- Fault triage: is an add-on to fault detection that provides fault duration, occurrence information, and corrective action recommendations to improve fault prioritization that assists less experienced building operators with problem solving.

- Building Network tree allows for faster delivery of the Metasys User Interface (UI) by enabling its deployment prior to the spaces and equipment configuration process. It also provides a familiar navigation experience for Metasys operators who have previous experience using the All Items tree of the Site Management Portal.

- Use Advanced Search and Reporting in the Metasys UI to find and report on operational data and make bulk commands to restore order more quickly. The Advanced Search and Reporting feature provides the ability to quickly search Metasys objects by Building Network, equipment, equipment type, or space.

- Use Custom Dashboards for the Metasys User Interface to create dashboards that provide the most relevant and critical information to Metasys operators for enhanced productivity and creates an experience that mimics users operational styles for ease of use.

- Graphics Custom Behaviors provide the flexibility to use custom symbols that are required for their individual building or campus needs or their local standards.

- Use trend widget updates to identify patterns including outliers, using an intuitive candlestick chart that displays min, max, and averages.

- Cyber Health Dashboard provides a centralized view of potential security-related issues or system issues which are detectable by an ADS/ADXOAS, but which may not surface as part of general system alarms.

Background

The Application and Data Server (ADS) and Extended Application and Data Server (ADX) are optional components of the Metasys system that manage the collection and presentation of large amounts of trend data, event messages, operator transactions, and system configuration data. The ADS is an entry-level server that runs on personal computers and supports up to five concurrent users. The ADX is a larger scale system that runs on a server operating system to provide extended historical archiving and reporting capabilities. The ADX is offered in several models to support up to 10, 25, 50, or 100 concurrent users. As Site Director, the ADS/ADX provides secure communication to a network of NAE, NIE, NCE, SNE and SNC series engines.

The ADS/ADX supports robust features that continue to position the Metasys system as the leading building automation system in the industry, including:

- Fault detection: identifies and lists building system-related faults in order of severity to help you quickly fix issues and avoid equipment issues, energy waste, and comfort complaints.

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- User Management facilitates the creation and management of users and their roles, category-based permissions, and privileges directly in Metasys UI Online, without the need to install software on client machines.

- Historical data management, including an ODBC-compliant database package for storage of trend data, event messages, operator transactions, and system configuration data.

The Site Management Portal UI of the ADS/ADX provides a flexible system to change the online configuration of the Metasys system, optimize control strategies, and perform administrative tasks. The ADS/ADX includes an Open Database Connectivity (ODBC) compliant database package for secure storage of historical and configuration data.

ⓘ **Note:** SMP requires a license at Release 12.0. The license is only available for existing sites upgrading to Release 12.0.

The ADS and ADX support virtual environments, including VMware® and Microsoft® Hyper-V™. Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for more information.

The Metasys system can communicate with cloud-based applications easily and securely. To make this connection, the Metasys system requires minor programming and setup by Johnson Controls. When you are connected, you can access multiple cloud-based applications and features. To learn more, visit the Building Management page located on the Johnson Controls® website.

Figure 1: Metasys UI

For the ADX, the Metasys Advanced Reporting System reports on system configuration performance, energy usage, demand, and cost.

Applications

Use an ADS in the following situations:

- When the number of network engines becomes larger than a single network engine can handle efficiently as Site Director.

- The long-term historical data storage needs exceed the capacity of a typical network engine.

- The number of simultaneous users logging on to SMP or Metasys UI exceeds the capacity of a single network engine. The ADS supports up to five simultaneous users, and up to 10 to 14 SNx/NxE engines. Refer to the *Metasys System Configuration Guide (LIT-12011832)*.

Use an ADX when any of the following criteria apply:

- The Metasys Advanced Reporting System or the Metasys for Validated Environments (MVE), Extended Architecture application is required.

- You need to support more than five simultaneous users logging on to SMP or Metasys UI. The ADX supports up to 10, 25, 50, or 100 users, and up to 1,000 SNx/NxE engines. Refer to the *Metasys System Configuration Guide (LIT-12011832)*.

- Any of your data storage or access requirements is not met by an ADS.

To further help you decide whether an ADS or ADX is right for your facility, consider their respective data storage and data access capabilities.

Ordering information

For complete ordering information, refer to the *Metasys System Software Purchase Options Product Bulletin (LIT-12011703).*

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Table 1: ADS/ADX Ordering Information for New or Upgrade Software

Base Product Code	Product Descriptions	New Software Product Code Number	Upgrade Software Product Code Number	Migration Software Product Code Number
MS-ADS05U	Application and Data Server	MS-ADS05U-0	MS-ADS05U-6	MS-ADS05U-8
MS-ADX10U	Extended Application and Data Server	MS-ADX10U-0	MS-ADX10U-6	MS-ADX10U-8
MS-ADX10SQL	Extended Application and Data Server Includes Microsoft SQL Server 2019 software with core license	MS-ADX10SQL-0	MS-ADX10SQL-6	MS-ADX10SQL-8
MS-ADX25U	Extended Application and Data Server	MS-ADX25U-0	MS-ADX25U-6	MS-ADX25U-8
MS-ADX25SQL	Extended Application and Data Server Includes Microsoft SQL Server 2019 software with core license	MS-ADX25SQL-0	MS-ADX25SQL-6	MS-ADX25SQL-8
MS-ADX50U	Extended Application and Data Server	MS-ADX50U-0	MS-ADX50U-6	MS-ADX50U-8
MS-ADX50SQL2	Extended Application and Data Server For use on server with dual processors or 8 cores[1] Includes Microsoft SQL Server 2019 software with core license	MS-ADX50SQL2-0	MS-ADX50SQL2-6	MS-ADX50SQL2-8

