IBM® Storage Networking

IBM Network Advisor Installation and Migration Guide

Supporting IBM Network Advisor version 14.0.2

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How this document is organized

This document is organized to help you find the information that you want as quickly and easily as possible. This document supports IBM Network Advisor 14.0.2 and later.

The document contains the following components:

- Chapter 1, "Installation," provides system and pre-installation requirements as well as step-by-step installation instructions.
- Chapter 2, "IBM Network Advisor Configuration," provides step-by-step instructions to configure a fresh IBM Network Advisor installation.
- Chapter 3, "Data Migration," provides pre-migration requirements as well as step-by-step instructions for migrating data from a previous release of IBM Network Advisor.
- Chapter 4, "Uninstallation," provides step-by-step instructions for performing a partial or full uninstall of IBM Network Advisor.
- Appendix A, "References," provides the following information for quick lookup.
  - IBM Network Advisor packages
  - Scalability limits
  - Edition feature support
  - Management server and client ports

Supported hardware and software

In those instances in which procedures or parts of procedures documented here apply to some devices but not to others, this guide identifies exactly which devices are supported and which are not.

Although many different software and hardware configurations are tested and supported by IBM Network Advisor 14.0.2, documenting all possible configurations and scenarios is beyond the scope of this document.

Fabric OS software support

The following firmware platforms are supported by this release of IBM Network Advisor 14.0.2:

- Fabric OS 5.0 or later in a pure Fabric OS fabric
- Fabric OS 6.0 or later in a mixed fabric

NOTE
For platform specific Fabric OS requirements, refer to the **Firmware level required** column in Table 1.

NOTE
Discovery of a Secure Fabric OS fabric in strict mode is not supported.

Fabric OS hardware support

Table 1 provides a list of the hardware platforms supported by this release of IBM Network Advisor 14.0.2 as well as any platform specific Fabric OS requirements.

TABLE 1 Supported Hardware

IBM Name	Terminology used in documentation	Firmware level required
IBM System Storage SAN24B-4	24-port, 8 Gbps FC Switch	Fabric OS v6.1.0 or later
IBM System Storage SAN40B-4	40-port, 8 Gbps FC Switch	Fabric OS v6.1.0 or later
IBM System Storage SAN80B-4	80-port, 8 Gbps FC Switch	Fabric OS v6.1.0 or later
IBM System Storage SAN24B-5	24-port, 16 Gbps Edge switch	Fabric OS v7.0.1 or later
IBM System Storage SAN48B-5	48-port, 16 Gbps switch	Fabric OS v7.0.0 or later
IBM System Storage SAN96B-5	96-port, 16 Gbps switch	Fabric OS v7.1.0 or later
IBM Flex System FC5022 16Gb SAN Scalable Switches (ScSM)	48-port, 16 Gbps embedded switch	Fabric OS v7.2.0 or later
SAN04B–R	4 Gbps Extension Switch	Fabric OS v5.1.0 or later
IBM System Storage SAN06B–R	8 Gbps Extension Switch	Fabric OS v6.3.0 or later
IBM System Storage SAN42B-R	16 Gbps 24-FC port, 18 GbE port Switch	Fabric OS v7.3.0 or later
IBM Converged Switch B32	8 Gbps 8-FC-port, 10 GbE 24-CEE port Switch	Fabric OS v6.1.2_CEE
IBM System Storage SAN32B-E4 Encryption Switch	8 Gbps Encryption Switch	Fabric OS v6.1.1_enc or later
IBM System Storage SAN256B	Director Chassis	Fabric OS v5.0.0 to Fabric OS 7.0.0

TABLE 1 Supported Hardware

IBM Name	Terminology used in documentation	Firmware level required
IBM System Storage SAN256B with FC4-16, FC4-32, and FC4-48 Blades	Director Chassis with 4 Gbps 16-FC port, 4 Gbps 32-FC port, and 4 Gbps 48-FC port Blades	Fabric OS v5.2.0 or later (FC4-48)
IBM System Storage SAN256B with FR4-18i Blade	Director Chassis with 4 Gbps router, Extension Blade	Fabric OS v5.1.0 or later (FR4-18i)
IBM System Storage SAN256B with FC4-16IP Blade	Director Chassis with 4 Gbps 8-FC port and 8 GbE iSCSI Blade	Fabric OS v5.2.0 or later (FC$-16IP)
IBM System Storage SAN256B with FC10-6 Blade	Director Chassis with 10 Gbps 6-port ISL Blade	Fabric OS v5.3.0 or later (FC10-6)
IBM System Storage SAN384B	4-slot Backbone Chassis	Fabric OS v6.0.0 or later
IBM System Storage SAN384B with FC8-16, FC8-32, and FC8-48 Blades	4-slot Backbone Chassis with 8 Gbps 16-FC port, 8 Gbps 32-FC port, and 8 Gbps 48-FC port Blades	Fabric OS v6.2.0 or later
IBM System Storage SAN384B with FC8-64 Blade	4-slot Backbone Chassis with 8 Gbps 64-port Blade	Fabric OS v6.4.0 or later
IBM System Storage SAN384B with FR4-18i Blade	4-slot Backbone Chassis with 4 Gbps Router, Extension Blade	Fabric OS v6.2.0 or later
IBM System Storage SAN384B with FC10-6 Blade	4-slot Backbone Chassis with FC 10 - 6 ISL Blade	Fabric OS v6.2.0 or later
IBM System Storage SAN384B with FX8-24 Extension Blade	4-slot Backbone Chassis with 8 Gbps 12-FC port, 10 GbE ports, 2-10 GbE ports Extension Blade	Fabric OS v6.3.1_CEE
IBM System Storage SAN384B with FCoE 10-24 Blades	4-slot Backbone Chassis with 8 Gbps 24-port FCoE Blade	Fabric OS v6.3.0 or later
IBM System Storage SAN768B[1, 2]	8-slot Backbone Chassis	Fabric OS v6.0.0 or later
IBM System Storage SAN768B[1, 2] with FC8-16, FC8-32, and FC8-48 Blades	8-slot Backbone Chassis with 8 Gbps 16-FC port, 8 Gbps 32-FC port, and 8 Gbps 48-FC port Blades	Fabric OS v6.0.0 or later
IBM System Storage SAN768B[1, 2] with FC8-64 Blade	8-slot Backbone Chassis with 8 Gbps 64-port Blade	Fabric OS v6.4.0 or later
IBM System Storage SAN768B[1, 2] with FR4-18i Blade	8-slot Backbone Chassis with 4 Gbps Router, Extension Blade	Fabric OS v6.0.0 or later
IBM System Storage SAN768B[1, 2] with FC10-6 Blade	8-slot Backbone Chassis with FC 10 - 6 ISL Blade	Fabric OS v6.2.0 or later
IBM System Storage SAN768B[1, 2] with FX8-24 Extension Blade	8-slot Backbone Chassis with 8 Gbps Extension Blade	Fabric OS v6.3.1_CEE
IBM System Storage SAN768B[1, 2] with FCoE10-24 Blade	8-slot Backbone Chassis with 8 Gbps 24-port FCoE Blade	Fabric OS v6.3.1_CEE
IBM System Storage SAN384B-2	16 Gbps 4-slot Backbone Chassis	Fabric OS v7.0.0 or later
IBM System Storage SAN384B-2 with FC8-64 and FX8-24[1, 2] Blades	16 Gbps 4-slot Backbone Chassis with 8 Gbps 64-port and 8 Gbps 12-FC port, 10 GbE ports, 2-10 GbE ports Extension blades	Fabric OS v7.0.0 or later
IBM System Storage SAN384B-2 with FC16-32 and FC16-48 Blades	16 Gbps 4-slot Backbone Chassis with 16 Gbps 32-port and 16 Gbps 48-port blades	Fabric OS v7.0.0 or later
IBM System Storage SAN384B-2 with FC8-32E and FC8-48E Blades	16 Gbps 4-slot Backbone Chassis with 8 Gbps 32-port and 8 Gbps 48-port blades	Fabric OS v7.0.1 or later

TABLE 1 Supported Hardware

IBM Name	Terminology used in documentation	Firmware level required
IBM System Storage SAN384B-2 with FC16-64 Blade	16 Gbps 4-slot Backbone Chassis with 16 Gbps 64-FC port blade	Fabric OS v7.3.0 or later
IBM System Storage SAN768B-2[1, 2]	16 Gbps 8-slot Backbone Chassis	Fabric OS v7.0.0 or later
IBM System Storage SAN768B-2[1, 2] with FC8-64 and FX8-24 Blades	16 Gbps 8-slot Backbone Chassis with 8 Gbps 64-port and 8 Gbps 12-FC port, 10 GbE ports, 2-10 GbE ports Extension blades	Fabric OS v7.0.0 or later
IBM System Storage SAN768B-2[1, 2] with FC16-32 and FC16-48 Blades	16 Gbps 8-slot Backbone Chassis with 16 Gbps 32-port and 16 Gbps 48-port blades	Fabric OS v7.0.0 or later
IBM System Storage SAN768B-2[1, 2] with FCoE 10-24 Blades	16 Gbps 8-slot Backbone Chassis with 8 Gbps 24-port FCoE Blade	Fabric OS v7.0.0 or later
IBM System Storage SAN768B-2[1, 2] with FC16-64 Blade	16 Gbps 8-slot Backbone Chassis with 16 Gbps 64-FC port blade	Fabric OS v7.3.0 or later
IBM Storage Networking SAN64B-6	64-port, 32 Gbps switch	Fabric OS v8.0.0 or later
IBM Storage Networking SAN256B-6 [1, 2]	32 Gbps, 4-slot Backbone Chassis	Fabric OS v8.0.1 or later
IBM Storage Networking SAN512B-6 [1, 2]	32 Gbps, 8-slot Backbone Chassis	Fabric OS v8.0.1 or later
FC8-16 Blade	FC 8 GB 16-port Blade	Fabric OS v6.2.0 or later
FC8-32 Blade	FC 8 GB 32-port Blade	Fabric OS v6.2.0 or later
FC8-32E Blade[3]	FC 8 GB 32-port Blade	Fabric OS v7.0.1 or later
FC8-48 Blade	FC 8 GB 48-port Blade	Fabric OS v6.2.0 or later
FC8-48E Blade[3]	FC 8 GB 48-port Blade	Fabric OS v7.0.1 or later
FC8-64 Blade	FC 8 GB 64-port Blade	Fabric OS v6.4.0 or later
FC10-6 Blade	FC 10 - 6 ISL Blade	Fabric OS v6.2.0 or later
FC16-32 Blade[3]	16 Gbps 32-port blade	Fabric OS v7.0.0 or later
FC16-48 Blade[3]	16 Gbps 48-port blade	Fabric OS v7.0.0 or later
FC16-64 Blade[3]	16 Gbps 64-FC port blade	Fabric OS v7.3.0 or later
FCoE10-24 Blade[4]	10 Gig FCoE Port Router Blade	Fabric OS v6.3.0 or later
FR4-18i Extension Blade	4 Gbps Router, Extension Blade	Fabric OS v5.1.0 or later
FR8-24 Extension Blade	8 Gbps Router, Extension Blade	Fabric OS 6.4.0 or later
FS8-18 Encryption Blade	Encryption Blade	Fabric OS v6.1.1_enc or later
FX8-24 Extension Blade [1, 2]	8 Gbps Extension Blade	Fabric OS v6.3.1_CEE
FC32-48 Port Blade[1, 2]	32 Gbps 48-port blade	Fabric OS v8.0.1 or later
SX6 Extension Blade[1, 2]	32 Gbps, Router Extension blade	Fabric OS v8.0.1 or later

1. Professional can discover, but not manage this device. This device cannot be used as a Seed switch.
2. Professional Plus Trial and Licensed version can discover, but not manage this device. This device cannot be used as a Seed switch.
3. Only supported on the SAN384B-2 and SAN768B-2 chassis.
4. Only supported on the SAN384B, SAN768B, and SAN768B-2 chassis

What's new in this document

- Information that was added:
  - Migration rollback in Configuration Wizard
  - Troubleshooting in Linux SUSE 11.3
- Information that was changed:
  - Supported migration paths
- Information that was deleted:
  - None

For further information about new features and documentation updates for this release, refer to the release notes.

Document conventions

This section describes text formatting conventions and important notice formats used in this document.

Text formatting

The narrative-text formatting conventions that are used are as follows:

bold text	Identifies command names Identifies the names of user-manipulated GUI elements Identifies keywords and operands Identifies text to enter at the GUI or CLI
italic text	Provides emphasis Identifies variables Identifies paths and Internet addresses Identifies document titles
`code` text	Identifies CLI output Identifies command syntax examples

For readability, command names in the narrative portions of this guide are presented in mixed lettercase: for example, switchShow. In actual examples, command lettercase is often all lowercase. Otherwise, this manual specifically notes those cases in which a command is case sensitive.

Notes, cautions, and warnings

The following notices and statements are used in this manual. They are listed below in order of increasing severity of potential hazards.

NOTE
A note provides a tip, guidance or advice, emphasizes important information, or provides a reference to related information.

ATTENTION
An Attention statement indicates potential damage to hardware or data.

Key terms

For definitions of SAN-specific terms, visit the Storage Networking Industry Association online dictionary at:

http://www.snia.org/education/dictionary

Additional information

This section lists additional IBM-specific documentation that you might find helpful.

For support information for this product and other SAN products, see the following Web site: *www.ibm.com/supportportal/*

Visit *www.ibm.com/contact/* for the contact information for your country or region. You can also contact IBM within the United States at 1-800-IBMSERV (1-800-426-7378). For support outside the United States, you can find the service number at: *www.ibm.com/planetwide/*.

Getting technical help

Contact IBM support for hardware, firmware, and software support, including product repairs and part ordering. To expedite your call, have the following information available:

1. General Information
    - Switch model
    - Switch operating system version
    - Error numbers and messages received
    - **supportSave** command output
    - Detailed description of the problem, including the switch or fabric behavior immediately following the problem, and specific questions
    - Description of any troubleshooting steps already performed and the results
    - Serial console and Telnet session logs
    - syslog message logs

2. Switch Serial Number

   The switch serial number and corresponding bar code are provided on the serial number label, as illustrated below.:

   The serial number label is located as follows:

   - SAN16B-2 — On the nonport side of the chassis
   - SAN24B-4, SAN42B-R, SAN40B-4, SAN80B-4, SAN96B-5, SAN04B–R, SAN06B-R, and IBM Converged Switch B32 — On the switch ID pull-out tab located inside the chassis on the port side on the left
   - SAN48B-5 and SAN64B-6 — On the pull-out tab on the front of the switch
   - SAN256B — Inside the chassis next to the power supply bays
   - SAN768B and SAN768B-2 — On the bottom right on the port side of the chassis
   - SAN384B and SAN384B-2 — On the bottom right on the port side of the chassis, directly above the cable management comb
   - SAN256B-6 — On the upper left on the non-port side of the chassis
   - SAN512B-6 — On the lower left on the non-port side of the chassis

3. World Wide Name (WWN)

   You can obtain the WWN from the same place as the serial number, except for the SAN768B, SAN384B, and SAN768B-2. For the SAN768B, SAN384B, and SAN768B-2, access the numbers on the WWN cards by removing the WWN bezel at the top of the nonport side of the chassis.

   If the switch is operable, you can also use the **wwn** command to display the switch WWN.

How to send your comments

Your feedback is important in helping us provide the most accurate and high-quality information. If you have comments or suggestions for improving this document, send us your comments by e-mail to starpubs@us.ibm.com.

