

# Brocade Network Advisor Installation and Migration Guide, 14.2.1

Supporting Brocade Network Advisor 14.2.1

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# Preface

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## Document conventions


The document conventions describe text formatting conventions, command syntax conventions, and important notice formats used in Brocade technical documentation.


## Notes, cautions, and warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the 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 a stronger note, for example, to alert you when traffic might be interrupted or the device might reboot.

 **CAUTION**  
A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.

 **DANGER**  
*A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.*

## Text formatting conventions

Text formatting conventions such as boldface, italic, or Courier font may be used to highlight specific words or phrases.

Format	Description
<b>bold text</b>	Identifies command names.
	Identifies keywords and operands.
	Identifies the names of GUI elements.
	Identifies text to enter in the GUI.
<i>italic text</i>	Identifies emphasis.
	Identifies variables.
Courier font	Identifies document titles.
	Identifies CLI output.

Format	Description
	Identifies command syntax examples.

## Command syntax conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

Convention	Description
<b>bold text</b>	Identifies command names, keywords, and command options.
<i>italic text</i>	Identifies a variable.
value	In Fibre Channel products, a fixed value provided as input to a command option is printed in plain text, for example, <b>--show</b> WWN.
[ ]	Syntax components displayed within square brackets are optional.  Default responses to system prompts are enclosed in square brackets.
{ x   y   z }	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.  In Fibre Channel products, square brackets may be used instead for this purpose.
x   y	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, <i>member[member...]</i> .
\	Indicates a "soft" line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

## Brocade resources

Visit the Brocade website to locate related documentation for your product and additional Brocade resources.

White papers, data sheets, and the most recent versions of Brocade software and hardware manuals are available at [www.brocade.com](http://www.brocade.com). Product documentation for all supported releases is available to registered users at [MyBrocade](http://MyBrocade).

Click the **Support** tab and select **Document Library** to access product documentation on [MyBrocade](http://MyBrocade) or [www.brocade.com](http://www.brocade.com). You can locate documentation by product or by operating system.

Release notes are bundled with software downloads on [MyBrocade](http://MyBrocade). Links to software downloads are available on the MyBrocade landing page and in the Document Library.

## Document feedback

Quality is our first concern at Brocade, and we have made every effort to ensure the accuracy and completeness of this document. However, if you find an error or an omission, or you think that a topic needs further development, we want to hear from you. You can provide feedback in two ways:

- Through the online feedback form in the HTML documents posted on [www.brocade.com](http://www.brocade.com)
- By sending your feedback to [documentation@brocade.com](mailto:documentation@brocade.com)

Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.



# Contacting Brocade Technical Support

As a Brocade customer, you can contact Brocade Technical Support 24x7 online or by telephone. Brocade OEM customers should contact their OEM/solution provider.

## Brocade customers

For product support information and the latest information on contacting the Technical Assistance Center, go to [www.brocade.com](http://www.brocade.com) and select **Support**.

If you have purchased Brocade product support directly from Brocade, use one of the following methods to contact the Brocade Technical Assistance Center 24x7.

Online	Telephone
<p>Preferred method of contact for non-urgent issues:</p> <ul style="list-style-type: none"> <li>Case management through the <a href="#">MyBrocade</a> portal.</li> <li>Quick Access links to Knowledge Base, Community, Document Library, Software Downloads and Licensing tools</li> </ul>	<p>Required for Sev 1-Critical and Sev 2-High issues:</p> <ul style="list-style-type: none"> <li>Continental US: 1-800-752-8061</li> <li>Europe, Middle East, Africa, and Asia Pacific: +800-AT FIBREE (+800 28 34 27 33)</li> <li><a href="#">Toll-free numbers</a> are available in many countries.</li> <li>For areas unable to access a toll-free number: +1-408-333-6061</li> </ul>

## Brocade OEM customers

If you have purchased Brocade product support from a Brocade OEM/solution provider, contact your OEM/solution provider for all of your product support needs.

- OEM/solution providers are trained and certified by Brocade to support Brocade® products.
- Brocade provides backline support for issues that cannot be resolved by the OEM/solution provider.
- Brocade Supplemental Support augments your existing OEM support contract, providing direct access to Brocade expertise. For more information, contact Brocade or your OEM.
- For questions regarding service levels and response times, contact your OEM/solution provider.



# About This Document

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## 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 Brocade Communications Systems, Inc. for Network Advisor 14.2.1, documenting all possible configurations and scenarios is beyond the scope of this document.

## Fabric OS hardware and software support

The following firmware platforms are supported by this release of Network Advisor 14.2.1:

- Fabric OS 5.0 or later in a pure Fabric OS fabric
- Fabric OS 6.0 or later in a mixed fabric
- Fabric OS 7.0 or later
- Fabric OS 8.0 or later
- Fabric OS 8.1 or later

### NOTE

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

The hardware platforms in the following table are supported by this release of Network Advisor 14.2.1.

**TABLE 1** Fabric OS-supported hardware

Device name	Terminology used in documentation	Firmware level required
Brocade 200E switch	16-port, 4 Gbps FC Switch	
Brocade 300 switch	24-port, 8 Gbps FC Switch	Fabric OS v6.1.0 or later
Brocade 4012 switch	Embedded 12-port, 4 Gbps FC Switch	
Brocade 4016 switch	Embedded 16-port, 4 Gbps FC Switch	
Brocade 4018 switch	Embedded 18-port, 4 Gbps FC Switch	
Brocade 4020 switch	Embedded 20-port, 4 Gbps FC Switch	
Brocade 4024 switch	Embedded 24-port, 4 Gbps FC Switch	Fabric OS v5.3.1 or later
Brocade 4100 switch	32-port, 4 Gbps FC Switch	
Brocade 4900 switch	64-port, 4 Gbps FC Switch	Fabric OS v5.2.0 or later
Brocade 5000 switch	32-port, 4 Gbps FC Interop Switch	Fabric OS v5.2.1 or later
Brocade 5100 switch	40-port, 8 Gbps FC Switch	Fabric OS v6.1.0 or later
Brocade 5300 switch	80-port, 8 Gbps FC Switch	Fabric OS v6.1.0 or later
Brocade 5410 embedded switch	Embedded 12-port, 8 Gbps Switch	Fabric OS v6.1.0 or later
Brocade 5424 embedded switch	Embedded 24-port, 8 Gbps Switch	Fabric OS v6.1.0 or later
Brocade 5431 embedded switch	Embedded 16-port, 8 Gbps Stackable Switch	Fabric OS v7.2.0 or later

**TABLE 1** Fabric OS-supported hardware (continued)

Device name	Terminology used in documentation	Firmware level required
Brocade 5450 embedded switch	Embedded 16-port, 8 Gbps Switch	Fabric OS v6.2.0 or later
Brocade 5460 embedded switch	Embedded 24-port, 8 Gbps Switch	Fabric OS v6.1.0_emb or later
Brocade 5470 embedded switch	Embedded 24-port, 8 Gbps Switch	Fabric OS v6.1.0 or later
Brocade 5480 embedded switch	Embedded 24-port, 8 Gbps Switch	Fabric OS v6.1.0 or later
Brocade 6505 switch	24-port, 16 Gbps Edge switch	Fabric OS v7.0.1 or later
Brocade M6505 embedded switch	24-port, 16 Gbps embedded switch	Fabric OS v7.2.0 or later
Brocade 6510 switch	48-port, 16 Gbps switch	Fabric OS v7.0.0 or later
Brocade 6520 switch	96-port, 16 Gbps switch	Fabric OS v7.1.0 or later
Brocade 6542 switch	48-port, 16 Gbps switch	Fabric OS v7.4.0 or later
Brocade 6543 switch	24-port, 16 Gbps switch	Fabric OS v7.3.0 or later
Brocade 6547 embedded switch	48-port, 16 Gbps embedded switch	Fabric OS v7.2.0 or later
Brocade 7500 Extension switch	4 Gbps Router, Extension Switch	Fabric OS v5.1.0 or later
Brocade 7500E Extension switch	4 Gbps Extension Switch	Fabric OS v5.1.0 or later
Brocade AP7600 switch	4 Gbps 32-port Switch	Fabric OS v6.1.0 or later
Brocade 7800 switch	8 Gbps Extension Switch	Fabric OS v6.3.0 or later
Brocade 7840 switch	16 Gbps 24-FC port, 18 GbE port Switch	Fabric OS v7.3.0 or later
Brocade 8000 switch	8 Gbps 8-FC port, 10 GbE 24-DCB port Switch	Fabric OS v6.1.2_CEE
Brocade 8470 FCoE embedded switch	FCoE Embedded Switch	Fabric OS v6.3.1_CEE
Brocade VA-40FC switch	8 Gbps 40-port Switch	
Brocade Encryption Switch	8 Gbps Encryption Switch	Fabric OS v6.1.1_enc or later
Brocade 48000 director	Director Chassis	
Brocade 48000 director 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	Fabric OS v5.2.0 or later (FC4-48)
Brocade 48000 director with FR4-18i Blades	Director Chassis with 4 Gbps router, extension blades	Fabric OS v5.1.0 or later (FR4-18i)
Brocade 48000 director with FC4-16IP Blades	Director Chassis with 4 Gbps 8-FC port and 8 GbE iSCSI blades	Fabric OS v5.2.0 or later (FC4-16IP)
Brocade 48000 director with FC10-6 Blades	Director Chassis with 10 Gbps 6-port ISL blades	Fabric OS v5.3.0 or later (FC10-6)
Brocade DCX <sup>1,2</sup>	8-slot Backbone Chassis	Fabric OS v6.0.0 or later
Brocade DCX with FC8-16, FC8-32, and FC8-48 Blades <sup>1,2</sup>	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
Brocade DCX with FC8-64 Blades <sup>1,2</sup>	8-slot Backbone Chassis with 8 Gbps 64-FC port blades	Fabric OS v6.4.0
Brocade DCX with FR4-18i Blades <sup>1,2</sup>	8-slot Backbone Chassis with 4 Gbps Router, Extension blade	Fabric OS v6.0.0 or later
Brocade DCX with FC10-6 Blades <sup>1,2</sup>	8-slot Backbone Chassis with FC 10 - 6 ISL Blade	Fabric OS v6.2.0

<sup>1</sup> Professional can discover, but not manage, this device. This device cannot be used as a Seed switch.

<sup>2</sup> Professional Plus Trial and Licensed version can discover, but not manage this device. This device cannot be used as a Seed switch.

**TABLE 1** Fabric OS-supported hardware (continued)

Device name	Terminology used in documentation	Firmware level required
Brocade DCX with FS8-18 Blades <sup>1,2</sup>	8-slot Backbone Chassis with Encryption Blade	Fabric OS v6.1.1_enc or later
Brocade DCX with FX8-24 Blades <sup>1,2</sup>	8-slot Backbone Chassis with 8 Gbps 12-FC port, 10 GbE ports, 2-10 GbE ports blade	Fabric OS v6.3.1_CEE
Brocade DCX with FCoE10-24 Blades <sup>1,2</sup>	8-slot Backbone Chassis with 10 Gbps 24-port FCoE blade	Fabric OS v6.3.1_CEE
Brocade DCX-4S	4-slot Backbone Chassis	Fabric OS v6.0.0 or later
Brocade DCX-4S 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
Brocade DCX-4S with FC8-64 Blades	4-slot Backbone Chassis with 8 Gbps 64-FC port blades	Fabric OS v6.4.0
Brocade DCX-4S with FR4-18i Blades	4-slot Backbone Chassis with 4 Gbps Router, Extension blade	Fabric OS v6.2.0
Brocade DCX-4S with FC10-6 Blades	4-slot Backbone Chassis with FC 10 - 6 ISL Blade	Fabric OS v6.2.0
Brocade DCX-4S with FS8-18 Blades	4-slot Backbone Chassis with Encryption Blade	Fabric OS v6.1.1_enc or later
Brocade DCX-4S with FX8-24 Blades <sup>1,2</sup>	4-slot Backbone Chassis with 8 Gbps 12-FC port, 10 GbE ports, 2-10 GbE ports blade	Fabric OS v6.3.1_CEE
Brocade DCX-4S with FCoE10-24 Blades	4-slot Backbone Chassis with 10 Gbps 24-port FCoE blade	Fabric OS v6.3.0 or later
Brocade DCX 8510-4	16 Gbps 4-slot Backbone Chassis	Fabric OS v7.0.0 or later
Brocade DCX 8510-4 with FS8-18 Encryption Blades	16 Gbps 4-slot Backbone Chassis with Encryption blades	Fabric OS v6.1.1_enc or later
Brocade DCX 8510-4 with FC8-64 and FX8-24 Blades	16 Gbps 4-slot Backbone Chassis with 8 Gbps 64-port and 8 Gbps Router Extension blades	Fabric OS v7.0.0 or later
Brocade DCX 8510-4 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
Brocade DCX 8510-4 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
Brocade DCX 8510-4 with FC16-64 Blades	16 Gbps 4-slot Backbone Chassis with 16 Gbps 64-port blades	Fabric OS v7.3.0 or later
Brocade DCX 8510-8 <sup>1,2</sup>	16 Gbps 8-slot Backbone Chassis	Fabric OS v7.0.0 or later
Brocade DCX 8510-8 with FS8-18 Encryption Blades <sup>1,2</sup>	16 Gbps 8-slot Backbone Chassis with Encryption blades	Fabric OS v6.1.1_enc or later
Brocade DCX 8510-8 with FC8-64 and FX8-24 Blades <sup>1,2</sup>	16 Gbps 8-slot Backbone Chassis with 8 Gbps 64-port and 8 Gbps Router Extension blades	Fabric OS v6.4.0 or later
Brocade DCX 8510-8 with FC16-32 and FC16-48 Blades <sup>1,2</sup>	16 Gbps 8-slot Backbone Chassis with 16 Gbps 32-port and 16 Gbps 48-port blades	Fabric OS v7.0.0 or later
Brocade DCX-8510-8 with FCoE10-24 Blades <sup>1,2</sup>	16 Gbps 8-slot Backbone Chassis with 10 Gbps 24-port FCoE blade	Fabric OS v7.0.0 or later
Brocade DCX 8510-8 <sup>1,2</sup>	16 Gbps 8-slot Backbone Chassis with 16 Gbps 64-port blades	Fabric OS v7.3.0 or later

<sup>1</sup> Professional can discover, but not manage, this device. This device cannot be used as a Seed switch.

