SCT
Technical Bulletin

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Document Introduction

This document describes how to use the System Configuration Tool (SCT),
including setting up archive databases offline. This document also describes the
basic setup of an N2 and Master-Slave/Token-Passing (MS/TP) network online to
illustrate some key differences between working online and offline. This document
does not provide installation instructions for the SCT.

Related Documentation

Table 1: SCT Technical Bulletin Related Documentation (Part 1 of 2)

For Information On	See Document	LIT or Part Number
Installing a Network Automation Engine (NAE) or Network Integration Engine (NIE)	*Installing the NAE/NIE Technical Bulletin*	LIT-1201161
Installing an NAE55/NIE55	*NAE55/NIE55 Installation Instructions*	*Part No. 24-10051-0*
Security Issues, Including Adding Users and Roles to the System	*Security Administrator System Technical Bulletin*	LIT-1201528
Daily Use of the Controller Configuration Tool (CCT)	CCT *Help*	--
Daily Use of the SCT	Metasys system *Help*	--
Using the SCT Manager	*ADS, ADX, and SCT Upgrade Installation Instructions*	*Part No. 24-10068-6*
Daily Use of the Metasys® System Extended Architecture	Metasys system *Help*	--
General Network and Information Technology Definitions and Concepts	*Network and IT Considerations for the IT Professional Technical Bulletin*	LIT-1201578
Security Database Backup/ Restore	Metasys system *Help*	--
Software Upgrade and Database Upgrade	*ADS, ADX, and SCT Installation Instructions*	*Part No. 24-9898-1*
Updating NAE/NIE Disk Images to New Software Releases	*NAE/NIE Update Tool Technical Bulletin*	*Part No. 24-10110-18*
Migrating an N1 Network into the Metasys System Extended Architecture Using an NIE	*N1 Migration with the NIE Technical Bulletin*	LIT-1201535
Integrating a BACnet® Network	*BACnet System Integration with NAE Technical Bulletin*	LIT-1201531
Integrating an N1 Network	*N1 Migration with the NIE Technical Bulletin*	LIT-1201535
Integrating a LONWORKS® Network	*LONWORKS Network Integration with NAE Technical Bulletin*	LIT-1201668

Table 1: SCT Technical Bulletin Related Documentation (Part 2 of 2)

For Information On	See Document	LIT or Part Number
Passthru with HVAC PRO	*Using HVAC PRO Software in Pass Through Mode* Chapter of the *HVAC PRO User's Guide*	*LIT-63750402*
LoaderUI	*GX-9100 Software Configuration Tool User's Guide*	*LIT-120182*
Downloading and Uploading a DX Controller via an N30 Supervisory Controller	*GX-9100 Software Configuration Tool User's Guide*	*LIT-120182*
Setting the Time, Date, Time Zone, and Time Synchronization	*NAE Commissioning Guide*	*LIT-1201519*
Dialing In to Metasys System Extended Architecture from a Computer	*Metasys System Extended Architecture Direct Connection and Dial-Up Connection Application Note*	*LIT-1201639*
Metasys System Extended Architecture	*Metasys System Extended Architecture Overview Technical Bulletin*	*LIT-1201527*
Accessing Metasys System Extended Architecture via Dial-Up Connections	*Metasys System Extended Architecture Remote Access Technical Bulletin*	*LIT-1201691*
Uploading and downloading an Network Control Engine (NCE) .caf file	*NCE Technical Bulletin*	*LIT-12011267*

SCT Overview

The SCT is a software application that assists in all phases of engineering, installing, and commissioning of devices that make up the Metasys system extended architecture. Use the SCT offline to create archive databases to download to a Metasys system – either to an NAE/NIE, an Application and Data Server (ADS), or to an Extended Application and Data Server (ADX). Also use the SCT to back up and restore Security Databases (that are created and edited online).

You can create and edit the Security System databases online and then use the SCT to back up and restore Security databases. Refer to the *Security Administrator System Technical Bulletin (LIT-1201528)* to create and edit a security database.

The SCT uses the same User Interface (UI) as the Metasys system extended architecture software on an NAE/NIE or ADS/ADX. The SCT can be used for various functions online with a Metasys system extended architecture network, such as scheduling downloads to NAEs.

The SCT allows commissioning of N2 Bus devices by allowing HVAC PRO software, GX-9100 tool software, and XTM Configurator software to access the Metasys system. The SCT also allows commissioning of MS/TP controllers by allowing you access to the CCT software. Use the CCT software to configure, commission, and simulate your Field Equipment Controllers (FECs), Input/Output Modules (IOMs), and Variable Air Volume Modular Assembly (VMA) 1600s on the MS/TP bus.

Upload archive databases modified in the Metasys system extended architecture to the SCT for archiving or editing. The SCT includes features to enable the synchronization of the archived and online databases. You can configure these features to run at specified times.

SCT in a Metasys Network

Figure 1 shows the SCT as part of an overall Metasys system extended architecture network. Figure 1 shows an ADS with an SCT installed and a portable computer with an SCT that can be connected directly to an NAE.
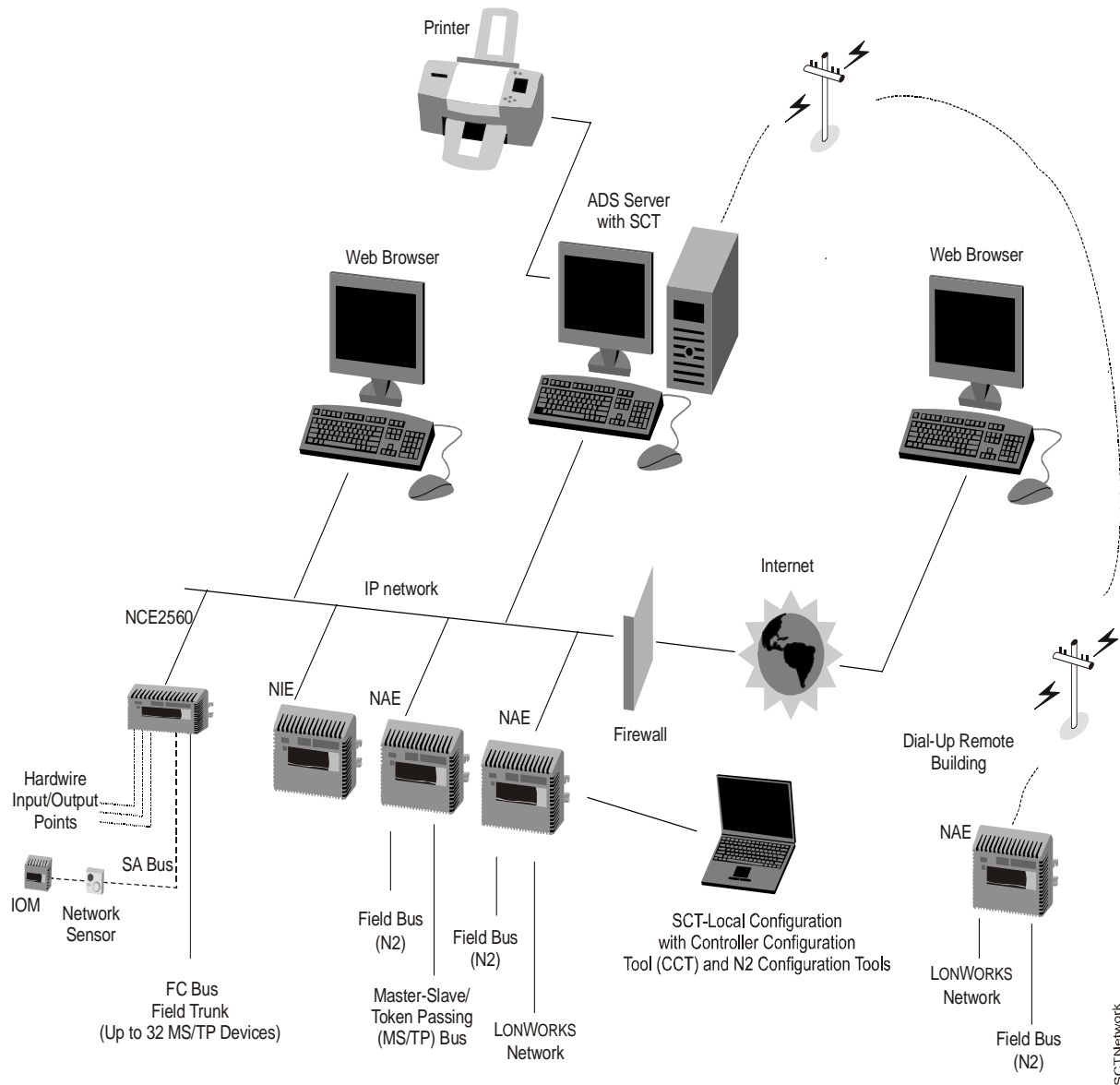
Figure 1: SCT as Part of a Metasys Network

NAE/NIE Configuration Flowchart

The flowchart in Figure 2 shows one of the possibilities for using the SCT to help configure an NAE/NIE and set up a Metasys system. In the left branch of the flow chart, the archive database is created and configured. This is done offline with the SCT and could be done prior to going to the job site. The right side shows the initial setup of NAE/NIEs at a site, which is done online. The security database is created and edited online and then backed up and restored offline using the SCT.

Flowchart — Left Column

Configure an archive database offline in the SCT.

↓

Add and configure a site.