Be sure to include the following:

- Exact publication title (paste into the e-mail subject line)
- Publication form number (for example, GC26-1234-02)
- Page, table, or illustration numbers
- A detailed description of any information that should be changed

Chapter

1

Installation

In this chapter

- System requirements 1
- Downloading the software 7
- Pre-installation requirements 8
- Installing the application 10
- Headless installation 12
- Client-only installation 14

System requirements

Use the following sections to determine if you have met the requirements for this application:

- Server and client operating system requirements 2
- Memory, host, and disk space requirements 4
- Operating system cache requirements 5
- Browser requirements 6
- Client and server system requirements 6

Server and client operating system requirements

Table 2 summarizes the required operating system (OS) for servers and the packages supported by each OS version.

NOTE
Beginning with BNA 14.0.0 release, 32-bit installer is not supported.

NOTE
It is recommended that you run Network Advisor on a dedicated machine to avoid conflicts with other applications that use the same resources and ports (such as SNMP, web server, and so on).

NOTE
If the required operating system is not available, a warning message displays during installation.

TABLE 2 Server operating system requirements

Operating system	Version	Guest OS version	Supported packages
Windows®	• 2008 R2 Data Center Edition (x86 64-bit) • 2008 R2 Standard Edition (x86 64-bit) • 2008 R2 Enterprise Edition (x86 64-bit) • 2012 Data Center Edition (x86 64-bit) • 2012 Standard Edition (x86 64-bit) • 2012 R2 Data Center Edition (x86 64-bit) • 2012 R2 Standard Edition (x86 64-bit) • 8 Enterprise (x86 64-bit) • 8.1 Enterprise (x86 64-bit)		SAN with SMI Agent SMI Agent only
Linux®	• RedHat Enterprise 6.3 Advanced (x86 64-bit) • RedHat Enterprise 6.4 Advanced (x86 64-bit) • RedHat Enterprise 6.5 Advanced (x86 64-bit) • SuSE Enterprise Server 11.3 (x86 64-bit) • Oracle Enterprise 6.3 (x86 64-bit) • Oracle Enterprise 6.4 (x86 64-bit) • Oracle Enterprise 6.5 (x86 64-bit)		SAN with SMI Agent SMI Agent only

TABLE 2 Server operating system requirements (Continued)

Operating system	Version	Guest OS version	Supported packages
Guest VMs	• VMware® ESX Server i 5.1[1] • Microsoft Hyper-V (Hyper-V Server 2008 R2, Windows Server 2012, Windows Server 2012 R2 Data Center) • KVM (RH 6.5)	Supports all server OS versions available for Windows and Linux.	Supports all packages available for Windows and Linux.

1. It is recommended that you run all IBM Network Advisor virtual CPUs on a single physical CPU.

Table 3 summarizes the required OS for clients. IBM Network Advisor clients are supported on 64-bit Windows and Linux systems.

TABLE 3 Client operating system requirements

Operating system	Version	Guest OS version
Windows®	• 2008 R2 Data Center Edition (x86 64-bit) • 2008 R2 Standard Edition (x86 64-bit) • 2008 R2 Enterprise Edition (x86 64-bit) • 2012 Data Center Edition (x86 64-bit) • 2012 Standard Edition (x86 64-bit) • 2012 R2 Data Center Edition (x86 64-bit) • 2012 R2 Standard Edition (x86 64-bit) • 7 Enterprise (x86 64-bit) • 8.1 Enterprise (x86 64-bit) • 10 Enterprise (x86 64-bit)	
Linux®	• RedHat Enterprise 6.6 Advanced (x86 64-bit) • RedHat Enterprise 6.7 Advanced (x86 64-bit) • RedHat Enterprise 7.0 Advanced (x86 64-bit) • RedHat Enterprise 7.1 Advanced (x86 64-bit) • SuSE Enterprise Server 11.3 (x86 64-bit) • SuSE Enterprise Server 12 (x86 64-bit) • Oracle Enterprise 6.6 (x86 64-bit) • Oracle Enterprise 6.7 (x86 64-bit) • Oracle Enterprise 7.0 (x86 64-bit) • Oracle Enterprise 7.1 (x86 64-bit)	
Guest VMs	• VMware® ESXi 5.1 • VMware ESXi 5.5 • VMware® ESXi 6.0 • Microsoft Hyper-V (Hyper-V Server 2008 R2, Windows Server 2012, Windows Server 2012 R2 Data Center) • KVM (RH 6.5)	Supports all client OS versions available for Windows and Linux.

Memory, host, and disk space requirements

Memory requirements are only applicable when there are no other applications running on the IBM Network Advisor server. Paging space should be equal to or exceed the physical memory size.

NOTE
To efficiently manage more than 9000 SAN ports, it is recommended to allocate a minimum of 2 GB client memory and 6 GB server memory.

NOTE
It is recommended that you add an additional 40 GB of disk space for the default temporary directory.

NOTE
If you enable periodic supportSave or configure the IBM Network Advisor server as the Upload Failure Data Capture location for monitored switches, you must add additional disk space. Each switch supportSave file is approximately 5 MB and each Upload Failure Data Capture file is approximately 500 KB. To determine the disk space requirements, multiply the frequency of scheduled supportSave files by 5 MB and the expected Upload Failure Data Capture files by 500 KB before the planned periodic purge activity.

Table 4 summarizes the memory, host, and disk space requirements for a remote client.

TABLE 4 Memory, Host, and Disk space requirements for remote client

Resources	Small	Medium	Large
Installed Memory	4 GB	4 GB	4 GB
Processor Core Count (including physical and logical cores)	2 (1 physical and 1 virtual)	4 (2 physical and 2 virtual)	4 (2 physical and 2 virtual)
Disk Space	1 GB	1 GB	1 GB

Table 5 summarizes the minimum system requirements for server (plus 1 client) installation.

TABLE 5 Minimum system requirements for server (plus 1 client) installation

Resources	Professional Plus or Enterprise Edition
Installed Memory	6 GB
Processor Core **Count** (including physical and logical cores)	2
Disk **Space**	20 GB

Table 6 summarizes the recommended system requirements for server (plus 1 client) installation.

TABLE 6 Recommended system requirements for server (plus 1 client) installation

Resources	Small	Medium	Large
Installed Memory	16 GB	16 GB	16 GB
Processor Core **Count** (including physical and logical cores)	2 (1 physical and 1 virtual)	4 (2 physical and 2 virtual)	8 (4 physical and 4virtual)
Disk **Space**	20 GB	80 GB	100 GB

Operating system cache requirements

It is recommended that you use the System managed size (the OS allocates the required cache); however, if you choose to use a custom size, make sure you use the following memory settings for your operating system.

The virtual memory requirements for Windows system is 1 GB for minimum paging file size and 4 GB for maximum paging file size

TABLE 7 Linux swap space requirements

Installed physical memory (RAM) size	Recommended swap size
4 GB	**4 GB**
Greater than 6 GB and less than 8 GB	Equal to the amount of RAM
Greater than or equal to 8 GB and less than 64 GB	5 time the amount of RAM

NOTE
For networks with more than 9000 ports, the recommended memory allocation is 6 GB.

Browser requirements

The launch of IBM Network Advisor remote client, and the launch of the Server Management Console, Launch in Context (LIC), and the Element Manager (Web Tools) from the application are supported from the following browsers with a Java plug-in:

- Browsers
  - Windows Internet Explorer 11.0.9 on Windows
  - Firefox 24 and later on Windows or Linux
  - Google Chrome 33 on Windows
- Java Plug-ins — For the current supported JRE version for IBM Network Advisor remote client, and the launch of the Server Management Console, Launch in Context (LIC), and Web Tools, refer to the Release Notes.

NOTE
For higher performance, use a 64-bit JRE.

NOTE
If the minimum system requirement is not met, you will be blocked from the configuration and an error message will be displayed.

For the website listing patch information, go to *http://www.oracle.com/technetwork/java/javase/downloads/index.html*.

Client and server system requirements

NOTE
IBM Network Advisor is not supported in a Network Address Translation (NAT) environment where the server and client are on different sides of the NAT Server.

IBM Network Advisor has the following client and server system requirements:

- In Professional Plus and Enterprise editions, a single server supports a maximum of 25 clients, which can be local on a 64-bit server or remote on 64-bit servers.
- In Professional Plus and Enterprise editions, a single server supports a maximum of 25 clients, which can be local or remote on 64-bit servers. To support more than 8 clients, you must make the following changes to your configuration:
  - Increase the server memory size. You can configure the server memory size from the **Options** dialog box, **Memory Allocations** pane. For instructions, refer to the *IBM Network Advisor User Manual* or online help.
  - Increase the PostgreSQL database shared buffers memory allocation to 1024 MB by editing the *Install_Home*\data\databases\postgresql.conf file.

Downloading the software

You can download the software and documentation from the MyBrocade website.

1. Go to the MyBrocade website.

   http://my.brocade.com/

2. Enter your user ID and password.

   If you do not already have a MyBrocade account, you can create one.

3. Select **MyBrocade** from the **Take me to** list, if necessary.
4. Click **LOG IN**.
5. Click **downloads** on the main page.
6. Select **Management Software** from the **Download by** list.
7. Click **Brocade Network Advisor** in the **Product Name** list.
8. Select the highest version number for the latest GA code.

   For example, click **Brocade Network Advisor 14.0.0**, then click **Brocade Network Advisor 14.0.2 Brocade GA.**

   To download the documentation, click **Brocade Network Advisor 14.0.2 Manuals** and then select the manual you want to download.

9. Select one of the following links to download the software:

   - IBM Network Advisor 14.0.2 GA for Windows
   - IBM Network Advisor 14.0.2 GA for Linux

   You can also access the release notes and md5 Checksum from this location.

10. Read the **Export Compliance**, select the certification check box, and click **Submit**.
11. Read the **Brocade End User License Agreement** and click **I Accept**.
12. Click **Save** on the **File Download** dialog box.
13. Browse to the location where you want to save the software and click **Save**.

Pre-installation requirements

Before you install IBM Network Advisor, make sure you meet the following requirements.

- Make sure all system requirements have been met prior to installation. For specific system requirements, refer to "System requirements" on page 1.
- To avoid errors, close all instances of the application before beginning the installation or uninstallation procedures.

  For UNIX system, if you still receive error messages after closing the application, enter the following commands:

  `#ps -ef | grep -i ""` to list the process IDs

  `#kill -9 "`*Process_ID*`"` where *Process_ID* is any Management application process

Additional pre-installation requirements for UNIX systems

- Make sure that an X Server is available for display and is configured to permit X Client applications to display from the host on which they are installing the IBM Network Advisor server (typically, this simply requires that the systems console be present and running with a logged-in user on the X Server-based desktop session, such as KDE, GNOME, and so on).

  If this is a headless unit with no console, refer to "Additional pre-installation requirements for UNIX systems (headless installation)" on page 12.
- Make sure that the DISPLAY environment variable is correctly defined in the shell with a valid value (for example, to display to the local console, `export DISPLAY=:0.0`, or to display to a remote system that has an X Server running, `export DISPLAY=`*Remote_IP_address*`:0.0`).

  You may also need to consider a firewall that might block the display to the X Server, which listens by default on TCP port 6000 on the remote host.

  To display to a remote system, you need to permit the remote display of the X Server by running the `xhost +IP` command, where IP is the IP address of the IBM Network Advisor server host from the X-based desktop of the remote system.
- Make sure you test the DISPLAY definition by running the `xterm` command, from the same shell from which you run install.bin. A new X terminal window to the destination X Server display should open.
- For Linux OS with the SELinux security policy enabled, make sure you complete the following steps.

  1. Disable the SELinux security policy using the `setenforce 0` command.
  2. Install the application (refer to "Installing the application" on page 10).
  3. Enable the SELinux security policy using the `setenforce 1` command.

Troubleshooting in Linux SUSE 11.3

Case 1:

Follow the steps to troubleshoot when the installation fails with error saying “error while loading shared libraries: libreadline.so.6: cannot open shared object file: No such file or directory”.

1. Install libreadline.so.6.
    a. Launch terminal
    b. Enter **wget** http://download.opensuse.org/distribution/11.3/repo/oss/suse/x86_64/libreadline6-6.1-8.1.x86_64.rpm
    c. rpm -Uvh libreadline6-6.1-8.1.i586.rpm –replacepkgs
    libreadline.so.6, libreadline.so.6.1 will be created in /lib64 folder
2. Install the application (Refer to “Installing the application”)

Case 2:

Follow the steps to troubleshoot when the installation fails with error saying “mysql: symbol lookup error: /usr/local/lib/libreadline.so.6: undefined symbol: UP”.

1. Copy libreadline.so.6.1 and libreadline.so.6 from */lib64* to */usr/local/lib*
    a. cp /lib64/libreadline.so.* /usr/local/lib
    b. Go to folder path *cd /usr/local/lib*
    c. Enter #ldconfig
    d. Enter #apt-get update
2. Install the application (Refer to “Installing the application”)

Installing the application

Before you install the application, make sure your system meets the minimum pre-installation requirements (refer to "Pre-installation requirements" on page 8). If you are migrating data, refer to "Data Migration" on page 41.

NOTE
On Windows systems, you must be an Administrator with Read and Write privileges to install IBM Network Advisor.

NOTE
On UNIX systems, you must be the root user to install IBM Network Advisor.

To install the new application version, complete the following steps.

1. Choose one of the following options:
   - For Windows systems, navigate to the *Download_Location**Application_Name*\windows\ directory, right-click install.exe and select **Run as administrator**.
   - For UNIX systems, complete the following steps.
     a. On the Management application server, navigate to the following directory: *Download_Location/Application_Name/UNIX_Platform/*bin
     a. Type the following at the command line:
     ```
     ulimit -n 2000
     ```
     b. Type the following at the command line:
     ```
     ./install.bin
     ```
     OR
     ```
     sh install.bin
     ```

     NOTE
     On Linux systems, if you double-click the install.bin file, select **Run**. Do not select **Run in Terminal**.
2. Click **Next** on the **Introduction** screen.
3. Read the agreement on the **License Agreement** screen, select **I accept the terms of the License Agreement**, and click **Next**.
4. Select the usual location for your system application files (for example, D:\Program Files*Application_Name* or opt/*Application_Name*) on the **Select Install Folder** screen and click **Next**.

   NOTE
   Do not install to the root directory. For example, C:\ (Windows) or /root (UNIX).
5. Review the displayed installation summary on the **Pre-Installation Summary** screen and click **Install**.
6. Make sure the **Launch Configuration** check box is selected (default) on the **Installation Complete** screen, and click **Done**.

NOTE
If a minimum of 10 GB space is not available on your server during installation, a warning message displays and installation fails.

If the localhost is not mapped to the loopback address, an error message displays. You must map the loopback address to the localhost (refer to "Mapping the loopback address to the local host" on page 11) before you configure the application.

If the localhost is mapped to the loopback address, the configuration wizard displays. To configure the application, refer to one of the following sections:

- If this is a fresh installation, refer to "IBM Network Advisor Configuration" on page 17.
- If you are upgrading from a previous version and need to migrate data, refer to "Data Migration" on page 41.

For Linux systems, the following lists the folder permissions configured during installation:

- *Install_Home* — 775
- conf — 775
- conf/schema folder (including sub-folders) — 775
- data — 775
- database — 700
- db (including sub -folders) — 775
- temp — 775
- support — 777
- All other folders — 774

Mapping the loopback address to the local host

To map the loopback address to the local host, complete the following steps.

1. Open the hosts file.

   For Windows, the hosts file is located in the WINDOWS\system32\drivers\etc directory.