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Table 1: ADS/ADX Ordering Information for New or Upgrade Software

Base Product Code	Product Descriptions	New Software Product Code Number	Upgrade Software Product Code Number	Migration Software Product Code Number
MS-ADX50SQL	Extended Application and Data Server For use on server with single processor or 4 cores Includes Microsoft SQL Server 2019 software with core license	MS-ADX50SQL-0	MS-ADX50SQL-6	MS-ADS50SQL-8
MS-ADX100U	Extended Application and Data Server	MS-ADX100U-0	MS-ADX100U-6	MS-ADX100U-8
MS-ADX100SQL2	Extended Application and Data Server For use on server with dual processors or 8 cores[1] Includes Microsoft SQL Server 2019 software with core license	MS-ADX100SQL2-0	MS-ADX100SQL2-6	MS-ADX100SQL2-8

1   Servers with dual processors or 8 cores are **recommended** for ADX 50 user and 100 user software.

Table 2: Optional features add-on licenses

Code number	Description
M4-APIMOCMD-0	License enabling the Monitoring and Commanding API for new site.
M4-APIMOCMD-6	License enabling the upgrade of the Monitoring and Commanding API for existing sites. ⓘ **Note:** Existing sites upgrading to Release 12.0 must purchase this upgrade to con-tinue using the API.

Table 2: Optional features add-on licenses

Code number	Description
M4-FAULT-0	License enabling Fault Detection feature for one Metasys server (ADS, ADS-Lite, ADX, or OAS series). [1]
M4-TRIAGE-0	License enabling Fault Triage feature for one Metasys server (ADS, ADS-Lite, ADX, or OAS series). ⓘ **Note:** M4-FAULT-0 is also required as a prerequisite.

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Table 2: Optional features add-on licenses

Code number	Description
M4-ADFS-0	License enabling Active Directory Federation Services (ADFS) feature for one Metasys server (ADS, ADS-Lite, ADX or OAS series).
M4-FIPS-0	License enabling Federal Information Processing Standard 140-2 (FIPS 140-2 Level 1 compliance) for one Metasys server (ADS, ADS-Lite, ADX, or OAS series), or for one software network engine (NAE85 or LCS85 series).
MS-SMP-6	License enabling SMP for existing sites.
M4-BACNETSC-0	License enabling BACnet Secure Connect.

1   The OAS must meet minimum requirements.

ADS concurrent users

The following table shows examples of the total number of supported users who can be simultaneously logged in to the SMP and Metasys UI.

ⓘ   **Note:** The following information provides the supported concurrent user limitations. Usage beyond the supported limitations may yield system or server performance issues.

Table 3: Examples of ADS/ADX/ADS-Lite concurrent users

ADS/ADX type	Examples of ADS/ADX concurrent users	
	SMP UI	Metasys UI
5-user ADS/ ADS-Lite	0	5
	2	3
	5	0

Table 3: Examples of ADS/ADX/ADS-Lite concurrent users

ADS/ADX type	Examples of ADS/ADX concurrent users	
	SMP UI	Metasys UI
10-user ADX	0	25^1
	5	20
	8	17
	10	15
25-user ADX	0	25
	10	15
	20	5
	25	0
50-user ADX	0	50
	10	40
	25	25
	50	0
100-user ADX	5	50^2
	10	50^2
	25	50^2
	50	50^2
	75	25
	100	0

1   The 10-user ADX has an SMP 10 concurrent user limitation. The Metasys UI concurrent user limitation is 25.
2   The 100-user ADX has an SMP 100 concurrent user limitation. The Metasys UI concurrent user maximum is 50.

For example, with a 5-user ADS or ADS-Lite, 5 Metasys UI users are supported if no SMP users are logged in, or 3 Metasys UI users are supported if 2 SMP users are logged in. Similarly, with a 50-user ADX, 50 Metasys UI users are supported if no SMP users are logged in, or 10 Metasys UI users are supported if 40 SMP users are logged in. The only Metasys UI user restriction applies to a 50-user or 100-user ADX: no more than 50 Metasys UI users are supported, regardless of the number of SMP users.

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Application and Data Server (ADS) system requirements

Table 4: Application and Data Server (ADS) system requirements (5 Users)