↓

Add and configure the NAEs in the site with the SCT.
- Set up BAS Network Configurations.
- Configure any modems
- Set up SNMP (optional)

↓

Complete building the offline archive database in the SCT.
- Add integration trunks, field devices, and field - points.
- Add Programming Logic Using LCT. See the Metasys system *Help*.
- Configure alarm, audit trail, and trend archive. Refer to the Metasys system *Help*.
- Configure Alarm Destinations. Refer to the Metasys system *Help*.
- Build Graphics. Refer to the Metasys system *Help*.

↓

The offline archive database is complete and ready to download to the NAE.

NOTE: Before downloading the archive database to the NAE, ensure that the settings, created in the NAE during the online configuration, match the settings in the archive database created in SCT. If they do not match, the SCT archive database overwrites the settings entered in the NAE.

Flowchart — Right Column

Install the NAE. Commission the NAE online

↓

Install, wire and power the NAE. Refer to the *NAE35/NAE45 Installation Instructions (Part No. 24-10050-6)* or *NAE55/NIE55 Installation Instructions (Part No. 24-10051-0).*

↓

1. Commission the NAE for connectivity in Metasys system network. See the *Detailed Procedures* section in this document to connect an NAE in various network scenarios and set the basic NAE parameters.
2. If the NAE is not the designated Site Director, demote it from Site Director status. Refer to the *Designating a Site Director* section in the *NAE Commissioning Guide (LIT-1201519).*
3. Change the NAE Computer Name value and assign an IP address, if necessary. (In some configuration scenarios, the NAE Computer Name may need to match the value assigned to the NAE archive database in SCT.)

↓

The NAE is ready to receive an archive database download from the SCT. Use the Load Wizard in SCT to download the database to the NAE. Refer to the Metasys system *Help*.

↓

Are there additional NAEs on the jobsite? — **Yes** (loops back to Install, wire and power the NAE)

↓ **No**

If there are any ADSs or ADXs on the site, one of them is automatically designated as the Site Director. Refer to the *ADS Commissioning Guide (LIT-1201645).*
If there are only NAEs on the site, designate one of the NAEs as the Site Director. Refer to the *Designating a Site Director* section in the *NAE Commissioning Guide (LIT-1201519).*

↓

Create and Edit Security Database Online. Backup and Restore Security Database in SCT. See the *Security Administrator System Technical Bulletin (LIT-1201528).*

NAE Config

Figure 2: NAE/NIE Configuration Flowchart

Metasys System Modes of Operation

With the Metasys system extended architecture software, you can access and operate specific system features in the online mode or the offline (SCT) mode:

- In the online mode, you can perform tasks such as monitoring and commanding a network of field devices or configuring a security database via an Internet browser connected to an NAE/NIE or ADS/ADX.

- In the offline mode, you can perform system configuration tasks such as building an archive database, configuring point objects and features, or backing up and restoring a security database when using a computer with the SCT application.

There is also a Simulation mode, in which you can simulate and test the system logic offline on a single NAE or NIE using the SCT application. See the *Simulation* section in this document.

Some key differences in functionality between the online and offline modes are shown in Table 2.

Table 2: Using Metasys System Features and Functions by Mode of Operation (Part 1 of 2)

Features/Functions	Offline Mode (via SCT)	Online Mode (via Browser to a Site Director or to an NAE/NIE)
Scope of Default Navigation	Items in an archive database for single or multiple sites	Items in the site (including NAE/NIE items) can be viewed in the Site Director. Items in an NAE/NIE can also be viewed in the NAE/NIE.
View User-Defined Navigation Trees		X
View and Edit Items in the Navigation Tree	X	X
Restrict Access via Security Database	Only at login	X
Provide Administration Tool for Creating and Editing Security Database	Administers the SCT security database. When the SCT and ADS/ADX reside on the same computer, the security database is shared by the SCT and the ADS/ADX.	X
Provide Security Database Backup and Restore	X	
Create or Delete a Site	X	
Create or Delete a Supervisory Device (NAE/NIE)	X	
Create or Delete a Metasys Server (ADS/ADX)	X	
Automatically Find Field Devices and Field Points on a Network Connected to an NAE/NIE (Auto Discovery feature)		X
Create a Navigation Tree	X	X
Create a System, Including the Logic Connector Tool (LCT)	X	X
Create Graphics	X	X

Table 2: Using Metasys System Features and Functions by Mode of Operation (Part 2 of 2)

Features/Functions	Offline Mode (via SCT)	Online Mode (via Browser to a Site Director or to an NAE/NIE)
Create All Other Items Supported by an NAE/NIE or ADS/ADX	X	X
Copy or Paste Items and Their Children	Can create archive copies, as well as copy or paste items and devices.	
Simulate a Single NAE/NIE	X	
Upload, Download, and Synchronize Configuration Databases	X	
Commission and Create Configurations for N2 devices via Passthru (HVAC PRO, GX 9100 tool)	X	
Commission and Create Configurations for MS/TP devices via Passthru (CCT)	X	

Metasys System Extended Architecture Software Upgrades

When you upgrade your SCT, ADS, ADX, NAE, or NIE to a new release version of the Metasys system extended architecture software, the database schema changes; therefore, you must also upgrade all archive databases from the previous release to new release databases.

Microsoft® Internet Explorer Browser Recommendations

Always open a new browser window to access the Metasys User Interface (UI) or SCT (if accessing from a Web browser). Do not use the Metasys UI browser window to navigate to any other Web site. If you access a Web site that requires the Java® Runtime Environment (JRE), configuration and runtime problems may arise.

If Microsoft Internet Explorer is configured to reuse windows when you launch shortcuts, then when you launch the following it may replace your Metasys application:

• launch Microsoft Internet Explorer from a shortcut on the desktop

• type a Universal Resource Locator (URL) in the address field of the task bar

Network Automation Engine (NAE)

The NAE is a Web-enabled, Ethernet-based supervisory device that monitors and supervises networks of field-level building automation devices. Typically the NAE controls Heating, Ventilating, and Air Conditioning (HVAC) equipment, lighting, security, and building access.

The NAE provides alarm and event management, trending, archiving, energy management, data exchange, scheduling, dial features, and password protection through the Web browser UI.

Network Integration Engine (NIE)

The NIE supervisory device is a specialized version of the NAE and is designed to provide for the migration of N1 networks into the Metasys system extended architecture. The NIE uses the same UI as the NAE, except that connectivity with LONWORKS®, BACnet, and N2 networks is not available in the NIE.

NAE/NIE Update Tool

The NAE/NIE Update Tools are a software application for updating the NAE or NIE flash image to the latest release of the Metasys system software. Using the Update Tool, you can update one or more NAEs/NIEs on the same Ethernet network.

NAE/NIE Point Mapping

The NAE/NIE maps device-point data to software objects in the NAE/NIE so that the points in the device are identified with objects in the NAE/NIE. Point mapping allows the NAE/NIE to read and write to the points of the device and view/acknowledge alarms.

On an N2 Bus, Analog Inputs (AIs), Analog Outputs (AOs), and Binary Inputs (BIs) are a few examples of N2 field points. The VAV Modular Assembly (VMA), Variable Air Volume (VAV) controller, and Air Handling Unit (AHU) are a few examples of N2 or MS/TP field devices.

Field points are mapped to a field device. Field devices are mapped to an integration object such as an N2 Trunk.

There are several ways to map points within an NAE/NIE. In the SCT, you can attach a resource file (with configuration information) to a field device and then use assisted point definition to map the points from the file. In the SCT, you can also manually map individual points. When you are online to an NAE/NIE, you can use the Auto Discovery feature to discover devices and points on a connected network. The new data from the Auto Discovery can then be uploaded to an archive database in the SCT, and the archive database can be edited offline. You can also manually insert points online using the Insert Point Wizard.

Note: Point discovery is not supported in N2 devices.

Application and Data Server (ADS)

The ADS is a Metasys server that consists of two components. The first component is the Application and Data Server software that supports the relational database management system, Microsoft SQL Server™ 2000 Desktop Engine (MSDE) software or SQL Server 2005 Express software, for storing collected trend data, audit trail messages, and event messages. The second component is the Web server software that provides user interface access to data, and routes commands to the Metasys system. This component may include the Site Director function.

Extended Application and Data Server (ADX)

The ADX is a version of the ADS Metasys server with extended capabilities for historical data archiving, and it extends the multi-user Web access capabilities of the system. The ADX supports the relational database management system, Microsoft SQL Server 2000 software or Microsoft SQL Server 2005 software, for storing collected trend data, audit trail messages, and event messages. This relational database is also used to store configuration information for site security, trend studies, and other features.

Network Control Engine (NCE)

The Network Control Engine (NCE) Series controllers combine the network supervisor capabilities and IP network connectivity of an NAE wit the Input/ Output (I/O) point connectivity and direct digital control capabilities of a Metasys Field Equipment Controller (FEC). NCE controllers provide a cost-effective solution designed for integrating central plants and large built-up air handlers into your Metasys networks.

Archive Database

An archive database holds the configuration information for the field devices and field points that make up a single site or multiple sites. The archive database contains information about controllers, input/output points, and alarms. A single server can contain multiple archive databases.

Archive Database Creation

Use the SCT to create new archive databases offline. To create a new archive database, copy an existing archive database, or generate a new archive database. Then add or edit information and references to sites, controllers, communications trunks, and objects (such as schedules, energy management objects, and operators).

You can also generate a database online in a single NAE or NIE and upload the information to the SCT for editing and archiving. See _Creating a New Archive Database_ in the _Detailed Procedures_ section of this document.

Archive Database Backup

An archive database backup is a backup file of an archive database. You must restore the archive backup into an archive database before it can be used. A backup can be created and moved to another computer running the SCT. See _Backing Up an Archive Database_ in the _Detailed Procedures_ section of this document.

Note: Archive databases created with previous versions of the Metasys system software must be upgraded to the software version you are using before they can be opened in the SCT.

