

# HP Network Automation Software

For the Windows<sup>®</sup>, Linux, and Solaris operating systems

Software Version: 9.20

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## Installation and Upgrade Guide

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# 1 Getting Started

This guide includes information on upgrading to or installing HP Network Automation Software (NA) on a single NA Core. Distributed System and Satellite configurations require additional information before upgrading. Please consult the Distributed System and Satellite documentation before following the instructions in this guide.

This chapter contains the following topics:

- [HP Network Automation Support Matrix](#) on page 9
- [Installation Overview](#) on page 10
- [Pre-Installation Checklist](#) on page 11
- [Additional NA Configurations](#) on page 14
- [HP Live Network Service](#) on page 14
- [Summary Reports](#) on page 15



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For more information, see [Documentation Updates](#) on page 3.

## HP Network Automation Support Matrix

For information on hardware and software requirements, database requirements, integrations with other products, coexistence with other products, additional required applications, internationalization and localization support, and other installation requirements, see the *NA Support Matrix*, available as described in [Documentation Updates](#) on page 3.

# Installation Overview

When installing NA on a supported 64-bit platform, NA uses the 64-bit Java Virtual Machine (JVM).

## NA 7.0.x and NA 7.2.x Users

While upgrading from NA 7.0.x or NA 7.2.x to NA 9.20, follow this process:

- 1 Upgrade to NA 7.60 as described in [Chapter 2, Upgrading to NA 7.60](#).
- 2 Upgrade to NA 9.20:
  - If the NA application server is running on a 32-bit operating system that cannot be upgraded to a 64-bit operating system on the same hardware, follow the procedure described in [Chapter 3, Upgrading to NA 9.20 from a Different System](#).
  - If the NA application server is running on a 64-bit operating system or on a 32-bit operating system that can be upgraded to a 64-bit operating system on the same hardware, follow the procedure described in [Chapter 4, Upgrading to NA 9.20 on the Same System](#).



To ensure that no settings or files are lost during an upgrade, back up the entire NA directory to a safe location before starting the upgrade. The current NA upgrade process does not restore the `$NA_HOME\jre\reporting.rcx` file. If you have customized the NA Summary Reports template or specification, such as adding additional report tabs, manually update the customized settings from the backed up version of the files to the new installed version of the file.

## NA 7.5.x, NA 7.60, NA 9.00, and NA 9.10 Users

You can upgrade NA 7.5.x or later directly to NA 9.20 as described in [Chapter 4, Upgrading to NA 9.20 on the Same System](#).



Before upgrading NA, move any existing `*.backup` files from the `$NA_HOME/server/lib/scripts/Database/Truecontrol` directory to a location outside the NA directory structure.

## NA 9.20 Users

For a new NA 9.20 installation, see [Chapter 5, Installing NA 9.20](#).

## Pre-Installation Checklist

To successfully install HP Network Automation (NA), you should review the pre-install checklist in [Table 1](#).



When upgrading NA from a 32-bit operating system to a 64-bit operating system, all of the wrapper configuration files (files such as `jboss_wrapper.conf` and `syslog_wrapper.conf`) will be overwritten.

**Table 1 NA Pre-Installation Checklist**

Area	Consideration
User Information	How many users will be using NA?
	How many different roles will NA users represent?
	Are you using individual credentials for tasks or single sign-on?
Installation Information	What is the FQDN of the server on which NA will be installed?
	What OS will be running on the server onto which NA will be installed?
	What path will NA be installed into?
	Are there other applications running on the server on which NA will be installed?
	What database will you be using (MySQL, Oracle, or Microsoft® SQL Server)? ( <b>Note:</b> If you are using Oracle, you will need to create an Oracle database. For information on configuring an Oracle database, see the Oracle documentation.)
	What is the fully qualified domain name of the database server?
	For the database server, the user must have privileges to create users and databases. ( <b>Note:</b> This information is needed during NA install to create the appropriate users and databases.)
	What TCP port is the database listening on for remote connections?
	If NA installs MySQL as part of the installation, what directory will MySQL be installed into? ( <b>Note:</b> If MySQL is not installed on the same system as NA, what port is MySQL running on and what is its fully qualified domain name?)
	Do you have the proper device credential information to access devices? ( <b>Note:</b> Devices can be grouped by credential.)
	Do any access-lists need to be modified for the NA server to access devices?
	Do you have a device group plan?
	Do you plan to use dynamic device groups?
	Do you plan to create groups during a bulk import via a CSV file?
Do you plan on using detect network devices and do you have your IP address range(s)?	

**Table 1 NA Pre-Installation Checklist (cont'd)**

Area	Consideration
Distributed System Configurations (See the <i>NA Multimaster Distributed System on Oracle Guide</i> or the <i>NA Multimaster Distributed System on SQL Server Guide</i> .)	Are you using Oracle or Microsoft SQL Server?
	Are there firewalls or ACLs between the database servers?
	What is the approximate bandwidth between database sites?
	Are all NA servers and database servers configured for the same time zone and synchronized by a common time source?
	Are you using the distributed system configuration for failover or load balancing (or both)?
	What is the total number of NA Cores you are planning to configure? ( <b>Note:</b> An NA Core is a single NA server and its attached database.)
Syslog	Is there a Syslog server to which devices are sending messages?
	Do you want devices to send Syslog messages to the NA server?
	What is the fully qualified domain name of the Syslog server?
	What OS is the Syslog server running?
	What is the name and version of the Syslog server?
Authentication	<p>What type of authentication will be used for NA (Local, TACACS+, RADIUS, SecurID, TWIST, or LDAP)? Are you using HP Server Automation (SA)? What type of authentication will be used for devices (Local, TACACS+, RADIUS, or SecurID)?</p> <ul style="list-style-type: none"> <li>• If you are using TACACS+ or RADIUS for authentication, what is the fully qualified domain name or IP address of the primary and secondary TACACS+ or RADIUS server? What is the shared secret for the NA host configured on the TACACS+ or RADIUS server? What type of authentication method is being used to encrypt the TACACS+ or RADIUS communication: PAP (the default), CHAP, or MSCHAP?</li> <li>• If you are using LDAP for application authentication, what is the fully qualified domain name of the LDAP server? What is the LDAP port? What type of connection should be made to the LDAP Server (Regular or SSL)? What is the Domain User Account or User Principal Name of the user being used to make the connection to LDAP? What is the password for the user being used to make the connection to LDAP? What is the Search Base? What are the LDAP security groups that are allowed to access NA?</li> <li>• If you are using HP Server Automation (SA) integrated authentication, what is the SA Twist Server fully qualified domain name? What is the HP SA Twist Username/Password? What is the OCC Server name?</li> </ul>

**Table 1 NA Pre-Installation Checklist (cont'd)**

<b>Area</b>	<b>Consideration</b>
Device Connection	What types of connection are permitted to and from your devices? Possibilities are: <ul style="list-style-type: none"> <li>• Telnet</li> <li>• SSH</li> <li>• SNMP</li> <li>• SNMPv3</li> <li>• SCP</li> <li>• FTP</li> <li>• Console</li> <li>• Bastion Host</li> <li>• Rlogin</li> <li>• TFTP</li> <li>• NAT</li> </ul>
Email	What is the fully qualified domain name of your SMTP server? What email address should NA use for an SMTP “From” address when sending email reports?
Connectors (For information on how to install and run HP Network Automation connectors, see the specific HP Network Automation Connector documentation.)	Are you using any NA Connectors, such as SMARTS InCharge, CA Unicenter NSM, Remydy AR system, HP Network Node Manager, CiscoWorks RME, or HP ServiceDesk?
Workflow	Will workflow be enabled? If so: <ul style="list-style-type: none"> <li>• What group(s) need approval?</li> <li>• What tasks need approval?</li> <li>• Who can approve tasks?</li> </ul>
Satellite Gateways	Are you using Satellite Gateways? If so: <ul style="list-style-type: none"> <li>• What is the design goal for the Satellite Gateways (simplified network traffic, NAT'ed / overlapping IP addresses)?</li> <li>• What OS will be used for each Satellite Gateway (Solaris or Linux)?</li> </ul>

**Table 1 NA Pre-Installation Checklist (cont'd)**

Area	Consideration
Sizing Information	How many nodes do you plan on managing with NA and over what period of time?
	How long would you prefer to store old configuration files?
	On average, how many lines are there in the configuration file.
	The default database pruning options include: <ul style="list-style-type: none"> <li>• Configurations — saved for 365 days</li> <li>• Diagnostics — Saved for 45 days</li> <li>• Events — Saved for 45 days</li> <li>• Tasks — Saved for 365 days</li> <li>• Sessions — Saved for 45 days</li> <li>• Log files — Saved for 30 days</li> <li>• Task log files — Saved for 7 days</li> <li>• Topology Data — Saved for 45 days</li> <li>• Diagram files — Saved for 1 day</li> <li>• All data — Saved for 365 days</li> </ul>

## Additional NA Configurations

For information on configuring a Distributed System environment, see the *NA Multimaster Distributed System on Oracle Guide* or the *NA Multimaster Distributed System on SQL Server Guide*.

For information on configuring a Horizontal Scalability system environment, see the *NA Horizontal Scalability Guide*.

For information on configuring a Gateway and Satellite agent environment, see the *NA Satellite Guide*.

## HP Live Network Service

HP Live Network is a complementary content delivery service that is integrated into HP Network Automation and can deliver periodic network security and compliance content updates. The HP Live Network security and compliance service enables immediate assessment of network security and policy violations, as well as automated remediation options. HP Live Network includes valuable free content as well as subscription services.



HP Live Network requires that the server hosting NA have access to the Internet.

## Installing the HP Live Network Service

To access the HP Live Network service, you need to install the HP Live Network Connector (LNc) via the LNc Installer.

If you launch the NA Installer from the NA distribution media, it will automatically copy the LNc Installer to the `$NA_HOME/installers` folder. The files include:

- `lnc-setup.exe` (Windows)
- `lnc-setup-linux.zip`
- `lnc-setup-solaris.zip`

For installation instructions, see the *HP Live Network Connector User Guide*, which is available on the NA DVD and from the HP Live Network web site at:

**<https://hpln.hp.com/group/hp-live-network-connector>**

Access to this page requires an HP Live Network user account.

If for some reason the NA installer does not copy the LNc Installer to the `$NA_HOME/installers` folder, you can locate it in the `add-ons/livenetwork` folder on the distribution media or download it from the HP Live Network web site at:

**<https://hpln.hp.com/group/hp-live-network-connector>**

## Summary Reports

The Summary reports are generated in the Microsoft Excel (.xls) format. You can either run the Summary reports from a Windows client computer connected to your NA server or you can use another program to view the Summary reports if you are running NA on a Linux or Solaris platform.





## 2 Upgrading to NA 7.60

This section includes information on upgrading from NA 7.0.x and NA 7.2.x to NA 7.60. After you have upgraded to NA 7.60, you can install NA 9.20. Refer to [Chapter 5, Installing NA 9.20](#) for information on upgrading to or installing NA 9.20.



Do not run the NA Uninstaller before upgrading from NA 7.0.x or NA 7.2.x to NA 7.60.

This chapter contains the following topics:

- [Upgrade Overview](#) on page 17
- [Upgrading the Operating System or Database](#) on page 18
- [Running the MySQL Upgrade Installer](#) on page 19
- [Running the NA 7.60 Service Pack Installer](#) on page 22
- [Upgrading Additional NA Components](#) on page 23

### Upgrade Overview

The following steps provide an outline for single NA Core upgrade.

- 1 Stop all NA services. Refer to [Chapter 7, Starting/Stopping NA Services](#) for information.
- 2 To ensure that no settings or files are lost during the upgrade, backup the entire NA directory to a safe location. For example, if you installed NA in c:\NA, backup the entire directory to a safe location.
- 3 **Be sure that you have backed up all of the data in the NA database.** Refer to your database documentation for instructions on backing up the database or contact your Database Administrator.
- 4 Run the MySQL Upgrade Installer if NA is using a MySQL database. Refer to [Running the MySQL Upgrade Installer](#) on page 19.
- 5 Run the NA 7.60 Service Pack Installer. Refer to [Running the NA 7.60 Service Pack Installer](#) on page 22.

Keep in mind that NA services are not available during the upgrade process. In addition, once you run the NA 7.60 Service Pack Installer, you cannot rollback to the previous version of NA after upgrading to NA 7.60.

# Upgrading the Operating System or Database

## Operating System Upgrades

When upgrading to NA 7.60, if you are going from a deprecated operating system, for example Windows 2000 or Solaris 9, to a supported NA 7.60 operating system, do the following:

- 1 Stop NA.
- 2 Back up the NA folder.
- 3 Upgrade the operating system to a version supported by NA 7.60.
- 4 Restart NA and verify that NA is working properly.
- 5 Follow the NA 7.60 upgrade steps.

► For all operating system upgrades, consult the vendor documentation and your system support personnel.

## Database Upgrades

When upgrading to NA 7.60, if you are going from a deprecated version of the database, for example Oracle 9i, to a supported version of the database, do the following:

- 1 Stop NA.
- 2 Back up the NA database.

► When you enter a database name to identify the NA database, it must be in the identical case as the database name in the database application. For example, if you created your NA database as "Nadb," be sure to enter "Nadb" when backing up and restoring the database.

- 3 Upgrade the database to a version supported by NA 7.60. (For MySQL, refer to [Running the MySQL Upgrade Installer](#) on page 19.)
- 4 Restart NA and verify that NA is working properly.
- 5 Follow the NA 7.60 upgrade steps.

► For all database upgrades, consult the documentation provided by the appropriate vendor and your database administrator (DBA). If after upgrading to NA 7.60 you experience performance issues, such as the NA Home page taking a long time to load, it is recommended that your Oracle DBA perform a re-index of the tables in the NA database instance. This work should be part of your regular Oracle maintenance tasks.

