

IBM® Storage Networking



IBM Network Advisor Software Licensing Guide

Supporting IBM Network Advisor version 14.4.2

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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 the release version
- Information that was deleted:
 - Removed IP only support references in the document

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

Supported hardware and software

When procedures or parts of procedures documented in this guide 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 LLC. for IBM Network Advisor 14.4.2, documenting all possible configurations and scenarios is beyond the scope of this guide.

Fabric OS software support

The following firmware platforms are supported by this release of the IBM Network Advisor 14.4.2:

- Fabric OS 6.0 or later
- Fabric OS 7.0 or later
- Fabric OS 8.0 or later
- Fabric OS 8.1 or later
- Fabric OS 8.2 or later

NOTE

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

NOTE

To ensure that a configuration is fully supported, always check the appropriate SAN, storage or blade server product support page to verify support of specific code levels on specific switch platforms prior to installing on your switch. Use only Fabric OS versions that are supported by the provider.

Fabric OS hardware support

The hardware platforms in the following table are supported by this release of the IBM Network Advisor 14.4.2.

NOTE

Professional and Professional Plus (Trial and Licensed) versions of the IBM Network Advisor 14.4.2 can discover, but not manage 8-slot directors. These devices cannot be used as a Seed switch.

TABLE 1 Hardware supported by Fabric OS

Device name	Terminology used in documentation	Firmware level required
SAN24B-4	24-port, 8-Gbps FC switch	Fabric OS v7.0.0 or later
SAN40B-4	40-port, 8-Gbps FC switch	Fabric OS v7.0.0 or later
SAN80B-4	80-port, 8-Gbps FC switch	Fabric OS v7.0.0 or later
SAN24B-5	24-port, 16-Gbps Edge switch	Fabric OS v7.0.1 or later
SAN48B-5	48-port, 16-Gbps Gbps switch	Fabric OS v7.0.0 or later
SAN96B-5	96-port, 16 Gbps switch	Fabric OS v7.1.0 or later
SAN06B-R	8Gbps extension switch	Fabric OS v7.0.0 or later
SAN42B-R	16 Gbps 24-FC port, 18 GbE port switch	Fabric OS v7.3.0 or later
IBM Converged Switch B32	8 Gbps 8-FC-port, 10 GbE 24-CEE port switch	Fabric OS v6.1.2_CEE
SAN32B-E4 Encryption Switch	8 Gbps encryption switch	Fabric OS v6.1.1_enc or later
IBM Storage Networking SAN24B-6	24-port, 32 Gbps switch	Fabric OS v8.1.0 or later
IBM Storage Networking SAN64B-6	64-port, 32 Gbps switch	Fabric OS v8.0.0 or later
IBM Storage Networking SAN128B-6	96-port, 32 Gbps switch	Fabric OS v8.2.0 or later
SAN768B	8-port backbone chassis	Fabric OS v6.0.0 or later
SAN768B with FC8-16, FC8-32, and FC8-48 Blades	8-port backbone chassis with 8 Gbps 16-FC port, 8 Gbps 32-FC port, and 8 Gbps 48-FC port blades	Fabric OS v7.0.0 or later
SAN768B with FC8-64 Blade	8-port backbone chassis with 8 Gbps 64-port blade	Fabric OS v7.0.0 or later
SAN768B with FC10-6 Blade	8-port backbone chassis with FC 10 - 6 ISL blade	Fabric OS v7.0.0 or later
SAN768B with FX8-24 Extension Blade	8-port backbone chassis with 8 Gbps extension blades	Fabric OS v6.3.1 or later
SAN768B with FCoE10-24 Blade	8-port backbone chassis with 8 Gbps 24-port FCoE blades	Fabric OS v6.3.1 or later
SAN768B with FS8-18 Blade	8-port backbone chassis with Encryption blade	Fabric OS v6.1.1_enc or later
SAN384B	4-port backbone chassis	Fabric OS v7.0.0 or later
SAN384B with FC8-16, FC8-32, and FC8-48 Blades	4-port backbone chassis with 8 Gbps 16-FC port, 8 Gbps 32-FC port, and 8 Gbps 48-FC port blades	Fabric OS v7.0.0 or later
SAN384B with FC8-64 Blade	4-port backbone chassis with 8 Gbps 64-port blade	Fabric OS v7.0.0 or later

TABLE 1 Hardware supported by Fabric OS (continued)

