

NxE85 Turnkey User's Guide

MS-NIE8500-0

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Introduction

Welcome to your new Network Engine 85 (Nx E85) Series Turnkey! Your turnkey has been pre-configured with all prerequisite and Johnson Controls® software installed. The Nx E85 has been named, has many recommended performance settings enabled, and has been tested and verified for proper functionality prior to shipment.

Important: Keep all collateral materials shipped with your Nx E85 in a safe and accessible place. Materials shipped with your Nx E85 Turnkey are crucial when servicing and restoring the original Nx E85 image.

Follow the instructions in the [Detailed Procedures](#) section before using your turnkey.

The following section may be used as needed:

- [Appendix: Restoring an Nx E85 Using a Recovery Image DVD](#): Use this section if you need to restore your Nx E85 to the condition in which you received it.

Naming Conventions

Prior to shipment, all Nx E85 Turnkeys are named **NAExxxxxxxxxxx**, where **xxxxxxxxxxx** is the MAC address of the enabled Ethernet card without hyphens. For example, if the Nx E85's MAC address is 00-80-66-05-0F-FC, the initial computer name is NAE008066050FFC.

If the name of your Nx E85 does not meet your requirements, refer to the *Nx E85 Commissioning Guide (LIT-12011044)* for renaming procedures.

Important: The name of the Nx E85 becomes part of the fully qualified reference (FQR) name of every object in the engine. If you want to rename your Nx E85, rename the engine before adding objects.

Nx E85 Hardware Platform

At Metasys® Release 4.0 and later, Nx E85 engines ship as a 1U rack-mount server-class computer configuration only ([Figure 1](#)). (The Nx E85 mid-tower chassis model is no longer available.)

See the [Technical Specifications](#) section for more information on the Nx E85 hardware platform.

The 1U rack-mount chassis is designed to mount in standard 1U server rack applications. Rail and bracket mount accessories are available.

Figure 1: Back of Nx E85 1U Rack-Mount Server Chassis Physical Features, Connectors, and Ports

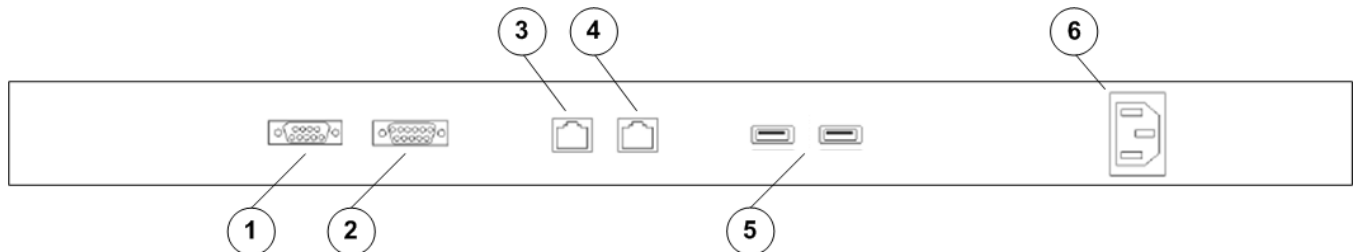


Table 1: Descriptions of Nx E85 Connectors

Callout	Description
1	Serial Port
2	Video Port (An additional video port is located on the front of the server.)
3	Ethernet Port 1 (1 Gbps)
4	Ethernet Port 2 (1 Gbps, disabled)
5	Two USB Ports (Two additional USB ports are located on the front of the server.)
6	120 VAC Power

NxE85 Ethernet Ports

The NxE85 has two Ethernet ports; however, only one is used for network connections ([Figure 1](#)). The other port has been disabled.

Port 1 is a 1 GB Ethernet port and it is the only enabled network port for the NxE85. Use Port 1 (only) to connect to the Building Automation System (BAS) network that the BACnet® or N1 devices are connected to. Also use Port 1 to connect to Metasys servers (Application and Data Server/Extended Application and Data Server [ADS/ADX]) and network engines (Network Control Engine [NCE] 25, Network Automation Engine [NAE] 35, NAE45 [excluding NAE45-Lite], NAE55, Network Integration Engine [NIE] 55, and NxE85).