## Operating System and Database Upgrades

When performing both an operating system and database upgrade, do the following:

- 1 Stop NA.
- 2 Back up the NA folder.

- 3 Back up the NA database.



When you enter a database name to identify the NA database, it must be in the identical case as the database name in the database application. For example, if you created your NA database as "Nadb," be sure to enter "Nadb" when backing up and restoring the database.

- 4 Upgrade the operating system to a version supported by NA 7.60.
- 5 Upgrade the database to a version supported by NA 7.60. (For MySQL, refer to [Running the MySQL Upgrade Installer](#) on page 19.)
- 6 Restart NA and verify that NA is working properly.
- 7 Follow the NA 7.60 upgrade steps.



For all operating system upgrades, consult the vendor documentation and your system support personnel. For all database upgrades, consult the documentation provided by the appropriate vendor and your database administrator (DBA). If after upgrading to NA 7.60 you experience performance issues, such as the NA Home page taking a long time to load, it is recommended that your Oracle DBA perform a re-index of the tables in the NA database instance. This work should be part of your regular Oracle maintenance tasks.

## Running the MySQL Upgrade Installer

If you are using MySQL as your NA database and upgrading from an NA release prior to NA 7.50, you must run the MySQL Upgrade Installer.

Before you perform the MySQL update, ensure that:

- The existing MySQL 3.23.55 database is working properly with NA, regardless of how it was initially installed, and that NA can connect to it.
- The NA version connecting to MySQL must be 7.0 or later.
- The existing MySQL 3.23.55 database is installed on one of the following OS platforms:
  - Windows 2003 Server
  - Red Hat Linux AS 3, Red Hat Linux AS 4, SuSE Linux 9
  - Solaris 10 (Solaris 9 is not supported. You must upgrade to Solaris 10 before upgrading MySQL.)
- NA services have been stopped.



When running the MySQL Upgrade Installer, all the databases in the MySQL Data folder will be upgraded to MySQL 5.0.58, not just the NA databases.

### Windows Platform

To upgrade to MySQL 5.0.58 on a Windows platform:

- 1 Double click the `mysql-5.0.58-[nnnn]-[mmddy]-windows.exe` installer file. [nnnn] is the build number and [mmddy] is the date when the MySQL Update Installer was built.
- 2 Click Next after reading the introduction.
- 3 Select "Upgrade existing MySQL to version 5.0.58" and click Next.

- 4 Make sure both the MySQL Install folder and MySQL Data folder are correct and click the Next button. Note that the MySQL Install folder is the home folder where the existing MySQL 3.23.55 database is installed. The MySQL Upgrade Installer checks for the existence of the `bin\mysql.exe` file in this folder for validation. The MySQL Data folder is the folder where the existing MySQL 3.23.55 stores its database files. The MySQL Upgrade Installer checks for the existence of the `mysql\user.frm` file in this folder for validation.
- 5 Input the root password and port number of the existing MySQL 3.23.55 database and click Next. Note that the MySQL Upgrade Installer tries to locate the `my.ini` file in the Windows folder (usually located in `C:\Windows` or `C:\Winnt`). If the file is found, the MySQL Upgrade Installer parses it and extracts some MySQL variables. If the `my.ini` file cannot be located, the MySQL Upgrade Installer tries to connect to the existing MySQL 3.23.55 database using the account root of the given password. It then queries MySQL 3.23.55 for certain variables.
- 6 The MySQL Upgrade Installer opens a warning dialog box with the following message:
 

Previous MySQL installation (except MySQL data folder) is going to be removed. Make sure you have backed up the entire MySQL install folder and MySQL data folder before processing to the next step.
- 7 Click OK to continue the installation. Click Cancel to cancel the installation. If you click OK, the MySQL Upgrade Installer executes the following actions:
  - Stops the MySQL 3.23.55 engine.
  - Verifies that the given port is available.
  - Removes the MySQL Windows service if it exists.
  - Deletes all the files and folders (except MySQL data files in the MySQL Data folder) in the MySQL Install folder.
- 8 Click Install. The MySQL Upgrade Installer executes the following actions:
  - Installs the MySQL 5.0.58 files.
  - Places the `my.ini` file in the MySQL Install folder.
  - Configures the MySQL Windows service.
  - Starts MySQL 5.0.58 using the Windows service.
  - Verifies the root password provided earlier.
  - Runs the database upgrade scripts to upgrade all MySQL 3.23.55 databases in the MySQL Data folder. (Note that this could take up to several hours if you have a very large database.)
  - Restart MySQL.
- 9 Click Done to complete the MySQL 5.0.58 upgrade.

## Linux or Solaris Platform

To upgrade to MySQL 5.0.58 on a Linux or Solaris platform:

- 1 Login as root.
- 2 Copy `mysql-5.0.58-[nnnn]-[mmddy]-[linux/solaris].bin` from the CD/DVD to the local file system. Change its permission by running `chmod +x mysql-5.0.58-[nnnn]-[mmddy]-[linux/solaris].bin`. `[nnnn]` is the build number and `[mmddy]` is the date when the MySQL Upgrade Installer was built.

- 3 Run the MySQL Upgrade installer using the following command:  

```
./mysql-5.0.58-[nnnn]-[mmdyy]-[linux/solaris].bin
```
- 4 Press Enter after reading the introduction.
- 5 Select “Upgrade existing MySQL to version 5.0.58” and press Enter.
- 6 Make sure that both the MySQL Install and MySQL Data folders are correct. Note that the MySQL Install folder is the home folder where existing MySQL 3.23.55 is installed. The MySQL Upgrade Installer checks the existence of `bin/mysql` file in this folder for validation. The MySQL Data folder is the folder where existing MySQL 3.23.55 stores its database files. The MySQL Upgrade Installer checks the existence of `mysql/user.frm` file in this folder for validation.
- 7 Input the root password and port number for the existing MySQL 3.23.55. Note that the MySQL Upgrade Installer tries to locate the `/etc/my.cnf` file. If this file is found, the MySQL Upgrade Installer parses it and extracts some MySQL variables from it. If `/etc/my.cnf` cannot be located, the MySQL Upgrade Installer tries to connect existing MySQL 3.23.55 using account root and the given password. It then queries MySQL 3.23.55 for certain variables.
- 8 The MySQL Upgrade Installer displays the following warning message:  

```
Previous MySQL installation (except MySQL data folder) is going to be removed. Make sure you have backed up the entire MySQL install folder and MySQL data folder before processing to the next step.
```
- 9 Select OK to continue the installation. Select Cancel to cancel the installation. If you clicked OK, the MySQL Upgrade Installer executes the following actions:
  - Stops the MySQL 3.23.55 engine. Note that if MySQL 3.23.55 cannot be stopped by the MySQL Upgrade Installer, a warning message is displayed for you to make sure MySQL 3.23.55 has been stopped. If the `ps -efl|grep mysql|wc -l` command returns 0, it means MySQL has been stopped. If MySQL is not stopped, manually enter the `/etc/init.d/mysql stop` or `kill` command to stop it.
  - Verifies that given port is available.
  - Deletes the files and folders (except MySQL data files in MySQL Data folder) in the MySQL Install folder.
- 10 Press Enter after reading the Pre-Installation summary. The following actions are executed by the MySQL Upgrade Installer:
  - Installs the MySQL 5.0.58 files.
  - Setup `/etc/my.cnf`, `/etc/init.d/mysql` and `startup/shutdown` in `/etc/rc[n].d`.
  - Starts MySQL 5.0.58.
  - Verifies the root password provided earlier.
  - Runs the database upgrade scripts to upgrade all MySQL 3.23.55 databases in the MySQL Data folder. Note that this could take up to several hours if you have very large database.
  - Restarts MySQL.
- 11 Press Enter to complete MySQL 5.0.58 upgrade.

## Running the NA 7.60 Service Pack Installer

This section provides information on running the NA 7.60 Service Pack Installer. Before running the NA 7.60 Service Pack Installer, ensure that the database server is running.

- ▶ If the upgrade fails, save all log files to a location outside the NA directory structure before re-running the upgrade.

### Restoring Previous Customization

The current NA upgrade process does not restore the `$NA_HOME\jre\reporting.rcx` file. If you have customized the NA Summary reports template or specification, such as adding additional report tabs, manually update the customized settings from the backed up version of the file to the new installed version of the file.

All settings in the `site_options.rcx` and `adjustable_options.rcx` files are preserved and restored automatically. To restore the `reporting.rcx` file, manually edit the new `reporting.rcx` file.

If you changed other `.rcx` files in the previous installation and want to keep those changes after upgrading, you should add those changes into the new `adjustable_options.rcx` file. You cannot use the previous `.rcx` file to overwrite the new version. Doing so could cause the application to fail.

- ▶ All settings in the `$NA_HOME/server/ext/wrapper/conf/*.conf` file and `$NA_HOME/server/ext/jboss/server/default/conf/log4j.xml` file are preserved and restored automatically.

### Windows Platform

For upgrading on a Windows platform, insert the NA 7.60 Service Pack Installer DVD into the DVD drive and do the following:

- 1 On the Windows taskbar, click Start, then click Run.
- 2 Enter: `[drive]:\windows_[nnnn]-[mmddyy]_spi_setup.exe`, where `[drive]` is the letter of your DVD drive, `[nnnn]` is the build number, and `[mmddyy]` is the build date.
- 3 Click OK.
- 4 Follow the instructions on the screen.

Refer to [Upgrading Additional NA Components](#) on page 23 for information on upgrading other NA components, such as NA Satellites, NA Horizontal Scalability, the NA AAA Log Reader, and the NA Syslog Reader.

### Linux Platform

If you are installing the NA 7.60 Service Pack Installer on an NA Linux server, insert the DVD into the DVD drive and mount it. You must have root access to run the NA 7.60 Service Pack Installer.

- 1 `cd / [DVD_MOUNT_POINT]`, where `[DVD_MOUNT_POINT]` is the location of the DVD drive.
- 2 `cd linux`

- 3 `sh linux_[nnnn]-[mmddy]_spi_setup.bin`, where [nnnn] is the build number and [mmddy] is the build date.
- 4 Follow the instructions on the screen.

## Solaris Platform

If you are installing the NA 7.60 Service Pack Installer on an NA Solaris server, insert the DVD into the DVD drive and mount it. You must have root access to run the Service Pack Installer.

- 1 `cd / [DVD_MOUNT_POINT]` where [DVD\_MOUNT\_POINT] is the location of the DVD drive.
- 2 `cd solaris`
- 3 `sh solaris_[nnnn]-[mmddy]_spi_setup.bin`, where [nnnn] is the build number and [mmddy] is the build date.
- 4 Follow the instructions on the screen.

## Upgrading Additional NA Components

The following optional components must be upgraded when upgrading NA:

- NA Multimaster Distributed System — For information about upgrading NA in a Distributed System environment, see the *NA Multimaster Distributed System on Oracle Guide* or the *NA Multimaster Distributed System on SQL Server Guide*.
- NA Horizontal Scalability — For information about upgrading NA in a Horizontal Scalability environment, see the *NA Horizontal Scalability Guide*.
- NA Satellites — If you are using NA Satellites, after installing the current version of NA, run the “Deploy Remote Agent” task to re-install the upgraded Satellite agent on all of the remote Gateways. For information, see the “Upgrading the Satellite” section of the *NA Satellite Guide*.

## NA AAA Log Reader

If you are using the AAA Log Reader on your AAA server to provide real-time change detection, you will need to update the AAA Log Reader. To do this:

- 1 Back up the AAA Log Reader directory on your AAA server.
- 2 Copy `truecontrol-client.jar` located in the AAA folder on the Install CD to the AAA Log Reader directory. Overwrite the existing file.
- 3 Change the following four options in the `agent.rcx` file for correct error logging to appear in the `aaa_wrapper.log`. Change:

```
[option name="log/AAALogReader"]System.out[option]
[option name="log/AAALogReader/level"]0[option]
[option name="log/connect"]System.out[option]
[option name="log/connect/level"]75[option]
```

To:

```
[option name="log/External/AAALogReader"]System.out[option]
[option name="log/External/AAALogReader/level"]0[option]
[option name="log/System/Authenticate"]System.out[option]
[option name="log/System/Authenticate/level"]75[option]
```

- 4 Although not required, it is recommended that you install a new version of the JRE on the AAA Server, version 1.6.0. The various JRE installations can be found on the DVD at: /add-ons/jre/. (**Note:** This step is not necessary if the JRE is already installed.)

## NA Syslog Reader

NA uses Syslog messages to detect device changes in real-time. Some environments require the use of a Syslog Reader to forward messages from the Syslog server to NA. Typically, the Syslog Reader agent is only needed when a central Solaris Syslog server is in use, as Solaris is not RFC-compliant for Syslog.

If you are using the Syslog Reader, it needs to be upgraded. When upgrading the NA 7.60 Syslog Reader:

- 1 Go to /usr/local/NA/syslogreader/probe.rcx.
- 2 In the probe.rcx file, make a note of the following lines:

```
[option name="connect/AppServerURL"]SERVERNAME:1099[/option]
[option name="SyslogReader/LogFile/FileName"]SOMEPATH/FILE[/option]
```
- 3 Stop the Syslog Reader.
- 4 Run /etc/init.d/truecontrol.syslogreader stop.
- 5 Remove the /usr/local/NA directory.
- 6 Follow the install instructions in the ReadMe.txt file. Be sure to include the correct values in the probe.rcx file from Step 2.



# 3 Upgrading to NA 9.20 from a Different System

NA 9.20 must run on a 64-bit operating system.

This chapter describes the procedure for upgrading from NA 7.5x, 7.6x, or 9.xx running on a standalone NA application server to NA 9.20 running on a different standalone NA application server. If the NA application server is currently running NA 7.0x or 7.2x, see [Chapter 2, Upgrading to NA 7.60](#).

