

HAWK 8000 Controller

Install and Start-Up Guide



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ABOUT THIS GUIDE

This topic contains important information about the purpose, content, context, and intended audience for this document.

Product Documentation

Released versions of NX software include a complete collection of technical information that is provided in both online help and PDF format. The information in this document is written primarily for Systems Integrators. In order to make the most of the information in this book, readers should have some training or previous experience with NX or NiagaraAX software.

Document Content

This document describes the initial NX software installation and configuration for a HAWK 8000, using COACH NX (versions NX 4.2 and later). The information in this document is intended for an engineer, technician, or service person who is performing control system installation. All information in this document is also available in the Centraline NX Help system. For physical mounting and wiring details for any HAWK controller, please refer to its specific hardware installation document. This document does not cover station configuration or NX components. For more information on these topics, please refer to online help and various other COACH NX software documents.

Related Technical Literature

Table 1. Related Technical Literature

Title	Product Literature no.
HAWK 8000 – Installation & Comm. Instructions	EN1Z-1016GE51
HAWK 8000 – Product Data	EN0Z-1016GE51
HAWK 8000 – Mounting Instructions	MU1Z-1016GE51
HAWK 8000 – Installation & Startup Guide	EN1Z-1027GE51
HAWK 8000 – Backup & Restore Guide	EN2Z-1027GE51
HAWK 8000 – PICS	EN0Z-1028GE51
HAWK 8000 – Wi-Fi Guide	EN2Z-1029GE51
HON-NXEM-xxx Expansion Modules – Mounting Instructions	MU1Z-1031GE51

OVERVIEW

Topics covered in this chapter

- ◆ Commissioning differences in NX
- ◆ SSL/TLS commissioning notes
- ◆ Limitations to NiagaraAX platform operations
- ◆ Factory-shipped state

HAWK 8000 controllers are shipped from the factory with a bare minimum of NX software to run a platform daemon, along with a Tridium certificate, but not all items needed to run any type of station. Using COACH NX, you can open a platform connection to the controller to begin the commissioning process.

NOTE: Starting in NX 4.2, licensing the HAWK 8000 for NiagaraAX enables the NX platform to run AX 3.8.111.6.5. For details, see section "Nx-to-AX conversion" on page 10. This is a powerful solution for customers with existing AX systems who want to replace older controllers with the HAWK 8000 controller running AX and plan for a later upgrade to NX. However, note that the following features are not supported when running AX: IEEE 802.1X wired authentication, USB backup/restore, and WiFi (access point/client) functionality.

After booting the new controller, establish a platform connection to it and commission it to install the necessary NX core software (or AX 3.8.111.6.5 software if converting to AX), selected modules, licenses, and to perform other platform configuration. Some important related tasks include setting the controller's:

- IP network address, and related IP networking parameters
- Platform daemon user(s), for platform login
- Time and date (or simply sync with your PC's time)

To do this you use the platform Commissioning Wizard.

NOTE: The Commissioning Wizard is the only way to install the needed core software in the HAWK controller. Most steps in the Commissioning Wizard are also available as separate platform views. For example, there is a Software Manager, License Manager, and many others. Using these views individually may be useful after commissioning the HAWK. For more details see the Niagara 4 Platform Guide.

However, always use the Commissioning Wizard to commission a new HAWK for Niagara, as well as to upgrade any HAWK from one Niagara point release to another – and make sure a license file is available!

Commissioning Differences in Niagara NX

The following items have been added to the Commissioning Wizard process in NX:

- The "Configure Runtime Profiles" step reflects the differences in software modules, as refactored for Niagara NX. However, the basic premise for installing only the types of modules needed for the intended application (preserving storage space on the controller) remains the same.
- The wizard will not let you commission and install a unit with the factory-default platform user credentials. Instead, a step requires you to replace this default platform admin user with a different user name, and specify a "strong" password for this admin account. Optionally, you can create additional platform admin accounts in the controller (up to 20). Each platform admin account must have a unique user name, and also use a strong password. Note each account has the same (full) platform admin access – users can change their password, even create additional platform admin accounts.
- The **Platform Administration** view includes an "SFTP/SSH" option, specifying a common port (22 by default, disabled). Although the SFTP and SSH protocols are more secure than FTP and Telnet, disabling is still recommended, except for troubleshooting or upon request by technical support.
- If converting the HAWK 8000 to run AX, first running the NX-to-AX conversion distribution file in COACH NX (which converts the controller to the AX 'clean' state), then switch to COACH AX 3.8.111.6.5 to run the Commissioning Wizard. For more details see "Converting the Controller to AX" on page 10.
- NX cannot successfully configure the system passphrase on the HAWK 8000 when it is running the AX daemon. You must instead use AX 3.8.111.6.5 or later. Also, in the NX Platform Administration view, the Update Authentication and System Passphrase buttons are disabled when the remote platform is the AX 3.8.111.6.5 or later daemon. NOTE that in release NX 4.2.36.34.2.14, the buttons do not appear disabled – however, setting the system passphrase fails when you attempt to configure it.

SSL/TLS Commissioning Notes

In NX, "SSL" is always implemented using the TLS (Transport Layer Security) protocol, supporting TLS versions 1.0, 1.1., and 1.2. See the Station Security Guide for complete details.

Also, when using COACH NX, the default "Open Platform" and "Open Station" operations initially assume Platform TLS Connection types and Fox TLS Connection types, respectively. This is intended to encourage this TLS usage for all NX platforms and stations. If necessary, you can change either connection type; COACH NX will then "remember" to use this type on your next connection. As needed, you can change back again.

Limitations to NiagaraAX Platform Operations

COACH NX does not support NiagaraAX commissioning of HAWK controllers, i.e. you cannot use the NX Commissioning Wizard to configure AX HAWK platforms. Instead, you must use COACH AX 3.8.111.6.5, and run the Commissioning Wizard on such platforms.

NOTE: This is true for the HAWK 8000 that you have downgraded to run AX 3.8.111.6.5. You must then use COACH AX 3.8.111.6.5 and configure the platform with the Commissioning Wizard.

COACH NX is generally recommended for all platform operations with AX 3.8.111.6.5 HAWK controllers. If needed, however, you can use COACH NX to perform some platform operations on AX HAWK controllers. Examples include modifying TCP/IP configuration, or installing AX software modules.

NOTE: The latter requires you to import the "software database" of a recent (AX 3.8) Supervisor or engineering workstation into your NX software database.

Other platform views/operations that are unavailable using COACH NX for a platform connection to the AX 3.8.111.6.5 HAWK controllers are:

- DDNS Configuration
- GPRS Modem Configuration
- Also unavailable are following operations from the **Platform Administration** view:
 - Update Authentication
 - FTP/Telnet
 - Set Module Filter

Use the appropriate COACH NX to perform such NiagaraAX platform configuration.

Factory-Shipped State

The factory-shipped state of a controller has the following default settings for IP address, HTTP port, and Platform credentials.

IP Address

When shipped, a new HAWK 8000 controller is pre-configured with an IPv4 address in the range: 192.168.1.140 (primary "LAN1" port; the "LAN2" port is disabled).

The default subnet mask is: 255.255.255.0

You change these IPv4 network settings during your startup commissioning of the HAWK.

HTTP Port for Platform Access

When shipped, the HAWK's platform daemon is configured to listen on HTTPS port 5011. Often, this is left at default. However, if a different port is needed for a platform connection (perhaps for firewall reasons), you can change this while commissioning the HAWK.

Platform Daemon Credentials

Any HAWK controller is shipped with default platform daemon (administrator) credentials:

Username: tridium

Password: niagara

Passphrase: niagara

NOTE: The username, password, and passphrase are all case-sensitive.

Initially, you use these default credentials to open (login) a platform connection to the HAWK. Like the factory-assigned IP address, default credentials are temporary. During your start-up commissioning, you must replace this platform admin account with at least one different platform admin user. Be sure to guard the credentials for such platform users closely.

NOTE: The NX Commissioning Wizard does not allow you to commission and startup a controller while retaining the factory platform user.

Secure Storage and the SD Card

On the HAWK 8000, the microSD flash memory card is the primary storage media for all data and configuration related to the software installation. Since the microSD flash memory card can be easily removed and the data duplicated, the sensitive data is encrypted when stored on the card. Files are stored in encrypted format, but decoded on the fly as they are accessed.

Sensitive data includes the following:

- Credentials for accessing a WiFi network
- Niagara key material
- Private key files
- OS account credentials

The system is designed in a way that protects this data, while at the same time allowing you to move a microSD flash memory card from a unit that has suffered a hardware failure to a new controller with minimal effort.

In this scenario, the microSD flash memory card inserted into the replacement unit contains the system passphrase for the original unit, which does not match the one in the replacement unit. This results in the boot sequence failing due to the passphrase mismatch (indicated by Stat LED flashing with a 50% duty cycle with a 1 second period).

You are then prompted to enter the system passphrase (for the original unit which is stored on the microSD flash memory card) via serial connection. Before you can update the system password, you must first authenticate with platform credentials.

NOTE: Pre-configuring (via serial connection) the replacement HAWK 8000 controller with a system passphrase matching the one stored on the microSD flash memory card (swapped out of the other unit) facilitates commissioning the replacement unit. In this situation, the commissioning process does not prompt for a passphrase since it detects a passphrase match.

Inserting or Removing a microSD Flash Memory Card

Typically, the microSD flash memory card delivered with a new controller is inserted in the unit prior to the mounting process. However, it is possible to move a microSD flash memory card from one controller to another. For example, you might want to remove the microSD flash memory card from a controller that suffered a hardware failure and use it in a replacement controller.

Prerequisites:

- All power to the controller must be removed before inserting/removing the microSD flash memory card, otherwise equipment damage may occur.
- The controller is unmounted from any DIN rail or screw tab mounting, as accessing the card uses space behind the mounting base.
- Discharge any static electricity that you may have accumulated by touching a known, securely grounded object.

NOTE: Data on the microSD flash memory card is encrypted by a "system passphrase" stored in the controller base. The passphrase on the card must match the passphrase stored in the controller. If swapping in a card from a previously configured unit, you must provide the passphrase (of the previously configured unit which is stored on this microSD flash memory card) using a serial connection to the controller's Debug port.

Step 1: Carefully slide the plastic microSD flash memory card shutter open.

The shutter should remain captive in the base, revealing the microSD flash memory card socket.

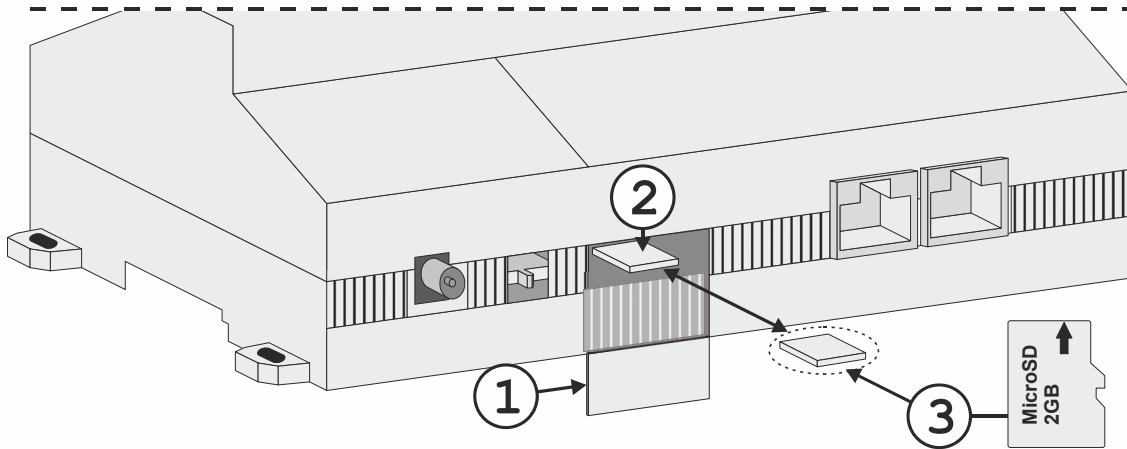


Fig. 1. Inserting / removing the microSD flash memory card

LEGEND:

- 1 Shutter access to microSD flash memory card
- 2 Card socket
- 3 microSD flash memory card

Step 2: Make either of the following changes, as needed:

- Insert the microSD flash memory card by sliding the card into the card socket, label side up, until the spring catch engages. If properly inserted, the card is behind the shutter track.
- Remove the microSD flash memory card by pushing the card in, until the spring release pushes the card partially out of the card socket. Grasp the card and pull it completely out of the unit. Store the microSD flash memory card in a static free protective case.

Step 3: Carefully slide the card shutter back over the card socket opening, until it clicks into place.

When properly closed, the shutter should not protrude behind the mounting base.

PREPARATION

Topics covered in this chapter

- ◆ Provide power and connectivity
- ◆ Software version and Host Platform requirements
- ◆ Connect to the HAWK

Consider the following areas to prepare before proceeding with commissioning: Power, connectivity, software and PC requirements.

Provide Power and Connectivity

In most cases, you perform the initial NX software installation and startup of the HAWK (as described in this document) in your office, before physically mounting it in place at a job site. Please refer to the HAWK 8000 – Installation and Commissioning Instructions (EN1Z-1016GE51) for details on making (temporary) power wiring and Ethernet wiring connections.

CAUTION

Risk of equipment damage!

- ▶ The HAWK 8000 is not compatible with a Power-Over-Ethernet (POE) network. Connecting the HAWK on a network segment which carries power causes the unit to fail (lockup). In that event, you must disconnect it from the POE network segment and cycle power to the unit.

The remainder of this document assumes that you have the HAWK nearby, and are able to power it ON/OFF as needed. After you complete the commissioning process described in this document, you can mount and wire the HAWK controller at the job site, making permanent mounting and wiring connections.

Software Version and Host Platform Requirements

These instructions assume that you have a PC running a licensed copy of COACH NX 4.2 or later, installed with the "installation tool" option. That option copies distribution files needed for commissioning various models of the HAWK controller. This PC is referred to as "your PC."

NOTE: Your PC must meet minimum hardware/operating system requirements for the COACH NX workstation. This includes a working Ethernet adapter with TCP/IP support (browser capable). An Ethernet TCP/IP connection to the HAWK is required to install Niagara software and establish other parameters.

For this initial Ethernet connection, you can use either:

- An Ethernet patch cable connected directly between your PC and the HAWK (if your PC Ethernet port is not "auto-sensing", you will need an Ethernet crossover cable), or
- A normal LAN connection, meaning that both your PC and the HAWK are physically connected to the same Ethernet hub or switch.

Preparing for New HAWK Commissioning

To prepare for a new HAWK commissioning, do the following steps:

- Step 1:** If not already installed, install the NX 4.2 or later software on your PC, including its permanent license.
- Step 2:** Typically, the license file for the HAWK already resides on the licensing server, where (if you have Internet connectivity) it is automatically retrieved during the licensing step of the Commissioning Wizard.

NOTE: If you were e-mailed a license archive (.lar file) or .license file for the HAWK, and you wish to use it instead of the online license server (for some reason, for example your COACH NX PC will not have Internet connectivity when you are commissioning the HAWK), make the file available to COACH NX first, as follows:

- Copy the file to your security/licenses/inbox folder, then restart COACH NX. For more details, refer to the section "Local license inbox" in the Platform Guide.

- Step 3:** Attach one end of a standard category-5 Ethernet unshielded twisted pair (UTP) patch cable to the RJ-45 Ethernet connector for LAN1 (labeled PRI) on the HAWK.

Step 4: Attach the other end of the patch cable to a network port or directly to an Ethernet hub.

Step 5: Power up the HAWK.

- Step 6:** Record your PC's current IP settings, then re-assign your PC's IP address for its Ethernet NIC (network interface card). If necessary, refer to Windows online Help for details on configuring TCP/IP settings.

NOTE: As an alternative to re-assigning your PC's IP address, you can do one of the following:

- Obtain a USB-to-Ethernet network adapter (second network interface card, or NIC), and use it with an Ethernet crossover cable to commission HAWK controllers. In this case, configure this second NIC to use the settings in the remainder of this step.
- Use a serial shell mode connection to the HAWK to re-assign its factory IP address settings. After making this change and rebooting the HAWK, you can continue commissioning using COACH NX. This requires a USB-to-Micro USB adapter cable, VCP driver, and a special power-up mode for the HAWK. VCP (Virtual COM Port) drivers cause a USB device to appear as an additional COM port available to the PC. Using terminal emulation software, such as PuTTY or ClearTerminal, the PC can access the USB device in the same way as it would access a standard COM port. VCP driver downloads are available at www.ftdichip.com and other sites.