Browser Access to the NxE85 Turnkey

Starting at Release 6.0, you use the Launcher application instead of a web browser to access the NxE85 Turnkey. If the Launcher is not already installed on your machine, you are prompted to install it when you attempt to log in using a web browser. Refer to the *Launcher Installation Instructions* (LIT-12011783).

The Launcher is a software application installed on each client computer that lets you access any Metasys server or supervisory engine on the building network, regardless of its software version. Its purpose is to remove the dependency on the public Java® Runtime Environment (JRE) for the Site Management Portal UI at Release 6.0 or later by placing a private edition of the JRE on the client computer. For details, refer to the *Launcher Help* (LIT-12011742).

Note: We strongly advise that you do not browse to the Metasys Site Management Portal UI from a computer running a server-class operating system (OS). By default, Windows® Internet Explorer® Enhanced Security Configuration is enabled on server-class operating systems, and may block the Launcher download page from which you install the Launcher application for access to the Site Management Portal. Open the Site Management Portal UI from a computer that is not running a server-class OS.

NxE85 Initial Configuration Values

The NxE85 ships with several factory-set initial attribute values ([Table 2](#)).

Table 2: NxE85 Initial Configuration Values

Attribute/Field Name	NxE85 Initial Value
Computer Name	NAExxxxxxxxxxxx (where xxxxxxxxxxxx is the MAC address of the enabled Ethernet card without hyphens.)
DHCP client	Enabled
Site Director	A new NxE85 is shipped as a Site Director. If an NxE85 is not going to be the Site Director, you must demote it by entering the computer name or IP address of the designated Site Director in the Site Director attribute field on the Advanced Focus tab of the NxE85.
Initial Metasys UI Login User Name	MetasysSysAgent (not case sensitive)
Initial Metasys UI Login Password	Contact your local Johnson Controls representative.
Initial Windows OS Login User Name ¹	MetasysSysAgent or Administrator (not case-sensitive)
Initial Windows OS Login Password	Contact your local Johnson Controls representative.

¹ The Windows OS has two administrator-level user accounts. For security reasons, we strongly recommend changing the Windows login password for both accounts at commissioning. You can disable the Administrator account, but do not disable the MetasysSysAgent account.

Detailed Procedures

Starting the Computer for the First Time

Enter the 25-character Microsoft® license product key during the Microsoft Windows Setup for your Nx E85 Turnkey. The key is located on a label affixed to the **top** of the Nx E85 1U rack-mount model.

Logging in for the First Time

All Nx E85s ship with the same initial login user name and password. The initial Metasys UI user account login user name is **MetasysSysAgent** and is not case sensitive. For the MetasysSysAgent default password, contact your local Johnson Controls representative.

You must use the initial MetasysSysAgent user name and password to log in to any Nx E85 the first time. For security reasons, you must change the password at the first login, before the Nx E85 goes online in a Metasys network. You can also change your password at any time in the future.

When you change your account password for the MetasysSysAgent user in the Nx E85 Metasys UI, your Windows account password does not automatically change to match. If you want your Metasys UI and Windows passwords to match, you must change your Windows account password manually.

The Windows OS uses Windows Password Policy rules to establish criteria for the OS account password's complexity and duration. The MetasysSysAgent account login password must conform to the password policy rules established in the Nx E85 OS. If the MetasysSysAgent account password does not conform to the password policy, any attempt to change the MetasysSysAgent password fails. Contact the Field Support Center if you cannot change the password.

The Windows OS has two administrator level user accounts: MetasysSysAgent and Administrator. For security reasons, we strongly recommend changing the Windows login password for both accounts. You can disable the Administrator account, but do not disable the MetasysSysAgent account. See [Nx E85 Initial Configuration Values](#).

When using an Nx E85 that is in a Windows domain or on a network where the password policy is controlled, consult the IT department to ensure that the MetasysSysAgent account password conforms to the network password policy and remains in sync with the OS login password.

Any new Metasys user accounts you create for the Nx E85 are unaffected by the Windows Password Policy rules. Refer to the *Security Administrator System Technical Bulletin (LIT-1201528)* for information on creating new Metasys user accounts and changing Metasys login passwords.

Note: When you change or add a login user name or password, record the new user name and password and store them in a safe location. You cannot access the Metasys UI without a valid user name and password.