<sup>2</sup> Professional Plus Trial and Licensed version can discover, but not manage this device. This device cannot be used as a Seed switch.

**TABLE 1** Fabric OS-supported hardware (continued)

Device name	Terminology used in documentation	Firmware level required
Brocade Gen 6 platform (32-Gbps) fixed-port switch (Brocade G620)	64-port, 32 Gbps switch	Fabric OS v8.0.0 or later
Brocade Gen 6 platform (32-Gbps) fixed-port switch (Brocade G610)	24-port, 32 Gbps switch	Fabric OS v8.1.0 or later
Brocade X6-4 Director	32 Gbps, 4-slot Backbone Chassis	Fabric OS v8.0.1 or later
Brocade X6-8 Director <sup>1,2</sup>	32 Gbps, 8-slot Backbone Chassis	Fabric OS v8.0.1 or later
FA4-18 Application Platform Blade	Application Platform Blade	
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 <sup>3</sup>	FC 8 GB 32-port Blade	Fabric OS v7.0.1 or later
FC8-48 Blade <sup>3</sup>	FC 8 GB 48-port Blade	Fabric OS v6.2.0 or later
FC8-48E Blade	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	16 Gbps 32-port blade	Fabric OS v7.0.0 or later
FC16-48 Blade	16 Gbps 48-port blade	Fabric OS v7.0.0 or later
FC16-64 Blade	16 Gbps 64-port blade	Fabric OS v7.3.0 or later
FCoE10-24 Blade <sup>4</sup>	10 Gbps FCoE Port Router Blade	
FR4-18i Blade	4 Gbps Router Extension blade	Fabric OS v5.1.0 or later
FS8-18 Encryption Blade	Encryption Blade	Fabric OS v6.1.1_enc or later
FX8-24 Blade <sup>1,2</sup>	8 Gbps Extension Blade	
Brocade CPX6 Control Processor Blade <sup>5</sup>	Control Processor Blade	Fabric OS v8.0.1 or later
Brocade CR32-4 Core Blade	32 Gbps 8-port blade	Fabric OS v8.0.1 or later
Brocade CR32-8 Core Blade	32 Gbps 16-port blade	Fabric OS v8.0.1 or later
Brocade FC32-48 Port Blade	32 Gbps 48-port blade	Fabric OS v8.0.1 or later
Brocade SX6 Extension Blade	32 Gbps, Router Extension blade	Fabric OS v8.0.1 or later

## IronWare OS hardware and software support

The following firmware platforms are supported by this release of Network Advisor 14.2.1:

- BigIron 2.7.02e (sustaining mode) or later
- FastIron 7.2.0 or later
- NetIron 5.1.0 or later
- ServerIron (JetCore) 11.0 or later
- ServerIron ADX 12.2.0 or later

<sup>1</sup> Professional can discover, but not manage, this device. This device cannot be used as a Seed switch.

<sup>2</sup> Professional Plus Trial and Licensed version can discover, but not manage this device. This device cannot be used as a Seed switch.

<sup>3</sup> Only supported on the DCX 8510-4 and DCX 8510-8 chassis.

<sup>4</sup> Only supported on the DCX, DCX-4S, and DCX 8510-8 chassis.

<sup>5</sup> 16 Gbps devices do not support Fabric OS 8.0.0 and must directly upgrade to Fabric OS 8.0.1 from Fabric OS 7.4.X.

- Turbolron 4.2.0 or later

For platform-specific firmware requirements, refer to [Table 2](#).

The following table lists the hardware platforms supported by this release of Network Advisor 14.2.1, the terminology used in the documentation, as well as any specific firmware requirements.

**TABLE 2** IronWare OS-supported hardware

Device name	Terminology used in documentation	Firmware level required
<b>BigIron family</b>	Ethernet Chassis	BigIron 2.7.02e or 2.7.01b
BigIron RX-4 (BI-RX-4-AC)	Ethernet Chassis, 4 interface slots	BigIron 2.7.02e or 2.7.01b
BigIron RX-8 (BI-RX-8-AC)	Ethernet Chassis, 8 interface slots	BigIron 2.7.02e or 2.7.01b
BigIron RX-16 (BI-RX-16-AC-A)	Ethernet Chassis, 16 interface slots	BigIron 2.7.02e or 2.7.01b
Brocade 6910 Ethernet Access Switch	Ethernet Access Switch	release 2.0.2.7, loader version 1.0.1.3
<b>FastIron family</b>	Ethernet switch	See individual device.
FastIron CX 624S (FCX624S)	Ethernet L2/L3 Edge switch, 24 1-GbE RJ-45 ports	FastIron 06.0.00 and later
FastIron CX 648S (FCX648S)	Ethernet L2/L3 Edge switch, 48 1-GbE RJ-45 ports	FastIron 06.0.00 and later
FastIron CX 624S-HPOE (FCX624S-HPOE)	Ethernet L2/L3 Edge switch, 24 1-GbE RJ-45 ports, 24 POE+ ports	FastIron 06.0.00 and later
FastIron CX 648S-HPOE (FCX648S-HPOE)	Ethernet L2/L3 Edge switch, 48 1-GbE RJ-45 ports, 48 POE+ ports	FastIron 06.0.00 and later
FastIron CX 624S-F (FCX624S-F)	Ethernet L2/L3 Edge switch, 20 SFP ports	FastIron 06.0.00 and later
FastIron CX 624-E (FCX624-E)	Ethernet L2/L3 Edge switch, 24 1-GbE RJ-45 ports	FastIron 06.0.00 and later
FastIron CX 624-I (FCX624-I)	Ethernet L2/L3 Edge switch, 24 1-GbE RJ-45 ports	FastIron 06.0.00 and later
FastIron CX 648-E (FCX648-E)	Ethernet L2/L3 Edge switch, 48 1-GbE RJ-45 ports	FastIron 06.0.00 and later
FastIron CX 648-I (FCX648-I)	Ethernet L2/L3 Edge switch, 48 1-GbE RJ-45 ports	FastIron 06.0.00 and later
ICX 6610 Stackable switch family	Campus LAN Edge stackable switch	FastIron 07.0.3 and later Hyper Edge stacking requires FastIron 08.0.00 or later
ICX 6610-24 Stackable switch	24 RJ-45 ports Campus LAN Edge stackable switch	FastIron 07.0.3 and later Hyper Edge stacking requires FastIron 08.0.00 or later
ICX 6610-48 Stackable switch	48 RJ-45 ports Campus LAN Edge stackable switch	FastIron 07.0.3 and later Hyper Edge stacking requires FastIron 08.0.00 or later
ICX 6610-24F Stackable switch	24 SFP ports Campus LAN Edge stackable switch	FastIron 07.0.3 and later Hyper Edge stacking requires FastIron 08.0.00 or later
ICX 6610-24P Stackable switch	24 PoE ports Campus LAN Edge stackable switch	FastIron 07.0.3 and later Hyper Edge stacking requires FastIron 08.0.00 or later
ICX 6610-48P Stackable switch	48 PoE ports Campus LAN Edge stackable switch	FastIron 07.0.3 and later

**TABLE 2** IronWare OS-supported hardware (continued)

Device name	Terminology used in documentation	Firmware level required
		Hyper Edge stacking requires FastIron 08.0.00 or later
ICX 6430-24 switch	24-port Campus LAN switch	FastIron 07.4.00 and later
ICX 6430-24-HPOE switch	24-port Campus LAN HPOE switch	FastIron 07.4.00 and later
ICX 6430-48 switch	48-port Campus LAN switch	FastIron 07.4.00 and later
ICX 6430-48-HPOE switch	48-port Campus LAN HPOE switch	FastIron 07.4.00 and later
ICX 6450 stacking switch	Campus LAN stacking switch	FastIron 08.0.00 or later
ICX 6450-24 switch	24-port Campus LAN switch	FastIron 07.4.00 and later
ICX 6450-24 Base L3 router	24-port Campus LAN Base L3 router	FastIron 07.4.00 and later
ICX 6450-24 Base router	24-port Campus LAN Base router	FastIron 07.4.00 and later
ICX 6450-24 Premium router	24-port Campus LAN Premium router	FastIron 07.4.00 and later
ICX 6450-24-HPOE switch	24-port Campus LAN HPOE switch	FastIron 07.4.00 and later
ICX 6450-24-HPOE Base L3 router	24-port Campus LAN HPOE Base L3 router	FastIron 07.4.00 and later
ICX 6450-24-HPOE Base router	24-port Campus LAN HPOE Base router	FastIron 07.4.00 and later
ICX 6450-24-HPOE Premium router	24-port Campus LAN HPOE Premium router	FastIron 07.4.00 and later
ICX 6450-48 switch	48-port Campus LAN switch	FastIron 07.4.00 and later
ICX 6450-48 Base L3 router	48-port Campus LAN Base L3 router	FastIron 07.4.00 and later
ICX 6450-48 Base router	48-port Campus LAN Base router	FastIron 07.4.00 and later
ICX 6450-48 Premium router	48-port Campus LAN Premium router	FastIron 07.4.00 and later
ICX 6450-48-HPOE switch	48-port Campus LAN HPOE switch	FastIron 07.4.00 and later
ICX 6450-48-HPOE Base L3 router	48-port Campus LAN HPOE Base L3 router	FastIron 07.4.00 and later
ICX 6450-48-HPOE Base router	48-port Campus LAN HPOE Base router	FastIron 07.4.00 and later
ICX 6450-48-HPOE Premium router	48-port Campus LAN HPOE Premium router	FastIron 07.4.00 and later
ICX 6450 IronStack switch	48-port Campus LAN switch	FastIron 07.4.00 and later Hyper Edge stacking requires FastIron 08.0.00 or later
ICX 6430 IronStack switch	24-port Campus LAN switch	FastIron 07.4.00 and later
ICX 6430 IronStack Base L3 router	Campus LAN Base L3 router	FastIron 07.4.00 and later
ICX 6430 IronStack Base router	Campus LAN Base router	FastIron 07.4.00 and later
ICX 6430 IronStack Premium router	Campus LAN Premium router	FastIron 07.4.00 and later
ICX 7250-24 switch	24-port Campus LAN switch	FastIron 08.0.30 and later
ICX 7250-24 Base L3 router	24-port Campus LAN Base L3 router	FastIron 08.0.30 and later
ICX 7250-24 router	24-port Campus LAN router	FastIron 08.0.30 and later
ICX 7250-24-HPOE switch	24-port Campus LAN HPOE switch	FastIron 08.0.30 and later
ICX 7250-24-HPOE Base L3 router	24-port Campus LAN HPOE Base L3 router	FastIron 08.0.30 and later
ICX 7250-24-HPOE Base router	24-port Campus LAN HPOE Base router	FastIron 08.0.30 and later
ICX 7250-48 switch	48-port Campus LAN switch	FastIron 08.0.30 and later
ICX 7250-48 Base L3 router	48-port Campus LAN Base L3 router	FastIron 08.0.30 and later
ICX 7250-48 router	48-port Campus LAN router	FastIron 08.0.30 and later
ICX 7250-48-HPOE switch	48-port Campus LAN HPOE switch	FastIron 08.0.30 and later
ICX 7250-48-HPOE Base L3 router	48-port Campus LAN HPOE Base L3 router	FastIron 08.0.30 and later