Recommended Computer Platform[1]	Intel Core i7-8700 Processor (Six Core, 3.20GHz)
	2 x 500 GB 7200 rpm SATA 3.5 in. drive[2] with 40 GB free space after installation of all prerequisite software and before installation of ADS software. Configure RAID 1 (mirroring) with disk write-caching turned on.
	ⓘ **Note:** Prerequisite software includes the supported operating system, database software, .NET Framework, and any other software or service packs required for your ADS configuration.
	Graphics card (1 GB RAM, ATI® Technologies or NVIDIA® Corporation, 64-bit compatible, Small Form Factor [SFF] if required)
Required Minimum Memory[3]	16 GB RAM
	The VM host must have at least 8 GB of allocated RAM at all times. When you configure the VM, do not select the enable dynamic memory option.
Number of engines supported	For information about the number of engines supported, refer to the table labeled *Maximum number of network engines supported based on Metasys Server type and Server size* in the *Metasys System Configuration Guide (LIT-12011832)*.
Number of Site Management Portal users supported	Up to five
Number of Metasys UI users supported	Up to five
Supported Operating Systems[4] and Database Software	Windows® 10 Pro and Windows 10 Enterprise Editions versions 2004, 21H1, and 21H2 (64-bit). For all future Windows 10 updates after version 21H2, we will evaluate and certify that Metasys software can support the updates before we provide guidance on support.
	Windows® 10 Enterprise LTSC (21H2) (64-bit)
	Supports: • SQL Server® 2019 Express with CU14 (64-bit) ⓘ **Note:** SQL Server 2019 may cause the configuration service cache that builds stored procedures to time out. This causes the user's login to Metasys UI to fail. To resolve this issue, set SQL Server 2019 databases to run in 2017 compatibility mode. For more information, refer to docs.microsoft.com • SQL Server® 2017 Express with CU27 (64-bit) • SQL Server® 2016 Express with SP2 CU17 (64-bit)
	Supports: • SQL Server® 2017 Express with CU27 (64-bit) • SQL Server® 2016 Express with SP2 CU17 (64-bit)
Supported Operating Systems for Metasys Site Management Portal Client Computer	Windows® 10 Pro and Windows 10 Enterprise Editions versions 2004, 21H1, and 21H2 (64-bit). For all future Windows 10 updates after version 21H2, we will evaluate and certify that Metasys software can support the updates before we provide guidance on support.
	Apple® macOS® 11 Big Sur
	Apple® macOS® 10.15 Catalina
	Apple® macOS® 10.14 Mojave

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Table 4: Application and Data Server (ADS) system requirements (5 Users)

Supported Web Browser Software for Metasys Site Management Portal Client Computers	Apple® Safari® 13.1 or later
	
	ⓘ **Notes:**
	  • In OS X, you cannot view Graphics+ graphics in the Site Management Portal UI.
	  • You use the web browser to download the Launcher application. After you install the Launcher application, you use the Launcher, not the web browser, to log in to the Site Management Portal (SMP) UI.

Supported Web Browser Software for Metasys UI Client Devices	Microsoft® Edge® version 91 or later Google® Chrome™ version 91 or later ⓘ **Note:** Metasys UI does not support incognito mode. To exit incognito mode, click or tap the **X** icon of the browser window or tab and then open a new browser window or tab. For more information on incognito mode in Google Chrome, click here. Apple® Safari® 13.1 or later ⓘ **Note:** Metasys UI does not support private browsing. To exit private browsing, click or tap **Private** in the browser window. Other web browsers, such as Mozilla® Firefox®, are not officially supported by the UI. However, the Metasys UI may appear and function appropriately in these web browsers.
Supported Virtual Environments	Microsoft Hyper-V™ VMware®
Supported User Interfaces	Site Management Portal (SMP) Metasys UI ⓘ **Note:** SMP requires a license at Release 12.0. The license is available only to existing Metasys customers.
Additional Software Included with the ADS Software Download	Launcher software, Network Engine images, Summary Definition Examples, Microsoft .NET Framework (multiple versions), SQL Server Management Studio, Metasys Database Manager, Toggletunnel, SNMP Management Information Base example files (MIBs), Report Viewer 2010 and Report Viewer 2012.
Optional Hardware	Any network or local printer supported by the qualified Windows operating system
Optional Software	Graphic Generation Tool CCT software SCT software Metasys Export Utility software

1   Our computer platform and memory recommendations are not meant to imply that older or slower machines are not usable. Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for more information regarding computer/server recommendations.
2   For best performance, use Serial Attached SCSI (SAS) hard drives, not Small Computer System Interface (SCSI) hard drives.
3   For best performance, use the maximum amount of memory that the computer allows.
4   Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for specific Microsoft Windows operating system settings that may be required for your Metasys system configuration.

Extended Application and Data Server system requirements (Unified 10 or 25 User ADX)

Use the following recommendations for small sites and small to medium sites.

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Table 5: Extended Application and Data Server system requirements (Unified ADX Systems, 10 or 25 Users)