Changing the NIE85 Turnkey to an NAE85 Engine

All Nx E85 models ship as NIE85s. Use the ChangeModel utility to change an NIE85 to an NAE85. Refer to the *Toggle Tunnel and ChangeModel Technical Bulletin (LIT-12011531)* for information and procedures on changing Nx E85 models.

Installing Metasys System Software Patches

Be sure to install any Metasys software patches that were released after the image for your Nx E85 Turnkey was created. For example, a Release 6.5 Nx E85 Turnkey solution does not have any Release 6.5 patches applied to it, regardless of when you order it.

To install Metasys system software patches:

1. Browse to one of the following locations:

Field Support Center (FSC) Product Quick Patch page at

http://publish.johnsoncontrols.com/content/controls/us/eng/fsc/hf/Metasys_Quick_Patches.html

For North American Authorized Building Controls Specialists (ABCS) Partners, go to the ABCS Exchange site under Metasys > Technical Support > Software Patches.

2. Search for patches that apply to the Nx85 for the Metasys software release in your Nx85 Turnkey solution.
3. Follow patch installation instructions to install the patch.

Modifying the OS Hosts File

You must modify the Microsoft Windows hosts file in order to access the Metasys Site Management Portal UI. You must also perform this procedure when you purchase a new turnkey.

1. Go to Start > All Programs > Accessories. (If you are using Windows Server® 2012 R2 or Windows Server 2012, type Notepad from the Start screen.)
2. Right-click Notepad and select **Run as administrator**. Notepad opens.
3. On the File menu, click **Open**.
4. In the drop-down selection box in the lower-right corner of the Open dialog box, select **All Files (*.*)**.
5. Browse to C:\Windows\System32\drivers\etc.
6. Select the hosts file.
7. Click Open.
8. Locate the line that contains **127.0.0.1**.
9. Delete the **#** in front of **127.0.0.1**.
10. On the File menu, click **Save**.

Technical Specifications

Table 3: MS-NIE8500-0

Computer Type	Dell® PowerEdge® R420 or latest equivalent
Power Requirement	100–240 VAC 50/60 Hz
Power Supply	480 W
Ambient Operating Conditions	10 to 35°C (50 to 95°F); 20 to 80% RH, noncondensing (twmax=29C)
Ambient Storage Conditions	-40 to 65°C (-40 to 149°F); 5 to 95% RH, noncondensing (twmax=38C)
Data Protection	Recommended UPS: APC® Smart-UPS SC 450 VA, 280 W, 120 VAC input/output, NEMA 5-15R output connections, OEM Part No. SC450RM1U
Processor	Intel® Xeon® E5506, 2+ GHz, 4 MB Cache2 or comparable (subject to availability)
Memory	2 GB or more, 1066 MHz or higher, 2 x 1 GB, single ranked UDIMMs for 1 processor
Hard Disk	2 total (providing ample storage space, size subject to availability, 7.2k RPM Serial Advanced Technology Attachment (SATA), 8.9 cm (3.5 in.) cabled 3 Gbps, RAID 1 configuration with add-in SAS6/iR (SATA/SAS Controller) or higher
Internal Optical Drive	DVD ROM, SATA
Operating System	Windows Server® 2012 R2 Standard
Antivirus Software	Symantec® Endpoint Protection, Small Business Edition (latest version)
Network and Serial Interfaces	2 RJ45 1 Gbps Ethernet Ports, Port 2 is disabled 2 video ports; 1 front, 1 back 1 9-pin Serial port 4 USB ports (2 front, 2 back)
Dimensions (Height x Width x Depth)	4.3 x 43.4 x 62.7 cm (1-3/4 x 17-1/8 x 24-3/4 in.)
Mounting	Mount in an EIA-310D compatible server cabinet

Table 3: MS-NIE8500-0

Shipping Weight	15.9 kg (35 lb)
Compliance	Europe: CE Mark (Record Holder: http://www.dell.com/regulatory_compliance)

The performance specifications are nominal and conform to acceptable industry standard. For application at conditions beyond these specifications, consult the local Johnson Controls® office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

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GERMANY

USA

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WUXI JIANGSU PROVINCE 214142

CHINA

Appendix: Restoring an NxE85 Using a Recovery Image DVD

Use this procedure if you need to restore your NxE85 Turnkey to the condition in which you received it from the factory. This procedure may be required in the case of an NxE85 software failure that prevents you from accessing or operating the NxE85.