For information about upgrading other NA environments, see the appropriate documentation:

- NA Multimaster Distributed System

For information about upgrading NA in a Distributed System environment, see “Upgrade the NA Mesh” in the *NA Multimaster Distributed System on Oracle Guide* or the *NA Multimaster Distributed System on SQL Server Guide*. Come back to this chapter when directed to do so in the upgrade procedure.

- NA Horizontal Scalability

For information about upgrading NA in a Horizontal Scalability environment, see “Upgrading Horizontal Scalability” in the *NA Horizontal Scalability Guide*. Come back to this chapter when directed to do so in the upgrade procedure.

- NA Satellites

If you are using NA Satellites, after installing the current version of NA, run the “Deploy Remote Agent” task to re-install the upgraded Satellite agent on all of the remote Gateways. For information, see the “Upgrading the Satellite” section of the *NA Satellite Guide*.

NA services are not available during the upgrade process. In addition, after you run the NA Service Pack Installer, you cannot roll back to the previous version of NA.

## Upgrade and Installation Caveats

When installing or upgrading NA, note the following:

- This documentation describes the process for upgrading NA on the same operating system type only (Windows to Windows, Solaris to Solaris, or Linux to Linux). Support can assist you with troubleshooting upgrade problems regardless of operating system path. If you require assistance with the process of moving NA to a different operating system, contact HP Professional Services.
- The NA Installer does not perform any sort of version checking. As a result, you could complete installations or upgrades on unsupported platforms.
- If you run a 64-bit NA full install or a Service Pack install on a 32-bit platform, the NA Installer will start and then quit without any error message.

- The Windows version of the NA Installer includes a black CLI window that runs in the background. Do not close this window or the install will end without prompting you. In addition, when performing NA installs over the network, for example running the `hpna_win.exe` installer from a remote share, you will see the black CLI window for several minutes.

## Restoration of Previous Customizations

During the NA upgrade, the NA Setup program automatically backs up critical NA files.

After upgrading NA, the installer automatically restores the following files:

- Device software images from the backup directory are copied to `$NA_HOME/server/images`.
- Summary reports from the backup directory are copied to `$NA_HOME/addins`.
- NA LiveNetwork content files are copied to `$NA_HOME/content`.
- If you selected the use the previous administrative settings option during installation, the `site_options.rcx` and `adjustable_options.rcx` file from the backup directory are copied to `$NA_HOME/jre`.
- The SecurID token file is restored.
- The Gateway encryption key is restored.
- The `license.dat` file is restored if you do not have a new license file.

The following files are backed up. However, they are not restored during the NA upgrade:

- Most `.rcx` files in the `$NA_HOME/jre` folder.
  - Aside from the `site_options.rcx` and `adjustable_options.rcx` files, changes in other `.rcx` files will not be preserved.
  - If you have customized the NA summary reports template or specification, such as adding additional report tabs, manually update the customized settings from the backed up version of the `reporting.rcx` file to the new version of the `reporting.rcx` file.
  - If you changed other `.rcx` files in the previous installation and want to keep those changes after upgrading, add those changes into the new `adjustable_options.rcx` file. You cannot use the previous `.rcx` file to overwrite the new version. Doing so could cause the application to fail.
- `$NA_HOME/server/ext/jboss/server/default/conf/log4j.xml` file.
  - As of NA 9.20, the `log4j.xml` file is no longer used. The comparative file is `$NA_HOME/server/ext/jboss/server/default/deploy/jboss-logging.xml`.
  - To restore previous settings, manually edit the `jboss-logging.xml` file with the customizations in the `log4j.xml` file. Note that the configuration formats differ between the two files.
- Wrapper configuration files in `$NA_HOME/server/ext/wrapper/conf`.
  - If you selected the use the previous administrative settings option during installation, the upgrade installer attempts to merge the settings from the backed up version of the `jboss.conf` file to the new `jboss.conf` file. Verify the configuration in the new file.

- To restore previous settings in other `.conf` files, manually edit the corresponding file after upgrading. You cannot use the previous file to overwrite the new version. Doing so could cause the application to fail.

## Upgrade Procedure

The following steps provide an outline for upgrading NA from a standalone NA application server to a different standalone NA application server. In this procedure, Server X identifies the source (existing) NA application server and Server Y identifies the target (new) NA application server.



Do *not* upgrade Oracle or SQL Server while upgrading NA across application servers. If you need to upgrade the database product for a standalone NA application server, complete this procedure, and then upgrade the database product as described in [Database Upgrades](#) on page 70.

- 1 Verify the current NA version:
  - If the NA application server is currently running NA 7.0x or 7.2x, follow the upgrade procedure in [Chapter 2, Upgrading to NA 7.60](#) before completing this procedure.
  - If the NA application server is currently running NA 7.5x, 7.6x, or 9.xx, continue with this procedure.
- 2 Determine the NA database name and database user name.
 

In the NA console, on the **Admin > System Status** page, locate the DatabaseMonitor row, and then click **Run Now** in that row.

On the **Monitor Results** page, locate the values for Database catalog (the database name) and Database user name.
- 3 Prepare Server Y with a supported version of the operating system in use on Server X.
- 4 On Server X, stop all NA services.
  - *Windows*: Open the **Services** control panel. In the list of services, right-click each of the following services, and then click **Stop**:
    - TrueControl ManagementEngine
    - TrueControl FTP Server
    - TrueControl SWIM Server
    - TrueControl Syslog Server
    - TrueControl TFTP Server
  - *UNIX*: Run the following command:
 

```
/etc/init.d/truecontrol stop
```
- 5 On Server X, if a gateway is installed on the NA application server, stop that gateway:
 

```
/etc/init.d/opswgw-<gatewayName> stop
```

- 6 On Server X, back up the following files:
  - <NA\_HOME>/jre/\*.rcx
  - <NA\_HOME>/server/ext/wrapper/conf/jboss\_wrapper.conf
  - <NA\_HOME>/server/ext/jboss/server/default/deploy/db-ds.xml
  - <NA\_HOME>/jre/lib/security/cacerts
  - <NA\_HOME>/server/ext/jboss/server/default/conf/truecontrol.keystore
  - <NA\_HOME>/server/ext/jboss/server/default/conf/truecontrol.truststore
- 7 Back up all of the data in the database. For instructions, see the database documentation or contact your database administrator (DBA).

For MySQL, use a command similar to the following example:

```
mysqldump -u root -p -h 127.0.0.1 --database NA > NAdump.sql
```

For the MySQL examples in this procedure, the database user name is root, and the database name is NA.

- 8 On Server Y, install the same NA version as on Server X.

For example, if Server X has NA 9.11 plus one hotfix, install NA 9.10, the NA 9.11 patch, and then the hotfix.



Because you will not be running this NA version in production on Server Y, it is acceptable to install the current NA version on the operating system of Server Y.

During installation, note the following:

- If you are using the embedded database, choose to install MySQL. Specify the same database name, user name, and password as on Server X.
  - If you are using a remote database, provide the information for connecting to the existing NA database.
- 9 On Server Y, stop all NA services.
    - *Windows*: Open the **Services** control panel. In the list of services, right-click each of the following services, and then click **Stop**:
      - **TrueControl ManagementEngine**
      - **TrueControl FTP Server**
      - **TrueControl SWIM Server**
      - **TrueControl Syslog Server**
      - **TrueControl TFTP Server**
    - *UNIX*: Run the following command:

```
/etc/init.d/truecontrol stop
```

- 10 Replicate the NA configuration of Server X as follows:

- a Copy the backed up \*.rcx files from Server X to the same location on Server Y.



In a multiple NA core environment, consider whether the \*.rcx files contain NA core-specific settings. In this case, copy the \*.rcx files in a way that replicates the existing NA configuration onto the new servers.

- b On Server Y, manually edit the jboss\_wrapper.conf and db-ds.xml files to restore any customizations made on Server X.

- 11 If you are using the embedded database, do the following:
  - a If the MySQL configuration for the NA database has been modified on Server X, replicate the configuration changes on Server Y.

MySQL provides configuration files at several levels. You must know which, if any, have been changed. The global configuration file is commonly located as follows:

- *Windows*: <Drive>:\MySQL\my.ini
- *UNIX*: /etc/my.cnf

Determine which MySQL configuration files have been modified for the NA database, and then do one of the following:

- Copy these files from Server X to the same location on Server Y. Retain permissions on the files.
  - Edit the MySQL configuration files on Server Y to match those on Server X.
- b Copy the database backup file from Server X to Server Y.  
Ensure that the database user has read access to the database backup file.
  - c On Server Y, import the data from the NA database backup into the new database instance created during installation of NA. For example:

```
mysql -u root -p NA < NAdump.sql
```

- 12 On Server Y, delete any existing \*.backup files from the \$NA\_HOME/server/lib/scripts/Database/Truecontrol directory.
- 13 Ensure that the database server is running.
- 14 *Optional.* Verify the authenticity of the NA 9.20 Service Pack Installer as described in [Optional. Verify the Signature of the NA Installer](#) on page 30.
- 15 On Server Y, run the NA 9.20 Service Pack Installer as described in [Running the NA 9.20 Service Pack Installer](#) on page 30.



If the upgrade fails, save all log files to a location outside the NA directory structure before re-running the upgrade.

- 16 On Server Y, restore the certificate files from Server X to the following locations:
  - <NA\_HOME>/jre/lib/security/cacerts
  - <NA\_HOME>/server/ext/jboss/server/default/conf/truecontrol.keystore
  - <NA\_HOME>/server/ext/jboss/server/default/conf/truecontrol.truststore
- 17 On Server Y, if NA uses a MySQL database, check the MySQL configuration as described in [Verify the MySQL Configuration](#) on page 32.
- 18 If Server Y runs the Linux operating system and if NA uses a MySQL database, verify that the /etc/hosts file contains the following line:

```
127.0.0.1    localhost
```

The NA-installed MySQL requires the localhost line exactly as shown here. To expand the information in the hosts file, add new lines containing the additional definitions.

- 19 *Linux only.* Set the open file limit for NA sessions as described in [Set the ulimit Values for Running NA \(Linux only\)](#) on page 34.
- 20 Disable the JCS disk cache as described in [Disabling the JCS Disk Cache](#) on page 34.
- 21 *Optional.* Use the optimized Data Pruning task as described in [Data Pruning](#) on page 35.

- 22 Update the NA configuration as described in [Verify the NA User Interface Settings](#) on page 36.
- 23 On Server Y, install the latest NA Driver Pack as described in [Installing the Latest NA Driver Pack](#) on page 36.
- 24 On Server Y, upgrade any additional NA components as described in [Upgrading Additional NA Components](#) on page 37.
- 25 On Server Y, if a gateway was installed on Server X, install the gateway as described in the *NA Satellite Guide*.

## Optional. Verify the Signature of the NA Installer

A Gnu Privacy Guard (GPG) signature file (.sig) is included with all NA installers on the NA installation media. HP recommends that you verify the authenticity of the NA installer before installing NA. To verify the validity of a file, follow the instructions for “Verification using GPG” at:

**[https://h20392.www2.hp.com/portal/swdepot/  
displayProductInfo.do?productNumber=HPLinuxCodeSigning](https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning)**

This process is valid for all operating system platforms supported by NA. File verification can be done on any system that supports running gpg. Because the verification process might vary depending on the gpg version and operating platform, consult the documentation for your version of gpg.

## Running the NA 9.20 Service Pack Installer

Before running the NA Service Pack Installer, ensure that the database server is running.

The NA Service Pack Installer sets the Java virtual machine (JVM) heap size in relation to the amount of system RAM and the number of processors. Generally speaking, the installer sets the JVM heap size to half of the RAM. (The NA installer does not explicitly set the size of the young generation, so this value defaults to 1/3 of the JVM heap size.) Note the following exceptions:

- If the heap size is already set to a larger value than the NA Service Pack Installer would set, the NA Service Pack Installer does not change that value.
- If the NA application server has more than 64GB of RAM, the NA installer sets the JVM heap size to 32GB.
- If HP Network Node Manager i Software is already installed on the NA application server, the NA installer sets the JVM heap size to 512MB regardless of the system RAM size. In this case, the NA installer sets the JVM permanent generation garbage collection (PermGen) to 128MB.

Read the section appropriate to your operating system type:

- [Running the Service Pack Installer on a Windows Operating System](#) on page 31
- [Running the Service Pack Installer on a Linux Operating System](#) on page 31
- [Running the Service Pack Installer on a Solaris Operating System](#) on page 32

## Running the Service Pack Installer on a Windows Operating System

For upgrading on a Windows platform, insert the NA Service Pack Installer DVD into the DVD drive and do the following:

- 1 On the Windows taskbar, click Start, then click Run.
- 2 Enter: [drive]:\windows\_[nnnn]-[mmddyy]\_spi\_setup.exe, where [drive] is the letter of your DVD drive, [nnnn] is the build number, and [mmddyy] is the build date.
- 3 Click OK.
- 4 Follow the instructions on the screen.

## Running the Service Pack Installer on a Linux Operating System

If you are installing the NA Service Pack Installer on an NA Linux server, insert the DVD into the DVD drive and mount it. You must have root access to run the NA Service Pack Installer.

- 1 `cd / [DVD_MOUNT_POINT]`, where [DVD\_MOUNT\_POINT] is the location of the DVD drive.
- 2 `cd linux`
- 3 Set the environment variable using the following commands: `TZ=UTC` and `export TZ`.
- 4 Set the open file limit for this session:
  - a Determine the open file limits by running the following commands:
 

```
ulimit -Sn
ulimit -Hn
```

The soft file limit must be at least 32768.  
The hard file limit must be at least 32768.
  - b If necessary, update the soft file limit by running the following command:
 

```
ulimit -n 32768
```
- 5 `sh linux_[nnnn]-[mmddyy]_spi_setup_64.bin`, where [nnnn] is the build number and [mmddyy] is the build date.
- 6 Follow the instructions on the screen.