   For Linux, the hosts file is located in the /etc directory

2. Add the following entries:

```
# For IPV4 machine
127.0.0.1      localhost

# For IPV6 enabled machine
127.0.0.1       localhost
::1             localhost
```

3. Save and close the file.

   To configure the application, refer to one of the following sections:

   - If this is a fresh installation, refer to "IBM Network Advisor Configuration" on page 17.
   - If you are upgrading from a previous version and need to migrate data, refer to "Data Migration" on page 41.

Headless installation

Headless installation, also known as *silent mode installation*, is fully supported on all platforms. Once initiated, the headless installation requires minimal user interaction and runs based on the default values provided.

Before you install IBM Network Advisor, make sure you meet the following requirements.

Make sure all system requirements have been met prior to installation. For specific system requirements, refer to "System requirements" on page 1.

Additional pre-installation requirements for UNIX systems (headless installation)

An X Server display is required, even when performing a headless installation, to run the initial configuration. Before you install IBM Network Advisor, complete the following:

- Make sure that an X Server is available for display and is configured to permit X Client applications to display from the host on which they are installing the IBM Network Advisor server (typically, this simply requires that the system console be present and running with a logged-in user on the X Server-based desktop session, such as KDE, GNOME, and so on).

  The DISPLAY can be any host X Server (for example, DISPLAY can be set to display the configuration to another UNIX system that has an X-based desktop).

- Make sure that the DISPLAY environment variable is correctly defined in the shell with a valid value (for example, to display to the local console, `export DISPLAY=:0.0`, or to display to a remote system that has an X Server running, `export DISPLAY=`*Remote_IP_Address*`:0.0`).

  To display to a remote system, you need to permit the remote display of the X Server by running the `xhost +IP` command, where IP is the IP address of the IBM Network Advisor server host, on a local terminal window of the X-based desktop of the remote system.

  You may also need to consider a firewall that might block the display to the X Server, which listens by default on TCP port 6000 on the remote host.

- Make sure you test the DISPLAY definition by running the `xterm` command from the same shell from which you run install.bin. A new X terminal window to the destination X Server display should open.

Performing a headless installation on Windows and UNIX systems

To perform a headless installation through the CLI, download the software (refer to "Downloading the software" on page 7).

- For Windows systems, complete the following steps:
  1. Select **Start > Programs > Accessories**, right-click **Command Prompt** and select **Run as administrator**.
  2. Execute this command:
     ```
     install.exe -i silent -DHEADLESS_CONFIG_MODE="false"
     ```
- For UNIX systems, open a UNIX shell and execute this command:
  ```
  sh install.bin -i silent -DHEADLESS_CONFIG_MODE="false"
  ```
  The application installs in silent mode using default settings.

  To configure the application, refer to one of the following sections:
  - If this is a fresh installation, refer to "IBM Network Advisor Configuration" on page 17.
  - If you are upgrading from a previous version and need to migrate data, refer to "Data Migration" on page 41.

Troubleshooting the Linux headless installation

If you have completed all of the pre-Installation requirements and you are still unable to install the application, run the following commands on the host.

1. Go to *Install_Home/* (the directory containing install.bin).
2. Execute `strace -f -F -v -s 1024 -o NetworkAdvisorinstall.txt ./install.bin`.
3. Execute `rpm -qa >> system.txt`.
4. Execute `ps -elf >> system.txt`.
5. Execute `md5sum install.bin >> system.txt`.
6. Execute `df -k >> system.txt`.
7. Execute `sh -c "xterm -e echo nothing >> system.txt 2>&1"`.
8. Execute `env >> system.txt`.
9. Execute `sh -c "DISPLAY=:0.0 xterm -e echo nothing >> system.txt 2>&1"`.
10. Execute `zip support1.zip NetworkAdvisorinstall.txt system.txt`.

    Send the support1.zip file output from the above (containing install.txt and system.txt) to Technical Support. This file will help Technical Support isolate the issue.

Collecting supportsave on Windows and Linux

To collect server supportsave, run the script file located at:

```
<BNA_HOME>\bin\commandsupportsave
```

Once the script file is triggered, the server supportsave is collected at the following location:

```
<BNA_HOME>\support
```

Client-only installation

You can install a client-only application on a machine other than the server (without using a web browser) by creating a client bundle on the server, and then copying and installing that client on another machine.

Installing the client-only application

NOTE
The client bundle is supported only on a 64-bit OS.

NOTE
To download the client bundle, the browser operating system and server operating system must be the same.

NOTE
The download client is bundled with the Network Advisor server java runtime environment package.

1. Click the client bundle and download the file.
2. Extract the client bundle.
3. Navigate to the *extract_location*\bin directory and run the appropraite .bat file.
   - For Windows, navigate to C:\Users*user_name*\desktop\windows-clientbundle\bin) and run `dcmclient.bat`.
   - For Linux, navigate to opt/linux-clientbundle/bin and run `dcmclient`.

   If you modify the data in the **Options** dialog box, the Client bundle must be triggered manually.
   - For Windows, navigate to *Install_Home*\bin) and run `create-client-bundle.bat`.
   - For Linux, navigate to *Install_Home*\bin) and run `create-client-bundle`.

   NOTE
   If the default starting port number is changed to some other port number, you must restart the server, regenerate the client bundle, and then download the client bundle to launch the client.

   The **Network Advisor Log In** dialog box displays.

4. Enter the IP address of the Network Advisor server in the **Network Address** list.

NOTE
The server must be the exact same version, edition, starting port number, and network size as the client.

NOTE
You can remove a server from the **Network Address** list by selecting the IP address and clicking **Delete**.

5. Enter your user name and password.

   The defaults are Administrator and password, respectively.

NOTE
Do not enter Domain\User_Name in the **User ID** field for LDAP server authentication.

6. Select or clear the **Save password** check box to choose whether you want the application to remember your password the next time you log in.
7. Click **Login**.
8. Click **OK** on the **Login Banner** dialog box.

   The IBM Network Advisor application displays.

1 Client-only installation

Chapter

IBM Network Advisor Configuration 2

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Configuring IBM Network Advisor

If you have not installed the application, refer to "Installation" on page 1. If you are migrating data, refer to "Data Migration" on page 41.

To configure IBM Network Advisor, complete the following steps.

1. Click **Next** on the **Welcome** screen.
2. Click **No, don't copy any data and settings** (default) on the **Copy Data and Settings (Migration)** screen and click **Next**.

NOTE
You cannot migrate data from an earlier release of IBM Network Advisor to 14.0.2 after you complete the 14.0.2 configuration.

To migrate data from a previous management application version, refer to "Data Migration" on page 41.

3. Select one of the following options on the **Package** screen and click **Next**.

   - **SAN with SMI Agent**
   - **SMI Agent Only** (Go to step 8.)

   NOTE
   If you choose to install only the SMI Agent, the configuration defaults to the SAN Enterprise package. When you open the IBM Network Advisor client, a **License** dialog displays, where you must enter a SAN Enterprise license key to use the client. If you enter a SAN Professional Plus license key, you must downgrade your license and restart all services for the changes to take affect. For instructions, refer to the user manual or online help.

4. Select one of the following options on the **Installation Type** screen and click **Next**.

   NOTE
   The SAN768B and SAN768B-2 Backbone chassis require Enterprise edition.

   - **IBM Network Advisor - Licensed version** (default)

     Continue with step 5. Requires you to enter a license key during configuration to enable features and configuration.

   - **IBM Network Advisor - 120 days Trial**

     Go to step 6. Enables you to manage SAN networks from a single interface for 120 days.

     ATTENTION
     If you choose to install Trial, once the trial period ends (120 days), you must upgrade to Licensed software.

5. Click **Next** on the **Server License** screen.
6. Complete the following steps on the **FTP/SCP/SFTP Server** screen.
   a. Choose one of the following options:
      - Select **Built-in FTP/SCP/SFTP Server** (default) to configure an internal FTP/SCP/SFTP server and select one of the following options:
        - Select **Built-in FTP Server** to configure an internal FTP server
          This is the default option. The internal FTP server uses a default account and port 21. You can configure your own account from the **Options** dialog box. For instructions, refer to the *IBM Network Advisor User Manual* or online help.
        - Select **Built-in SCP/SFTP Server** to configure an internal SCP/SFTP server
          The internal SCP/SFTP server uses a default account and port 22. You can configure your own account from the **Options** dialog box. For instructions, refer to the *IBM Network Advisor User Manual* or online help.
      - Select **External FTP/SCP/SFTP Server** to configure an external FTP server.
        You can configure the external FTP server settings from the **Options** dialog box. For instructions, refer to the *IBM Network Advisor User Manual* or online help.

b. Click **Next**.

If port 21 or 22 is busy, a message displays. Click **OK** to close the message and continue. Once the Management application is configured make sure port 21 or 22 is free and restart the Server to start the FTP/SCP/SFTP service.

NOTE
If you use an FTP/SCP/SFTP server that is not configured on the same machine as the Management application, the Firmware Repository feature will not be available.

7. Configure the database password on the **Database Administrator Password (dcmadmin)** screen by completing the following steps.

   a. Choose one of the following options:

      - To use the default password, select **Default password**.
        This is the default option. The default is password.
      - To configure a new password, select **New password** and enter a new password in the **Password** and **Confirm Password** fields.
        The password must be between 8 and 15 alphanumeric characters. Special characters except single quote (‘) are allowed.

   b. Click **Next**.

8. Complete the following steps on the **Server IP Configuration** screen.

NOTE
If the Management server or client has multiple Network Interface Cards and if any of these interfaces are not plugged in, you must disable them; otherwise, the following features do not work properly:

Server impact

- Configuration wizard (does not display all IP addresses)
- Trap and Syslog auto registration
- Report content (Ipconfiguration element does not display all server IP addresses)
- Trace dump through FTP

Client impact

- Options dialog box (does not display all IP addresses)
- Firmware import and download dialog box
- Firmware import for Fabric OS products
- FTP button in Technical Support Repository dialog box
- Technical supportSave of Fabric OSand Host products through FTP

   a. Select an address from the **Server IP Configuration** list.

NOTE
For SMI Agent, if the **Server IP Configuration** list contains a duplicate IP address or is empty, an error message displays and the configuration wizard closes.

NOTE
If the “hostname” contains invalid characters, the host name does not display in the list. Valid characters include alphanumeric and dash (-) characters. The IP address is selected by default.

If Domain Name System (DNS) is not configured for your network, do not select the “hostname” option from the **Server IP Configuration** list. Selecting the “hostname” option prevents clients and devices from communicating with the server.

b. Select an address from the **Switch - Server IP Configuration Preferred Address** list.

- Select **Any** from the **Switch - Server IP Configuration Preferred Address** list to enable switch and server communication with one of the reachable IP address present in the server. By default, **Any** option is selected.

  or

- Select an IP address from the **Switch - Server IP Configuration Preferred Address** list. The preferred IP address is used for switch and server communication. If the selected IP address changes, you will be unable to connect to the server. To change the IP address after configuration, refer to “Configuring an explicit server IP address” on page 38.

c. Click **Next**.

9. Complete the following steps on the **Server Configuration** screen (Figure 1).

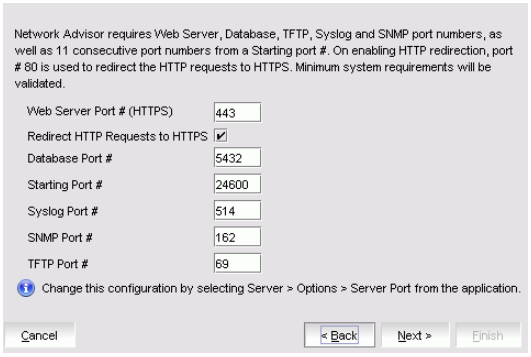

FIGURE 1 Server Configuration screen

a. Enter a port number in the **Web Server Port # (HTTPS)** field (default is 443).

b. Enable HTTP redirection to HTTPS by selecting the **Redirect HTTP Requests to HTTPS** check box.

When you enable HTTP redirection, the server uses port 80 to redirect HTTP requests to HTTPS. You can configure the server port settings from the **Options** dialog box (**Server Port** pane). For instructions, refer to the *IBM Network Advisor User Manual* or online help.

c. Enter a port number in the **Database Port #** field (default is 5432).

NOTE
Do not use a port number below 1024.

d. Enter a port number in the **Starting Port Number** field (default is 24600). The default is 24600. If the default port is changed to some other port number, restart the server and then regenerate the client bundle running `<BNA-Install-Location>\bin\create-client-bundle.bat` file and download the client-bundle to launch the client.

NOTE
For Trial and Licensed software, the server requires 11 consecutive free ports beginning with the starting port number.

e. Enter a port number in the **Syslog Port Number** field (default is 514).

NOTE
If the default syslog port number is already in use, you will not receive any syslog messages from the device. To find and stop the process currently running on the default Syslog port number, refer to "Syslog troubleshooting" on page 29.

f. Enter a port number in the **SNMP Port Number** field (default is 162).

g. Enter a port number in the **TFTP Port Number** field (default is 69).

h. Click **Next**.

If you enter a syslog port number already in use, a message displays. Click **No** on the message to remain on the **Server Configuration** screen and edit the syslog port number. Click **Yes** to close the message.

If you enter a port number already in use, a Warning displays next to the associated port number field. Edit that port number and click **Next**.

10. (SAN with SMI Agent) Complete the following steps on the **SMI Agent Configuration** screen.

a. Enable the SMI Agent by selecting the **Enable SMI Agent** check box.

b. Enable the SLP by selecting the **Enable SLP** check box, if necessary.

Only enabled after you select the **Enable SMI Agent** check box.

c. Enable the SSL by selecting the **Enable SSL** check box, if necessary.

Only enabled after you select the **Enable SMI Agent** check box.

d. Enter the SMI Agent port number in the **SMI Agent Port #** field (default is 5989 if **SSL Enabled** is selected; otherwise, the default is 5988).

e. Click **Next**.

11. (SAN Enterprise or SMI Agent) Select one of the following options on the **SAN Network Size** screen and click **Next**:

NOTE
Port count is equal to the total number of switch ports across all fabrics.

- **Small (managing up to 2000 switch ports, 1-20 domains)**
- **Medium (managing up to 5000 switch ports, 21-60 domains)**
- **Large (managing up to 15000 switch ports, 61-120 domains)**

12. Complete the following steps on the **Inventory Upload Configuration** screen.
    a. Select **Enable** check box to enable inventory upload configuration.
    b. Enter a valid E-mail address in **E-mail** field and click **Next**.

NOTE
E-mail server must be configured before enabling the Inventory upload configuration.

13. Verify your configuration information on the **Server Configuration Summary** screen and click **Next**.
14. Complete the following steps on the **Start Server** screen.
    a. (Trial and Licensed only) Select the **Start SMI Agent** check box, if necessary.

       Only enabled if you enabled SMI Agent on the **SMI Agent Configuration** screen.
    b. (Trial and Licensed only) Select the **Start SLP** check box, if necessary.

       Only enabled if you enabled SLP on the **SMI Agent Configuration** screen.
    c. Select the **Start Client** check box, if necessary.

       Only displays if you selected SAN with SMI Agent on the **Package** screen.
    d. Click **Finish**.

       After all of the services are started, the **Log In** dialog box displays.

       To make changes to the configuration, you can re-launch the configuration wizard (refer to "Configuring an explicit server IP address" on page 38).
15. Enter your user name and password.

    The defaults are Administrator and password, respectively.

NOTE
Do not enter Domain\User_Name in the **User ID** field for LDAP server authentication.