Recommended Server Platform[1]	**Processor for small sites:** Intel® Xeon® Gold 5222 3.8 GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933 **or** Intel® Xeon® Gold 6244 3.6 GHz, 8 cores/16 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2933
	Processor for small to medium sites: Intel® Xeon® Gold 5222 3.8 GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933 and recommended second processor type is Intel® Xeon® Gold 5222 3.8 GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933
	Hard drive: 2 x 960 GB SSD SATA Mix Use 6Gbps 512 2.5in Hot-plug Drive (RAID 1)[2] with 40 GB free space after installation of all prerequisite software and before installation of ADS software. Configure RAID 1 (mirroring) with disk write-caching turned on.
	ⓘ **Note:** ADX prerequisite software includes the Windows operating system, SQL Server software, Windows .NET Framework, and any other software or SPs required by your ADX configuration.
Required Minimum Memory[3]	32 GB RDIMM, 2933MT/s, Dual Rank
	The VM host must have at least 8 GB of allocated RAM at all times. When you configure the VM, do not select the enable dynamic memory option.
Number of engines supported	For information about the number of engines supported, refer to the table labeled *Maximum number of network engines supported based on Metasys Server type and Server size* in the *Metasys System Configuration Guide (LIT-12011832)*.
Number of Site Management Portal users supported	**For small sites:** Up to 10
	For small to medium sites: Up to 10
Number of Metasys UI users supported	**For small sites:** Up to 15
	For small to medium sites: Up to 25
Supported Operating Systems[4] **and Database Software**	Windows® Server® 2019 (version 1809 or later) (64-bit)
	ⓘ **Note:** Metasys Advanced Reporting System does not support SQL Server 2019.
	Supports:
	• SQL Server® 2019 with CU14 (64-bit)
	ⓘ **Note:** SQL Server 2019 may cause the configuration service cache that builds stored procedures to time out. This causes the user's login to Metasys UI to fail. To resolve this issue, set SQL Server 2019 databases to run in 2017 compatibility mode. For more information, refer to docs.microsoft.com
	• SQL Server® 2017 with CU27 (64-bit)
	• SQL Server® 2016 with SP2 CU17 (64-bit)
	Windows® Server® 2016 (version 1607 or later) (64-bit)
	Supports:
	• SQL Server® 2019 with CU14 (64-bit)
	ⓘ **Note:** SQL Server 2019 may cause the configuration service cache that builds stored procedures to time out. This causes the user's login to Metasys UI to fail. To resolve this issue, set SQL Server 2019 databases to run in 2017 compatibility mode. For more information, refer to docs.microsoft.com
	• SQL Server® 2017 with CU27 (64-bit)
	• SQL Server® 2016 with SP2 CU17 (64-bit)
Supported Operating Systems for Metasys Site Management Portal Client Computer	Windows® 10 Pro and Windows 10 Enterprise Editions versions 2004, 21H1, and 21H2 (64-bit). For all future Windows 10 updates after version 21H2, we will evaluate and certify that Metasys software can support the updates before we provide guidance on support.
	Apple® macOS® 11 Big Sur
	Apple® macOS® 10.15 Catalina
	Apple® macOS® 10.14 Mojave

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Table 5: Extended Application and Data Server system requirements (Unified ADX Systems, 10 or 25 Users)

Supported Web Browser Software for Metasys Site Management Portal Client Computers	Apple® Safari® 13.1 or later
	
	ⓘ **Notes:**
	
	   • In OS X, you cannot view Graphics+ graphics in the Site Management Portal UI.
	   • You use the web browser to download the Launcher application. After you install the Launcher application, you use the Launcher, not the web browser, to log in to the Site Management Portal (SMP) UI.

Supported Web Browser Software for Metasys UI Client Devices	Microsoft® Edge® version 91 or later Google® Chrome™ version 91 or later ⓘ **Note:** Metasys UI does not support incognito mode. To exit incognito mode, click or tap the **X** icon of the browser window or tab and then open a new browser window or tab. For more information on incognito mode in Google Chrome, click here. Apple® Safari® 13.1 or later ⓘ **Note:** Metasys UI does not support private browsing. To exit private browsing, click or tap **Private** in the browser window. Other web browsers, such as Mozilla® Firefox®, are not officially supported by the UI. However, the Metasys UI may appear and function appropriately in these web browsers.
Supported Virtual Environments	Microsoft Hyper-V™ VMware®
Supported User Interfaces	Site Management Portal (SMP) Metasys UI
Additional Software Included with the ADX Software Download	Microsoft .NET Framework 4.7.2 Microsoft .NET Core 3.1.17 Launcher Software Metasys Database Manager software Metasys Advanced Reporting System software RabbitMQ Server 3.8.16 Erlang OTP 23.2 (11.1.4) ⓘ **Note:** The Metasys Advanced Reporting System requires an ADX. The SCT computer must be online and accessible to the ADX at all times.
Optional Hardware	Any network or local printer supported by the qualified Windows operating system
Optional Software	Graphic Generation Tool CCT Software SCT Software Metasys Export Utility

1   Our computer platform and memory recommendations are not meant to imply that older or slower machines are not usable. Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for more information regarding computer/server recommendations.
2   For best performance, use SSD (preferred) or SAS hard drives (not SATA hard drives) that use RAID controllers with write-caching enabled.
3   For best performance, use the maximum amount of memory. An ADX with 32 GB RAM has much greater performance than an ADX with only 16 GB RAM.
4   Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for specific Microsoft Windows operating system settings that may be required for your Metasys system configuration.

For SQL Server software, you must purchase SQL Server software licenses per the guidelines listed here: SQL Server 2019, SQL Server 2017, and SQL Server 2016.

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Extended Application and Data Server system requirements (Unified 50 or 100 User ADX)

Use the following recommendations for medium to large sites and large sites.