Important: Keep all collateral shipped with your NxE8500 in a safe and accessible place. Materials shipped with your NxE8500 Turnkey are crucial when servicing and restoring the original image.

Important: Restore the NxE85 only as a final course of action when you experience problems with the NxE85 Turnkey, after you troubleshoot the system, and contact the Field Support Center (FSC). You lose all database information and settings if you follow this procedure. This procedure returns the NxE85 to the factory-original condition in which you received it.

Important: Recovery media is to be used only with the NxE85 Turnkey computer you purchased. Do not use recovery media on a non-Turnkey computer or on a different Turnkey computer.

To restore an NxE85 you need the following:

- monitor, keyboard, and mouse
- the NxE85 recovery image DVD that shipped with your NxE85

You must use the **correct procedure** for the version of NxE85 you have. Older NxE85s use a different process than newer NxE85s.

NxE85 Turnkeys that use the new process include a recovery image DVD indicating a release of 4.1.2.0900 or later. See [Figure 2](#).

Note: If your NxE85 is at Release 4.1.2.0900 or later, but your recovery image DVD does not indicate a date, contact the Field Support Center (FSC).

Figure 2: Recovery Disk Indicating Release 4.1.2.0900



For NxE85 Turnkeys that indicate Release 4.1.2.0900 or later, use the instructions in [Restoring an NxE85 at Release 4.1.2.0900 or Later](#).

If you have an NxE85 Turnkey that is at a release prior to 4.1.2.0900, see [Restoring an NxE85 Prior to Release 4.1.2.0900](#).

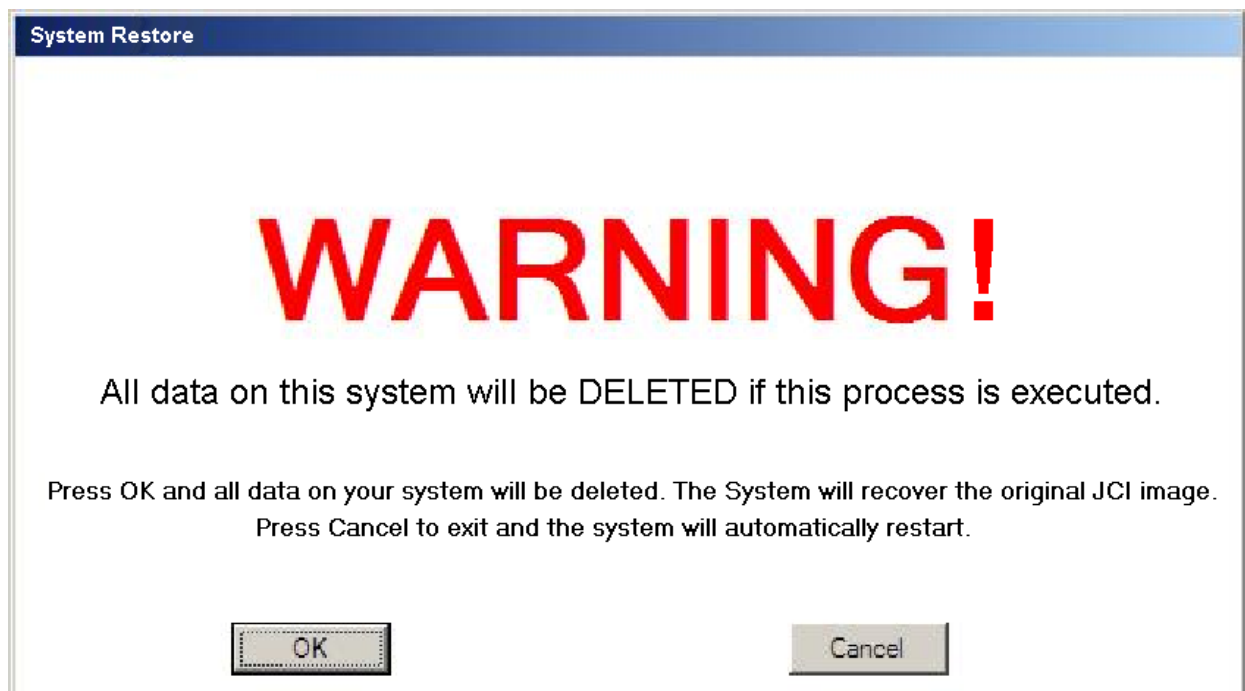
Restoring an NxE85 at Release 4.1.2.0900 or Later