If you see the following errors in the log file, verify the value of the TZ environment variable, and then restart the NA Service Pack Installer:

```
SQLException while trying to connect to the database.
java.sql.SQLException: ORA-00604: error occurred at recursive SQL level 1
RA-01882: timezone region not found
```

## Running the Service Pack Installer on a Solaris Operating System

If you are installing the NA Service Pack Installer on an NA Solaris server, insert the DVD into the DVD drive and mount it. You must have root access to run the NA Service Pack Installer.



On Solaris, the NA Service Pack Installer supports 64-bit. As a result, on a 64-bit operating system:

- The installer automatically installs 64-bit NA.
- The installer upgrades 32-bit NA to 64-bit NA.

1 `cd / [DVD_MOUNT_POINT]` where `[DVD_MOUNT_POINT]` is the location of the DVD drive.

2 `cd solaris`

3 Set the environment variable using the following commands: `TZ=UTC` and `export TZ`.

4 Set the open file limit for this session:

- a Determine the open file limits by running the following commands:

```
ulimit -Sn
```

```
ulimit -Hn
```

The soft file limit must be at least 32768.

The hard file limit must be at least 32768.

- b If necessary, update the soft file limit by running the following command:

```
ulimit -n 32768
```

5 `sh solaris_[nnnn]-[mmddy]_spi_setup_64.bin`, where `[nnnn]` is the build number and `[mmddy]` is the build date.

6 Follow the instructions on the screen.

If you see the following errors in the log file, verify the value of the `TZ` environment variable, and then restart the NA Service Pack Installer:

```
SQLException while trying to connect to the database.
java.sql.SQLException: ORA-00604: error occurred at recursive SQL level 1
RA-01882: timezone region not found
```

## Verify the MySQL Configuration

The following MySQL configuration options affect NA performance:

- Large device configurations can exceed the default packet size configured for MySQL, resulting in an error similar to the following example:

```
DeviceDataManagementEJB: Exception in addDeviceData -
com.mysql.jdbc.PacketTooBigException: Packet for query is too large.
```

To avoid this problem, increase the maximum packet size that MySQL accepts to at least 16MB. If the error still occurs after adjusting this value, increase it further, up to a maximum of 1GB.



- Restricting MySQL to a small number of concurrent threads can reduce NA performance. (On prior versions of NA, the default number was 10.) To avoid this problem, in the MySQL configuration file, set the number of concurrent threads to 20, which the NA-installed version of MySQL interprets as “infinite threads.”

To set the MySQL configuration as described here, follow these steps:

- 1 Locate the file to modify.

The global configuration file is commonly located as follows:

- *Windows*: <Drive>:\MySQL\my.ini
- *UNIX*: /etc/my.cnf

- 2 Back up the file identified in [step 1](#).

- 3 Open the configuration file in a text editor, such as WordPad or vi.

- 4 To set the MySQL permitted packet size to 16MB, edit the configuration file as follows:

- a Locate the line that contains the string `max_allowed_packet=`.

If this line does not exist, create it in the next step.

- b Increase the allocation by updating this line to read:

```
max_allowed_packet=16776192
```

- 5 To set infinite thread concurrency, edit the configuration file as follows:

- a Locate the line that contains the string `innodb_thread_concurrency=`.

- b Set infinite thread concurrency by updating this line to read:

```
innodb_thread_concurrency=20
```

- 6 Save the configuration file.

- 7 Stop all NA services:

- *Windows*: Open the **Services** control panel. In the list of services, right-click each of the following services, and then click **Stop**:

- **TrueControl ManagementEngine**
- **TrueControl FTP Server**
- **TrueControl SWIM Server**
- **TrueControl Syslog Server**
- **TrueControl TFTP Server**

- *UNIX*: Run the following command:

```
/etc/init.d/truecontrol stop
```

- 8 Restart MySQL:

- *Windows*: Open the Services control panel. In the list of services, right-click the MySQL service, and then click **Restart**.

- *UNIX*: Run the following command:

```
/etc/init.d/mysql restart
```

- 9 Start all NA services:

- *Windows*: Open the **Services** control panel. In the list of services, right-click each of the following services, and then click **Start**:

- TrueControl ManagementEngine
- TrueControl FTP Server
- TrueControl SWIM Server
- TrueControl Syslog Server
- TrueControl TFTP Server
- *UNIX*: Run the following command:  

```
/etc/init.d/truecontrol restart
```

## Set the ulimit Values for Running NA (Linux only)

On the NA core server, ensure that the open file limits are set appropriately for each NA session.

- 1 Change to the following directory:

```
/etc/init.d
```

- 2 Back up the `truecontrol` file to a location outside the `/etc` directory.
- 3 In the `truecontrol` file, add the following line as the first non-commented line:

```
ulimit -n 32768
```

- 4 In an NA Horizontal Scalability environment, repeat all of the previous steps on each NA core server.
- 5 On each NA server, restart all NA services.



You can wait to restart the NA services until after disabling the JCS disk cache (next).

## Disabling the JCS Disk Cache

To disable the JCS disk cache, follow these steps:

- 1 Change to the following directory:
  - *Windows*: `<NA_HOME>\jre`
  - *UNIX*: `<NA_HOME>/jre`
- 2 Back up the `cache.ccf` file to a location outside the `<NA_HOME>` directory.
- 3 In a text editor such as WordPad or `vi`, open the `cache.ccf` file.
- 4 Verify that the `jcs.default=` line does not include any settings. It should read exactly as follows:

```
jcs.default=
```

- 5 Search for the string `AVAILABLE AUXILIARY CACHES` to locate the following lines:

```
# AVAILABLE AUXILIARY CACHES
jcs.auxiliary.DC=org.apache.jcs.auxiliary.disk.indexed.IndexedDiskCacheFactory
jcs.auxiliary.DC.attributes=org.apache.jcs.auxiliary.disk.indexed.IndexedDiskCacheAttributes
jcs.auxiliary.DC.attributes.DiskPath=/tmp/cache
jcs.auxiliary.DC.attributes.MaxPurgatorySize=1000000
jcs.auxiliary.DC.attributes.MaxKeySize=1000000
jcs.auxiliary.DC.attributes.MaxRecycleBinSize=5000
jcs.auxiliary.DC.attributes.OptimizeAtRemoveCount=300000
jcs.auxiliary.DC.attributes.ShutdownSpoolTimeLimit=60
```

- 6 Comment out each of the lines located in [step 5](#) by inserting a number sign character (#) at the beginning of the line.
- 7 Save the `cache.ccf` file.
- 8 In an NA Horizontal Scalability environment, repeat [step 1](#) through [step 7](#) on each NA server.
- 9 On each NA server, restart all NA services.
  - **Windows:** Open the **Services** control panel. In the list of services, right-click **TrueControl ManagementEngine**, and then click **Restart**.
  - **UNIX:** Run the following command:

```
/etc/init.d/truecontrol restart
```

## Data Pruning

The NA 9.20 Data Pruning task is optimized from that of previous versions of NA. To take advantage of this optimization, verify that the Data Pruning task is scheduled to run at least weekly.



In a Distributed System or Horizontal Scalability environment, it is recommended to run the Data Pruning task manually on one NA application server until the warning message does not appear. At that point, verify that the Data Pruning task is scheduled to run at least weekly on each core.

After upgrading NA, the first several runs of the Data Pruning task might exceed the configured maximum task time. In this case, you might see the following warning message:

```
com.rendition.pruner.ConfigPruner: The task thread was interrupted.
Pruning partially completed.
```

This message indicates that additional records can be pruned. No action is necessary; subsequent runs of the Data Pruning task will clear the additional records.



If the database configuration includes redo logs, ensure that adequate disk space is available for these logs, especially while the warning message appears. The required size depends on the database configuration and the size of the NA database.

To complete database cleanup faster, do either or both of the following steps:

- Temporarily increase the value of Max Task Length to a value such as 18000 (5 hours). This setting is under Tasks on the Admin > Administrative Settings > Server page in the NA console.



After the warning message no longer appears, reset the Max Task Length to the original value (3600 by default).

- Run the Data Pruning task manually until the warning message does not appear.

## Verify the NA User Interface Settings

Upgrading to NA 9.20 installs code fixes for HTML and application processing. To enable these fixes, follow these steps:

- 1 Log on to the NA console as an NA administrator.
- 2 Open the User Interpage page (**Admin > Administrative Settings > User Interface**).
- 3 Under Security, make the following changes:
  - Select the **Cross site scripting** check box.
  - Clear the **Show Stack Traces** check box.
- 4 Under Miscellaneous, make the following changes:
  - Select the **Disable hidden stack trace output** check box.
  - Select the **Disable detailed exception message output** check box.

## Installing the Latest NA Driver Pack

The NA upgrade installer overwrites the existing driver pack on the NA server with the driver pack embedded in the installer. To prevent a functionality regression, after you upgrade or install NA, install the latest NA Driver Pack. Follow these steps:

- 1 Go to the HP Live Network web site at:  
**[https://hpln.hp.com/node/19/contentfiles#node\\_2279](https://hpln.hp.com/node/19/contentfiles#node_2279)**  
(under Driver Packs > Network Automation Version 7.6 - 9.x Driver Packs)  
Access to this page requires an HP Live Network user account.
- 2 Download the latest NA Driver Pack.
- 3 Install the downloaded driver pack.

# Upgrading Additional NA Components

## NA AAA Log Reader

If you are using the AAA Log Reader on your AAA server to provide real-time change detection, you will need to update the AAA Log Reader. To do this:

- 1 Back up the AAA Log Reader directory on your AAA server.
- 2 Copy `truecontrol-client.jar` located in the AAA folder on the Install CD to the AAA Log Reader directory. Overwrite the existing file.
- 3 Change the following four options in the `agent.rcx` file for correct error logging to appear in the `aaa_wrapper.log`.

Change:

```
[option name="log/AAALogReader"]System.out[option]
[option name="log/AAALogReader/level"]0[option]
[option name="log/connect"]System.out[option]
[option name="log/connect/level"]75[option]
```

To:

```
[option name="log/External/AAALogReader"]System.out[option]
[option name="log/External/AAALogReader/level"]0[option]
[option name="log/System/Authenticate"]System.out[option]
[option name="log/System/Authenticate/level"]75[option]
```

- 4 Although not required, it is recommended that you install a new version of the JRE on the AAA Server, version 1.6.0. The various JRE installations can be found on the DVD at: `/add-ons/jre/`. (**Note:** This step is not necessary if the JRE is already installed.)

## NA Syslog Reader

NA uses Syslog messages to detect device changes in real-time. Some environments require the use of a Syslog Reader to forward messages from the Syslog server to NA. Typically, the Syslog Reader agent is only needed when a central Solaris Syslog server is in use, as Solaris is not RFC-compliant for Syslog.

If you are using the Syslog Reader, it needs to be upgraded. To upgrade the NA Syslog Reader, follow these steps:

- 1 Go to `/usr/local/NA/syslogreader/probe.rcx`.
- 2 In the `probe.rcx` file, make a note of the following lines:
 

```
[option name="connect/AppServerURL"]SERVERNAME:1099[/option]
[option name="SyslogReader/LogFile/FileName"]SOMEPATH/FILE[/option]
```
- 3 Stop the Syslog Reader:
 

```
/etc/init.d/truecontrol.syslogreader stop
```
- 4 Remove the `/usr/local/NA` directory.
- 5 Follow the install instructions in the `ReadMe.txt` file. Be sure to include the correct values in the `probe.rcx` file from [step 2](#).



## 4 Upgrading to NA 9.20 on the Same System

NA 9.20 must run on a 64-bit operating system.

This chapter describes the procedure for upgrading a standalone NA application server to NA 9.20 from NA 7.5x, 7.6x, or 9.xx running on a 64-bit operating system or on a 32-bit operating system that can be upgraded to a 64-bit operating system on the same hardware. If the NA application server is currently running NA 7.0x or 7.2x, see [Chapter 2, Upgrading to NA 7.60](#).

For information about upgrading other NA environments, see the appropriate documentation:

- NA Multimaster Distributed System

For information about upgrading NA in a Distributed System environment, see “Upgrade the NA Mesh” in the *NA Multimaster Distributed System on Oracle Guide* or the *NA Multimaster Distributed System on SQL Server Guide*. Come back to this chapter when directed to do so in the upgrade procedure.

- NA Horizontal Scalability

For information about upgrading NA in a Horizontal Scalability environment, see “Upgrading Horizontal Scalability” in the *NA Horizontal Scalability Guide*. Come back to this chapter when directed to do so in the upgrade procedure.

- NA Satellites

If you are using NA Satellites, after installing the current version of NA, run the “Deploy Remote Agent” task to re-install the upgraded Satellite agent on all of the remote Gateways. For information, see the “Upgrading the Satellite” section of the *NA Satellite Guide*.

NA services are not available during the upgrade process. In addition, after you run the NA Service Pack Installer, you cannot roll back to the previous version of NA.

### Upgrade and Installation Caveats

When installing or upgrading NA, note the following:

- This documentation describes the process for upgrading NA on the same operating system type only (Windows to Windows, Solaris to Solaris, or Linux to Linux). Support can assist you with troubleshooting upgrade problems regardless of operating system path. If you require assistance with the process of moving NA to a different operating system, contact HP Professional Services.
- The NA Installer does not perform any sort of version checking. As a result, you could complete installations or upgrades on unsupported platforms.
- If you run a 64-bit NA full install or a Service Pack install on a 32-bit platform, the NA Installer will start and then quit without any error message.