Site

A site is a logical grouping of supervisory level devices (NAEs/NIEs) and their field level devices that are on the same Local Area Network (LAN). A site may consist of one or many supervisory devices.

Site Director

For each site, a single supervisory device or Metasys server is designated as the Site Director. An NAE or NIE may be designated as the Site Director on small networks consisting of single or multiple NAEs/NIEs. On larger networks with single or multiple ADSs/ADXs, an ADS/ADX is designated as the Site Director. The Site Director provides a uniform point of entry and supports functions such as user logon, user administration, time synchronization, and data-traffic management. Internet browsers accessing the Site Director are able to view most of the integrated network components.

Note: Define the Site Director by adding the appropriate ADS/ADX or NAE/NIE as the first device in the archive. Use the rename feature to assign the Site Director the appropriate name before you continue defining other devices. When you add or change the Site Director late in the configuration process, it takes a while for the database to rename all the data to reflect the change.

Site Object

The Site Object is a representation of the site, and it contains the attributes and values that represent the characteristics of the site. If the Site Object exists on a device, that device is considered a Site Director.

One important function of the Site Object is to maintain time-of-day synchronization for a site.

Site Organization

The SCT provides a number of ways to help organize your site. The two main methods are folders and User Views.

Use folders as containers to assist in organizing your archive database. The default NAE/NIE database contains Energy, Programming, and Schedule folders.

User Navigation Views group object references for quick access. You can add references to any object in the site and add folders to User Views. User Views can be added for each user of a site and appear when that user logs into a database.

Security Scenarios

When the SCT is part of a site, there are four scenarios of how the Security Administration System integrates into the site.

Note: For more information on Security, including setting up roles and users, refer to the *Security Administrator System Technical Bulletin (LIT-1201528).*

1. **For Release 1.1 or later** – On a site where the SCT is installed and an NAE/NIE or ADS/ADX is the Site Director and you want to:

   • **change Site Directors,** use the Security Backup/Restore Wizard in the SCT to back up the Security System database of the current Site Director before changing Site Directors. After changing the Site Director, use the Security Backup/Restore wizard to restore the Security System database to the new Site Director. The new Site Director administers the Security System for the Site.

   Note: Define the new or renamed Site Director first. When you add or change the Site Director late in the configuration process, it takes a while for the database to rename all the data to reflect the change.

   • **back up or restore a Security System database,** use the Security Backup/Restore Wizard in the SCT to back up the Security System database. If the need arises, use the Security Backup/Restore Wizard to restore the backed up Security System database. For more information, refer to the *Security Database Backup/Restore* section of the Metasys system *Help*.

2. **On a Site where the SCT is not installed on the same computer as an ADS that is the Site Director,** the only function the Security Administration System plays is to add users and passwords for authentication to the SCT. Neither the Object-based nor System-based permissions affect the use of the SCT, even though all the functions are available.

3. **On a site where the SCT and ADS are installed on the same computer and the ADS is the Site Director,** the Security Administration System on either the SCT or ADS administers the Security System for the site.

4. **On a site where the SCT and ADS are installed on the same computer and the ADS is not the Site Director (the ADS is only used for Data Storage),** the Security Administration System function on the SCT only adds users and passwords for authentication to the SCT. The Site Director for the site is the Security Administrator for the ADS acting in the Data Storage Capacity.

N2 Integration

The NAE supports all current N2 devices except the N2 Dialer, Baseframe products, Digital Control Module (DCM), DCM-140, and XM Configurator.

IFC-2020 and IFC-1010 are supported in a limited capacity. Addresses for N2 devices are in the range of 1 to 254.

Supported N2 Configuration Tools

N2 Tools are used in Passthru mode to commission N2 devices in the Metasys system. To perform Passthru, N2 configuration tools must reside on the computer with an SCT installed. Passthru applications can be launched from the SCT or from the online Metasy UI. In addition, Resource files, which are files created by N2 configuration tools, can be attached to field devices as extensions and then used to assist in field point generating and mapping.

See Table 3 for the file extension of the legacy tools supported by the NAE.

Table 3: Supported Legacy Tools

Device/Controller Type	Configuration Tool	File Name Expected During Import[1]
ASC	HVAC PRO, LoaderUI	PRN[2]
VMA	HVAC PRO	PRN
Vendor	Vendor	PRN
XP	XTM Configurator, LoaderUI	HMC
DX	GX-9100 Tool, LoaderUI DX Commissioning Tool	DMO
MIG	Metasys Integrator® unit	VCT

1. The files required by the N2 Integration import utility for generating Extensive Markup Language (XML). The original Configuration Tool files are not stored in the NAE.
2. When generating PRN files from the HVAC PRO, use the long format.

BACnet System Integration

The BACnet System Integration feature enables the integration of BACnet enabled devices (including the N30) into the Metasys system extended architecture. The NAE maps the BACnet system data to integrated objects you can use in Metasys system applications.

LONWORKS Network Integration

LONWORKS network integration enables the integration of LONWORKS enabled devices into the Metasys system extended architecture. The LON Integration object runs in an NAE.

N1 Migration

The N1 Migration feature allows you to migrate an N1 Network into the Metasys system extended architecture using an NIE. You are able to configure and prepare the N1 Network, import the N1 objects either via Auto Discovery or using the N1 Migration Tool, and migrate the N1 Network features (including Schedules, Calendars, and Totalization configurations).

P2000 System Integration

The P2000 system integration enables you to view objects in the P2000 security system from a single user interface. You can also view the objects from other building systems controlled by the Metasys system extended architecture. Use Web Services technology to integrate the P2000 system.

Wireless Integration

The Wireless Supervisor integration enables the integration of WRS-RTN receivers into the Metasys system extended architecture. Wireless Integration allows you to integrate remote WRS Series wireless room temperature sensors and map the sensors to N2, BACnet, LON, and Master-Slave/Token-Passing (MS/TP) field controllers using Global Data Sharing. The Wireless Supervisor integration supports up to 50 receivers and each receiver supports up to 60 wireless room temperature sensors.

MS/TP Integration

The MS/TP Communication bus is a local network that connects supervisory controllers and field controllers; Field Equipment Controllers (FECs), VMAs, Input/Output Modules (IOMs), and TEC BACnet Thermostats to the Metasys system supervisory controller. The Sensor Actuator (SA) Bus connects point devices (IOMs or Network Sensors) to the field controllers. For more information, refer to *MS/TP Communications Bus Technical Bulletin (LIT-12011034)*.

Wizards

Wizards help you perform complicated operations and present tasks in a consistent format. A wizard consists of a series of steps, each correlating to a screen presented to the user.

A wizard may appear when you select an option from the Insert menu, or when you attempt to perform certain complex actions. For example, a wizard appears when you select Object from the Insert menu. Wizards appear the same when you are working online or offline.

Note: For Release 3.0, there are two types of database load wizards: the **Load Wizard** for uploading, downloading, and synchronizing archive (configuration) databases, and the **Security Backup/Restore Wizard** for backing up and restoring the Security System databases of Site Directors and other supervisory devices. Both wizards use the ActionQ to initiate and monitor the load or backup/restore process.

Uploading and Downloading with the Load Wizard

Use the Load Wizard to download, upload, and synchronize databases. Access the Load Wizard by selecting Load Archive... from the Tools menu in the offline mode in the SCT. The Load Wizard collects necessary information to perform the load such as load type, controller names, and load time. Once you complete the wizard, the supervisory controller sends the load commands to the ActionQ. ActionQ initiates and monitors the load.

When a computer running the SCT is reset, the SCT application shuts down until someone logs on to the application again. If a load is scheduled and the computer running the SCT is reset, the load does not start until someone logs on to the SCT application again. Logging on to the SCT restarts the application and automatically starts any scheduled loads. The Load Archive options are described in the following sections:

Upload

The Load Wizard's upload option transfers a copy of the NAE/NIE or ADS/ADX archive databases into the archive database of the SCT. Perform an upload to update the SCT archive database with changes made in the online mode. The NAE/NIE or ADS/ADX database overwrites the SCT archive database for the device being loaded. The direction of an upload is from the NAE/NIE or ADS/ADX to the SCT.

Note: To ensure recent online changes are captured during an upload, manually archive the NAE/NIE (Actions > Commands > Archive) and then upload.

Note: The NAE/NIE device automatically upgrades to Version 1.1 when you upload an NAE/NIE with Version 1.0 to an SCT with Version 1.1.

Download

The Load Wizard's download option downloads (copies) the archive database from the SCT into NAE/NIE, ADS/ADX, and Network Control Engine (NCE) databases. Perform a download to send the changes made in the SCT database to the NAE/NIE, ADS/ADX, or NCE database. The SCT archive database overwrites the NAE/NIE, ADS/ADX, or NCE database. The direction of a download is from the SCT to the NAE/NIE, ADS/ADX, or NCE.

Synchronize

The Load Wizard's synchronize option synchronizes an NAE/NIE or ADS/ADX database with the SCT archive database. When you synchronize a database, the NAE/NIE or ADS/ADX database is uploaded to the SCT and checked for consistency with the archive database. Then, only the changes in the archive database are downloaded back to the NAE/NIE or ADS/ADX. The changes made to the SCT database override changes made to the NAE/NIE or ADS/ADX database, and the databases match.

Security Database Backup and Restore

Use the Security Backup/Restore Wizard to back up and restore Security System databases of Site Directors and other supervisory devices. An SCT archive stores the Security database.

In addition to the general backup/restore function, use this wizard to back up the Security System database before changing Site Directors. This wizard allows you to move the Security System from one Site Director to another.