**TABLE 2** IronWare OS-supported hardware (continued)

Device name	Terminology used in documentation	Firmware level required
ICX 7250-48-HPOE Base router	48-port Campus LAN HPOE Base router	FastIron 08.0.30 and later
ICX 7250-24G switch	24-port 1-GbE Campus LAN switch	FastIron 08.0.30 and later
ICX 7250-24G Base L3 router	24-port 1-GbE Campus LAN Base L3 router	FastIron 08.0.30 and later
ICX 7250-24G router	24-port 1-GbE Campus LAN router	FastIron 08.0.30 and later
ICX 7450-24 switch	24-port Campus LAN switch	FastIron 08.0.20 and later
ICX 7450-24 Base L3 router	24-port Campus LAN Base L3 router	FastIron 08.0.20 and later
ICX 7450-24 router	24-port Campus LAN router	FastIron 08.0.20 and later
ICX 7450-24-HPOE switch	24-port Campus LAN HPOE switch	FastIron 08.0.20 and later
ICX 7450-24-HPOE Base L3 router	24-port Campus LAN HPOE Base L3 router	FastIron 08.0.20 and later
ICX 7450-24-HPOE Base router	24-port Campus LAN HPOE Base router	FastIron 08.0.20 and later
ICX 7450-32ZP	24-port 1-GbE or 8-port 2.5-GbE	FastIron 08.0.40 and later
ICX 7450-32ZP switch	24-port 1-GbE or 8-port 2.5-GbE switch	FastIron 08.0.40 and later
ICX 7450-32ZP Base router	24-port 1-GbE or 8-port 2.5-GbE Base router	FastIron 08.0.40 and later
ICX 7450-32ZP router	24-port 1-GbE or 8-port 2.5-GbE router	FastIron 08.0.40 and later
ICX 7450-48 switch	48-port Campus LAN switch	FastIron 08.0.20 and later
ICX 7450-48 Base L3 router	48-port Campus LAN Base L3 router	FastIron 08.0.20 and later
ICX 7450-48 router	48-port Campus LAN router	FastIron 08.0.20 and later
ICX 7450-48-HPOE switch	48-port Campus LAN HPOE switch	FastIron 08.0.20 and later
ICX 7450-48-HPOE Base L3 router	48-port Campus LAN HPOE Base L3 router	FastIron 08.0.20 and later
ICX 7450-48-HPOE Base router	48-port Campus LAN HPOE Base router	FastIron 08.0.20 and later
ICX 7450-48F switch	48 SFP ports Campus LAN switch	FastIron 08.0.20 and later
ICX 7450-48F Base L3 router	48 SFP ports Campus LAN Base L3 router	FastIron 08.0.20 and later
ICX 7450-48F router	48 SFP ports Campus LAN router	FastIron 08.0.20 and later
ICX 7750-26Q switch	26 10/40 GbE QSFP+ ports	FastIron 08.0.10 and later
ICX 7750-48F switch	48 1/10 GbE SFP+ ports and six 10/40 GbE QSFP+ ports	FastIron 08.0.10 and later
ICX 7750-48C switch	48 1/10 GbE RJ-45 ports and six 10/40 GbE QSFP+ ports	FastIron 08.0.10 and later
ICX 7750 and ICX 7450	Campus Fabric	FastIron 08.0.40 and later
FastIron GS	Ethernet L2/L3 Access switch	
FastIron GS-STK	Ethernet L2/L3 Access switch, stackable	
FastIron LS	Enterprise LAN switch	
FastIron LS-STK	Enterprise LAN switch, stackable	
FastIron SuperX/SX	Enterprise LAN chassis	FSX 02.4.00 and later
FastIron SX 800 and FastIron SX 1600		
FastIron 8-port 10 GbE SFP Blade	8-port 10 GbE SFP Blade	
FastIron 24-port Fiber SFP GbE Blade	24-port Fiber SFP GbE Blade	
FastIron 24-port GbE Cu Blade	24-port GbE Cu Blade	
FastIron 2-port 10GbE SFP+ Blade	2-port 10GbE SFP+ Blade	
FastIron Edge Switch X-Series	Enterprise LAN Edge switch	
FastIron Edge X 424	Enterprise LAN Edge switch, 24 10/100/1000 Mbps ports	

**TABLE 2** IronWare OS-supported hardware (continued)

Device name	Terminology used in documentation	Firmware level required
FastIron Edge X 624	Enterprise LAN Edge switch, 24 10/100/1000 Mbps ports	
FastIron Edge X 448	Enterprise LAN Edge switch, 48 10/100/1000 Mbps ports	
FastIron Edge X 648	Enterprise LAN Edge switch, 48 10/100/1000 Mbps ports	
FastIron Edge X 424HF	Enterprise LAN Edge switch, 20 100/1000 Mbps SFP ports	
FastIron Edge X 624HF	Enterprise LAN Edge switch, 20 100/1000 Mbps SFP ports	
FastIron WS devices	Enterprise Campus switch	
Motorola Controllers RFS4000 series	Wireless controller	Mobility 5.1
Motorola Controllers RFS6000 series	Wireless controller	Mobility 5.1
Motorola Controllers RFS7000 series	Wireless controller	Mobility 5.1
Motorola Access Point 7131	Wireless access point	Mobility 4.1.1 (standalone mode) Mobility 5.1 <sup>6</sup> (adaptive mode)
Motorola Access Point 7131N	Wireless access point	Mobility 4.1.1 <sup>6</sup> (standalone mode) Mobility 5.1 <sup>6</sup> (adaptive mode)
Motorola Access Point 5181	Wireless access point	Mobility 2.5.X (standalone mode) Mobility 5.1 <sup>6</sup> (adaptive mode)
Motorola Access Point 6511	Wireless access point	Mobility 5.1 <sup>6</sup> (adaptive mode)
Ruckus SmartZone 100	Wireless controller	3.1.1.0.442
Ruckus R500	Wireless access point	3.1.1.0.442
Ruckus R700	Wireless access point	3.1.1.0.442
<b>NetIron family</b>	Ethernet routers	NetIron 5.0.0 or 5.0.1
NetIron MLX (Supported regardless of license configuration)	Ethernet router	NetIron 5.0.0 or 5.0.1
NetIron MLXe (Supported regardless of license configuration)	Ethernet Core router	NetIron 5.0.0 or 5.0.1
NetIron XMR (Supported regardless of license configuration)	Ethernet Backbone router	NetIron 5.0.0 or 5.0.1
NetIron CES 2048CX (NI-CES-2048CX-AC) (Supported regardless of license configuration)	Ethernet Carrier router	NetIron 5.0.0 or 5.0.1
NetIron CER (Supported regardless of license configuration)	Ethernet Edge router	NetIron 5.0.0 or 5.0.1
NetIron XMR/MLX 2-Port 100GbE Module	2-Port 100-GbE Module	NetIron 5.7.0
NetIron XMR/MLX 20-port 10GbE Module	20-port 10-GbE Module	NetIron 5.7.0
NetIron MLX 4-Port 10GbE Module	4-port 10-GbE Module	NetIron 5.8.0

<sup>6</sup> The Management application cannot discover or manage wireless access points running Mobility 5.1.

**TABLE 2** IronWare OS-supported hardware (continued)

Device name	Terminology used in documentation	Firmware level required
NetIron MLX MR2 Module	Management Module	NetIron 5.8.0
NetIron MLX 4-port 10 GbE IPSEC-M	4-port 10-GbE IPSEC-M Blade	NetIron 5.8.0
NetIron MLX 2-Port 100-GbE (X2) CFP2	2-port 100-GbE (X2) CFP2 Blade	NetIron 5.8.0
NetIron MLX 20-Port 10-GbE/1GBE (X2)	20-port 10-GbE (X2) Blade	NetIron 5.8.0
<b>ServerIron family</b>	Application product	
ServerIron ADX 1000	Application switch	
ServerIron ADX 1000F	Application Fiber switch	ADX 12.3.03 or later
ServerIron ADX 4000	4U Application Delivery chassis	ADX 12.1.00 or later
ServerIron ADX 10000	10U Application Delivery chassis	ADX 12.1.00 or later
<b>Turbolron family</b>	Data Center switch	4.1.00d or 4.2.00 or later
Turbolron 24X (T1-24X-AC)	Data Center switch	4.1.00d or 4.2.00 or later
Brocade 6650 Switch	Data Center switch	FastIron 7.5 and later
Brocade 6650 Base L3 Router	Data Center base L3 router	FastIron 7.5 and later
Brocade 6650 Router	Data Center router	FastIron 7.5 and later

## Network OS hardware and software support

Network Advisor 14.2.1 supports the Network OS 4.1.0 or later firmware platform. For platform-specific firmware requirements, if any, refer to the [Table 3](#).

[Table 3](#) lists the hardware platforms supported by this release of Network Advisor 14.2.1, the terminology used in the documentation, as well as any specific firmware requirements.

**TABLE 3** Network OS-supported hardware

Device name	Terminology used in documentation	Firmware level required
Brocade VDX 2730 10 Gbps connection blade	VDX 2730 10 Gbps connection blade	2.1.1_fuj
Brocade VDX 2740 switch	VDX 2740 switch	4.0.0_bbd
Brocade VDX 2746 switch	VDX 2746 switch	6.0 or later
Brocade VDX 6710 switch	VDX 6710 switch	2.1 or later
Brocade VDX 6720-24 switch	VDX 6720-24 switch	2.1 or later
Brocade VDX 6720-60 switch	VDX 6720-60 switch	2.1 or later
Brocade VDX 6730-32 switch	VDX 6730-32 switch	2.1 or later
Brocade VDX 6730-76 switch	VDX 6730-76 switch	2.1 or later
Brocade VDX 6740 switch	VDX 6740 switch	4.0 or later
Brocade VDX 6740T switch	VDX 6740T switch	4.0 or later
Brocade VDX 6740T-1G switch	VDX 6740T-1G switch	4.1 or later
Brocade VDX 6940-144S switch	VDX 6940-144S switch	6.0.1 or later
Brocade VDX 6940-36Q switch	VDX 6940-36 switch	6.0 or later
Brocade VDX 8770-4 switch	VDX 8770-4 switch	3.0 or later
Brocade VDX 8770-8 switch	VDX 8770-8 switch	3.0 or later
Brocade VDX 8770 with 40G/10G Base-T/ 100G by line card	VDX 8770 switch with 40G/10G Base-T/ 100G by line card	4.1 or later

## HBA hardware and software support

The Adapter Software 3.0.0.0 or later is supported by this release of Network Advisor 14.2.1.

The following table lists the hardware platforms supported by this release of Network Advisor 14.2.1.

**TABLE 4** HBA-supported hardware

Device name	Terminology used in documentation	Firmware level required
Brocade 415 Host Bus Adapter	4 Gbps 1-port HBA	
Brocade 425 Host Bus Adapter	4 Gbps 2-port HBA	
Brocade 815 Host Bus Adapter	4 Gbps 1-port HBA	
Brocade 825 Host Bus Adapter	8 Gbps 2-port HBA	
Brocade 1860 Fabric Adapter	16 Gbps FC HBA mode 10 Gbps CNA mode 10 Gbps NIC mode	Adapter Software 3.0.0.0 or later
Brocade 1867 HBA	16 Gbps Mezzanine HBA	Adapter Software 3.0.3.0 or later
Emulex LPe12002-M8	8 Gbps 2-port HBA	
Emulex LPe16002B	16 Gbps 2-port HBA	
QLogic QLE2562-CK	8 Gbps 2-port FC HBA x4 PCIe	
QLogic QLE2672-CK	PCI Express 3.0 x4 / PCI Express 2.0 x8 low profile 16 Gbps Fibre Channel x 2	

## What's new in this document

The following changes have been made since this document was last released:

- Information that was added:
  - None.
- Information that was changed:
  - Updated release version wherever applicable.
- Information that was deleted:
  - None.

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

# Installation

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## System requirements

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

- [Server and client operating system requirements](#) on page 21
- [Operating system cache requirements](#) on page 24
- [Browser requirements](#) on page 24
- [Client and server system requirements](#) on page 25

## Server and client operating system requirements

[Table 5](#) summarizes the required operating systems (OS) for servers and the packages supported by each OS version.

### 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

Beginning with Brocade Network Advisor 14.0.0, the 32-bit installer is not supported.

### NOTE

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

**TABLE 5** Server operating system requirements

Operating system	Version	Guest OS version	Supported packages
Windows ®	<ul style="list-style-type: none"><li>• 2008 R2 SP1 Data Center Edition (x86 64-bit)</li><li>• 2008 R2 SP1 Standard Edition (x86 64-bit)</li><li>• 2008 R2 SP1 Enterprise Edition (x86 64-bit)</li><li>• 2012 R2 Data Center Edition (x86 64-bit)</li><li>• 2012 Standard Edition (x86 64-bit)</li><li>• 10 Enterprise (x86 64-bit)</li></ul>		SAN with SMI Agent IP only SMI Agent only SAN with SMI Agent + IP
Linux ®	<ul style="list-style-type: none"><li>• RedHat Enterprise 6.8 Advanced (x86 64-bit)</li></ul>		SAN with SMI Agent

**TABLE 5** Server operating system requirements (continued)

Operating system	Version	Guest OS version	Supported packages
	<ul style="list-style-type: none"> <li>RedHat Enterprise 7.0 Advanced (x86 64-bit)</li> <li>RedHat Enterprise 7.1 Advanced (x86 64-bit)</li> <li>RedHat Enterprise 7.2 Advanced (x86 64-bit)</li> <li>SuSE Enterprise Server 11.3 (x86 64-bit)</li> <li>SuSE Enterprise Server 12 (x86 64-bit)</li> <li>Oracle Enterprise 7.0 (x86 64-bit)</li> <li>Oracle Enterprise 7.1 (x86 64-bit)</li> <li>Oracle Enterprise 7.2 (x86 64-bit)</li> </ul>		IP only SMI Agent only SAN with SMI Agent + IP
Guest VMs	<ul style="list-style-type: none"> <li>VMware® ESXi 5.5</li> <li>VMware® ESXi 6.0</li> <li>Microsoft Hyper-V (Hyper-V Server 2008 R2, Windows Server 2012, Windows Server 2012 R2 Data Center)</li> <li>KVM RH 6.8</li> <li>KVM RH 7.0</li> <li>KVM RH 7.1</li> <li>KVM RH 7.2</li> </ul>	Supports all server OS versions available for Windows and Linux.	Supports all packages available for Windows and Linux.

Table 6 summarizes the required OS for clients. Network Advisor clients are supported on 64-bit Windows and Linux systems.

**TABLE 6** Client operating system requirements

Operating system	Version	Guest OS version
Windows ®	<ul style="list-style-type: none"> <li>2008 R2 SP1 Data Center Edition (x86 64-bit)</li> <li>2008 R2 SP1 Standard Edition (x86 64-bit)</li> <li>2008 R2 SP1 Enterprise Edition (x86 64-bit)</li> <li>2012 R2 Data Center Edition (x86 64-bit)</li> <li>2012 R2 Standard Edition (x86 64-bit)</li> <li>7 Enterprise (x86 64-bit)</li> <li>8.1 Enterprise (x86 64-bit)</li> <li>10 Enterprise (x86 64-bit)</li> </ul>	
Linux ®	<ul style="list-style-type: none"> <li>RedHat Enterprise 6.8 Advanced (x86 64-bit)</li> <li>RedHat Enterprise 7.0 Advanced (x86 64-bit)</li> </ul>	

**TABLE 6** Client operating system requirements (continued)

Operating system	Version	Guest OS version
	<ul style="list-style-type: none"> <li>RedHat Enterprise 7.1 Advanced (x86 64-bit)</li> <li>RedHat Enterprise 7.2 Advanced (x86 64-bit)</li> <li>SuSE Enterprise Server 11.3 (x86 64-bit)</li> <li>SuSE Enterprise Server 12 (x86 64-bit)</li> <li>Oracle Enterprise 7.0 (x86 64-bit)</li> <li>Oracle Enterprise 7.1 (x86 64-bit)</li> <li>Oracle Enterprise 7.2 (x86 64-bit)</li> </ul>	
Guest VMs	<ul style="list-style-type: none"> <li>VMware® ESXi 5.5</li> <li>VMware® ESXi 6.0</li> <li>Microsoft Hyper-V (Hyper-V Server 2008 R2, Windows Server 2012, Windows Server 2012 R2 Data Center)</li> <li>KVM RH 6.8</li> <li>KVM RH 7.0</li> <li>KVM RH 7.1</li> <li>KVM RH 7.2</li> </ul>	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 Network Advisor server. Paging space should be equal to or exceed the physical memory size.