16. Click **Login**.
17. Click **OK** on the **IBM Network Advisor Login Banner**.

Accessing the IBM Network Advisor interfaces

Use the following procedures to access IBM Network Advisor from the server and client as well as to access the Server Management Console and the SMI Agent Configuration Tool.

Logging into a server

You must log into a server to monitor your network.

NOTE
You must have an established user account on the server to log in.

1. Double-click the desktop icon or open the application from the **Start** menu.

   The **Log In** dialog box displays.

2. Log into another server by entering the IP address to the other server in the **Network Address** field.

   NOTE
   The server must be the exact same version, edition, starting port number, and network size as the client.

   NOTE
   You can remove a server from the **Network Address** list by selecting the IP address and clicking **Delete**.

3. Enter your user name and password.

   The defaults are Administrator and password, respectively.

   NOTE
   Do not enter Domain\User_Name in the **User ID** field for LDAP server authentication.

4. Select or clear the **Save password** check box to choose whether you want the application to remember your password the next time you log in.
5. Click **Login**.
6. Click **OK** on the **Login Banner** dialog box.

   The IBM Network Advisor application displays.

Launching a remote client

The remote client link in the **Start** menu does not automatically upgrade when you upgrade the Management application. You must clear the previous version from the Java cache. To clear the previous version, refer to "Clearing previous versions of the remote client" on page 25.

The remote client requires Oracle JRE. For the current supported JRE version for IBM Network Advisor, refer to the Release Notes. For the website listing patch information, go to *http://www.oracle.com/technetwork/java/javase/downloads/index.html*.

NOTE
For higher performance, use a 64-bit JRE.

1. Choose one of the following options:
   - Open a web browser and enter the IP address of the IBM Network Advisor server in the **Address** bar.

     If the web server port number does not use the default (443 if is SSL Enabled; otherwise, the default is 80), you must enter the web server port number in addition to the IP address. For example, *IP_Address*:*Port_Number*.

     If this is the first time you are accessing this version of IBM Network Advisor, this creates a start menu shortcut automatically in IBM Network Advisor program directory.

     For Linux systems, remote client shortcuts are not created.
   - Select IBM Network Advisor (*Server_IP_Address*) in the IBM Network Advisor directory from the start menu.

   The IBM Network Advisor web client login page displays.
2. Click **Desktop Client**.

   The IBM Network Advisor web start page displays.
3. Click the IBM Network Advisor web start link.

   The **Log In** dialog box displays.
4. Log into another server by entering the IP address to the other server in the **Network Address** field.

   NOTE
   The server must be the exact same version, edition, starting port number, and network size as the client.

   NOTE
   You can remove a server from the **Network Address** list by selected the IP address and clicking **Delete**.
5. Enter your user name and password.

   The defaults are Administrator and password, respectively.

   NOTE
   Do not enter Domain\User_Name in the **User ID** field for LDAP server authentication.

6. Select or clear the **Save password** check box to choose whether you want the application to remember your password the next time you log in.
7. Click **Login**.
8. Click **OK** on the **Login Banner** dialog box.

   The IBM Network Advisor application displays.

Clearing previous versions of the remote client

The remote client link in the **Start** menu does not automatically upgrade when you upgrade the Management application. You must clear the previous version from the Java cache.

To clear the Java cache, complete the following steps.

1. Select **Start > Settings > Control Panel > Java**.

   The **Java Control Panel** dialog box displays.
2. Click **View** on the **General** tab.

   The **Java Cache Viewer** dialog box displays.
3. Right-click the application and select **Delete**.
4. Click **Close** on the **Java Cache Viewer** dialog box.
5. Click **OK** on the **Java Control Panel** dialog box.

   To create a remote client link in the **Start** menu, refer to "Launching a remote client" on page 24.

Launching the SMC on Windows

Open the **Server Management Console** from the **Start** menu on the IBM Network Advisor server.

You can also drag the SMC icon onto your desktop as a short cut.

Launching the SMC on Linux

NOTE
The Server Management Console is a graphical user interface and should be launched from the XConsole on Linux systems.

Double-click the SMC icon on your desktop.

OR

1. On the IBM Network Advisor server, go to the following directory:

   Install_Directory/bin
2. Type the following at the command line:

```
./smc
OR
sh smc
```

Launching the SMIA Configuration Tool

1. Launch the **Server Management Console** from the **Start** menu.
2. Click **Configure SMI Agent**.

   The **SMIA Configuration Tool Log In** dialog box displays.
3. Enter your user name and password.

   The defaults are Administrator and password, respectively.
4. Click **Login**.

Launching the SMIA Configuration Tool remote client

The remote client link in the **Start** menu does not automatically upgrade when you upgrade the Management application. You must clear the previous version from the Java cache. To clear the previous version, refer to "Clearing previous versions of the remote client" on page 25.

The remote client requires Oracle JRE. For the current supported JRE version for IBM Network Advisor, refer to the Release Notes. For the website listing patch information, go to *http://www.oracle.com/technetwork/java/javase/downloads/index.html*.

1. Choose one of the following options:
   - Open a web browser and enter the IP address of the IBM Network Advisor server in the **Address** bar.

     If the web server port number does not use the default (443 if is SSL Enabled; otherwise, the default is 80), you must enter the web server port number in addition to the IP address. For example, *IP_Address*:*Port_Number*.

     If this is the first time you are accessing this version of IBM Network Advisor, this creates a start menu shortcut automatically in IBM Network Advisor program directory.

     For Linux systems, remote client shortcuts are not created.
   - Select IBM Network Advisor (*Server_IP_Address*) in the IBM Network Advisor directory from the start menu.

   The IBM Network Advisor web client login page displays.
2. Click **Desktop Client**.

   The IBM Network Advisor web start page displays.
3. Click the SMIA Configuration Tool web start link.

   The **SMIA Configuration Tool Log In** dialog box displays.
4. Enter your user name and password.

   The defaults are Administrator and password, respectively.
5. Select or clear the **Save password** check box to choose whether you want the application to remember your password the next time you log in.
6. Click **Login**.

   The **SMIA Configuration Tool** displays.

Performance collection for SMI-A only

For SMI-A only installations, you can use the following procedures to configure performance collection using scripts.

Enabling or disabling performance statistics collection

To enable or disable performance statistics collection, complete the following steps.

- On Windows systems, complete the following steps.
  a. Open a command prompt and navigate to the *Install_Home*\utilities directory.
  b. Enable performance statistics collection by typing `sanperformancestatsenable.bat` *`dbusername dbpassword`* `enable` and pressing **Enter**.

     For example, `sanperformancestatsenable.bat dcmadmin passw0rd enable`.

     Disable performance statistics collection by typing `sanperformancestatsenable.bat` *`dbusername dbpassword`* `disable` and pressing **Enter**.
- On UNIX systems, complete the following steps.
  a. Open a terminal and navigate to the *Install_Home*\utilities directory.
  b. Enable performance statistics collection by typing `sanperformancestatsenable` *`dbusername dbpassword`* `enable|disable` and pressing **Enter**.

     For example, `sanperformancestatsenable dcmadmin passw0rd enable`.

     Disable performance statistics collection by typing `sanperformancestatsenable` *`dbusername dbpassword`* `disable` and pressing **Enter**.

Updating system threshold data

To configure the SMI-A only installation to update the file system threshold data in the system property table, complete the following steps.

- On Windows systems, complete the following steps.
  a. Open a command prompt and navigate to the *Install_Home*\utilities directory.
  b. Update file system threshold data by typing `updatethresholddata.bat` *`dbusername dbpassword THRESHOLD_WARN THRESHOLD_RISK THRESHOLD`* and pressing **Enter**.

     For example, `updatethresholddata.bat dcmadmin passw0rd 80 90 95`.
- On UNIX systems, complete the following steps.
  a. Open a terminal and navigate to the *Install_Home*\utilities directory.
  b. Update file system threshold data by typing `updatethresholddata` *`dbusername dbpassword THRESHOLD_WARN THRESHOLD_RISK THRESHOLD`* and pressing **Enter**.

Exporting configuration data

To export configuration data from the CFG_backup_archive table, complete the following steps.

- On Windows systems, complete the following steps.
  a. Open a command prompt and navigate to the *Install_Home*\utilities directory.
  b. Export configuration data by typing `exportconfigdata.bat` *`dbusername dbpassword`* and pressing **Enter**.

     For example, `exportconfigdata.bat dcmadmin passw0rd`.
- On UNIX systems, complete the following steps.
  a. Open a terminal and navigate to the *Install_Home*\utilities directory.
  b. Export configuration data by typing `exportconfigdata` *`dbusername dbpassword`* and pressing **Enter**.

     For example, `exportconfigdata dcmadmin passw0rd`.

Clearing performance data

To clear performance data (all time series child table data), complete the following steps.

- On Windows systems, complete the following steps.
  a. Open a command prompt and navigate to the *Install_Home*\utilities directory.
  b. Clear performance data by typing `clear-performance-data.bat` *`dbusername dbpassword`* and pressing **Enter**.

     For example, `clear-performance-data.bat dcmadmin passw0rd`.
- On UNIX systems, complete the following steps.
  a. Open a terminal and navigate to the *Install_Home*\utilities directory.
  b. Clear performance data by typing `clear-performance-data` *`dbusername dbpassword`* and pressing **Enter**.

     For example, `clear-performance-data dcmadmin passw0rd`.

Syslog troubleshooting

If the default syslog port number is already in use, you will not receive any syslog messages from the device. Use one of the following procedures (depending on your operating system), to determine which process is running on the syslog port and to stop the process.

Finding the process

1. Open a command window.
2. Choose one of the following options:
   - On Linux systems, type netstat –nap | grep 514 and press **Enter**.

     The process running on port 514 displays.

     Example output: UDP 0 0 ::ffff:127:0:0:1:514 :::* 27397.
   - On Windows systems, type netstat –anb | find /i “514” and press **Enter**.

     The process running on port 514 displays.

     Example output: UDP 127:0:0:1:514 *:* 3328.

Stopping the process

Choose one of the following options:

- On Linux systems, type kill -9 “ProcessID”, where ProcessID is the ID of the process you want to stop, and press **Enter**.

  For example, kill -9 “27397”.
- On Windows systems, type `taskkill /F /PID "`ProcessID`"`, where ProcessID is the ID of the process you want to stop, and press **Enter**.

  For example, taskkill /F /PID "3328".

  OR

  1. Select Ctrl + Shift + Esc to open Windows Task Manager.
  2. Click the **Processes** tab.
  3. Click the **PID** column header to sort the processes by PID.
  4. Select the process you want to stop and click **End Process**.

Installing the ODBC driver

You must have the Open Database Connectivity (ODBC) driver to allow remote clients to export data and generate reports. The ODBC driver enables you to configure the data source name (DSN) for the IBM Network Advisor database.

Installing the ODBC driver on Windows systems

You must have the Open Database Connectivity (ODBC) driver to allow remote clients to export data and generate reports. The ODBC driver enables you to configure the data source name (DSN) for the IBM Network Advisor database.

To install the ODBC driver, complete the following steps.

1. Right-click psqlodbc.exe, located on the DVD (*DVD_Drive*/Network Advisor/odbc/Windows), and select **Run as administrator**.
2. Install the file to the usual location for your system's application files (for example, C:\Program Files\Network Advisor ODBC Driver) on the **Select Install Folder** screen and click **Next**.

   NOTE
   If you select an invalid location, the ODBC driver is installed in a different location than where the ODBC executable drivers are located.

3. On the **Ready to Install** screen, click **Next**.
4. Click **Finish** to complete the installation.

Adding the data source on Windows systems

To add the data source, complete the following steps.

1. Select **Start > Settings > Control Panel > Administrative Tools.**
2. Right-click **Data Sources (ODBC)** and select **Run as administrator**.

   The **ODBC Data Source Administrator** dialog box displays. If the **ODBC Data Source Administrator** dialog box does not display, select **Start > Run**, type `%windir%\SysWOW64\odbcad32.exe,` and press **Enter**.
3. Click the **System DSN** tab.
4. Click **Add**.

   The **Create a New Data Source** dialog box displays.
5. Select **PostgreSQL Unicode**.
6. Click **Finish**.

   The **PostgreSQL Unicode ODBC Driver (psqlODBC) Setup** dialog box displays.
7. Enter a name for the data source in the **Datasource** field.
8. Enter the description of the IBM Network Advisor database in the **Description** field.
9. Enter the name of the IBM Network Advisor database in the **Database** field.
10. Select **enable** or **disable** from the **SSL Mode** list to specify whether or not to use SSL when connecting to the database.

11. Enter the IP address or host name of the IBM Network Advisor server in the **Server** field.
12. Enter the database server port number in the **Port Number** field.
13. Enter the database user name in the **User Name** field.
14. Enter the password in the **Password** field.
15. Click **Test** to test the connection.

NOTE
You can also use the Windows ODBC Driver Manager to add the DSN for the Linux database server.

16. Click **OK** on the **Connection Test** dialog box.
17. Click **Save**.
18. Click **OK** on the **ODBC Data Source Administrator** dialog box.

Installing the ODBC driver on Linux systems

You must have the Open Database Connectivity (ODBC) driver to allow remote clients to export data and generate reports. The ODBC driver enables you to configure the data source name (DSN) for the IBM Network Advisor database.

To install the ODBC driver, complete the following steps.

1. Execute the following command in the terminal:

```
> su
>chmod 777 psqlodbc.bin
> ./psqlodbc.bin
```

   For 64-bit Linux systems, the installer file is located in DVD/BROCADE/IBM Network Advisor/odbc/Linux_64/psqlodbc.bin.

2. On the **Setup psqlODBC** screen, click **Next**.
3. Install the file to the usual location for your system's application files (for example, /opt/PostgreSQL/psqlODBC) on the **Installation Directory** screen and click **Next**.

NOTE
If you select an invalid location, the ODBC driver is installed in a different location than where the ODBC executable drivers are located.

4. On the **Ready to Install** screen, click **Next**.
5. On the **Completing the psqlODBC Setup Wizard** screen, click **Finish** to complete the installation.

Adding the datasource on Linux systems

Before you edit the INI files, install IBM Network Advisor (refer to "Installation" on page 1) and make sure the PostgreSQL database is up and running.

NOTE
For RedHat and Oracle Enterprise systems, the odbc.ini and odbcinst.ini files are located in /etc. For SUSE systems, the odbc.ini and odbcinst.ini files are located in /etc/unixODBC.

1. Open the odbc.ini file in an editor and enter the datasource information as follows:

```
[TestDB]
Description = PostgreSQL 9.4.4
Driver = /opt/PostgreSQL/psqlODBC/lib/psqlodbcw.so
Database = dcmdb
Servername = 172.26.1.54
UserName = dcmadmin
Password = passw0rd
Port = 5432
```

2. Save and close the odbc.ini file.
3. Open the odbcinst.ini file in a text editor and make sure that the driver path information is correct.

   After you install the PostgreSQL ODBC driver, the odbcinst.ini should automatically update the driver path. If the driver path is not updated, add the following:

```
[psqlODBC]
Description=PostgreSQL ODBC driver
Driver=/opt/PostgreSQL/psqlODBC/lib/psqlodbcw.so
```

4. Save and close the odbcinst.ini file.

Testing the connection on Linux systems

To test the connection, complete the following steps.

1. Download and install Open Office.
2. Select **File > New > Database**.

   The **Database Wizard** displays.
3. On the **Select database** screen, complete the following steps.
   a. Select the **Connect to an existing database** option.
   b. Select **ODBC** from the list.
   c. Click **Next**.
4. On the **Set up ODBC connection** screen, complete the following steps.
   a. Click **Browse**.