For this initial connection to a factory-shipped HAWK, configure your PC's NIC to use an IP address in the same subnet as the HAWK, as well as a matching subnet mask.

Set the IP address in the range: 192.168.1.1 to 192.168.1.254 with a subnet mask of: 255.255.255.0

NOTE: Do not assign your PC the identical IP address as the HAWK's factory-assigned IP address.

- Step 7:** From your PC, start COACH NX. The Nav tree should be visible in the side bar area (left pane).

If not, from the menu bar, select **Window** → **Side Bars** → **Nav**.

Connect to the HAWK

Once the HAWK has powered up, connect to it with COACH NX using "Open Platform." A platform connection to any HAWK is required for most host-level operations. This includes installing NX 4.2 core software and modules and performing various other platform tasks.

After you open a platform connection, you can run the Commissioning Wizard.

Opening a Platform Connection to the HAWK

Step 1: From the menu bar, select **File**→**Open**→**Open Platform**.

The Open Platform dialog box appears.

Step 2: Complete the fields in the Open Platform dialog box as follows:

- Type: Select **Platform Connection**, if not already selected.

NOTE: By default, COACH NX prompts for a **Platform TLS Connection**.

- Host: Leave at default IP, and type in the IP address of the new HAWK.
- Port: Leave at default 5011.
- Credentials:
 - Username: Type in default username: tridium
 - Password: Type in default password: niagara
 - Passphrase: Type in default passphrase: niagara

Step 3: Click the **OK** button to accept all settings.

The Platform opens in the tree, and its Nav Container View displays in the view pane.

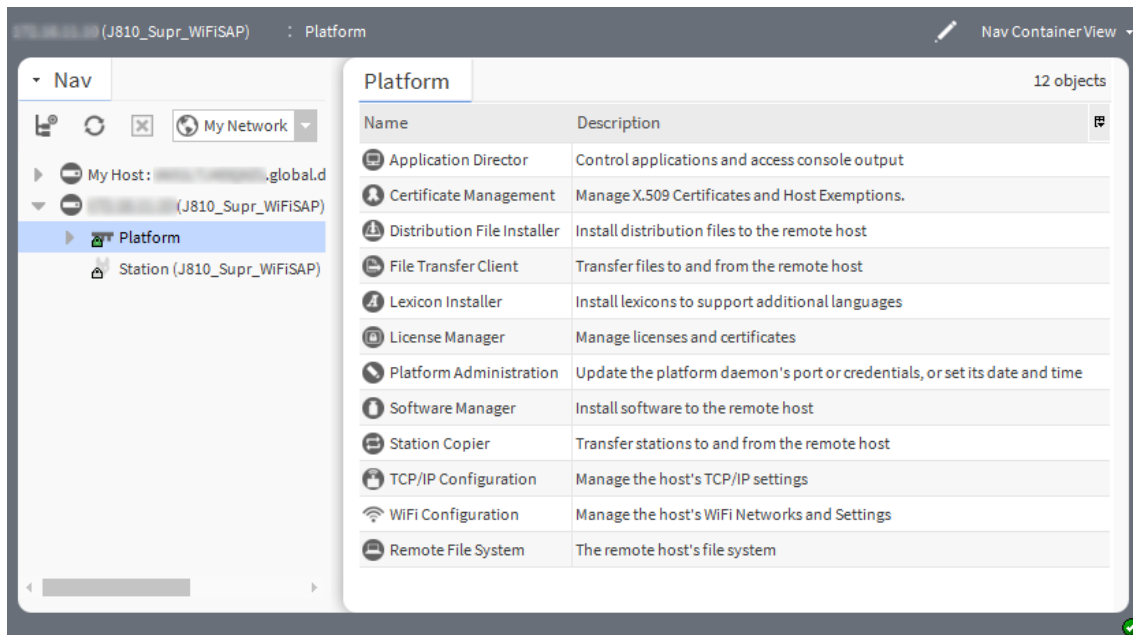


Fig. 2. Connected HAWK platform

NX-TO-AX CONVERSION

Topics covered in this chapter

- ◆ Converting the controller to AX

Starting in NX 4.2, licensing the HAWK 8000 controller for NiagaraAX enables the NX platform to run AX 3.8.111.6.5. This allows you to upgrade an existing AX system with the latest model controller and have the capability to upgrade to NX or later.

Use Case Scenarios

The following are some typical use cases for running AX on the HAWK 8000:

- Customers with an existing AX system and a planned system extension (a new controller required for a new floor or building addition) who want to upgrade to NX at a later time. These customers can add to their existing system with the HAWK 8000 running AX. At a future date, the controller can be upgraded to NX, once the supervisor is upgraded.
- Customers with an existing AX system and a planned system extension (desire new functionality but the current controller is out of resources). In this case, customers can replace the existing controller with the HAWK 8000 running AX and use new features.
- Customers with an existing AX system and an older model controller (now obsolete) that needs to be replaced. In this case, customers can use the HAWK 8000 running AX and plan for a later upgrade to NX.

CAUTION

Risk of equipment damage!

- ▶ For any AX 3.6.406 station with CryptoService that you attempt to upgrade to AX 3.8.111, once you commission the controller, the station will fail to start after the "successful" upgrade. The same is true if you attempt to move an AX 3.6.406 supervisor to an AX 3.8.111 station and start it. As a preparatory step, manually remove CryptoService from the station's Services directory before attempting to commission it.

Prerequisites

The following software is required for the NX-to-AX conversion:

- COACH NX 4.2 licensed and installed on your PC
- AX 3.8.111.6.5 licensed and installed on your PC
- AX 3.8.111.6.5 license for the controller
- AX 3.8.111.6.5-to-AX conversion distribution file (N4toAX-qnx-jace-titan-am335x-clean.dist). Located in the conversion directory in the COACH NX 4.2 installation.

Converting the Controller to AX

In order to convert the NX controller to AX, you must run a conversion distribution file that leaves the controller in the AX 'clean' state. At that point, you commission the controller via COACH AX. This procedure describes the steps to convert the controller.

Prerequisites:

- NiagaraAX license for the HAWK 8000 (in order to commission after the conversion)
- NX 4.2 and AX 3.8.111.6.5 releases licensed and installed on your PC

Step 1: In the COACH NX, open a platform connection to the controller and click **Distribution file Installer**.

Step 2: In the **Distribution File Installer** view, click **Conversion**.

A table displays a list of .dist files located in the conversion directory.

Step 3: Select the file: **N4toAx-qnx-jace-titan-am335x-clean.dist**, (as shown) and click **Install**:

CAUTION

Risk of equipment damage!

- ▶ If converting the HAWK 8000 that has an existing NX configuration, this data will be lost. This includes configuration, alarm and history information, server certificates, licenses, and files.

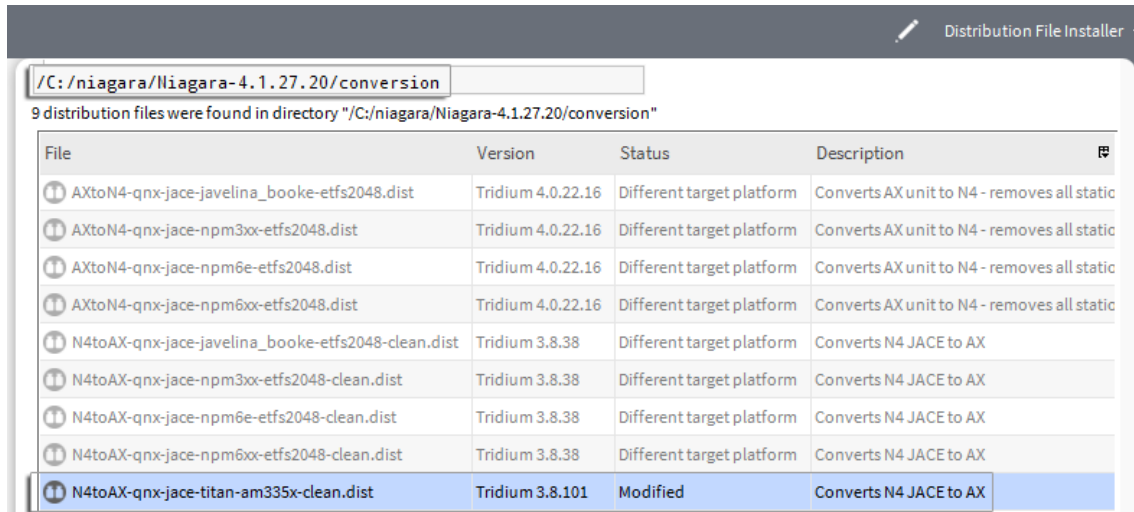


Fig. 3. Conversion

On successful completion of the conversion, the controller is returned to the AX 'clean' state.

Step 4: In AX 3.8.111.6.5, open a platform connection to the controller and click Platform Administration.

Step 5: In the Platform Administration view, click Commissioning.

NOTE: For more information refer to the "Run the Commissioning Wizard" procedure in either this Install & Start-Up Guide or the NiagaraAX Platform Guide.

On commissioning completion, the controller reboots. At this point, you can reconnect to the platform using AX 3.8.111.6.5 and in the Platform Administration view confirm that the Baja Version is 3.8.xxx, as shown here.

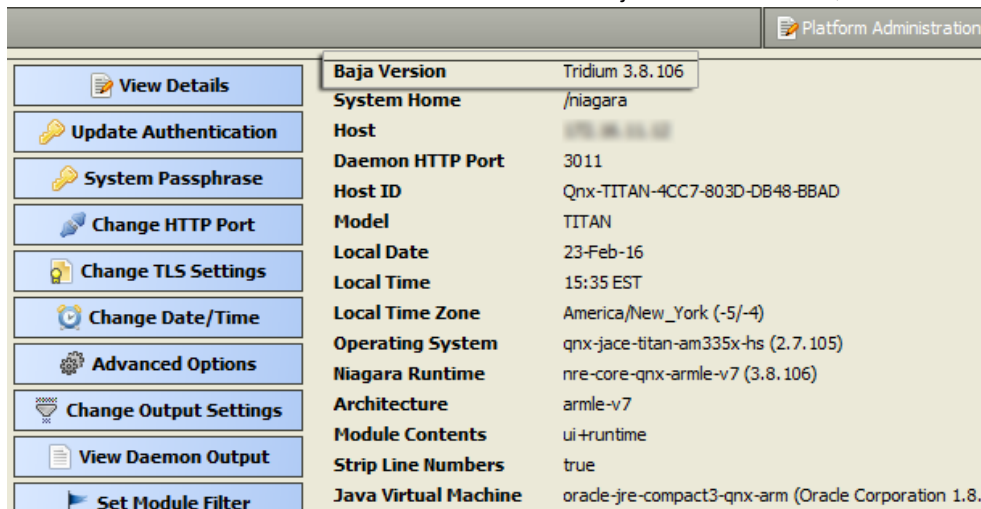


Fig. 4. Baja version

RUN THE COMMISSIONING WIZARD

Topics covered in this chapter

- ◆ Starting the Commissioning Wizard
- ◆ Installing or updating licenses
- ◆ Installing or updating licenses from files
- ◆ Setting the enabled runtime profiles
- ◆ Specifying a station database to install
- ◆ Install lexicons
- ◆ Select modules
- ◆ Install/upgrade core software
- ◆ TCP/IP configuration
- ◆ Configuring system passphrase
- ◆ Remove platform default user account
- ◆ Configure additional platform daemon users
- ◆ Review and finish wizard

As shown below, the Commissioning Wizard is a right-click option on any connected HAWK platform in the Nav tree. You can also launch the wizard from the Platform Administration view.

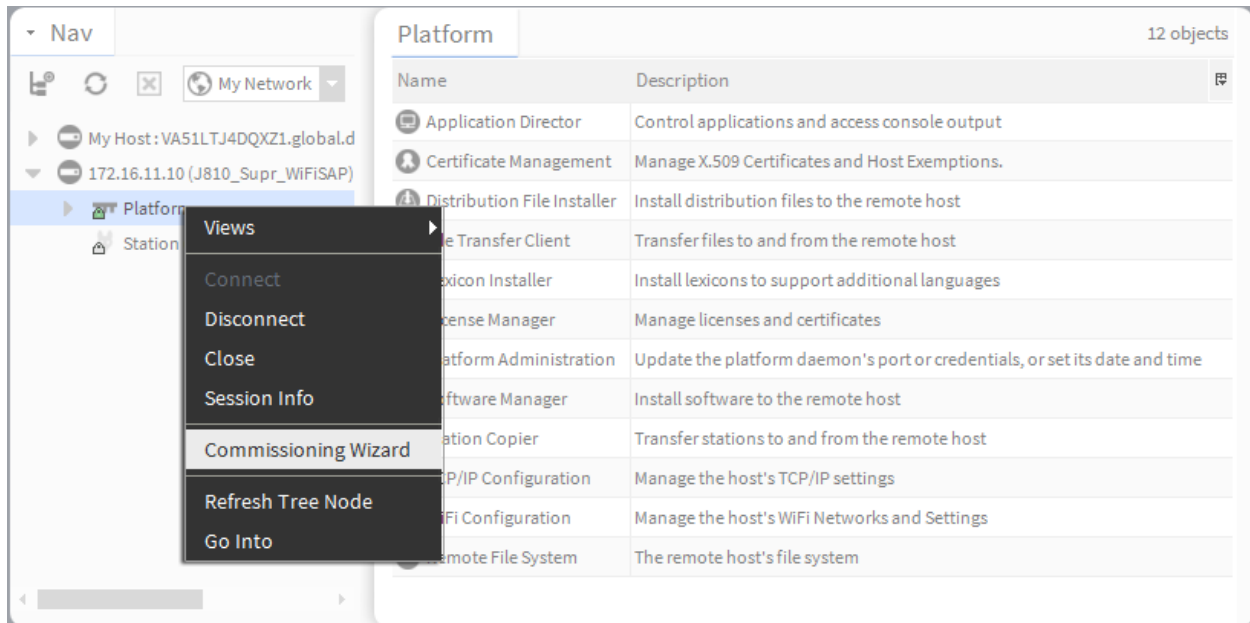


Fig. 5. Commissioning Wizard as right-click platform option

Use this wizard when installing a new HAWK, as it provides a "checklist" method to perform essential (and often "one time") platform tasks. Also use this wizard whenever you upgrade the core NX software in the HAWK, at some future time. See the Platform Guide for more details.

NOTE: If performing the NX-to-AX conversion, use the Commissioning Wizard in AX 3.8.111.6.5.

Before starting the commissioning process, note the following points:

- Throughout the wizard's dialogs, use the buttons **Back** and **Next**, as needed, to retrace (or skip) steps. Also, the Cancel button exits the wizard after your confirmation – no operations are performed as a result.
- Before committing to the final sequence of steps, the wizard provides a summary for you to review.

Starting the Commissioning Wizard

Prerequisites:

Using COACH NX, open a platform connection to the HAWK 8000 controller.

Step 1: In the Nav tree, right-click on Platform and select Commissioning Wizard.

The dialog box Commissioning for "<IP address>" displays (shown here with default selections for a new HAWK).

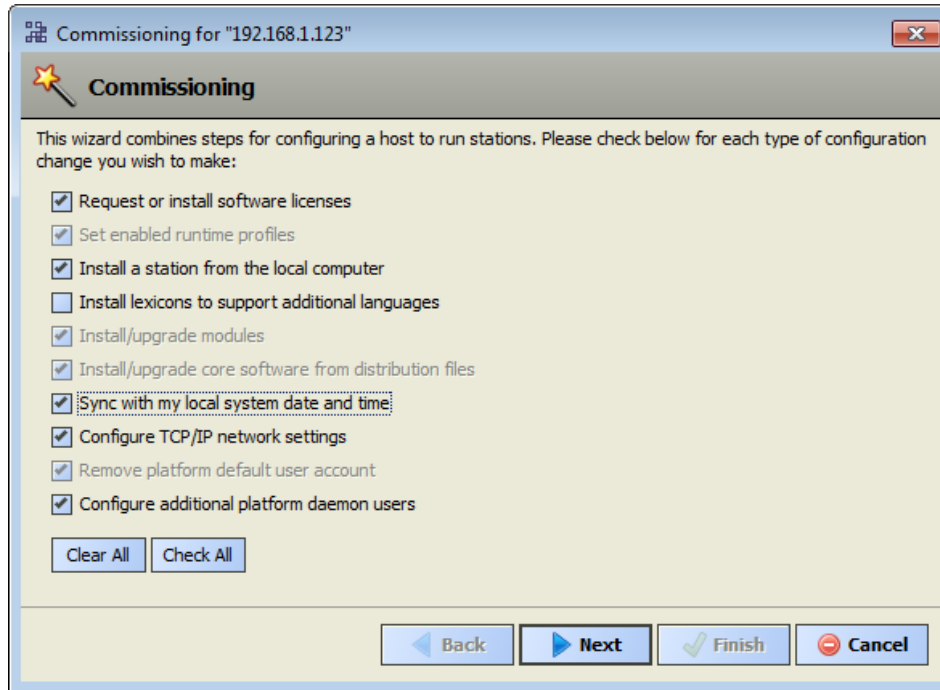


Fig. 6. Dialog box Commissioning for "<IP address>"

By default, all steps are preselected except lexicon installation. Steps are executed in the order listed in the wizard.