Use the Site Director to back up/restore all devices. Using the Site Director saves you time because you perform fewer backups, and the size of your archive database is smaller because you can restore security to all devices on your site. Also, you can share changes made at the Site Director to all devices without having to log on and change settings on each device.

Auto Discovery

Auto Discovery allows an NAE/NIE to automatically find field devices and field points on a connected network. Auto Discovery is only available online and is not available through the SCT. Discovery is limited to only the integrations connected to a supervisory device that supports discovery.

After discovery, the new device and point information may be uploaded to an archive database in the SCT where you can store the new information and edit it offline. For an example of how to use Auto Discovery in an N2 Network integration, refer to the *Adding N2 Field Points to an Archive Database* section of the *N2 Integration with the NAE Technical Bulletin (LIT-1201683)*. For an example on how to use Auto Discovery in an MS/TP Network integration, refer to the *BACnet MS/TP Integration with the NAE Technical Bulletin (LIT-12011013)*.

Note: To perform Auto Discovery Passthru, you may access the NAE/NIE by logging on directly to the device or access the NAE/NIE through the Site Director. To access the supervisory device directly, you need the Internet Protocol (IP) address or host name, User Name, and Password for the device. To access through the Site Director, you need the Site Director IP address or host name, User Name, and Password.

Logic Connector Tool (LCT)

The LCT is a feature of the Metasys system software used to create a graphical representation of the control logic within a system. The control logic may include system blocks, reference blocks, and logic blocks. The Layout mode allows you to edit the logic offline while the View mode allows limited online commanding capabilities.

The LCT allows system viewing and editing via any browser logged into any online NAE/NIE or ADS/ADX with access to a System object. Create new logic systems from any browser with access to the NAE/NIE. Refer to the Metasys system *Help* for instructions on using the LCT.

User Graphic Tool

Use the User Graphics tool to view, create, and edit graphics for Metasys systems. You can monitor and control a facility through a graphical interface representing the functionality and location of fans, controllers, and other Heating, Ventilating, and Air Conditioning (HVAC) equipment. Refer to the Metasys system *Help* for instructions on using the User Graphic tool. Graphics provide a visual representation of the monitored systems that enable you to quickly check the status of system symbols and recognize unusual system conditions. Graphics can be designed to allow you to move through buildings, floors, and other areas, viewing building systems and control processes. You can create new graphics from any browser with access to an NAE/NIE or ADS/ADX.

Backgrounds are static images displayed behind a graphic. Backgrounds are buildings, floor plans, mechanical equipment, and any other picture that represents the location or function of the equipment in the graphic. By default, a newly created graphic has a gray background. You can insert a background image using a file based on Scale Vector Graphics (SVG), Super Video Graphics Array (SVGZ), or Joint Photographic Engineering Group (JPEG) graphic format. You can then bind data to items in the graphic.

Simulation

IMPORTANT: Do not run Simulation on server class machines. Stopping Simulation resets the Internet Information Server (IIS), and interrupts a variety of processes being performed by the server.

Note: When you are simulating for an NAE/NIE, your computer must be formatted for New Technology File System (NTFS). The simulated values for the Flash Usage and Memory Usage attributes are not accurate if your computer is formatted to use File Allocation Table (FAT) 32.

Simulation allows you to test the system logic created for an NAE or NIE when the Metasys system is offline. In Simulation, you can enter commands and see how an online system would react if commanded to perform the same action. The Simulation mode uses the same user interface and command features of the online system.

Simulation is run from the SCT in offline mode. You cannot run Simulation on the same computer as an ADS/ADX, because ADS/ADX is part of the online system. Simulation supports the simulation of one NAE or NIE on one site and, if you attempt to start a second simulation, the first simulation must be stopped.

In Simulation mode, you can perform the following tasks including:

- viewing a control system created using the Logic Connector Tool
- simulating Inputs/Outputs (I/Os)

The menu choices in Simulation are different from online or offline modes. Simulation does not support moving logic or items from within the simulated system to the archive database or online system.

Simulation runs in a new browser window labeled Metasys Simulation in the title bar of the browser. Only the information for the simulated device appears in the simulation session (not the entire site). For more information on Simulation, refer to the Metasys system *Help*.

Passthru

In Passthru mode, a configuration tool (such as CCT software, HVAC PRO software, or GX-9100 tool software) communicates directly to a controller through the NAE over the LAN. In Passthru mode, the N2 device or MS/TP device appears offline at the NAE. Commands from the software tool go directly to the N2 device or MS/TP device. In Passthru, you can view both N2 trunks or MS/TP trunks of an NAE at the same time. The Configuration Tools show the object name as it appears in the NAE of the device undergoing Passthru. This object name contains the name of the trunk to help you determine on which trunk the device is located.

Passthru Requirements

When you connect directly to an NAE to use Passthru, the NAE must be the Site Director. The Passthru feature only works on direct connect to the Site Director. For additional Passthru information, see the *Troubleshooting* section.

To use the Passthru features, you must install the required applications in a specific order. For installation requirements, refer to the *ADS, ADX, and SCT Installation Instructions (Part No. 24-9898-1).*

HVAC PRO

HVAC PRO configures the Application Specific Controllers (ASC): VMA1400 Series, VAV, AHU, and Unitary (UNTs) controllers.

In Passthru mode, you can use the HVAC PRO software to download, upload, and commission ASC devices through an NAE.

In addition, Passthru mode makes it easier to identify and manage controllers for common tasks by showing the user a complete list of controllers currently mapped in an NAE. The first step in any Passthru operation from HVAC PRO is to select a controller from a list. Subsequent Passthru operations, such as Controller Information and Upload/Download, are performed on the selected controller.

HVAC PRO restricts the number of characters allowed in each controller name. See *HVAC PRO Name Restrictions in Passthru Mode*.

GX-9100 Tool

The GX-9100 tool configures the DX-9100 and DX-9200 controllers.

In Passthru mode, you can use the GX-9100 software to download or upload the DX configurations. When you use the GX-9100 through an NAE, the LoaderUI application launches to initiate the upload or download.

Loader User Interface (LoaderUI) Tool

The Loader User Interface (LoaderUI) tool provides a generic method for you to download a previously created dxf file to a DX-9100 controller.

However, the primary use of the LoaderUI application is for the GX-9100 software to upload and download the DX controller. When you select Upload via an N30 from the GX-9100, the LoaderUI launches and you use it to connect to the NAE to upload a file with the dxu extension. When the upload is complete, the GX-9100 displays the information from the dxu file. You can save the file as a dxs file.

When you initiate an upload independent from the GX-9100 software, you cannot open the successfully uploaded dxu file by the GX-9100 software or any other application; therefore, you must use the GX-9100 software to initiate the upload of a DX controller through the NAE.

Note: The LoaderUI only supports uploading one device at a time. XT/XTM uploads over the N2 bus and XT/XTM only uploads are not supported by the LoaderUI. You can upload an XT/XTM with a DX upload, if it is connected to the XT bus of the DX controller.

XTM Configurator

The XTM Configurator supports building configuration files for XTMs.

Note: The XTM Configurator tool does not support N2 passthru but can be used to download XTMs using a serial connection.

N2 Device Loader

Opens the N2 LoaderUI window. You can browse to the location of the DX-9100 device file and other N2 device files to upload and download. All devices found on the selected NAE/NIE appear with the Address, Device Type, and Object Name. You can open the device file in the GX-9100 or HVAC PRO tool.

DX Commissioning

Opens the DX Commissioning Tool.

Controller Configuration Tool (CCT)

The Controller Configuration Tool (CCT) is used to configure, simulate, and commission the Field Equipment Controllers (FECs), Input/Output Modules (IOMs), and VAV Modular Assembly (VMA) 1600s, on a MS/TP bus. CCT operates in three modes of operation that provide key functionality for your system: Configuration, Simulation, and Commissioning.

Metasys System Help

The Metasys system *Help* is the User's Guide for the Metasys system extended architecture. The Help provides information on procedures such as downloading, global searching, commanding, and scheduling and also contains information on objects, the user interface, and wizards. The Contents, Index, and Search tabs in the left pane of the Help allow you to find information by browsing through defined sections, looking up key terms, or by performing a full-text search of the Help content. The Favorites tab allows you to bookmark sections that you access often. You can print the information appearing in the scrollable region in the right pane of the *Help*, but to print larger sections of the Help or the entire Help system, go to the PDF file of the Metasys system *Help* on QuickLIT.

The Metasys system *Help* is available in all modes of operation via the Help menu or by pressing F1. When you press F1 to launch the Help, the Microsoft Internet Explorer Help system also appears. Close the Internet Explorer Help system. When you access the Metasys system *Help* from a device to which you have browsed, a File Download dialog box appears asking if you want to open the Help file or save it to your computer. Click Open to access the Help or Save to choose a location on your computer where you want to save the Help file. To access this saved Help file, browse to and double-click on MetasysSystemExtendedArchitecture.chm. You can access this Help without accessing a Metasys device, but MetasysSystemExtendedArchitecture.chm is approximately 3 MB; therefore, be sure you have space available before saving the Help file to your computer.

SCT Manager

The SCT Manager allows you to have multiple versions of the SCT on your computer. The SCT Manager creates a snapshot of the databases from the earlier versions of the SCT. For more information on the SCT Manager, refer to the *ADS, ADX, and SCT Upgrade Installation Instructions (Part No. 24-10068-6).*

Detailed Procedures

Starting the SCT

The SCT install should also place a Metasys SCT icon on your Microsoft Windows® operating system desktop. Double-clicking this icon also starts the SCT.

From the Computer Where the SCT Is Installed

To start the SCT from the computer where the SCT is installed:

1. On the Windows operating system Start Menu, select Programs > Johnson Controls > Metasys > Metasys SCT. The Welcome to Metasys screen appears.