Device name	Terminology used in documentation	Firmware level required
SAN384B with FC10-6 Blades	4-port backbone chassis with FC 10 - 6 ISL blades	Fabric OS v7.0.0 or later
SAN384B with FX8-24 Extension Blades	4-port backbone chassis with 8 Gbps 12-FC port, 10 GbE ports, 2-10 GbE ports extension blades	Fabric OS v7.0.0 or later
SAN384B with FCoE10-24 Blade	4-port backbone chassis with 8 Gbps 24-port FCoE blade	Fabric OS v7.0.0 or later
SAN384B with FS8-18 Blade	4-port backbone chassis with Encryption blade	Fabric OS v6.1.1_enc or later
SAN384B-2	16 Gbps 4-port backbone chassis	Fabric OS v7.0.0 or later
SAN768B-2	16 Gbps 8-port backbone chassis	Fabric OS v7.0.0 or later
IBM Storage Networking SAN256B-6	32 Gbps, 4-slot backbone chassis	Fabric OS v8.0.1 or later
IBM Storage Networking SAN512B-6	32 Gbps, 8-slot backbone chassis	Fabric OS v8.0.1 or later
FC8-16 Blade Only supported on the SAN384B and SAN768B chassis.	FC 8 GB 16-port blade	Fabric OS v7.0.0 or later
FC8-32 Blade Only supported on the SAN384B and SAN768B chassis.	FC 8 GB 32-port blade	Fabric OS v7.0.0 or later
FC8-32E Blade Only supported on the SAN384B-2 and SAN768B-2 chassis.	FC 8 GB 32-port blade	Fabric OS v7.0.1 or later
FC8-48 Blade Only supported on the SAN384B and SAN768B chassis.	FC 8 GB 48-port blade	Fabric OS v7.0.0 or later
FC8-48E Blade Only supported on the SAN384B-2 and SAN768B-2 chassis.	FC 8 GB 48-port blade	Fabric OS v7.0.1 or later
FC8-64 Blade	FC 8 GB 64-port blade	Fabric OS v7.0.0 or later
FC10-6 Blade	FC 10 - 6 ISL blade	Fabric OS v7.0.0 or later
FC16-32 Blade Only supported on the SAN384B-2 and SAN768B-2 chassis.	16 Gbps 32-port blade	Fabric OS v7.0.0 or later
FC16-48 Blade Only supported on the SAN384B-2 and SAN768B-2 chassis.	16 Gbps 48-port blade	Fabric OS v7.0.0 or later
FC16-64 Blade Only supported on the SAN384B-2 and SAN768B-2 chassis.	16 Gbps 64-port blade	Fabric OS v7.0.0 or later
FCoE10-24 Blade Only supported on the SAN768B, SAN384B, and SAN768B-2 chassis.	10 Gig FCoE port router blade	Fabric OS v7.0.0 or later
FX8-24 Extension Blade	8 Gbps extension blade	Fabric OS v6.3.1_CEE
FC32-48 Port Blade	32 Gbps 48-port blade	Fabric OS v8.0.1 or later

TABLE 1 Hardware supported by Fabric OS (continued)

Device name	Terminology used in documentation	Firmware level required
FC32-64 Port Blade	32 Gbps 64-port blade	Fabric OS v8.2.0 or later
SX6 Extension Blade	32 Gbps, router extension blade	Fabric OS v8.0.1 or later

Document conventions

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

Text formatting conventions

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

Format	Description
bold text	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. Identifies document titles.
Courier font	Identifies CLI output. 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
bold text	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, --show 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.
x y	In Fibre Channel products, square brackets may be used instead for this purpose. 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> .

Convention	Description
\	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.

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

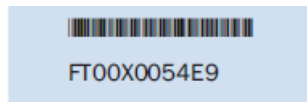
A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Getting technical help

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

- Management application serial number
 - To obtain the Management application serial number, select **Help > License**. The **License** dialog box displays.
- General information
 - Switch model
 - Switch operating system version
 - Software name and software version, if applicable
 - Error numbers and messages received
 - **supportSave** command output
 - Detailed description of the problem, including the switch or fabric behavior immediately following the problem, and specific questions
 - Description of any troubleshooting steps already performed and the results
 - Logs from serial console and Telnet sessions
 - Logs from syslog messages
- Switch serial number

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



The serial number label is located as follows:

- SAN24B-4, SAN24B-5, SAN24B-6, SAN42B-R, SAN64B-6, SAN40B-4, SAN80B-4, SAN96B-5, SAN06B-R, and IBM Converged Switch B32—On the switch ID pull-out tab located inside the chassis on the port side on the left
 - SAN48B-5—On the pull-out tab on the front of the switch
 - SAN256B—Inside the chassis next to the power supply bays
 - SAN768B and SAN768B-2—On the bottom right on the port side of the chassis
 - SAN384B and SAN384B-2—On the bottom left on the port side of the chassis
 - SAN256B-6 and SAN512B-6—On the upper portion of the chassis to the left of the fan assemblies
- World wide name (WWN)

You can also obtain the WWN from the same place as the serial number. For the SAN768B, SAN384B, SAN768B-2, SAN256B-6, and SAN512B-6, access the numbers on the WWN cards by removing the WWN bezel at the top of the nonport side of the chassis.

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

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- Publication form number (for example, GC26-1234-02)
- Page, table, or illustration numbers
- A detailed description of any information that should be changed

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License keys overview

License keys are an encoded form of supported configuration or features. License keys verify ownership of the Management application software and determine the maximum port count allowed or any additional features that you receive as part of the license.

Software licensing terminology

The following terms are used in this document:

- Entitlement certificate—The proof-of-purchase certificate (paperpack or e-license) issued by Brocade when a license is purchased. The certificate contains a unique transaction key that is used in conjunction with the license ID (LID) of the Brocade device to generate and download a software license from the Brocade software portal.
- License file—The file produced by the Brocade software portal when the license is generated. The file is installed in Network Advisor and controls access to a licensed feature or feature set.
- Licensed feature—Any hardware or software feature or set of features that requires a valid software license in order to operate on the device.
- License ID (LID)—The identification number that uniquely identifies the Brocade device. The LID is used in conjunction with a transaction key to generate and download a software license from the Brocade software portal. The software license is tied to the LID of the Brocade device for which the license was ordered and generated.
- Transaction key—A unique key, along with the LID, used to generate a software license from the Brocade software portal. The transaction key is issued by Brocade when a license is purchased. The transaction key is delivered according to the method specified when the order is placed:
 - Paperpack—The transaction key is recorded on an entitlement certificate, which is mailed to the customer.
 - E-license—The transaction key is contained in an e-mail message, which is sent instantly to the customer after the order is placed. The customer receives the e-mail message within a few minutes after the order is placed, though the timing will vary depending on the network, Internet connection, and so on.

If a delivery method is not specified at the time of order, the key will be delivered by the way of paperpack.

