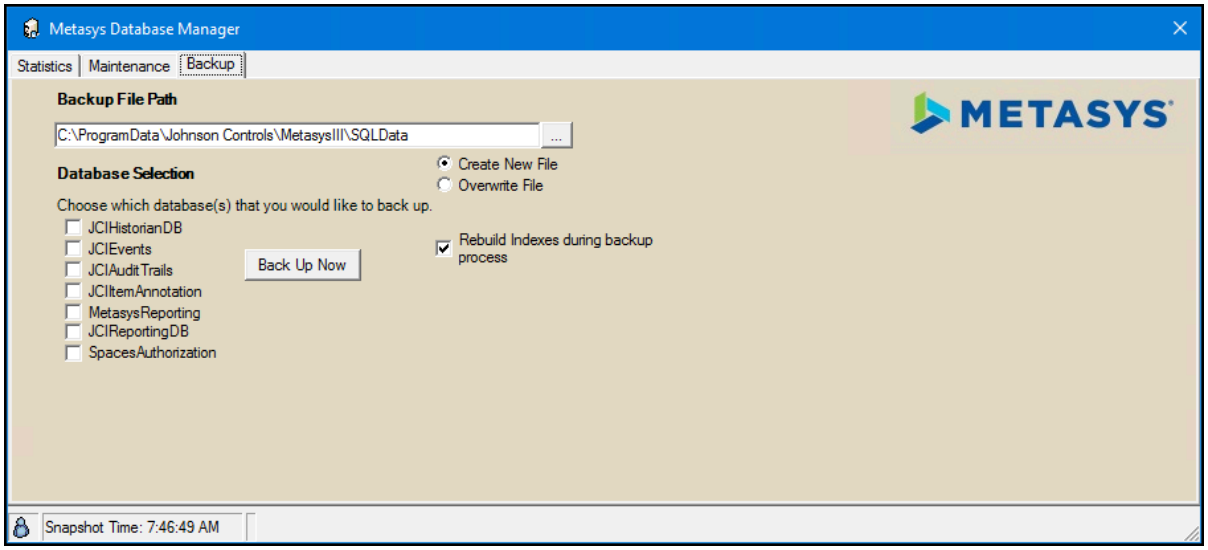
The Backup tab allows you to create a SQL Server software backup of a database. (If you cannot see this tab, see Required access rights.)

The Backup tab is divided into two sections (Figure 7):

- Backup file path
- Database selection

See Status bar for information on the status bar.

Figure 7: Backup Tab



Backup file path

The Backup File Path field shows the path where the backup is created. By default, backups are created in the same directory as the database files.

The *Metasys* Database Manager may not be able to restore your databases from all file locations.

Therefore, we recommend that you use the default path `C:\ProgramData\JohnsonControls\MetasysIII\SQLData`.

Click the **Browse** button to navigate to a new location for the backup databases, but we recommend that you keep the default path `C:\ProgramData\Johnson Controls\MetasysIII\SQLData`. See Table 7 for details on file saving choices.

Table 7: File Saving Choices

Selection	Description
Create New File	Creates a new backup file with today's date as part of the file name. If a file already exists with the same name and same date, it is overwritten. Only the most recent backup file is retained for any day. The backup file is named YYMMDD<DB Name>.bak, where: • YY - year • MM - month • DD - day • <DB Name> - the name of the database For example: 140807JCIAuditTrails.bak. You can have several files with different dates saved in the same location.
Overwrite File	Overwrites an existing backup with the same name. Only the most recent backup file is retained. The backup is named <DB Name>.bak. You can only have a single file with this name saved in a location.

Database selection

The Database Selection section allows you to choose which of the following databases you want to back up:

- JCIHistorianDB - trends
- JCIEvents - alarms (events)
- JCIAuditTrails - audits
- JCIItemAnnotation - annotations
- MetasysReporting - *Metasys* Advanced Reporting System
- JCIReportingDB - *Metasys* UI Reporting
- Spaces Authorization - permissions

ⓘ **Note:** MetasysReporting and JCIReportingDB appear in the list if the databases exists.

Clicking the **Backup** button begins backing up the selected databases immediately. The backup is a full SQL Server database backup and is performed without needing to shut down the *Metasys* Device Manager.

ⓘ **Note:** The backup fails if there is not enough disk space for the backup file.

If you select the **Rebuild Indexes during backup process** check box, SQL Server software rebuilds the database indexes during the backup. The operation may slow down the backup process, but it may speed up database access later.

ⓘ **Note:**

- Re-indexing your database temporarily increases your database size (up to twice its original size). Make sure that you have enough hard disk space when you select this option.
- SQL Server software index rebuilding is a normal SQL Server software database maintenance operation that should be done weekly or monthly depending on data change volume. Refer to the SQL Server software documentation for details on the index rebuilding procedure.

- You cannot back up the JCIItemAnnotation database in Releases 2.2, 3.0, and 3.1.

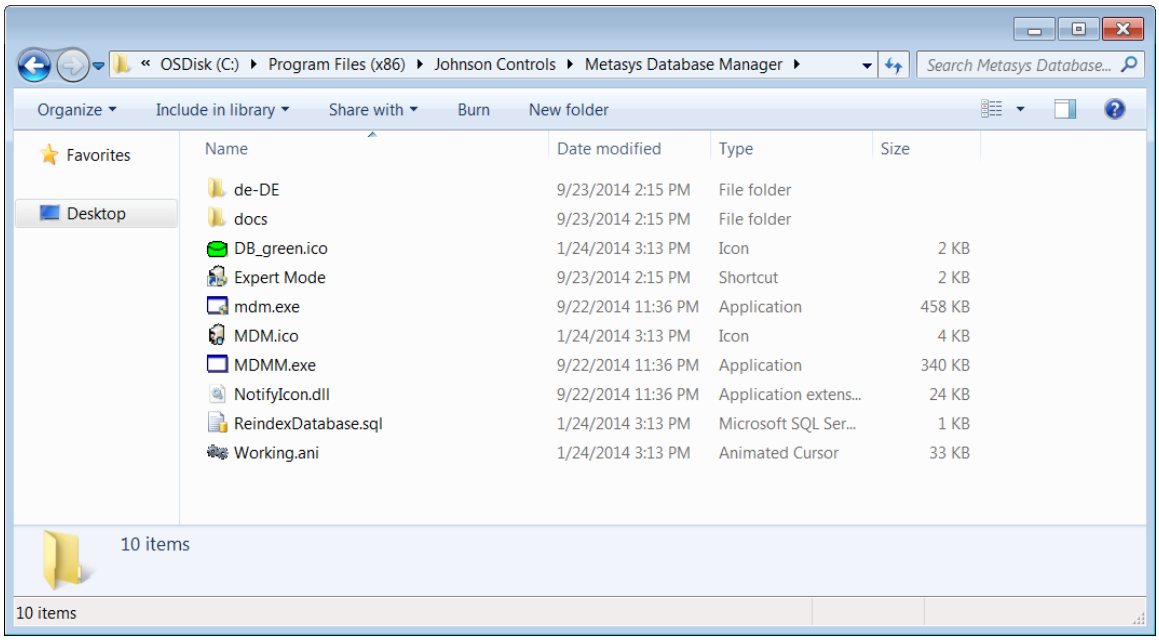
Expert mode

Expert Mode lets you view two additional tabs:

- Restore tab
- Rename tab

To access Expert Mode, browse to `C:\Program Files (x86)\Johnson Controls\Metasys Database Manager` (Figure 8). Double-click **Expert Mode** in the *Metasys* Database Manager file.

Figure 8: Expert Mode



If you are performing an out-of-place upgrade, use Expert Mode to restore databases and rename database field contents.

ⓘ **Note:** Expert Mode functionality does not remain if you close the window and then start the *Metasys* Database Manager in standard mode.

Restore tab

The Restore tab is available only when you are using the *Metasys* Database Manager in Expert Mode. (If you cannot see this tab, see Required access rights.)

If you are performing an out-of-place upgrade, use the Restore tab to restore historical databases. The Restore tab also provides a simple way to recover if your *Metasys* system database becomes corrupted. Perform a restore only if there is no alternative, and use the most recent successful backup file.

➧ **Important:**

Restoring a database deletes any information that is in the database from the time the backup was created to when it was restored. Use this option to restore a database during an out-of-place upgrade, or to repair a corrupted database only. This feature **should not** be used to view

historical data in the *Metasys* system. Instead, use the *Metasys* Export Utility to store and view historical data in more user-friendly formats.

You cannot restore database backups from a newer version of SQL Server software to an older version of SQL Server software. For example, you cannot create a backup of *Metasys* databases that are hosted on SQL Server 2019 software and restore them to SQL Server 2016 software. However, you can restore database backups from an older version of SQL Server to a newer version of SQL Server. If you restore a database that was created using a version of SQL Server software that is older than the version you are currently using, the *Metasys* Database Manager upgrades the database so it can function with the current SQL Server software version.

If you restore a database from a release of *Metasys* software that is earlier than the software that you are using, the ADS/ADX/ODS/OAS stops functioning. No fail-safes prevent you from restoring a database that is older than the database you are using. Be sure to restore databases from the same release that you are using if the ADS/ADX/ODS/OAS is already installed. Beginning at Release 5.0, you can restore a Release 2.2 or later database before a Release 5.0 ADS/ADX is installed as part of data preservation during the upgrade process. If you are not performing an out-of-place upgrade as detailed in the *Metasys Server Installation and Upgrade Guide (LIT-12012162)* or *ODS Installation and Upgrade Guide (LIT-12011945)*, you cannot restore a database from a system that does not have the *Metasys* Advanced Reporting System installed to a system that does have the reporting system installed. The database does not contain all the stored procedures required to use the reporting system. If you attempt to do this, the reporting system does not function.