2. Click the Close Window button on the Welcome screen. A dialog box lets you know that the application is trying to close the window. Click Yes to allow it to do so.

3. When the Metasys Login screen appears, type your user name and password, and click the Login button.

4. If archive databases have been created, the Open Archive dialog appears.

5. Select the desired database and click OK. The SCT screen appears.

If an archive database has not been created, the Create New Archive wizard starts. See *Adding a Metasys Server (ADS/ADX) to an Archive Database* in this document.

From a Computer without the SCT Installed

To start the SCT from a computer without the SCT installed:

1. Start your Web browser.

2. Type the URL of the SCT in your browser and press Enter. In Microsoft Internet Explorer, the URL field is called address. The Welcome to Metasys screen appears.

   You can add the Metasys SCT URL to your browser Favorites list.

3. Click the Close Window button on the Welcome screen. A dialog box lets you know that the application is trying to close the window. Click Yes to close the window.

4. When the Metasys Login screen appears, type your user name and password, and click the Login button. If archive databases have been created, the Open Archive dialog box appears.

5. Select the desired database and click OK.

If an archive database has not been created, the Create New Archive wizard starts. See *Creating a New Archive Database* in this document.

Creating a New Archive Database

To create a new archive database:

1. On the Item menu, click New Archive. The New Archive Wizard screen appears.

2. Type a name for the new archive. Note the following restrictions:

   - Archive names are not case sensitive. All archive files are created in the same directory.

   - Archive names cannot be longer than 120 characters.

   - The first character can only be an alphabetical character from a to z.

   - No special characters can be in the name. For example, ! @ # $ % . and & are not allowed.

   - Archive names cannot include spaces.

   - Archive names cannot be a Structured Query Language (SQL) reserved word. For example, you cannot create an archive and name it **create**, **database**, or **select**. There are a number of SQL reserved words, and an error message appears if you attempt to use one.

   - HVAC PRO controllers have name restrictions. See *HVAC PRO Name Restrictions in Passthru Mode*.

3. Click the Create button. A new archive is created. You are prompted if you want to add a site to the new archive. See *Adding Sites to an Archive Database* in this document for more information.

You cannot create a new archive database if another archive database is already open. You are prompted to close any open archive database before creating a new archive database.

Go to *Adding Sites to an Archive Database*.

Opening an Archive Database

To open an archive database:

1. On the Item menu, click Open Archive. The Open Archive Wizard appears.

2. Select an archive from the list and click the Open button. If an archive database is already open, you are prompted to close it before the selected archive database opens.

An archive database may be used by only one user at a time. An open archive database locks out additional users. The open archive database appears on the Open Archive list with a locked lock icon next to it, and the User Name of the open archive database user is displayed.

Go to the *Populating an Archive Database* section in this document.

Copying an Archive Database

The Archive copy must have a unique name. By default, the new archive has the same name as the one you are copying with a number appended to the name.

To copy an archive database:

1. With an archive database open, click Create Archive Copy on the Item menu. The Copy Archive Wizard appears.

2. Select the Archive to copy from the list.

3. Click the Copy button.

4. Click Yes when prompted to close the current database. The new Archive copy opens.

Deleting an Archive Database

Only one archive can be deleted at a time. An open archive **can** be deleted.

To delete an archive database:

1. On the Item menu, click Delete Archive. The Delete Archive Wizard opens.

2. Select the archive to be deleted and click the Delete button.

3. Confirm the deletion.

Populating an Archive Database

The following procedures can assist you in configuring an archive database for a Metasys system extended architecture system. They are listed in the order in which they should be performed when creating a new archive database. For example, to add a supervisory device to a database archive, you must first have a site defined in the archive. In addition to the following procedures, you can speed up your work by starting with copies of archive databases, by importing previously exported portions of databases, and by copying and pasting items within an archive database. Importing and exporting portions of databases is described later in this document.

These instructions are written from the point of view of building an archive database for an N2 network. Perform the same procedure for an MS/TP network but select the appropriate MS/TP trunk. See Figure 3 for an example.

To populate an archive database:

1. Add sites to an archive database. In the example (Figure 3), the archive database is MyArchive2 and the sites are Site1 and Site2.

---

2. Add Metasys servers to an archive database if applicable. In the example (Figure 3), the Metasys server is an ADS labeled ADS1.

   The Object Category drop-down menu shown in the right panel allows you to select a category for the object. Permission to view or act on different object categories is assigned to users and/or roles.

3. Add supervisory devices to an archive database. The example shows supervisory devices NAE1 and NIE1. An NIE is required to add an N1 Integration object to an archive database.

4. Select an N2 trunk from the (default) NAE archive database. The archive database in Figure 3 shows two N2 trunks (N2 Trunk 1 and N2 Trunk 2) added to NAE1.

5. Add N2 Field Devices to an archive database. Visible field devices in Figure 3 are AHU-1 and TC-2.

6. Add N2 Field Points to an archive database. See ZN-T under the Analog inputs folder of TC-2 in Figure 3 for an example of an added N2 field point.
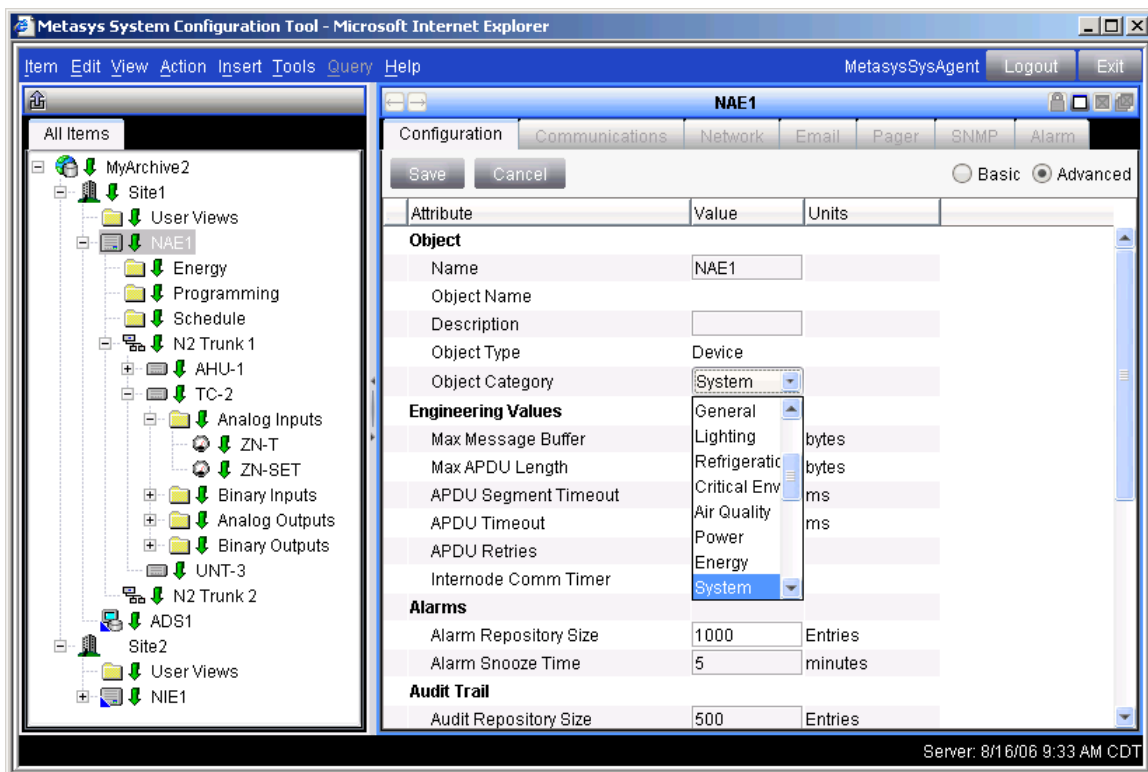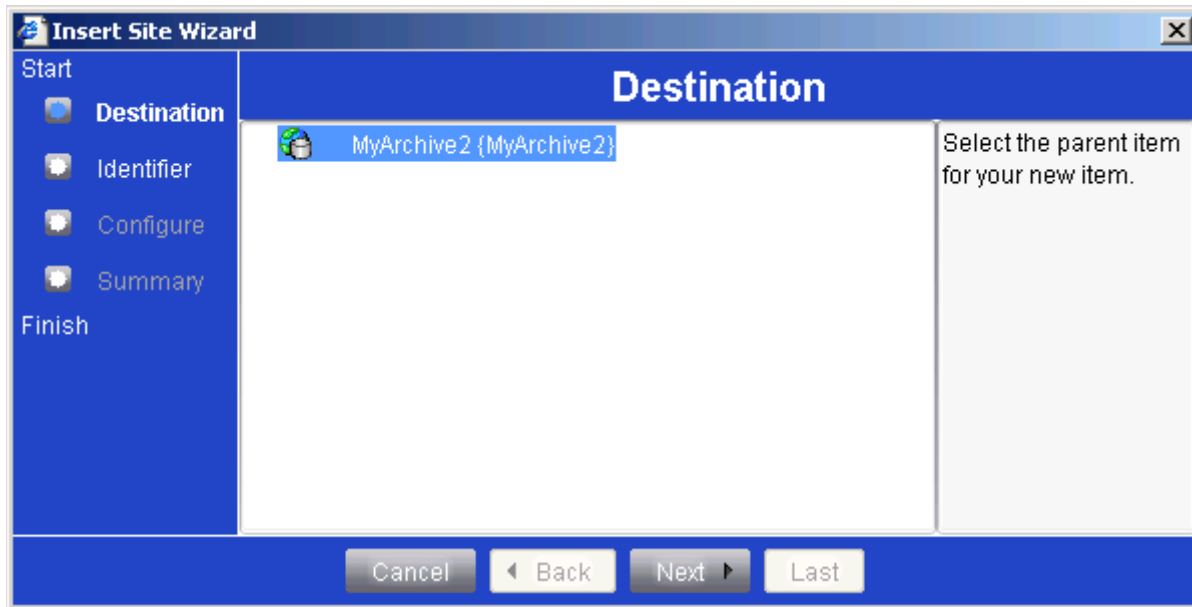

Figure 3: SCT with Archive Database

Adding Sites to an Archive Database

You must have at least one archive database defined. See *Creating a New Archive Database* in this document for details.