How software licensing works

When a license is ordered, an entitlement certificate or e-mail message, along with a transaction key, is issued to the customer by Brocade as proof of purchase. The transaction key and license ID (LID) of the Brocade device are used to generate a license key from the Brocade software portal. The license key is contained within a license file, which is downloaded to your PC and installed on the Management application.

When a trial license expires, the new clients can no longer log in.

License types

The following license types are supported by the Management application:

- Trial extension license—Enables a 45-day extension after the 120-day free evaluation of the Enterprise Trial edition.
- Permanent license—Enables a license-controlled feature to run on the Management application indefinitely.

Managed count

The Management application audits and verifies the managed count against the maximum limit for your license under the following conditions:

- Every three hours from server start time. Note that you may be able to manage more products or ports than the maximum licensed limit briefly (maximum of three hours) between these periodic checks.
- When a new client logs in to the server.
- When you access the **License** dialog box (**Help** > **License**).

NOTE

SAN Professional Plus Licensed versions can manage up to 2,560 ports.

NOTE

SAN Enterprise Trial and Licensed versions can manage up to 15,000 ports and 100 fabrics.

NOTE

SAN +IP Enterprise and Licensed versions can manage only up to 20 IP devices when managing 15,000 SAN ports.

NOTE

For full performance management and dashboard functionality, the **Large** option of the SAN Enterprise edition only supports 5,000 switch ports on a 32-bit system.

NOTE

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

General rules about licensing

This section lists the software licensing rules related to the Management application:

- Only one permanent or trial license can be installed in the Management application at a time.
- A trial license cannot replace or supersede a permanent license.

- If a new feature is added, a new license will be issued.
- Two 45-day trial licenses are available after the default trial period (120 days) expires.

Viewing software license information from the Management application software portal

This section describes other software licensing tasks supported from the Management application software portal. You can use the **Unit License Query** option to view software license information for the Management application. You can export the report to Excel for sharing or archiving purposes.

Depending on the status of the license (for example, whether or not the license was generated), the report will include the following information:

- Software part number, serial number, and description
- Date when the license was installed
- Transaction key
- License ID (LID)
- Product line

To view license information, complete the following steps:

1. From the **License Management** menu, select **Management_application > Unit License Query**. The Management application **Unit License Query** window displays.

FIGURE 1 Unit License Query window



1. Enter the unique serial number in the **Serial Number** field.
2. Enter the unique transaction key number in the **Transaction Key** field. The license details will be displayed only after the transaction key is activated.
3. Click **Search**. The **License Query Results** window displays.

FIGURE 2 License Query Results window

BROCADE support1 Log Out

License Management

IP/ADP Unit License Query

IP/ADP Unit License Query

ID Type: LID

Unit ID:

Transaction key: FD8D0E5B08842E13D32CE

Search Cancel

Level	Part Number	Serial Number	Installed Date	License File	Transaction Key	LID	Feature Name	Description	Product Line	
1	NI-CER-2048C-AC	NICERAC1099				pkegiceGFOO		NI CER 2048C 1 500W AC BASE SW	NICER2048	NI
2	BR-NI-CER-2048-ADV	UA200001757	02-Feb-2010	License File	FD8D0E5B08842E13D32CE	pkegiceGFOO	BR-NI-CER-2048-ADV	BR-NI-CER-2048-ADV	CER 2048C	NI

Export to excel

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The following table describes the fields displayed in the **License Query Results** window.

TABLE 2 Description of License Query Results fields

Field or component	Description
Customer Serial #	The unique serial number given to the customer.
Transaction Key	The unique key number along with the license ID.
Sales Order	The order number of the sale.
Purchase Order	The order number of the purchase.
Description	The license type ordered.
License	The license.
Key Activation Date	The date when the license key is activated.
Size of SAN at the time of installation	Used for SAN devices.
Software Version Number	The software version.
M&S Expiration Date	The expiration date of M&S.

Fabric Insight Portal Advanced Analytics Management license

To manage devices through Management application 14.1.0 or later, you must install the Fabric Insight Portal Advanced Analytics Management (AAM) license in the Brocade Analytics Monitoring Platform running AMP OS 2.1.0 or later. This BNA release has been restricted to advanced AMP capabilities, such as flow metrics monitoring, collection, and aggregation to a single Management application instance at the logical switch level.