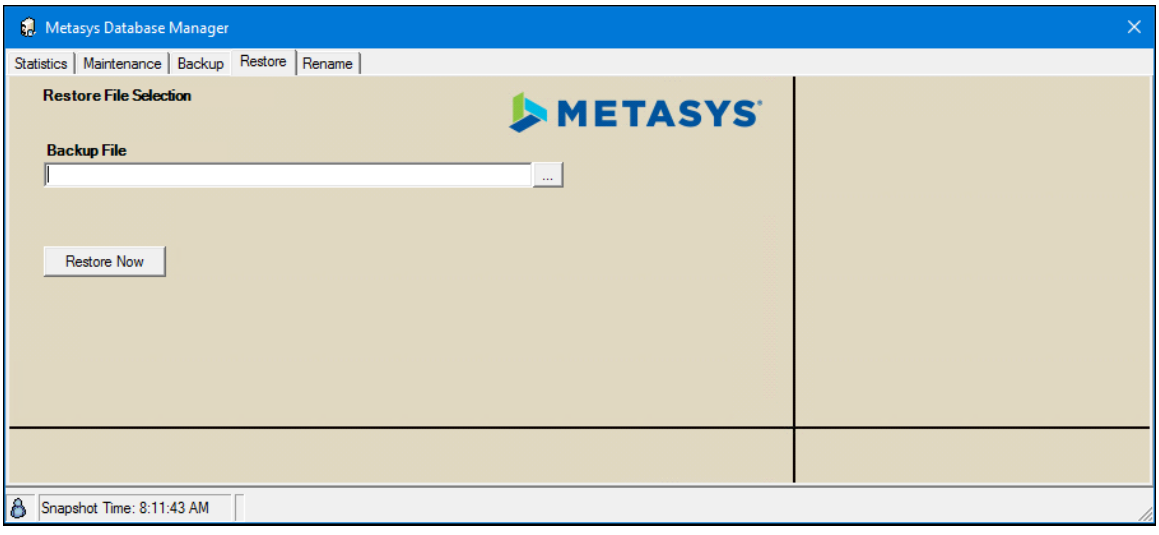
ⓘ **Note:** The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to *Metasys* Release 11.

Do not restore databases from a different server unless you follow the process for performing an out-of-place upgrade as detailed in the *Metasys Server Installation and Upgrade Guide (LIT-12012162)* or *ODS Installation and Upgrade Guide (LIT-12011945)*. Even if both systems have the same name and are at the same *Metasys* release, there are underlying differences in the databases.

See Interaction with the Metasys system for information on ADS/ADX/ODS/OAS behavior during database restoration.

The Restore tab opens with a warning that offers the choice whether to continue with or cancel the restore. Clicking **Continue** proceeds with the restore and Figure 9 appears.

Figure 9: Restore Tab



The Backup File field allows you to browse to the database you want to restore to the ADS/ADX/ODS/OAS. Once a backup file is selected, clicking **Restore Now** starts the database restore. See Restoring a database.

Rename tab

The Rename tab is available only when you are using the *Metasys* Database Manager in Expert Mode. (If you cannot see this tab, see Required access rights.)

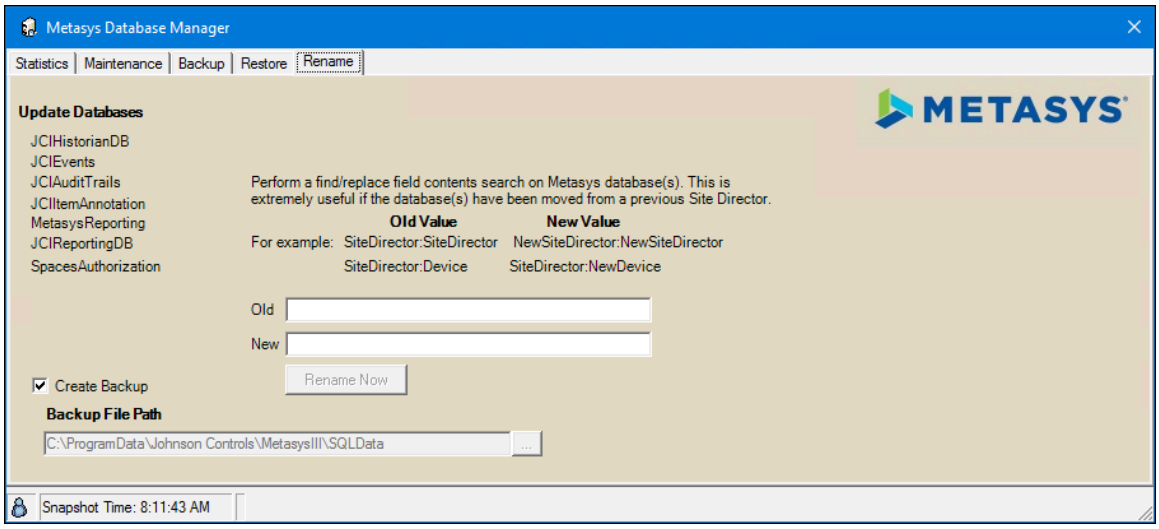
If the ADS/ADX/ODS/OAS computer is renamed in the SCT, use the rename function in *Metasys* Database Manager to replace the old Site Director name or an old device name in the JCI databases with a new name. For more information on renaming a computer in SCT, refer to the *Metasys SCT Help (LIT-12011964)*.

The Rename tab is divided into two sections (Figure 10):

- Update databases
- Backup file path

See Status bar for information on the status bar.

Figure 10: Rename Tab



Update databases

The Update Databases section shows the databases that are searched during the rename process:

- JCIHistorianDB - trends
- JCIEvents - alarms (events)
- JCIAuditTrails - audits
- JCIItemAnnotation - annotations
- MetasysReporting - *Metasys* Advanced Reporting System
- JCIReportingDB - *Metasys* UI Reporting
- Spaces Authorization - permissions

ⓘ **Note:** MetasysReporting and JCIReportingDB appear in the list if the databases exist.

This section has Old and New fields where you type the old name and the new name of the Site Director or device. Clicking the **Rename Now** button starts the find/replace process of the field contents in the *Metasys* databases.

Backup file path

If you select the **Create Backup** check box, the databases are backed up before the rename process begins.

The Backup File Path field shows the location where the backup file is saved. By default, backups are created in the same directory as the database files.

Click the **Browse** button to navigate to a new location for the backup files, but we recommend that you keep the default path `C:\ProgramData\Johnson Controls\MetasysIII\SQLData`.

Monitoring settings

The monitoring capabilities of *Metasys* Database Manager let you set the file size limit (percentage full) that determines the database status. Database statuses are Normal, Warning, and Alarm. Monitoring settings appear in a different window from the tabbed window described in Tabs.

When you log in to the Windows OS on an ADS/ADX/ODS/OAS computer, the monitoring starts automatically. Monitoring does not stop unless you exit monitoring or log out of the Windows OS on the ADS/ADX/ODS/OAS computer. If you exit and want to restart monitoring, you must either log in to the Windows OS on the ADS/ADX/ODS/OAS, or restart the monitoring itself. See Stopping database monitoring and Accessing/Starting monitoring settings for information.

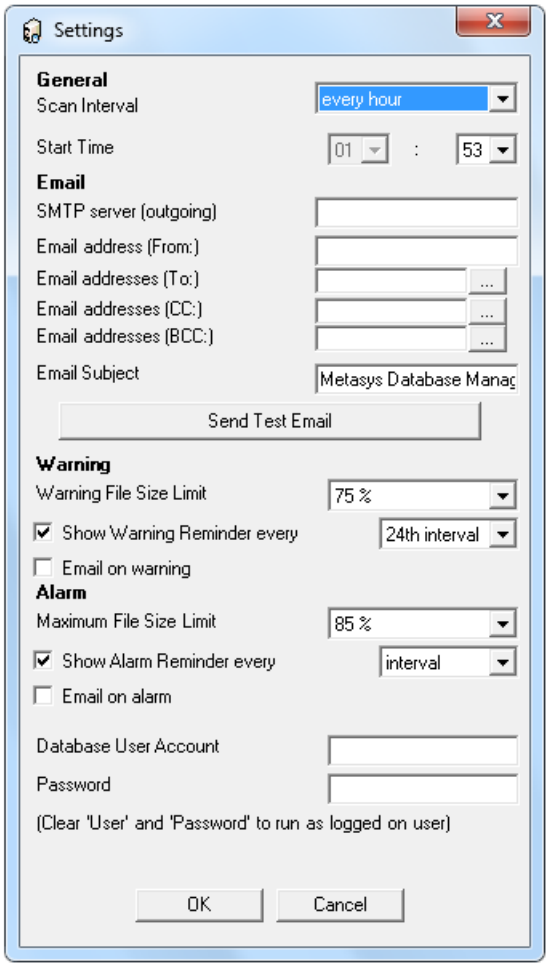
ⓘ **Note:** The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to *Metasys* Release 11.

ⓘ **Note:** If you have administrator privileges, the *Metasys* Database Manager Monitoring Settings window appears each time you restart your computer (unless you have already configured it for monitoring). See Choosing monitoring settings. To access the setting for other users who have administrator privileges, close the *Metasys* Database Manager Monitor and log in as Administrator. See Accessing/Starting monitoring settings.

The *Metasys* Database Manager Monitoring Settings window is divided into five sections (Figure 11):

- General
- Email
- Warning
- Alarm
- Database login

Figure 11: Monitoring Settings Window



General

The General section contains the main settings for monitoring databases as shown in the following table.

Table 8: General Section Contents

Field	Description
Scan Interval	The frequency with which the databases are checked against their limits. Options are: • Every half hour • Every hour • Every 8 hours • Every day
Start Time	The hour and minute that the check on the databases first occurs ⓘ **Note:** For scan intervals of **every half hour** and **every hour**, the hour selection is disabled because it is not applicable.

By default, the *Metasys* Database Manager Monitor checks the databases every hour on the 53rd minute so it does not interfere with the default ADS Delivery Time of 12:15 A.M. (ADS Delivery Time is the name of the parameter for both an ADS and an ODS.)

Email

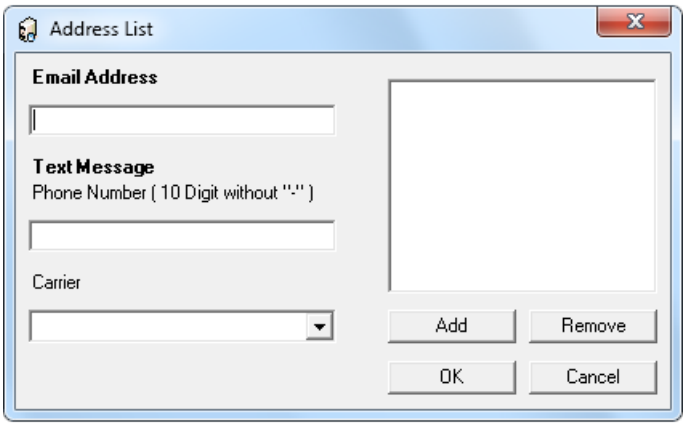
The email feature is optional for *Metasys* servers. It requires a valid SMTP email account and access to the SMTP server. For email functionality to work, you must enter at least one valid entry for **SMTP server (outgoing)**, **Email address (From)**, and **Email address (To/CC/BCC)** as shown in the following table.