1. Verify that your NxE85 is at Release 4.1.2.0900 or later.

Note: If your NxE85 is at a release prior to 4.1.2.0900, see [Restoring an NxE85 Prior to Release 4.1.2.0900](#).

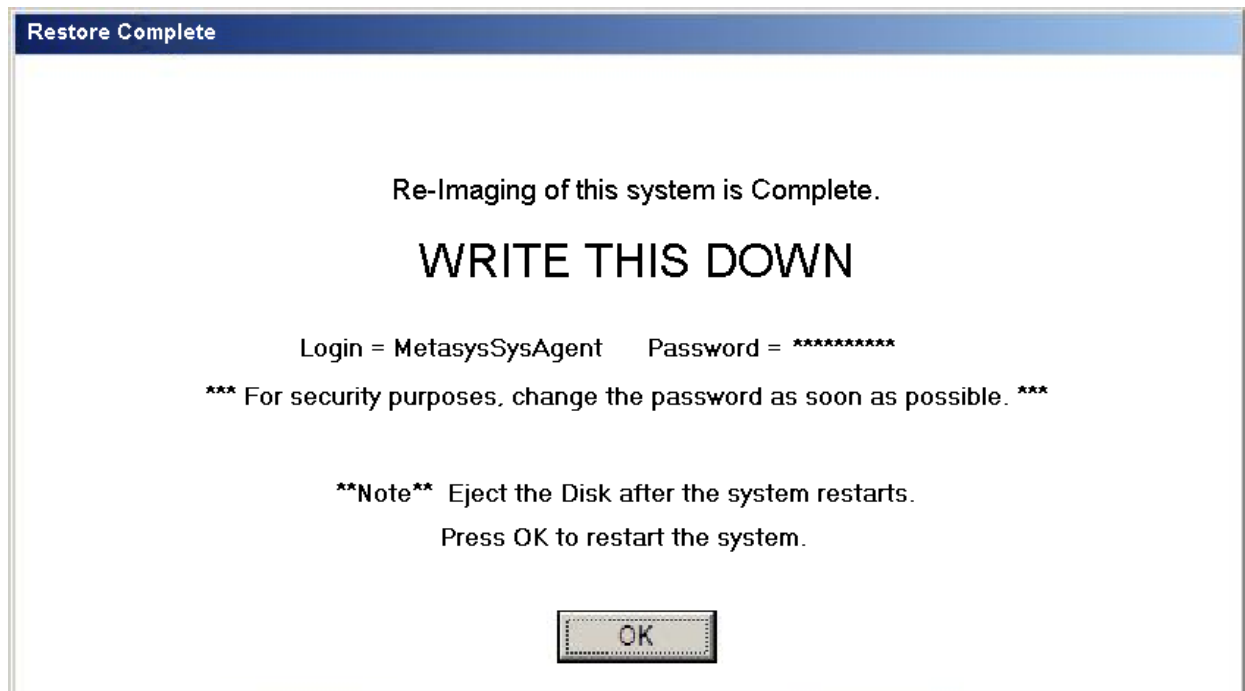
2. Obtain the 25-character Windows product key for the NxE85. (The product key is located on a label on top of the 1U rack-mount chassis.)
3. Connect the monitor, keyboard, and mouse to the NxE85, if not connected already.
4. Disconnect the network cable from the NxE85, if it is connected.
5. Place the recovery image DVD in the DVD drive.
6. Restart the NxE85 computer. As the computer restarts, the operating system detects the bootable disk in the drive and displays **Press any key to boot from CD or DVD**.
7. Press any key to begin the restoration process. If you did not press a key in time, restart the computer and try again.
8. After a few moments, a Progress window appears and indicates **Windows is loading files**.
9. After several minutes, a warning message appears ([Figure 3](#)).