- The Windows version of the NA Installer includes a black CLI window that runs in the background. Do not close this window or the install will end without prompting you. In addition, when performing NA installs over the network, for example running the `hpna_win.exe` installer from a remote share, you will see the black CLI window for several minutes.

## Restoration of Previous Customizations

During the NA upgrade, the NA Setup program automatically backs up critical NA files.

After upgrading NA, the installer automatically restores the following files:

- Device software images from the backup directory are copied to `$NA_HOME/server/images`.
- Summary reports from the backup directory are copied to `$NA_HOME/addins`.
- NA LiveNetwork content files are copied to `$NA_HOME/content`.
- If you selected the use the previous administrative settings option during installation, the `site_options.rcx` and `adjustable_options.rcx` file from the backup directory are copied to `$NA_HOME/jre`.
- The SecurID token file is restored.
- The Gateway encryption key is restored.
- The `license.dat` file is restored if you do not have a new license file.

The following files are backed up. However, they are not restored during the NA upgrade:

- Most `.rcx` files in the `$NA_HOME/jre` folder.
  - Aside from the `site_options.rcx` and `adjustable_options.rcx` files, changes in other `.rcx` files will not be preserved.
  - If you have customized the NA summary reports template or specification, such as adding additional report tabs, manually update the customized settings from the backed up version of the `reporting.rcx` file to the new version of the `reporting.rcx` file.
  - If you changed other `.rcx` files in the previous installation and want to keep those changes after upgrading, add those changes into the new `adjustable_options.rcx` file. You cannot use the previous `.rcx` file to overwrite the new version. Doing so could cause the application to fail.
- `$NA_HOME/server/ext/jboss/server/default/conf/log4j.xml` file.
  - As of NA 9.20, the `log4j.xml` file is no longer used. The comparative file is `$NA_HOME/server/ext/jboss/server/default/deploy/jboss-logging.xml`.
  - To restore previous settings, manually edit the `jboss-logging.xml` file with the customizations in the `log4j.xml` file. Note that the configuration formats differ between the two files.
- Wrapper configuration files in `$NA_HOME/server/ext/wrapper/conf`.
  - If you selected the use the previous administrative settings option during installation, the upgrade installer attempts to merge the settings from the backed up version of the `jboss.conf` file to the new `jboss.conf` file. Verify the configuration in the new file.



- To restore previous settings in other `.conf` files, manually edit the corresponding file after upgrading. You cannot use the previous file to overwrite the new version. Doing so could cause the application to fail.


## Upgrade Procedure

The following steps provide an outline for upgrading NA on a standalone NA application server.

- 1 Verify the current NA version:
  - If the NA application server is currently running NA 7.0x or 7.2x, follow the upgrade procedure in [Chapter 2, Upgrading to NA 7.60](#) before completing this procedure.
  - If the NA application server is currently running NA 7.5x, 7.6x, or 9.xx, continue with this procedure.
- 2 Stop all NA services.
  - *Windows*: Open the **Services** control panel. In the list of services, right-click each of the following services, and then click **Stop**:
    - **TrueControl ManagementEngine**
    - **TrueControl FTP Server**
    - **TrueControl SWIM Server**
    - **TrueControl Syslog Server**
    - **TrueControl TFTP Server**
  - *UNIX*: Run the following command:
 

```
/etc/init.d/truecontrol stop
```
- 3 If a gateway is installed on the NA application server, stop that gateway:
 

```
/etc/init.d/opswgw-<gatewayName> stop
```
- 4 To ensure that no settings or files are lost during the upgrade, back up the entire NA directory to a safe location. For example, if you installed NA in `C:\NA` or `/opt/NA`, back up the entire directory to a safe location.
- 5 Back up the following certificate files to an accessible location. You will need to restore these files after the upgrade.
  - `<NA_HOME>/jre/lib/security/cacerts`
  - `<NA_HOME>/server/ext/jboss/server/default/conf/truecontrol.keystore`
  - `<NA_HOME>/server/ext/jboss/server/default/conf/truecontrol.truststore`
- 6 Back up all of the data in the database. For instructions, see the database documentation or contact your database administrator (DBA).
 



When backing up and restoring the database, enter the NA database name in the identical case as the database name in the database application. For example, if you created your NA database as `Nadb`, enter exactly `Nadb`.
- 7 Move any existing `*.backup` files from the `$NA_HOME/server/lib/scripts/Database/Truecontrol` directory to a location outside the NA directory structure.

- 8 If you will need to reboot the NA application server during this procedure, for example if you are upgrading the operating system or the database, disable automatic starting of the NA services.
  - *Windows:* Open the **Services** control panel. In the list of services, right-click each of the following services, click **Properties**, and then set Startup Type to **Disabled**:
    - **TrueControl ManagementEngine**
    - **TrueControl FTP Server**
    - **TrueControl SWIM Server**
    - **TrueControl Syslog Server**
    - **TrueControl TFTP Server**
  - *Linux:*

```
rm -f /etc/rc.d/rc5.d/S99truecontrol
```
  - *Solaris:*

```
rm -f /etc/rc2.d/S99truecontrol
```
- 9 If NA 9.20 is not supported on the operating system of the current NA application server, do the following:
  - a Upgrade the operating system to a version supported by NA 9.20.  
For all operating system upgrades, consult the vendor documentation and your system support personnel.
  - b Restart NA, and then verify that NA is working properly.
  - c Stop all NA services before continuing with this procedure.
- 10 If NA 9.20 is not supported on the database version of the current NA database server, do the following:
  - a Upgrade the database to a version supported by NA 9.20.
    - For all database upgrades, consult the documentation provided by the appropriate vendor and your database administrator (DBA).
    - If after upgrading NA you experience performance issues, such as the NA Home page taking a long time to load, it is recommended that your Oracle DBA perform a re-index of the tables in the NA database instance. This work should be part of your regular Oracle maintenance tasks.
  - b Restart NA, and then verify that NA is working properly.
  - c Stop all NA services before continuing with this procedure.
- 11 Ensure that the database server is running.
- 12 *Optional.* Verify the authenticity of the NA 9.20 Service Pack Installer as described in [Optional. Verify the Signature of the NA Installer](#) on page 43.
- 13 Run the NA 9.20 Service Pack Installer as described in [Running the NA 9.20 Service Pack Installer](#) on page 44.



If the upgrade fails, save all log files to a location outside the NA directory structure before re-running the upgrade.



The Service Pack Installer re-enables automatic starting of the NA services.

- 14 Restore the certificate files that were backed up in [step 5](#) to the following locations:
  - <NA\_HOME>/jre/lib/security/cacerts
  - <NA\_HOME>/server/ext/jboss/server/default/conf/truecontrol.keystore
  - <NA\_HOME>/server/ext/jboss/server/default/conf/truecontrol.truststore
- 15 If NA uses a MySQL database, check the MySQL configuration as described in [Verify the MySQL Configuration](#) on page 46.
- 16 On the Linux operating system, if NA uses a MySQL database, verify that the /etc/hosts file contains the following line:
 

```
127.0.0.1    localhost
```

The NA-installed MySQL requires the localhost line exactly as shown here. To expand the information in the hosts file, add new lines containing the additional definitions.
- 17 *Linux only.* Set the open file limit for NA sessions as described in [Set the ulimit Values for Running NA \(Linux only\)](#) on page 47.
- 18 Disable the JCS disk cache as described in [Disabling the JCS Disk Cache](#) on page 48.
- 19 *Optional.* Use the optimized Data Pruning task as described in [Data Pruning](#) on page 49.
- 20 Update the NA configuration as described in [Verify the NA User Interface Settings](#) on page 49.
- 21 Install the latest NA Driver Pack as described in [Installing the Latest NA Driver Pack](#) on page 50.
- 22 Upgrade any additional NA components as described in [Upgrading Additional NA Components](#) on page 50.
- 23 If a gateway is installed on the NA application server, start that gateway:

```
/etc/init.d/opswgw-<gatewayName> start
```

## Optional. Verify the Signature of the NA Installer

A Gnu Privacy Guard (GPG) signature file (.sig) is included with all NA installers on the NA installation media. HP recommends that you verify the authenticity of the NA installer before installing NA. To verify the validity of a file, follow the instructions for “Verification using GPG” at:

**<https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning>**

This process is valid for all operating system platforms supported by NA. File verification can be done on any system that supports running gpg. Because the verification process might vary depending on the gpg version and operating platform, consult the documentation for your version of gpg.

## Running the NA 9.20 Service Pack Installer

Before running the NA Service Pack Installer, ensure that the database server is running.

The NA Service Pack Installer sets the Java virtual machine (JVM) heap size in relation to the amount of system RAM and the number of processors. Generally speaking, the installer sets the JVM heap size to half of the RAM. (The NA installer does not explicitly set the size of the young generation, so this value defaults to 1/3 of the JVM heap size.) Note the following exceptions:

- If the heap size is already set to a larger value than the NA Service Pack Installer would set, the NA Service Pack Installer does not change that value.
- If the NA application server has more than 64GB of RAM, the NA installer sets the JVM heap size to 32GB.
- If HP Network Node Manager i Software is already installed on the NA application server, the NA installer sets the JVM heap size to 512MB regardless of the system RAM size. In this case, the NA installer sets the JVM permanent generation garbage collection (PermGen) to 128MB.

Read the section appropriate to your operating system type:

- [Running the Service Pack Installer on a Windows Operating System](#) on page 44
- [Running the Service Pack Installer on a Linux Operating System](#) on page 44
- [Running the Service Pack Installer on a Solaris Operating System](#) on page 45

### Running the Service Pack Installer on a Windows Operating System

For upgrading on a Windows platform, insert the NA Service Pack Installer DVD into the DVD drive and do the following:

- 1 On the Windows taskbar, click Start, then click Run.
- 2 Enter: `[drive]:\windows_[nnnn]-[mmddyy]_spi_setup.exe`, where `[drive]` is the letter of your DVD drive, `[nnnn]` is the build number, and `[mmddyy]` is the build date.
- 3 Click OK.
- 4 Follow the instructions on the screen.

### Running the Service Pack Installer on a Linux Operating System

If you are installing the NA Service Pack Installer on an NA Linux server, insert the DVD into the DVD drive and mount it. You must have root access to run the NA Service Pack Installer.

- 1 `cd / [DVD_MOUNT_POINT]`, where `[DVD_MOUNT_POINT]` is the location of the DVD drive.
- 2 `cd linux`
- 3 Set the environment variable using the following commands: `TZ=UTC` and `export TZ`.
- 4 Set the open file limit for this session:
  - a Determine the open file limits by running the following commands:

```
ulimit -Sn
ulimit -Hn
```

The soft file limit must be at least 32768.

The hard file limit must be at least 32768.

**b** If necessary, update the soft file limit by running the following command:

```
ulimit -n 32768
```

- 5 `sh linux_[nnnn]-[mmddy]_spi_setup_64.bin`, where [nnnn] is the build number and [mmddy] is the build date.
- 6 Follow the instructions on the screen.

If you see the following errors in the log file, verify the value of the TZ environment variable, and then restart the NA Service Pack Installer:

```
SQLException while trying to connect to the database.
java.sql.SQLException: ORA-00604: error occurred at recursive SQL level 1
RA-01882: timezone region not found
```

## Running the Service Pack Installer on a Solaris Operating System

If you are installing the NA Service Pack Installer on an NA Solaris server, insert the DVD into the DVD drive and mount it. You must have root access to run the NA Service Pack Installer.



On Solaris, the NA Service Pack Installer supports 64-bit. As a result, on a 64-bit operating system:

- The installer automatically installs 64-bit NA.
- The installer upgrades 32-bit NA to 64-bit NA.

- 1 `cd / [DVD_MOUNT_POINT]` where [DVD\_MOUNT\_POINT] is the location of the DVD drive.
- 2 `cd solaris`
- 3 Set the environment variable using the following commands: `TZ=UTC` and `export TZ`.
- 4 Set the open file limit for this session:

**a** Determine the open file limits by running the following commands:

```
ulimit -Sn
```

```
ulimit -Hn
```

The soft file limit must be at least 32768.

The hard file limit must be at least 32768.

**b** If necessary, update the soft file limit by running the following command:

```
ulimit -n 32768
```

- 5 `sh solaris_[nnnn]-[mmddy]_spi_setup_64.bin`, where [nnnn] is the build number and [mmddy] is the build date.
- 6 Follow the instructions on the screen.

If you see the following errors in the log file, verify the value of the TZ environment variable, and then restart the NA Service Pack Installer:

```
SQLException while trying to connect to the database.
java.sql.SQLException: ORA-00604: error occurred at recursive SQL level 1
RA-01882: timezone region not found
```

## Verify the MySQL Configuration

The following MySQL configuration options affect NA performance:

- Large device configurations can exceed the default packet size configured for MySQL, resulting in an error similar to the following example:

```
DeviceDataManagementEJB: Exception in addDeviceData -
com.mysql.jdbc.PacketTooBigException: Packet for query is too large.
```

To avoid this problem, increase the maximum packet size that MySQL accepts to at least 16MB. If the error still occurs after adjusting this value, increase it further, up to a maximum of 1GB.

- Restricting MySQL to a small number of concurrent threads can reduce NA performance. (On prior versions of NA, the default number was 10.) To avoid this problem, in the MySQL configuration file, set the number of concurrent threads to 20, which the NA-installed version of MySQL interprets as “infinite threads.”

To set the MySQL configuration as described here, follow these steps:

- 1 Locate the file to modify.

The global configuration file is commonly located as follows:

- *Windows*: <Drive>:\MySQL\my.ini
- *UNIX*: /etc/my.cnf

- 2 Back up the file identified in [step 1](#).

- 3 Open the configuration file in a text editor, such as WordPad or vi.