Table 6: Extended Application and Data Server system requirements (Unified ADX Systems, 50 or 100 Users)

Recommended Server Platform [1]	**Processor for medium to large sites:** Intel® Xeon®Gold 5222 3.8GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933 and the recommended second processor type is Intel® Xeon® Gold 5222 3.8GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933
	Processor for large sites: Intel® Xeon® Gold 6244 3.6GHz, 8 cores/16 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2933 and the recommended second processor type is Intel® Xeon® Gold 5222 3.8GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933
	Hard drive for medium to large sites: 2 x 960GB SSD SATA Mix Use 6Gbps 512 2.5in Hot-plug Drive (RAID 1)[2] with 50 GB free space after installation of all prerequisite software and before installation of ADS software. Configure RAID 1 (mirroring) with disk write-caching turned on
	Hard drive for large sites: 2 x 960GB SSD SAS Mixed use 12Gbps 512e 2.5in Hot-Plug PM5-V Drive, 3 DWPD, 5256 TBW (RAID 1) [2] with 50 GB free space after installation of all prerequisite software and before installation of ADS software. Configure RAID 1 (mirroring) with disk write-caching turned on
	PERC H730P RAID Controller, 2GB NV Cache, Minicard
	ⓘ **Note:** ADX prerequisite software includes the Windows operating system, SQL Server software, Windows .NET Framework, and any other software or SPs required by your ADX configuration.
Required Minimum Memory [3]	64 GB RDIMM, 2933MT/s, Dual Rank
	The VM host must have at least 8 GB of allocated RAM at all times. When you configure the VM, do not select the enable dynamic memory option.
Number of engines supported	For information about the number of engines supported, refer to the table labeled *Maximum number of network engines supported based on Metasys Server type and Server size* in the *Metasys System Configuration Guide (LIT-12011832)*.
Number of Site Management Portal users supported	**For medium to large sites:** Up to 25
	For large sites: Up to 100
Number of Metasys UI users supported	**For medium to large sites:** Up to 50
	For large sites: Up to 50

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Table 6: Extended Application and Data Server system requirements (Unified ADX Systems, 50 or 100 Users)

Supported Operating Systems[4] and Database Software	Windows® Server® 2019 (version 1809 or later) (64-bit) ⓘ **Note:** Metasys Advanced Reporting System does not support SQL Server 2019. Supports: • SQL Server® 2019 with CU14 (64-bit) ⓘ **Note:** SQL Server 2019 may cause the configuration service cache that builds stored procedures to time out. This causes the user's login to Metasys UI to fail. To resolve this issue, set SQL Server 2019 databases to run in 2017 compatibility mode. For more information, refer to docs.microsoft.com • SQL Server® 2017 with CU27 (64-bit) • SQL Server® 2016 with SP2 CU17 (64-bit)
	Windows® Server® 2016 (version 1607 or later) (64-bit) Supports: • SQL Server® 2019 with CU14 (64-bit) ⓘ **Note:** SQL Server 2019 may cause the configuration service cache that builds stored procedures to time out. This causes the user's login to Metasys UI to fail. To resolve this issue, set SQL Server 2019 databases to run in 2017 compatibility mode. For more information, refer to docs.microsoft.com • SQL Server® 2017 with CU27 (64-bit) • SQL Server® 2016 with SP2 CU17 (64-bit)
Supported Operating Systems for Metasys Site Management Portal Client Computer	Windows® 10 Pro and Windows 10 Enterprise Editions versions 2004, 21H1, and 21H2 (64-bit). For all future Windows 10 updates after version 21H2, we will evaluate and certify that Metasys software can support the updates before we provide guidance on support. Apple® macOS® 11 Big Sur Apple® macOS® 10.15 Catalina Apple® macOS® 10.14 Mojave
Supported Web Browser Software for Metasys Site Management Portal Client Computers	Apple® Safari® 13.1 or later ⓘ **Notes:** • In OS X, you cannot view Graphics+ graphics in the Site Management Portal UI. • You use the web browser to download the Launcher application. After you install the Launcher application, you use the Launcher, not the web browser, to log in to the Site Management Portal (SMP) UI.
Supported Web Browser Software for Metasys UI Client Devices	Microsoft® Edge® version 91 or later Google® Chrome™ version 91 or later ⓘ **Note:** Metasys UI does not support incognito mode. To exit incognito mode, click or tap the **X** icon of the browser window or tab and then open a new browser window or tab. For more information on incognito mode in Google Chrome, click here. Apple® Safari® 13.1 or later ⓘ **Note:** Metasys UI does not support private browsing. To exit private browsing, click or tap **Private** in the browser window. Other web browsers, such as Mozilla® Firefox®, are not officially supported by the UI. However, the Metasys UI may appear and function appropriately in these web browsers.
Supported Virtual Environments	Microsoft Hyper-V™ VMware®

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Table 6: Extended Application and Data Server system requirements (Unified ADX Systems, 50 or 100 Users)

Supported User Interfaces	Site Management Portal (SMP)
	Metasys UI
Additional Software Included with the ADX Software Download	Microsoft .NET Framework 4.7.2
	Microsoft .NET Core 3.1.17
	Launcher Software
	Metasys Database Manager software
	Metasys Advanced Reporting System software
	RabbitMQ Server 3.8.16
	Erlang OTP 23.2 (11.1.4)
	ⓘ **Note:** The Metasys Advanced Reporting System requires an ADX. The SCT computer must be online and accessible to the ADX at all times.
Optional Hardware	Any network or local printer supported by the qualified Windows operating system
Optional Software	Graphic Generation Tool
	CCT Software
	SCT Software
	Metasys Export Utility

1   Our computer platform and memory recommendations are not meant to imply that older or slower machines are not usable. Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for more information regarding computer/server recommendations.
2   For best performance, use SSD (preferred) or SAS hard drives (not SATA hard drives) that use RAID controllers with write-caching enabled.
3   For best performance, use the maximum amount of memory. An ADX with 64 GB RAM has much greater performance than an ADX with only 32 GB RAM.
4   Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for specific Microsoft Windows operating system settings that may be required for your Metasys system configuration.