ⓘ **Note:** The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to *Metasys* Release 11.

Table 9: Email Section Contents

Field	Description
SMTP Server (outgoing)	Enter either the IP address or the name of the SMTP server. We recommend using the IP address because it does not rely on the domain name system (DNS) to resolve the name. Example: 167.206.112.6 (mail-hub.optonline.net) To avoid having the Monitoring Settings window appear when you restart the ADS/ADX/ODS/OAS, enter the SMTP server in this field. ⓘ **Note:** If you do not know the SMTP server address or name, contact your IT department.
Email Address (From)	Enter the email address from which the *Metasys* Database Manager Monitor email is sent. ***Metasys* Database Manager** is used as an alias for email clients that support it.
Email Addresses (To)	Click the **Browse** button to display the **Address List** window, see Figure 12. Enter either email addresses, or cell phone numbers for text messages in the fields provided. Email addresses appear in the To: field of the email.
Email Addresses (CC)	Click the **Browse** button to display the **Address List** window, see Figure 12. Enter either email addresses, or cell phone numbers for text messages in the fields provided. Email addresses appear in the CC (carbon copy) field of the email.
Email Addresses (BCC)	Click the **Browse** button to display the **Address List** window, see Figure 12. Enter either email addresses, or cell phone numbers for text messages in the fields provided. Email addresses appear in the BCC (blind carbon copy) field of the email.
Email Subject	Enter the subject of the email. By default, the subject is ***Metasys* Database Manager Alert!**
Send Test Email	Click this button to test the email functionality based on the information you entered in the fields in the Email section.

Figure 12: Address List Window



The following table describes the contents of the **Address List** window.

Table 10: Address List Window Contents

Field	Description
Email Address	Enter an email address and click **Add** to include it in your list. The *Metasys* Database Manager checks for proper syntax and returns an error if the address is invalid.
Phone Number	Enter the 10-digit phone number for the cell phone you want to text message. Do not enter hyphens (-).
Carrier	Select from a list of cell phone carriers.

Warning

Use the Warning section to define the warning limit parameters as shown in the following table.

Table 11: Warning Section Contents

Field	Description
Warning File Size Limit	Choose the percentage of the maximum file size that the database file must reach before a warning appears.
Show Warning Reminder every	Select this check box to show a warning balloon when a database size exceeds the value in Warning File Size Limit. Choose how often you want to show the balloon. By default, every **24th interval** is selected, which shows the warning balloon once a day until the database has been reduced to an acceptable level.
Email on Warning	Select this check box to enable the email feature of the *Metasys* Database Manager Monitor. Only one email is sent when the database exceeds its warning limits.

Alarm

Use the Alarm section to define the alarm limit parameters as shown in the following table.

Table 12: Alarm Section Contents

Field	Description
Maximum File Size Limit	Choose the percentage of the maximum file size that the database file must reach before an alarm appears.
Show Alarm Reminder Every	Select the check box to show an alarm balloon when a database size exceeds the value in Maximum File Size Limit. Choose how often you want to show the balloon. By default, every **interval** is selected, which shows the alarm balloon once a day until the database has been reduced to an acceptable level.
Email on Alarm	Select this check box to enable the email feature of the *Metasys* Database Manager Monitor. Only one email is sent when the database exceeds its alarm limits.

Database login

If you leave the fields in the Database Login section blank, the *Metasys* Database Manager uses the credentials of the user logged in to the Windows OS to access the SQL Server database.

If you enter text into the Database User Account and Password fields, the *Metasys* Database Manager uses that set of credentials to access the SQL Server database.

To ensure full access to *Metasys* Database Manager functionality:

- The credentials that you enter must belong to a SQL Server System Administrator (sysadmin).
- Your Windows login must be that of the administrator or a member of the Administrator group. Standard Windows users cannot back up and restore or change monitoring settings, even if they enter SQL Server sysadmin credentials here. However, Standard users can still view statistics.

See Required access rights for more information.

Split ADX considerations

If you use Metasys Database Manager to manage Metasys databases on a split server, you must install it on the database server. If a database administrator manages the Metasys databases, then the Metasys Database Manager installation is optional.

ⓘ **Note:** The Metasys Database Manager will not work on the application server.

Refer to the *Metasys Database Manager Installation Guide (LIT-12011553)* for details on installation.

Settings.xml

The Settings.xml file stores settings from both the *Metasys* Database Manager and the *Metasys* Database Manager Monitor. The file is stored in the XML directory in the *Metasys* Database Manager home directory. This file is necessary for proper operation of both applications and should not be moved or removed. We recommend that most users avoid editing the Settings.xml file.

Log file

Log information is stored in the Windows Event Viewer and can be accessed by right-clicking the Taskbar Icon and then clicking **View Log File**. In Event Viewer, click **MetasysDBMonitor** in the left pane.

Detailed procedures

Procedures are described in two sections: Managing databases and Monitoring databases.

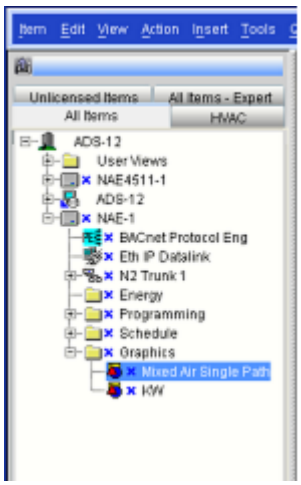
To manage databases, see these sections:	To monitor databases, see these sections:
Opening the Metasys database manager to manage your databases Checking database statistics Backing up a database Purging a database Restoring a database Renaming field contents in Metasys databases	Accessing/Starting monitoring settings Choosing monitoring settings Stopping database monitoring

Interaction with the Metasys system

About this task:
The maintenance, restore, and rename functions shut down the Metasys Device Manager, which disrupts communications for anyone logged in to the Metasys Site Management Portal (SMP) UI. (Backups do not require shutting down the Metasys Device Manager. Therefore, the backup function does not interrupt access.)
The following is expected behavior when a user is logged in to the SMP and you maintain, restore, or rename databases by using the Metasys Database Manager:

1. Users who are accessing the Metasys system server see blue Xs next to all objects in the navigation tree (Figure 13).

Figure 13: Blue Xs in SMP UI



2. The Metasys system terminates the session and displays the login screen.
3. After the maintenance, restore, and rename functions have finished, users can log in to the SMP UI again.

At Release 3.1 and later, the Metasys Database Manager on a unified ADX with the Simple Recovery model no longer shuts down the Metasys system for the entire time that it takes to purge records. The Metasys system shuts down only long enough to clean up the database.

Renaming a computer after an operating system upgrade using the *Metasys* rename assistant

To ensure that your upgraded site continues to access historical data, complete the following steps:

1. Use the SCT to rename the Site Director to match the new computer name.
2. Use the *Metasys* Database Manager to update the Site Director and the device name in the JCI databases.

For more information about an out-of-place upgrade, see Performing an out-of-place upgrade.

To access the *Metasys* Rename Assistant, browse to `C:\Program Files (x86)\Johnson Controls\Metasys Database Manager`. Double-click **Metasys Rename Assistant** in the *Metasys* Database Manager folder.

Note: If you have large historical databases, the rename procedure may take several hours to complete. We recommend you purge your databases in advance in order to speed up the rename process. For more information, see Purging a database.

The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to Metasys Release 11.0.

Getting started

During the rename process, *Metasys* software may be uninstalled and reinstalled; refer to the installation documents when necessary. Installation documents that may be required are:

- *Metasys Server Installation and Upgrade Guide (LIT-12012162)*
- *Energy Essentials Installation Instructions (LIT-12011539)*
- *SCT Installation and Upgrade Instructions (LIT-12012067)*

1. Once you have read the IMPORTANT notice on the screen, select the checkbox.
2. Select the **Enable SQL Server Authentication** checkbox.
3. Type your user name and password into the correct boxes.
4. Click **Test Connection**.

   Note:

   - If the connection is successful, `Connection: Success` appears underneath the `Test Connection` button and a check appears to the right of the button. If the connection fails, `Connection: Error` appears underneath the `Test Connection` button and an x appears to the right of the button.
   - You cannot proceed if the Test Connection was not successful.

5. Click **Get Started**.

Preparing the computer

1. Click **Backup** to open the *Metasys* Database Manager to back up your databases. The *Metasys* Database Manager window opens.

    a. Select the **Backup** tab.
    b. Take note of the backup file path.
    c. Under Database Selection, choose which database(s) that you would like to back up.
    d. Click **Back Up Now** to back up the selected database(s).
    e. Once backup is complete, close *Metasys* Database Manager window.

2. Select the checkbox that denotes you have performed the *Metasys* database backup in the *Metasys* Rename Assistant window.
3. Verify the time zone and time for the computer are correct, and select the checkbox denoting the Time Zone and Time are correct.

    ⓘ **Note:** If the time zone and time are not both correct, click the refresh button to update them.

4. After you have backed up the databases and corrected the time zone and time, the rename box unlocks. Enter the new name that you want to assign to the ADS/ADX and click **Validate Name**.

    ⓘ **Note:**

    - The **Name** field is case sensitive.
    - The new name must be different from the original name.

5. Click **Continue**.

ⓘ **Note:** A checkmark icon next to each step indicates the step is complete.

Preparing the archive database

1. Click **Launch SCT** in the *Metasys* Rename Assistant. The *Metasys* Launcher opens.
2. Log in to SCT.

    ⓘ **Note:** To create a new archive, continue with Step 2. To use an archive that already exists, skip to Step 8.

3. Click **Next**. Select the **Item** menu, then select **New Archive**. The New Archive wizard opens.
4. Click **Next** in the *Metasys* Rename Assistant. Enter a unique name for the new archive in the box.

    ⓘ **Note:** When you are asked to close the current archive, click **Yes**.

5. Click **Next** in the *Metasys* Rename Assistant.

    a. Click **Create**.
    b. The **Create Site** window opens. Click **Yes**. The **Insert Site Wizard** opens.
    c. On the **Destination** window, select the parent item for the new item. Click **Next**.
    d. On the **Identifier** window, enter a unique name for the server. Click **Next**.
    e. On the **Configure** window, click **Next**.

ⓘ **Note:** The order of the time zones in the Metasys software does not match the order that they are presented in in the Windows operating system. Use care to select the correct time zone from the list.