- 4 To set the MySQL permitted packet size to 16MB, edit the configuration file as follows:

- a Locate the line that contains the string `max_allowed_packet=`.

If this line does not exist, create it in the next step.

- b Increase the allocation by updating this line to read:

```
max_allowed_packet=16776192
```

- 5 To set infinite thread concurrency, edit the configuration file as follows:

- a Locate the line that contains the string `innodb_thread_concurrency=`.

- b Set infinite thread concurrency by updating this line to read:

```
innodb_thread_concurrency=20
```

- 6 Save the configuration file.

- 7 Stop all NA services:

- *Windows*: Open the **Services** control panel. In the list of services, right-click each of the following services, and then click **Stop**:

- TrueControl ManagementEngine
- TrueControl FTP Server
- TrueControl SWIM Server
- TrueControl Syslog Server
- TrueControl TFTP Server

- *UNIX*: Run the following command:

```
/etc/init.d/truecontrol stop
```

#### 8 Restart MySQL:

- *Windows*: Open the Services control panel. In the list of services, right-click the MySQL service, and then click **Restart**.
- *UNIX*: Run the following command:

```
/etc/init.d/mysql restart
```

#### 9 Start all NA services:

- *Windows*: Open the **Services** control panel. In the list of services, right-click each of the following services, and then click **Start**:
  - **TrueControl ManagementEngine**
  - **TrueControl FTP Server**
  - **TrueControl SWIM Server**
  - **TrueControl Syslog Server**
  - **TrueControl TFTP Server**
- *UNIX*: Run the following command:

```
/etc/init.d/truecontrol restart
```

## Set the ulimit Values for Running NA (Linux only)

On the NA core server, ensure that the open file limits are set appropriately for each NA session.

#### 1 Change to the following directory:

```
/etc/init.d
```

#### 2 Back up the truecontrol file to a location outside the /etc directory.

#### 3 In the truecontrol file, add the following line as the first non-commented line:

```
ulimit -n 32768
```

#### 4 In an NA Horizontal Scalability environment, repeat all of the previous steps on each NA core server.

#### 5 On each NA server, restart all NA services.



You can wait to restart the NA services until after disabling the JCS disk cache (next).

## Disabling the JCS Disk Cache

To disable the JCS disk cache, follow these steps:

- 1 Change to the following directory:
  - *Windows*: <NA\_HOME>\jre
  - *UNIX*: <NA\_HOME>/jre
- 2 Back up the `cache.ccf` file to a location outside the <NA\_HOME> directory.
- 3 In a text editor such as WordPad or vi, open the `cache.ccf` file.
- 4 Verify that the `jcs.default=` line does not include any settings. It should read exactly as follows:

```
jcs.default=
```

- 5 Search for the string `AVAILABLE AUXILIARY CACHES` to locate the following lines:

```
# AVAILABLE AUXILIARY CACHES
jcs.auxiliary.DC=org.apache.jcs.auxiliary.disk.indexed.IndexedDiskCacheFactory
jcs.auxiliary.DC.attributes=org.apache.jcs.auxiliary.disk.indexed.IndexedDiskCacheAttributes
jcs.auxiliary.DC.attributes.DiskPath=/tmp/cache
jcs.auxiliary.DC.attributes.MaxPurgatorySize=10000000
jcs.auxiliary.DC.attributes.MaxKeySize=1000000
jcs.auxiliary.DC.attributes.MaxRecycleBinSize=5000
jcs.auxiliary.DC.attributes.OptimizeAtRemoveCount=300000
jcs.auxiliary.DC.attributes.ShutdownSpoolTimeLimit=60
```

- 6 Comment out each of the lines located in [step 5](#) by inserting a number sign character (#) at the beginning of the line.
- 7 Save the `cache.ccf` file.
- 8 In an NA Horizontal Scalability environment, repeat [step 1](#) through [step 7](#) on each NA server.
- 9 On each NA server, restart all NA services.
  - *Windows*: Open the **Services** control panel. In the list of services, right-click **TrueControl ManagementEngine**, and then click **Restart**.
  - *UNIX*: Run the following command:

```
/etc/init.d/truecontrol restart
```



## Data Pruning

The NA 9.20 Data Pruning task is optimized from that of previous versions of NA. To take advantage of this optimization, verify that the Data Pruning task is scheduled to run at least weekly.



In a Distributed System or Horizontal Scalability environment, it is recommended to run the Data Pruning task manually on one NA application server until the warning message does not appear. At that point, verify that the Data Pruning task is scheduled to run at least weekly on each core.

After upgrading NA, the first several runs of the Data Pruning task might exceed the configured maximum task time. In this case, you might see the following warning message:

```
com.rendition.pruner.ConfigPruner: The task thread was interrupted.
Pruning partially completed.
```

This message indicates that additional records can be pruned. No action is necessary; subsequent runs of the Data Pruning task will clear the additional records.



If the database configuration includes redo logs, ensure that adequate disk space is available for these logs, especially while the warning message appears. The required size depends on the database configuration and the size of the NA database.

To complete database cleanup faster, do either or both of the following steps:

- Temporarily increase the value of Max Task Length to a value such as 18000 (5 hours). This setting is under Tasks on the Admin > Administrative Settings > Server page in the NA console.



After the warning message no longer appears, reset the Max Task Length to the original value (3600 by default).

- Run the Data Pruning task manually until the warning message does not appear.

## Verify the NA User Interface Settings

Upgrading to NA 9.20 installs code fixes for HTML and application processing. To enable these fixes, follow these steps:

- 1 Log on to the NA console as an NA administrator.
- 2 Open the User Interpage page (**Admin > Administrative Settings > User Interface**).
- 3 Under Security, make the following changes:
  - Select the **Cross site scripting** check box.
  - Clear the **Show Stack Traces** check box.
- 4 Under Miscellaneous, make the following changes:
  - Select the **Disable hidden stack trace output** check box.
  - Select the **Disable detailed exception message output** check box.

## Installing the Latest NA Driver Pack

The NA upgrade installer overwrites the existing driver pack on the NA server with the driver pack embedded in the installer. To prevent a functionality regression, after you upgrade or install NA, install the latest NA Driver Pack. Follow these steps:

- 1 Go to the HP Live Network web site at:

**[https://hpln.hp.com/node/19/contentfiles#node\\_2279](https://hpln.hp.com/node/19/contentfiles#node_2279)**

(under Driver Packs > Network Automation Version 7.6 - 9.x Driver Packs)

Access to this page requires an HP Live Network user account.

- 2 Download the latest NA Driver Pack.
- 3 Install the downloaded driver pack.

## Upgrading Additional NA Components

### NA AAA Log Reader

If you are using the AAA Log Reader on your AAA server to provide real-time change detection, you will need to update the AAA Log Reader. To do this:

- 1 Back up the AAA Log Reader directory on your AAA server.
- 2 Copy truecontrol-client.jar located in the AAA folder on the Install CD to the AAA Log Reader directory. Overwrite the existing file.
- 3 Change the following four options in the agent.rcx file for correct error logging to appear in the aaa\_wrapper.log.

Change:

```
[option name="log/AAALogReader"]System.out[option]
[option name="log/AAALogReader/level"]0[option]
[option name="log/connect"]System.out[option]
[option name="log/connect/level"]75[option]
```

To:

```
[option name="log/External/AAALogReader"]System.out[option]
[option name="log/External/AAALogReader/level"]0[option]
[option name="log/System/Authenticate"]System.out[option]
[option name="log/System/Authenticate/level"]75[option]
```

- 4 Although not required, it is recommended that you install a new version of the JRE on the AAA Server, version 1.6.0. The various JRE installations can be found on the DVD at: /add-ons/jre/. (**Note:** This step is not necessary if the JRE is already installed.)

## NA Syslog Reader

NA uses Syslog messages to detect device changes in real-time. Some environments require the use of a Syslog Reader to forward messages from the Syslog server to NA. Typically, the Syslog Reader agent is only needed when a central Solaris Syslog server is in use, as Solaris is not RFC-compliant for Syslog.

If you are using the Syslog Reader, it needs to be upgraded. To upgrade the NA Syslog Reader, follow these steps:

- 1 Go to `/usr/local/NA/syslogreader/probe.rcx`.
- 2 In the `probe.rcx` file, make a note of the following lines:  

```
[option name="connect/AppServerURL"]SERVERNAME:1099[/option]  
[option name="SyslogReader/LogFile/FileName"]SOMEPATH/FILE[/option]
```
- 3 Stop the Syslog Reader:  

```
/etc/init.d/truecontrol.syslogreader stop
```
- 4 Remove the `/usr/local/NA` directory.
- 5 Follow the install instructions in the `ReadMe.txt` file. Be sure to include the correct values in the `probe.rcx` file from [step 2](#).



## 5 Installing NA 9.20

This chapter provides information on installing NA 9.20 on a new standalone NA application server.

For information about installing in other NA environments, see the appropriate documentation:

- [NA Multimaster Distributed System](#)

For information about installing NA in a Distributed System environment, see the *NA Multimaster Distributed System on Oracle Guide* or the *NA Multimaster Distributed System on SQL Server Guide*.

- [NA Horizontal Scalability](#)

For information about installing NA in a Horizontal Scalability environment, see the *NA Horizontal Scalability Guide*.

- [NA Satellites](#)

See the “Installation” section of the *NA Satellite Guide*.

The following steps provide an outline for single NA Core installation:

- 1 [Prepare the Database](#) on page 53
- 2 [Install Nmap](#) on page 56
- 3 [Obtain and Deploy an NA License](#) on page 58
- 4 [Optional. Verify the Signature of the NA Installer](#) on page 59
- 5 [Run the NA Installer](#) on page 59
- 6 [Set the ulimit Values for Running NA \(Linux only\)](#) on page 62
- 7 [Installing the Latest NA Driver Pack](#) on page 63

### Prepare the Database

As of NA 9.22, for Oracle or SQL Server, NA supports reducing the privileges of the NA database user account for general operation. For information, see “Running NA with Minimal Database User Privileges” in the *NA Administration Guide* version 9.22 or later.

For information about database options, read the section appropriate to your database type:

- [MySQL Database Options](#) on page 54
- [Oracle Database Options](#) on page 54
- [Microsoft SQL Server Database Options](#) on page 56

## MySQL Database Options

On the Linux operating system, verify that the `/etc/hosts` file contains the following line:

```
127.0.0.1    localhost
```

The NA-installed MySQL requires the localhost line exactly as shown here. To expand the information in the hosts file, add new lines containing the additional definitions.

Make note of the following MySQL Database options during installation:

- 1 If you want NA to install MySQL Enterprise Server 5.0.58, when prompted for the folder in which to install MySQL, do not select the NA Install folder or any sub-folder therein.
- 2 When prompted whether or not to create a new database or use an existing one, select the “Create New Database” option. Do not return to the previous step after the database has been created.



If you want to use an existing NA database created by a previous NA installation, select the “using existing database” option. The database will be upgraded to the current version, if applicable.

## Oracle Database Options

Oracle database configuration requirements:

- Create a new tablespace dedicated to NA. For example:

```
CREATE TABLESPACE NADB DATAFILE '/oracledata/u01/app/oracle/oradata/
perfqa02/NADB01.DBF' SIZE 30G REUSE;
```



To enable future defragmentation of the NA tablespace, create the tablespace with automatic segment space management (ASSM). The example command creates the tablespace with ASSM.

- Create an NA database user that uses the new tablespace. For example (for Oracle user name `nauser`):

```
CREATE USER nauser IDENTIFIED BY napass DEFAULT TABLESPACE NADB;
```

- Grant at least the following privileges to the NA database user:

```
— CREATE SEQUENCE
— CREATE SESSION
— CREATE TABLE
— CREATE PROCEDURE
— SELECT ANY DICTIONARY
— CONNECT
— SELECT ANY TABLE
— INSERT ANY TABLE
— UPDATE ANY TABLE
— DELETE ANY TABLE
— ALTER ANY TABLE
— DROP ANY TABLE
— CREATE ANY INDEX
— ALTER ANY INDEX
— DROP ANY INDEX
```

- UNLIMITED TABLESPACE
- EXECUTE on CTXSYS.ctx\_ddl

For example (for Oracle user name nauser):

```
GRANT CREATE SEQUENCE, CREATE SESSION, CREATE TABLE, CREATE PROCEDURE to nauser;
GRANT SELECT ANY DICTIONARY, CONNECT to nauser;
GRANT SELECT ANY TABLE, INSERT ANY TABLE, UPDATE ANY TABLE, DELETE ANY TABLE to nauser;
GRANT ALTER ANY TABLE, DROP ANY TABLE to nauser;
GRANT CREATE ANY INDEX, ALTER ANY INDEX, DROP ANY INDEX to nauser;
GRANT UNLIMITED TABLESPACE to nauser;
GRANT EXECUTE on CTXSYS.ctx_ddl to nauser;
```

- To enable future configuration of the “contains (full text)” search functionality, enable Oracle Text for the database.

## Designating Unclustered Oracle During NA Installation

In an unclustered Oracle environment, note the following database options during installation:

- 1 When prompted for the Database Admin Login information, enter the database user with access to the NA tablespace.
  - 2 When prompted to configure the database, select the “Clean database for use by NA” option. Do not return to the previous step after the database has been created.
- If you want to use an existing NA database created by a previous NA installation, select the “using existing database” option. The database will be upgraded to the current version, if applicable.

## Designating Oracle RAC During NA Installation

In an Oracle RAC environment, note the following database options during installation:

- 1 When prompted for the Database Admin Login information, enter the database user with access to the NA tablespace.
  - 2 When prompted to configure the database, select the “Clean database for use by NA” option. Do not return to the previous step after the database has been created.
- If you want to use an existing NA database created by a previous NA installation, select the “using existing database” option. The database will be upgraded to the current version, if applicable.