To add sites to an archive database:

1. With the Archive Database open, click Site on the Insert Menu. The Insert Site Wizard's Destination screen opens (Figure 4).

Figure 4: Insert Site Wizard - Destination Screen

2. Select an archive database and click Next.

   Note: You must already have created at least one archive database to populate.

3. Follow the prompts on the screen to configure each site in the archive. See Table 4 for details.

Table 4: Insert Site Wizard Screens

Screen	Purpose
Destination	Type or select the archive database to which you are adding the site.
Identifier	Type a unique name for the site.
Configure	Set the editable attributes of the Site object you are configuring, including Connection type and Site Time Servers. See the Site object *Help* for further information. Clicking the Advanced button on this screen allows you to access the BACnet system features of the Site object.
Summary	View the basic parameters of the site just added.

4. Click the Finish Button. A site is created with the parameters you have selected, and you are prompted to create a supervisory device or a Metasys Server in the new site.

Go to *Adding a Metasys Server (ADS/ADX) to an Archive Database* section or *Adding Supervisory Devices (NAEs/NIEs) to an Archive Database* section in this document.

Adding a Metasys Server (ADS/ADX) to an Archive Database

When there is an ADS or ADX on a site, it is automatically the Site Director. If there are multiple ADSs or ADXs added to a site, the first ADS or ADX added is the Site Director by default.

To add an ADS or ADX to an archive database:

1. With the Archive Database open, click Metasys Server on the Insert menu. The Insert Metasys Server Wizard starts (Figure 5).

Figure 5: **Insert Metasys Server Wizard - Select Object Type Screen**

2. Follow the prompts on the screen to configure the Metasys Server. See Table 5 for details.

Table 5: Insert Metasys Server Wizard

Screen	Purpose
Object Type	Select the type of Metasys Server you are adding. For example, ADS Version 1.0.
Destination	Select the site where the Metasys Server resides.
Identifier	Type a unique name for the Metasys Server. A unique name is required for each Metasys Server in an archive. By default, the name of the object has a number appended to keep it unique. Therefore, if adding an ADS to a site for the first time, the default name is ADS1.
Configure	Access features of the Metasys Server, including: • Email – Set up Simple Mail Transfer Protocol (SMTP) and Post Office Protocol (POP) destinations. Add email addresses for the Metasys Server to send messages. • Pager – Enter phone number information for sending messages to a pager. • SNMP – Enable Simple Network Management Protocol (SNMP) and add destinations.
Summary	View the basic parameters of the Metasys Server just added.

3. Click the Finish button.

Adding Supervisory Devices (NAEs/NIEs) to an Archive Database

To add Supervisory Devices to an archive database:

1. With the archive database open, click Supervisory Device on the Insert menu.
    The Insert Device Wizard Select Object Type screen appears (Figure 6).
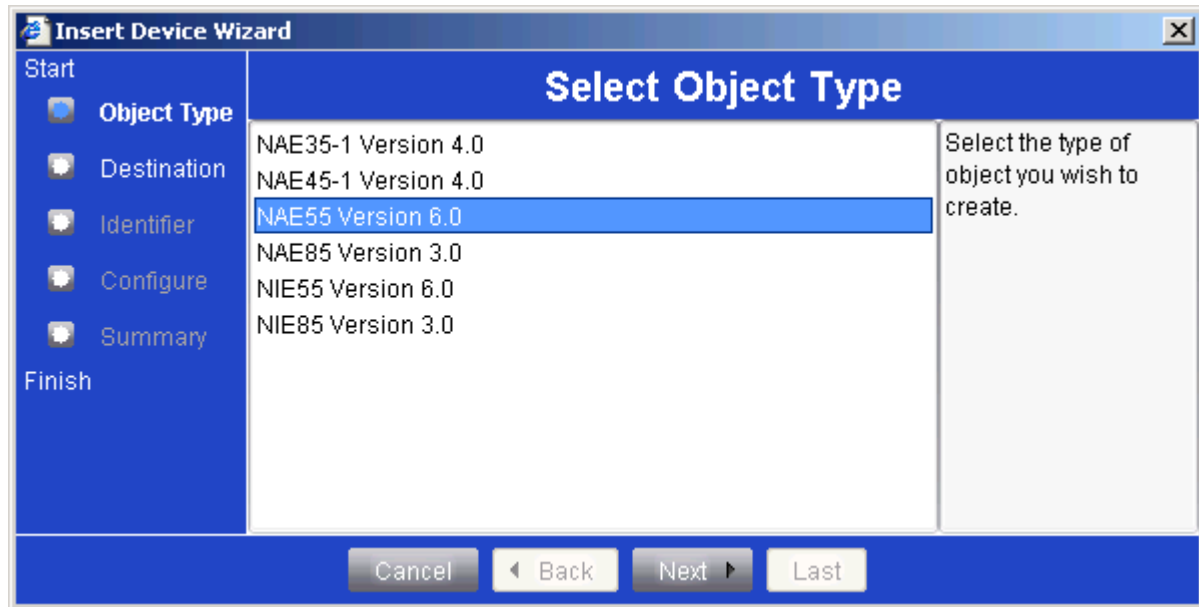
Figure 6: Insert Device Wizard - Select Object Type Screen

2. Follow the prompts on the screen to configure the Supervisory Device. See Table 6 for details.

Table 6: Insert Device Wizard Screens

| Screen	Purpose
Object Type	Select the type of Supervisory Device you are adding.
Destination	Select the Site where the Supervisory Device resides.
Identifier	Type a unique name for the supervisory device. A unique name is required for each supervisory device in an archive. By default, the name of the object being entered has a number appended to keep it unique; therefore, if adding an NAE to a site for the first time, the default name is NAE1.
Configure	Access NAE/NIE features, including (See Metasys system *Help* for the NAE Device object for a description of the attributes on these screens: including default values and ranges.) • Configuration – If Basic is selected, you can edit parameters such as name and description. If you select Advanced, you can configure additional parameters such as Engineering values, Alarm snooze, Audit Trail, and Site information. • Communications – Configure the serial port, internal, and external modems. • Network – Enter the LAN settings and configure dial-up settings for accessing the network over dial-up connections. • Email – Set up SMTP and POP destinations. Allows you to add e-mail addresses for the NAE/NIE to send messages. • Pager – Enter phone number information for sending messages to a pager. • SNMP – Enable SNMP and add destinations.
Summary	View the basic parameters of the Supervisory device just added.

3. Click the Finish button.

Exporting Part of an Archive Database to a File

To export part of an archive database to a file:

1. Open an Archive.

2. On the Item menu, click Export Item. The Export Archive Wizard starts (Figure 7).

The source must be at a level lower than a Site object. You cannot export an entire site as an item.
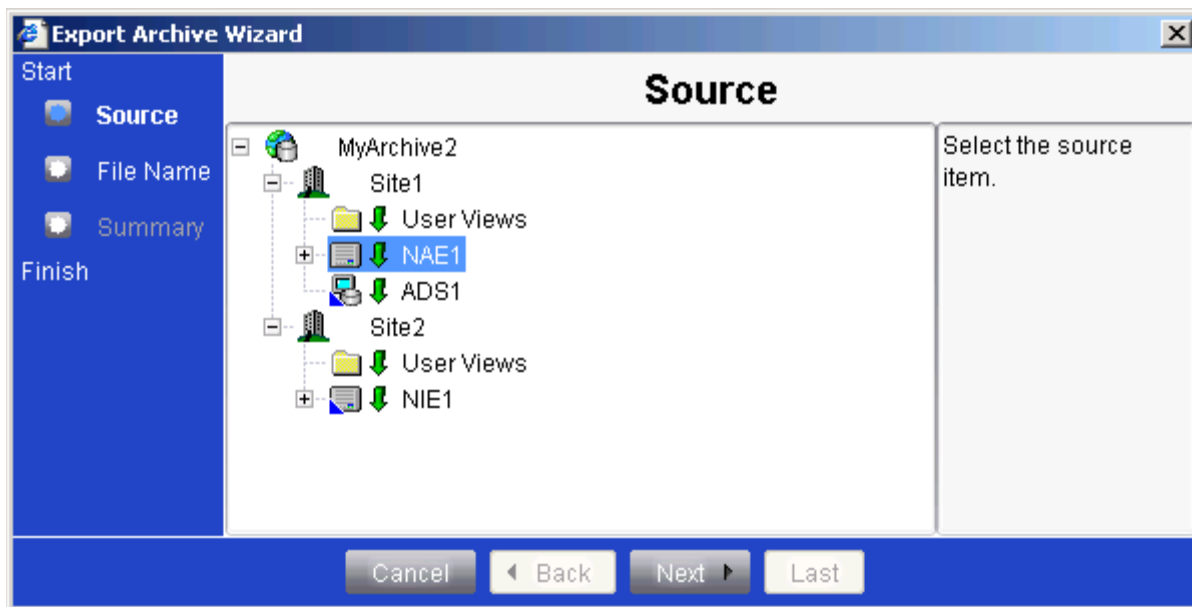
Figure 7: Export Archive Wizard - Source Screen