### NOTE

You must allocate 2 GB client memory and 6 GB server memory, to efficiently manage more than 9,000 SAN ports or 200 IP devices. It is not recommended to allocate more than 6 GB of server memory.

### NOTE

If you use sFlow, it is recommended that you add an additional 100 GB of disk space.

### 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 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.

The following table summarizes the memory, host, and disk space requirements for a remote client.

**TABLE 7** Memory, host, and disk space requirements for remote client

Resources	Small	Medium	Large
Installed Memory	4 GB	4 GB	8 GB

**TABLE 7** Memory, host, and disk space requirements for remote client (continued)

Resources	Small	Medium	Large
Processor Core Count (including physical and logical cores)	2 (1 physical, 2 virtual)	4 (2 physical, 4 virtual)	8 (4 physical, 8 virtual)
Disk Space	1 GB	1 GB	1 GB

The following table summarizes the minimum system requirements for server (plus 1 client) installation.

**TABLE 8** Minimum system requirements for server (plus 1 client) installation

Resources	Professional Edition	Professional Plus or Enterprise Edition
Installed Memory	6 GB	6 GB
Processor Core Count (including physical and logical cores)	2	2
Disk Space	10 GB	20GB

The following table summarizes the recommended system requirements for server (plus 1 client) installation.

**TABLE 9** 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, 2 virtual)	4 (2 physical, 4 virtual)	8 (4 physical, 8 virtual)
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 systems is 1 GB for minimum paging file size and 4 GB for maximum paging file size.

### NOTE

For networks with more than 9,000 ports, the recommended memory allocation is 6 GB.

**TABLE 10** Linux swap space requirements

Installed physical memory (RAM) size	Recommended swap size
Greater than 4 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 times the amount of RAM

## Browser requirements

The launch of 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 (except Windows 8 and 2012)
  - Firefox 24 or later on Linux
  - Google Chrome 33 on Windows



- Edge 13 on Windows 10
- Java Plug-ins: For the current supported JRE version for 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>.

## Launching Network Advisor in IE and Edge browsers

You can launch the Network Advisor in Internet Explorer 10 or later and in Edge browsers using literal IPv6 address.

We recommend `xxxx-xxxx-xxxx-xxxx-xxxx-xxxx-xxxx-xxxx.ipv6-literal.net` literal IPv6 address format instead using the standard `[xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx]` IPv6 format.

## Client and server system requirements

**NOTE**

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.

Network Advisor has the following client and server system requirements:

- In the Professional edition, a single server supports a single client, which must be a local client only.
- 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 *Brocade 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 14.2.1**, then click **Brocade Network Advisor 14.2.1 Brocade GA**.

To download the documentation, click **Brocade Network Advisor 14.2.1 Manuals** and then select the manual you want to download.

9. Select one of the following links to download the software:
  - Network Advisor 14.2.1 GA for Windows
  - Network Advisor 14.2.1 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 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 21.
- To avoid errors, close all instances of the application before beginning the installation or uninstallation procedures.

For a 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 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 30.

- 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 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 28).
  3. Enable the SELinux security policy using the `setenforce 1` command.

## Troubleshooting in Linux SUSE 11.3

1. 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”.
  - Install libreadline.so.6.
  - Launch terminal
  - Enter `wget http://download.opensuse.org/distribution/11.3/repo/oss/suse/x86_64/libreadline6-6.1-8.1.x86_64.rpm`
  - `rpm -Uvh libreadline6-6.1-8.1.x86_64.rpm --replacepks`  
libreadline.so.6, libreadline.so.6.1 will be created in /lib64 folder
  - Install the application (Refer to [Installing the application](#) on page 28).
2. 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”.
  - Copy libreadline.so.6.1 and libreadline.so.6 from /lib64 to /usr/local/lib
  - `cp /lib64/libreadline.so.* /usr/local/lib`
  - Go to folder path `cd /usr/local/lib`
  - Enter `#ldconfig`
  - Enter `#apt-get update`
  - Install the application (Refer to [Installing the application](#) on page 28).

## Prerequisites for starting SLP services in Linux servers

To start SLP services in Linux servers, Linux servers needs to be installed with the following libraries:

- Linux-vdso.so.1
- Libcrypto.so.1.0.0
- Libpthread.so.0
- Libm.so.6, Libc.so.6
- Libdl.so.2
- Libz.so.1
- Ld-linux-x86-64.so.2

Follow the steps to install libraries:

1. Install **glibc**, to install libc.so.6, libdl.so.2, libpthread.so.0, linux-vdso.so.1, libm.so.6, and ld-linux.so.2 use **yum install glibc** command.
2. Install **zlib**, to install libz.so.1 use **yum install zlib** command.
3. Install Openssl, to install ibcrypto.so.6 use **yum provides libcrypto.so.6** command. This command lists the compatible packages and you can install anyone of the package using **yum install <package>** command. For example, **yum install openssl098e-0.9.8e-29.el7\_2.3\***.

**NOTE**

The above libraries are compatible for both 32-bit and 64 bit, as the SLP service is 32-bit.

## 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 26). If you are migrating data, refer to [Installation](#) on page 21.

**NOTE**

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

**NOTE**

On UNIX systems, you must be the root user to install 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\install.exe* file and select **Run as administrator**.
  - For UNIX systems, complete the following steps:
    1. On the Management application server, navigate to the following directory: *Download\_Location /Application\_Name /UNIX\_Platform /bin*
    2. Type the following at the command line: `ulimit -n 2000`
    3. 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 *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 the installation fails.

If the local host is not mapped to the loopback address, an error message displays. You must map the loopback address to the local host (refer to [Mapping the loopback address to the local host](#) on page 29) before you configure the application.

If the local host 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 [Installation](#) on page 21.
- If you are upgrading from a previous version and need to migrate data, refer to [Installation](#) on page 21.

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/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 [Installation](#) on page 21.
- If you are upgrading from a previous version and need to migrate data, refer to [Installation](#) on page 21.

# 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. Headless installation performs the actual installation; however, you must use the configuration wizard in graphical user interface mode to copy data and settings, configure the FTP or SCP server, configure IP, and configure server ports.

Make sure all system requirements have been met prior to installation. For specific system requirements, refer to [System requirements](#) on page 21.

## 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 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 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 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 may 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 will 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 25).

- 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 -HEADLESS_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 [Installation](#) on page 21.
- If you are upgrading from a previous version and need to migrate data, refer to [Installation](#) on page 21.

## 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 (containing *install.txt* and *system.txt*) to Technical Support. This file will help Technical Support isolate the issue.

## Collecting supportSave information on Windows and Linux

To collect server supportSave information, run the script file located at `<BNA_HOME>\bin\commandsupportsave`. Once the script file is triggered, the server supportsave information is collected at `<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

The client bundle is supported on a 64-bit OS only. The download client is bundled with the Network Advisor server Java runtime environment package. To download the client bundle, the browser operating system and the server operating system must be the same.

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 appropriate `.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`.

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

**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.

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 Network Advisor application displays.



# Network Advisor Configuration

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## Configuring Network Advisor

If you have not installed the application, refer to [Installation](#) on page 21. If you are migrating data, refer to [Data Migration](#) on page 57.

To configure 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 Network Advisor to 14.2.1 after you complete the 14.2.1 configuration.

To migrate data from a previous management application version, refer to [Data Migration](#) on page 57 .

3. Select one of the following options on the **Package** screen and click **Next**.
  - **SAN with SMI Agent**
  - **IP**
  - **SAN with SMI Agent + IP** (default)
  - **SMI Agent Only** (Go to [Configuring Network Advisor](#).)

### NOTE

SMI Agent is not supported in a Professional edition configuration.

### NOTE

If you choose to install only the SMI Agent, the configuration defaults to the SAN Enterprise package. When you open the Network Advisor client, a **License** dialog box 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 effect. 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 DCX and DCX 8510-8 Backbone chassis require the Enterprise edition.

- Network Advisor - Licensed version (default)

Continue with [Configuring Network Advisor](#). Requires you to enter a license key during configuration to enable features and configuration.

- Network Advisor - 120 days Trial

Go to [Configuring Network Advisor](#). Enables you to manage IP, SAN, or SAN and IP networks from a single interface for 120 days.

**ATTENTION**

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

- Network Advisor - Professional

Go to [Configuring Network Advisor](#). Bundled with Fabric OS and IronWare OS devices to manage small IP, SAN, or SAN and IP networks from a single interface. SMI Agent is not available with the Professional edition.

5. (Licensed software only) If you are installing licensed software, browse to the license file (.xml) and click **Next** on the **Server License** screen.

You can also copy (Ctrl+C) and paste (Ctrl+V) the license key into the **License Key** field. The **License Key** field is not case-sensitive.

**NOTE**

If you use the SAN with SMI Agent +IP Enterprise license key, Event-based collection for IP discovery will be turned off.

If you use the SAN with SMI Agent +IP Enterprise license key, a message displays. Click **No** on the message to remain on the **Server License** screen and edit the license key. Click **Yes** to close the message and continue with [Configuring Network Advisor](#).

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, or 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 *Brocade Network Advisor User Manual* or online help.
  - Select **Built-in SCP/SFTP Server** to configure an internal SCP or SFTP server The internal SCP or 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 *Brocade 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 *Brocade 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, or 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 the single quote (') are allowed.

b) Click **Next**.

You can configure the external FTP server settings from the **Options** dialog box.

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)
- Network OS configuration backup through FTP
- 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 and Network OS products
  - **FTP** button in the **Technical Support Repository** dialog box
  - Technical supportSave of Fabric OS, Network OS, and host products through FTP
- a) Select an address from the **Server IP Configuration** list.

**NOTE**

For Professional software, the **Server IP Configuration** address is set to "localhost" by default. You cannot change this address.

**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 "host name" 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 addresses 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 addresses 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 51.

- c) Click **Next**.

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

**FIGURE 1** Server Configuration screen

Network Advisor requires Web Server, Database, Syslog and SNMP port numbers, as well as 15 consecutive port numbers from a Starting port #. On enabling HTTP redirection, port # 80 is used to redirect the HTTP requests to HTTPS.

Web Server Port # (HTTPS)

Redirect HTTP Requests to HTTPS ☒

Database Port #

Starting Port #

Syslog Port #

SNMP Port #

Change this configuration by selecting Server > Options > Server Port from the application.

- 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 *Brocade 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 (the default is 24600). If the default port is changed to some other port number, restart the server, 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 Professional software, the server requires 11 consecutive free ports beginning with the starting port number.

**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 44.

- 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**.

If you are configuring Professional software, go to [Configuring Network Advisor](#).

If you are configuring IP Enterprise, go to [Configuring Network Advisor](#).

10. (SAN with SMI Agent + IP or 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)**

If you are configuring IP Enterprise, continue with [Configuring Network Advisor](#); otherwise, go to [Configuring Network Advisor](#).

12. (IP Enterprise) Select one of the following options on the **IP Network Size** screen and click **Next**:

**NOTE**

Port count is equal to the total number of all managed product ports.

- **Small (managing up to 1-20 products)**
- **Medium (managing up to 21-200 products)**
- **Large (managing up to 201-5050 products)**

13. Enable feature usage data transfer from the application by selecting the **Yes, I want to participate** option.

If you do not want to participate in feature usage data transfer, make sure the **No, Thank You** option is selected. You can stop participating at any time. To view an example of the usage data, click **View Example Data**.

To stop participating in feature usage data transfer after configuration, refer to [Product Improvement](#) on page 52.

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

15. 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 the 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 + IP or 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 relaunch the configuration wizard (refer to [Configuring an explicit server IP address](#) on page 51).

16. 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.

17. Click **Login**.

18. Click **OK** on the Network Advisor Login Banner.

## Accessing the Network Advisor interfaces

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

### Logging in to a server

You must log in to 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 in to 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

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 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 41.

The remote client requires Oracle JRE. For the currently supported JRE version for 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 Network Advisor server in the **Address** bar.
  - If the web server port number does not use the default (443 if is SSL enable; 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 Network Advisor, a **Start** menu shortcut is automatically created in the Network Advisor program directory.

For Linux systems, remote client shortcuts are not created.

- Select **Network Advisor (Server\_IP\_Address)** in the Network Advisor directory from the **Start** menu.

The Network Advisor web client login page displays.

2. Click **Desktop Client**.

The Network Advisor web start page displays.

3. Click the Network Advisor web start link.

The **Log In** dialog box displays.

4. Log in to 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**.



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 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 40.

## Launching the SMC on Windows

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

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

## 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 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 41.

The remote client requires Oracle JRE. For the currently supported JRE version for 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 Network Advisor server in the **Address** bar.
  - If the web server port number does not use the default (443 if SSL is 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 Network Advisor, a **Start** menu shortcut is automatically created in the Network Advisor program directory.

For Linux systems, remote client shortcuts are not created.