For SQL Server software, you must purchase SQL Server software licenses per the guidelines listed here: SQL Server 2019, SQL Server 2017, and SQL Server 2016.

Extended Application and Data Server system requirements (Split 10 or 25 User ADX)

Use the following recommendations for medium to large sites.

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Table 7: Extended Application and Data Server system requirements (Split ADX Systems, 10 or 25 Users)

Recommended Server Platform[1]	**Web/Application Server**
	Intel® Xeon® Gold 5222 3.8GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933 and the recommended second processor type is Intel® Xeon® Gold 5222 3.8GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933
	2 x 960GB SSD SATA Mix Use 6Gbps 512 2.5in Hot-plug Drive (RAID 1)[2] with 50 GB free space after installation of all prerequisite software[3] and before installation of ADS software. Configure RAID 1 (mirroring) with disk write-caching turned on
	ⓘ **Notes:**
	• Metasys Advanced Reporting System must reside on the ADX web/application server.
	• Metasys UI must reside on the ADX web/application server.
	Database Server
	Intel® Xeon® Gold 5222 3.8GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933 and the recommended second processor type is Intel® Xeon® Gold 5222 3.8GHz, 4 cores/8 threads, 10.4GT/s, 16.5M Cache, Turbo, HT (105W) DDR4-2933
	2 x 960GB SSD SATA Mix Use 6Gbps 512 2.5in Hot-plug Drive (RAID 1) [2] with 50 GB free space after installation of all prerequisite software[3] and before installation of ADS software. Configure RAID 1 (mirroring) with disk write-caching turned on
	SCT Computer
	In a split configuration, you cannot install SCT on either the ADX web/application server computer or the ADX database server computer. Refer to the *System Configuration Tool Catalog Page (LIT-1900198)* for current SCT computer requirements.
Required Minimum Memory[4]	64 GB RDIMM, 2933MT/s, Dual Rank (web/application server and database server for 10 or 25 user ADX)
	The VM host must have at least 8 GB of allocated RAM at all times. When you configure the VM, do not select the enable dynamic memory option.
Number of engines supported	For information about the number of engines supported, refer to the table labeled *Maximum number of network engines supported based on Metasys Server type and Server size* in the *Metasys System Configuration Guide (LIT-12011832)*.
Number of Site Management Portal users supported	Up to 25
Number of Metasys UI users supported	Up to 25

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Table 7: Extended Application and Data Server system requirements (Split ADX Systems, 10 or 25 Users)

Supported Operating Systems[5,6] **with Supported Database Software**	Windows® Server® 2019 (version 1809 or later) (64-bit) ⓘ **Note:** Metasys Advanced Reporting System does not support SQL Server 2019. Supports: • SQL Server® 2019 with CU14 (64-bit) ⓘ **Note:** SQL Server 2019 may cause the configuration service cache that builds stored procedures to time out. This causes the user's login to Metasys UI to fail. To resolve this issue, set SQL Server 2019 databases to run in 2017 compatibility mode. For more information, refer to <u>docs.microsoft.com</u> • SQL Server® 2017 with CU27 (64-bit) • SQL Server® 2016 with SP2 CU17 (64-bit)
	Windows® Server® 2016 (version 1607 or later) (64-bit) Supports: • SQL Server® 2019 with CU14 (64-bit) ⓘ **Note:** SQL Server 2019 may cause the configuration service cache that builds stored procedures to time out. This causes the user's login to Metasys UI to fail. To resolve this issue, set SQL Server 2019 databases to run in 2017 compatibility mode. For more information, refer to <u>docs.microsoft.com</u> • SQL Server® 2017 with CU27 (64-bit) • SQL Server® 2016 with SP2 CU17 (64-bit)
Supported Operating Systems for Metasys Site Management Portal Client Computer	Windows® 10 Pro and Windows 10 Enterprise Editions versions 2004, 21H1, and 21H2 (64-bit). For all future Windows 10 updates after version 21H2, we will evaluate and certify that Metasys software can support the updates before we provide guidance on support. Apple® macOS® 10.15 Catalina Apple® macOS® 10.14 Mojave
Supported Web Browser Software for Metasys Site Management Portal Client Computers	Apple® Safari® 13.1 or later ⓘ **Notes:** • In OS X, you cannot view Graphics+ graphics in the Site Management Portal UI. • You use the web browser to download the Launcher application. After you install the Launcher application, you use the Launcher, not the web browser, to log in to the Site Management Portal (SMP) UI.
Supported Web Browser Software for Metasys UI Client Devices	Microsoft® Edge® version 91 or later Google® Chrome™ version 91 or later ⓘ **Note:** Metasys UI does not support incognito mode. To exit incognito mode, click or tap the **X** icon of the browser window or tab and then open a new browser window or tab. For more information on incognito mode in Google Chrome, click <u>here</u>. Apple® Safari® 13.1 or later ⓘ **Note:** Metasys UI does not support private browsing. To exit private browsing, click or tap **Private** in the browser window. Other web browsers, such as Mozilla® Firefox®, are not officially supported by the UI. However, the Metasys UI may appear and function appropriately in these web browsers.
Supported Virtual Environments	Microsoft Hyper-V™ VMware®
Supported User Interfaces	Site Management Portal (SMP) Metasys UI