Software portal tasks

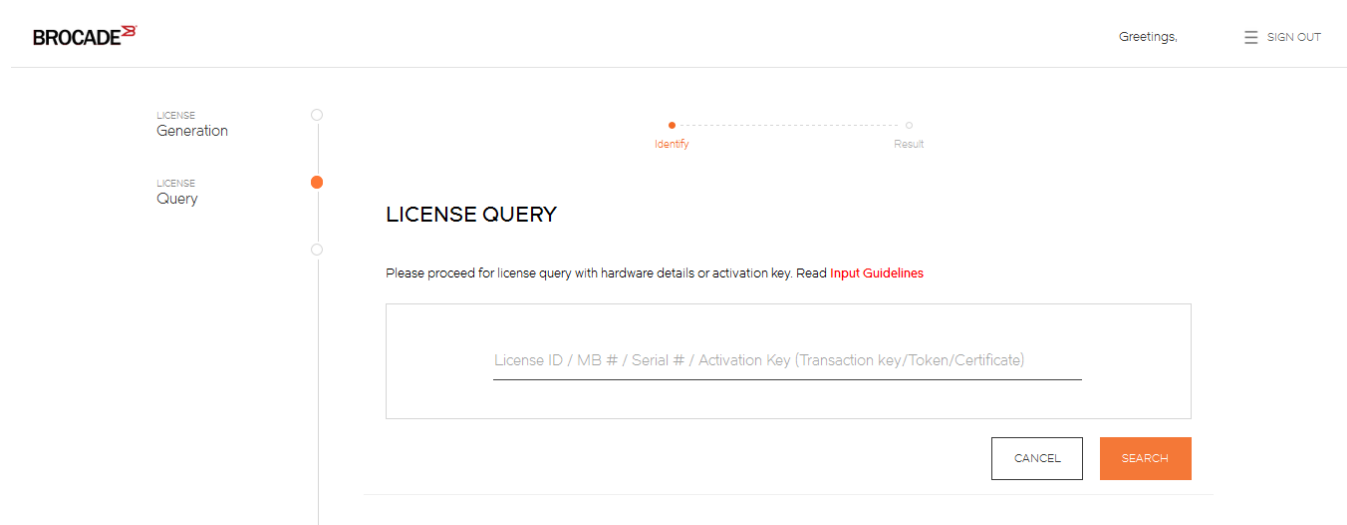
- Querying a license.....15

Querying a license

To view software license information for a particular product, you can use the **License Query** option with an activation key or license ID (LID).

1. To display the **License Query** window, from the **License Management Welcome** window, select **License Management > Brocade NOS > Unit License Query**.

FIGURE 3 License Query window



Click **Input guidelines** for more information on the input value.

2. You must enter the license ID, serial number or activation Key to query a particular product.

3. Click **Search**. Depending on the status of the license (for example, whether or not the license was generated), the report includes the following product information:
 - Product name SKU
 - ID value
 - Activation key
 - License
 - Created date
 - Capacity
 - Customer name
 - Description

FIGURE 4 License Product Information window

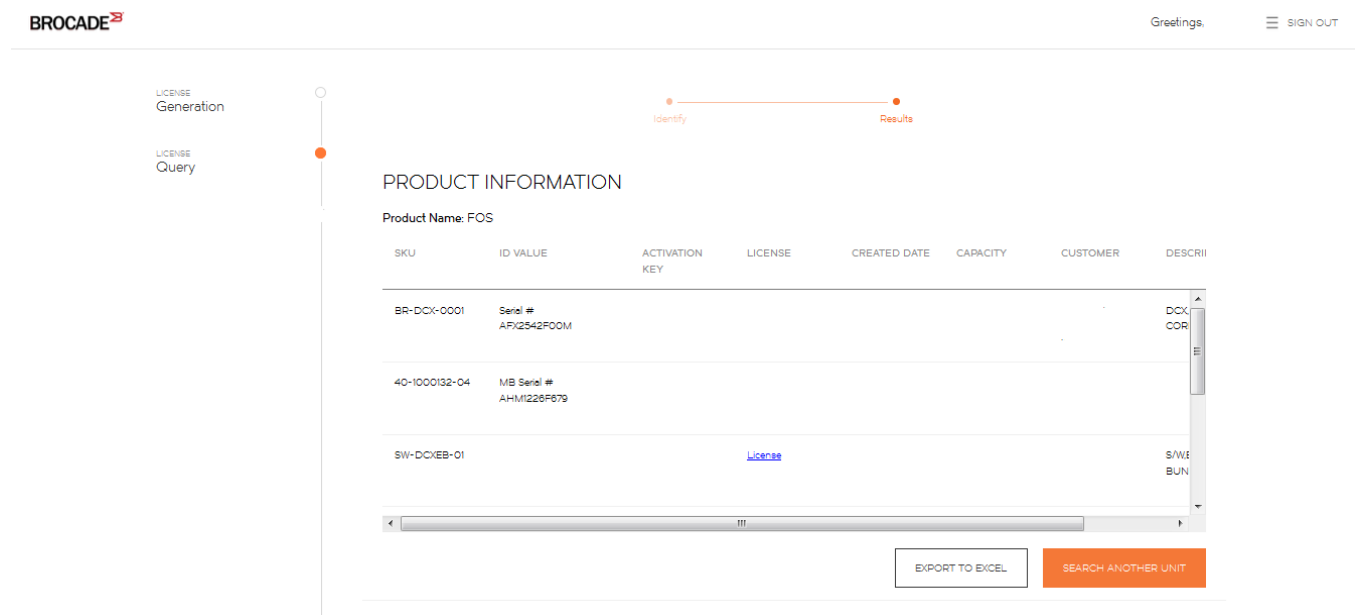


FIGURE 5 License Product Information window

LICENSE Generation

LICENSE Query

Identify Results

PRODUCT INFORMATION

Product Name: BNA

Serial#	BUY00001000
Activation Key	E0CB797C7B2ED8D4FDAAE2
License	License
Key Activation Date	20-Nov-2010
Configuration	BR-NTWADV-IP-BASE NA_EE_IP_1
Software Version Number	11X
Customer	
Description	IP MGMT SWKIT INT ORDER#50DEVICES

IP Information

IP Switch Count	50
IP Switch Port Count	2500
MPLS Count	0
VCS Count	

EXPORT TO EXCEL

SEARCH ANOTHER UNIT

In the figure, the first row under PRODUCT INFORMATION displays hardware-related information, and the second row displays software-related information. If the query is performed before the transaction key is generated, the hardware-related information will not appear as part of the search results. Similarly, if the query is performed before the license is generated, some of the software-related information will not be displayed.

4. Click **more** or **less** in **ID value** to view the License ID.
5. Click the **License** hyperlink to download the license information.
6. Click **Export to Excel** to download the report for sharing or archiving purposes, or click **Search Another Unit** to query another product.

Software Licensing Tasks

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Obtaining a license key

Before upgrading the Management application, you must generate a software license key.

Use the following procedure to generate and obtain a software license key.