Figure 3: Warning Message



10. Click OK to begin the recovery process. After the system is reloaded and all files are restored, a Restore Complete message appears and the NxE85 computer restarts ([Figure 4](#)).

Figure 4: Restore Message Complete



11. When the computer begins to restart, eject the disk from the drive. If the message **Press any key to boot from CD or DVD** appears again, you did not remove the disk in time. In this case, do not press any key while this message is displayed, or the restore process begins again. If the message appears, restart the computer again and repeat this step.
12. When the restart completes, the Nx85 is in original factory condition.
13. Defragment the Nx85 hard drive to maximize server performance and protect your data. On the Start menu, click All Programs > Accessories > System Tools > Disk Defragmenter. (If you are using Windows Server 2012 R2 or Windows Server 2012, type Defragment and Optimize Drives from the Start screen, then click Defragment and Optimize Drives in the Apps results.)
14. Connect Port 1 on the Nx85 to the BAS network with an Ethernet patch cable.

Important: Before attempting to access the Metasys UI for the first time, the Nx85 must be connected to an active network at Ethernet Port 1 and restarted. Failure to follow this sequence prevents the Nx85 object from appearing in the Metasys UI navigation panel.

15. Restart the computer.
16. Browse to and log in to the Nx85 Site Management Portal UI.

Note: All NAEs ship with the same initial login user name and password. The initial login user name is **MetasysSysAgent** and is not case sensitive. For the default MetasysSysAgent password, contact your local Johnson Controls representative.

You must change the login account password for your Nx85. In some network scenarios, we recommend creating a new Metasys user account for the Nx85.

17. Make sure the required **Computer Name** (host name) value appears on the **Network** tab. Set the **DHCP** value to **False** if DHCP is not required on the network. Refer to the *Establishing the NAE Network Parameters* section in the *NAE Commissioning Guide (LIT-1201519)* for detailed procedures.

Note: If you are using a static IP address, you must reinstall the Microsoft Corporation Update for Windows OS (KB973243) on your computer.

18. Configure the time zone, date, and time settings in the NxE85 Metasys UI. Refer to the *NxE85 Commissioning Guide (LIT-12011044)* for detailed procedures for setting the time zone, time, and date on an NxE85.

Note: **Time Zone**, **Date**, and **Time** must be set in the Metasys UI. Do not use the Windows time dialog box to set the time zone, date, or time on the NxE85.

19. Configure the Site Director and Object Name for the NxE85 on the Focus tab. Refer to the *Establishing Basic NAE Parameters in the Focus Screen* section of the *NAE Commissioning Guide (LIT-1201519)* for detailed procedures.
20. Access the SCT UI, and download the most recent archive database for the NxE85 from the SCT. Refer to the Metasys system *Help (LIT-1201793)* for detailed procedures.

Note: All data recorded on the NxE85 since the archive database was last backed up is lost.

The NxE85 is now restored and operational on the Metasys site.

Restoring an NxE85 Prior to Release 4.1.2.0900

1. Verify that your NxE85 is at a release prior to 4.1.2.0900 and does not have a date marked on it. [Figure 2](#) shows where the release and date appear if they are present.