      The datasource saved in the odbc.ini file is populated in the **Datasource** dialog box.
   b. Select the datasource and click **OK** on the **Datasource** dialog box.
   c. Click **Next**.

5. On the **Set up user authentication** screen, complete the following steps.
   a. Enter the database user name in the **User name** field.
   b. Select the **Password required** check box.
   c. Click **Test Connection** to test the connection.

      The **Authentication Password** dialog box displays.
   d. Enter the database password in the **Password** field and click **OK**.
   e. Click **OK** on the **Connection Test** dialog box.

      For 64-bit Linux systems, if an error message (cannot open library) displays, complete the following steps:

      1. Execute the following command:
         ```
         export
         LD_LIBRARY_PATH=/opt/PostgreSQL/8.4/lib/:/usr/lib64/:/opt/PostgreSQL/p
         sqlODBC/lib/:$LD_LIBRARY_PATH
         ```
      5. Navigate to the Postgres ODBC library (default location is opt/PostgreSQL/psqlODBC/lib/).
      6. Create a list of missing libraries by executing the following command:
         `ldd psqlodbcw.so`
         Missing files display as: `libodbc.so.1=> not found`
      7. Find shared libraries with the same name as the missing library by executing the following command:
         `find –name libodbc.so*`
      8. Create a soft link for libodbc.so.1 pointing to libodbc.so.2.0.0 by executing the following command:
         `ln  -s  libodbc.so.1 libodbc.so.2.0.0`
   f. Click **Next**.
2. On the **Save and proceed** screen, click **Finish**.

Smart Card driver installation

Windows operating systems do not require smart card drivers to be installed separately; the driver is bundled with the operating system. However, you must install a smart card driver for the Linux operating systems. You must install both the special USB Chip/Smart Card Interface Device (USB CCID) and the PC/SC IFD driver. You can download the source code and compile it from one of the following websites:

- USB CCID (ccid-1.3.7.tar.bz2)
  Open Source URL: *http://pcsclite.alioth.debian.org/ccid.html*.
- Muscle PC/SC IFD Driver (pcsc-lite-1.4.101.tar.gz)
  Open Source URL: *https://alioth.debian.org/frs/?group id=30105*.

The Encryption Manager Client within IBM Network Advisor provides the binary code on both platforms for installation. You must uncompress or untar the file depending on the platform. The procedures for the local client and the remote client configurations follow. The thirdparty/pscs-lite-1.4.101-linux-x86.tar.gz file can be found on the IBM Network Advisor DVD.

Installing the Smart Card driver on the local client

1. Verify that the /opt directory exists.

   If the /opt directory does not exist, create an /opt directory. If you want to install the driver in a different directory, create that directory. Otherwise, skip this step.

   ```
   > su
   > mkdir /opt
   ```

2. Copy the appropriate pscs file for your platform (Linux) from the DVD and rename the file as pcsc-lite-1.4.101-linux-x86.tar.gz file.

3. Log in as the superuser to untar the pcsc-lite-1.4.101-linux-x86.tar.gz file.

   ```
   > su
   > cd /opt
   > gunzip pcsc-lite-1.4.101-linux-x86.tar.gz
   > tar -xvf pcsc-lite-1.4.101-linux-x86.tar
   ```

   After the pcsc_lite_1.4.101.tar file is extracted, the necessary binary, library, and smart card drivers are stored in the /opt/pcsc directory.

4. If you installed a pcsc directory into a location other than /opt, modify the pcscctl script to change “/opt” to the directory you specified in step 1.

   ```
   > cd <new_dir>
   > vi pcscctl
   ```

   Search for “/opt” and change it to the name of the new directory.

5. Create a soft link into the system directory. This is to support the automatic restart of the pcscd daemon upon system restart.

   If you installed the pcsc directory into the /opt directory, just create the soft link. Otherwise, use the name of the new directory in place of /opt.

   ```
   S.u.s.e> ln –s /opt/pcsc/pcscctl /etc/init.d/pcscd
   S.u.s.e> chkconfig --add pcscd
   ```

   or

   ```
   redhat> ln –s /opt/pcsc/pcscctl /etc/init.d/pcscd
   redhat> chkconfig --add pcscd
   ```

   NOTE

   Before you enter `chkconfig --add pcscd`, you can enter `chkconfig –list | grep pcscd` to verify that the pcscd file is already on the list. If it already exists, you do not need to enter `chkconfig –add pcscd`. After you reboot the system, you should expect the following links under /etc/rc2.d, /etc/rc3.d, /etc/rc3.d, /etc/rc4.d, and /etc/rc5.d.

   ```
   lrwxrwxrwx 1 root root 15 Jul 28 01:50  S94pcscd -> ../init.d/pcscd
   ```

   NOTE

   For some Linux vendors, the Smart Card driver may come with the operating system. In this case, extra system configuration may be needed. For more information, refer to "Detecting and correcting a default Linux Smart Card driver" on page 36.

6. Start the pcscd daemon or stop the pcscd daemon.

   To start pcscd, type:

   ```
   > /opt/pcsc/pcscctl start
   ```

   To stop pcscd, type:

   ```
   > /opt/pcsc/pcscctl stop
   ```

Installing the Smart Card driver on the remote client

1. Complete steps 1 through 4 in "Installing the Smart Card driver on the local client" on page 34.
2. Run the following commands to support remote clients (Web Start).

```
> cd /usr/lib
> ln –s /opt/pcsc/lib/libpcsclite.so .
```

NOTE
If a soft link exists on libpcsclite.so, make sure that the final file is linked to /opt/pcsc/lib/libpcsclite.so.xxx. It is recommended that you back up the original.

Example

```
> ls –l  libpcsc*
    lrwxrwxrwx 1 root root    20 Aug  4 16:16 libpcsclite.so ->
    libpcsclite.so.1.0.0
    lrwxrwxrwx 1 root root    20 Jun  4 12:30 libpcsclite.so.1 ->
    libpcsclite.so.1.0.0
    lrwxrwxrwx 1 root root    34 Aug  5 14:36 libpcsclite.so.1.0.0

> mv libpcsclite.so.1.0.0 libpcsclite.so.1.0.0.org
> ln -s /opt/pcsc/lib/libpcsclite.so.1.0.0   libpcsclite.so.1.0.0

> ls –l  libpcsc*
    lrwxrwxrwx 1 root root    20 Aug  4 16:16 libpcsclite.so ->
    libpcsclite.so.1.0.0
    lrwxrwxrwx 1 root root    20 Jun  4 12:30 libpcsclite.so.1 ->
    libpcsclite.so.1.0.0
    lrwxrwxrwx 1 root root    34 Aug  5 14:36 libpcsclite.so.1.0.0 ->
    /opt/pcsc/lib/libpcsclite.so.1.0.0
    -rwxr-xr-x 1 root root 35428 Aug  4 16:17 libpcsclite.so.1.0.0.org
```

Detecting and correcting a default Linux Smart Card driver

This section applies to the Linux system only. Some Linux systems may provide a default Smart Card driver and have their own setup to activate it. In this case, you must use the driver provided with IBM Network Advisor. Otherwise, there could be an incompatibility issue between the driver and the native library that could cause a driver detection failure. Complete the following steps to discover whether a default driver already exists and how to reconfigure the driver environment.

1. Detect a different Smart Card driver by running the following commands:

```
> cd /
> find . –name pcscd –print
```

   If the results contain "pcscd", and it is not located under /opt/pcsc or /etc/init.d/pcscd, a different driver exists on the system.

2. Make sure the pcscd file on the /etc/init.d directory is linked to /opt/pcsc/pcscctl by running the following commands:

```
> cd /etc/init.d
> ls –l pcscd
    lrwxrwxrwx 1 root root 17 Jul 28 01:29 pcscd -> /opt/pcsc/pcscctl
```

3. If there is an existing pcscd script in this directory, you can move and rename this file before you overwrite it.

```
> mv  /etc/init.d/pcscd   /etc/init.d/pcscd.org
```

4. Create a soft link using the following command.

```
> ln –s /opt/pcsc/pcscctl /etc/init.d/pcscd
```

The existing pcscd.org script in this directory implies that a different driver version exists. You can compare the existing one with the one under /opt/pcsc/pcscd/sbin. If the size is different and the existing pcscd script contains the following information, you must clean up the driver configuration. The example below shows a different pscsd.org script and how to do the configuration cleanup. The configuration level is 2345, the start priority is 25, and the stop priority is 88.

```
> more /etc/init.d/pcscd

   #!/bin/sh
   #
   # pcscd        Starts the pcscd Daemon
   #
   # chkconfig:   2345   25  88
```

5. Remove the existing pcscd start priority file by deleting the file as SNNpcscd, where NN is the start priority. For example, from the preceding step, the file name is S25pcscd.

```
> find  /etc/.   –name “S25pcscd” –exec rm {} \; –print
> sync;sync;sync
> reboot
```

After the reboot, the new configuration from the /opt/pcsc/pcscctl file should be under the /etc/rc2.d, /etc/rc3.d, /etc/rc4.d, and /etc/rc5.d directories.

```
lrwxrwxrwx 1 root root 15 Jul 28 01:50 S94pcscd -> ../init.d/pcscd
```

6. For the remote client, ensure that the Smart Card native library is linked to the one under /opt/pcsc/lib.

```
> cd /
> find . –name libpcsclite.so* –print
```

If the library libpcsclite.so* exists in multiple locations, you must ensure that there is only one library under /lib or /usr/lib, and that it is linked to the library on /opt/pcsc/lib correctly. For example, to find a copy of the library on /lib, use the following commands.

```
> cd /lib
> ls –al libpcsclite.so
```

If a copy of the library exists, either remove it or save it as a backup.

To find a copy of the library on /usr/lib, use the following commands.

```
> cd /usr/lib
> ls –al libpcsclite.so
```

Use this copy for the soft link.

```
> ln –s  /opt/pcsc/lib/libpcsclite.so  /usr/lib/.
```

Configuring an explicit server IP address

If you selected a specific IP address from the **Server IP Configuration** screen during installation and the selected IP address changes, you will not be able to connect to the server. To connect to the new IP address, you must manually update the IP address information.

To change the IP address, complete the following steps.

1. Choose one of the following options:
   - On Windows systems, select **Start > Programs > IBM Network Advisor 14.0.2 > IBM Network Advisor Configuration**.
   - On UNIX systems, execute sh Install_Home/bin/configwizard in terminal.
2. Click **Next** on the **Welcome** screen.
3. Click **Yes** on the confirmation message.
4. Click **Next** on the **FTP Server** screen.
5. Complete the following steps on the **Server IP Configuration** screen.
   a. Select an address from the **Server IP Configuration** list.

      NOTE
      The host name does not display in the list if it contains invalid characters. Valid characters include alphanumeric and dash (-) characters. The IP address is selected by default.

      If DNS is not configured for your network, do not select the “hostname” option from the **Server IP Configuration** list. Selecting the “hostname” option prevents clients and devices from communicating with the server.

   b. Select an IP address from the **Switch - Server IP Configuration Preferred Address** list. The preferred IP address is used for switch and server communication.

      or

      Select **Any** from the **Switch - Server IP Configuration Preferred Address** list to enable switch and server communication with one of the reachable IP address present in the server. By default, **Any** option is selected.

   c. Click **Next**.
6. Click **Next** on the **Server Configuration** screen.
7. (SAN with SMI Agent) Click **Next** on the **SMI Agent Configuration** screen.
8. Verify your Server Name on the **Server Configuration Summary** screen and click **Next**.
9. Click **Finish** on the **Start Server** screen.
10. Click **Yes** on the restart server confirmation message.
11. Enter your user name and password and click **Login**.

    The defaults are Administrator and password, respectively.

    NOTE
    Do not enter Domain\User_Name in the **User ID** field for LDAP server authentication.

12. Click **OK** on the Login Banner.

Configuring remote client access to the database

1. Open the pg_hba.conf file (in the Install_Home\data\databases\ directory).
2. To allow all IPv4 remote connections for all users, search for the following text and uncomment the second line:

```
# IPv4 remote connections (Uncomment below line to allow all IPv4 remote
users):
#host    all             all             0.0.0.0/0               md5
```

3. To allow all IPv6 remote connections for all users, search for the following text and uncomment the second line:

```
# IPv6 remote connections (Uncomment below line to allow all IPv6 remote
users):
#host    all             all             ::0/0                   md5
```

4. To allow access to a specific IPv4 address, search for the following text and uncomment the second line:

```
# Uncomment below line and provide IPV4 address to allow specific IPv4 remote
user
#host    all             all             <IPV4 address>/32       md5
```

5. To allow access to a specific IPv6 address, search for the following text and uncomment the second line:

```
# Uncomment below line and provide IPV6 address to allow specific IPv6 remote
user
#host    all             all             <IPV6 address>/128      md5
```

6. Save and close the file.

2 Configuring remote client access to the database

Chapter

3

Data Migration

In this chapter

- Upgrading the license 41
- Supported migration paths 42
- Pre-migration requirements 44
- Migrating data 48
- Cross flavor migration 54
- Migration rollback 54

Upgrading the license

The quickest and simplest method of moving from one package to another is to enter the new license information on the **IBM Network Advisor License** dialog box. The following tables list the available upgrade paths.

TABLE 8 SAN upgrade paths

Current software release	To software release
SAN Professional Plus Licensed version	SAN Enterprise Licensed version
SAN Enterprise Trial	SAN Enterprise Licensed version

1. Select **Help > License**.

   The **IBM Network Advisor License** dialog box displays.

2. Browse to the license file (.xml) and click **Update**.
3. Click **OK** on the **IBM Network Advisor License** dialog box.
4. Click **OK** on the message.

   The Client closes after updating the license successfully. Restart the Server from the Server Management Console for the changes to take effect.

5. Open the application (double-click the desktop icon or open from the **Start** menu).

   The **Log In** dialog box displays.

6. Enter your user name and password.

   The defaults are Administrator and password, respectively. If you migrated from a previous release, your user name and password do not change.

   NOTE
   Do not enter Domain\User_Name in the **User ID** field for LDAP server authentication.

7. Select or clear the **Save password** check box to choose whether you want the application to remember your password the next time you log in.
8. Click **Login**.
9. Click **OK** on the **IBM Network Advisor Login Banner**.

Supported migration paths

NOTE
To migrate Enterprise and Professional Plus editions to a 64-bit server, refer to "Pre-migration requirements when migrating from one server to another" on page 44.

Direct migration is not supported on pre-11.1.X releases. Table 9 shows the migration paths from DCFM and IBM Network Advisor 11.1.X or earlier releases.

NOTE

TABLE 9 Pre-12.0.0 release migration path

	IBM Network Advisor 12.4.X
DCFM 10.4.X	DCFM 10.4.X > IBM Network Advisor 11.1.X > IBM Network Advisor 12.0.X > IBM Network Advisor 12.3.X IBM Network Advisor 12.4.1
IBM Network Advisor 11.1.X	IBM Network Advisor 11.1.X IBM Network Advisor 12.0.X > IBM Network Advisor 12.3.X IBM Network Advisor 12.4.1

Table 15 shows the direct migration paths from the IBM Network Advisor 12.0.0 or later Trial and Licensed versions. For the step-by-step migration procedure, refer to "Migrating data" on page 48.