1. Order a Management application license.

You will receive the license transaction key in the form of an electronic transaction key. Do not discard the entitlement certificate or the e-mail with the electronic key. Keep it in a safe place in case it is needed for technical support or product replacement.

NOTE

A new license is issued if a new feature is added.

NOTE

Two trial licenses of 45 days each are available after the default trial period (120 days) expires.

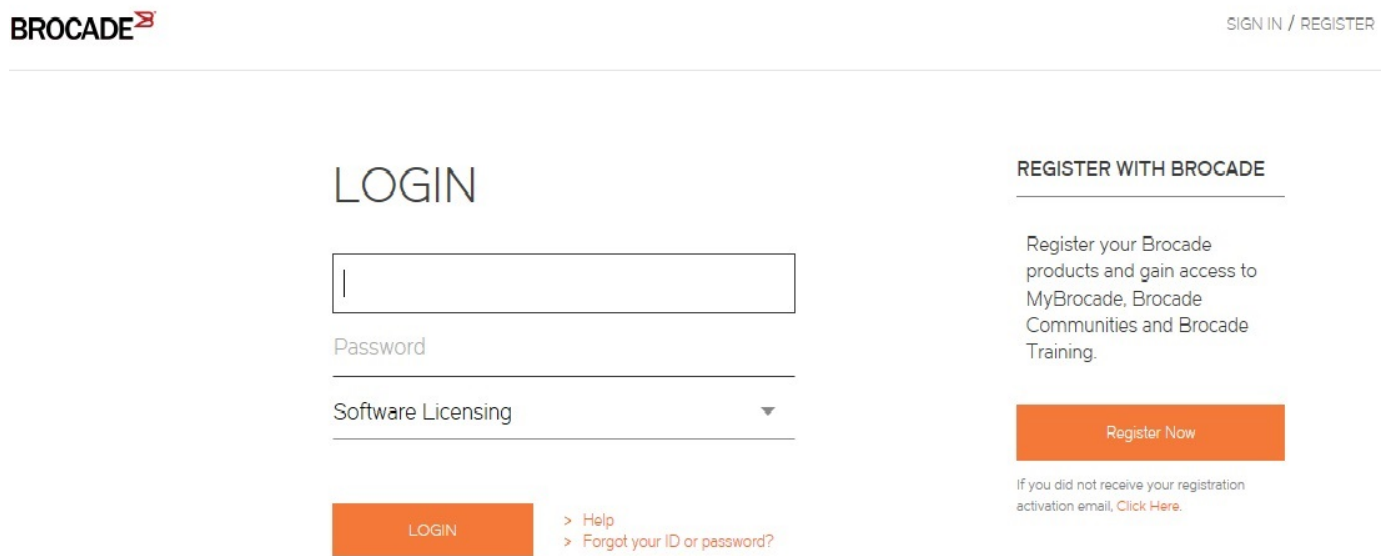
NOTE

Do not discard the entitlement certificate or the e-mail with the electronic key. Keep it in a safe place in case it is needed for technical support or product replacement.

2. Log in to the Brocade software portal at <http://swportal.brocade.com> , and complete the software license request. If you do not have a login ID and password, request access by following the instructions online.


The following figure shows the software licensing portal login window.

FIGURE 6 Management application software licensing portal login window



3. From the **License Management** menu, select *Management_application* > **License Generation with Transaction key**. The **License Generation** window displays.

FIGURE 7 Brocade Network Advisor License Generation window

BROCADE  Log Out

License Management | Reports | Administration

Network Advisor License Generation

Please check the Unique ID to make sure it is correct! License install failure may result!

[Network Advisor code available here](#)
 Note: Login to brocade partner site will be required

Customer Information

* Indicates required field

Customer email ID*

Site Name

Technical Contact

Company Name

City

State/Province

Zip/Postal Code

Country

Phone

Unit Information

Unique ID Type*

Unit's Unique ID*

Transaction Key*

I have read and accept the [Brocade End User License Agreement](#)

- Enter the requested information in the required fields. An asterisk (*) next to a field indicates that the information is required.

NOTE

You can generate more than one license at a time. For each license request, enter the **Unit's Unique ID** and **Transaction Key**, and click **Add**.

NOTE

The validity of the 45-day extension file starts from the day you receive the license key.

- When you have finished entering the required information, read the End User License Agreement, and select the **I have read and accept** check box.

6. Click the **Generate** button to generate the license. The results window displays an order summary and the results of the license request.
 - If the license request is successful, the **Status** field displays "Success" and the **License File** field contains a hyperlink to the generated license file. The license file is automatically sent by e-mail to the specified customer e-mail address.
 - If the license request fails, the **Status** field indicates the reason it failed and the action to be taken.
7. Download the license file to your PC by either clicking the hyperlink in the **License File** field or saving the license file from the e-mail attachment.

Upgrading the Management application

The quickest and simplest method of moving from a lower configuration to a higher configuration is to enter the new license information on the **License** dialog box.

SAN upgrade paths

The following table list the SAN upgrade paths.

TABLE 3 SAN upgrade paths

Current software release	Target software release
SAN Professional	SAN Professional Plus Licensed SAN Enterprise Trial or Licensed
SAN Professional Plus Licensed	SAN Enterprise Licensed
SAN Enterprise Trial	SAN Enterprise Licensed

SAN +IP upgrade paths

The Management application 14.4.2 does not support a fresh installation of SAN+IP license. However, if a SAN+IP license is already installed on a pre-14.4.2, then that version of the Management application can be successfully upgraded to 14.4.2.

Complete the following steps to update the license.