- Select *Network Advisor (Server\_IP\_Address)* in the Network Advisor directory from the **Start** menu.

The Network Advisor web client login page displays.

2. Click **Desktop Client**.

The 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.

1. 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.
2. 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, `ssanperformancestatsenable 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:

1. 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..`
2. 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:

1. 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`.

2. 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:

1. 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.`
2. 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 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 Network Advisor database.

To install the ODBC driver, complete the following steps.

1. Double-click `edb_psqlodbc.exe` located on the DVD (*DVD\_Drive/Network Advisor/odbc/Windows*).
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 Network Advisor database in the **Description** field.

9. Enter the name of the Network Advisor database in the **Database** field.
10. Select **enable** or **disable** from the **SSL Mode** list to specify whether to use SSL when connecting to the database.
11. Enter the IP address or host name of the 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 Network Advisor database.

To install the ODBC driver, complete the following steps.

1. Execute the following command in the terminal:

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

For 64-bit Linux systems, the installer file is located in DVD/BROCADE/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 Network Advisor (refer to [Installation](#) on page 21) 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 following datasource information:

```
[TestDB]
Description = PostgreSQL 9.5.1
Driver = /opt/PostgreSQL/psqlODBC/lib/psqlodbcw.so
Database = dcldb
Servername = 172.26.1.54
Username = dcadmin
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` file should automatically update the driver path. If the driver path is not updated, enter the following information:

```
[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/psqlODBC/lib/:$LD_LIBRARY_PATH`
2. Navigate to the Postgres ODBC library (default location is `opt/PostgreSQL/psqlODBC/lib/`).
3. Create a list of missing libraries by executing the following command: `ldd psqlodbcw.so` Missing files display as:  
`libodbc.so.1=> not found`
4. Find shared libraries with the same name as the missing library by executing the following command: `find -name libodbc.so*`
5. 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**.

6. 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://pcsc-lite.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](https://alioth.debian.org/frs/?group_id=30105).

The Encryption Manager Client within Network Advisor provides the binary code on both platforms for installation. You must uncompress or untar the file depending on the platform. The `thirdparty/pcsc-lite-1.4.101-linux-x86.tar.gz` file can be found on the 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 the 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 [Installing the smart card driver on the local client](#).

```
> 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 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 50.

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 48.

2. Run the following commands to support remote clients (Web Start).

```
> cd /usr/lib
> ln -s /opt/pcsc/lib/libpcsc-lite.so .
```

#### NOTE

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

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

## Detecting and correcting a default Linux smart card driver

#### NOTE

The steps to detect and correct a default Linux smart card driver apply 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 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 following example below shows a different pcscd.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 libpcsc-lite.so* -print
```

If the library libpcsc-lite.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 libpcsc-lite.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 libpcsc-lite.so
```

Use this copy for the soft link.

```
> ln -s /opt/pcsc/lib/libpcsc-lite.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 > Network Advisor 14.2.1 > Network Advisor Configuration**.
  - On UNIX systems, use the `sh Install_Home/bin/configwizard` command from the 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 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.

- b) Select an 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 addresses 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. (SAN with SMI Agent or SAN with SMI Agent + IP packages) Click **Next** on the **SMI Agent Configuration** screen.
9. Verify your Server Name on the **Server Configuration Summary** screen and click **Next**.
10. Click **Finish** on the **Start Server** screen.
11. Click **Yes** on the restart server confirmation message.
12. 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.

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

## Product Improvement

To improve its products, Brocade is collecting usage statistics from the field. If you agree to participate in the program, the Network Advisor server will transmit data back to the secure Brocade web server (HTTPS). The Brocade web server is hosted in a Brocade network.

Brocade collects the following usage data:

- Installation Details
  - The version information (such as, Major, Minor, Revision, and Patch)
  - The Edition (such as, Enterprise, Professional Plus, or Professional)
  - The Package (such as, SAN, IP, or SAN + IP)
  - Whether SSL is enabled or not
  - Generates a unique identifier based on the MAC address
  - The operating system (such as, Windows or Linux)
- User Actions
  - Top level menu actions
  - Tool bar actions
  - Right-click menu actions
- Feature Details
  - Feature name
  - Button identifier (such as, **OK** , **Help** , or **Cancel** and so on)

## Enabling product improvement data transfer

You can enable feature usage data transfer during installation or migration. For more information, refer to the [Installation](#) on page 21. You can also enable data transfer from the **Options** dialog box once your system is up and running.

To enable feature usage data transfer from the application, complete the following steps.

1. Select **Server** > **Options** .  
The **Options** dialog box displays.
2. Select **Product Improvement** in the **Category** list.
3. Select the **Yes, I want to participate** option.  
To view an example of the usage data, click **View Example Data** .
4. Click **OK** to save your selection and close the **Options** dialog box.

## Disabling product improvement data transfer

You can disable feature usage data transfer from the **Options** dialog box once your system is up and running.

To disable feature usage data transfer from the application, complete the following steps.

1. Select **Server** > **Options** .  
The **Options** dialog box displays.
2. Select **Product Improvement** in the **Category** list.
3. Select the **No, thank you** option.
4. Click **OK** to save your selection and close the **Options** dialog box.

## Data transfer

If you agree to participate in the program, these are the actions that occur on the client and server.

1. You log into the Network Advisor client.  
The main window displays.
2. The application automatically schedules a timer.  
The timer is configured with an initial delay of 5 minutes and an interval of 24 hours.
3. Once scheduled, the client triggers the scheduled data transfer.
4. The client checks the reachability of the Brocade web server for the data transfer to make sure that the client workstation has HTTP connectivity.  
If the Brocade web server is reachable, the client schedules the timer.
5. The client triggers the schedule to run in 5 minutes and then every 24 hours thereafter.
6. When the scheduled timer runs, the client requests the server to transfer the usage data.
7. The server determines the availability of the data based on the following details:
  - - Last transfer timestamp must be greater than 24 hours to avoid frequent data uploads.
  - Data must be available for transfer. Data availability is determined by the delta between the last data transfer and the current data.
8. The client requests a data transfer.

If data is available, the server nominates the client to transfer data. Once nominated, any further upload requests are denied.

### NOTE

If the nominated client's session is ended or stuck, the session is invalidated and the state is cleared.

9. The nominated client requests the server to prepare the data.
10. The server compiles the usage data text file into a zip file using the following naming convention:  
*UUID\_usagedata\_file\_creation\_timestamp* where UUID is the unique identification of the server based on the MAC address.
11. When the file is successfully created, the client changes the state of the data transfer to "Uploading" and transmits the data.  
The client transmits the data securely to the Brocade web server using the Apache HTTP Components third-party library. The client communicates with the Brocade web server using an authorization token.
12. When the transfer is complete, the client updates the Brocade web server database with the transfer status (success or failure).  
The client also triggers an application event with the following details: success or failure, source client IP address, and source user name.

## 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.





# Data Migration

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## Upgrading the license

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. The following tables list the available upgrade paths.

**TABLE 11** SAN upgrade paths

Current software release	To software release
SAN Professional	SAN Professional Plus or Licensed version SAN Enterprise Trial or Licensed version SAN + IP Professional Plus Licensed version SAN + IP Enterprise Licensed version
SAN Professional Plus Licensed version	SAN Enterprise Licensed version SAN + IP Enterprise Licensed version SAN + IP Professional Plus Licensed version
SAN Enterprise Trial	SAN Enterprise Licensed version SAN + IP Enterprise Licensed version

**TABLE 12** IP upgrade paths

Current software release	To software release
IP Professional	IP Base Trial or Licensed version SAN + IP Professional Plus Licensed version SAN + IP Enterprise Licensed version
IP Base Trial	IP Base Licensed version SAN + IP Enterprise Licensed version SAN + IP Professional Plus Licensed version
IP Base Licensed version (lower count)	IP Base Licensed version (higher count) SAN + IP Enterprise Licensed version

**TABLE 13** SAN + IP upgrade paths

Current software release	To software release
SAN + IP Professional	SAN + IP Professional Plus Licensed version SAN + IP Enterprise Trial or Licensed version

**TABLE 13** SAN + IP upgrade paths (continued)

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

1. Select **Help > License**.

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

2. Browse to the license file (.xml) and click **Update**.
3. Click **OK** on the **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 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 62.

#### NOTE

Network Advisor 14.0.x includes 14.0.0, 14.0.1, 14.0.2, and 14.0.3.

#### NOTE

Network Advisor 14.1.x includes 14.1.0, and 14.1.1.

#### NOTE

Network Advisor 14.2.x includes 14.2.0 and 14.2.1.

Direct migration is not supported on pre-12.3.X releases. The following table shows the migration paths from DCFM and INM.

**TABLE 14** DCFM and INM release migration path

	Network Advisor 14.2.1
DCFM 10.4.X	DCFM 10.4.X > Network Advisor 11.1.X > Network Advisor 12.0.X > Network Advisor 12.3.X Network Advisor 12.4.X Network Advisor 14.0.X
INM 3.3	INM 3.3.X > Network Advisor 11.0.X > Network Advisor 11.1.X > Network Advisor 12.0.X > Network Advisor 12.3.X Network Advisor 12.4.X Network Advisor 14.0.X

The following table shows the migration paths from Network Advisor 12.1.X or earlier releases.

**TABLE 15** Pre-12.1.X release migration path

	Network Advisor 14.2.1
Network Advisor 11.0.X	Network Advisor 11.0.X > Network Advisor 11.1.X > Network Advisor 12.0.X > Network Advisor 12.3.X Network Advisor 12.4.X Network Advisor 14.0.X
Network Advisor 11.1.X	Network Advisor 11.1.X > Network Advisor 12.0.X > Network Advisor 12.3.X Network Advisor 12.4.X Network Advisor 14.0.X
Network Advisor 11.2.X	Network Advisor 11.2.X > Network Advisor 12.0.X > Network Advisor 12.3.X Network Advisor 12.4.X Network Advisor 14.0.X
Network Advisor 11.3.x	Network Advisor 11.3.X > Network Advisor 12.0.X > network Advisor 12.1.X >

**TABLE 15** Pre-12.1.X release migration path (continued)

	Network Advisor 14.2.1
	Network Advisor 12.3.X Network Advisor 12.4.X Network Advisor 14.0.X
Network Advisor 12.0.x	Network Advisor 12.0.X > Network Advisor 12.1.x > Network Advisor 12.3.X Network Advisor 12.4.X Network Advisor 14.0.X
Network Advisor 12.1.x	Network Advisor 12.1.x > Network Advisor 12.3.X Network Advisor 12.4.X Network Advisor 14.0.X

[Supported migration paths](#) shows the direct migration paths from the Network Advisor 12.2.0 or later Professional, Trial, and Licensed versions. For the step-by-step migration procedure, refer to [Migrating data](#) on page 67.

**NOTE**

Data migration is not supported from 12.4.4 to 14.0.0.

**TABLE 16** Network Advisor version migration paths

Current version	Professional version	Trial version	Licensed Version	
		Enterprise	Professional Plus	Enterprise
Network Advisor 14.0.X Professional <sup>7</sup>	Yes	Yes	Yes	Yes
Network Advisor 14.0.X Professional Plus Licensed <sup>7</sup>	No	No	Yes	Yes
Network Advisor 14.0.X Enterprise trial <sup>7</sup>	No	Yes	No	Yes
Network Advisor 14.0.X Enterprise Licensed <sup>7</sup>	No	Yes	No	Yes
Network Advisor 14.1.X Professional	Yes	Yes	Yes	Yes
Network Advisor 14.1.X Professional Plus Licensed	No	No	Yes	Yes
Network Advisor 14.1.X Enterprise trial	No	Yes	No	Yes
Network Advisor 14.1.X Enterprise Licensed	No	Yes	No	Yes
Network Advisor 14.2.X Professional	Yes	Yes	Yes	Yes
Network Advisor 14.2.X Professional Plus Licensed	No	No	Yes	Yes
Network Advisor 14.2.X Enterprise trial	No	Yes	No	Yes
Network Advisor 14.2.X Enterprise Licensed	No	Yes	No	Yes

<sup>7</sup> Network path migration and migration from partially uninstalled data are not supported due to the upgrade of major postgres version from 9.2.9 to 9.4.4.

Table 17 shows the migration paths from SMI Agent only. For the step-by-step migration procedures, refer to [Migrating data](#) on page 67.

**TABLE 17** SMI Agent only migration paths

Current version	Professional version	Enterprise Trial version	Licensed Version		SMI Agent only
			Professional Plus	Enterprise	
Network Advisor 14.2.1 SMI Agent only	No	No	No	No	Yes

## DCFM migration paths

### NOTE

Before you migrate from DCFM to Network Advisor 11.0.X, 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 Network Advisor 14.2.X. You must first migrate to DCFM 10.4.X, then migrate to Network Advisor 11.1.X, then migrate to Network Advisor 12.0.X, then migrate to Network Advisor 12.2.X, then migrate to Network Advisor 12.3.X, then migrate to Network Advisor 12.4.X, then migrate to Network Advisor 14.0.X, and then migrate to Network Advisor 14.2.X.

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 Network Advisor 11.1.X, refer to Network Advisor Migration Guide for Network Advisor 11.1.X.

## INM migration paths

You cannot migrate directly from INM to Network Advisor 14.2.1. You must first migrate to Network Advisor 11.0.X, then migrate to Network Advisor 11.1.X, then migrate to Network Advisor 12.0.X, then migrate to Network Advisor 12.2.X, then migrate to Network Advisor 12.3.X, then migrate Network Advisor to 12.4.X, then migrate to Network Advisor 14.0.X, and then migrate to Network Advisor 14.2.X. To migrate from INM to Network Advisor 11.1.X, contact your customer representative.