TABLE 10 IBM Network Advisor version migration paths

Current version	Trial version		Licensed Version	
	Professional Plus	Enterprise	Professional Plus	Enterprise
IBM Network Advisor 12.0.X/12.1.X Professional Plus Trial	Yes[1]	Yes[1]	Yes[1]	Yes[1]
IBM Network Advisor 12.0.X/12.1.X Professional Plus Licensed	No	No	Yes[1]	Yes[1]

TABLE 10 IBM Network Advisor version migration paths

Current version	Trial version		Licensed Version	
	Professional Plus	Enterprise	Professional Plus	Enterprise
IBM Network Advisor 12.0.X/12.1.X Enterprise Trial	No	Yes[1]	No	Yes[1]
IBM Network Advisor 12.0.X/12.1.X Enterprise Licensed	No	No	No	Yes[1]
IBM Network Advisor 12.3.X Professional Plus Trial	Yes[1]	Yes[1]	Yes[1]	Yes[1]
IBM Network Advisor 12.3.X Professional Plus Licensed	No	No	Yes[1]	Yes[1]
IBM Network Advisor 12.3.X Enterprise Trial	No	Yes[1]	No	Yes[1]
IBM Network Advisor 12.3.X Enterprise Licensed	No	No	No	Yes[1]

1. Local path migration is only supported when you partially uninstall the current version. Network path migration (whether the current version is fully installed or partially uninstalled) is always supported.

Table 11 shows the migration paths from SMI Agent only. For the step-by-step migration procedures, refer to "Migrating data" on page 48.

TABLE 11 SMI Agent only migration paths

Current version	Professional version	Trial version	Licensed Version		SMI Agent only
		Enterprise	Professional Plus	Enterprise	
IBM Network Advisor SMI Agent only	No	No	No	No	Yes

DCFM migration paths

NOTE
Before you migrate from DCFM to IBM Network Advisor 11.1.0, 11.1.1, or 11.1.2, you must reset your DCFM password back to the default (password).

You cannot migrate directly from DCFM 10.0.X, DCFM 10.1.X, or DCFM 10.3.X to IBM Network Advisor 14.0.2. You must first migrate to DCFM 10.4.X, then migrate to IBM Network Advisor 11.1.X, then migrate to IBM Network Advisor 12.0.X, then migrate to IBM Network Advisor 12.2.X, then migrate to IBM Network Advisor 12.3.X, then migrate to IBM Network Advisor 12.4.X, then migrate to IBM Network Advisor 14.0.0, and then migrate to IBM Network Advisor 14.0.2.

To migrate from DCFM 10.0.X, DCFM 10.1.X, or DCFM 10.3.X to DCFM 10.4.X, contact your customer representative. To migrate from DCFM 10.4.X to IBM Network Advisor 11.1.X, refer to the *IBM Network Advisor Migration Guide* for IBM Network Advisor 11.1.X.

EFCM and Fabric Manager migration paths

You cannot migrate directly from EFCM or Fabric Manager to Network Advisor 14.0.0. To migrate from EFCM or Fabric Manager, you must first migrate to DCFM 10.3.X, then migrate to Network Advisor 11.1.X, then migrate to Network Advisor 12.0.X, then migrate to IBM Network Advisor 12.3.X, then migrate to Network Advisor 12.4.X, and then migrate to Network Advisor 14.0.2. For more information about migrating from EFCM or Fabric Manager to DCFM 10.3.X, contact your customer representative.

Pre-migration requirements

Before you install IBM Network Advisor, make sure you meet the following pre-migration requirements:

- Make sure all system requirements have been met prior to installation. For specific system requirements, refer to "System requirements" on page 1.
- Check for and install the latest Java patches for your operating system. For the current supported JRE version for IBM Network Advisor and Web Tools, refer to the Release Notes. For the website listing patch information, go to *http://www.oracle.com/technetwork/java/javase/downloads/index.html*.
- Fully back up your current Management application data on your management server.
- Close all instances of the application before migrating.
- Install IBM Network Advisor on the same system as your current Management application.
- If you are migrating within the same release, make sure to partially uninstall (refer to "Uninstallation" on page 57) the application.
- Partial data migration is not supported from pre-12.0.0 releases. If you are migrating data from a partially uninstalled source, complete the following steps.

  1. Re-install your current IBM Network Advisor version on the same machine and migrate the partially uninstalled data.

     If your current release is pre-11.1.X, you must migrate to IBM Network Advisor 11.1.0 or later. Refer to Table 14 on page 47 for the release migration path.

  2. Install IBM Network Advisor 12.1 (refer to "Installation" on page 1) on the same machine and migrate your data (refer to "Migrating data" on page 48).

- Make sure minimum of free space is 1.5 times the size of the BNA data folder (*<Install_Home>\data*) available for performing migration for the servers with large amount of Performance, Events, and Flow Vision data in the database.

Pre-migration requirements when migrating from one server to another

If you are migrating from IBM Network Advisor 14.0.0 on a 64-bit Windows server1 to IBM Network Advisor 14.0.2 on a 64-bit Windows server2, complete the following steps.

1. Back up the server for 14.0.0 using **Options** > **Server Backup** on the 64-bit Windows server1.
2. Install IBM Network Advisor 14.0.0 on the 64-bit Windows server2.
3. Select **SMC** > **Restore** to restore the backup on the 64-bit Windows server.1
4. Install IBM Network Advisor 14.0.2 on the 64-bit Windows server2.

   Perform seamless migration to IBM Network Advisor 14.0.2 (refer to "Migrating data" on page 48).

If you are migrating from a pre-12.3.X release on a 64-bit Windows server1 to IBM Network Advisor 14.0.2 on a 64-bit Windows server2, complete the following steps.

1. Install and migrate to IBM Network Advisor 14.0.0 in the same machine (refer to "Supported migration paths" on page 42).
2. Back up the server using **Options** > **Server Backup** on the 64-bit Windows server1.
3. Install the same version (14.0.0) on the 64-bit Windows server2.
4. Select **SMC** > **Restore** to restore the backup on the 64-bit Windows server1.
5. Install IBM Network Advisor 14.0.2 on the 64-bit Windows server2.

   Perform seamless migration to IBM Network Advisor 14.0.2 (refer to "Migrating data" on page 48).

If you are migrating from IBM Network Advisor 14.0.0 on a 64-bit Linux server1 to IBM Network Advisor 14.0.2 on a 64-bit pure Linux server2, complete the following steps.

1. Back up the server for 14.0.0 using **Options** > **Server Backup** on the 64-bit Linux server1.
2. Install the same version (14.0.0) on the 64-bit pure Linux server2.
3. Select **SMC** > **Restore** to restore the backup on the 64-bit Linux server.1
4. Install IBM Network Advisor 14.0.2 on the 64-bit pure Linux server2.

   Perform seamless migration to IBM Network Advisor 14.0.2 (refer to "Migrating data" on page 48).

If you are migrating from a pre-12.3.X release on a 64-bit Linux server1 to IBM Network Advisor 14.0.2 on a 64-bit pure Linux server2, complete the following steps.

1. Install and migrate to IBM Network Advisor 14.0.0on the 64-bit Linux server1 (refer to "Supported migration paths" on page 42).
2. Back up the server using **Options** > **Server Backup** on the 64-bit Linux server1.
3. Install the same version (14.0.0) on the 64-bit pure Linux server2.
4. Select **SMC** > **Restore** to restore the backup on the 64-bit Linux server1.
5. Install IBM Network Advisor 14.0.2 on the 64-bit pure Linux server2.

   Perform seamless migration to IBM Network Advisor 14.0.2 (refer to "Migrating data" on page 48).

If you are migrating from IBM Network Advisor 12.3.X or 12.4.X on a 64-bit Linux server1 to IBM Network Advisor 14.0.2 on a 64-bit Linux server2, complete the following steps.

1. Back up the server for IBM Network Advisor 14.0.0 using **Options** > **Server Backup** on the 64-bit Linux server1.
2. Install IBM Network Advisor 14.0.0 on the 64-bit Linux server2.
3. Select **SMC** > **Restore** to restore the backup on the 64-bit Linux server1.
4. Install IBM Network Advisor 14.0.2 on the 64-bit Linux server2.

   Perform seamless migration to IBM Network Advisor 14.0.2 (refer to "Migrating data" on page 48).

If you are migrating from a pre-12.3.X release on a 64-bit Linux server1 to IBM Network Advisor 14.0.2 on a 64-bit Linux server2, complete the following steps.

1. Install and migrate to Network Advisor 14.0.0 on the 64-bit Linux server1 (refer to "Supported migration paths" on page 42).
2. Back up the server using **Options** > **Server Backup** on the 64-bit Linux server1.
3. Install IBM Network Advisor 14.0.0 on the 64-bit Linux server2.
4. Select **SMC** > **Restore** to restore the backup on the 64-bit Linux server1.
5. Install IBM Network Advisor 14.0.2 on the 64-bit Linux server2.

   Perform seamless migration to IBM Network Advisor 14.0.2 (refer to "Migrating data" on page 48).

If you are migrating from a pre-12.2.0 release on one server to another server, complete the following steps. Migrating using this procedure requires that the server versions are the same (64-bit to 64-bit).

NOTE
If you are migrating from a pre-11.1.0 release, you must first migrate to IBM Network Advisor 12.0.X on the current server (refer to Table 14 on page 47 for the release migration path).

1. Install IBM Network Advisor 14.0.0 on your new machine (refer to "Installation" on page 1) and migrate your data ("Migrating data" on page 48) using the network path.
2. Install IBM Network Advisor 14.0.2 on your new machine (refer to "Data Migration" on page 41) and migrate your data ("Migrating data" on page 48).

If you are migrating from a IBM Network Advisor 12.4.X release on a 64-bit server1 to IBM Network Advisor 14.0.2 on a 64-bit server2, complete the following steps.

1. Back up the IBM Network Advisor 14.0.0 server data on your current 64-bit machine. For instructions, refer to "Configuring backup" in the *IBM Network Advisor User Manual* or online help.
2. Install IBM Network Advisor 14.0.2 on your new 64-bit machine (refer to "Installation" on page 1).
3. Restore the server backup from your original 64-bit machine. For instructions, refer to "Restoring data" in the *IBM Network Advisor User Manual* or online help.
4. Install IBM Network Advisor 14.0.2 on the 64-bit Windows server (refer to "Data Migration" on page 41) and migrate your data ("Migrating data" on page 48).

If you are migrating from a Windows server that is no longer supported to a supported Windows server, complete the following steps. For a list of supported operating system servers, refer to Table 5 on page 2.

NOTE
If you are migrating from a pre-12.0.X release, you must first migrate to IBM Network Advisor 12.1.X on your current server (refer to Table 14 on page 47 for the release migration path).

1. Install IBM Network Advisor 14.0.0 on your current machine (refer to "Installation" on page 1) and migrate your data ("Migrating data" on page 48).
2. Install IBM Network Advisor 14.0.2 on your new machine (refer to "Data Migration" on page 41) and migrate your data ("Migrating data" on page 48).

If you are migrating from a Linux server that is no longer supported to a supported Linux server, complete the following steps. For a list of supported operating system servers, refer to Table 5 on page 2.

NOTE
If you are migrating from a pre-12.0.X release, you must first migrate to IBM Network Advisor 12.0.X on your current server (refer to Table 14 on page 47 for the release migration path).

1. Install IBM Network Advisor 14.0.0 on your current machine (refer to "Installation" on page 1) and migrate your data ("Migrating data" on page 48).
2. Back up the server data on your current machine. For instructions, refer to "Configuring backup" in the *IBM Network Advisor User Manual* or online help.
3. Install IBM Network Advisor 14.0.0 on the supported server (refer to "Data Migration" on page 41).
4. Restore the server backup from your original server. For instructions, refer to "Restoring data" in the *IBM Network Advisor User Manual* or online help.
5. Install IBM Network Advisor 14.0.2 on your new machine (refer to "Data Migration" on page 41) and migrate your data ("Migrating data" on page 48).

Cross-OS migration is not supported; however, you can restore a Windows OS backup to a Linux OS and vice versa. If you are migrating from one OS to another, complete the following steps.

NOTE
If you are migrating from a pre-12.0.X release, you must first migrate to IBM Network Advisor 12.2.X on your current server (refer to Table 14 on page 47 for the release migration path).

1. Install IBM Network Advisor 14.0.0 (refer to "Installation" on page 1) on the current machine and migrate your data (refer to "Migrating data" on page 48).
2. Back up the server data on your current machine. For instructions, refer to "Configuring backup" in the *IBM Network Advisor User Manual* or online help.
3. Install IBM Network Advisor 14.0.2 (refer to "Installation" on page 1) on the new machine.
4. Restore the server backup from your original machine. For instructions, refer to "Restoring data" in the *IBM Network Advisor User Manual* or online help.

Additional pre-migration requirements on UNIX systems

- Make sure that the current application services are running.

1. Go to Install_Home/bin.

3. Execute ./smc or sh smc.
4. Click the **Services** tab.

   The tab lists the DCFM services.

5. Click **Start**, if necessary.

- Make sure that an X Server is available for display and is configured to permit X Client applications to display from the host on which they are installing the Network Advisor Server (typically, this simply requires that the systems console be present and running with a logged-in user on the X Server-based desktop session, such as KDE, GNOME, and so on).

- Make sure that the DISPLAY environment variable is correctly defined in the shell with a valid value (for example, to display to the local console, **export DISPLAY=:0.0**, or to display to a remote system that has an X Server running, **export DISPLAY=**`Remote_IP_Address`**:0.0**).

  You may also need to consider a firewall that might block the display to the X Server which listens by default on TCP port 6000 on the remote host.

  To display to a remote system you need to permit the remote display of the X Server by running command **xhost +IP**, where IP is the IP address of the Network Advisor server host from the X-based desktop of the remote system.

- Make sure you test the DISPLAY definition by running the command **xterm** from the same shell from which you run `install.bin`. A new X terminal window to the destination X Server display should open.

Additional trial requirements

- Two versions of the Management application (DCFM or IBM Network Advisor) cannot reside on the same host unless there are two guest operating systems on the same host.
- Once the Enterprise trial period expires, you must upgrade to Licensed software.

Migrating data

The quickest and simplest method of moving from one package to another is to enter the new license information on the **Network Advisor License** dialog box. To upgrade from a previous release, refer to "Upgrading the license" on page 41. If you have not installed the application, refer to "Installation" on page 1.

NOTE
If an error occurs while migrating from version 14.0.0 or earlier to version 14.0.2, it rolls back to the earlier version. Migration rollback is not supported if you are performing headless migration.

NOTE
Licensed software to Trial software migration is not supported.

NOTE
Enterprise software to Professional Plus software migration is not supported.

To migrate data from a previous version, complete the following steps.

1. Click **Next** on the **Welcome** screen.
2. Choose one of the following options:
   - If data is detected on your system, the **Copy Data and Settings from previous releases** screen displays. To migrate data from the previous version installed (automatically detected), select **Yes, from the following location**. Continue with step 3.
   - If data is not detected, the **Copy Data and Settings from previous releases** screen displays. Complete the following steps:
     a. Select **Yes, from this machine or on network** and click **Browse** to browse to the installation directory.

c. Click **Next** on the **Copy Data and Settings from previous releases** screen. Continue with step 3.

NOTE
If you are migrating to the same install location (as the previous version), you will need to browse to the renamed directory on the **Copy Data and Settings from previous releases** screen.

3. Click **Start** on the **Data Migration** screen.

   Data migration may take several minutes. When data migration is complete, the previous version is partially uninstalled.

   During data migration, Network Advisor and SMIA certificates migrating from source to destination will happen if satisfies with any of the following scenarios. A new certificate will be generated using SHA256 signature algorithm if not satified:

   - Certificates must be generated by customers.
   - Certificates must have SHA2 signature algorithm.
   - Source certificate must be self-signed and has a validity of more than six months or generated using SHA256 signature algorithm.