1. Select **Help > License**.
The **License** dialog box displays.
2. Browse to the license key file (.xml) or cut and paste the license string in the **License Key** field, and click **Update**.
3. Click **OK** on the message.
The client closes after updating the license successfully. Restart the server through the Server Management Console for the changes to take effect.
4. Open the Management application (double-click the desktop icon or open it from the **Start** menu).
The **Log In** dialog box displays.

5. Choose one of the following options:
 - If you configured authentication to CAC, enter your PIN in the **CAC PIN** field.
 - If you configured authentication to the local database, an external server (RADIUS, LDAP, or TACACS+), or a switch, complete the following steps.
 - a) Enter your user name and password. The defaults are Administrator and password.

NOTE

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

- b) 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**.
7. Click **OK** on the **Login Banner**.

NOTE

When you launch the Management application or navigate to a new view, the **SAN** tab displays with a gray screen over the **Product List** and **Topology Map** while data is loading.

Downgrading a license

You can downgrade from a higher configuration to a licensed version with a lower configuration. You can perform the following types of downgrades:

- Edition
- Package

NOTE

You cannot downgrade to the Professional edition.

NOTE

Downgrading to a Trial version is not supported.

NOTE

You cannot downgrade during migration (Configuration Wizard).

Downgrading the edition

The table lists the available downgrade paths.

TABLE 4 Edition downgrade paths

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

Before you downgrade the edition, make sure that your application meets the following requirements:

- Your application configuration is within the limit of the licensed version.
- The application is not using a DCX device as a seed switch.

NOTE

If you combine more than one downgrade option, you must meet the requirements for all downgrade options.

To downgrade the edition, complete the following steps.

1. Select **Help > License**.

The **License** dialog box displays.

2. Browse to the license key file (.xml) in the **License Key** field, and click **Update**.

A message displays the support that will no longer be available after the license update.

3. Click **Yes** on the message to continue.

The client closes after updating the license successfully. Restart the server through the Server Management Console for the changes to take effect, and then log back in to the application. After you downgrade from Enterprise to Professional Plus, the network size changes to small and all network-size-related parameters (such as asset collection thread pool size and client and server heap size) are updated.

Downgrading the package

[Table 5](#) lists the available downgrade paths.

TABLE 5 Package downgrade paths

Current software release	Target software release
SAN + IP Enterprise	SAN Enterprise
	SAN Professional Plus
SAN + IP Professional Plus	SAN Enterprise
	SAN Professional Plus
SAN + IP Professional	SAN Enterprise
	SAN Professional Plus

Before you downgrade the package, make sure that your application meets the following requirement:

- If you are downgrading to a SAN-only license, delete all IP products and DCB devices discovered from the **IP** tab.

NOTE

If you combine more than one downgrade option, you must meet the requirements for all downgrade options.

To downgrade the edition, complete the following steps.

1. Select **Help > License**.

The **License** dialog box displays.

2. Browse to the license key file (.xml) in the **License Key** field, and click **Update**.

A message displays the support that will no longer be available after the license update.

3. Click **Yes** on the message to continue.

The client closes after updating the license successfully. Restart the server through the Server Management Console for the changes to take effect, and then log back in to the application.

After you downgrade, the following application change occurs:

- When you downgrade from SAN + IP to SAN only, the SAN network-size changes to none, and all network size-related parameters (such as asset collection thread pool size and client and server heap size) are updated.

References

- Management application packages..... 27
- Scalability limits..... 27
- Edition feature support..... 28

Management application packages

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

TABLE 6 Management application packages and versions

Package	Editions
SAN with SMI Agent	<ul style="list-style-type: none"> • Enterprise (Trial and Licensed) • Professional Plus (Licensed) • Professional
SMI Agent	<p>NOTE Management application clients are not available in the SMI Agent only package. Clients are not required when other management tools are used in SMI Agent.</p>

For a list of the supported scalability limits for the Management application by edition, refer to [Scalability limits](#) on page 27.

Scalability limits

The following table summarizes the scalability limits supported for Management application by edition.

TABLE 7 Supported scalability limits by Management application edition

	Enterprise edition			SAN Professional Plus edition	Professional edition
	Small	Medium	Large		
SAN switch ports	2000	5000	15,000	2560	300
SAN Switches and Access Gateways	40	100	400	40	15
SAN Devices	5000	15000	40,000	5000	1000
SAN Fabrics	25	50	100	36	2
Managed Hosts	20	100	400	100	20
vCenters	1	5	10	5	1
VMs (includes powered-down VMs)	1000	5000	10,000	5000	1000
ESX Hosts	200	1000	2000	1000	200

NOTE

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

NOTE

SMI Agent is not supported in the Professional edition.

NOTE

Supported network latency between the Management application server and client or between the server and devices is 100 milliseconds.

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 8 SAN features supported

Feature	Professional	Professional Plus	Enterprise
AAA (Authentication, authorization, and accounting) Authentication and authorization configuration	No	Yes	Yes
Access Gateway (AG) management			
AG display	Yes	Yes	Yes
Support for firmware download, supportSave, performance statistics, and configuration file management	Yes	Yes	Yes
Active session management	Yes	Yes	Yes
Bottleneck detection			
Badge on topology and product tree	Yes	Yes	Yes
Configuration	No	Yes	Yes
Show affected host	No	Yes	Yes
Statistics	No	Yes	Yes
Call Home support			
Support for all call home centers	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
SupportSave for Fabric OS switches	No	Yes	Yes
Certificate management	No	Yes	Yes
COMPASS	No	Yes	Yes
Configuration management			
Configuration repository management	No	Yes	Yes
Firmware download	Yes	Yes	Yes
Manual backup	Yes	Yes	Yes