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Table 7: Extended Application and Data Server system requirements (Split ADX Systems, 10 or 25 Users)

Additional Software Included with the ADX Software Download	Microsoft .NET Framework 4.7.2
	Microsoft .NET Core 3.1.17
	Launcher Software
	Metasys Database Manager software
	Metasys Advanced Reporting System software
	RabbitMQ Server 3.8.16
	Erlang OTP 23.2 (11.1.4)
	ⓘ **Note:** The Metasys Advanced Reporting System requires an ADX. The SCT computer must be online and accessible to the ADX at all times.
Optional Hardware	Any network or local printer supported by the qualified Windows operating system
Optional Software	Graphic Generation Tool
	CCT Software
	SCT Software
	Metasys Export Utility

1   Our computer platform and memory recommendations are not meant to imply that older or slower machines are not usable. Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for more information regarding computer/server recommendations.
2   For best performance, use SSD (preferred) or SAS hard drives (not SATA hard drives) that use RAID controllers with write-caching enabled.
3   ADX prerequisite software includes the Windows operating system and SQL Server software, Windows .NET Framework, and any other software or service packs required for your ADX configuration.
4   For best performance, use the maximum amount of memory.
5   The web/application and database servers must have the same operating system installed.
6   Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for specific Microsoft Windows operating system settings that may be required for your Metasys system configuration.

For SQL Server software, you must purchase SQL Server software licenses per the guidelines listed here: SQL Server 2019, SQL Server 2017, and SQL Server 2016.

Extended Application and Data Server system requirements (Split 50 or 100 User ADX)

Use the following recommendations for large to extra large sites and for extra large sites.

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Table 8: Extended Application and Data Server system requirements (Split ADX System, 50 or 100 Users)

Recommended Server Platform[1]	Web/Application Server
	Processor for large to extra large sites: Intel® Xeon® Gold 6244 3.6GHz, 8 cores/16 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2933 and the recommended second processor type is Intel® Xeon® Gold 6244 3.6GHz, 8 cores/16 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2933
	Processor for extra large sites: Intel® Xeon® Gold 6136 3.0GHz, 12 cores/24 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2666 and the recommended second processor type is Intel® Xeon® Gold 6136 3.0GHz, 12 cores/24 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2666
	Hard drive for large to extra large sites: 960GB SSD SAS Mixed use 12Gbps 512e 2.5in Hot-Plug PM5-V Drive, 3 DWPD, 5256 TBW (RAID 5)[2] with 50 GB free space after installation of all prerequisite software[3] and before installation of ADS software. Configure RAID 5 with disk write-caching turned on. Use a minimum of three hard drives for RAID 5 or a minimum of four hard drives for RAID 10.
	Hard drive for extra large sites: 960GB SSD SAS Mixed use 12Gbps 512e 2.5in Hot-Plug PM5-V Drive, 3 DWPD, 5256 TBW (RAID 5) [2] with 50 GB free space after installation of all prerequisite software[3] and before installation of ADS software. Configure RAID 5 with disk write-caching turned on. Use a minimum of three hard drives for RAID 5 or a minimum of four hard drives for RAID 10.
	PERC H730P RAID Controller, 2GB NV Cache, Minicard

	ⓘ **Notes:**
	   • Metasys Advanced Reporting System must reside on the ADX web/application server.
	   • Metasys UI must reside on the ADX web/application server.

Recommended Server Platform	**Database Server**
	Processor for large to extra large sites: Intel® Xeon® Gold 6244 3.6GHz, 8 cores/16 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2933 and the recommended second processor type is Intel® Xeon® Gold 6244 3.6GHz, 8 cores/16 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2933
	Processor for extra large sites: Intel® Xeon® Gold 6136 3.0GHz, 12 cores/24 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2666 and the recommended second processor type is Intel® Xeon® Gold 6136 3.0GHz, 12 cores/24 threads, 10.4GT/s, 24.75M Cache, Turbo, HT (150W) DDR4-2666
	Hard drive for large to extra large sites: 960GB SSD SAS Mixed use 12Gbps 512e 2.5in Hot-Plug PM5-V Drive, 3 DWPD, 5256 TBW (RAID 5) [2] with 50 GB free space after installation of all prerequisite software[3] and before installation of ADS software. Configure RAID 5 with disk write-caching turned on. Use a minimum of three hard drives for RAID 5 or a minimum of four hard drives for RAID 10.
	Hard drive for extra large sites: 960GB SSD SAS Mixed use 12Gbps 512e 2.5in Hot-Plug PM5-V Drive, 3 DWPD, 5256 TBW (RAID 5) [2] with 50 GB free space after installation of all prerequisite software[3] and before installation of ADS software. Configure RAID 5 with disk write-caching turned on. Use a minimum of three hard drives for RAID 5 or a minimum of four hard drives for RAID 10.
	PERC H730P RAID Controller, 2GB NV Cache, Minicard
Recommended Server Platform	**SCT Computer**
	In a split configuration, you cannot install SCT on either the ADX web/application server computer or the ADX database server computer. Refer to the *System Configuration Tool Catalog Page (LIT-1900198)* for current SCT computer requirements.