6. Click **Next** in the *Metasys* Rename Assistant. On the **Summary** window, click **Finish**. The **Create Device?** window opens.
7. Click **Next** in the *Metasys* Rename Assistant. In the drop-down of the **Create Device?** window, select **Metasys Server**. Click **OK**. The Insert *Metasys* Server Wizard opens.
8. Click **Next** in the *Metasys* Rename Assistant.
    a. On the **Object Type** window, select the type of object that you wish to create.
    b. Click **Next**.
    c. On the **Destination** window, select the parent item for the new item.
    d. Click **Next**.

    ⓘ **Note:** If you select an item that will not work, an error message will appear.

    e. On the **Identifier** window, enter the original ADS/ADX name that appeared in red text in the *Metasys* Rename Assistant. Click **Next**.
9. Click **Next** in the *Metasys* Rename Assistant.
    a. On the **Configure** window, click **Next**.
    b. On the **Summary** window, click **Finish.** The *Metasys* Insert Site wizard closes.
    c. In SCT, select the **Metasys server** in the navigation tree.
10. Click **Next** in the *Metasys* Rename Assistant. Select the **Tools** menu. Select **Manage Archive**. The Manage Archive Wizard opens.
11. Click **Next** in the *Metasys* Rename Assistant. On the Action screen in the Manage Archive wizard, under Type, select **Upload from Device**. Click **Next**.
12. Click **Next** in the *Metasys* Rename Assistant.
    a. On the Select Devices window, select the devices you want to upload. Click **Next**.
    b. On the Schedule window, click **Next**.
13. Click **Next** in the *Metasys* Rename Assistant.
    a. On the Site Login screen, use the computer's name (the red text on the *Metasys* Rename Assistant) as the Username, and the same password you entered to log into SCT as the password for the engine.
    b. Click **Test Login**.

    ⓘ **Note:** The login process must succeed in order to proceed.
14. Click **Next**.
    a. On the Specify Retries window, click **Next**.
    b. On the Repeat Upload window, click **Next**.
    c. On the Summary window, click **Finish**. The Manage Archive wizard closes. The upload process begins. Progress is shown on the ActionQ screen in SCT.

15. Click **Next** in the Rename Assistant. When the completion status reports OK, right-click the **Metasys server** in the navigation tree, click **Rename**. The Rename box appears.
16. Click **Next** in the Rename Assistant. In the new name box, enter the new ADS/ADX name written in red text in the *Metasys* Rename Assistant.
17. Click **Next** in the Rename Assistant. Click **OK**.

    ⓘ **Note:**

    - If you have existing user views, open each user view in Edit mode in the SCT, use the Find/Replace function to change the name, and save the user view. The Site Director portion of the reference updates to match the new Site Director name (the name you just entered in the Rename box).
    - Do not download or make other name changes in the SCT.

18. Click **Next** in the Rename Assistant. Double-click the **Metasys site** in the navigation tree. The *Metasys* site information opens in the display pane in SCT.
19. Click **Next** in the Rename Assistant. Click **Edit** in the display pane.
20. Click **Next**.

    a. In the Name and Default ADS Repository attributes enter the name you previously entered in the Rename box. This name appears in red text in the *Metasys* Rename Assistant.
    b. Click **Save**.

21. Click **Next** in the Rename Assistant. Select ***Tools*** > ***Database*** > ***Create Backup***. A notice window opens that denotes the backup is complete.
22. Click **Next** in the Rename Assistant. Exit SCT.
23. Click **Continue** in the *Metasys* Rename Assistant.

Renaming the computer

1. Click **Windows Rename** in the *Metasys* Rename Assistant. The System Properties window opens.
2. Click **Next**.

    a. Select the **Computer Name** tab.
    b. Click **Change...**. The Computer Name/Domain Changes window opens.

3. Click **Next** in the Rename Assistant. The Computer name field, enter the new ADS/ADX name. This is the red text from Rename the Computer tab of the *Metasys* Rename Assistant.

    ⓘ **Note:**

    - If this computer is a member of a domain, specify the name in the Domain field. If the computer name includes a DNS suffix, enter the suffix.
    - If you join the computer to a domain, the DNS suffix appears automatically. If you join the computer to a workgroup, the DNS suffix is optional.

4. Click **Next** in the *Metasys* Rename Assistant. Click **OK**.

5. Click **Next** in the *Metasys* Rename Assistant. Click **OK** in the Computer Name/Domain Changes Window. The Computer Name/Domain Changes warning window opens.

   ⓘ **Note:** You must restart your computer to apply these changes.

6. Click **Next** in the *Metasys* Rename Assistant. Close all windows.
7. Click **Next** in the *Metasys* Rename Assistant. Click **OK** when you are prompted to restart the computer. Your computer restarts.

Verifying the SQL server software

1. When the SQL Server is running, click the **Reconfigure** button. When prompted, click **OK** in the Restart Computer Now window.

   ⓘ **Note:** When you log back in to Windows, a prompt to allow the *Metasys* Rename Assistant access to your computer appears. Click **Yes**. If you are not prompted, reopen the tool manually.

2. Click the **View** button next to Report Server Web Service. The Report Server Web Service window opens
3. Select the checkbox to the left of Report Server Web Service once you have confirmed that the Report Server is working.
4. Click the **View** button next to Report Manager Site Identification URL. The Report Manager Site Identification URL window appears.
5. Check the box to the left of Report Manager Site Identification URL once you have confirmed that the Report Server is working.
6. Click **Continue**.

Reinstalling the *Metasys* software

1. Click **MDM Rename**. The *Metasys* Database Manager Window opens.

   a. Click the **Rename** tab.
   b. In the Old box, enter the **Old Site Director** name. This is found in red text in the pop-up instructions with the *Metasys* Rename tool.
   c. In the New box enter the old Site Director name, this is found in red text in the pop-up instructions with the *Metasys* Rename tool.

      ⓘ **Note:** Ensure you use the proper name format. Enter the old value in the following format: `SiteDirector:SiteDirector` or `SiteDirector:Device`. Enter the new value in the following format: `NewSiteDirector:NewSiteDirector` or `SiteDirector:Device`.

   d. Click **Rename Now**.
   e. Close the *Metasys* Database Manager.

2. Click **Browse** under the Install *Metasys* SCT. The Browse window opens. Navigate to and select the **SCT installation** file. Click **Open**.
3. Click **Install**. The *Metasys* SCT installation window opens.

   a. Click **Install**.
   b. Select the server from the Server Name drop-down. Click **Install**.
   c. Click **Finish**.

4. Click **Browse** under the Install *Metasys* ADS. The Browse window opens. Navigate to and select the **ADS installation** file. Click **Open**.
5. Click **Install**. The *Metasys* Server installer opens.
    a. Click **Install**.
    b. Select the server from the Server Name drop-down. Click **Install**.
    c. Click **Restart Now**.
6. Click **Browse** under the Install Energy Essentials. The **Browse** window opens. Navigate to and select the Energy Essentials installation file. Click **Open**.
7. Click **Install**. The Energy Essentials Install window opens. Click **Install**.
8. Click **Continue.** Restart Computer Now window opens. Click **OK.**

Downloading the *Metasys* archive database

1. Click **Launch SCT**. The *Metasys* Launcher opens. Select SCT tab. Select **Server**. Click **Launch**. Select the archive you wish to work in.
2. Click **Next**. Open each user view in Edit mode in the SCT. Use the Find/Replace function to change the name to the new name. Save the user view. Repeat this for each user view. The Site Director portion of the reference updates to match the new Site Director name.
3. Click **Next**. Click the **Metasys server** in the navigation tree.

    ⓘ **Note:** It is normal at this time for the site name to be the same as the original ADS/ADX name. Do not attempt to change the site name at this time.
4. Click **Next**. Click the **Tools** menu, then Click **Manage Archive**. The Manage Archive Wizard opens.
5. Click **Next**. On the Action window, in the Type section, Click **Download to Device**. In the Options section, select the **Include Security** checkbox so that the ADX user accounts get recreated. Click **Next**.
6. Click **Next** in the *Metasys* Rename Assistant.
    a. On the Select Devices window, select the devices to download.
    b. Click **Next**.
    c. On the Schedule window, if you need to schedule the download for a later time, select when you would like it to download.
    d. Click **Next**.
    e. On the Device Change window, click **Next**.

        ⓘ **Note:** Do NOT select Use this option to rename a device through the download process. Do NOT select Use this option to change a device address during the download.
7. Click **Next.**
    a. On the Site Login window, click **Test Login**.
    b. Click **Next**.
    c. Click **Next**.
    d. Click **Finish**.
    e. Close SCT.

Applying the launcher settings

1. On the Desktop, right-click the **Metasys SCT** shortcut. Select **Delete**. Repeat this for the *Metasys* SMP shortcut.
2. Click **Next**.
3. Click **Launcher**.
4. Click **Next**.
    a. On the Launcher screen, click the **SMP** tab to edit an existing SMP profile.
    ⓘ **Note:** If you wish to edit a SCT profile, select the **SCT** tab instead of SMP.
    b. Log in.
5. Click **Next**.
    a. Select the profile whose description you want to edit.
    b. Click **Edit**. The Edit screen appears.
6. Click **Next**. In the New Description field, type the new name you selected for the device.
    ⓘ **Note:** You cannot change the IP address or host name of the device on the Edit screen. To make that change, delete the device, then add the device again.
7. Click **Next**. Click **Save**.
8. Click **Next**. Recreate shortcuts on the Desktop if desired.
9. Click **Continue**.

Uploading the *Metasys* archive database

1. Launch **SCT**. Log in.
2. Click **Next**. Click the **Metasys server** in the navigation tree.
3. Click **Next**. In the Tools menu, select **Manage Archive**. The Manage Archive Wizard opens.
4. Click **Next**. In the Action window, in the Type section, select **Upload from Device**. Click **Next**.
5. Click **Next**. In the Select Devices window, select the **Metasys server** in the navigation tree. Click **Next**.
6. Click **Next**. In the Schedule window, click **Next**.
7. Click **Next**. On the Site Login window, click **Test Login**. Click **Next**.
8. Click **Next**. On the Specify Retries window, click **Next**.
9. Click **Next**. On the Repeat Upload window, click **Next**.
10. Click **Next**. On the Summary window, click **Finish**.
    ⓘ **Note:** When the upload completion status reports OK, the upload is complete. The site and server names now match.
11. Click **Next**. Exit the SCT.
12. Click **Continue**.
    ⓘ **Note:** If you are not using the *Metasys* Advanced Reporting System, the verification and rename processes are complete.