TABLE 8 SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
NOTE Professional only supports one switch at a time.			
Periodic configuration backup and persistence	No	Yes	Yes
Replicate switch configuration	No	Yes	Yes
Save configuration NOTE Professional only supports one switch at a time.	Yes	Yes	Yes
Dashboard	Yes	Yes	Yes
DCB configuration management	Yes	Yes	Yes
SAN768B backbone chassis discovery and management	No	No	Yes
Diagnostic port test	No	Yes	Yes
Digital diagnostic	Yes	Yes	Yes
Encryption			
Access Gateway - Cisco interop support	Yes	Yes	Yes
Device decommissioning	Yes	Yes	Yes
Encryption configuration and monitoring	Yes	Yes	Yes
Layer 2 FC support	Yes	Yes	Yes
End device connectivity Collection Views	Yes	Yes	Yes
Fabric binding	No	Yes	Yes
Fabric Watch			
Admin	Element Manager	Element Manager	Element Manager
Hardware	Element Manager	Element Manager	Element Manager
Name Server	Element Manager	Element Manager	Element Manager
Ports	Element Manager	Element Manager	Element Manager
Router Admin	Element Manager	Element Manager	Element Manager
Fault management			
Common SNMP/trap registration	No	Yes	Yes
Event forwarding	No	Yes	Yes
Event custom report	No	Yes	Yes
Event processing (event policies and pseudo events)	Yes	Yes	Yes
Show switch events	Yes	Yes	Yes
Show fabric events	Yes	Yes	Yes

TABLE 8 SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
SNMP trap registration and forwarding	Yes	Yes	Yes
Syslog registration and forwarding	Yes	Yes	Yes
Trap configuration, credentials, and customization	Yes	Yes	Yes
FCIP management			
FCIP configuration wizard	Yes	Yes	Yes
Iperf and IP trace route	Yes	Yes	Yes
FCoE management			
FCoE configuration	Yes	Yes	Yes
Migration from DCFM	Yes	Yes	Yes
FICON/CUP			
Cascaded FICON configuration wizard	No	No	Yes
Cascaded FICON fabric merge wizard	No	No	Yes
PDCM Matrix	Element Manager	Element Manager	Yes
Firmware management and supportSave			
Capture SupportSave	Yes	Yes	Yes
Firmware download	Yes	Yes	Yes
Flow Vision	No	Yes	Yes
Flow Vision - NVMe	No	Yes	Yes
Frame monitor	No	Yes	Yes
HBA management			
Driver/DIOS management	No	Yes	Yes
Fabric-assigned WWN	No	Yes	Yes
HBA management	Yes	Yes	Yes
VM management	Yes	Yes	Yes
HBA server and storage port mapping	No	Yes	Yes
High Integrity Fabric	No	Yes	Yes
IPv6 - Server - Switch support	Yes	Yes	Yes
iSCSI discovery	Yes	Yes	Yes
Layer 2 trace route	No	Yes	Yes
License	No	Yes	Yes
MAPS management	No	Yes	Yes
Meta-SAN	No	Yes	Yes
Domain ID configuration			
Routing configuration			
Name Server	Yes	Yes	Yes
Open Trunking Support			
Display trunks on the topology	Yes	Yes	Yes

TABLE 8 SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
Display trunks properties	Yes	Yes	Yes
Display marching ants	Yes	Yes	Yes
Display connection properties	Yes	Yes	Yes
Performance management - SNMP monitoring			
Data aging	No	Yes	Yes
End-to-end monitors	No	Yes	Yes
Historical Performance collection, display, and reports	No	Yes	Yes
Marching ants	No	Yes	Yes
Real Time Performance collection, display, and reports	Yes	Yes	Yes
Thresholds	No	Yes	Yes
Top talkers - Supported on SAN switches and Access Gateway	No	Yes	Yes
Policy Monitor	Yes	Yes	Yes
Port administration	Element Manager	Element Manager	Element Manager
Port fencing	No	Yes	Yes
Port group configuration	No	No	Yes
Reports	Yes	Yes	Yes
FCR reports	Yes	Yes	Yes
Generate reports	Yes	Yes	Yes
Performance reports	Yes	Yes	Yes
View reports	Yes	Yes	Yes
SCOM plug-in support	No	Yes	Yes
Security management			
L2 ACL configuration	Yes	Yes	Yes
NOTE Supported only on DCB devices.			
Replicate switch policy configuration	No	Yes	Yes
SNMP configuration	Yes	Yes	Yes
SMI Agent	No	Yes	Yes
Access Points Sub Profile			
CEE (Converged Enhanced Ethernet)			
CP Blade Sub Profile			
Enhanced Zoning and Enhanced Zoning Control Sub Profile			
Fabric and Host Discovery			
Fabric Profile			

TABLE 8 SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
Fabric Switch Partitioning Sub Profile			
Fabrics Virtual Fabrics Sub Profile			
Fabric Views Sub Profile			
FC Initiator Ports Sub Profile			
FC HBA (Fibre Channel Host Bus Adapter) Profile Fan, Power Supply, and Sensor Profiles Inter Fabric Routing (FCR) Profile			
FDMI (Fabric Device Management Interface) Sub Profile			
Indication Sub Profile			
Launch In Context Profile			
Location Sub Profile			
N Port Virtualizer (AG NPIV) Profile			
Object Manager Adapter Sub Profile			
Physical Package Sub Profile			
Profile Registration Sub Profile			
Role Based Authorization (CEE ACL) Profile			
SAN Zoning			
Server Profile			
Software Sub Profile			
Switch Profile			
Topology View Sub Profile			
Trunking			
Zone Control Sub Profile			
Switch configuration management	Yes	Yes	Yes
Basic configurations through the Element Manager			
Switch port enable/disable through right-click menu	Yes	Yes	Yes
Technical SupportSave	Yes	Yes	Yes
Telnet	Yes	Yes	Yes
NOTE Telnet through the server is supported only on Windows systems.			
Tools launcher (Setup Tools)	No	Yes	Yes
Troubleshooting and Diagnostics			