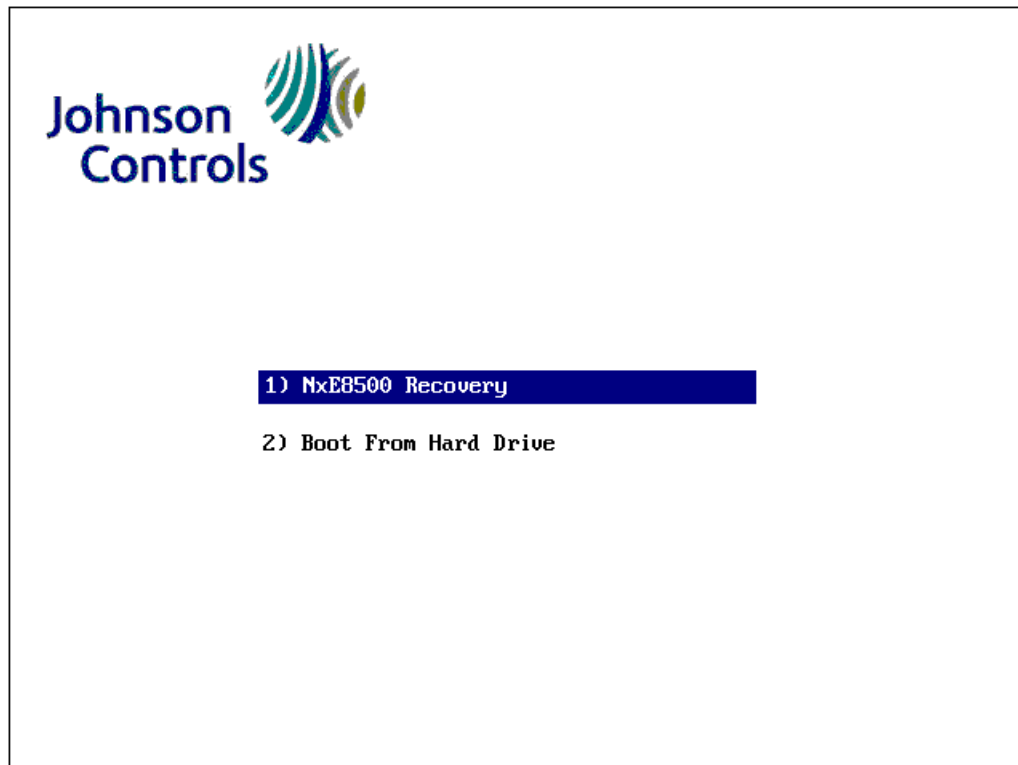
Note: If your NxE85 indicates Release 4.1.2.0900 and has a date of 6-09-2009 or later, see [Restoring an NxE85 at Release 4.1.2.0900 or Later](#).

2. Obtain the 25-character Windows product key for the NxE85.

The product key is located on a label on the top of the 1U rack-mount chassis under the DVD drive or a label on the top of the mid-tower chassis.

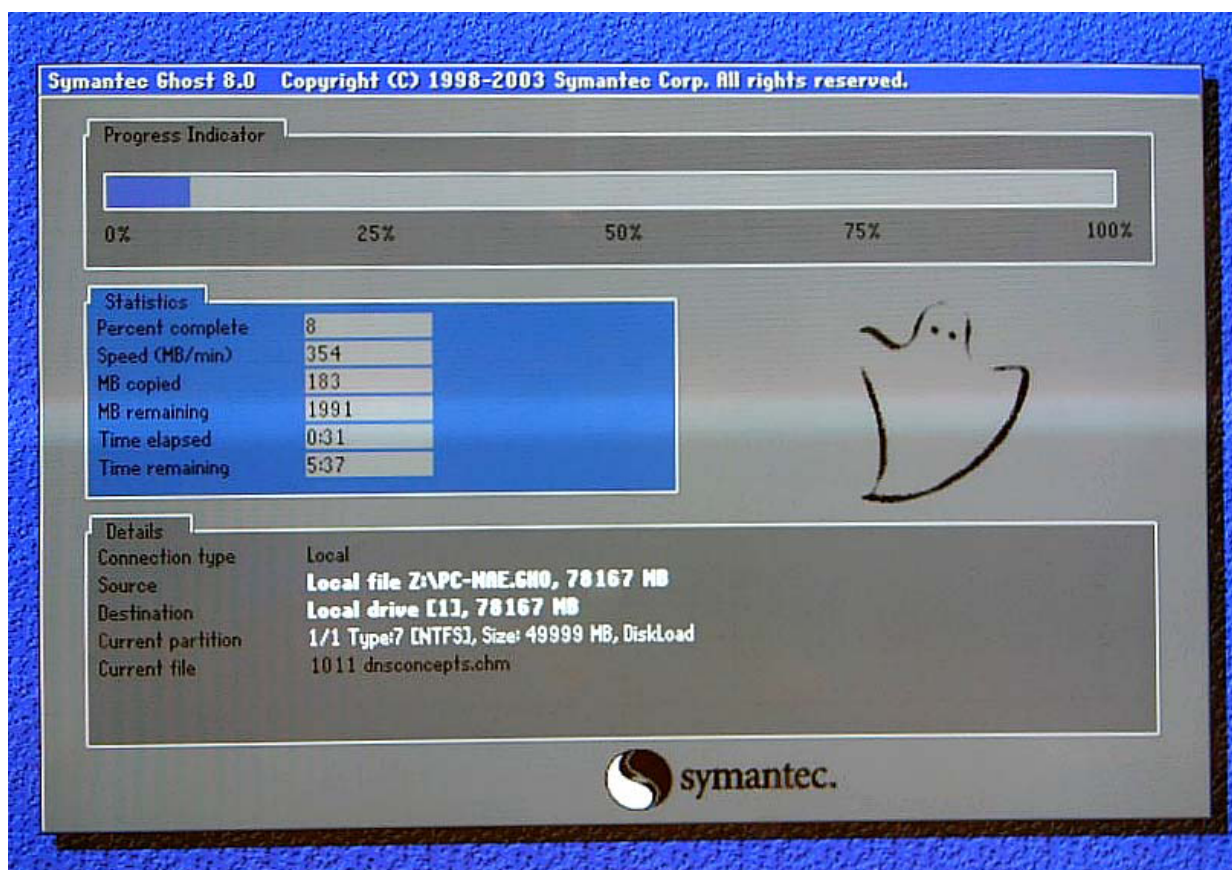
3. Connect the monitor, keyboard, and mouse to the NxE85, if they are not connected already.
4. Disconnect the network cable from the NxE85, if it is connected.
5. Place the recovery image DVD in the DVD drive.
6. Restart the NxE85 computer. A Metasys splash screen appears, followed by the Boot Option Menu ([Figure 5](#)) and two DOS windows.