Step 2: As needed, click to include or omit steps. For a new HAWK, you typically accept all default selections.

Commissioning steps include:

- Request or install software licenses: Preselected for any new HAWK controller.
- Set enabled runtime profiles: Preselected and read-only for any new unit.
- Install a station from the local computer: Recommended. Optionally, you can station(s) at a later time.
- Install lexicons to support additional languages: Option to install file-based lexicon sets (alternative to lexicon modules). Typically you leave this cleared – lexicon modules are required in NX.
- Install/upgrade modules: (always preselected, whenever wizard is run). To select the software modules, and optionally any lexicon modules.
- Install/upgrade core software from distribution files: Preselected and read-only for any new unit.
- Sync with my local system date and time: Preselected in most cases (new HAWK for example, where controller time may greatly differ from actual time).
- Configure TCP/IP network settings: Recommended.
- Remove platform default user account: Preselected and read-only for a new unit. You cannot commission a unit with the factory default platform user.
- Configure additional platform daemon users: Recommended option if you require additional platform admin user accounts, with unique user names and passwords (all have full equal privileges).

Step 3: Click the Next button to continue.

Installing or Updating Licenses

At the License step, you install one or more license files in a new HAWK controller. You typically select the option to get and install licenses from the licensing server.

Prerequisites:

- A minimum of one license file is always needed. Typically, other license files are not needed unless you are using third-party module(s). In this case, you can also install those license files during this same commissioning step, either automatically, or by selecting to install from files.

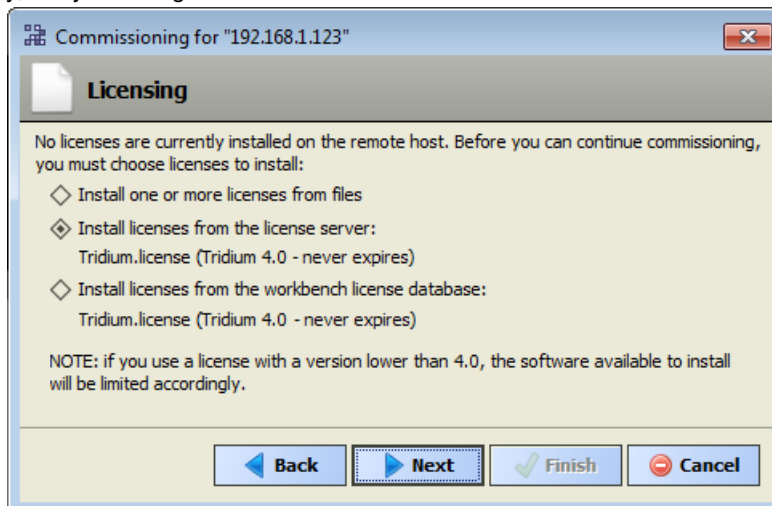


Fig. 7. Licensing

At least one license file specific to any HAWK is stored on the licensing server. Providing you have Internet connectivity, this is the recommended method to install or update a license.

For license files validated against the Tridium certificate, installation can be automated from COACH NX. All such purchased licenses (including HAWK, Supervisor, or Workstation-only) are stored and available to COACH NX through the licensing server.

If your PC currently has Internet connectivity while running a platform connection to any Niagara host, COACH NX provides an install option to get and install the licenses for the host from the license server. When selected, COACH NX silently searches the license server for a license with a matching Host ID of the target platform. When found, it selects the license(s) and advances to the next wizard step. For more details, refer to the section "About the licensing server" in the Platform Guide.

Step 1: Select "Install licenses from the license server."

Step 2: COACH NX silently searches the licensing server, locates the license(s), and the wizard advances to the next step.

NOTE: If the "license server" option shown above does not appear, COACH NX has not detected Internet connectivity, and so cannot contact the licensing server. In this case, you can either:

- If you already have a license for this HAWK in your "local license database," select the last option shown to install from your "COACH NX license database." (This option will be missing if your local license database does not include a license for this HAWK.) COACH NX locates the license, and the wizard advances to the next step.
- If you have the HAWK license file(s), use the procedure, "Installing or updating licenses from files". If necessary, you can install license(s) later, either from your local license database or from license files.

Installing or Updating Licenses from Files

During the license install step, the wizard checks to see if a Tridium certificate is installed. This certificate is required by any Niagara host, to verify the license file. If other licenses are installed, additional certificates may also be required.

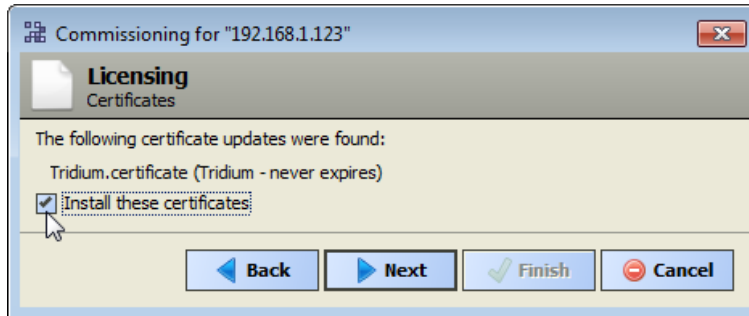


Fig. 8. Licensing certificates

- Step 1:** Select **Install these certificates** and click **Next** to advance to the next step.
- Step 2:** At the **License** step, select **"Install one or more licenses from files"**.
- Step 3:** Click the **Next** button.

The "Choose license files to install" step appears:

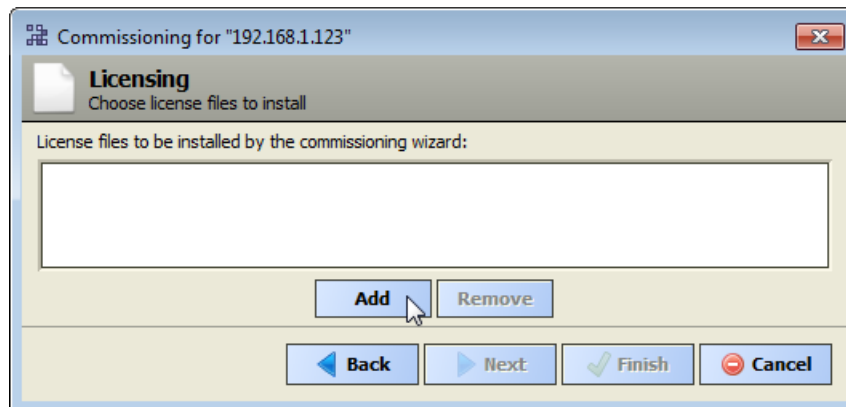


Fig. 9. Choose license files to install

Step 4: Click the Add button.

A "Select File" dialog appears. By default, the contents of your licenses subfolder is listed (showing your COACH NX license). If you previously pointed COACH NX to another location, license files in that location are listed instead.

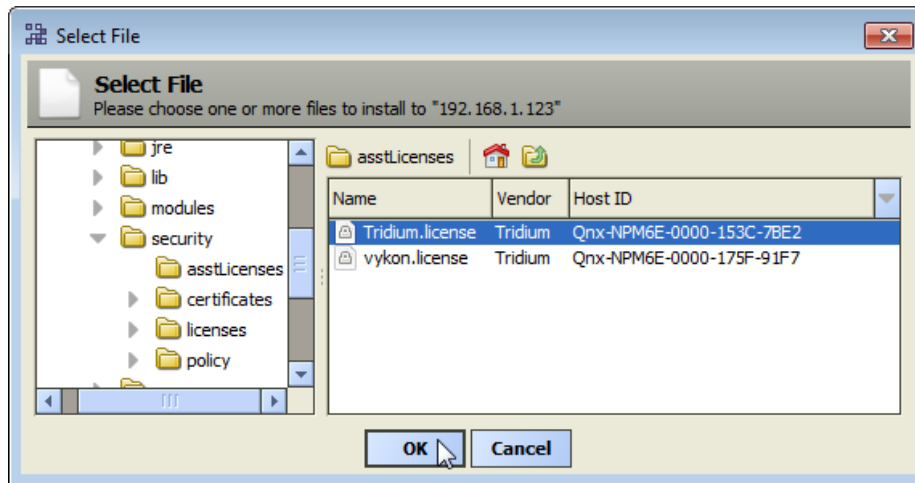


Fig. 10. "Select File" dialog

- If you see the license you need, click it to select it. If other licenses are also needed, you can select multiples by holding down the Ctrl key while you click.
- If a license is not listed, navigate to its location using the left-pane folder tree controls, and click the license to select it.

NOTE: The licensing tool prevents selection of a wrong license (different hostid) to install in the HAWK.

Step 5: Click the OK button.

Step 6: If necessary, click the Add button again to add additional license files.

Step 7: When all needed licenses are listed in the "Choose license files" dialog, click the Next button to go to continue.

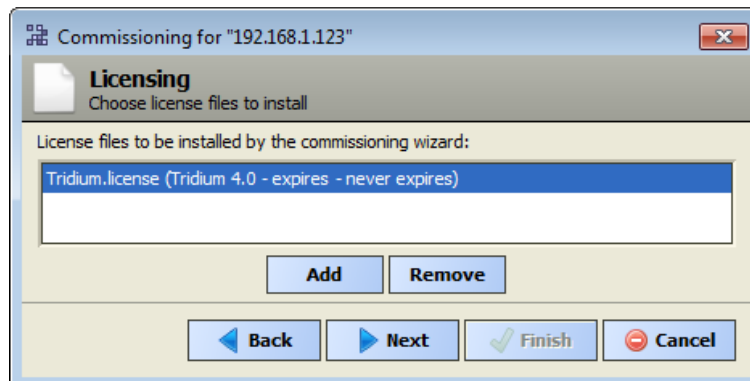


Fig. 11. Continue

Setting the Enabled Runtime Profiles

Enabled runtime profiles specify what types of NX software module JAR are to be installed, as shown in the following image. This affects the total file space consumed by the installed module JAR files.

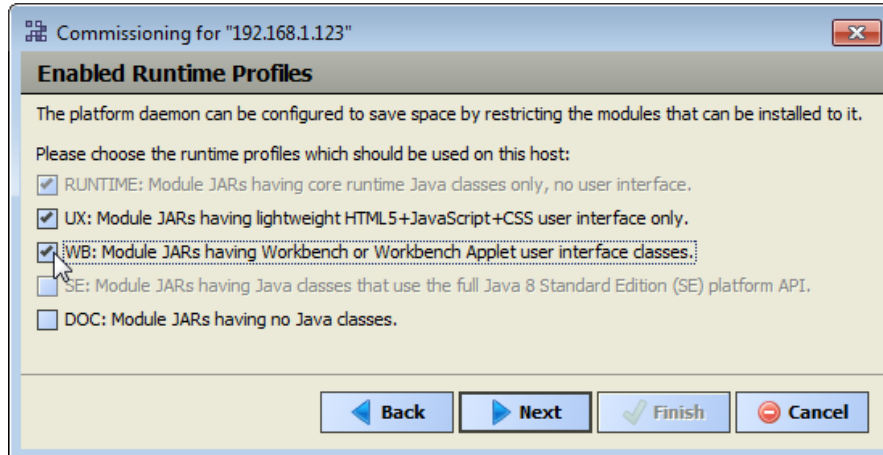


Fig. 12. Types of NX software module JAR to be installed

All NX platforms require the base "RUNTIME" (-rt) module JARs, so it is pre-selected/read-only.

For HAWK platforms (which run the "Java 8 compact 3" VM), you can also select "UX" (-ux) and "WB" (-wb) module JARs, but not "SE" (-se) module JARs.

NOTE: Following commissioning, you can also change the enabled runtime profiles, working from the Platform Administration view. For details, see the Niagara 4 Platform Guide.

At the **Enabled Runtime Profiles** step:

Step 1: Click all module profile types to be installed in this HAWK controller, which include one or more of these:

- RUNTIME: Always selected. Note that if UX (or UX and WB) are not selected, the HAWK will not support client Web browser access from its WebService – only client access from COACH NX via Fox.
- UX: Select to support Web client browser access, using HTML5, Javascript, and CSS technologies only (client does not need to run Java and download WbApplet from HAWK).
- WB: Select (in addition to UX) if the HAWK must also support browser "Web COACH NX " access from Java-enabled clients, using the WbApplet.
- SE: Not available for HAWK controllers.
- DOC: Selectable, but not recommended for file space reasons on the HAWK controller.

Step 2: Click the Next button for the next step.

Specifying a Station Database to Install

If you have a specific station database ready to install in the HAWK, you can specify it at this step in the wizard. Or, simply accept the default "(Don't transfer a station)" and click **Next**. (You can create a station later using the New Station Wizard, and install it using the platform's Station Copier. Or you can simply select an existing station to install using the Station Copier.)

At the Station Installation step, do the following:

Step 1: Click the Station drop-down control and click the name of a station database on your PC.

Listed are station subfolders under in your COACH NX User Home.

Step 2: If you select a station, the following additional options are available, as shown:

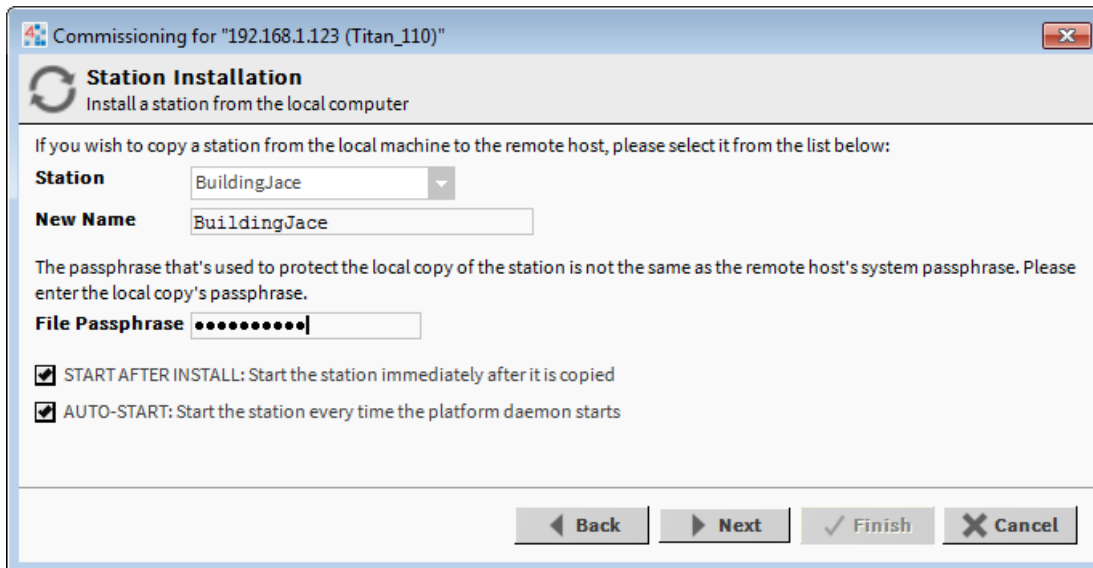


Fig. 13. Station installation

- **New Name**
Either leave at same station name as local copy, or type in a new station name.
- If the passphrase for the local copy of the station is different from the remote host's system passphrase, you are prompted to enter the local copy's passphrase. If there is no passphrase mismatch, you are not prompted to enter one.
- **START AFTER INSTALL**
If enabled (the default), and a reboot is not included at the end of commissioning, when commissioning completes the station is restarted, In cases where commissioning ends in a reboot, such as if commissioning a new HAWK (installing core software) and/or changing TCP/IP settings, the next "AUTO-START" setting determines if the installed station is started following the reboot.

NOTE: In NX, it is possible to start or restart a station without rebooting the host HAWK controller.