## EFCM and Fabric Manager migration paths

You cannot migrate directly from EFCM or Fabric Manager to Network Advisor 14.2.1. To migrate from EFCM or Fabric Manager, you must first migrate to Network Advisor 11.0.X, then migrate to Network Advisor 11.1.X, then migrate to Network Advisor 12.0.X, then migrate to Network Advisor 12.2.X, then migrate to Network Advisor 12.3.X, then migrate to Network Advisor 12.4.X, then migrate to Network Advisor 14.0.X, and then migrate to Network Advisor 14.2.X.

# Pre-migration requirements

Before you install 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 [Pre-migration requirements](#).
- Check for and install the latest Java patches for your operating system. For the current supported JRE version for 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>.

- Make sure that you fully back up your current Management application data on your management server.
- Make sure you close all instances of the application before migrating.
- Make sure to install Network Advisor on the same system as your current Management application.
- Make sure minimum of free space is 1.5 times the size of the Management Application 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.
- If you are migrating within the same release or you are migrating from Professional to Licensed software, make sure to partially uninstall (refer to [Data Migration](#) 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 Network Advisor version on the same machine and migrate the partially uninstalled data. If your current release is pre-11.3.X, you must migrate to Network Advisor 11.3.0 or later. Refer to [Pre-migration requirements](#) for the release migration path.
  2. Install Network Advisor 12.1 (refer to [Data Migration](#) on page 57) on the same machine and migrate your data (refer to [Migrating data](#) on page 67).
- 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 Network Advisor 14.1.X on a 64-bit Windows server1 to Network Advisor 14.2.1 on a 64-bit Windows server2, complete the following steps.

1. Take server backup for 14.1.X using **Options > Server Backup** on the 64-bit Windows server1.
2. Install Network Advisor 14.2.1 on the 64-bit Windows server2.
3. Select **SMC > Restore** tab to restore the backup taken on the 64-bit Windows server1.
4. Install Network Advisor 14.2.1 on the 64-bit Windows server2.  
Perform seamless migration to Network Advisor 14.2.1 (refer to [Data Migration](#) on page 57).

If you are migrating from a pre-12.3.X release on a 64-bit Windows server1 to Network Advisor 14.2.1 on a 64-bit Windows server2, complete the following steps.

1. Install and migrate to Network Advisor 14.2.1 in the same machine (refer to [Supported migration paths](#) on page 58).
2. Take server backup using **Options > Server Backup** on the 64-bit Windows server.
3. Install the same version (14.2.1) on the 64-bit Windows server1.
4. Select **SMC > Restore** tab to restore the backup taken on the 64-bit Windows server.
5. Install Network Advisor 14.2.1 on the 64-bit Windows server2.  
Perform seamless migration to Network Advisor 14.2.1 (refer to [Data Migration](#) on page 57).

If you are migrating from Network Advisor 14.2.1 on a 64-bit Linux server1 to Network Advisor 14.2.1 on a 64-bit pure Linux server2, complete the following steps.

1. Take server backup for 14.1.X using **Options > Server Backup** on the 64-bit Linux server1.

2. Install the same version (14.2.1) on the 64-bit pure Linux server2.
3. Select **SMC > Restore** tab to restore the backup taken on the 64-bit Linux server1.
4. Install Network Advisor 14.2.1 on the 64-bit pure Linux server2.  
Perform seamless migration to Network Advisor 14.2.1 (refer to [Data Migration](#) on page 57).

If you are migrating from a pre-12.3.X release on a 64-bit Linux server1 to Network Advisor 14.2.1 on a 64-bit pure Linux server2, complete the following steps.

1. Install and migrate to Network Advisor 14.2.1 in the 64-bit Linux server1 (refer to [Supported migration paths](#) on page 58).
2. Take server backup using **Options > Server Backup** on the 64-bit Linux server1.
3. Install the same version (14.2.1) on the 64-bit pure Linux server2.
4. Select **SMC > Restore** tab to restore the backup taken on the 64-bit Linux server1.
5. Install Network Advisor 14.2.1 on the 64-bit pure Linux server2.  
Perform seamless migration to Network Advisor 14.2.1 (refer to [Data Migration](#) on page 57).

If you are migrating from Network Advisor 12.3.X or 12.4.X on a 64-bit Linux server1 to Network Advisor 14.2.1 on a 64-bit Linux server2, complete the following steps.

1. Take server backup for 14.1.X using **Options > Server Backup** on the 64-bit Linux server1.
2. Install Network Advisor 14.2.1 on the 64-bit Linux server2.
3. Select **SMC > Restore** tab to restore the backup on the 64-bit Linux server1.
4. Install Network Advisor 14.2.1 on the 64-bit Linux server2.  
Perform seamless migration to Network Advisor 14.2.1 (refer to [Data Migration](#) on page 57).

If you are migrating from a pre-12.3.X release on a 64-bit Linux server1 to Network Advisor 14.2.1 on a 64-bit Linux server2, complete the following steps.

1. Install and migrate to Network Advisor 14.2.1 on the 64-bit Linux server1 (refer to [Supported migration paths](#) on page 58).
2. Take server backup using **Options > Server Backup** on the 64-bit Linux server1.
3. Install Network Advisor 14.2.1 on the 64-bit Linux server2.
4. Select **SMC > Restore** tab to restore the backup taken on the 64-bit Linux server1.
5. Install Network Advisor 14.2.1 on the 64-bit Linux server2.  
Perform seamless migration to Network Advisor 14.2.1 (refer to [Data Migration](#) on page 57).

If you are migrating from a pre-12.0.0 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-11.3.0 release, you must first migrate to Network Advisor 12.0.X on the current server for the release migration path.

1. Install Network Advisor 14.1.X on your new machine (refer to [Installation](#) on page 21) and migrate your data ([Migrating data](#) on page 67) using the network path.
2. Install Network Advisor 14.2.1 on your new machine (refer to [Data Migration](#) on page 57) and migrate your data ([Migrating data](#) on page 67).

If you are migrating from a Network Advisor 12.4.X release on a 64-bit server<sup>1</sup> to Network Advisor 14.2.1 on a 64-bit server<sup>2</sup>, complete the following steps.

1. Back up the Network Advisor 14.1.X server data on your current 64-bit machine. For instructions, refer to "Configuring backup" in the *Brocade Network Advisor User Manual* or online help.
2. Install Network Advisor 14.2.1 on your new 64-bit machine (refer to [Installation](#) on page 21)
3. Restore the server backup from your original 64-bit machine. For instructions, refer to "Restoring data" in the *Brocade Network Advisor User Manual* or online help.
4. Install Network Advisor 14.2.1 on the 64-bit Windows server (refer to [Data Migration](#) on page 57) and migrate your data ([Migrating data](#) on page 67).

If you are migrating from 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 "Server operating system requirements" table.

#### NOTE

If you are migrating from a pre-12.0.X release, you must first migrate to Network Advisor 12.0.X on your current server for the release migration path.

1. Install Network Advisor 14.1.X on your current machine (refer to [Installation](#) on page 21) and migrate your data ([Migrating data](#) on page 67).
2. Install Network Advisor 14.2.1 on your new machine (refer to [Data Migration](#) on page 57) and migrate your data ([Migrating data](#) on page 67).

If you are migrating from 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 "Server operating system requirements" table.

#### NOTE

If you are migrating from a pre-12.0.X release, you must first migrate to Network Advisor 12.0.X on your current server for the release migration path.

1. Install Network Advisor 14.1.X on your current machine (refer to [Installation](#) on page 21) and migrate your data ([Migrating data](#) on page 67).
2. Back up the server data on your current machine. For instructions, refer to "Configuring backup" in the *Brocade Network Advisor User Manual* or online help.



3. Install Network Advisor 14.1.X on the supported server (refer to [Data Migration](#) on page 57).
4. Restore the server back up from your original server. For instructions, refer to "Restoring data" in the *Brocade Network Advisor User Manual* or online help.
5. Install Network Advisor 14.2.1 on your new machine (refer to [Data Migration](#) on page 57) and migrate your data ([Migrating data](#) on page 67).

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-11.3.0 release, you must first migrate to Network Advisor 12.2.X on your current server.

1. Install Network Advisor 14.1.X (refer to [Installation](#) on page 21) on the current machine and migrate your data (refer to [Migrating data](#) on page 67).
2. Back up the server data on your current machine. For instructions, refer to "Configuring backup" in the *Brocade Network Advisor User Manual* or online help.
3. Install Network Advisor 14.2.1 (refer to [Installation](#) on page 21) on the new machine.
4. Restore the server back up from your original machine. For instructions, refer to "Restoring data" in the *Brocade 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*.
  2. Execute `./smc` or `sh smc`.
  3. Click the **Services** tab. The tab lists the DCFM services.
  4. 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**).

#### NOTE

You may also need to consider a firewall that may 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 must permit the remote display of the X Server by running the **xhost +IP** command, 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 **xterm** command from the same shell from which you run `install.bin`. A new X terminal window to the destination X Server display opens.

## Additional trial requirements

- Two versions of the Management application (DCFM, Network Advisor, or INM) cannot reside on the same host unless there are two guest operating systems on the same host.
- Data collected during the Trial cannot be migrated back to the Professional software.
- Once the Enterprise trial period expires, you must upgrade to Licensed software.

# Data migration for Brocade Network Advisor

While performing a data migration, you must understand the following information.

Some upgrade options are not supported:

- Trial to Professional software migration is not supported.
- Licensed software to Trial software migration is not supported.
- Enterprise software to Professional Plus software migration is not supported.

During data migration, Network Advisor and SMIA certificates will migrate from the source to the destination according to the following requirements. If none of the requirements is followed, a new certificate will be generated using the SHA-256 signature algorithm.

- Certificates must be generated by customers.
- Certificates must have SHA-2 signature algorithm.
- The source certificate must be self-signed and have a validity of more than six months or generated using the SHA-256 signature algorithm.

Ensure that you have configured the Brocade E-mail Call Home center. For details, refer to the *Brocade Network Advisor User Manual* or online help.

### NOTE

You must be running the Enterprise edition for the following devices:

- DCX or DCX 8510-8 Backbone chassis
- Brocade X6-4 Director
- Brocade X6-8 Director

## Management server or client issues

If the Management server 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:

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

If the Management 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:

- Options dialog box (does not display all IP addresses)
- Firmware import and download dialog box

- Firmware import for Fabric OS and Network OS products
- FTP button in Technical Support Repository dialog box
- Technical supportSave of Fabric OS, Network OS, and Host products through FTP

## Migrating data

While upgrading from one version of Brocade Network Advisor to another version, the data must be migrated.

You must enter the new license information before migrating the data. Refer to [Upgrading the license](#) on page 57.

### NOTE

If an error occurs while migrating from Network Advisor 14.1.X or earlier to Network Advisor 14.2.X, it rolls back to the earlier version. Migration rollback is not supported if you are performing headless migration.

### NOTE

When you migrate from Pre-14.1.X release to Network Advisor 14.2.X will remove the flows and statistics retrieved from the Brocade Analytics Monitoring Platform pre-14.1.X release and the AMP-specific dashboards **SAN Analytics Monitoring-Top Flows** and **SAN Analytics Monitoring-Summary** post the migration.

When migrating data from a previous version, the data migration may take several minutes after you click **Start** on the **Data Migration** screen.

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 to step 4.
  - If data is not detected, the **Copy Data and Settings from previous releases** screen displays. Continue to step 3.
3. Choose one of the following options:
  - a) Select **Yes, from this machine or on network** and click **Browse** to browse to the installation directory.
  - b) Click **Next** on the **Copy Data and Settings from previous releases** screen. Continue with step 3.

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

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

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

5. 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**.

If you are migrating from Professional or Trial software, continue with [Migrating data](#).

If you are migrating from Licensed software, go to [Migrating data](#).

6. Select one of the following options on the **Installation Type** screen and click **Next**:
  - Network Advisor - Licensed version: If you choose the Licensed version, you must enter a license key during configuration to enable features and configuration. Continue with [Migrating data](#).
  - Network Advisor - 120 days Trial: If you choose the Trial version, once the trial period ends (120 days), you must upgrade to Licensed software. The trial version enables you to manage IP, SAN, or SAN and IP networks from a single interface for 120 days. Go to [Migrating data](#).
  - Network Advisor - Professional: The Professional version is bundled with Fabric OS and IronWare OS devices to manage small IP or SAN networks from a single interface. Go to [Migrating data](#).
7. Choose one of the following options on the **Server License** screen:
  - If you are migrating from a licensed source, the source license information displays. Click **Next**.
  - If you are migrating from Professional or Trial software to Licensed software, browse to the license file (.xml) and click **Next**.

The **License Key** field is not case-sensitive. Downgrading the license from the current configuration during migration is not supported.

8. 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, or 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 *Brocade Network Advisor User Manual* or online help.
      - Select **Built-in SCP or SFTP Server** to configure an internal SCP or SFTP server. The internal SCP or 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 *Brocade Network Advisor User Manual* or online help.
    - Select **External FTP, SCP, or 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 *Brocade 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, or 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.

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

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

**NOTE**

For Professional software, the **Server IP Configuration** address is set to "localhost" by default. You cannot change this address.

**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 51.

- c) Click **Next**.

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

**FIGURE 2** Server Configuration screen

Network Advisor requires Web Server, Database, Syslog and SNMP port numbers, as well as 15 consecutive port numbers from a Starting port #. On enabling HTTP redirection, port # 80 is used to redirect the HTTP requests to HTTPS.

Web Server Port # (HTTPS)

Redirect HTTP Requests to HTTPS ☒

Database Port #

Starting Port #

Syslog Port #

SNMP Port #

Change this configuration by selecting Server > Options > Server Port from the application.

- 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 *Brocade 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**

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 [Migrating data](#).

- 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 [Migrating data](#).

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**.

If you are configuring Professional software, go to [Migrating data](#).