4. Click **Next** on the **Data Migration** screen.

   If you have products associated with the Brocade North America or Brocade International Call Home centers, a message displays. To map these Call Home centers to the Brocade E-mail Call Home center after migration, click **Yes**. To not map these Call Home centers, click **No**.

NOTE
Make sure you configure the Brocade E-mail Call Home center (refer to the *Brocade Network Advisor User Manual* or online help).

   If you are migrating from Trial software, continue with step 5.

   If you are migrating from Licensed software, go to step 6.

5. Select one of the following options on the **Installation Type** screen and click **Next**.

NOTE
The SAN768B and SAN768B-2 Backbone chassis require Enterprise edition.

   - **IBM Network Advisor - Licensed version**

     Continue with step 6. Requires you to enter a license key during configuration to enable features and configuration.

   - **IBM Network Advisor - 120 days Trial**

     Go to step 7. Enables you to manage SAN networks from a single interface for 120 days.

ATTENTION
If you choose to install Trial, once the trial period ends (120 days), you must upgrade to Licensed software.

6. Click **Next** on the **Server License** screen.

7. Complete the following steps on the **FTP/SCP/SFTP Server** screen.

   The default selection reflects the previous edition configuration.

   a. Choose one of the following options:

      - Select **Built-in FTP/SCP/SFTP Server** to configure an internal FTP/SCP/SFTP server and select one of the following options:
        - Select **Built-in FTP Server** to configure an internal FTP server
          The internal FTP server uses a default account and port 21. You can configure your own account from the **Options** dialog box. For instructions, refer to the *IBM Network Advisor User Manual* or online help.
        - Select **Built-in SCP/SFTP Server** to configure an internal SCP/SFTP server
          The internal SCP/SFTP server uses a default account and port 22. You can configure your own account from the **Options** dialog box. For instructions, refer to the *IBM Network Advisor User Manual* or online help.
      - Select **External FTP/SCP/SFTP Server** to configure an external FTP server.
        You can configure the external FTP server settings from the **Options** dialog box. For instructions, refer to the *IBM Network Advisor User Manual* or online help.

   b. Click **Next**.

   If port 21 or 22 is busy, a message displays. Click **OK** to close the message and continue. Once the Management application is configured make sure port 21 or 22 is free and restart the Server to start the FTP/SCP/SFTP service.

   NOTE
   If you use an FTP/SCP/SFTP Server which is not configured on the same machine as the Management application, the Firmware Repository feature will not be available.

8. Complete the following steps on the **Server IP Configuration** screen.

   NOTE
   If the Management server or client has multiple Network Interface Cards and if any of these interfaces are not plugged in, you must disable them; otherwise, the following features do not work properly:

   Server impact

   - Configuration wizard (does not display all IP addresses)
   - Trap and Syslog auto registration
   - Report content (Ipconfiguration element does not display all server IP addresses)
   - Trace dump through FTP

   Client impact

   - Options dialog box (does not display all IP addresses)
   - Firmware import and download dialog box
   - Firmware import for Fabric OS products
   - FTP button in Technical Support Repository dialog box
   - Technical supportSave of Fabric OS and Host products through FTP

a. Select an address from the **Server IP Configuration** list.

NOTE
For SMI Agent, if the **Server IP Configuration** list contains a duplicate IP address or is empty, an error message displays and the configuration wizard closes.

b. Select an address from the **Switch - Server IP Configuration Preferred Address** list.

NOTE
If the "hostname" contains invalid characters, the host name does not display in the list. Valid characters include alphanumeric and dash (-) characters. The IP address is selected by default.

If DNS is not configured for your network, do not select the 'hostname' option from either the **Server IP Configuration** or **Switch - Server IP Configuration Preferred Address** list. Selecting the 'hostname' option prevents clients and devices from communicating with the Server.

If you select a specific IP address from the **Server IP Configuration** screen and the selected IP address changes, you will not be able to connect to the server. To change the IP address, refer to "Configuring an explicit server IP address" on page 38.

c. Click **Next**.

9. Complete the following steps on the **Server Configuration** screen.

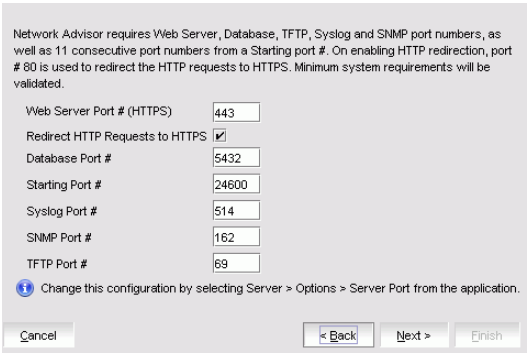

FIGURE 2 Server Configuration screen

a. Enter a port number in the **Web Server Port # (HTTPS)** field (default is 443).

b. Enable HTTP redirection to HTTPS by selecting the **Redirect HTTP Requests to HTTPS** check box.

When you enable HTTP redirection, the server uses port 80 to redirect HTTP requests to HTTPS. You can configure the server port settings from the **Options** dialog box (**Server Port** pane). For instructions, refer to the *IBM Network Advisor User Manual* or online help.

c. Enter a port number in the **Database Port #** field (default is 5432).

NOTE
Do not use a port number below 1024.

d. Enter a port number in the **Starting Port #** field (default is 24600).

NOTE
For Trial and Licensed software, the server requires 11 consecutive free ports beginning with the starting port number.

e. Enter a port number in the **Syslog Port #** field (default is 514).

NOTE
If the default syslog port number is already in use, you will not receive any syslog messages from the device. To find and stop the process currently running on the default Syslog port number, refer to "Syslog troubleshooting" on page 29.

f. Enter a port number in the **SNMP Port #** field (default is 162).

g. Enter a port number in the **TFTP Port #** field (default is 69).

h. Click **Next**.

If you enter a syslog port number already in use, a message displays. Click **No** on the message to remain on the **Server Configuration** screen and edit the syslog port number. Click **Yes** to close the message and continue with step 10.

If you enter a port number already in use, a warning displays next to the associated port number field. Edit that port number and click **Next**.

10. (SAN with SMI Agent) Complete the following steps on the **SMI Agent Configuration** screen.

a. Enable the SMI Agent by selecting the **Enable SMI Agent** check box.

b. Enable the SLP by selecting the **Enable SLP** check box, if necessary.

Only enabled after you select the **Enable SMI Agent** check box.

c. Enable the SSL by selecting the **Enable SSL** check box, if necessary.

Only enabled after you select the **Enable SMI Agent** check box.

d. Enter the SMI Agent port number in the **SMI Agent Port #** field (default is 5989 if **SSL Enabled** is selected; otherwise, the default is 5988).

e. Click **Next**.

11. (SAN Enterprise or SMI Agent) Select one of the following options on the **SAN Network Size** screen and click **Next**:

NOTE
Port count is equal to the total number of switch ports across all fabrics.

- **Small (managing up to 2000 switch ports, 1-20 domains)**
- **Medium (managing up to 5000 switch ports, 21-60 domains)**
- **Large (managing up to 15000 switch ports, 61-120 domains)**

12. Complete the following steps on the **Inventory Upload Configuration** screen.

NOTE
You must configure the E-mail server before you enable the Inventory Upload Configuration.

a. Select the **Enable** check box to enable inventory upload configuration.

b. Enter a valid E-mail address in **E-mail** field and click **Next**.

Enter more than one e-mail address, separating each with a semi-colon. You can enter up to 5 e-mail addresses.

13. Verify your configuration information on the **Server Configuration Summary** screen and click **Next**.

14. Complete the following steps on the **Start Server** screen.

a. (Trial and Licensed only) Select the **Start SMI Agent** check box, if necessary.

b. (Trial and Licensed only) Select the **Start SLP** check box, if necessary.

c. Select the **Start Client** check box, if necessary.

d. Click **Finish**.

After all of the services are started, the **Log In** dialog box displays.

To make changes to the configuration, you can re-launch the configuration wizard (refer to "Configuring an explicit server IP address" on page 38).

15. Enter your user name and password.

The defaults are Administrator and password, respectively. If you migrated from a previous release, your user name and password do not change.

NOTE
Do not enter Domain\`User_Name` in the **User ID** field for LDAP server authentication.

16. Click **Login**.

17. Click **OK** on the **IBM Network Advisor Login Banner**.

Cross flavor migration

To migrate from *IBM* Network Advisor 14.0.0 to a *IBM* Network Advisor 14.0.2, complete the following steps.

1. Install *IBM* Network Advisor 14.0.2 (refer to "Installing the application" on page 10).
2. Install *IBM* Network Advisor 14.0.2 (refer to "Installing the application" on page 10).
3. Migrate the supported (partial or full) data from *IBM* Network Advisor 14.0.2 (refer to "Migrating data" on page 48) to the *IBM* Network Advisor 14.0.2 by browsing to the Network Advisor 14.0.2 location on the **Copy Data and Setting** screen.

Migration rollback

NOTE
Migration rollback is not supported if you are performing headless migration.

Migration rollback is triggered when a failure occurs while migrating to a different version of IBM Network Advisor. After successful rollback, the previous version will be running and the destination version will be uninstalled. The destination version failure logs and the source version supportsave will be zipped and stored at the source BNA_HOME\support folder in the following format.

```
Zip file format, Migration_Failure_SupportSave_<Time stamp>.zip
```

Migration rollback due to insufficient space

When migration rollback fails due to insufficient space, you can either increase the disk space and try rollback or cancel the migration rollback. The destination version is uninstalled manually if you cancel the migration rollback. Use the following commands, to retrieve the source version.

For Windows

```
Install_Home>bin>dbsvc install
Install_Home>bin>dbsvc start
Install_Home>bin>service.bat dcmsvc install
Install_Home>bin>service.bat dcmsvc start
```

For Windows, if SLP is enabled

```
Install_Home>cimom>bin>slpd.bat -install
Install_Home>cimom>bin>slpd.bat -start
```

For Windows, if CIMOM is enabled

```
Install_Home>bin>service.bat cimomsvc install
Install_Home>bin>service.bat cimom svc start
```

For Linux

```
Install_Home>bin>sh dbsvc start
Install_Home>bin>sh service dcmsvc start
```

For Linux, if SLP is enabled

```
Install_Home>bin>sh slpsvc start
```

For Linux, if CIMOM is enabled

```
Install_Home>bin>sh service cimomsvc start
```

Migration rollback in Configuration Wizard

You can rollback to the earlier version of Network Advisor during migration by canceling the configuration using **Cancel** button.

You cannot cancel the migration while you are in the **Welcome** and **Copy and Data Settings** pages of Configuration wizard.

The warning message “Are you sure you want to cancel the configuration of Network Advisor 14.0.2?” displays, if you try to cancel the migration before the migration starts.

The warning message “Canceling the migration will initiate rollback of the changes made and will uninstall Network Advisor 14.0.2. Are you sure you want to continue?” displays, if you try to cancel the migration post the migration success.

NOTE
The supportsave will not be triggered, if you manually cancel the installation and initiate the rollback.

Click **Yes**, to quit and close the configuration wizard.

Click **No**, to stay on the same page.

3 Migration rollback

Chapter

4

Uninstallation

In this chapter

- Uninstalling from Windows systems 57
- Uninstalling from Windows systems (headless uninstall) 58
- Uninstalling from UNIX systems 58
- Uninstalling from UNIX systems (headless uninstall) 59

This section provides step-by-step instructions to uninstall IBM Network Advisor and SMI Agent from both Windows and UNIX systems.

NOTE
IBM Network Advisor is installed on a separate directory from your previous version; therefore, you do not need to uninstall the previous version immediately. However, you cannot run both versions simultaneously.

Uninstalling from Windows systems

Follow these instructions to uninstall the IBM Network Advisor and SMI Agent from your Windows system.

1. Select **Start > Programs > Network Advisor 14.0.2 > Uninstall Network Advisor**.
2. Select one of the following options on the **Uninstall Option** screen:
   - **Partial Uninstall** — Configuration and performance data is retained to be re-used by the new installation. This is the default option.
   - **Full Uninstall** — All data is removed.
3. Click **Uninstall**.
4. Click **Done** on the **Uninstall Complete** screen.

Uninstalling from Windows systems (headless uninstall)

If the application was installed using the headless installation, complete the following steps to uninstall IBM Network Advisor and SMI Agent from your Windows server.

1. Open a command prompt.
2. Choose one of the following options:
   - To partially uninstall IBM Network Advisor (configuration and performance data is retained to be re-used by the new installation), execute Install_Home\Uninstall_Network Advisor 14.0.2\Uninstall_Network Advisor 14.0.2.exe –f <absolute path of partial uninstall property file>.
   - To fully uninstall IBM Network Advisor (all data is removed), execute Install_Home\Uninstall_Network Advisor 14.0.2\Uninstall_Network Advisor 14.0.2.exe –f <absolute path of full uninstall property file>.

   When uninstallation is complete, an “Uninstallation complete” message displays. You must manually delete the Install_Home/silent folder.

Uninstalling from UNIX systems

Follow these instructions to uninstall the IBM Network Advisor and SMI Agent from your UNIX system.

NOTE
The Uninstall folder is retained.

1. Go to Install_Home/Uninstall_Network_Advisor14_0_2.
2. Execute ./Uninstall_Network_Advisor14_0_2.
3. Select one of the following options on the **Uninstall Option** screen:
   - **Partial Uninstall** — Configuration and performance data is retained to be re-used by the new installation. This is the default option.
   - **Full Uninstall** — All data is removed.
4. Click **Uninstall**.
5. Click **Done** on the **Uninstall Complete** screen.

Uninstalling from UNIX systems (headless uninstall)

If the application was installed using the headless installation, complete the following steps to uninstall IBM Network Advisor and SMI Agent from your UNIX server.

1. Go to Install_Home/Uninstall_Network_Advisor14_0_2.
2. Choose one of the following options:
   - To partially uninstall IBM Network Advisor (configuration and performance data is retained to be re-used by the new installation), execute Uninstall_Network_Advisor 14_0_2 –f <absolute path of partial uninstall property file>.
   - To fully uninstall IBM Network Advisor (all data is removed), execute .\Uninstall_Network_Advisor 14_0_2 –f <absolute path of full uninstall property file>.

   When uninstallation is complete, an “Uninstallation complete” message displays. You must manually delete the Install_Home/silent folder.

4 Uninstalling from UNIX systems (headless uninstall)

Appendix

References

A

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- Edition feature support 63
- Management server and client ports 69

IBM Network Advisor packages

IBM Network Advisor provides the following packages and editions for each package:

- SAN with SMI Agent
  - Enterprise (trial or licensed)
  - Professional Plus (trial or licensed)
- SMI Agent only

NOTE
IBM Network Advisor clients are not available in the SMI Agent only package. Clients are not required when other management tools are used the SMI Agent.

For a list of the supported scalability limits for IBM Network Advisor by edition, refer to "Scalability limits" on page 62.

Scalability limits

Table 12 Table 13 summarizes the scalability limits supported for IBM Network Advisor by edition.

TABLE 12 Supported scalability limits by Network Advisor edition

	Enterprise edition			SAN Professional Plus + IP Base edition	Professional edition
	Small	Medium	Large		
SAN Switch Ports	2000	5000	15000	2560	300
SAN Switches and Access Gateways	40	100	400	40	15
SAN Devices	5000	15000	40000	5000	1000
SAN Fabrics	25	50	100	36	2
IP Switches[1]	50	200	1550 (supported) 1200 (recommended) (with performance monitoring on up to 20000 ports)	50	50
MPLS Switches	1	10	100	1	Not supported.
VDX Switches	50	100	400	50	50
Managed Hosts	20	100	400	100	20
vCenters	1	5	10	5	1
VMs (inlcudes powered down VMs)	1000	5000	10000	5000	1000
ESX Hosts	200	1000	2000	1000	200

1.The IP switch count includes MPLS and VDX switches.