- **AUTO-START**
If enabled (the default), the station starts every time the HAWK is rebooted. This is recommended.

NOTE: In some commissioning scenarios, you may wish to disable (clear) both "Start" options when installing a station, especially if commissioning ends in a reboot. This way the software modules needed by the station will be installed (along with all station files), but the station will be "idle". In this case, to start the station you must reopen a platform connection to the HAWK following the reboot, starting the (now idle) station from the Application Director view. This allows you to see all standard output messages from the station, as it transitions from "idle" to "starting" to "started".

If doing this, in the Application Director be sure to enable "AUTO-START" on the selected station. Otherwise, it will remain "idle" after the next controller reboot.

Step 3: Click the Next button to continue.

A dialog asks which station files to copy, as shown, where you can select *one* of the options:

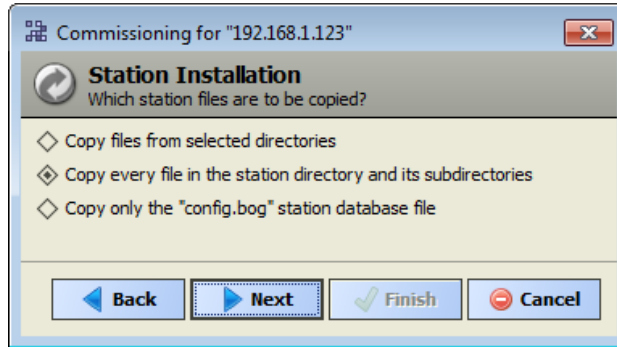


Fig. 14. Selecting station to be copied

- Copy files from selected directories.
Allows you to specify which subfolders under that local station that are copied. It produces a "tree" selection dialog upon Next button.

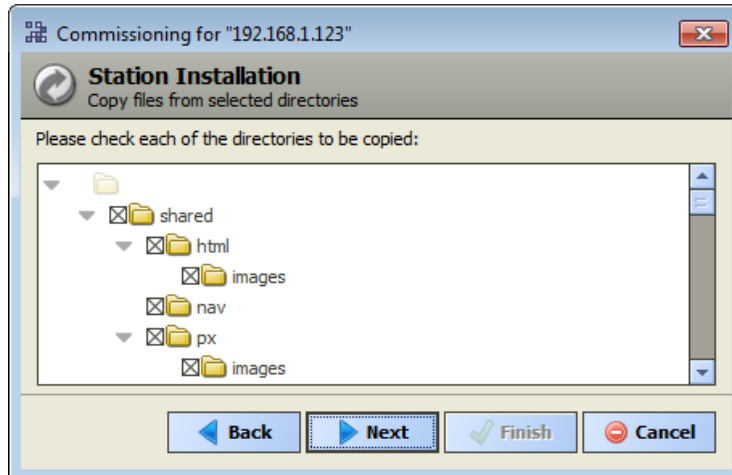


Fig. 15. "Tree" selection dialog

- If you choose this, click folder controls to expand and contract as needed.
- Selected folders appear with an "X" and unselected folders show an empty folder box.
- Copy every file in the station directory and its subdirectories.
The default, and most typically used.

NOTE: Copying identical alarm/history data to multiple HAWK controllers is not recommended. For this reason, Alarm and History data are not included (by default) in the station copying process.

- Copy only the "config.bog" station database file.
Copies only the station configuration (components), and not any supporting folders/files like px files, html files, and so forth.

Step 4: Click the Next button for the next step (or if skipping that step, go to "Select modules").

Install Lexicons

At the Lexicon Installation step, you can install one or more text-based lexicon file sets in the HAWK, providing you have any in a lexicons folder under your Sys Home.

Prerequisites:

- Lexicon file sets must be under a lexicons subdirectory under your Sys Home. See the following notes before proceeding.

NOTE: Lexicons provide support for non-English languages in the HAWK. Lexicons are identified by java locale codes, such as "fr" (French) or "de" (German). In some domestic (U.S.) installations, an English lexicon ("en") is added and configured to globally "customize" items such as property descriptions in COACH NX.

For NX, we recommend you skip this step. Instead, make one or more modules of customized lexicons and install them in the next (Select modules) step. Otherwise, issues may occur in browser access of the hosted station. For complete details on working with lexicons and the Lexicon Module Builder, refer to the Lexicon Guide.

Step 1: Click a language code to select it, as shown.

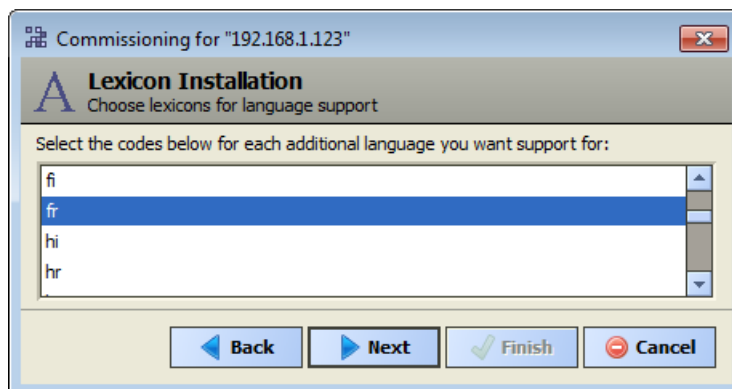


Fig. 16. Lexicon installation

If multiple lexicons are needed, hold down the Ctrl key while you click.

Step 2: When needed lexicons are selected, click the Next button.

Select Modules

At the select modules step, a popup "Rebuilding software list" dialog briefly appears as the dependencies of the HAWK are compared against the available software modules in your COACH NX PC's "software database."

During commissioning, you add to the software modules that are preselected for installation. Sometimes you may not make any changes, as the wizard preselects all necessary "core" modules, plus any additional modules needed by the station you previously specified in the Install Station step.

However, you may need to select additional modules, including a few not directly related to the contents of the station selected for installation. Examples include lexicon module(s), or some modules related to Platform Services. Or, you may know that the HAWK controller will need one or more modules in the future (e.g., for a driver), and you wish to install them now.

In general, do not select modules if you are not sure they are needed. You can manage software modules anytime later, using the Software Manager. Also, if you install a station later, the Station Copier will automatically prompt for confirmation to install any additional modules deemed necessary.

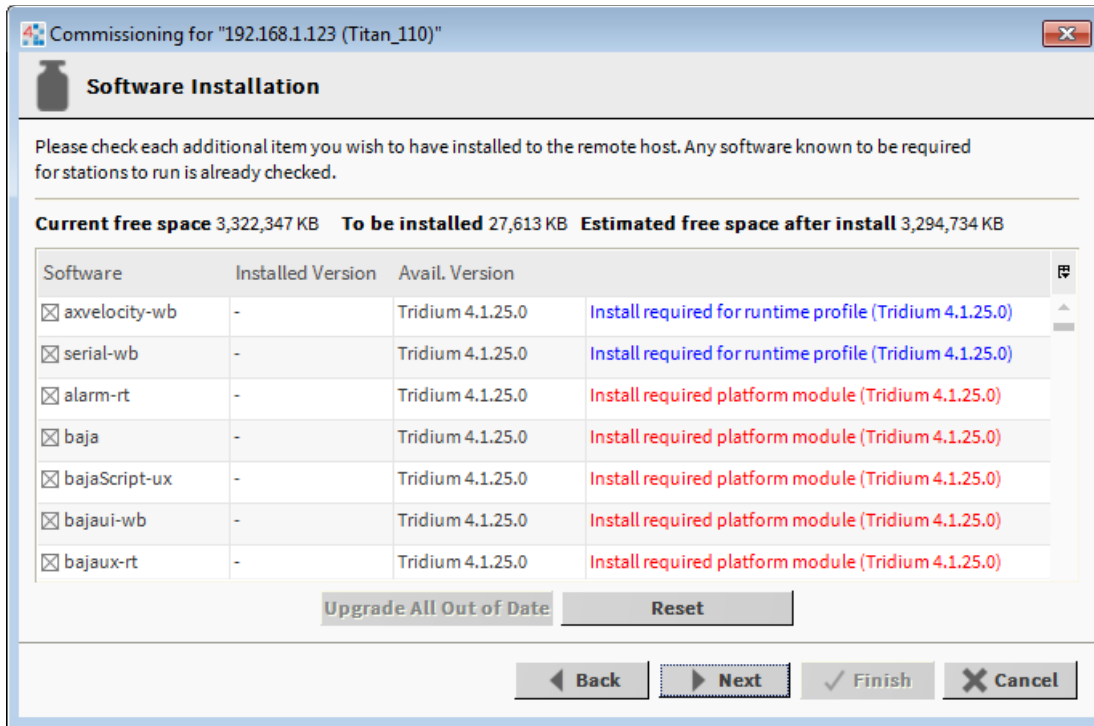


Fig. 17. Module installation dialog (default)

NOTE: For cases described below, install the following additional module(s) to enable options.

- Select either (or both) "theme"-related modules: themeLucid-ux, themeZebra-ux, depending on how station users are assigned to Web Profiles (for example, Default Hx Profile, Hx Theme=Lucid).
- If you want any installed station to have the "Hardware Scan Service" in its PlatformServices, select the appropriate platHwScanType modules. For example, select platHwScanTitan-rt and -wb modules.
- Note that "standard" lexicon modules appear listed using a module name convention of: niagaraLexiconLc-rt where Lc is a two-character language code, such as Fr for French or Es for Spanish. It is also possible to make custom lexicon modules using COACH NX Lexicon Tools (which can use different naming).

Selecting Modules for Installation

At the Software Installation step, do the following:

Step 1: Review the list of available modules (This list is long and requires you to use the scroll bar).

Each selected module has an "X" in its selection box.

Note the following:

- Modules preselected from "core" need or station database reasons each have a red text descriptor, which may read as:
 - Install required platform module
 - Install required for runtime profile
 - Install module required by station

By default, these modules are at the top of the list. You cannot deselect these modules.

- You can select additional modules to install by clicking selection boxes. The description for each is in blue text, and displays as either:
 - Not Installed (if not selected)
 - Install (if selected)

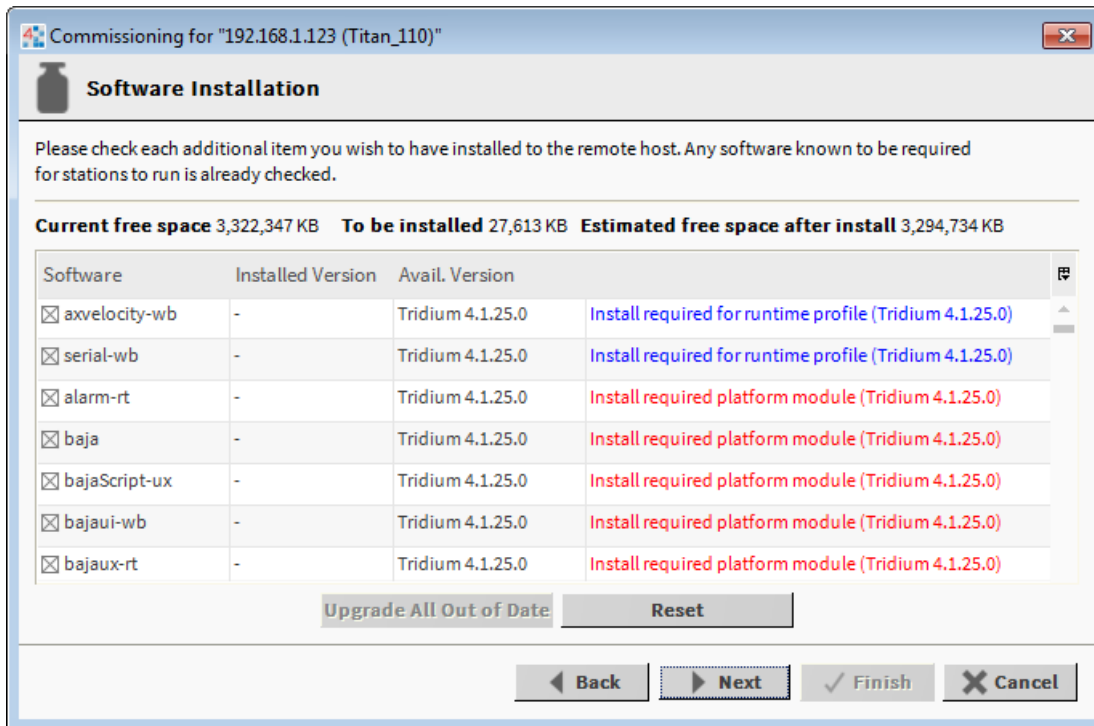


Fig. 18. Installing modules

- To re-sort the list alphabetically, click the Module header in the table. To return to the default sort order, click the table's (blank) description header.
- To reset the selection of modules to the original collection, click the Reset button.

Step 2: Click the **Next** button to go to the next step.

Install / Upgrade Core Software

At the install/upgrade core software step, the dependencies of the HAWK platform are compared against the distribution (dist) files available in your COACH NX PC's "software database." For the initial commissioning, the wizard determines what core distribution files are needed, selects the files automatically, and then informs you in a dialog, as shown.

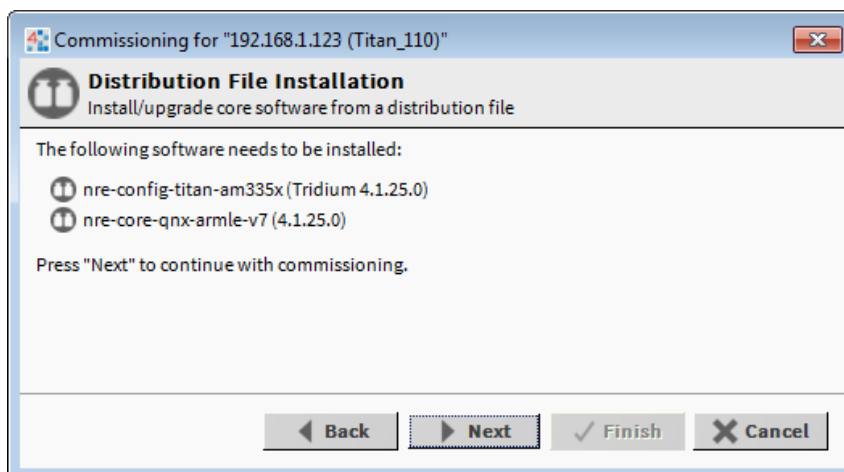


Fig. 19. Distribution File Installation dialog

1. Click **Next** to continue.

TCP/IP Configuration

The TCP/IP configuration step allows you to review and adjust the platform's TCP/IP settings.

NOTE: IPv6 support is available; however this document focuses on IPv4 configuration. For details on IPv6, refer to the Platform Guide section on TCP/IP Configuration.

Configuring TCP/IP Settings

At the TCP/IP Configuration step, do the following:

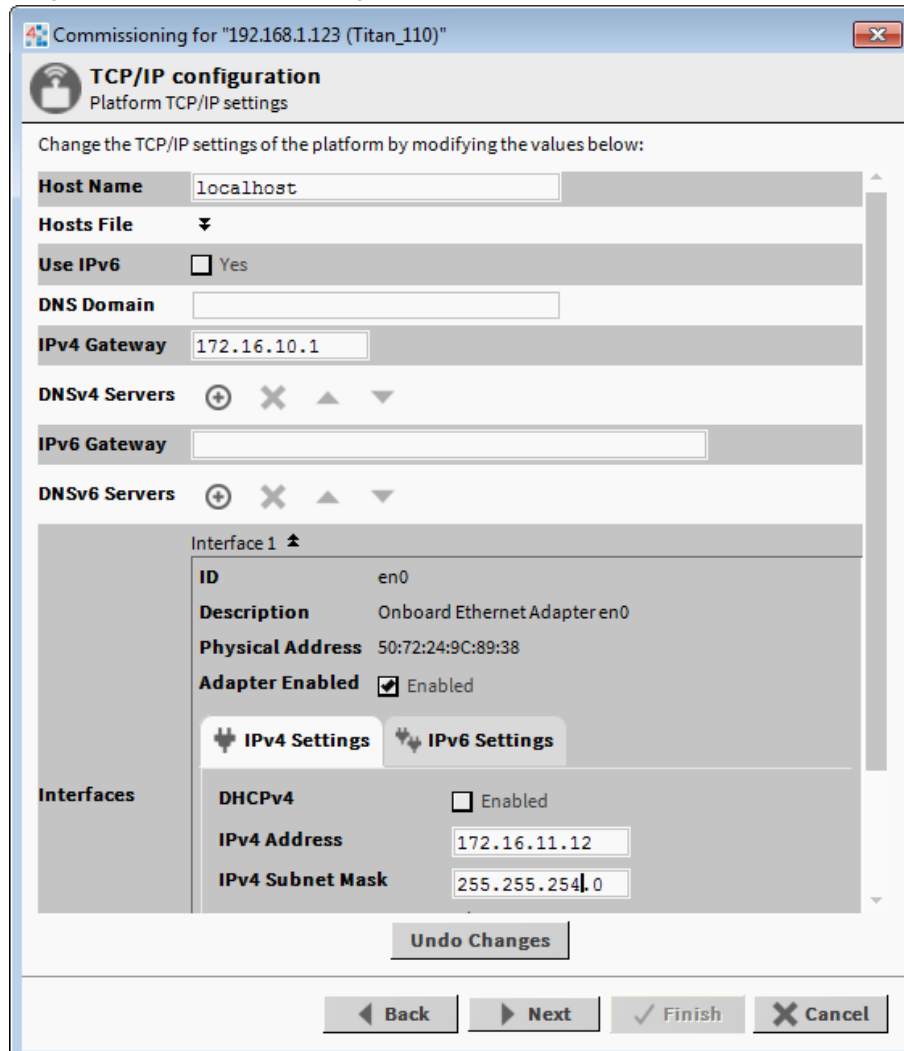


Fig. 20. TCP/IP Configuration dialog

- Step 1:** Review the Interface 1 settings on the IPv4 Settings tab, which include the temporary factory-shipped IP address.
- Step 2:** Assign the HAWK a unique IPv4 address for the network you are installing it on. No other device on this network should use this same IP address. Include the appropriate subnet mask used by the network.