Figure 5: Boot Option Menu



7. At the prompt in the second DOS window, press any key to continue. The recovery application starts, the Symantec Ghost window appears ([Figure 6](#)), and the NxE85 image load begins.

Figure 6: Symantec Ghost Window with Progress Bar



Note: A progress bar at the top of the Symantec Ghost window indicates the load progress. A complete load of the Nx85 image takes approximately 10 minutes.

8. A DOS screen appears stating the image load is complete. Press the reset button to restart the Nx85.
9. When the restart completes, the Nx85 is in factory-original condition.
10. Connect Port 1 on the Nx85 to the BAS network with an Ethernet patch cable.

Important: Before attempting to access the Site Management Portal UI for the first time, the Nx85 must be connected to an active network at Ethernet Port 1 and then restarted. Failure to follow this sequence prevents the Nx85 object from appearing in the Site Management Portal UI navigation panel.

11. Restart the computer.
12. Browse to and log in to the Nx85 Site Management Portal UI.

Note: All NAEs ship with the same initial login user name and password. For the default MetasysSysAgent password, contact your local Johnson Controls representative.

You must change the login account password for your Nx85. In some network scenarios, we recommend creating a new Metasys user account for the Nx85.

13. Make sure the required **Computer Name** (host name) value appears on the **Network** tab. Set the **DHCP** value to **False** if DHCP is not required on the network. Refer to the *Establishing the NAE Network Parameters* section in the *NAE Commissioning Guide (LIT-1201519)* for detailed procedures.
14. Configure the time zone, date, and time settings in the Nx85 Metasys UI. Refer to the *Nx85 Commissioning Guide (LIT-12011044)* for detailed procedures on setting time and date on an Nx85.

Note: **Time Zone**, **Date**, and **Time** must be set in the Metasys UI. Do not use the Windows OS time dialog box to set time zone, date, or time on the Nx85.

15. Configure the Site Director and Object Name for the NxE85 on the Focus tab. Refer to the *Establishing Basic NAE Parameters in the Focus Screen* section of the *NAE Commissioning Guide (LIT-1201519)* for detailed procedures.
16. Access the SCT UI and then download the most recent archive database for the NxE85 from the SCT. For information on downloading an archive database, refer to *Database Uploading, Downloading, and Synchronization* in the Metasys system *Help (LIT-1201793)*.

Note: All data recorded on the NxE85 since the archive database was last backed up is lost.

The NxE85 is now restored and operational on the Metasys site.



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