TABLE 13 Supported scalability limits by IBM Network Advisor edition

	Enterprise edition			Professional Plus edition
	Small	Medium	Large	
SAN Switch Ports	2000	5000	15000	2560
SAN Switches and Access Gateways	40	100	400	100
SAN Devices	5000	15000	40000	5000
SAN Fabrics	25	50	100	100
Managed Hosts	20	100	400	100
vCenters	1	5	10	5

TABLE 13 Supported scalability limits by IBM Network Advisor edition

	Enterprise edition			Professional Plus edition
	Small	Medium	Large	
VMs (inlcudes powered down VMs)	1000	5000	10000	5000
ESX Hosts	200	1000	2000	1000

NOTE
Virtual Fabrics are counted as fabrics when calculating the managed count limits.

NOTE
Supported network latency between Network Advisor server and client or server and devices is 100ms.

Edition feature support

Table 13 details whether the features are supported in the Professional Plus or Enterprise versions, or only through the Element Manager of the device.

TABLE 14 SAN feature support by edition

Feature	Professional Plus	Enterprise
AAA (Authentication, Authorization, and Auditing)	Yes	Yes
Authentication and authorization configuration		
Access Gateway (AG) management		
AG display		
Support for firmware download, supportSave, performance statistics, and configuration file management	Yes	Yes
Active session management	Yes	Yes
Bottleneck detection		
Configuration	Yes	Yes
Statistics	Yes	Yes
Badge on topology and product tree	Yes	Yes
Show affected host	Yes	Yes
Call Home support		
Support for all call home centers	Yes	Yes
SupportSave for Fabric OS switches	Yes	Yes
Support for appending the last 30 events in a call home event for e-mail-based call home centers	Yes	Yes
Certificate management	Yes	Yes
COMPASS	Yes	Yes

TABLE 14 SAN feature support by edition (Continued)

Feature	Professional Plus	Enterprise
Configuration management		
Configuration repository management	Yes	Yes
Firmware download	Yes	Yes
Manual backup **NOTE:** Professional only supports one switch at a time.	Yes	Yes
Save configuration **NOTE:** Professional only supports one switch at a time.	Yes	Yes
Periodic configuration backup and persistence	Yes	Yes
Replicate switch configuration	Yes	Yes
Dashboard	Yes	Yes
DCB configuration management	Yes	Yes
DCX backbone chassis discovery and management	No	Yes
Diagnostic port test	Yes	Yes
Digital diagnostic	Yes	Yes
Encryption		
Layer 2 FC support	Yes	Yes
Encryption configuration and monitoring	Yes	Yes
Access Gateway – Cisco interop support	Yes	Yes
Device decommissioning	Yes	Yes
End device connectivity Collection Views	Yes	Yes
Fabric binding	Yes	Yes
Fabric Watch		
Hardware	Element Manager	Element Manager
Ports	Element Manager	Element Manager
Admin	Element Manager	Element Manager
Router Admin	Element Manager	Element Manager
Name Server	Element Manager	Element Manager
Fault management	Element Manager	Element Manager
Show switch events	Yes	Yes
Show fabric events	Yes	Yes
Syslog registration and forwarding	Yes	Yes

TABLE 14 SAN feature support by edition (Continued)

Feature	Professional Plus	Enterprise
SNMP trap registration and forwarding	Yes	Yes
Trap configuration, credentials, and customization	Yes	Yes
Event forwarding	Yes	Yes
Event custom report	Yes	Yes
Event processing (event policies and pseudo events)	Yes	Yes
Common SNMP/Trap registration	Yes	Yes
FCIP management		
FCIP configuration wizard	Yes	Yes
Iperf and IP trace route	Yes	Yes
FCoE management		
FCoE configuration	Yes	Yes
Migration from DCFM	Yes	Yes
FICON/CUP		
Cascaded FICON configuration wizard	No	Yes
Cascaded FICON Fabric merge wizard	No	Yes
PDCM Matrix	Element Manager	Yes
Firmware management and supportSave		
Firmware download	Yes	Yes
Capture SupportSave	Yes	Yes
Flow Vision	Yes	Yes
Frame monitor	Yes	Yes
HBA management		
HBA management	Yes	Yes
VM management	Yes	Yes
Driver/DIOS management	Yes	Yes
Fabric assigned WWN	Yes	Yes
HBA Server and Storage port mapping	Yes	Yes
High Integrity Fabric	Yes	Yes
IPv6 — Server - Switch support	Yes	Yes
iSCSI discovery	Yes	Yes
Layer 2 trace route	Yes	Yes
License	Yes	Yes
MAPS management	Yes	Yes
Meta-SAN Routing configuration Domain ID configuration	Yes	Yes

TABLE 14 SAN feature support by edition (Continued)

Feature	Professional Plus	Enterprise
Name Server	Yes	Yes
Open Trunking Support		
Display trunks on the topology	Yes	Yes
Display trunks properties	Yes	Yes
Display marching ants	Yes	Yes
Display connections properties	Yes	Yes
Performance management - SNMP monitoring		
Real Time Performance collection, display, and reports	Yes	Yes
Historical Performance collection, display, and reports	Yes	Yes
Thresholds	Yes	Yes
Top talkers - Supported on SAN switches and Access Gateway	Yes	Yes
Marching ants	Yes	Yes
Data aging	Yes	Yes
End-to-End monitors	Yes	Yes
Policy Monitor	Yes	Yes
Port Administration	Element Manager	Element Manager
Port Fencing	Yes	Yes
Port group configuration	No	Yes
REST API	Yes	Yes
Reports	Yes	Yes
Generate reports	Yes	Yes
View reports	Yes	Yes
Performance reports	Yes	Yes
FCR reports	Yes	Yes
SCOM plug-in support	Yes	Yes
Security management		
Replicate switch policy configuration	Yes	Yes
SNMP configuration	Yes	Yes
L2 ACL configuration **NOTE:** Only supported on DCB devices.	Yes	Yes

TABLE 14 SAN feature support by edition (Continued)

Feature	Professional Plus	Enterprise
SMI Agent	Yes	Yes
Server Profile		
Fabric Profile		
Indication Sub Profile		
Zone Control Sub Profile		
Enhanced Zoning and Enhanced Zoning Control Sub Profile		
FDMI (Fabric Device Management Interface) Sub Profile		
Fabrics Virtual Fabrics Sub Profile		
Topology View Sub Profile		
FC HBA (Fibre Channel Host Bus Adapter) Profile		
Fan, Power Supply, and Sensor Profiles		
Inter Fabric Routing (FCR) Profile		
Trunking		
CP Blade Sub Profile		
CEE (Converged Enhanced Ethernet)		
Launch In Context Profile		
Switch Profile		
Role Based Authorization (CEE ACL) Profile		
N port Virtualizer (AG NPIV) Profile		
Profile Registration Sub Profile		
Object Manager Adapter Sub Profile		
Fabric Views Sub Profile		
Physical Package Sub Profile		
Software Sub Profile		
Access Points Sub Profile		
Location Sub Profile		
Fabric Switch Partitioning Sub Profile		
FC Initiator Ports Sub Profile		
Fabric and Host discovery		
SAN Zoning		
Switch configuration management	Yes	Yes
Basic configurations through the Element Manager		
Switch port enable/disable through right-click menu	Yes	Yes
Technical SupportSave	Yes	Yes
Telnet	Yes	Yes
NOTE: Telnet through the server is only supported on Windows systems.		
Tools launcher (Setup Tools)	Yes	Yes
Troubleshooting and Diagnostics		
Device connectivity troubleshooting wizard	Yes	Yes
Trace route and Ping	Yes	Yes
Fabric device sharing	Yes	Yes
User management	Yes	Yes
View management	Yes	Yes

TABLE 14 SAN feature support by edition (Continued)

Feature	Professional Plus	Enterprise
Virtual fabric support		
Discovery	Yes	Yes
Configuration	Yes	Yes
VLAN management	Yes	Yes
VM Plugin Support	Yes	Yes
Web Element Manager	Yes	Yes
Zoning		
Member selection	Yes	Yes
Zone editing	Yes	Yes
Live fabric library scope	Yes	Yes
QoS support	Yes	Yes
Zone alias support	Yes	Yes
Delete Zone database	Yes	Yes
Impact analysis	Yes	Yes
Remove offline devices	Yes	Yes
TI Zones	Yes	Yes
Device to Zone / zoneset participation analysis	Yes	Yes
LSAN Zones	Yes	Yes
Rolling back to an activated zone database	Yes	Yes
Import or export a zone database	Yes	Yes

Management server and client ports

The Management application has two parts: the Server and the Client. The Server is installed on one machine and stores device-related information; it does not have a user interface. To view information through a user interface, you must log in to the Server through a Client. The Server and Clients may reside on the same machine, or on separate machines. If you are running , the server and the client must be on the same machine.

In some cases, a network may utilize virtual private network (VPN) or firewall technology, which can prohibit communication between Products and the Servers or Clients. In other words, a Server or Client can find a Product, appear to log in, but is immediately logged out because the Product cannot reach the Server or Client. To resolve this issue, check to determine if the ports in the table below need to be opened up in the firewall.

Table 15 lists the default port numbers and whether or not it needs to be opened up in the firewall and includes the following information:

- **Port Number** — The port at the destination end of the communication path.
- **Ports** — The name of the port.
- **Transport** — The transport type (TCP or UDP).
- **Description** — A brief description of the port.
- **Communication Path** — The "source" to "destination" values. Client and Server refer to the Management application client and server unless stated otherwise. Product refers to the Fabric OS, Network OS, or IronWare OS devices.
- **Open in Firewall** — Whether the port needs to be open in the firewall.

NOTE
For bi-directional protocols, you must open the firewall port bi-directionally.

TABLE 15 Port usage and firewall requirements

Port Number	Ports	Transport	Description	Communication Path	Open in Firewall
20	FTP Port (Control)	TCP	FTP Control port for internal FTP server	Client–Server Product–Server	Yes
21	FTP Port (Data)	TCP	FTP Data port for internal FTP server	Client–Server Product–Server	Yes
22[1]	SSH or SCP or SFTP	TCP	Secure telnet and secure upload and download to product	Server–Product Client –Product Product – Server	Yes
23	Telnet	TCP	Telnet port from server/client to product	Server–Product Client–Product	Yes
25[1]	SMTP Server port	TCP	SMTP Server port for e-mail communication if you use e-mail notifications without SSL	Server–SMTP Server	Yes
49[1]	TACACS+ Authentication port	TCP	TACACS+ server port for authentication if you use TACACS+ as an external authentication	Server–TACACS+ Server	Yes

TABLE 15 Port usage and firewall requirements (Continued)

Port Number	Ports	Transport	Description	Communication Path	Open in Firewall
69	TFTP	UDP	File upload/download to product	Product-Server	Yes
80[1]	Management application HTTP server	TCP	Non-SSL HTTP/1.1 connector port if you use secure client-server communication. You need this port for HTTP redirection	Client–Server	Yes
80	Product HTTP server	TCP	Product non-SSL http port for http and CAL communication if you do not use secure communication to the product	Server–Product	Yes
			Product non-SSL http port for http and CAL communication if you do not use secure communication to the product and you do not use the Management application server proxy	Client–Product	Yes
161[1]	SNMP port	UDP	Default SNMP port	Server–Product	Yes
162[1]	SNMP Trap port	UDP	Default SNMP trap port	Product-Server	Yes
389[1]	LDAP Authentication Server Port	UDP TCP	LDAP server port for authentication if you use LDAP as an external authentication	Server–LDAP Server	Yes
443[1]	HTTPS server	TCP	HTTPS (HTTP over SSL) server port if you use secure client - server communication	Client-Server	Yes
443[1]			HTTPS (HTTP over SSL) server port if you use secure communication to the product	Server–Product	Yes
443			HTTPS (HTTP over SSL) server port if you use secure communication to the product and you do not use the Management application server proxy	Client–Product	Yes
443[1]			HTTPS (HTTP over SSL) server port if you use vCenter discovery	Server-vCenter Server	Yes
465[1]	SMTP Server port for SSL	TCP	SMTP Server port for e-mail communication if you use e-mail notifications with SSL	Server-SMTP Server	Yes
514[1]	Syslog Port	UDP	Default Syslog Port	Product–Server Managed Host - Server	Yes
636[1]	LDAP Authentication SSL port	TCP	LDAP server port for authentication if you use LDAP as an external authentication and SSL is enabled	Server–LDAP Server	Yes

TABLE 15 Port usage and firewall requirements (Continued)

Port Number	Ports	Transport	Description	Communication Path	Open in Firewall
1812[1]	RADIUS Authentication Server Port	UDP	RADIUS server port for authentication if you use RADIUS as an external authentication	Server–RADIUS Server	Yes
1813[1]	RADIUS Accounting Server Port	UDP	RADIUS server port for accounting if you use RADIUS as an external authentication	Server–RADIUS Server	Yes
5432	Database port	TCP	Port used by database if you access the database remotely from a third-party application	Remote ODBC–Database	Yes
5988	SMI Server port	TCP	SMI server port on the Management application and the CIM/SMI port on HBAs if you use SMI Agent without SSL	SMI Client- Server	Yes
				Server-Managed Host	Yes
5989[1]	SMI Server port with SSL enabled	TCP	SMI Agent port on the Management application and the CIM/SMI port on HBAs if you use SMI Agent with SSL	SMI Agent Server–Client	Yes
				Server-Managed Host	Yes
6343[1]	sFlow	UDP	Receives sFlow data from products if you are monitoring with sFlow	Product-Server	Yes
24600[1]	JBoss remoting connector port	TCP	Use for service location. Uses SSL for privacy.	Client–Server	Yes
24601[1]	JBoss Transaction Services Recovery Manager port	TCP	Not used remotely.	Server	Yes
24602[1]	JBoss Transaction Status Manager port	TCP	Not used remotely.	Server	Yes
24603[1]	HornetQ Netty port	TCP	Use for JMS (Java Message Service), async messages from server to client. Uses SSL for privacy.	Client–Server	Yes
24604[1]	JMX remoting connector port	TCP	Management console port for native connector (JMX)	Client–Server	Yes
24605[1]	JBoss https management port TCP	TCP	Management console port for HTTPS based management	Client–Server	Yes
24606[1]	Fault Management CIM Indication Listener Port	TCP	Used for HBA management	Managed Host - Server	Yes
24607[1]	HCM Proxy CIM Indication Listener port	TCP	Used for HBA management	Managed Host - Server	Yes
24608[1]	Reserved for future use	TCP	Not used	Client - Server	No
24609[1]	Reserved for future use	TCP	Not used	Client - Server	No
24610[1]	Reserved for future use	TCP	Not used	Client - Server	No

TABLE 15 Port usage and firewall requirements (Continued)

Port Number	Ports	Transport	Description	Communication Path	Open in Firewall
34568	HCM Agent discovery port	TCP	Used for HBA management via JSON	Server - Managed Host	Yes
55556	Launch in Context (LIC) client hand shaking port	TCP	Client port used to check if a Management application client opened using LIC is running on the same host **NOTE:** If this port is in use, the application uses the next available port.	Client	No

1. The default port number. You must use the same port number for all products or hosts managed by the Management server. This port is configurable in the Management server; however, some products and firmware versions do not allow you to configure a port.

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