- 3 When prompted for database credentials, do the following:

- a In a text editor, open the `$NA_HOME/server/conf/JDBCDrivers.properties` file.
- b Set the `oracle.url` variable in the following format:

```
oracle.url=jdbc:oracle:thin:@//<server>:<port>/<service_name>
```

Replace the variables as follows:

- `<server>` is the IP address or fully-qualified hostname of the Oracle RAC cluster.
- `<port>` is the port of the Oracle RAC cluster.
- `<service_name>` is the service name of the Oracle RAC cluster.

- c Save the file.

- d At the NA installer prompt, enter the following information:
  - For the database IP address or hostname, enter the value of `<server>` in the `oracle.url` variable.
  - For the database port, enter the value of `<port>` in the `oracle.url` variable.
  - For the database SID / Service Name, enter the value of `<service_name>` in the `oracle.url` variable.
- 4 After NA installation completes, ensure that the Oracle RAC cluster information in the `$NA_HOME/server/ext/jboss/server/default/deploy/db_ds.xml` file is current.

## Microsoft SQL Server Database Options

SQL Server database configuration requirement:

- To enable future configuration of the “contains (full text)” search functionality, install and enable the SQL Server Full Text Search service for the database.

Make note of the following SQL Server Database options during NA installation:

- 1 When prompted for the Database Admin login, if you do not select the “Use Windows Authentication” option, make sure you have set all privileges at the global level.
- 2 When prompted for the database administrator credentials, provide a SQL Server user account with the `sysadmin` role. You can use the SQL Server SA user account or a custom user account.
- 3 When prompted whether or not to create a new database or use an existing one, select the “Create New Database” option.



If you want to use an existing NA database created by a previous NA installation, select the “using existing database” option. The database will be upgraded to the current version, if applicable.

- 4 When prompted for credentials for a new database user, provide a user name that does not yet exist in SQL Server.

As the SQL Server administrator user, the NA installer does the following database actions:

- 1 Populates the NA database with the NA tables.
- 2 Creates a new SQL Server user with the provided credentials. The NA core connects to the NA database using this new account.

## Install Nmap

Nmap enables you to scan networks to determine which hosts are up and the services they offer.

Install Nmap as described in the section appropriate to the operating system of the NA application server:

- [Installing Nmap on a Windows Operating System](#) on page 57
- [Installing Nmap on a Linux Operating System](#) on page 57
- [Installing Nmap on a Solaris Operating System](#) on page 57

For more information about Nmap, see “Scanning Methods” in the *NA User Guide*.



## Installing Nmap on a Windows Operating System

The Nmap execution file included with NA might not be compliant with all Windows versions. Be sure to download the correct Nmap install packages for your Windows versions.

## Installing Nmap on a Linux Operating System

To install Nmap on a Linux operation system, follow these steps:

- 1 `cd [$NA_HOME]/server/ext/nmap`
- 2 Install the RPM package using the following command:  
`rpm -i <rpm file>`

For example:

```
cd [$NA_HOME]/server/ext/nmap
rpm -i nmap-3.81-1.i386.rpm
```

- 3 Create a link to the nmap executable in the \$NA\_HOME/server/ext/nmap directory:

```
cd [$NA_HOME]/server/ext/nmap
ln -s /usr/bin/nmap nmap
```

## Installing Nmap on a Solaris Operating System

Nmap has several installation prerequisites. Make sure you have the following installed before installing Nmap. These packages are available at:

**<http://sunfreeware.com>**

- glib
- gtk
- openssl-0.9.7g
- pcre
- libgcc-3.3 or gcc-3.3.2 (libgcc-3.3 is preferred)

To install Nmap on a Solaris operating system, follow these steps:

- 1 `cd $NA_HOME/server/ext/nmap`
- 2 Unzip and add the packages using the following commands:  
`gunzip <filename>`  
`pkgadd -d <filename>`

For example:

```
cd [$NA_HOME]/server/ext/nmap
gunzip nmap-3.81-sol10-sparc-local.gz
pkgadd -d nmap-3.81-sol10-sparc-local
```



The Nmap package that comes with NA might not be compliant with all Solaris versions. Be sure to download the correct Nmap install packages for your Solaris version.

- 3 Create a link to the nmap executable in the \$NA\_HOME/server/ext/nmap directory:

```
cd $NA_HOME/server/ext/nmap
ln -s /usr/local/bin/nmap nmap
```

## Obtain and Deploy an NA License

Complete both of the following procedures:

- [Obtaining an NA License](#) on page 58
- [Deploying NA License Information](#) on page 59

### Obtaining an NA License

As of version 9.10, NA supports the following license types:

- **InstantOn** — InstantOn licenses are shipped with the product. Each InstantOn license is limited to 250 devices and 60 days of use after installing the product.
- **Permanent** — Permanent licenses must be obtained via the HP License Key Delivery Service. Permanent licenses do not have an expiration date and can be used in conjunction with one NA add-on feature, such as Horizontal Scalability or Multimaster Distributed Systems.

For information on NA Evaluation licenses, contact your NA Sales Representative.

If you have a valid NA 9.00 license that meets your needs, you do not need to obtain an NA 9.20 license. However, if you want to augment that license for additional devices or to install a new NA add-on feature, you must obtain new NA 9.20 license keys for all of your licensed features.



If you are using a pre-NA 9.00 license and upgrade to or install NA 9.20, you must obtain new NA 9.20 license keys for all of your licensed features.

To obtain an NA 9.20 Permanent license, follow these steps:

- 1 Go to <http://support.openview.hp.com/support.jsp>.
- 2 Click **Sign-in with HP Passport** or the **Login** button, enter your credentials, and click the **Sign-in** button.
- 3 Click the **Downloads** tab.
- 4 Click the **Software Updates** box.
- 5 Click the **My Updates** link. The HP Passport Sign-in page opens.
- 6 Either select your Service Agreement ID (SAID) from the pull-down menu or enter your SAID, agree to the terms and conditions, and click **Submit**.
- 7 Expand the **Network Management Center** node.
- 8 Click the Network Automation, version 9.20 medium.
- 9 Click the **Get Software Updates** button.
- 10 Click the **Get Licensing** tab.

- 11 Click the **Get License** link. You will be prompted for information as to where to download the NA license.

## Deploying NA License Information

If you upgraded to NA 9.20 before downloading an NA 9.20 license, do the following:

- 1 Obtain an NA 9.20 license as described in [Obtaining an NA License](#) on page 58.
- 2 Be sure that your NA license file, `license.dat`, is located in the NA root directory.
- 3 Restart NA.

If you did a fresh install of NA 9.20 before downloading an NA 9.20 license, do the following:

- 1 Obtain an NA 9.20 license as described in [Obtaining an NA License](#) on page 58.
- 2 Be sure that your NA license file, `license.dat`, is located in the NA root directory.



You have the option of providing a path to the license file during installation.

If you do not have easy access to the NA server so as to copy the `license.dat` file, but can login to NA, do the following to update your NA license information:

- 1 Login to NA.
- 2 Open the `license.dat` file.
- 3 On the main menu under Help, click **About HP Network Automation**. The About Network Automation page opens.
- 4 Click the **View License Information** link. The License Information page opens.
- 5 Copy the new license text into the page and click the **Update License** button. The `license.dat` file is automatically updated.

## Optional. Verify the Signature of the NA Installer

A Gnu Privacy Guard (GPG) signature file (`.sig`) is included with all NA installers on the NA installation media. HP recommends that you verify the authenticity of the NA installer before installing NA. To verify the validity of a file, follow the instructions for “Verification using GPG” at:

**[https://h20392.www2.hp.com/portal/swdepot/  
displayProductInfo.do?productNumber=HPLinuxCodeSigning](https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning)**

This process is valid for all operating system platforms supported by NA. File verification can be done on any system that supports running `gpg`. Because the verification process might vary depending on the `gpg` version and operating platform, consult the documentation for your version of `gpg`.

## Run the NA Installer

If you are installing NA on a Windows platform, run the Install Wizard. If you are installing NA on a Linux or Solaris platform, run the CLI Installer.

The NA installer sets the Java virtual machine (JVM) heap size in relation to the amount of system RAM and the number of processors. Generally speaking, the installer sets the JVM heap size to half of the RAM. (The NA installer does not explicitly set the size of the young generation, so this value defaults to 1/3 of the JVM heap size.) Note the following exceptions:

- If the NA application server has more than 64GB of RAM, the NA installer sets the JVM heap size to 32GB.
- If HP Network Node Manager i Software (NNMi) is already installed on the NA application server, the NA installer sets the JVM heap size to 512MB regardless of the system RAM size. In this case, the NA installer sets the JVM permanent generation garbage collection (PermGen) to 128MB.

- ▶ Be sure you have ActivePerl 5.8.x (for Windows) or Perl 5.8.x (for Solaris and Linux) installed before installing NA.
- ▶ If the installation fails, save all log files to a location outside the NA directory structure before re-running the installation.

Read the section appropriate to your operating system type:

- [Running the Installer on a Windows Operating System](#) on page 60
- [Running the Installer on a Linux Operating System](#) on page 60
- [Running the Installer on a Solaris Operating System](#) on page 61

## Running the Installer on a Windows Operating System

With Administrator privileges, do the following to install NA:

- 1 On the Windows taskbar, click Start, and then click Run.
- 2 Enter: <drive>:\windows\_[nnnn]-[mmddy]\_setup.exe, where <drive> is the letter of your CD-ROM drive and [nnnn]-[mmddy] is the build number.
- 3 Click OK.

Follow the instructions on the screen.

- ▶ Setup does not work with PC Anywhere. If you attempt to run Setup through PC Anywhere, you cannot view the windows to step through the installation. This also affects uninstalling NA.6

## Running the Installer on a Linux Operating System

To install NA on a Linux server, follow these steps:

- 1 Log on to the Linux server as the `root` user.
- 2 If the installer is on physical media, mount that drive:
  - a `mount /mnt/cdrom`
  - b `cd /mnt/cdrom`
- 3 Change to the directory containing the CLI installer.  
On the physical media, change to the `linux` directory.

- 4 Set the time zone environment variable using the following commands:

```
TZ=UTC
export TZ
```

- 5 Set the open file limit for this session:

- a Determine the open file limits by running the following commands:

```
ulimit -Sn
ulimit -Hn
```

The soft file limit must be at least 32768.

The hard file limit must be at least 32768.

- b If necessary, update the soft file limit by running the following command:

```
ulimit -n 32768
```

- 6 Run the installer:

```
./linux_[nnnn]-[mmddy]_setup_64.bin
```

Follow the instructions on the screen.

If you see the following errors in the log file, verify the value of the TZ environment variable, and then restart the NA Service Pack Installer:

```
SQLException while trying to connect to the database.
java.sql.SQLException: ORA-00604: error occurred at recursive SQL level 1
RA-01882: timezone region not found
```

## Running the Installer on a Solaris Operating System

The Solaris CLI installer supports 64-bit. As a result:

- The Solaris CLI installer automatically installs 64-bit NA.
- The Solaris SPI will upgrade 32-bit NA to 64-bit NA.
- When upgrading to 64-bit NA, all of the wrapper configuration files (files such as `jboss_wrapper.conf` and `syslog_wrapper.conf`) will be overwritten. Any user-specified settings will be reset. For example, if you had set the `jboss_wrapper.conf` to start NA with 1GB Java Heap memory, the setting will be overwritten to the NA default.

To install NA on Solaris, first download the latest Solaris patches from the Sun Web site:

**<https://www.sun.com>**

Before installing NA on a Solaris 10 platform, you must reconfigure the Syslog server on Solaris 10 to not listen for remote Syslog messages on port 514.

- 1 Edit the `/etc/default/syslogd` file and set `LOG_FROM_REMOTE=NO`.
- 2 Restart the Syslog server. Enter: `svcadm refresh svc:/system/system-log:default`

Enter the following commands to install NA manually. Be sure to change to the drive on which you want to install NA. At the shell prompt, enter:

- 1 `su root` [when prompted, enter the password]
- 2 `cd /cdrom/`
- 3 Set the environment variable using the following commands: `TZ=UTC` and `export TZ`.

- 4 Set the open file limit for this session:
  - a Determine the open file limits by running the following commands:
 

```
ulimit -Sn
ulimit -Hn
```

The soft file limit must be at least 32768.  
The hard file limit must be at least 32768.
  - b If necessary, update the soft file limit by running the following command:
 

```
ulimit -n 32768
```
- 5 `sh solaris_[nnnn]-[mmddyy]_setup_64.bin`

Follow the instructions on the screen.



On Solaris, the NA installer moves the existing `/etc/syslog.conf` file to `/etc/syslog.conf.rm` and then restarts the Syslog process using its own configuration.

If you see the following errors in the log file, verify the value of the `TZ` environment variable, and then restart the NA Service Pack Installer:

```
SQLException while trying to connect to the database.
java.sql.SQLException: ORA-00604: error occurred at recursive SQL level 1
RA-01882: timezone region not found
```

## Set the ulimit Values for Running NA (Linux only)

On the NA core server, ensure that the open file limits are set appropriately for each NA session.

- 1 Change to the following directory:
 

```
/etc/init.d
```
- 2 Back up the `truecontrol` file to a location outside the `/etc` directory.
- 3 In the `truecontrol` file, add the following line as the first non-commented line:
 

```
ulimit -n 32768
```
- 4 In an NA Horizontal Scalability environment, repeat all of the previous steps on each NA core server.
- 5 On each NA server, restart all NA services.



You can wait to restart the NA services until after disabling the JCS disk cache (next).