TABLE 8 SAN features supported (continued)

Feature	Professional	Professional Plus	Enterprise
Device connectivity troubleshooting wizard	Yes	Yes	Yes
Fabric device sharing	No	Yes	Yes
Trace route and ping	Yes	Yes	Yes
User management	No	Yes	Yes
View management	No	Yes	Yes
Virtual fabric support			
Configuration	No	Yes	Yes
Discovery	Yes	Yes	Yes
VLAN management	Yes	Yes	Yes
VM plugin support	No	Yes	Yes
Web Element Manager	Yes	Yes	Yes
Zoning			
Delete zone database	No	Yes	Yes
Device to zone/ zoneset participation analysis	Yes	Yes	Yes
Impact analysis	Yes	Yes	Yes
Import or export a zone database	No	Yes	Yes
LSAN zones	No	Yes	Yes
Live fabric library scope	Yes	Yes	Yes
Member selection	Yes	Yes	Yes
QoS support	Yes	Yes	Yes
Remove offline devices	No	Yes	Yes
Rolling back to an activated zone database	No	Yes	Yes
TI zones	Yes	Yes	Yes
Zone alias support	Yes	Yes	Yes
Zone editing	Yes	Yes	Yes

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

TABLE 9 IP features supported

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
802.1ag support (MPLS and VLAN management)	No	Yes	Yes	Yes
AAA (Authentication, Authorization, and Accounting)	No	Yes	Yes	Yes
Authentication and authorization configuration				
Address Finder	No	Yes	Yes	Yes
ADP management	No	Yes	Yes	Yes
AMPP (port profile)	No	Yes	Yes	No

TABLE 9 IP features supported (continued)

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
Call Home support				
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
Change management	Partial support	Yes	Yes	Yes
CLI configuration management	No	Yes	Yes	Yes
CLI Element Manager	Yes	Yes	Yes	Yes
Configuration management				
Configuration snapshot	No	Yes	Yes	Yes
Configuration repository management	Yes	Yes	Yes	Yes
Manual backup NOTE Professional only supports one product at a time.	Yes	Yes	Yes	Yes
Save configuration NOTE 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"> • Setting baselines • Search 	No	Yes	Yes	Yes
Change tracking	No	Yes	Yes	Yes
Configuration wizard				
Product configuration - create, edit, and deploy	Yes	Yes	Yes	Yes
Interface payload - sFlow configuration	Yes	Yes	Yes	Yes

TABLE 9 IP features supported (continued)

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
NOTE Professional only supports one product at a time.				
Product Payloads: <ul style="list-style-type: none"> • CLI configuration • CLI product monitoring 	No	Yes	Yes	Yes
Dashboard	Yes	Yes	Yes	Yes
DCB configuration management	Yes	Yes	Yes	Yes
Deployment management	Yes	Yes	Yes	Yes
Discovery				
IP discovery	Yes	Yes	Yes	Yes
VCS discovery	Yes	Yes	Yes	Yes
NOTE Professional supports one cluster member.				
Fabric Watch NOTE 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
Fault Management				
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

TABLE 9 IP features supported (continued)

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
Common SNMP/Trap registration	Yes	Yes	Yes	Yes
FCoE configuration management	Yes	Yes	Yes	Yes
Firmware Management and SupportSave				
Firmware download	Yes	Yes	Yes	Yes
Capture SupportSave	Yes	Yes	Yes	Yes
GSLB management	No	Yes	Yes	Yes
HBA management				
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
IPv6 Server - Product support	Yes	Yes	Yes	Yes
NOTE Only supported in the application when IPv6 is supported on the product.				
Layer 2 trace route	No	Yes	Yes	No
License	No	Yes	Yes	Yes
MLX/XMR management	No	Yes	Yes	Yes
MPLS management	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
Performance management - SNMP monitoring				
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
Performance management - Traffic Analysis (sFlow)				

TABLE 9 IP features supported (continued)

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
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
Policy Monitor	Yes	Yes	Yes	Yes
Power Center	Yes	Yes	Yes	Yes
Reports				
IP product inventory report	Yes	Yes	Yes	Yes
SSL Certificate management	No	Yes	Yes	Yes
Third Party Device support	No	Yes	Yes	Yes
Security management				
MAC filter configuration	Yes	Yes	Yes	Yes
L2 ACL configuration	Yes	Yes	Yes	Yes
L3 ACL configuration	Yes	Yes	Yes	Yes
Services	Yes	Yes	Yes	Yes
Networks	Yes	Yes	Yes	Yes
Switch configuration management	Yes	Yes	Yes	Yes
Basic configurations through the Element Manager				
Telnet	Yes	Yes	Yes	Yes
Tools launcher (Setup Tools)	No	Yes	Yes	Yes
Topology management	Yes	Yes	Yes	Yes
User Management	No	Yes	Yes	Yes
VCS Trace Route				
Trace route	Yes	Yes	Yes	Yes
Historical Graphs/Tables	No	Yes	Yes	Yes
VIP Server management	No	Yes	Yes	Yes
VLAN management	Yes	Yes	Yes	Yes
VM Plugin Support	No	Yes	Yes	Yes
Web Element Manager	Yes	Yes	Yes	Yes
Web Tools/Fabric Watch	Yes	Yes	Yes	Yes
Zoning				
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

TABLE 9 IP features supported (continued)

Feature	Professional	Base Licensed version	Base with Licensed Ethernet Fabrics	Base with Unlicensed Ethernet Fabrics
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



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