11. (SAN with SMI Agent + IP or 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**.

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

- **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)**

Port count is equal to the total number of switch ports across all fabrics. If you are configuring IP Enterprise, continue with [Migrating data](#); otherwise, go to step 14.

13. (IP Enterprise) Select one of the following options on the **IP Network Size** screen and click **Next**:

- **Small (managing up to 1-20 products)**
- **Medium (managing up to 21-200 products)**
- **Large (managing up to 201-5050 products)**

Port count is equal to the total number of all managed product ports.

14. Enable feature usage data transfer from the application by selecting the **Yes, I want to participate** option.

You can stop participating at any time. To view an example of the usage data, click **View Example Data**. To stop participating in feature usage data transfer after configuration, refer to [Migrating data](#).

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

16. 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 [Migrating data](#)).

17. 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.

18. Click **Login**.
19. Click **OK** on the Network Advisor Login Banner.

## Cross flavor migration

To migrate from Brocade Network Advisor 14.0.X/14.1.X to a Non-Brocade Network Advisor 14.2.X, complete the following steps:

1. Install Brocade Network Advisor 14.0.x/14.1.x/14.2.0 (refer to [Installing the application](#) on page 28).
2. Install Non-Brocade Network Advisor 14.2.1 (refer to [Installing the application](#) on page 28).
3. Migrate the supported (partial or full) data from Brocade Network Advisor 14.2.1 (refer to [Migrating data](#) on page 67) to the Non-Brocade Network Advisor 14.2.1 by browsing to the Brocade Network Advisor 14.2.1 location on the **Copy Data and Setting** screen.

### NOTE

If the Non-Brocade Network Advisor is not supporting SAN + IP, it is recommended to install SAN only Brocade Network Advisor and then migrate to Non-Brocade Network Advisor.

## Migration rollback

Migration rollback is triggered when a failure occurs while migrating to a different version of Brocade 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:

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 roll back to the earlier version of Network Advisor during migration by canceling the configuration using the **Cancel** button.

You cannot cancel the migration while you are in the **Welcome** or **Copy and Data Setting** pages of the configuration wizard.

If you try to cancel the migration before the migration starts, the warning message “Are you sure you want to cancel the configuration of Network Advisor 14.2.1?” displays.

If you try to cancel the migration after the migration succeeds, the warning message “Canceling the migration will initiate rollback of the changes made and will uninstall Network Advisor 14.2.1. Are you sure you want to continue?” displays.

### 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.



# Uninstallation

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Details uninstallation of the Network Advisor and SMI Agent from both Windows and UNIX systems.

## NOTE

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

Complete the following steps to uninstall the Network Advisor and SMI Agent from your Windows system.

1. Select **Start** > **Programs** > **Network Advisor 14.2.1** > **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 Network Advisor and SMI Agent from your Windows server.

1. Open a command prompt.
2. Choose one of the following options:
  - To partially uninstall Network Advisor (configuration and performance data is retained to be re-used by the new installation), execute `Install_Home\Uninstall_Network Advisor 14.2.1\Uninstall_Network Advisor 14.2.1.exe -f <absolute path of partial uninstall property file>`.
  - To fully uninstall Network Advisor (all data is removed), execute `Install_Home\Uninstall_Network Advisor 14.2.1\Uninstall_Network Advisor 14.2.1.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

Complete the following steps to uninstall Network Advisor and SMI Agent from your UNIX system.

### NOTE

The Uninstall folder is retained.

1. Go to *Install\_Home/Uninstall\_Network\_Advisor14\_2\_1*.
2. Execute *./Uninstall\_Network\_Advisor14\_2\_1*.
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 Network Advisor and SMI Agent from your UNIX server.

1. Go to *Install\_Home/Uninstall\_Network\_Advisor14\_2\_1*.
2. Choose one of the following options:
  - To partially uninstall Network Advisor (configuration and performance data is retained to be re-used by the new installation), execute **Uninstall\_Network\_Advisor 14\_2\_1 -f<absolute path of partial uninstall property file>**.
  - To fully uninstall Network Advisor (all data is removed), execute **Uninstall\_Network\_Advisor 14\_2\_1 -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.

# References

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## Network Advisor packages

The following table summarizes the packages and available editions for each package.

**TABLE 18** Network Advisor packages and versions

Package	Versions
SAN with SMI Agent +IP	<ul style="list-style-type: none"><li>Enterprise (trial and licensed)</li><li>Professional Plus (licensed)</li><li>Professional</li></ul>
SAN with SMI Agent	<ul style="list-style-type: none"><li>Enterprise (trial and licensed)</li><li>Professional Plus (licensed)</li><li>Professional</li></ul>
IP	<ul style="list-style-type: none"><li>Enterprise (trial and licensed)</li><li>Professional</li></ul>
SMI Agent	<b>NOTE</b> Network Advisor clients are not available in the SMI Agent only package. Clients are not required when other management tools are used in the SMI Agent.

For a list of the supported scalability limits for Network Advisor by edition, refer to [Scalability limits](#) on page 77.

## Scalability limits

The following table summarizes the scalability limits supported for Network Advisor by edition.

**TABLE 19** Supported scalability limits by Network Advisor edition

	Enterprise edition			SAN Professional Plus + IP Base edition	Professional edition
	Small	Medium	Large		
<b>SAN Switch Ports</b>	2000	5000	15000	2560	300
<b>SAN Switches and Access Gateways</b>	40	100	400	40	15
<b>SAN Devices</b>	5000	15000	40000	5000	1000
<b>SAN Fabrics</b>	25	50	100	36	2
<b>IP Switches</b> <sup>9</sup>	50	200	1550 (supported)	50	50

**TABLE 19** Supported scalability limits by Network Advisor edition (continued)

	Enterprise edition			SAN Professional Plus + IP Base edition	Professional edition
	Small	Medium	Large		
			1200 (recommended) (with performance monitoring on up to 20000 ports)		
<b>MPLS Switches</b>	1	10	100	1	Not supported.
<b>VDX Switches</b>	50	100	400	50	50
<b>Managed Hosts</b>	20	100	400	100	20
<b>vCenters</b>	1	5	10	5	1
<b>VMs (includes powered-down VMs)</b>	1000	5000	10000	5000	10000
<b>ESX Hosts</b>	200	1000	2000	1000	200

**NOTE**

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

**NOTE**

SMI Agent is not supported on the Professional edition.

**NOTE**

The Network Advisor SAN+IP package is supported in Professional Plus Edition; whereas IP package is not supported on Professional Plus Edition. The IP package is either supported on Enterprise Edition or Trail or Professional Edition. Refer to *Brocade Network Advisor Software Licensing Guide*, for more information.

**NOTE**

Supported network latency between the Network Advisor server and client or server and devices is 100 milliseconds.

## 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 Professional, 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 following table below need to be opened up in the firewall.

**NOTE**

Professional edition does not support remote clients.

<sup>9</sup> The IP switch count includes MPLS and VDX switches.

The following table lists the default port numbers and whether the port 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 bidirectional protocols, you must open the firewall port bi-directionally.

**TABLE 20** Port usage and firewall requirements

Port Number	Ports	Transport	Description	Communication Path	Open in Firewall
20 <sup>10</sup>	FTP Port (Control)	TCP	FTP Control port for internal FTP server	Client-Server Product-Server	Yes
21 <sup>10</sup>	FTP Port (Data)	TCP	FTP Data port for internal FTP server	Client-Server Product-Server	Yes
22 <sup>11</sup>	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 or client to product	Server-Product Client-Product	Yes
25 <sup>11</sup>	SMTP Server port	TCP	SMTP Server port for e-mail communication if you use e-mail notifications without SSL	Server-SMTP Server	Yes
49 <sup>11</sup>	TACACS+ Authentication port	TCP	TACACS+ server port for authentication if you use TACACS+ as an external authentication	Server-TACACS+ Server	Yes
69	TFTP	UDP	File upload/download to product	Product-Server	Yes
80 <sup>11</sup>	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

<sup>10</sup> Port does not need to be open in the firewall for Professional edition.

<sup>11</sup> 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.

**TABLE 20** Port usage and firewall requirements (continued)

Port Number	Ports	Transport	Description	Communication Path	Open in Firewall
80 <sup>10</sup>	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 <sup>11</sup>	SNMP port	UDP	Default SNMP port	Server-Product	Yes
162 <sup>11</sup>	SNMP Trap port	UDP	Default SNMP trap port	Product-Server	Yes
389	LDAP Authentication Server Port	UDP TCP	LDAP server port for authentication if you use LDAP as an external authentication	Server-LDAP Server	Yes
443 <sup>10, 11</sup>	HTTPS server	TCP	HTTPS (HTTP over SSL) server port if you use secure client-server communication	Client-Server	Yes
443 <sup>11</sup>			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 <sup>11</sup>			HTTPS (HTTP over SSL) server port if you use vCenter discovery	Server-vCenter Server	Yes
465 <sup>11</sup>	SMTP Server port for SSL	TCP	SMTP Server port for e-mail communication	Server-SMTP Server	Yes

<sup>10</sup> Port does not need to be open in the firewall for Professional edition.

<sup>11</sup> 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.



**TABLE 20** Port usage and firewall requirements (continued)

Port Number	Ports	Transport	Description	Communication Path	Open in Firewall
			if you use e-mail notifications with SSL		
514 <sup>11</sup>	Syslog Port	UDP	Default Syslog Port	Product-Server Managed Host-Server	Yes
636 <sup>11</sup>	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
1812 <sup>11</sup>	RADIUS Authentication Server Port	UDP	RADIUS server port for authentication if you use RADIUS as an external authentication	Server-RADIUS Server	Yes
1813 <sup>11</sup>	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 <sup>10, 11</sup>	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 <sup>11</sup>	sFlow	UDP	Receives sFlow data from products if you are monitoring with sFlow	Product-Server	Yes
24600 <sup>10, 11</sup>	JBoss remoting connector port	TCP	Use for service location. Uses SSL for privacy.	Client-Server	Yes
24601 <sup>10, 11</sup>	JBoss Transaction Services Recovery Manager port.	TCP	Not used remotely	Server	Yes
24602 <sup>10, 11</sup>	JBoss Transaction Status Manager port	TCP	Not used remotely	Server	Yes

<sup>11</sup> 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.

<sup>10</sup> Port does not need to be open in the firewall for Professional edition.

**TABLE 20** Port usage and firewall requirements (continued)

Port Number	Ports	Transport	Description	Communication Path	Open in Firewall
24603 <sup>10</sup> , <sup>11</sup>	HornetQ Netty port	TCP	Use for JMS (Java Message Service), async messages from server to client  Uses SSL for privacy	Client-Server	Yes
24604 <sup>10</sup> , <sup>11</sup>	JMX remoting connector port	TCP	Management console port for native connector (JMX)	Client-Server	Yes
24605 <sup>10</sup> , <sup>11</sup>	JBoss HTTPS management port	TCP	Management console port for HTTPS-based management	Client-Server	Yes
24606 <sup>10</sup> , <sup>11</sup>	Fault Management CIM Indication Listener Port	TCP	Used for HBA management	Managed Host-Server	Yes
24607 <sup>10</sup> , <sup>11</sup>	HCM Proxy CIM Indication Listener port	TCP	Used for HBA management	Managed Host-Server	Yes
24608 <sup>11</sup>	Reserved for future use	TCP	Not used	Client-Server	No
24609 <sup>11</sup>	Reserved for future use	TCP	Not used	Client-Server	No
24610 <sup>11</sup>	Reserved for future use	TCP	Not used	Client-Server	No
34568	HCM Agent discovery port	TCP	Used for HBA management via JSON	Server-Managed Host	Yes
55556 <sup>10</sup>	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  <b>NOTE</b> If this port is in use, the application uses the next available port.	Client	No

<sup>10</sup> Port does not need to be open in the firewall for Professional edition.

<sup>11</sup> 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.