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Table 8: Extended Application and Data Server system requirements (Split ADX System, 50 or 100 Users)

Required Minimum Memory[4]	**For large to extra large sites:** 64 GB RDIMM, 2933MT/s, Dual Rank
	For extra large sites: 64 to 128 GB RDIMM, 2933MT/s, Dual Rank
	The VM host must have at least 8 GB of allocated RAM at all times. When you configure the VM, do not select the enable dynamic memory option.
Number of engines supported	For information about the number of engines supported, refer to the table labeled *Maximum number of network engines supported based on Metasys Server type and Server size* in the *Metasys System Configuration Guide (LIT-12011832)*.
Number of Site Management Portal users supported	**For large to extra large sites:** Up to 50
	For extra large sites:
	Up to 100
Number of Metasys UI users supported	**For large to extra large sites:** Up to 50
	For extra large sites: Up to 50
Supported Operating Systems and Database Software[5,6]	Windows® Server® 2019 (version 1809 or later) (64-bit)
	ⓘ **Note:** Metasys Advanced Reporting System does not support SQL Server 2019.
	Supports:
	• SQL Server® 2019 with CU14 (64-bit)
	ⓘ **Note:** SQL Server 2019 may cause the configuration service cache that builds stored procedures to time out. This causes the user's login to Metasys UI to fail. To resolve this issue, set SQL Server 2019 databases to run in 2017 compatibility mode. For more information, refer to <u>docs.microsoft.com</u>
	• SQL Server® 2017 with CU27 (64-bit)
	• SQL Server® 2016 with SP2 CU17 (64-bit)
	Windows® Server® 2016 (version 1607 or later) (64-bit)
	Supports:
	• SQL Server® 2019 with CU14 (64-bit)
	ⓘ **Note:** SQL Server 2019 may cause the configuration service cache that builds stored procedures to time out. This causes the user's login to Metasys UI to fail. To resolve this issue, set SQL Server 2019 databases to run in 2017 compatibility mode. For more information, refer to <u>docs.microsoft.com</u>
	• SQL Server® 2017 with CU27 (64-bit)
	• SQL Server® 2016 with SP2 CU17 (64-bit)
Supported Operating Systems for Metasys Site Management Portal Client Computer	Windows® 10 Pro and Windows 10 Enterprise Editions versions 2004, 21H1, and 21H2 (64-bit). For all future Windows 10 updates after version 21H2, we will evaluate and certify that Metasys software can support the updates before we provide guidance on support.
	Apple® macOS® 11 Big Sur
	Apple® macOS® 10.15 Catalina
	Apple® macOS® 10.14 Mojave
Supported Web Browser Software for Metasys Site Management Portal Client Computers	Apple® Safari® 13.1 or later
	ⓘ **Notes:**
	• In OS X, you cannot view Graphics+ graphics in the Site Management Portal UI.
	• You use the web browser to download the Launcher application. After you install the Launcher application, you use the Launcher, not the web browser, to log in to the Site Management Portal (SMP) UI.

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Table 8: Extended Application and Data Server system requirements (Split ADX System, 50 or 100 Users)

Supported Web Browser Software for Metasys UI Client Devices	Microsoft® Edge® version 91 or later Google® Chrome™ version 91 or later ⓘ **Note:** Metasys UI does not support incognito mode. To exit incognito mode, click or tap the **X** icon of the browser window or tab and then open a new browser window or tab. For more information on incognito mode in Google Chrome, click here. Apple® Safari® 13.1 or later ⓘ **Note:** Metasys UI does not support private browsing. To exit private browsing, click or tap **Private** in the browser window. Other web browsers, such as Mozilla® Firefox®, are not officially supported by the UI. However, the Metasys UI may appear and function appropriately in these web browsers.
Supported Virtual Environments	Microsoft Hyper-V™ VMware®
Supported User Interfaces	Site Management Portal (SMP) Metasys UI
Additional Software Included with the ADX Software Download	Microsoft .NET Framework 4.7.2 Microsoft .NET Core 3.1.17 Launcher Software Metasys Database Manager software Metasys Advanced Reporting System software RabbitMQ Server 3.8.16 Erlang OTP 23.2 (11.1.4) ⓘ **Note:** The Metasys Advanced Reporting System requires an ADX. The SCT computer must be online and accessible to the ADX at all times.
Optional Hardware	Any network or local printer supported by the qualified Windows operating system
Optional Software	Graphic Generation Tool CCT Software SCT Software Metasys Export Utility

1. Our computer platform and memory recommendations are not meant to imply that older or slower machines are not usable. Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for more information regarding computer/server recommendations.
2. For best performance, use SSD (preferred) or SAS hard drives (not SATA hard drives) that use RAID controllers with write-caching enabled.
3. ADX prerequisite software includes the Windows operating system and SQL Server software, Windows .NET Framework, and any other software or service packs required for your ADX configuration.
4. For best performance, use the maximum amount of memory. An ADX with 64 GB RAM has much greater performance than an ADX with only 32 GB RAM.
5. The web/application and database servers must have the same operating system installed.
6. Refer to the *Network and IT Guidance Technical Bulletin (LIT-12011279)* for specific Microsoft Windows operating system settings that may be required for your Metasys system configuration.

For SQL Server software, you must purchase SQL Server software licenses per the guidelines listed here: SQL Server 2019, SQL Server 2017, and SQL Server 2016.

Product warranty

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

Software terms

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Patents

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Contact information

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