3. Select the item to export and click Next. The Export Archive Wizard Identifier screen appears (Figure 8).
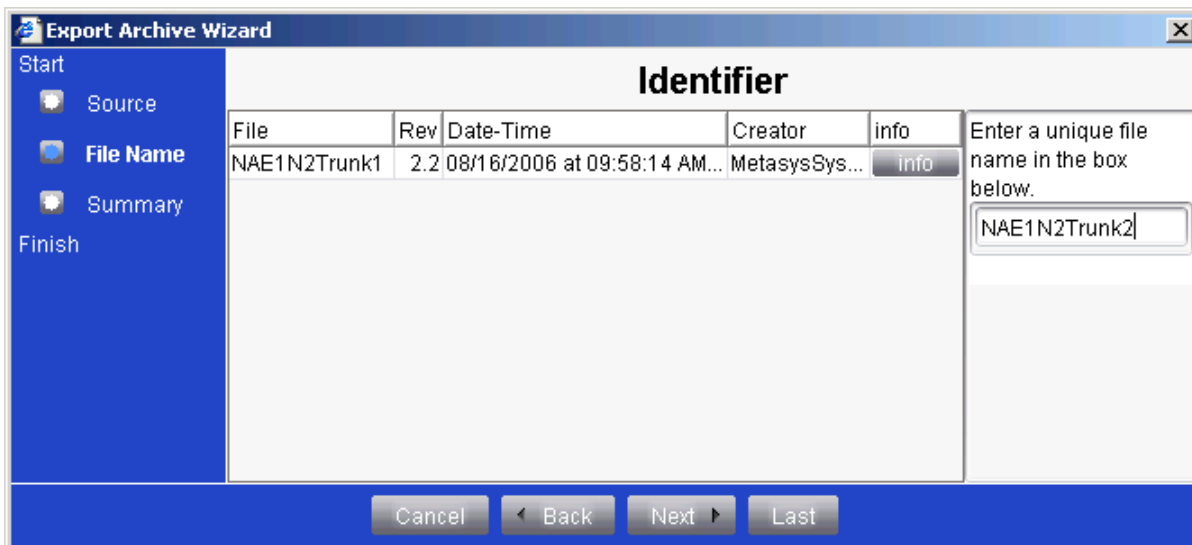

Figure 8: Export Archive Wizard - Identifier Screen

4. Enter a unique name for your export file. This is the name that appears in the Import Archive Wizard's Select File screen (Figure 10).

5. Click Next. The Export Archive Wizard Summary screen appears (Figure 9).

This screen displays the information that appears when the user presses the info button on the Import Archive Wizard's Select File screen.
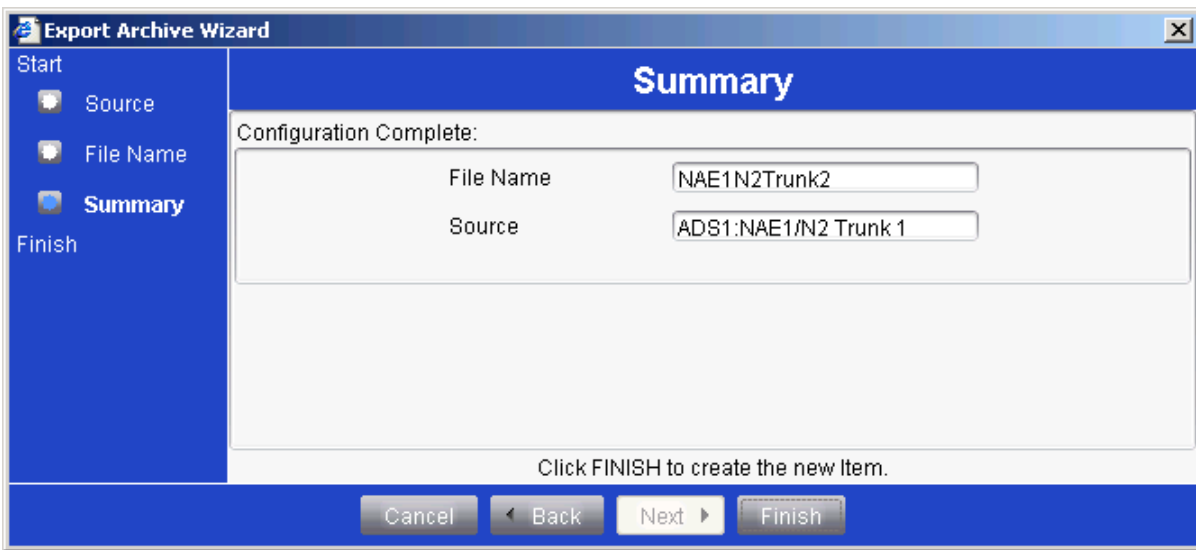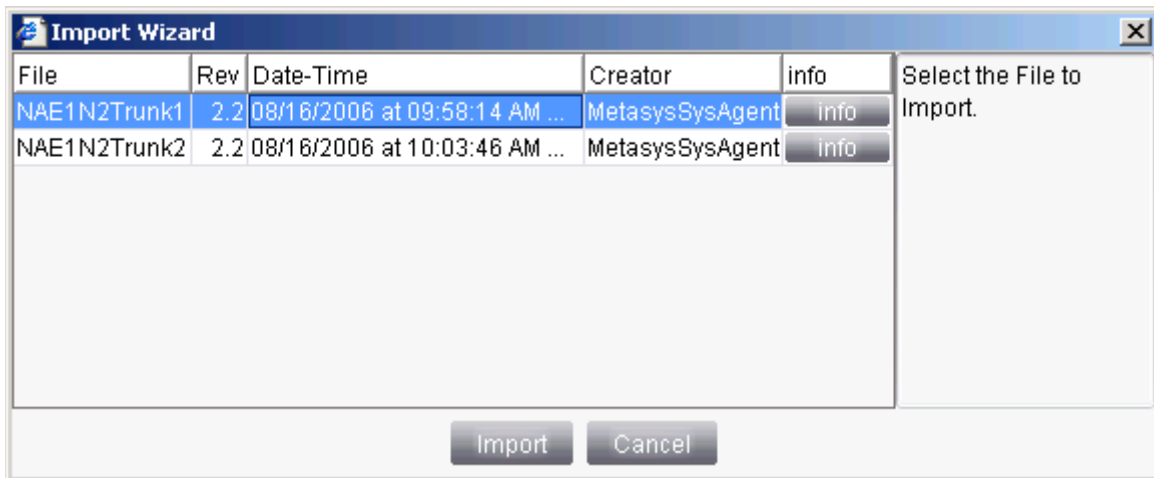

Figure 9: Export Archive Wizard - Summary Screen

6. If the Summary appears correct, click Finish. Otherwise, click Back and edit as necessary.

Importing Part of an Archive Database from a File

To import part of an archive database from a file:

1. Open an archive database.

2. On the Item menu, click Import Item. The Import Wizard appears (Figure 10).

Figure 10: Import Wizard

3. Select the file you want to import and click the Import button. If an item of the same name already exists, a dialog checks to verify that you want to overwrite the existing item.

   Importing a file discards all change status indicators (the little green arrows in the navigation tree) from your database. Importing a site director device into a database with existing User Views is not supported and may cause loss of User View data.

   When the import is complete, the new item appears in your navigation tree.

Backing Up an Archive Database

Backups are saved as.zip files and stored in the default directory:
C:\Documents and Settings\All Users\ApplicationData\Johnson Controls\MetasysIII\DatabaseFiles

To back up an archive database:

1. Open an archive database.

2. On the Tools menu, select Database > Create Backup. A message appears telling you that the backup was successful.

Restoring an Archive Database

To restore the database backup file it must be in the following directory:
C:\Documents and Settings\All Users\ApplicationData\Johnson Controls\MetasysIII\DatabaseFiles

To restore an archive database:

1. On the Tools menu, select Database; then click Restore Backup. The Restore Archive Wizard appears.

   You can restore a backup of an archive database file only when it is not in use. Archive database files that are in use are locked and unavailable.

2. Click Restore. If the archive currently exists, the Confirm Delete and Restore message appears (Figure 11).
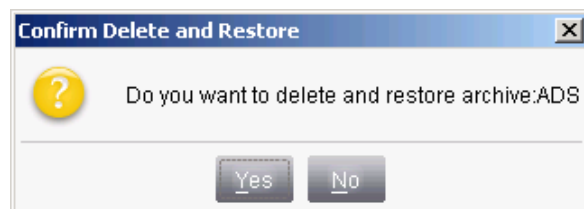
Figure 11: Confirm Delete and Restore Message

3. Click Yes to Delete the current archive with the name selected in Step 1 and replace it with the most recent backup of that archive.

4. Open the restored archive if desired. The version now available in the Open Archive Wizard is the last version that was backed up.

Note: Do not rename the backup file.

Inserting a User View

To insert a user view:

1. Open an archive database.

2. On the Insert menu, click User View. The Create New User View Wizard starts.

3. Follow the prompts on the screen to configure the User View. See Table 7 for details.

4. Click Finish when you are done.

Table 7: Insert User View Wizard

Screen	Purpose
Destination	Select the site and user view folder for the new user view.
Identifier	Type a unique name for the User View. A unique name is required for each User View in a site. By default, the name of the object being entered has a number appended to keep it unique; therefore, if adding a User View to a site for the first time, the default name is User View1.
Configure	Click on the Tree View tab to add and remove references to the objects that you want to appear in your new User View. Organize your view by adding folders to group your references according to your preferences. Note that the root of the tree view or the folder in which you want to add a reference must be selected for the Add Reference button to work.
Summary	View the basic parameters of the User View just added.