Verifying the *Metasys* Advanced Reporting System

1. Click **Launch ADX**. Log in to the ADX.
2. Click **Next**. Select the **Tools** menu, the select **Metasys Advanced Reporting** user interface.
3. Click **Next**. Log in to the *Metasys* Advanced Reporting user interface.
4. Click **Next**. Verify that the user interface appears correctly and that the site and ADX have the correct name.
5. Click **Next**. Verify that the navigation tree that appears in the *Metasys* Advanced Reporting user interfaces matches that that on the SCT/ADX.
6. Click **Next**. Select **Alarm Definition Report** and click **Run**.
7. Click **Next**. Verify that the report window appears.

   ⓘ **Note:** The content of the window is not important at this time. Simply verify that the window opens successfully.
8. Click **Next**. Close the report window.
9. Click **Next**. Select **Event**, then select **Summary Report**. Click **Run**.
10. Click **Next**. Verify that the report window appears.

    ⓘ **Note:** The content of the window is not important at this time. Simply verify that the window opens successfully.
11. Click **Next**. Close the report window.
12. Click **Completed**. The *Metasys* Rename Assistant closes.

Applying the ADS/ADX settings

ADS Settings

1. Click **Launch ADS/ADX.**
2. Click **Next**. If any user views are open, close them.
3. Click **Next**. Select the View Menu, then select **Extended Labels**.
4. Click **Next**. Double-click the **Metasys site** in the navigation tree.
5. Click **Next**. Click **Edit** in the Display pane.
6. Click **Next**. In the Name and Default ADS Repository attributes, enter the new server name.
7. Click **Next**.

   ⓘ **Note:** The name is case sensitive.

   In the Time Zone attribute, set the time zone to the zone written in the *Metasys* Rename Assistant.
8. Click **Next**. Click **Save**.
9. Click **Next**. Select **Refresh All Tabs** from the Action menu.

   ⓘ **Note:** The site and ADS/ADX name should now match.
10. Click **Next**. Exit the ADS/ADX Site Management Portal. The Restart Computer Now window opens.
11. Click **Next**. Click **OK**. The computer restarts.

Managing databases

To manage a database, use the following procedures:

- Opening the Metasys database manager to manage your databases
- Checking database statistics
- Backing up a database
- Purging a database
- Restoring a database
- Renaming field contents in Metasys databases

Opening the *Metasys* database manager to manage your databases

You manage the database and monitor the database using different windows.

To open the *Metasys* Database Manager:

1. Do one of the following:

   - On the Start menu, select ***Programs*** > ***Johnson Controls*** > ***Metasys Database Manager*** > ***Metasys Database Manager***.
   - Right-click  or  or  in the taskbar and select **Open**.
   - Double-click **Metasys Database Manager** icon on the desktop.

2. If the User Account Control window appears, click **Yes**. If you do not click **Yes**, only the Statistics tab is available.

   If the User Account Control window does not appear and the *Metasys* Database Manager opens with only the Statistics tab available, verify your Windows access rights. See Required access rights.

Go to Checking database statistics, Purging a database, or Backing up a database.

Checking database statistics

About this task:
Use the Statistics tab to view database statistics.

1. Open the *Metasys* Database Manager. See Opening the Metasys database manager to manage your databases.
2. On the Statistics tab, note information about the databases and server.

Backing up a database

About this task:
Use the Backup tab to back up a database. You cannot rename a backup file. However, if you select create new file when you back up a file, the backup version does not overwrite the previous version but creates a new file and adds the date to its name.
To best preserve the data during an out-of-place upgrade, back up the databases on the old ADS/ADX/ODS/OAS immediately before the databases are needed in the new installation.

ⓘ **Note:** The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to Metasys Release 11.0. .

To save storage on your computer, delete database back ups from the computer if the database is no longer required.

You can back up a database before purging it. Backing up a database ensures that you can restore purged data if necessary. See Purging a database.

If you select create backup prior to maintenance on the maintenance tab, you must fill in the fields on the backup tab before you purge a database.

The backup tab is not available to all users. Access is dependent on the user's Windows access rights. See Required access rights.

To back up a database, complete the following steps:

1. Open the **Metasys Database Manager**. See Opening the Metasys database manager to manage your databases.
2. Click the **Backup** tab.

   ⓘ **Note:** If the **Backup** tab is not visible, this tab may not be available to you based on your Windows access rights, or because you did not click **Yes** in the User Account Control window. See Required access rights and Opening the Metasys database manager to manage your databases.
3. In the **Backup File Path** section, click the **Browse** button to choose a location for the database backup files.

   ⓘ **Note:** The *Metasys* Database manager may not restore your databases from all file locations. To avoid any issues, use the default path `C:\ProgramData\John Controls \MetasysIII\SQLData`.
4. Click either **Create New File** or **Overwrite File**.
5. If you want to rebuild the SQL Server indexes, in the **Database Selection** section, select the databases you want to back up, and click **Rebuild Indexes during backup process**.
6. Click **Backup**. The **Backup in Progress** window appears. You can ignore a **Not Responding** label that appears in the title bar. The back up is progressing but the page is not refreshing. Wait until the backup is complete, and the **Backup Successful** message box appears.

Performing an out-of-place upgrade

If you need to install a new Windows® operating system on the machine currently hosting the Metasys software, for example Windows 10® instead of Windows 7®, do not complete an upgrade, instead complete a fresh Windows 10® installation. To ensure that you maintain proper functionality of the Metasys software family, complete the following steps:

1. Remove the existing self-signed certificate. For more information, refer to the *Removing or rebinding the secure certificate* section in the *Metasys Server Installation and Upgrade Guide (LIT-12012162)*.
2. Back up the Metasys Database Manager, the historical databases, and the ADS, ADX, ODS, or OAS software, and store them offline.
3. Reformat the machine.
4. Install the software in the following order:

   a. Windows® operating system.
   b. If applicable, install the System Configuration Tool (SCT).
   c. Metasys Database Manager.
   d. Restore the historical databases.
   e. Install the ADS, ADX, ODS, or OAS software.

ⓘ **Note:** If you need to complete an out-of-place upgrade to a new machine or virtual machine, follow the same steps but omit Step 3, reformatting the machine.

Purging a database

Use the Maintenance tab to purge databases. The Maintenance tab is not available to all users. Access is dependent on the user's Windows access rights. See Required access rights.

➤ **Important:** Unless you back up the database first, the database information cannot be recovered after you click **Purge Data Now**.

ⓘ **Note:** To minimize Metasys system downtime during a purge, purge the database on a regular basis. Large databases, for example over 50 GB, may take substantial time to complete the purge operation.

To purge a database:

1. Open the **Metasys Database Manager**. See Opening the Metasys database manager to manage your databases.
2. Click the **Maintenance** tab.

ⓘ **Note:** If the Maintenance tab is not visible, this tab may not be available to you based on your Windows access rights, or because you did not click **Yes** in the User Account Control window. See Required access rights and Opening the Metasys database manager to manage your databases.

3. To create a backup, in the Maintenance Type section, click **Create Backup prior to maintenance**.

ⓘ **Note:** If you click this box, you must enter information on the Backup tab before you click **Purge Data Now**, including the location where the backup files are saved.

4. In the Maintenance Thresholds section, select an amount of data to leave in the database, if desired. You can leave:

   - No data (No)
   - Current Month's data
   - Last Month's data
   - Last 2 Month's data
   - Last 3 Month's data
   - Last 6 Month's data
   - Last 12 Month's data
   - Last 24 Month's data
   - Last 36 Month's data
   - Last 60 Month's data
   - Custom Cutoff Date

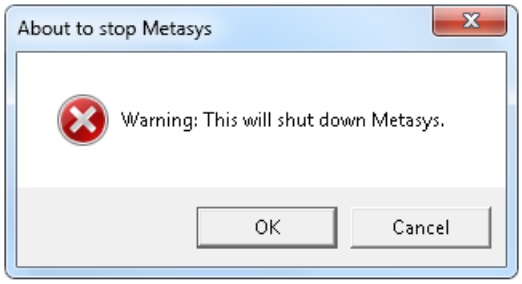
   If you want to delete all records, choose No.

1. In the Database Selection section, select the databases you want to purge.

ⓘ **Note:** If you click **Create Backup prior to maintenance**, you must enter information on the Backup tab before you click Purge Data Now

2. Click **Purge Data Now**. An alert message appears (Figure 14).

Figure 14: Shutdown at the Start of the Purge



3. Click **OK** to shut down the Metasys system and start the purge.

When the purge is complete, a check mark appears in the status bar (Figure 15).

Figure 15: Successful Purge

Restoring a database

➧ **Important:** If you perform an out-of-place upgrade, restore the databases and then rename the device before you install the ADS, ADX, ODS, or OAS software. For more information, see Renaming field contents in Metasys databases and Introduction.

ⓘ **Note:** The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to Metasys Release 11.0.

In order to restore databases to the new computer during an out-of-place upgrade, copy the backup files from the old computer to the same folder on the new computer before proceeding with the directions in this section.

ⓘ **Note:** The *Metasys* Database Manager may not restore your databases from all file locations. To avoid any issues, use the default path `C:\ProgramData\Johnson Controls\Metasys\SQLData`.

➧ **Important:**

Restoring a database deletes any information that exists in the database from the time the backup was created to when it was restored. Use this option to restore a database during an out-of-place upgrade, or to repair a corrupted database only. This feature **should not** be used to view historical data in the *Metasys* system. Instead, use the *Metasys* Export Utility for storing and viewing historical data in more user-friendly formats.

You cannot restore database backups from a newer version of SQL Server software to an older version of SQL Server software. For example, you cannot create a backup of *Metasys* databases that are hosted on SQL Server 2019 software and restore them to SQL Server 2016 software. However, you can restore database backups from an older version of SQL Server to a newer version of SQL Server. If you restore a database that was created using a version of SQL Server software that is older than the version you are currently using, the *Metasys* Database Manager upgrades the database so it can function with the current SQL Server software version.

If you restore a database from an earlier release of *Metasys* software than you are using, the ADS/ADX/ODS/OAS stops functioning. No fail-safes prevent you from restoring a database that is older than the database you are using. Be sure to restore databases from the same release that you are using if the ADS/ADX/ODS/OAS is already installed. Beginning at Release 5.0, you

can restore a Release 2.2 or later database before a Release 5.0 ADS/ADX is installed as part of data preservation during the upgrade process. If you are not performing an out-of-place upgrade as detailed in the *Metasys Server Installation and Upgrade Guide (LIT-12012162)* or *ODS Installation and Upgrade Guide (LIT-12011945)*, you cannot restore a database from a system that does not have the *Metasys* Advanced Reporting System installed to a system that does have the reporting system installed. The database does not contain all the stored procedures required to use the reporting system. If you attempt to do this, the reporting system does not function.