## Installing the Latest NA Driver Pack

The NA upgrade installer overwrites the existing driver pack on the NA server with the driver pack embedded in the installer. To prevent a functionality regression, after you upgrade or install NA, install the latest NA Driver Pack. Follow these steps:

- 1 Go to the HP Live Network web site at:

**[https://hpln.hp.com/node/19/contentfiles#node\\_2279](https://hpln.hp.com/node/19/contentfiles#node_2279)**

(under Driver Packs > Network Automation Version 7.6 - 9.x Driver Packs)

Access to this page requires an HP Live Network user account.

- 2 Download the latest NA Driver Pack.
- 3 Install the downloaded driver pack.





## 6 Uninstalling NA and MySQL

Uninstalling NA requires several steps. The most significant steps are uninstalling NA itself and removing related components from either Windows, Solaris, or Linux. If you chose to install a MySQL database with NA, you may want to uninstall that database at the same time, however, you permanently lose your historical data if you delete the database.

► MySQL must be uninstalled separately.

Keep in mind when uninstalling NA, the uninstall does not drop the database. If you manually drop the database, you must ensure that those files are removed before trying to re-install NA.

► If the uninstall fails, save all log files to a location outside the NA directory structure before re-running the uninstall process.

This chapter contains the following topics:

- [Uninstalling NA from Windows](#) on page 65
- [Uninstalling NA from Linux or Solaris](#) on page 66
- [Manually Uninstalling NA \(Windows\)](#) on page 66
- [Uninstalling MySQL 5.0.58 \(MySQL Installer\)](#) on page 67
- [Uninstalling MySQL 5.0.58 \(NA Installer\)](#) on page 67
- [Uninstalling MySQL 3.23.55](#) on page 68

### Uninstalling NA from Windows

The following steps assume you installed NA using the default directories and names. If you installed NA in a different directory or used different names, adjust accordingly.

To uninstall NA from Windows, do the following:

- 1 Click Start --> Programs --> HP Network Automation --> Uninstall HP Network Automation.
- 2 Click Uninstall.
- 3 When the uninstall program is done, click Finish.
- 4 A message appears saying that you must reboot. The folder `c:\NA` (the installation folder) is removed when you reboot the computer.

- 5 You can delete the following:

```
c:\windows\Temp\Rendition
```



If you upgraded to a newer version of NA on a Windows platform, the NA Uninstaller does not remove the FTP service. As a result, after uninstalling NA, enter the `sc delete TrueControlFTP` command from the command line prompt to delete the FTP service.

## Uninstalling NA from Linux or Solaris

To uninstall NA from Linux or Solaris, do the following:

As root:

- 1 Navigate to the `InstallDirectory/UninstallerData` directory (for example: `/opt/NA/UninstallerData`).
- 2 Enter: `# ./Uninstall_HP_Network_Automation`
- 3 There are files left in other locations to preserve your settings, logs, and scripts in case you reinstall NA. If you want to completely purge NA from your system, manually delete all files (for example:  
`# rm -rf /opt/NA`).
- 4 You can delete the following:

```
/var/Rendition
```

## Manually Uninstalling NA (Windows)

If the NA uninstaller makes no progress for over 10 minutes stop the NA uninstaller process and do the following:

- 1 Run the following commands to stop all NA services:

```
{$NA_HOME}\server\ext\wrapper\bin\UninstallAAAWrapper-NT.bat
{$NA_HOME}\server\ext\wrapper\bin\UninstallJBossWrapper-NT.bat
{$NA_HOME}\server\ext\wrapper\bin\UninstallSWIMWrapper-NT.bat
{$NA_HOME}\server\ext\wrapper\bin\UninstallSyslogWrapper-NT.bat
{$NA_HOME}\server\ext\wrapper\bin\UninstallTFTPWrapper-NT.bat
```

- 2 Delete the NA folder.
- 3 Delete the following Windows registry keys if they exist:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Rendition Networks\TrueControl
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TrueControlJBoss
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TrueControlAAA
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TrueControlJBossSWIM
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TrueControlJBossSyslog
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TrueControlJBossTFTP
```

- 4 Manually delete the `%WINDIR%\temp\Rendition` folder. (Note: `%WINDIR%` is usually located in `C:\WINDOWS` or `C:\WINNT`. However, it might reside on a different drive.)

## Uninstalling MySQL 5.0.58 (MySQL Installer)

This section includes information on uninstalling MySQL 5.0.58 if MySQL 5.0.58 was installed by the MySQL Installer.

### Windows

On a Windows platform, to uninstall the MySQL Upgrade Installer, double-click `[$MYSQL_HOME]\Uninstall_MySQL\Uninstall_MySQL.exe` and follow the instructions in the MySQL Uninstaller. Note that `[$MYSQL_HOME]` is the location where MySQL is installed.



The MySQL data folder will not be removed.

### UNIX<sup>®</sup>

On a Linux or Solaris platform, to uninstall the MySQL Upgrade Installer, run `[$MYSQL_HOME]/Uninstall_MySQL/Uninstall_MySQL` and follow the instructions in the MySQL Uninstaller. Note that `[$MYSQL_HOME]` is the location where MySQL is installed.



The MySQL data folder will not be removed.

## Uninstalling MySQL 5.0.58 (NA Installer)

This section includes information on uninstalling MySQL 5.0.58 if MySQL 5.0.58 was installed by the NA Installer.

To uninstall MySQL 5.0.58 on a Windows platform:

- 1 Double click `[$MYSQL_HOME]\bin\remove-service.bat`.
- 2 Backup the MySQL data folder if necessary.
- 3 Manually delete `[$MYSQL_HOME]`. Where `[$MYSQL_HOME]` is where MySQL is installed.

To uninstall MySQL 5.0.58 on a Linux or Solaris platform:

- 1 Run `/etc/init.d/mysql stop`
- 2 Backup the MySQL data folder if necessary.
- 3 Run `rm -rf /etc/init.d/mysql /etc/my.cnf [$MYSQL_HOME]`, where `[$MYSQL_HOME]` is where MySQL is installed (`/opt/mysql` is the default).

## Uninstalling MySQL 3.23.55

**Warning:** *Uninstalling the MySQL3.23.55 database permanently deletes your historical data. There is no undo.*

On a Windows platform:

- 1 Click Start --> Settings --> Control Panel --> Administrative Tools --> Services. Right-click MySQL and select Stop.
- 2 Click Start --> Run, then enter `cmd`.
- 3 Enter `c:\mysql\bin\mysqld-max-nt.exe --remove`. This assumes you installed MySQL to the folder `c:\mysql`.
- 4 In the Services window, verify that the MySQL Service is gone. If it is still listed as disabled, close all programs and restart your computer, then check the Services window again.
- 5 In the Windows Control Panel, double-click Add/Remove Programs. Select MySQL Servers and Clients, then click Remove.
- 6 Click Start --> Run and then enter `cmd` to launch a command window, then enter `cd c:\`, then enter `del c:\mysql`.

On a Linux or Solaris platform:

- 1 As root, run `/etc/init.d/mysql stop`
- 2 Backup MySQL data folder if necessary.
- 3 Run `rm -rf /etc/init.d/mysql /etc/my.cnf [$MYSQL_HOME]`, where `[$MYSQL_HOME]` is where MySQL is installed.

# 7 Starting/Stopping NA Services

## Windows Platform

To start/stop NA services, on a Windows platform, do the following:

- 1 Click Start --> Programs --> Administrative Tools --> Services.
- 2 Start/stop the following NA services:
  - TrueControl AAA Agent
  - TrueControl Management Engine
  - TrueControl SWIM Server
  - TrueControl Syslog Server
  - TrueControl FTP Server
  - TrueControl TFTP Server

Use Windows Services to start/stop MySQL.

## Linux and Solaris Platform

To start/stop NA services on Linux or Solaris platform, login as root and enter:  
`/etc/init.d/truecontrol <command>`

Options for this command include:

- start
- stop
- restart
- status

Use `/etc/init.d/mysql` to start/stop MySQL.

## System Status Page

If you do not know the name of the existing NA database, before shutting down NA do the following:

- 1 On the menu bar under Admin, click System Status. The System Status page opens.
- 2 In the Monitor Name column, locate DatabaseMonitor.
- 3 Click the View Details option in the Actions column. The database information is displayed.

## Database Upgrades

For a same-system upgrade of the database software on the database server used by NA, follow these steps:

- ▶ If you also need to upgrade the NA version, see [Database Upgrades](#) on page 18.
  - 1 Stop NA.
  - 2 Back up the NA database.
- ▶ When you enter a database name to identify the NA database, it must be in the identical case as the database name in the database application. For example, if you created your NA database as "Nadb," be sure to enter "Nadb" when backing up and restoring the database.
  - 3 Upgrade the database to a version supported by NA 9.20.
  - 4 Restart NA and verify that NA is working properly.
- ▶ For all database upgrades, consult the documentation provided by the appropriate vendor and your database administrator (DBA).

# A Troubleshooting

This appendix contains the following topics:

- [Configuring the NA Syslog Server](#) on page 71
- [NA 7.60 Upgrade](#) on page 72
- [MySQL Upgrade Installer](#) on page 72
- [Using Gateways](#) on page 73



As of September 2012, information about NA ports is available in the *NA Administration Guide*, which is available from:

<http://h20230.www2.hp.com/selfsolve/manuals>

For more information, see [Documentation Updates](#) on page 3.

## Configuring the NA Syslog Server

The following configuration settings are available for the NA Syslog Server:

- The interface to listen for Syslog messages. The default is to listen on all interfaces.
- The UDP port to listen for Syslog messages. The default is 514.
- A hostname to forward Syslog messages. Syslog forwarding is off by default.
- The UDP port to forward Syslog messages to. The default is 514.

To configure the above settings, edit the `$NA_HOME/jre/adjustable_options.rcx` file and add the following lines anywhere between the `<option>` and `</option>` tags:

```
<option name="syslog/listener_address">192.168.1.12</option>
<option name="syslog/listener_port">514</option>
```

To enable Syslog forwarding, add the following:

```
<array name="syslog/handlers">
  <value>com.hp.nas.syslog.NASSyslogHandler</value>
  <value>com.hp.nas.syslog.NASSyslogForwarder</value>
</array>

<option name="syslog/forward_host">10.1.2.3</option>
<option name="syslog/forward_port">514</option>
```



If you remove the `NASSyslogHandler` from the array of Syslog handlers, NA will only forward Syslog messages. NA will not initiate snapshots of devices when Syslog messages are received.

## NA 7.60 Upgrade

If the upgrade to NA 7.60 failed, check the following files for detailed error messages:

- `[$NA_HOME] HP_Network_Automation_InstallLog.log`
- All files in `[$NA_HOME]/server/log`

If the NA 7.60 upgrade is successful, but NA 7.60 does not run, check the following:

- `[$NA_HOME] HP_Network_Automation_InstallLog.log` file — If this file is truncated, this indicates that NA was not allocated enough disk space. Please contact your System Administrator to resolve disk space or other hardware issues.
- `[$NA_HOME]/jre` folder — If JRE is installed successfully, the folder should contain approximately 600 files. An installation failure will result in less than 100 files. This could occur if Windows Explorer was not closed or other applications were running during the NA upgrade. Be sure to close Windows Explorer and all other applications before running the NA 7.60 Service Pack Installer.

Running a multi-million record update can take a long time and you might think the upgrade has hung. This may not be the case. Before you cancel the upgrade installer, make sure to check the log files. The file is located in `[$NA_HOME]/server/Log/install_SP_UpgradeDatabase.log`.



In the case of system failures, logging is the primary means of identifying what is going wrong and the means of troubleshooting the issue. Be sure to send all pertinent logs to customer Support, along with any error messages, even if the troubleshooting information is removed.

## MySQL Upgrade Installer

When troubleshooting the MySQL Upgrade Installer, keep in mind the Log files are in the sub-folder log in the MySQL Install folder.

In some very rare cases, `my.ini (/etc/my.cnf)` cannot be located and the MySQL variables cannot be queried successfully from MySQL engine. You may be asked to confirm the previous MySQL variables. Please refer to your MySQL 5.0 Reference Manual for detailed description of these variables.

- `bind-address` — IP address to bind to.
- `innodb_data_file_path` — Paths to individual data files and their sizes. The full directory path to each data file is acquired by concatenating `innodb_data_home_dir` to the paths specified here. The file-sizes are specified in megabytes, hence the 'M' after the size specification above. InnoDB also understands the abbreviation 'G', 1G meaning 1024M. Starting from 3.23.44 you can set the file-size bigger than 4 GB on those operating systems which support big files. On some operating systems, files must be < 2 GB. The sum of the sizes of the files must be at least 10 MB.
- `innodb_data_home_dir` — The common part of the directory path for all InnoDB data files. If you do not mention this option in `my.cnf` the default is the `datadir` of MySQL. You can specify this also as an empty string, in which case you can use absolute file paths in `innodb_data_file_path`.



- `innodb_log_file_size` — Size of each log file in a log group in megabytes. Sensible values range from 1M to 1/nth of the size of the buffer pool specified below, where n is the number of log files in the group. The bigger the value, the less checkpoint flush activity is needed in the buffer pool, saving disk I/O. But bigger log files also mean that recovery will be slower in case of a crash. The combined size of log files must be < 4 GB on 32-bit computers.
- `max_binlog_size` — If a write to the binary (replication) log exceeds the given value, rotate the logs. You cannot set it to less than 1024 bytes, or more than 1 GB. The default is 1 GB.

## Using Gateways

When upgrading NA where Gateways are used, after the upgrade run the “Deploy Remote Agent” task to re-install the upgraded Satellite agent on all of the remote Gateways. For information on configuring the Satellite functionality, see the *NA Satellite Guide*.



# We appreciate your feedback!

If an email client is configured on this system, by default an email window opens when you click *here*.

If no email client is available, copy the information below to a new message in a web mail client, and then send this message to **ovdoc-nsm@hp.com**.

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**Feedback:**