 **CAUTION**

Risk of equipment damage!

- ▶ If enabling more than one LAN port (applicable to LAN1, LAN2, and WiFi), then the IP address for each must be configured on different subnets, otherwise the ports will not function correctly.

For example, with a typical "Class C" subnet mask of 255.255.255.0, setting Interface 1=192.168.1.99 and Interface 2=192.168.1.188 is an invalid configuration, as both addresses are on the same subnet.

Alternatively, if the network supports DHCP, you can enable it (click DHCP Enabled). In this case, the IP Address and Subnet Mask fields become read only.

NOTE: In general (for stability), static IP addressing is recommended over DHCP. If DHCP is preferred, an IP Address 'Reservation' should be entered for the controller in the DHCP Server. The controller IP address of the should not change.

 **CAUTION**

Risk of equipment damage!

- ▶ Do not enable DHCP unless you are certain that the network has DHCP servers! Otherwise, the controller may become unreachable over the network.

NOTE: If the HAWK 8000 platform is to be used to wirelessly connect to the enterprise network, DHCP should not be enabled here. In that event, the WiFi adapter in Client Mode will require use of the HAWK DHCP feature. For more information, see the HAWK 8000 WiFi Guide (EN2Z-1029GE51).

Step 3: Review, and if needed adjust other TCP/IP settings, which (in usual order of importance) include:

- IPv4 Gateway: The IP address for the device that forwards packets to other networks or subnets.

NOTE: The HAWK supports only one gateway for all adapters. This includes the HAWK 8000 WiFi Adapter in Client mode.

- DNS Domain Name: Enter the name of network domain, or if not applicable, leave blank.
- DNSv4 Servers: Click the +add button for a field to enter the IPv4 address of one or more DNS servers.
- Hostname: Default may be "localhost," or enter another name you want to use for this host. If a hostname is entered, typically the name is unique for the domain.

NOTE: In some installations, changing hostname may result in unintended impacts on the network, depending on how the DHCP or DNS servers are configured. If in doubt, leave hostname at default.

- Hosts File: Click control to expand edit field. Format is a standard TCP/IP hosts file, where each line associates a particular IP address with a known host name. Each entry should be on an individual line. The IP address should be placed in the first column, followed by the corresponding host name. The IP address and the host name should be separated by at least one space.

a. To add a line, click at the end of the last line and press Enter.

b. Type in the required data on the new line.

To return to see all TCP/IP settings, click the control to collapse the edit field when done.

NOTE: The Undo Changes button resets all settings (all Interfaces) back to the original pre-step values.

Step 4: Click the Next button to go to the next step.

NOTE: HAWK 8000 controllers have two Ethernet ports, where "Interface 2" is available for configuring the secondary (LAN2) Ethernet port. By default, this port is disabled, that is without a "default" address. Intended usage is for:

- Isolating a "driver's" Ethernet traffic from the primary (LAN1) interface, OR
- In some cases, LAN2 may be set up with a standard, fixed, IP address that is used only by a company's service technician, when on site. This allows access to the HAWK without disconnecting it from the customer's network, or without connecting the technician's service PC to the customer's network (which might go against local IT security policies).

NOTE: In any case, only one LAN port can be set as DHCP. If enabling LAN2, you must specify another (network) static IP address and the appropriate subnet mask, i.e. a different subnet mask for each enabled LAN port IP address.

- The HAWK does not provide IP routing or bridging operation between different Interfaces (LAN ports or WiFi).

Configuring System Passphrase

In this Commissioning Wizard step, you specify a passphrase to replace the factory default passphrase. A strong password is required (a minimum of 10 characters and include at least one uppercase character, at least one lowercase character, and at least one digit).

The system passphrase is used to protect sensitive information stored on all Niagara systems, and on the microSD flash memory card in HAWK 8000 controllers. The system passphrase is assigned as the file passphrase for "portable" files, such as backups and station copies, and is used to encrypt those files. During operations in which you transfer encrypted files to a system (restoring backups, transferring a station, etc.) you are prompted to enter the file passphrase if it doesn't match the system passphrase for the target system. For more details, see "System passphrase" in the Niagara 4 Platform Guide.

Step 1: Enter the Current Passphrase for the HAWK (typically the factory default platform).

Step 2: Enter a strong password in the New Passphrase and Confirm New Passphrase fields.

Your entries must match in both of these fields.

Step 3: Click Next to continue.

Fig. 21. System Passphrase

CAUTION

Risk of equipment damage!

- When you create a system passphrase, be sure to make a note of it and guard it carefully! If you lose the system passphrase, you will lose access to encrypted data. You can change the system passphrase using the Platform Administration tool.

NOTE: NX cannot successfully configure the system passphrase on the HAWK 8000 when it is running the AX daemon. You must instead use AX 3.8.111.6.5 or later. Also, in the NX **Platform Administration** view, the **Update Authentication** and **System Passphrase** buttons are disabled when the remote platform is the AX 3.8.111.6.5 or later daemon. In release NX 4.2.36.34.2.14, the buttons do not appear disabled – however, setting the system passphrase fails when you attempt to configure it.

Remove Platform Default User Account

In this Commissioning Wizard step, you specify platform login credentials (user name and password) to replace the factory-default platform user in this HAWK controller.

Fig. 22. Initial dialog to replace the factory-default platform user account

NOTE: The Commissioning Wizard in NX prevents commissioning the HAWK controller that retains the factory default platform user account. To proceed, you must enter a different user name, along with a "strong" password (this means a minimum of 10 characters including: at least one uppercase character, at least one lowercase character, and at least one digit).

Following your entry in this dialog, another step (if pre-selected) lets you create additional platform admin users, if needed. Each platform user must have a unique user name and use a "strong" password. Up to 20 total users are supported. Note that each platform user account has the same (full) platform admin access – users can change their password, and even create additional platform admin accounts.

NOTE: User name and password entries are case sensitive.

If you are not changing the controller's IP address during commissioning, the credentials for your replacement platform user are "remembered" in the current session. This can simplify platform reconnection to the controller after it reboots from commissioning. This is useful in a "migration" scenario.

However, if changing the IP address in commissioning, you need to remember/re-enter the new credentials for a platform user in order to reconnect. Always make careful note of any changed platform credentials, and guard them closely – as they provide the highest security level access to any NX platform.

Specifying a Platform User to Replace the Factory-Default Platform User

You see this dialog only in the initial commissioning of a new HAWK controller, or possibly at some future point after installing an NX "clean dist" file.

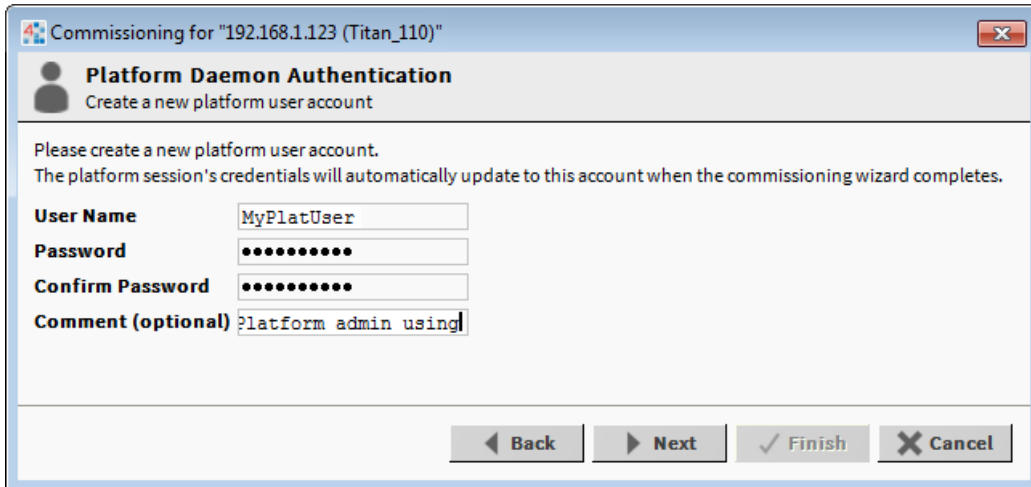


Fig. 23. Initial commissioning of a new HAWK controller

- Step 1:** In the User Name field, type in the desired user name for platform login.
- Step 2:** In the Password fields, type in a strong password (it must match in both password fields).
Password must use a minimum of 10 characters including: at least one uppercase character, at least one lowercase character, and at least one digit.
- Step 3:** In the (optional) Comment field, you can enter an alphanumeric descriptor for this platform admin user, where it is seen in the "Users table" if there are more than one platform user.
- Step 4:** Click the Next button.

You proceed either to the final commissioning (review changes) step, or if you selected to configure additional platform daemon users, you see your replacement user in the Users table of the Platform Daemon Authentication dialog, as below.

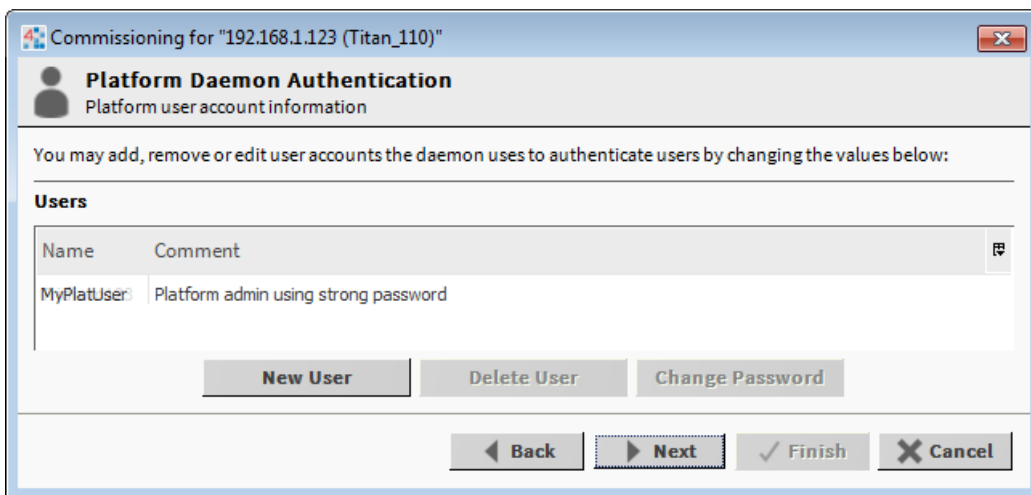


Fig. 24. Platform Daemon Authentication dialog

Platform User Rules and Guidelines

When adding any NX HAWK platform admin user, the following rules apply:

- **User Name**
User Name can be a maximum of 14 alphanumeric characters (a - z, A - Z, 0 - 9), where the first character must be alphabetic, and following characters either alphanumeric or underscore (___).
 - **Password**
A strong password is required (it must match in both password fields). Entry characters display only in asterisks (*). Password must be a minimum of 10 characters including: at least one uppercase character, at least one lowercase character, and at least one digit. An error popup reminds you if attempt to enter a password that does not meet minimum rules.
- NOTE:** Some basic guidelines on strong passwords:
- Use both upper and lower case.
 - Include numeric digits (a minimum of one).
 - Include special characters.
 - Don't use dictionary words.
 - Don't use company name.
 - Don't make the same as the user name.
 - Don't use common numbers like telephone, address, birthday, and so on.
- **Comment**
This is an optional alphanumeric field you can use when adding a new platform admin user, for description purposes, only (note you cannot edit it after adding a user, unlike with a user's password).



CAUTION

Risk of equipment damage!

- ▶ Make note of your platform user credentials, and guard them carefully! Consider the platform daemon as the highest-level access to the HAWK controller. If you lose or forget these credentials, you may be unable to complete commissioning and startup of this controller. In this case, you can restore the factory default platform user, providing you can serially connect to the controller (make serial shell connection), and press a key at the prompted time during controller boot up following a power cycle.

Configure Additional Platform Daemon Users

This Commissioning Wizard step lets you add additional platform admin users in the HAWK controller, and also delete users and change passwords.

- NOTE:** Access this same configuration via the "User Accounts" button in the Platform Administration view, available any time after commissioning.

Configuring Additional Platform Daemon Users

Platform daemon authentication lets you create additional (up to 20 total) platform admin users.

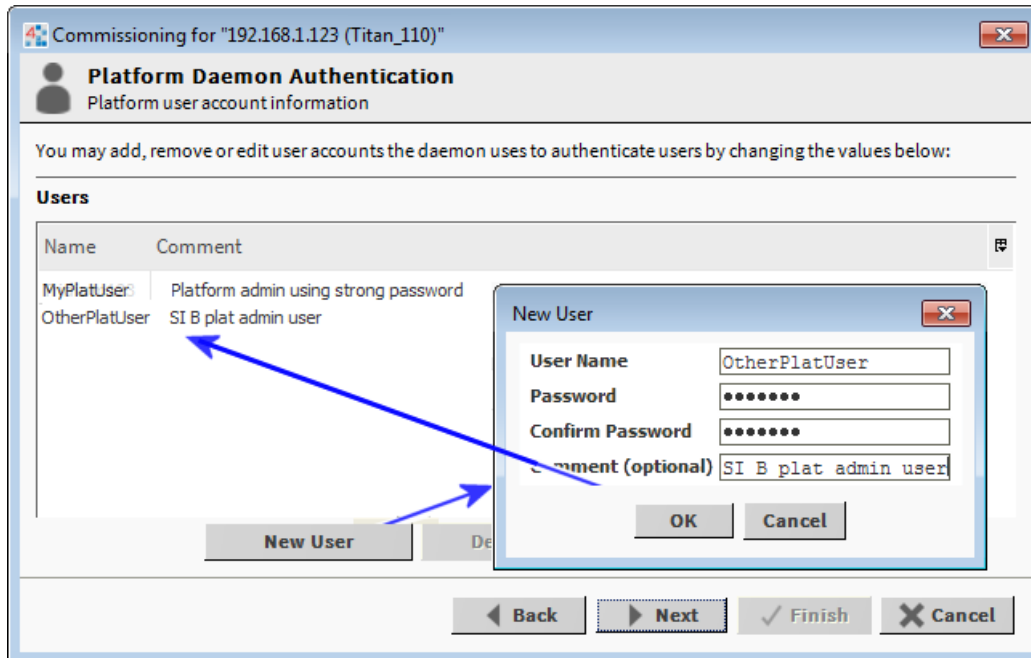


Fig. 25. Configuring additional platform daemon users

- Step 1:** Click New User for the popup New User dialog, as shown above.
- Step 2:** In the User Name field, type in the desired user name for platform login.
- Step 3:** In the Password fields, type in a strong password (it must match in both password fields).
Password must use a minimum of 10 characters, using at least one uppercase character, at least one lowercase character, and at least one digit.
- Step 4:** In the (optional) Comment field, you can enter an alphanumeric descriptor for this platform admin user, where it is seen in the "Users table".
- Step 5:** Click OK. The user is added to the Users table.
- Step 6:** To add another user, repeat the previous steps or else click the Next button for the final step.