Launching N2 Configuration Tools and CCT in Passthru Mode

N2 Devices are configured using N2 configuration tools in Passthru mode in the SCT. To use the N2 configuration tools in Passthru mode, install the N2 configuration tools on the machine where you are using them.

CCT devices are configured using CCT in Passthru mode in the SCT. To use CCT in Passthru mode, install CCT on the machine where you are using them.

To launch N2 configuration tools and CCT in Passthru mode:

1. Open the archive database in the SCT or log on to the NAE.

2. On the Tools menu, select Field Device Tools, then click the N2 configuration tool you want to use or CCT (MS/TP). The selected tools opens in Passthru mode.

   If you are launching a Passthru session from the SCT, you are guided through a logon sequence to log on to the Site Director that contains the devices that contain the N2 controllers or MS/TP controllers.

   Any offline conditions/actions in the Site Director (such as a download to the Site Director) interrupts N2 and MS/TP Passthru communications.

   Note: When you use the GX-9100 tool in Passthru mode, NAEs appear as N30 devices in the UI of the GX-9100 tool.

HVAC PRO Name Restrictions in Passthru Mode

HVAC PRO Release 8.06 and later restricts the number of characters allowed in each controller name. HVAC PRO does not download, upload, commission, or retrieve information about the controller if the item name or controller name exceeds the 157 maximum characters limit.

The controller's full name consists of the: domain name, site name, equipment name, trunk name, and the actual controller's name. The controller name appears in the following format:

```
Site_name:device_name.domain_name/N2 Trunk #.controller_name
```

Table 8 describes the controller name restrictions.

Table 8: Controller Name Restrictions[1]

Component	Maximum Number of Characters Allowed by the NAE or SCT	Maximum Viewable Characters		Maximum Characters Allowed by HVAC PRO
Site Name	fewer than or equal to 32	30	47	157
Device Name	fewer than or equal to 15			
Domain Name	fewer than or equal to 64			
N2 Trunk Name	fewer than or equal to 32	-		
Controller Name	fewer than or equal to 32			

1. The component column lists each of the components represented in a Full Item reference. The Maximum Viewable Characters column lists the restrictions on the Component names when entered through SCT or a Web-based user interface of the Metasys supervisory controller. The Maximum Characters Allowed by HVAC PRO column shows the maximum number of characters in a Full Item Reference allowed in HVAC PRO.

HVAC PRO Naming Recommendations

Use the following list of naming conventions to assist you while naming your controllers. If the recommendations are followed, there are an additional 61 characters available.

- site name under 15 characters

- device name (network name) under 15 characters

- the default N2 Trunk name unchanged so it only consists of 10 characters (for example N2 Trunk 1 or N2 Trunk 2)

- controller's name under 15 characters

Troubleshooting

Table 9: Troubleshooting

Error/Error Message	Description
When you attempt to execute any N2 Passthru tool (for example HVAC PRO) from the ADS, ADX, or NAE user Interface, the error appears: `"The Supervisory Controller does not contain any supported devices"`	Date and/or time may be incorrect. Verify that all dates and times are correct. For more information, refer to *Appendix A: Time Zone, Date, and Time Management* in the *ADS Commissioning Guide (LIT-1201645)*.
	Item name may be too long. See the <u>*HVAC PRO Name Restrictions in Passthru Mode*</u>.
SCT does not log on to allow HVAC PRO to load despite already being logged on to the NAE. SCT (offline) allows you to log on and run HVAC PRO, but you receive a ZSWHPRO crash when you try to do anything over Passthru.	The Site Director is offline. Log on and verify it is online.
Logon responds with `"Unable to Login. Unexpected Error."`	SCT must be completely uninstalled. You may also have to uninstall IIS 5.0 and the .Net Framework. Reinstalling SCT should fix this problem. If there are error messages from the Installer, there may also be an issue at runtime.
	Verify the JRE proxy settings are disabled. To verify proxy settings are disabled: 1. From the Start menu select > Settings > Control Panel. 2. Select the Java icon. The Java Control Panel appears. 3. Select the Proxies Tab. 4. Uncheck Use browser settings. 5. Click OK.
SCT installer responds with `"XPPKInitConsole,exe crash"`	Error typically occurs if IIS 5.0 is installed after the .Net Framework. Uninstall .Net, IIS, and SCT. Reinstall in the following order: IIS, .Net, SCT.
HVAC PRO gives the item reference of the NAE but fails to get any controllers and causes ZSWHPRO.EXE to crash.	Only the second N2 Trunk is integrated. Integrate the first N2 Trunk, even if it has no controllers on it. You must integrate the first N2 Trunk if N2 Trunk 2 is being used in HVAC PRO even if there are no devices on the first N2 trunk.
Downloading and uploading the database of an NAE in SCT causes a Communication Error (521).	The SCT is case sensitive for the names of the NAE devices. Create a new Supervisory device in SCT and give it the exact same name of the NAE. For example, the name 'nae' is different from 'NAE' in SCT.
N2 applications may respond with no information or lock up.	Two N2 Passthru Applications may not run at the same time when used in Passthru mode. Close all of the N2 Passthru application and restart. Run one N2 Passthru application at a time.
Downloading/Uploading the database of an NAE in SCT causes a Communication Error (521) or error (522).	This error occurs when the NAE/NIE have domain names defined for them, but they are not defined in SCT. When you define a new Site or a new Supervisory device in SCT, you must include the domain name as part of the name (for example, NAE.cg.jci.com instead of just NAE). It is also possible to use the IP address of the device that the archive is being taken from.
SCT upgrade tool fails with the archive upgrade log error for a restored database: `"In ConvertArchives: Error in reading archive data for fixbuild1, Empty Archive"`	Verify the name of the backup matches the name of the archive. To verify the backup and archive names match: log onto the Site Director. The name at the top of the tree is the archive name. Rename the SCT backup database to match the archive name, restore it, and execute the archive upgrade again.
When you attempt to use one of the N2 Passthru tools, the following error message appears `"Supervisory Device Offline"`	M-Tools may have been installed while running the N2 Passthru. Shutdown all active N2 Tools and SCT. Reinstall SCT.

Table 9: Troubleshooting

Error/Error Message	Description
A DX9100 device may remain offline after exiting the GX9100 Commissioning tool. This occurs when the tool is run in passthru mode from an ADS. In the NAE, the DX9100 N2 Device tab shows: Offline = True and Enabled = True	The GX9100 device is disabled at the GX9100. To enable the GX9100 device, You must first command the DX9100 N2 Device to Disable, then command the DX9100 device to Enable.
The N2DeviceLoader/LoaderUI (LoaderUIG3.exe) crashes when you try to connect to the site.	The error typically occurs when you have a child NAE listed above the Site Director. When the child NAE appears offline (with a red or blue X), the N2DeviceLoader/LoaderUI crashes. Right-click on the offline NAE and choose Remove from Site.
The SCT installed without error, but the SCT UI window freezes or stalls while Java is loading.	A wireless connection manager may be installed on the machine. If present, uninstall the wireless connection manager. As a reference, refer to Microsoft *Knowledge Base Article KB910435*.

Technical Specifications

System Configuration Tool

Product Code	MS-SCTSWO-0
Recommended Computer Platform[1]	2.8 GHz Pentium® 4 processor with 80 GB hard disk (2.0 GHz Pentium 4 processor with 40 GB hard disk minimum) 20 GB recommended free hard disk space available (600 MB minimum) CD-ROM drive
Memory	1 GB RAM recommended (512 MB RAM minimum)
Operating System (OS)	Microsoft Windows 2000 Professional with Service Pack (SP) 4 Microsoft Windows 2000 Server or Windows 2000 Advanced Server with SP4 Microsoft Windows Server 2003 (Standard or Enterprise) with SP1[2, 3] Web Server Software: Microsoft Internet Information Server (IIS) Version 5.0 or later[4] Microsoft Windows XP Professional with SP1[5] or SP2 Web Server Software: Microsoft Internet Information Server (IIS) Version 5.1 or later
Web Browser	Microsoft Internet Explorer Version 6.x or Version 7.0 or later Java Runtime Environment 1.5.0_10
Communication	Ethernet network interface card 10/100 Mbps (100 Mbps network recommended)
Optional Software Packaging	Metasys System Configuration Tool (SCT) software is included with the ADS/ADX product.

1. Our suggested minimum hardware configurations are only suggestions and are not meant to imply that older or slower machines are not usable. For more information about hardware configurations and their implications, refer to the Hardware Requirement section of the *Network and Information Technology (IT) Considerations Technical Bulletin (LIT-1201578)*.
2. Windows Server 2003 OS R2 has been released; however, at this time, we support only Windows Server 2003 OS with SP1. If you are currently running Windows Server 2003 OS with SP1, you do not need to upgrade at this time. If you have not yet purchased Windows Server 2003 OS, you may purchase Windows Server 2003 OS R2 through your regular channels. The Windows Server 2003 R2 installation includes Windows Server 2003 OS SP1 and optional components. Install **only** Windows Server 2003 OS SP1. **Do not** install any of the optional R2 components.
3. Refer to the *Network and Information Technology Considerations (IT) Technical Bulletin (LIT-1201578)* for special settings required to make this operating system work with an Extended Application and Data Server (ADX).
4. For the split ADX configuration, install the ADX software and Internet Information Server (IIS) on the Web/Application server computer only.
5. If your Windows XP Professional computer includes SP2, refer to the *Network and Information Technology (IT) Considerations Technical Bulletin (LIT-1201578)* for special settings required to make this operating system work with an SCT.

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