# Edition feature support

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

**TABLE 21** SAN features supported

Feature	Professional	Professional Plus	Enterprise
<b>AAA (Authentication, Authorization, and Accounting)</b> Authentication and authorization configuration	No	Yes	Yes
<b>Access Gateway (AG) management</b>			
AG display	Yes	Yes	Yes
Support for firmware download, supportSave, performance statistics, and configuration file management	Yes	Yes	Yes
<b>Active session management</b>	Yes	Yes	Yes
<b>Bottleneck detection</b>			
Configuration	No	Yes	Yes
Statistics	No	Yes	Yes
Badge on topology and product tree	Yes	Yes	Yes
Show affected host	No	Yes	Yes
<b>Call Home support</b>			
Support for all call home centers	No	Yes	Yes
SupportSave for Fabric OS switches	No	Yes	Yes
Support for appending the last 30 events in a call home event for e-mail-based call home centers	No	Yes	Yes
<b>Certificate management</b>	No	Yes	Yes
<b>COMPASS</b>	No	Yes	Yes
<b>Configuration management</b>			
Configuration repository management	No	Yes	Yes
Firmware download	Yes	Yes	Yes
Manual backup  <b>NOTE</b> Professional only supports one switch at a time.	Yes	Yes	Yes
Save configuration  <b>NOTE</b> Professional only supports one switch at a time.	Yes	Yes	Yes

**TABLE 21** SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
Periodic configuration backup and persistence	No	Yes	Yes
Replicate switch configuration	No	Yes	Yes
<b>Dashboard</b>	Yes	Yes	Yes
<b>DCB configuration management</b>	Yes	Yes	Yes
<b>DCX backbone chassis discovery and management</b>	No	No	Yes
<b>Diagnostic port test</b>	No	Yes	Yes
<b>Digital diagnostic</b>	Yes	Yes	Yes
<b>Encryption</b>			
Layer 2 FC support	Yes	Yes	Yes
Encryption configuration and monitoring	Yes	Yes	Yes
Access Gateway - Cisco interop support	Yes	Yes	Yes
Device decommissioning	Yes	Yes	Yes
<b>End device connectivity</b>	Yes	Yes	Yes
Collection			
Views			
<b>Fabric binding</b>	No	Yes	Yes
<b>Fabric Watch</b>			
Hardware	Element Manager	Element Manager	Element Manager
Ports	Element Manager	Element Manager	Element Manager
Admin	Element Manager	Element Manager	Element Manager
Router Admin	Element Manager	Element Manager	Element Manager
Name Server	Element Manager	Element Manager	Element Manager
<b>Fault management</b>	Element Manager	Element Manager	Element Manager
Show switch events	Yes	Yes	Yes
Show fabric events	Yes	Yes	Yes
Syslog registration and forwarding	Yes	Yes	Yes
SNMP trap registration and forwarding	Yes	Yes	Yes
Trap configuration, credentials, and customization	Yes	Yes	Yes
Event forwarding	No	Yes	Yes
Event custom report	No	Yes	Yes
Event processing (event policies and pseudo events)	No	Yes	Yes
Common SNMP/Trap registration	Yes	Yes	Yes
<b>FCIP management</b>			
FCIP configuration wizard	Yes	Yes	Yes
Iperf and IP trace route	Yes	Yes	Yes
<b>FCoE management</b>			

TABLE 21 SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
FCoE configuration	Yes	Yes	Yes
Migration from DCFM	Yes	Yes	Yes
<b>FICON/CUP</b>			
Cascaded FICON configuration wizard	No	No	Yes
Cascaded FICON Fabric merge wizard	No	No	Yes
PDCM Matrix	Element Manager	Element Manager	Yes
<b>Firmware management and supportSave</b>			
Firmware download	Yes	Yes	Yes
Capture SupportSave	Yes	Yes	Yes
<b>Flow Vision</b>	No	Yes	Yes
<b>Frame monitor</b>	No	Yes	Yes
<b>HBA management</b>			
HBA management	Yes	Yes	Yes
VM management	Yes	Yes	Yes
Driver/DIOS management	No	Yes	Yes
Fabric assigned WWN	No	Yes	Yes
<b>HBA Server and Storage port mapping</b>	No	Yes	Yes
<b>High Integrity Fabric</b>	No	Yes	Yes
<b>IPv6 -- Server - Switch support</b>	Yes	Yes	Yes
<b>iSCSI discovery</b>	Yes	Yes	Yes
<b>Layer 2 trace route</b>	No	Yes	Yes
<b>License</b>	No	Yes	Yes
<b>MAPS management</b>	No	Yes	Yes
<b>Meta-SAN</b>	No	Yes	Yes
Routing configuration			
Domain ID configuration			
<b>Name Server</b>	Yes	Yes	Yes
<b>Open Trunking Support</b>			
Display trunks on the topology	Yes	Yes	Yes
Display trunks properties	Yes	Yes	Yes
Display marching ants	Yes	Yes	Yes
Display connections properties	Yes	Yes	Yes
<b>Performance management - SNMP monitoring</b>			
Real Time Performance collection, display, and reports	Yes	Yes	Yes
Historical Performance collection, display, and reports	No	Yes	Yes
Thresholds	No	Yes	Yes

**TABLE 21** SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
Top talkers - Supported on SAN switches and Access Gateway	No	Yes	Yes
Marching ants	No	Yes	Yes
Data aging	No	Yes	Yes
End-to-End monitors	No	Yes	Yes
<b>Policy Monitor</b>	Yes	Yes	Yes
<b>Port Administration</b>	Element Manager	Element Manager	Element Manager
<b>Port Fencing</b>	No	Yes	Yes
<b>Port group configuration</b>	No	No	Yes
<b>Reports</b>	Yes	Yes	Yes
Generate reports	Yes	Yes	Yes
View reports	Yes	Yes	Yes
Performance reports	Yes	Yes	Yes
FCR reports	Yes	Yes	Yes
<b>SCOM plug-in support</b>	No	Yes	Yes
<b>Security management</b>			
Replicate switch policy configuration	No	Yes	Yes
SNMP configuration	Yes	Yes	Yes
L2 ACL configuration	Yes	Yes	Yes
<b>NOTE</b> Only supported on DCB devices.			
<b>SMI Agent</b>	No	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)			

**TABLE 21** SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
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			
<b>Switch configuration management</b>	Yes	Yes	Yes
Basic configurations through the Element Manager			
<b>Switch port enable/disable through right-click menu</b>	Yes	Yes	Yes
<b>Technical SupportSave</b>	Yes	Yes	Yes
<b>Telnet</b>	Yes	Yes	Yes
<b>NOTE</b> Telnet through the server is only supported on Windows systems.			
<b>Tools launcher (Setup Tools)</b>	No	Yes	Yes
<b>Troubleshooting and Diagnostics</b>			
Device connectivity troubleshooting wizard	Yes	Yes	Yes
Trace route and Ping	Yes	Yes	Yes
Fabric device sharing	No	Yes	Yes
<b>User management</b>	No	Yes	Yes
<b>View management</b>	No	Yes	Yes
<b>Virtual fabric support</b>			
Discovery	Yes	Yes	Yes
Configuration	No	Yes	Yes
<b>VLAN management</b>	Yes	Yes	Yes
<b>VM Plugin Support</b>	No	Yes	Yes

**TABLE 21** SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
<b>Web Element Manager</b>	Yes	Yes	Yes
<b>Zoning</b>			
Member selection	Yes	Yes	Yes
Zone editing	Yes	Yes	Yes
Live fabric library scope	Yes	Yes	Yes
QoS support	Yes	Yes	Yes
Zone alias support	Yes	Yes	Yes
Delete Zone database	No	Yes	Yes
Impact analysis	Yes	Yes	Yes
Remove offline devices	No	Yes	Yes
TI Zones	Yes	Yes	Yes
Device to Zone / zoneset participation analysis	Yes	Yes	Yes
LSAN Zones	No	Yes	Yes
Rolling back to an activated zone database	No	Yes	Yes
Import or export a zone database	No	Yes	Yes

The following table details whether the IP features are fully or partially supported in the Professional or Licensed versions.

**TABLE 22** IP features supported

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
<b>802.1ag support (MPLS and VLAN management)</b>	No	Yes	Yes	Yes
<b>AAA (Authentication, Authorization, and Accounting)</b>	No	Yes	Yes	Yes
Authentication and authorization configuration				
<b>Address Finder</b>	No	Yes	Yes	Yes
<b>ADP management</b>	No	Yes	Yes	Yes
<b>AMPP (port profile)</b>	No	Yes	Yes	No
<b>Call Home support</b>				
Support for all call home centers	No	Yes	Yes	Yes
Support for appending the last 30 events in a call home event for e-mail-based call home centers	No	Yes	Yes	Yes
<b>Change management</b>	Partial support	Yes	Yes	Yes
<b>CLI configuration management</b>	No	Yes	Yes	Yes
<b>CLI Element Manager</b>	Yes	Yes	Yes	Yes



TABLE 22 IP features supported (continued)

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
<b>Configuration management</b>				
Configuration snapshot	No	Yes	Yes	Yes
Configuration repository management	Yes	Yes	Yes	Yes
Manual backup  <b>NOTE</b> Professional only supports one product at a time.	Yes	Yes	Yes	Yes
Save configuration  <b>NOTE</b> Professional only supports one switch at a time.	Yes	Yes	Yes	Yes
Save configuration for VCS-enabled switches	No	Yes	Yes	Yes
Periodic configuration backup and persistence	No	Yes	Yes	Yes
Replicate switch configuration	No	Yes	Yes	Yes
Product configuration <ul style="list-style-type: none"> <li>Setting baselines</li> <li>Search</li> </ul>	No	Yes	Yes	Yes
Change tracking	No	Yes	Yes	Yes
<b>Configuration wizard</b>				
Product configuration - create, edit, and deploy	Yes	Yes	Yes	Yes
Interface payload - sFlow configuration  <b>NOTE</b> Professional only supports one product at a time.	Yes	Yes	Yes	Yes
Product Payloads: <ul style="list-style-type: none"> <li>CLI configuration</li> <li>CLI product monitoring</li> </ul>	No	Yes	Yes	Yes
<b>Dashboard</b>	Yes	Yes	Yes	Yes
<b>DCB configuration management</b>	Yes	Yes	Yes	Yes
<b>Deployment management</b>	Yes	Yes	Yes	Yes
<b>Discovery</b>				

TABLE 22 IP features supported (continued)

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
IP discovery	Yes	Yes	Yes	Yes
VCS discovery	Yes	Yes	Yes	Yes
<b>NOTE</b> Professional supports one cluster member.				
<b>Fabric Watch</b>				
<b>NOTE</b> Only supported on DCB switches.				
Hardware	Element Manager	Element Manager	Element Manager	Element Manager
Ports	Element Manager	Element Manager	Element Manager	Element Manager
Admin	Element Manager	Element Manager	Element Manager	Element Manager
Router Admin	Element Manager	Element Manager	Element Manager	Element Manager
Name Server	Element Manager	Element Manager	Element Manager	Element Manager
<b>Fault Management</b>				
Show switch events	Yes	Yes	Yes	Yes
Syslog registration and forwarding	Yes	Yes	Yes	Yes
SNMP trap registration and forwarding	Yes	Yes	Yes	Yes
Trap configuration, credentials, and customization	Yes	Yes	Yes	Yes
Event forwarding	No	Yes	Yes	Yes
Event custom report	No	Yes	Yes	Yes
Event processing (event policies and pseudo events)	No	Yes	Yes	Yes
Common SNMP/Trap registration	Yes	Yes	Yes	Yes
<b>FCoE configuration management</b>	Yes	Yes	Yes	Yes
<b>Firmware Management and SupportSave</b>				
Firmware download	Yes	Yes	Yes	Yes
Capture SupportSave	Yes	Yes	Yes	Yes
<b>GSLB management</b>	No	Yes	Yes	Yes
<b>HBA management</b>				
HBA management	Yes	Yes	Yes	Yes
VM management	No	Yes	Yes	Yes
Driver/DIOS management	No	No	No	No
Fabric assigned WWN	No	No	No	No

TABLE 22 IP features supported (continued)

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
<b>IPv6 Server - Product support</b>  <b>NOTE</b> Only supported in the application when IPv6 is supported on the product.	Yes	Yes	Yes	Yes
<b>Layer 2 trace route</b>	No	Yes	Yes	No
<b>License</b>	No	Yes	Yes	Yes
<b>MLX/XMR management</b>	No	Yes	Yes	Yes
<b>MPLS management</b>	No	Yes	Yes	Yes
LSP	No	Yes	Yes	Yes
VCID pool	No	Yes	Yes	Yes
VLL manager	No	Yes	Yes	Yes
VLL monitor	No	Yes	Yes	Yes
VPLS manager	No	Yes	Yes	Yes
VPLS monitor	No	Yes	Yes	Yes
<b>Performance management - SNMP monitoring</b>				
Real Time Performance collection, display, and reports	Yes	Yes	Yes	Yes
Historical Performance collection, display, and reports	No	Yes	Yes	Yes
Thresholds	No	Yes	Yes	Yes
Data aging	No	Yes	Yes	Yes
<b>Performance management - Traffic Analysis (sFlow)</b>				
sFlow configuration payload (configuration wizard)	No	Yes	Yes	Yes
Monitoring reports	No	Yes	Yes	No
Accounting reports	No	Yes	Yes	Yes
Custom reports	No	Yes	Yes	Yes
<b>Policy Monitor</b>	Yes	Yes	Yes	Yes
<b>Power Center</b>	Yes	Yes	Yes	Yes
<b>Reports</b>				
IP product inventory report	Yes	Yes	Yes	Yes
<b>SSL Certificate management</b>	No	Yes	Yes	Yes
<b>Third Party Device support</b>	No	Yes	Yes	Yes
<b>Security management</b>				
MAC filter configuration	Yes	Yes	Yes	Yes

TABLE 22 IP features supported (continued)

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
L2 ACL configuration	Yes	Yes	Yes	Yes
L3 ACL configuration	Yes	Yes	Yes	Yes
Services	Yes	Yes	Yes	Yes
Networks	Yes	Yes	Yes	Yes
<b>Switch configuration management</b> Basic configurations through the Element Manager	Yes	Yes	Yes	Yes
<b>Telnet</b>	Yes	Yes	Yes	Yes
<b>Tools launcher (Setup Tools)</b>	No	Yes	Yes	Yes
<b>Topology management</b>	Yes	Yes	Yes	Yes
<b>User Management</b>	No	Yes	Yes	Yes
<b>VCS Trace Route</b>				
Trace route	Yes	Yes	Yes	Yes
Historical Graphs/Tables	No	Yes	Yes	Yes
<b>VIP Server management</b>	No	Yes	Yes	Yes
<b>VLAN management</b>	Yes	Yes	Yes	Yes
<b>VM Plugin Support</b>	No	Yes	Yes	Yes
<b>Web Element Manager</b>	Yes	Yes	Yes	Yes
<b>Web Tools/Fabric Watch</b>	Yes	Yes	Yes	Yes
<b>Zoning</b>				
Member selection	Yes	Yes	Yes	Yes
Zone editing	Yes	Yes	Yes	Yes
Live fabric library scope	Yes	Yes	Yes	Yes
Zone alias support	Yes	Yes	Yes	Yes
Delete Zone database	No	Yes	Yes	Yes
Impact analysis	Yes	Yes	Yes	Yes
Remove offline devices	No	Yes	Yes	Yes
Device to Zone / zoneset participation analysis	Yes	Yes	Yes	Yes
LSAN Zones	No	Yes	Yes	Yes
Rolling back to an activated zone database	No	Yes	Yes	Yes
Import or export a zone database	No	Yes	Yes	Yes