Review and Finish Wizard

The final step in the Commissioning Wizard provides a review of changes, as shown below.

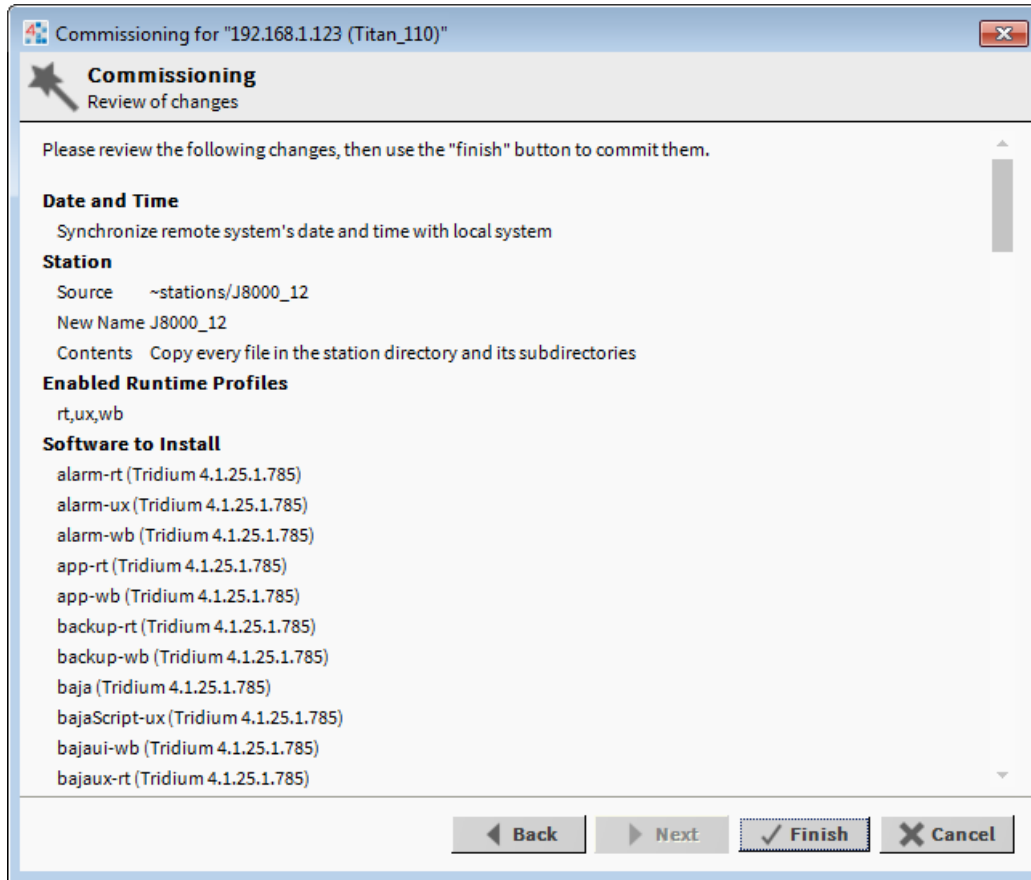


Fig. 26. Review Commissioning Wizard dialog

Reviewing and Finishing the Commissioning Wizard

A summary is shown for all the actions to be performed by the wizard. Before proceeding:

Step 1: Read through the summary of changes, using the scroll bar to see those steps near the end.

- If no change is needed, click Finish to initiate the rest of the Commissioning Wizard.
- If any change is needed, click the Back button until the step dialog appears, then make the change. Then, click the Next button until this review dialog appears again.

Step 2: While the wizard is working, progress updates are posted in a "Completing Commissioning" dialog.

When completed, the wizard reboots the HAWK, and a "Close" button is available.

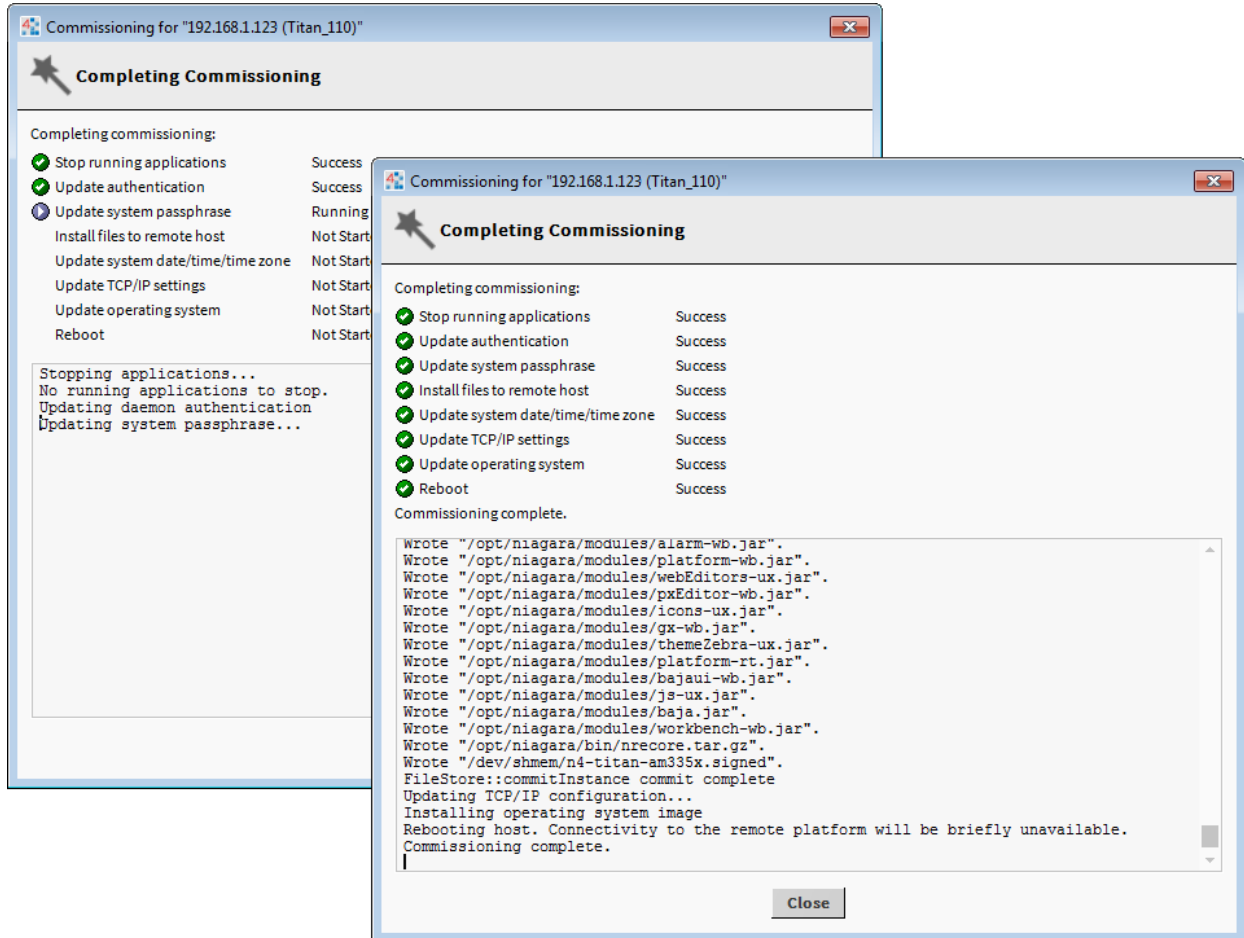


Fig. 27. Completing Commissioning

Do not remove power from the controller during this reboot, which may take up to 7 or more minutes to complete. Removing power could make the unit unrecoverable. If desired (and convenient), you can use a serial shell connection to the controller to monitor progress as files are installed and the unit is prepared (for details refer to section "System Shell" section on pg. 43).

NOTE: The firmware upgrades occur before the platform daemon starts in the HAWK controller. It is therefore safe to interrupt power at any time after you can re-open a platform connection to the HAWK controller.

Step 3: Click the Close button to exit the wizard.

When the HAWK reboots, your platform connection to it closes. Notice that in the Nav tree, the platform instance for that HAWK is now dimmed.

Step 4: Assuming that you changed the HAWK's IP address in commissioning, right-click and close that platform instance, as this would make that connection instance invalid.

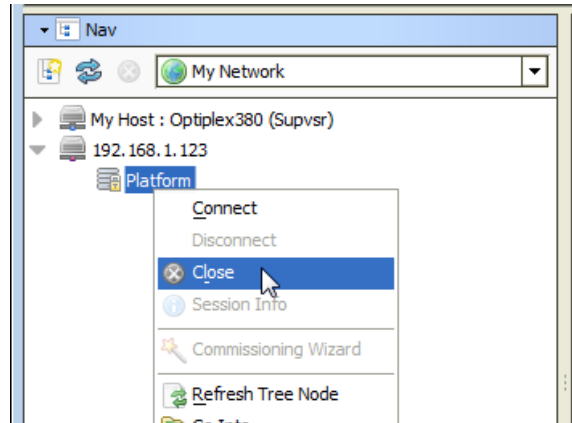


Fig. 28. Closing platform instance

If you did not change its IP address, after several minutes you should be able to double-click the platform instance again to reconnect.

NOTE: Going forward, you must access the HAWK by its new (assigned) IP address. Note that your COACH NX keeps a history of TCP/IP changes made.

Reopening a Platform Connection Using the New (Changed) IP Address

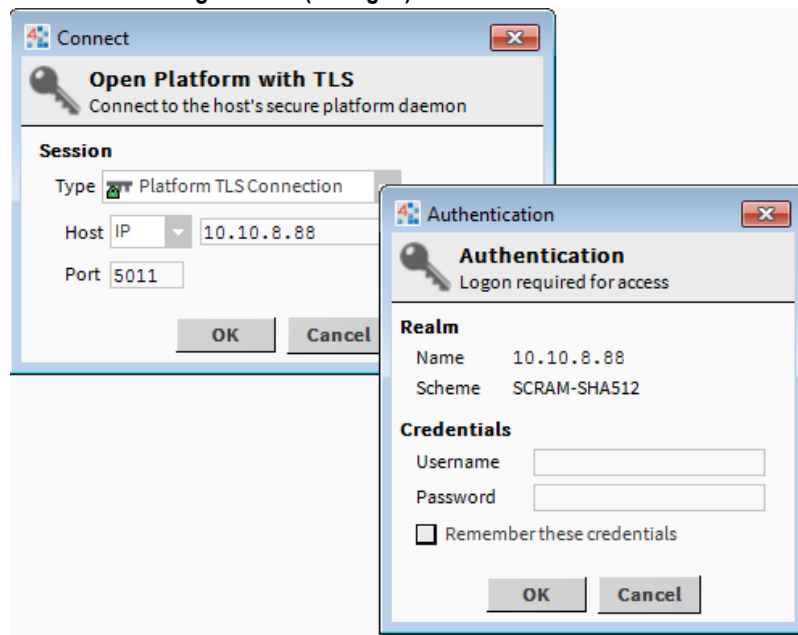


Fig. 29. Reopening a platform connection

Also, you must use the credentials for the new platform user you created (to replace the factory-default platform user), or if you created additional platform users, credentials for one of them.

If you changed your PC's IP address in order to commission the HAWK, you usually need to reconfigure your PC's TCP/IP settings back to appropriate settings (now) to communicate with it. Otherwise, you will be unable to connect to it for other commissioning.

PLATFORM SERVICES (STATION) AND ADMINISTRATION

Topics covered in this chapter

- ◆ About Platform Services
- ◆ PlatformServices properties
- ◆ Controller-specific PlatformServices properties
- ◆ HAWK SRAM support enabling/disabling
- ◆ Optional platform administration

A few platform configuration items in the HAWK are not directly accessible in the COACH NX platform connection to that controller – that is, via the Commissioning Wizard or any of the platform views. Instead, you must have a station installed and running on the controller (any station).

Using COACH NX, you then open a (Fox) connection to that station and configure these platform-related items by accessing services under the station's PlatformServices container.

About Platform Services

Under its Services container, every station has a PlatformServices container.

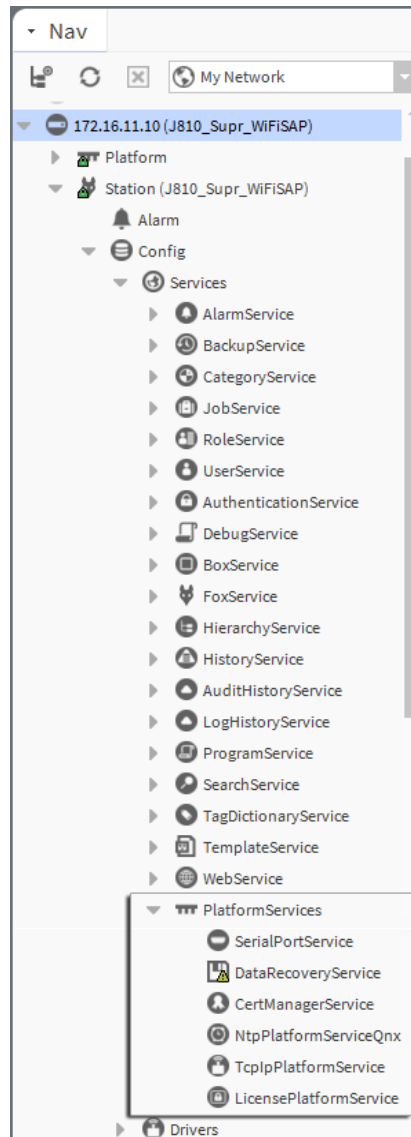


Fig. 30. Example controller station's PlatformServices

PlatformServices is different from all other components in a station in the following ways:

- It acts as the station interface to specifics about the host platform (whether HAWK or a PC).
- It is built dynamically at station runtime – you do not see PlatformServices in an offline station.
- Any changes you make to PlatformServices or its child services are not stored in the station database.

Instead, changes are stored in other files on the host platform, such as its platform.bog file.

NOTE: Do not attempt to edit platform.bog directly; always use PlatformServices' views.

Included services are a TcpIpService and LicenseService, providing station (Fox) access to dialogs used in platform views, for instance the TCP/IP Configuration. These services support installations where all configuration must be possible using only a browser connection (and not COACH NX connected to the HAWK's platform daemon).

PlatformServices Items of Interest for HAWK Commissioning

For any NX HAWK, the following child platform services in the station's PlatformServices are of chief importance when commissioning a new controller.

- CertManagerService: For management of PKI certificate "stores" and/or allowed host exceptions, used in certificate-based SSL (TLS) connections between the station/platform and other hosts. For details, see the Station Security Guide.
- DataRecoveryService: For operation/monitoring of the ongoing SRAM backups for most (SRAM-equipped) HAWK controllers. It includes a "Service Enabled" configuration property, such that you can disable it, if needed. This is viable only if a backup battery is installed, or the unit is powered by an external UPS. For details. Also, you may wish to review the parent container's PlatformServices properties and adjust, if needed.

PlatformServices Properties

The default view of the PlatformServices container, the Platform Service Container Plugin, provides access to numerous properties, as shown below.

Fig. 31. PlatformServices property sheet in HAWK

Reviewing / Adjusting PlatformServices Properties for HAWK

Prerequisites:

- A station in the HAWK is running, and that station opened in COACH NX.

Step 1: In the Nav tree, double-click Services and then PlatformServices.

Its "Platform Service Container Plugin" displays in the view pane. Some properties are read-only status types, similar to many seen in the Platform Administration view. Other configuration properties can be edited. A group of three config properties allow adjustment of the time, date, and time zone settings for the host HAWK (alternately accessible using a platform connection to the HAWK). Access to these properties is useful if the installation requires all setup access using a browser only.

Step 2: As needed, review other platform service configuration properties, which include the following:

NOTE: You should leave the following properties at default values, unless otherwise directed by Systems Engineering.

- **Locale:** Determines locale-specific behavior such as date and time formatting, and also which lexicons are used. A string entered must use the form: language ["_" country ["_" variant]] For example U.S. English is "en_US" and traditional Spanish would be "es_ES_Traditional". See Oracle documentation at <http://docs.oracle.com/javase/1.4.2/docs/api/java/util/Locale.html> for related details.
- **Engine Watchdog Policy:** Defines response taken by the platform daemon if it detects a station engine watchdog timeout. With the watchdog, the station periodically reports to the platform daemon its updated engine cycle count. The watchdog purpose is to detect and deal with a "hung" or "stalled" station, and is automatically enabled when the station starts. Watchdog policy selections include:
 - **Log Only:** Generates stack dump and logs an error message in the system log. (The station should ultimately be restarted if a watchdog timeout occurs with the "Log Only" setting).
 - **Terminate:** (Default) Kills the VM process. If "restart on failure" is enabled for the station (typical), the station is restarted.
 - **Reboot:** Automatically reboots the host HAWK platform. If "auto-start" is enabled for the station, the station is restarted after the system reboots.
- **Engine Watchdog Timeout:** Default is 3 minutes in NX, and range is from 1 minute to many hours. If the station's engine cycle count stops changing and/or the station does not report a cycle count to the platform daemon within this defined period, the platform daemon causes the VM to generate a stack dump for diagnostic purposes, then takes the action defined by the Engine Watchdog Policy.
- **Enable Station Auto-Save:** Either Enable (default) or Disable.