Do not restore databases from a different server unless you follow the process for performing an out-of-place upgrade as detailed in the *Metasys Server Installation and Upgrade Guide (LIT-12012162)* or *ODS Installation and Upgrade Guide (LIT-12011945)*. Even if both systems have the same name and are at the same *Metasys* release, there are underlying differences in the databases.

For more information about the fields on the Restore tab, see Restore tab. The Restore tab is available in Expert Mode only.

Expert Mode and the Restore tab are not available to all users. Access is dependent on the user's access rights. See Required access rights.

To restore a database, complete the following steps:

1. Use Windows Explorer to browse to `C:\Program Files (x86)\Johnson Controls \Metasys Database Manager`.
2. In the *Metasys* Database Manager folder, double-click **Expert Mode**. The *Metasys* Database Manager opens in expert mode with the **Restore** tab enabled.

Note:

If the **User Account Control** window appears, click **Yes**.

If the **User Account Control** window does not appear and the *Metasys* Database Manager opens with only the **Statistics** tab available, verify your Windows access rights. See Required access rights.

3. Click the **Restore** tab. A warning appears.

   If the **Restore** tab is not present, see Required access rights.
4. Read the warning and click **Continue**. The **Restore** tab appears (Figure 9).
5. To navigate to the database you want to restore, click **Browse**. For information on specifying back up file locations, see Backup tab.

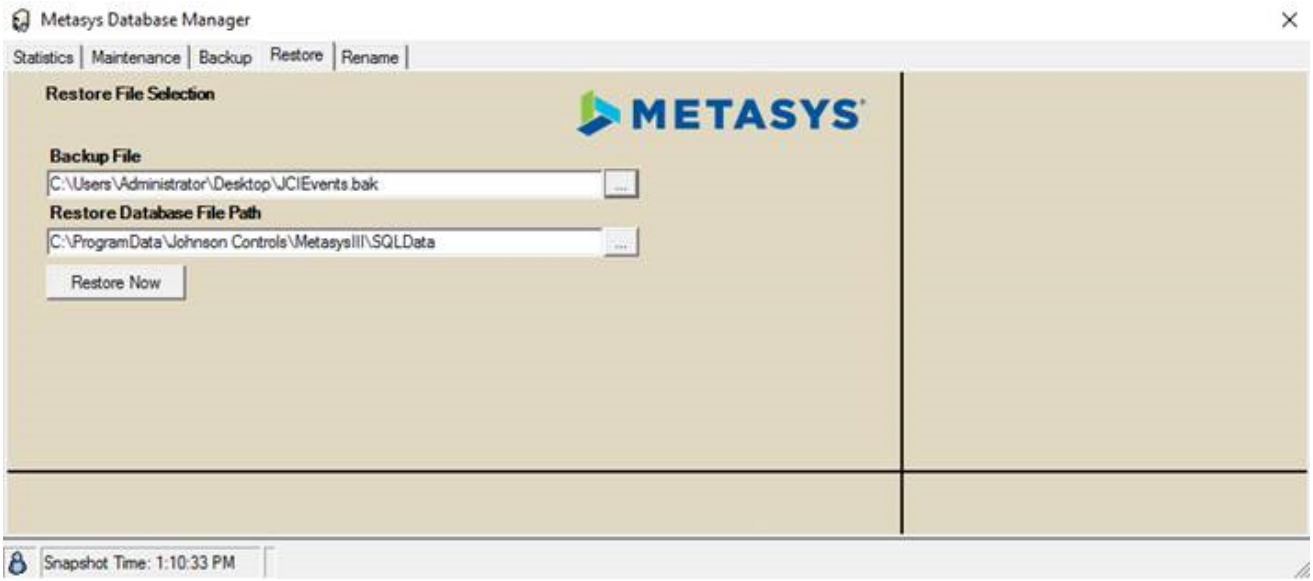
   Note:

   You can restore only one database at a time.
   After you select a backup file, a **Restore Database File Path** field may appear if the following conditions occur:

   - The database name is the name of an existing database.
   - The database is trying to replace a database that does not exist; for example, the backup file name is JCIEvents.bak and the JCIEvents database does not exist in the system.

   If prompted to select a **Restore Database File Path**, select the appropriate file path of the database.

Figure 16: Restore Path Dialog Box



6. Click **Restore Now**. The **Restore in Progress** window appears. You can ignore a **Not Responding** label that appears in the title bar. The restore is progressing but the page is not refreshing. Wait until the restore is complete, and the **Database backup has been successfully restored** message box appears.

   ⓘ **Note:**

   - If you receive an error while restoring a database, you may need to run a SQL script to fix the problem. Contact the Johnson Controls® Field Support Center (FSC) for assistance.
   - When you restore a database, the *Metasys* Database Manager creates a backup of the database before you start the restore and saves it in the same file location as the database. If you accidentally overwrite a database, see Troubleshooting.

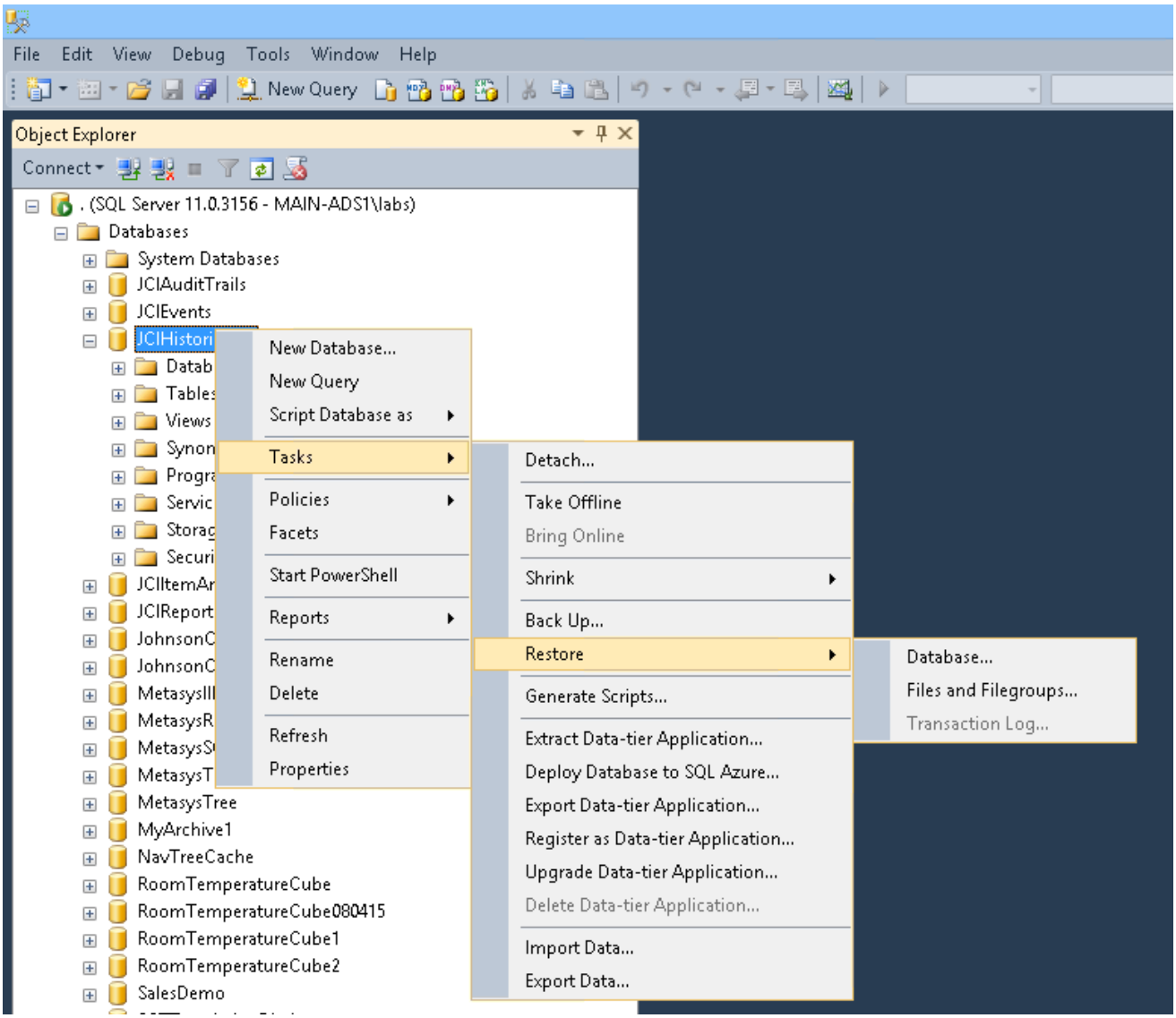
If the security restrictions on your computer prevent you from using *Metasys* Database Manager to restore a database you can manually restore databases using Microsoft SQL Management Studio.

ⓘ **Note:** This process can ONLY be used to restore backups that were from the same machine at the same *Metasys* release. Trying to restore backups from other machines or from previous versions of *Metasys* will cause problems.

To restore a database using SQL Management Studio, complete the following steps:

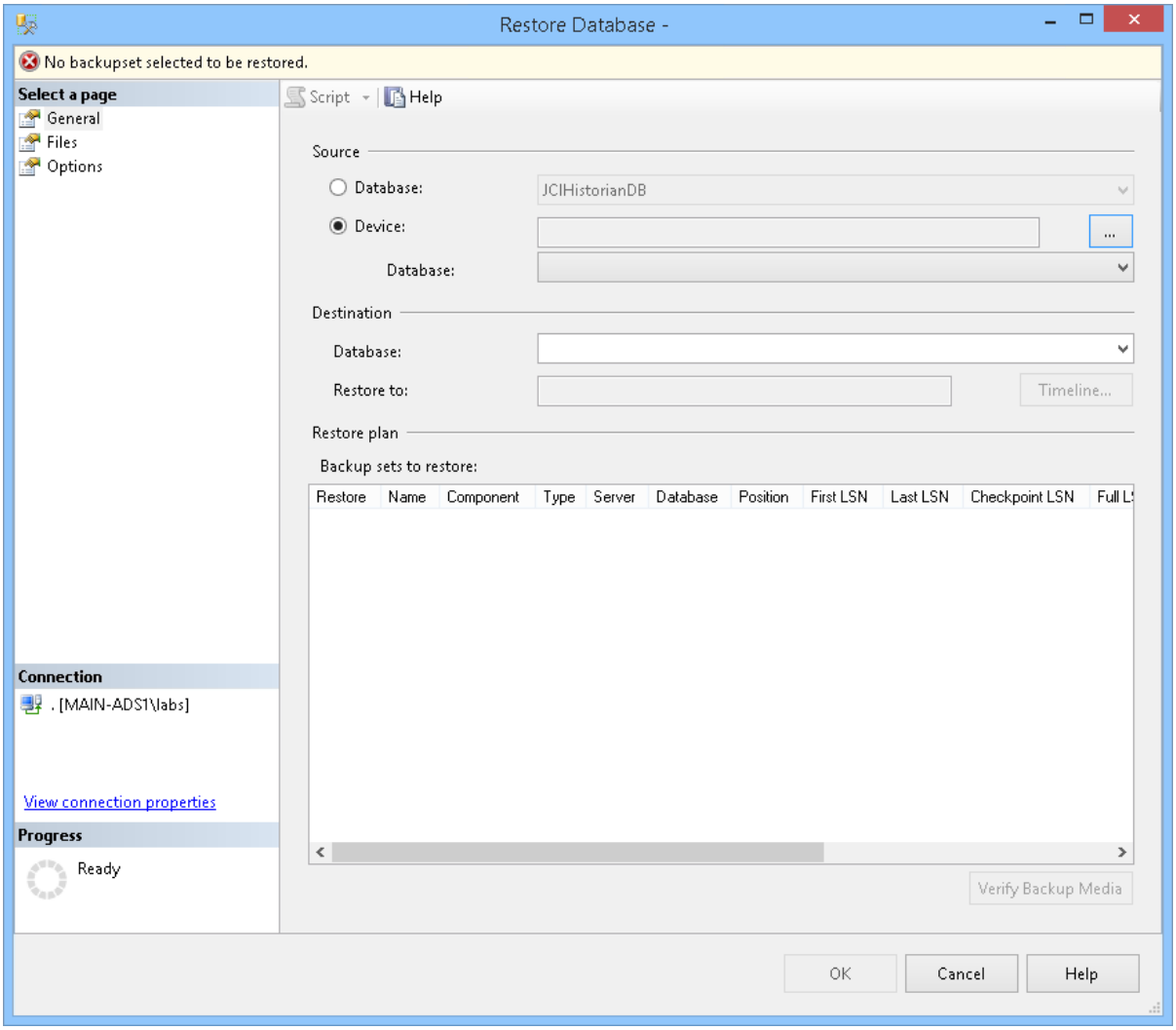
1. Open the **Command Prompt** in Administrator mode, type **net stop miiidm**, and press **Enter** to stop the Metasys III Device Manager Service.
2. Exit *Metasys* Database Manager.
3. Open **Microsoft SQL Server Management Studio** or **SQL Server Management Studio Express**, and log in with credentials that have system admin role capabilities.
4. Expand folder to browse to the database you want to restore.
5. Right-click the database name, click **Tasks** > **Restore** > **Database**.

Figure 17: SQL Server Management Studio Tree



6. In the **Restore Database** window, in the **Source** area in the right pane, select **Device**.

Figure 18: Restore Database - General Tab

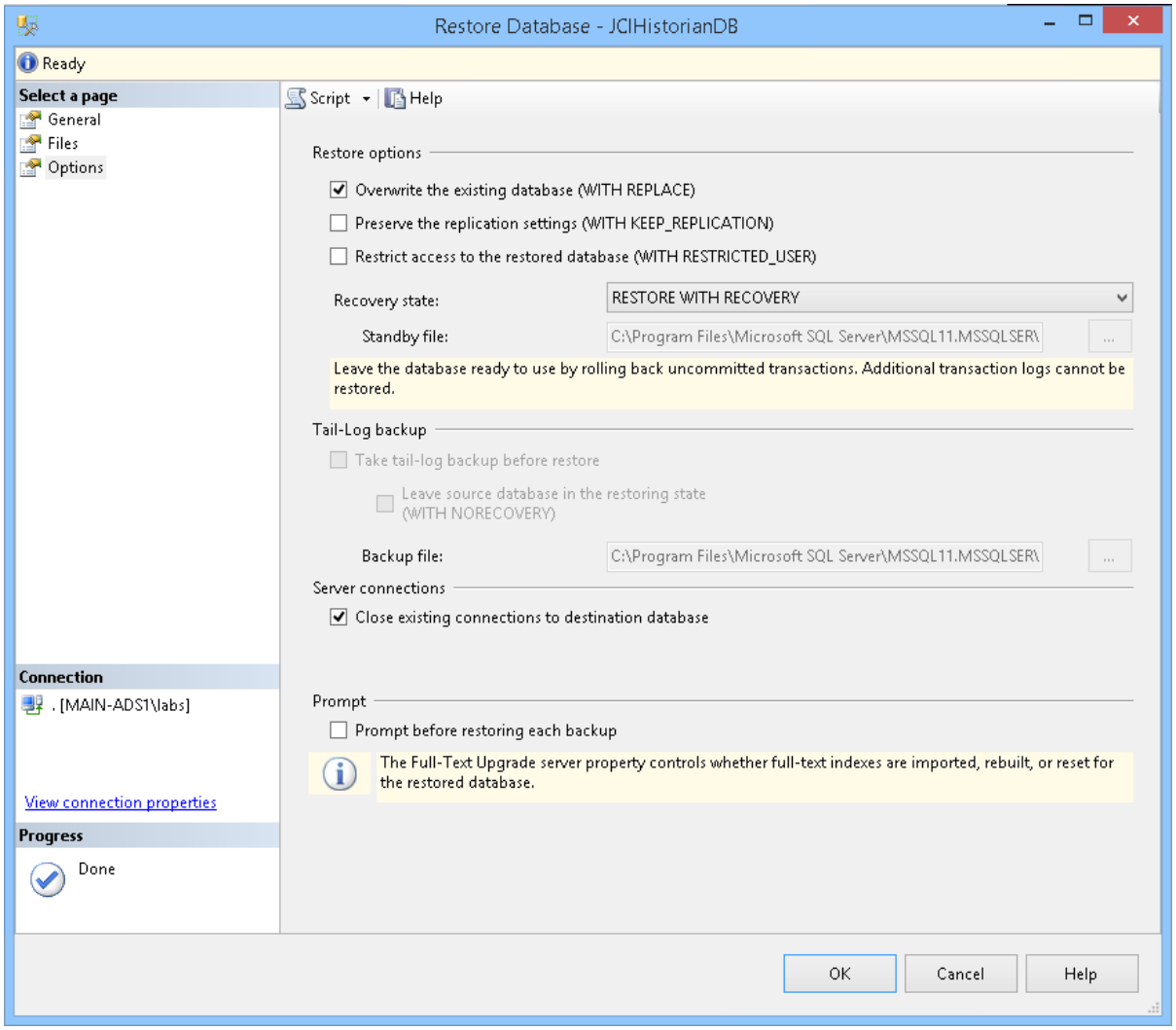


7. To navigate to the database you want to restore, click **Browse**. For information on specifying backup file locations, see Backup tab.

   ⓘ **Note:** The backup file must be in a directory that the SQL Server service account has read access to.

8. Click **OK**.
9. Under Select the backupsets to restore,select the **check box** next to the database you want to restore.
10. Open the **Options** tab and click **Overwrite the existing database** and **Close existing connections to destination database**.

Figure 19: Restore Database - Options Tab



11. Click **OK** to start the restore.
12. When you are finished restoring your databases, open the Command Prompt, type **net start miiidm**, and press **Enter** to start the Metasys III Device Manager Service.

Renaming field contents in *Metasys* databases

➤ **Important:** If you are performing an out-of-place upgrade, restore the databases and then rename the device **before** you install the ADS/ADX/ODS/OAS software. See Restoring a database.

ⓘ **Note:** The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to *Metasys* Release 11.

In order for the ADS/ADX/ODS/OAS to continue accessing historical data without interruption, you should rename the field contents in the JCI databases immediately after you rename the Site Director in SCT. See Renaming a computer after an operating system upgrade using the Metasys rename assistant for a complete list of steps to follow in the rename process.

For more information about the fields on the Rename tab, see Rename tab. The Rename tab is available in Expert Mode only. Expert Mode and the Rename tab are not available to all users. Access is dependent on the user's Windows access rights. See Required access rights.

To rename field contents in a *Metasys* database:

1. Run the **historian_query_find_other_site_dirs.sql** script that is found in Solutions Database article 26394 to scan your Historian Database looking for multiple Site Director names. If you do not have access to the FSC Solutions Database, please contact the FSC for assistance or execute the Rename procedure and check the log file after the Rename procedure and verify that there are no errors.
2. If you do have multiple Site Director names in your Historian Database please contact the FSC to run SQL scripts to resolve the multiple Site Director issue.
3. Using Windows Explorer, browse to `C:\Program Files (x86)\Johnson Controls\Metasys Database Manager`.
4. Double-click **Expert Mode**. The *Metasys* Database Manager opens in Expert Mode with the Rename tab enabled.

Note:

If the User Account Control box appears, click **Yes**.

If you do not click **Yes**, the *Metasys* Database Manager opens with only the Statistics tab available. Verify your Windows access rights. See Required access rights.

5. Click the **Rename** tab.
6. Do one of the following:

   - If you are renaming due to an out-of-place upgrade, deselect **Create Backup**. (There is no need to create a backup because you have just restored the original backup.)
   - If you are renaming for a reason other than an out-of-place upgrade, click **Create Backup** and then click the **Browse** button in the Backup File Path section to browse to a location for the database files. We recommend that you use the default path: `C:\ProgramData\Johnson Controls\MetasysIII\SQLData`.

7. In the Old field, enter the old name of the Site Director or device. In the New field, enter the new name of the Site Director or device. Follow the format shown in Table 13.

Table 13: Example Format of Old and New Names

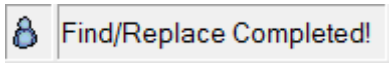
Reference Being Renamed	Old Name	New Name
Site Director	SiteDirector:SiteDirector	NewSiteDirector:NewSiteDirector
Device	SiteDirector:Device	SiteDirector:NewDevice

Note: The Rename function uses these exact names in the find and replace process. Therefore, make sure you spell and capitalize the old and new names correctly.

8. Click **Rename Now**. The status bar displays the status of the rename. When the rename is complete, a message appears in the status bar (Figure 20).

Note: If a dialog box appears with the message **You should stop the Metasys service on the ADX Application Server before proceeding**, click **OK** to proceed with the rename. This message is expected when you perform a rename as part of an out-of-place upgrade.