Allows for "auto save" of running station to "config_backup_<YYMMDD>_<HHMM>.bog" file at the frequency defined in next property. Auto-saved backup files are kept under that station's folder.

- **Station Auto-Save Frequency:** Default is every 24 hours for any embedded HAWK, range is from 1 to many hours.
- **Station Auto-Save Versions to Keep:** Default is 0. Oldest of kept backups is replaced upon next manual save or auto-save backup, once the specified limit is reached. Significant flash space is saved by keeping this 0 or perhaps 1.
- **RAM Disk:** In MB (default is 1GB). Indicates the size of RAM disk used to store history and alarm files.
 - **Min Free:** sets the level at which Platform Services and Platform Admin show a warning.

For further details on these and other PlatformServices properties, refer to the "PlatformService- Container parameters" section in the Niagara 4 Platform Guide.

Step 3: Click Save to write any configuration change to the host HAWK platform.

Controller-Specific PlatformServices Properties

As newer HAWK platforms are introduced, hardware-specific properties may be appended to the collection of a station's PlatformServices properties. Examples are given below.

HAWK SRAM Support Enabling / Disabling

SRAM support is provided by the DataRecoveryService, a platform service that applies to SRAM-equipped HAWK controllers.

Enabling / Disabling SRAM Support in the DataRecoveryService

Prerequisites:

- Station running in the HAWK, and that station opened in COACH NX.

Step 1: In the Nav tree, click to expand the station's Services, then PlatformServices container to reveal all contained services.

Step 2: Double-click DataRecoveryService. The Data Recovery Service Editor displays.

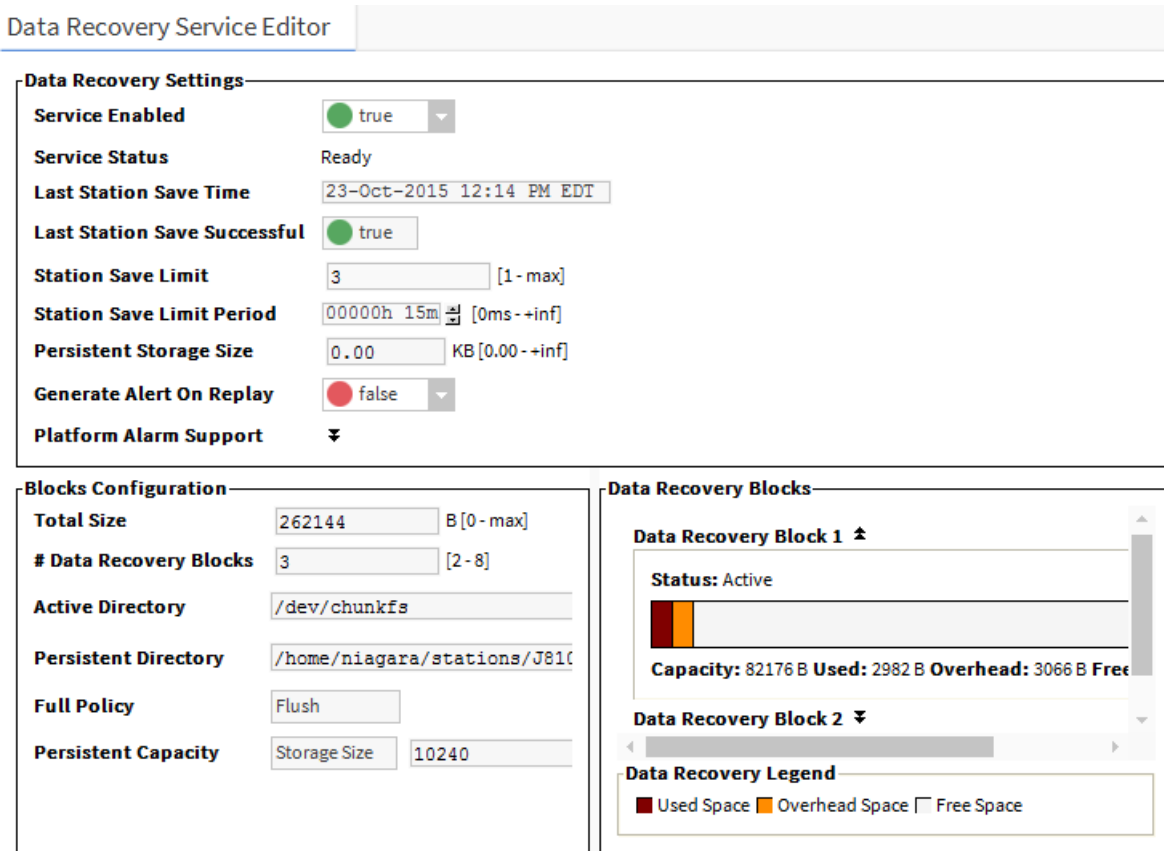


Fig. 32. Data Recovery Service Editor

Step 3: By default, the Service Enabled property is true. This is appropriate since the controller has no backup battery installed. If a "battery-less" HAWK controller is powered from a battery-backed UPS, you could also choose to set Service Enabled to false.

NOTE: If you set "Service Enable" to false, the DataRecoveryService no longer records runtime database changes to SRAM. The controller depends entirely on its backup battery to preserve station data upon a power loss!

Step 4: Click Save to write the configuration to host platform.

You are prompted to reboot now to apply the changes. Click Yes to reboot with the change in the Data-RecoveryService (disabled or enabled) made effective.

Optional Platform Administration

The Commissioning Wizard performs most, but sometimes not all, needed configuration for a new HAWK platform. There are several items you should review (and optionally change) in a follow-up platform connection to each HAWK, using the **Platform Administration** view.

As shown below, the **Platform Administration** view is one of several views for any platform, listed under the platform in the Nav tree and in the platform's Nav Container View. This view provides a text summary of the HAWK's current software configuration, including its model number, OS level, JVM version, installed modules, lexicons, licenses, certificates, and so on.

The screenshot displays the 'Platform Administration' view. On the left, a navigation tree shows 'Platform Administration' selected under a platform. The main area is divided into two sections:

Platform Services List:

Name	Description
Application Director	Control applications and access console output
Certificate Management	Manage X.509 Certificates and Host Exemptions.
Distribution File Installer	Install distribution files to the remote host
File Transfer Client	Transfer files to and from the remote host
Lexicon Installer	Install lexicons to support additional languages
License Manager	Manage licenses and certificates
Platform Administration	Update the platform daemon's port or credentials, or set its date and time
Software Manager	Install software to the remote host
Station Copier	Transfer stations to and from the remote host
TCP/IP Configuration	Manage the host's TCP/IP settings
WiFi Configuration	Manage the host's WiFi Networks and Settings
Remote File System	The remote host's file system

Platform Administration Configuration Details:

View Details	Baja Version	Tridium 4.1.25.0
User Accounts	Daemon Version	4.1.25.0
System Passphrase	System Home	/opt/niagara
Change HTTP Port	User Home	/home/niagara
Change TLS Settings	Host	172.16.11.10 (J810_Supr_WiFISAP)
Change Date/Time	Daemon HTTP Port	3011
Advanced Options	Daemon HTTPS Port	5011
Change Output Settings	Host ID	Qnx-TITAN-A7A1-E827-6C6D-843B
View Daemon Output	Model	TITAN
View System Log	Product	JACE-8000
Configure Runtime Profiles	Local Date	23-Oct-15
Configure NRE Memory	Local Time	13:45 Eastern Daylight Time
Backup	Local Time Zone	America/New_York (-5/-4)
Commissioning	Operating System	qnx-jace-n4-titan-am335x (4.1.25.0)
Reboot	Niagara Runtime	nre-core-qnx-armle-v7 (4.1.25.0)
	Architecture	armle-v7
	Enabled Runtime Profiles	rt,ux,wb
	Java Virtual Machine	oracle-jre-compact3-qnx-arm (Oracle Corporation 1.8.0.33.1)
	Niagara Stations Enabled	enabled
	Number of CPUs	1
	Current CPU Usage	5%
	Overall CPU Usage	2%
	Filesystem	
		Total Free Files Max Files
	/	3,492,848 KB 3,295,570 KB 331 109152
	/mnt/aram0	393,215 KB 393,052 KB 0 0
	/mnt/ram0	8,192 KB 8,126 KB 0 0
	Physical RAM	
		Total Free
		1,048,576 KB 91,436 KB
	Other Parts	
		n4-titan-am335x(4.0.1)

Fig. 33. Platform Administration is one of several platform views

Included in this view are commands and related dialogs in which you can:

- Set the date and time in the HAWK controller.
- Change the HTTP port used by the HAWK for the platform daemon (platform server). The default port is 3011.
- Change TLS settings used by the HAWK for secure "platformssl" access, including configured state, platformssl port (HTTPS Port), PKI certificate, and TLS protocol. The default port is 5011.

NOTE: In NX, "SSL" is always implemented using the TLS (Transport Layer Security) protocol. See the Station Security Guide for complete details.

- Enable or disable SFTP (Secure File Transfer Protocol) and SSH (Secure Shell) access to the HAWK controller. By default, such access is disabled, where both protocols use TCP port 22.



CAUTION

Risk of equipment damage!

- ▶ Although SFTP and SSH are more secure than FTP and Telnet access, enabling still poses security risks. We strongly recommend you keep this access disabled, unless otherwise directed by Systems Engineering. Upon completion of any use, such access should be disabled once again.

-
- View daemon output and change logging levels.
 - Enable debug access for temporary browser access to platform daemon diagnostic tools
 - Perform other platform tasks initially performed with the Commissioning Wizard, such modifying platform admin users (User Accounts), configuring runtime profiles, and so on. For more details, see section "Platform Administration" in the Niagara 4 Platform Guide.

Performing Platform Administration

Prerequisites:

- The HAWK controller is already commissioned using the Commissioning Wizard.

Step 1: Using COACH NX, open a platform connection to the HAWK controller. Use the platform credentials you specified when creating a platform user while commissioning the HAWK.

Step 2: In the HAWK platform's Nav Container View, double-click Platform Administration.

Step 3: In the Platform Administration view, click any of the following to review or make changes:

- View Details: A platform summary that you can copy to the Windows clipboard.
- User Accounts: A platform daemon authentication dialog to add, delete, or manage platform users (initially performed as a step in the Commissioning Wizard).
- System Passphrase: A dialog to set or change the system passphrase used to encrypt sensitive information on the platform's filesystem.
- Change HTTP Port: A dialog to change the HTTP port for the HAWK's platform daemon from port 3011 to some other port.
- Change TLS Settings: A dialog to specify platform SSL settings, including enabling/disabling, port, PKI certificate to authenticate by, and secure protocol to use. Details are beyond the scope of this document. For an overview, see "Change SSL (TLS) Settings" in the Niagara 4 Platform Guide. For complete information, refer to the Station Security Guide.
- Change Date / Time: A dialog to change the HAWK's current date, time, and time zone (initially performed as a step in commissioning wizard).
- Advanced Options: A dialog to enable or disable the following advanced platform options
 - SFTP / SSH Enabled: A dialog to enable/disable SFTP and SSH access to the HAWK, or change the default port number that these protocols use/share.
 - Daemon Debug Enabled: Temporarily enable the browser based daemon debugging tools. This is automatically turned OFF the next time the system boots.
 - USB Backup Enabled: Enable or disable the USB Backup port of the HAWK's housing.
- Change Output Settings: A dialog to change the log level of different processes that can appear in the platform daemon output
- View Daemon Debug: A window in which you can observe debug messages from platform daemon processes in real time. Also includes ability to pause or load.

- View System Log: A window for viewing system log(s) for the platform.
- Configure Runtime Profiles: A dialog to change the types of runtime profiles for software modules installed on the HAWK (initially performed in commissioning wizard).
- Configure NRE Memory: A dialog to configure the memory allocation sizes of this platform's Niagara Runtime Environment.
- Backup: Make a complete backup of all configuration on the connected host platform, including all station files, plus other Niagara configuration (typically unnecessary for any HAWK just started up).
- Commissioning: Another way to re-launch the Commissioning Wizard, as previously used in the initial commissioning of the HAWK.
- Reboot: A method to reboot the HAWK platform, which restarts all software including the OS and JVM, then the platform daemon, then if so configured in the Application Director (Station Director), the installed station. If you click this, a confirmation dialog appears. If you reboot, your platform connection is lost, and it is typically a few minutes until you can reconnect to this HAWK.

REFERENCE INFORMATION

Topics covered in this chapter

- ◆ IP changes history
- ◆ Shutdown operations
- ◆ Restoring factory defaults
- ◆ System shell

During HAWK commissioning, it is possible to run into problems. For instance, you may type an IP address incorrectly when entering it, and as a result be unable to regain access. In this scenario, there are a couple of things you should know about:

IP Changes History

Your COACH NX PC records "before and after" TCP/IP settings made from your platform connections in an ipchanges.bog file. If necessary, you can review changes made from your COACH NX using the following procedure.

Reviewing TCP/IP Changes Made from Your COACH NX PC

From your PC, with COACH NX started, do the following:

Step 1: In the Nav tree, expand "My Host" and then "My File System."

Step 2: Expand "User Home", then expand "ipchanges.bog."

Child folders are "date-named" using the following convention:

<yyyymmddhhmmss> for example, "d20150113153640" for 2015 Jan 13 3:36pm

Step 3: Expand any folder of interest (right-click, select Views → → Property Sheet). Note the included decoded "modTime" value, for example, "13-Jan-2015 03:36 PM EST" (vs "d20150113153640").

Underneath each folder are two objects:

- priorValue: TCP/IP settings that existed before this change.
- newValue: TCP/IP settings that existed after this change.

Step 4: In the property sheet, expand a priorValue or newValue to see settings.

NOTE: If you have a platform connection open (to any host), you can also review this same history of IP changes made from your COACH NX to remote platforms. At the bottom of the TCP/IP Configuration view, click the "Audit" button. This shows this same ipChanges.bog folder and all child change entry folders in a property sheet view. Expand a change folder to see a decoded "mod-Time" value, for example, "13-Jan-2015 03:36 PM EST" (vs "d20150113153640"). Expand a "priorValue" or "newValue" in the view to see the settings.

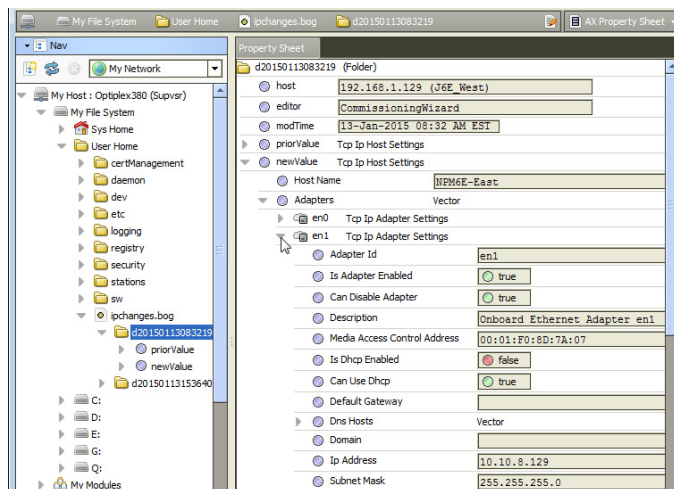


Fig. 34. Accessing ipchanges.bog in User Home

Shutdown Operations

The information below describes how the shutdown operation works.

To initiate a shutdown, press and hold the Shutdown button on the enclosure. When the controller detects that the Shutdown button is being pressed, it enters the shutdown mode. This is indicated by the Backup LED flashing the alert mode pattern (100 msec ON, 100 msec OFF).

To verify the Shutdown button is functioning and not in a failed state, the controller must detect the button release before proceeding. Once the button is released, the controller puts the software in a safe state. During this process, the Backup LED toggles with the work pattern (1 second ON, 1 second OFF). Once the software has successfully completed its process, it notifies the controller that it is safe to shut down. The controller turns OFF the Backup LED, indicating that it is now safe to remove power.

In the event that the software is unable to put the system into a safe state, the software notifies the controller that it could not complete the request. The controller then indicates this by toggling the Backup LED with the error pattern (200 msec ON, 200 msec OFF, 200 msec ON, 3 seconds OFF).

Shutting Down the Controller

The shutdown procedure allows you to safely shutdown the controller.

Step 1: Press and hold the Shutdown button until the Backup LED begins to flash.

NOTE: The heartbeat LED also turns OFF, and all Ethernet, USB, and console connectivity is lost.

Step 2: Once the Backup LED begins to flash, release the Shutdown button.

Step 3: Once the Backup LED turns ON (solid) and begins to flash, wait until the Backup LED turns OFF.

Step 4: Remove power to the controller.

NOTE: If you have a terminal connected to the controller, the following message displays when the shutdown process is complete and it is safe to remove power:

```
iomonitor: shutdown complete, safe to remove power
```

Restoring Factory Defaults

The process of restoring factory defaults returns the controller to the state it was in when it shipped from the factory. This procedure describes the steps to restore factory defaults when using a terminal emulator program to access the controller's system shell menu.

Prerequisites:

- A USB-to-Micro USB cable (same cable as that used to connect a smart phone to a computer) connecting the controller to your PC. The Debug port on a controller is a standard Micro-A type USB port for debugging serial communications.
- A terminal emulator (system shell program), such as PuTTY, installed on your PC.

CAUTION

Risk of information loss!

- ▶ Recovering factory defaults removes all platform and station data in the controller. Be sure to backup data prior to performing this procedure.

The following are a few scenarios for which you might choose to restore factory defaults:

- While commissioning a brand new HAWK, you make an error entering the default platform daemon credentials or passphrase. The result is that you cannot commission the controller. In this scenario, your only recovery option is to restore the factory defaults.
- When decommissioning the HAWK, a best practice to follow is recovering the factory defaults in order to wipe all of the platform and station data in the controller.

Fig. 35 indicates the position of USB ports and switches behind the access door.

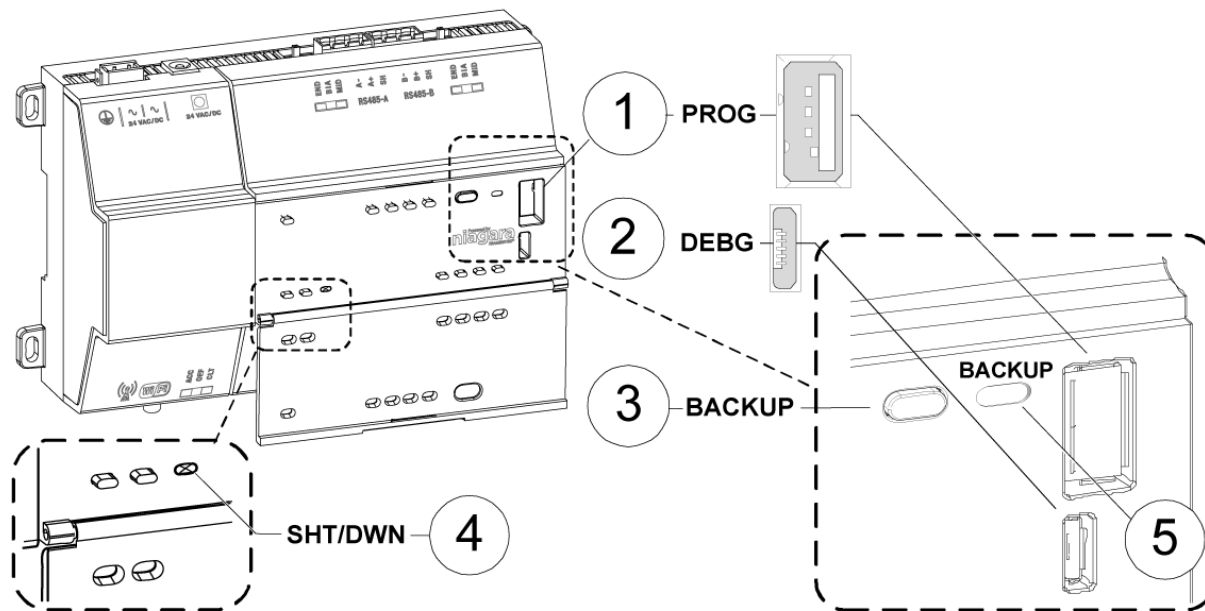


Fig. 35. LEDs, USB ports, and pushbuttons behind access door

LEGEND:

- 1 PROG USB 2.0 for use with USB Flash (thumb) drive
- 2 DEBUG Micro-A USB for serial debug communications
- 3 BACKUP Pushbutton switch to start a USB backup, or if held in during power up/boot up, initiates a factory recovery image
- 4 SHT/DWN Recessed pushbutton switch for initiating a controlled shutdown
- 5 BACKUP LED to indicate USB media present, or a backup, restore, or factory recovery image in progress

NOTE: For any HAWK 8000 converted to run AX, the USB Backup/Restore and USB port functionality is not supported. And although holding down the Backup button during power up/boot up still functions to initiate a factory recovery image, it restores the controller to its factory ship state which is NX 4.2 or later. You must repeat the conversion procedure to get it to AX 3.8.111.6.5.

- The DEBUG port is a standard Micro-A type USB port for serial debug communications to the controller. For more details, see "About HAWK System Shell Mode".

NOTE: Login requires administrator level platform credentials.

- The SHT/DWN pushbutton initiates a "controlled shutdown" of the controller, ensuring that all station data is preserved.

Step 1: Ensure that the controller's power is OFF.

Step 2: Press and hold down the backup and restore button as you power up the controller, and continue holding down the button throughout the boot-up process until the button press is detected and the following confirmation banner displays:

```
*****
Backup/Restore button press detected. Release button now to proceed.
*****
```

NOTE: During this step of the procedure, the Backup LED flashes at medium speed (100 msec ON, 100 msec OFF). Also, be aware that holding the button down too long results in the following message (which does not indicate a hardware fault). If this message appears it is best to start the procedure over, beginning with step 1:

"WARNING - CHECK BACKUP BUTTON - POSSIBLE SHORT!"

Step 3: Release the backup and restore button once the banner displays.

On detecting the button release, the system begins a 10-second countdown, which displays as shown here:

```
Press any key to restore from USB backup.
If no key pressed, factory recovery will begin in 10 seconds
Recovery begins in 9 seconds
Recovery begins in 8 seconds
Recovery begins in....
```

NOTE: Pressing any key during this 10-second countdown prevents the system from entering factory recovery mode. Instead, the system switches modes to restore from a USB backup.

When no key press is detected during the 10-second countdown, the factory recovery process begins at the moment the countdown finishes. Upon entering recovery mode, the boot process overwrites the controller with a default factory image. During this process, the Backup LED blinks at slow speed (one second ON, then one second OFF).

 **CAUTION**

Risk of equipment damage!

► Once in recovery mode (BACKUP LED is flashing in slow blink), do not interrupt this process. Allow the recovery to complete or the controller could be left in an inoperable state.

Step 4: When the Backup LED stops flashing, turn the controller's power OFF and back ON again to reboot.

NOTE: After restoring factory defaults, the initial controller reboot process takes longer than usual. On completion, the controller is restored to a factory default state.

System Shell

Any QNX-based HAWK has a "system shell," providing low-level access to a few basic platform settings. Using a special power-up mode and a serial connection via a USB-to-Micro USB cable connected to the HAWK's Debug port, you can access this system shell. Note that system shell is also available via SSH (providing that SSH is enabled in the HAWK).

NOTE: Starting in NX 4.2, the HAWK 8000 can be converted (downgraded) to run AX 3.8.111.6.5 – with some feature limitations. For example, for any HAWK 8000 running AX, the USB functionality is not supported. In this configuration the USB port on the device is not monitored for insertion/removal of devices.

Typical usage is for troubleshooting. However, in the case of IP address mis-configuration, you can use the serial system shell in order to regain access to the unit.

NOTE: Also, depending on your preference, you may wish to use the serial shell to set IP address of the HAWK, as an alternative to reconfiguring your PC's IP address in Windows (to initially connect to a new HAWK).

If done as the first step, afterwards you could connect normally (Ethernet/IP) and perform all other Niagara software installation/platform configuration using COACH NX and the Commissioning Wizard. This method would save you from having to re-configure your PC's IP address settings in Windows: first to connect to the HAWK as shipped from the factory, and then back again to its original settings.

The following sections provide more details.

About HAWK System Shell Mode

To put the HAWK into the debug system shell mode, plug-in the USB-to-MicroUSB cable. This makes the system shell available at the Debug port of the HAWK, at a pre-defined serial rate: 115200, 8, N, 1.

Using a terminal emulation program such as PuTTY, you can then login with platform credentials and access the system shell menu. After changing platform IP address parameters, a reboot command from the menu is necessary, and you remove the USB cable. The HAWK reboots using the changed IP address parameters.

Apart from physical access to the HAWK, you need the following items:

- A working USB port on your PC.
- VCOM or similar PC software (such as PuTTY) enabling the USB port to emulate a serial port
- A cable to connect your PC's USB port to the Debug port of the HAWK.

Connecting to the HAWK Debug System Shell

The following procedure provides steps to use the system shell. Examples provided use the PuTTY terminal emulation program.

Prerequisites:

- Physical access to the HAWK controller
- Universal USB-to-Micro USB connector cable

NOTE: Starting in NX 4.2, the HAWK 8000 can be converted (downgraded) to run AX 3.8.111.6.5 – with some feature limitations. For example, for any HAWK 8000 running AX, the USB functionality is not supported. In this configuration the USB port on the device is not monitored for insertion/removal of devices.

Step 1: **Connect the USB cable between the controller's Debug port and the USB port you are using on your PC.**

Step 2: **On your PC, start your terminal emulation software. For example to start PuTTY from the Windows Start menu, this is typically Programs > PuTTY → PuTTY.**

Step 3: **In the tree in the PuTTY Configuration dialog, expand Connection and click Serial.**

Step 4: **Set the "Serial line to connect to" for your PC's (USB) COM port to use. For example, COM3.**

NOTE: You can examine Ports in Windows Device Manager to determine which serial port is in use on the PC.

Step 5: **Set the "Configure the serial line" fields as follows:**

- Speed (baud): 115200
- Data bits: 8
- Stop bits: 1
- Parity: None
- Flow control: None

Step 6: **In the tree in the PuTTY Configuration dialog, click Session and then click/select the "Connection type" as Serial**

NOTE: Optionally, you can save this configuration to reuse (load) in future PuTTY to HAWK serial sessions. To do this, type in a connection name in the "Saved Sessions" field (for example, "HAWK 8000-S"), and click Save. When you start PuTTY again to serially connect to the HAWK, select this name, and click **Load**.

Step 7: **At the bottom of the PuTTY Configuration dialog, click Enter.**

Step 8: **At the login prompt, enter a platform user name, and at the password prompt, the platform password.**

If prompted for system passphrase, enter the platform's system passphrase. If login is successful, the TITAN System Shell menu appears:

Step 9: **When finished making platform changes from the system shell, do the following:**

- If no changes, or reboot is not necessary, simply type L to Logout.
- If changes require rebooting, select the Reboot option.

Type "y" at the "Are you sure you want to reboot [y/n]" prompt, and press Enter.

Shutdown-related text appears in the terminal (PuTTY) window.

Step 10: Click the Close control (upper right corner) in the terminal session (PuTTY) window.

Click OK in the "PuTTY Exit Confirmation" popup dialog.

Step 11: Unplug the USB connector from the HAWK's Debug port.

About the HAWK System Shell Menu

The system shell of the HAWK provides simple, menu-driven, text-prompt access to basic Niagara platform settings, including IP network settings, platform credentials, system time, and enabling/disabling SFTP/SSH and Telnet. Also, you can use it to perform a TCP/IP "ping" from the HAWK to another host.

Changes issued in the system shell become immediately effective, except for IP address settings (Update Network Settings). You must reboot the HAWK in order for any changed network settings to become effective.

NOTE: If SSH is enabled in the HAWK, you can also access the controller's system shell using a remote terminal session using SSH. Platform login is still required (just as with the HAWK powered up in serial shell mode).

CAUTION

Risk of equipment damage!

- ▶ Be careful when changing items from the system shell, in particular platform account (login credentials, system passphrase) and network settings. If you change platform login credentials and then lose or forget them, you can restore the "factory default" platform login credentials – however, you will need to make a debug system shell connection, reboot the HAWK, and then be careful to press a key at the appropriate time during HAWK boot up.

The following is an example of the system shell menu.

```

TITAN System Shell
-----
hostid: Qnx-TITAN-4CC7-803D-DB48-BBAD
serial number: -1
build version: 4.1.25.1.3
build date: built on 2015-10-13 21:20:07
system time: Fri Oct 23 19:52:14 UTC 2015
niagara daemon port: 3011

dm0: inet 172.16.11.12 netmask 0xfffffe00 broadcast 172.16.11.255
      inet6 fe80::5272:24ff:fe9c:8938%dm0 prefixlen 64 scopeid 0x2
dm1: <disabled>
-----

1. Update System Time
2. Update Network Settings
3. Ping Host
4. Enable/Disable SSH/SFTP
5. Change Current User Password
6. Change System Passphrase
7. Enable Front Panel USB
8. Configure WIFI
9. Reboot

L. Logout

Enter choice: |
    
```

Fig. 36. System shell menu (serial shell or Telnet access)

To select a menu option, type the associated number (1 to 9) or "L" for logout, then press **Enter**. For example,

- type 2 (Update Network Settings) to recover IP access, or to set the IP settings of a new HAWK.
- type 6 (Change System Passphrase) to change the system passphrase of the unit. You might do this if swapping in a microSD flash memory card from a previously configured unit, in order to change the passphrase of the controller to match the passphrase that is already stored on the microSD flash memory card.

Update Network Settings

Use system shell menu option '2' to access most of the same IP networking options available in the Commissioning Wizard step "TCP/IP configuration". When selected, you are prompted for each setting sequentially, starting with hostname (shown below).

Update Network Settings Example in the System Shell

```
Network Configuration Utility

Enter new value, '.' to clear the field or '<cr>' to keep existing
value.
Hostname <localhost>                : J8_East
Domain <>                            : myDomain.net
Primary DNS Server <>                : 8.8.8.8
Secondary DNS Server <>              : 8.8.4.4
Route <192.168.1.1>                  :
Primary IPv6 DNS Server <>           :
Secondary IPv6 DNS Server <>         :
IPv6 Route <>                         :

NET1 Ethernet interface (en0)
IP address (clear to use DHCP) <>    : 192.168.1.36
Subnet mask <255.255.255.0>          :
Enable IPv6 addressing on this adapter? (Y/n) :
IPv6 address (clear to use stateless autoconfiguration) <> :

Enable NET2 (en1) interface? (y/N)   : Y
NET2 Ethernet interface
IP address (clear to use DHCP) <>    : 172.15.16.36
Subnet mask <255.255.255.0>          :
Enable IPv6 addressing on this adapter? (Y/n) :
IPv6 address (only 1 adapter may use IPv6 Autoconfiguration) <> :
**** IPv6 Autoconfiguration NOT supported on NET2 interface.
IPv6 on NET2 will be disabled.

Confirm new configuration
Hostname                : J8_East
Domain                 : myDomain.net
Default Gateway        : 192.168.1.1
Primary DNS            : 8.8.8.8
Secondary DNS          : 8.8.4.4
Default IPv6 Gateway   :
Primary IPv6 DNS       :
Secondary IPv6 DNS     :
NET1 settings:
IP Address              : 192.168.1.36
```

Subnet Mask : 255.255.255.0

IPv6 Addressing assigned via Autoconfiguration

NET2 settings:

IP Address : 172.15.16.36

Subnet Mask : 255.255.255.0

IPv6 Addressing assigned via Autoconfiguration

Save these settings? (Y/n) :

NOTE: After you save the network settings, they do not become active until you perform a reboot of the HAWK controller. You can do this when you return to the main system shell menu, by selecting Reboot, menu option 6.

Update System Time

If the commissioning process hasn't been completed yet, it is often important to set the current date and time (YYYYMMDDHHMM.ss). For example: "201510231536" for "23-Oct-2015 at 3:36pm UTC" or "11:36 EDT".

HAWK 8000 CONTROLLER – INSTALL & START-UP GUIDE

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