Figure 20: Successful Rename



9. Open the ***Microsoft Event Viewer Control Panel*** > ***System and Security*** > ***Administrative Tools*** > ***Event Viewer***.
10. Expand the **Applications and Services Logs** and select **MetasysDBMonitor**.
11. Verify that the log file contains no errors. If the error **Exception Occurred: Cannot insert duplicate key row in object 'dbo.tblPoint' with unique index 'IX_tblPoint'** appears in the log file, the rename procedure was not successful and more than one Site Director Name exists in the database. Please contact the FSC for assistance in solving this issue.
12. Install the ADS/ADX/ODS/OAS software.

Monitoring databases

To monitor a database, use the following procedures:

- Accessing/Starting monitoring settings
- Choosing monitoring settings
- Stopping database monitoring

Accessing/Starting monitoring settings

This procedure starts monitoring if you have stopped it and allows access to the settings while monitoring is taking place.

To choose *Metasys* Database Manager monitoring settings:

1. Log in as a user with administrator privileges.
2. If the Settings selection or Monitoring Settings window does not appear, this may be a result of your Windows access rights (see Required access rights). Do the following:

    a. On the Windows Start menu, go to ***All Programs*** > ***Johnson Controls*** > ***Metasys Database Manager***.
    b. Right-click **Metasys Database Monitor** and then click **Run as Administrator**.

        If you are not a member of the Administrator group, a credentials box appears. Enter your credentials.

        If you have sufficient privileges, the User Account Control window appears. Click **Yes**. The *Metasys* Database Manager icon appears in the taskbar.

    c. Right-click  or  or  in the taskbar and select **Settings**. The *Metasys* Database Manager Monitoring Settings window appears.

Go to Choosing monitoring settings for information on choosing Monitoring settings.

Choosing monitoring settings

About this task:
For more information on the contents of the Monitoring Settings window, see Monitoring settings.

ⓘ **Note:** The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to *Metasys* Release 11.

To set the *Metasys* Database Manager monitoring settings:

1. Access the monitoring settings. See Accessing/Starting monitoring settings.
   ⓘ **Note:** If the Settings selection or window is not visible, they may not be available to you based on your Windows access rights or because you need to take special steps when you open the window. See Required access rights and Accessing/Starting monitoring settings.
2. In the General section of the Monitoring Settings window (Figure 11), select how often you would like the databases monitored.
3. If you would like to send email notification of status changes, enter the addresses to which notification should be sent in the Email section.
4. To send a test email to the addresses you entered in Step 3, click **Send Test Email**.
5. In the Warning section, define the parameters for a Warning state. If the databases reach the size that you set here, the taskbar icon changes to  and the *Metasys* Database Manager sends an email to the addresses listed in the Email section (if you select **Email on warning**).
6. In the Alarm section, define the parameters for an Alarm state. If the databases reach the size that you set here, the taskbar icon changes to  and the *Metasys* Database Manager sends an email to the addresses listed in the Email section (if you select **Email on alarm**).
7. In the Database User Account section, enter your **SQL Server software login credentials**. If you do not enter your credentials here, the *Metasys* Database Manager uses the credentials used to log in to the ADS/ADX/ODS/OAS computer. See Database login.
8. Click **OK**.

Stopping database monitoring

About this task:
To stop database monitoring:

1. Right-click  or  or  in the taskbar and then click **Exit**. A confirmation box appears.
2. Click **OK**.
   ⓘ **Note:** The log creates an entry when you exit database monitoring. See Log file.

Viewing the log file

About this task:
To view the log file:

1. Right-click  or  or  in the taskbar and select **View Log File**. The Windows Event Viewer opens.
2. On the left side of the viewer, select **MetasysDBMonitor**.

Troubleshooting

Use Table 14 to troubleshoot the *Metasys* Database Manager.

Table 14: *Metasys* Database Manager Troubleshooting

Problem	Condition
The *Metasys* Database Manager Monitoring Settings window appears every time you restart the ADS/ADX/ODS/OAS.	If you do not enter values in the Email section of the Monitoring Settings window, the window appears every time the ADS/ADX/ODS/OAS restarts. To prevent the Monitoring Settings window from reappearing: 1. In the Email section of the Monitoring Settings window (Figure 11), enter the correct information into the appropriate fields. If you do not wish to use the Email feature, enter at least three characters in the SMTP Server field and in at least one address field. 2. Click **OK**.
You experience one or more of the following: • You cannot view all of the tabs. • You cannot access monitoring settings.	This problem occurs when you do not have sufficient access rights to use the *Metasys* Database Manager. See Required access rights.

Table 14: *Metasys* Database Manager Troubleshooting

Problem	Condition
Metasys Database Manager does not start, or the icon appears red, indicating an alarm state. Other users may log in to the same computer and not experience issues.	In some scenarios, only users without Windows administrator privileges experience these issues. If you experience this scenario, try the following: 1. Log in to the Windows OS as a user with administrator privileges (not as a Standard user). 2. Right-click the **Metasys Database Manager** icon and then click **Exit**. 3. Using Windows Explorer, browse to the following location: `C:\ProgramData\Johnson Controls\MetasysIII\MDM` 4. Delete the following files: JCIAuditTrails.txt JCIEvents.txt JCIHistorianDB.txt JCIItemAnnotation.txt 5. Do **not** restart the *Metasys* Database Manager. Log out of the OS. 6. Log in to the Windows OS as a user who does not have administrative privileges (as a Standard user). If the icon is still red, the Users group in the Windows OS may not have public access to the *Metasys* databases. In this scenario, do the following: 1. Using Add/Remove programs, uninstall the *Metasys* Database Manager. 2. Reinstall the *Metasys* Database Manager. Instead of granting the entire Users group public access to the *Metasys* databases, you may prefer to grant access only to some Windows users. If this is the case, grant public access to the *Metasys* databases.

Table 14: *Metasys* Database Manager Troubleshooting

Problem	Condition
When a user logs on to their Windows computer, the following error message appears: `Metasys Database Manager. Status: Alarm. There was an error connecting to the target database. JCIHistorianDB. Metasys Database Manager Monitor.`	Change the permissions on the MDM folder and the files it contains, complete the following steps: 1. Navigate to `C:\ProgramData\Johnson Controls \MetasysIII.` 2. In the MetasysIII folder, right-click the **MDM** folder, and click **Properties.** 3. Click the **Security** tab, and click **Edit**. 4. In the **Group or user names** area, click **Users**. 5. In the **Permissions for Users** area, in the **Full control** entry, select **Allow**. 6. Click **Apply**.
A Database Error box appears: `At least one database cannot be found. Make sure your Metasys software has been installed properly and that SQL Server service is running.`	This error message appears if a timeout occurs when the *Metasys* Database Manager attempts to connect to the database. For example, the timeout may occur if the computer is busy executing a virus scan. This message also appears if the user credentials used to connect to the SQL Server database do not have read access to the databases. See Taskbar icon and Database login.
The Current Database Server Connections field reads 0.	This may indicate that there are no connections to the SQL Server software. This field reads 0 if the Windows user account does not have Administrator privileges.
While you monitor databases, a message appears indicating that one or more databases have exceeded their allowed size. However, you know the database size is less than the alarm limit.	This message may appear if your SQL Server software access credentials do not give you read access to the databases.
When you purge a database, the database size seems to increase.	The log file may increase during a purge. The *Metasys* Database Manager is working properly.
The JCIItemAnnotation database does not grow. It is always the same size.	The Annotation database is populated only on MVE systems. (MVE is not currently supported on the ODS.) Event and audit annotations are stored in the JCIEvents and JCIAuditTrails databases.

Table 14: *Metasys* Database Manager Troubleshooting

Problem	Condition
After you restart a computer that has *Metasys* Database Manager installed, the icon in the Windows system tray is red.	If the *Metasys* Database Manager comes online faster than one of the managed SQL Server databases and cannot connect to the managed database to determine the database size, the *Metasys* Database Manager tray icon turns red, indicating an alarm condition. As the size of the SQL Server databases increases, the databases require more time to come online, increasing the likelihood of encountering this alarm condition. Although the SQL Server database size may suddenly seem too large, the real cause of the alarm condition may be that the *Metasys* Database Manager has not yet established connections to the SQL Server databases. The *Metasys* Database Manager connects with the SQL Server and other associated databases at user-specified time intervals. By the time of the next scheduled connection, the SQL Server database completes the startup, the databases are online, and the *Metasys* Database Manager icon turns green. It is very unlikely that the SQL Server database has exceeded the size limits during this time. A user who is concerned about this possibility can restart *Metasys* Database Manager immediately. When the databases have finished coming online, the *Metasys* Database Manager icon turns green. Until the databases have finished coming online, the *Metasys* Database Manager icon remains red. If the icon remains red after a restart, wait a few minutes to allow the databases to finish coming online, and restart the *Metasys* Database Manager.
You accidentally restore a database over an existing database.	If this occurs, you can restore the original database. The *Metasys* Database Manager created a backup of the original database before it was overwritten. Automatic backups are stored in the *Metasys* Database directory at `C:\ProgramData\Johnson Controls \MetasysIII\SQLData`. Backups use the following naming convention: [yymmdd]FromRestore[databasename].bak For example: 090605FromRestoreJCIHistorian.bak To restore the original database, use the standard *Metasys* Database Manager restoration procedure in Restoring a database.

Table 14: *Metasys* Database Manager Troubleshooting

Problem	Condition
Metasys Database Manager does not start, or the icon appears red, indicating an alarm state. Other users may log in to the same computer and not experience issues.	Update the folder permissions on `C:\ProgramData\Johnson Controls\MetasysIII\MDM` to allow the Users group to write to the directory.

Related documentation

Table 15 contains literature related to the *Metasys* Database Manager.

ⓘ **Note:** The latest available version of the ODS is Release 10.1. The ODS is not available for upgrade to *Metasys* Release 11.

Table 15: *Metasys* Database Manager Related Documentation

For Information On	See Document
Installing the ADS/ADX	*Metasys Server Installation and Upgrade Guide (LIT-12012162)*
Installing the ADS-Lite	*Metasys Server Lite Installation and Upgrade Instructions (LIT-12012258)*
Installing the ODS	*ODS Installation and Upgrade Guide (LIT-12011945)*
Installing the OAS	*Open Application Server Installation and Upgrade Instructions (LIT-12013222)*
Installing the *Metasys* Database Manager	*Metasys Database Manager Installation Guide (LIT-12011553)*
Working with Trends, Alarms (Events), Audits, and Annotations	*Metasys Site Management Portal Help (LIT-1201793)*
Creating, Editing, and Loading Archive Databases with the SCT	*Metasys SCT Help (LIT-12011964)*

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information, and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Patents

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Contact information

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