



# Documentation Reference for VOSS

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# Chapter 1: About this Document

This section discusses the purpose of this document, the conventions used, ways to provide feedback, additional help, and information regarding other Extreme Networks publications.

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## Purpose

This document provides information on features in VSP Operating System Software (VOSS). VOSS runs on the following product families:

- Extreme Networks VSP 4000 Series (includes VSP 4450 Series)
- Extreme Networks VSP 4900 Series
- Extreme Networks VSP 7200 Series
- Extreme Networks VSP 7400 Series
- Extreme Networks VSP 8000 Series (includes VSP 8200 Series and VSP 8400 Series)
- Extreme Networks VSP 8600 Series
- Extreme Networks XA1400 Series

 **Note:**

VOSS is licensed on the XA1400 Series as a Fabric Connect VPN (FCVPN) application, which includes a subset of VOSS features. FCVPN transparently extends Fabric Connect services over third-party provider networks.

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## Conventions

This section discusses the conventions used in this guide.

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## Text Conventions

The following tables list text conventions that can be used throughout this document.

Table 1: Notice Icons







Icon	Alerts you to...
 <b>Important:</b>	A situation that can cause serious inconvenience.
 <b>Note:</b>	Important features or instructions.
 <b>Tip:</b>	Helpful tips and notices for using the product.
 <b>Danger:</b>	Situations that will result in severe bodily injury; up to and including death.
 <b>Warning:</b>	Risk of severe personal injury or critical loss of data.
 <b>Caution:</b>	Risk of personal injury, system damage, or loss of data.

Table 2: Text Conventions

Convention	Description
Angle brackets ( < > )	<p>Angle brackets ( &lt; &gt; ) indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when you enter the command.</p> <p>If the command syntax is <code>cfm maintenance-domain maintenance-level &lt;0-7&gt;</code>, you can enter <code>cfm maintenance-domain maintenance-level 4</code>.</p>
<b>Bold text</b>	<p>Bold text indicates the GUI object name you must act upon.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>Click <b>OK</b>.</li> <li>On the <b>Tools</b> menu, choose <b>Options</b>.</li> </ul>
Braces ( { } )	<p>Braces ( { } ) indicate required elements in syntax descriptions. Do not type the braces when you enter the command.</p> <p>For example, if the command syntax is <code>ip address {A.B.C.D}</code>, you must enter the IP address in dotted, decimal notation.</p>
Brackets ( [ ] )	<p>Brackets ( [ ] ) indicate optional elements in syntax descriptions. Do not type the brackets when you enter the command.</p> <p>For example, if the command syntax is <code>show clock [detail]</code>, you can enter either <code>show clock</code> or <code>show clock detail</code>.</p>

*Table continues...*

Convention	Description
Ellipses ( ... )	<p>An ellipsis ( ... ) indicates that you repeat the last element of the command as needed.</p> <p>For example, if the command syntax is <code>ethernet/2/1 [ &lt;parameter&gt; &lt;value&gt; ]...</code>, you enter <code>ethernet/2/1</code> and as many parameter-value pairs as you need.</p>
<i>Italic Text</i>	<p>Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles that are not active links.</p>
Plain Courier Text	<p>Plain Courier text indicates command names, options, and text that you must enter. Plain Courier text also indicates command syntax and system output, for example, prompts and system messages.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• <code>show ip route</code></li> <li>• <code>Error: Invalid command syntax [Failed][2013-03-22 13:37:03.303 -04:00]</code></li> </ul>
Separator ( > )	<p>A greater than sign ( &gt; ) shows separation in menu paths.</p> <p>For example, in the Navigation tree, expand the <b>Configuration &gt; Edit</b> folders.</p>
Vertical Line (   )	<p>A vertical line (   ) separates choices for command keywords and arguments. Enter only one choice. Do not type the vertical line when you enter the command.</p> <p>For example, if the command syntax is <code>access-policy by-mac action { allow   deny }</code>, you enter either <code>access-policy by-mac action allow</code> or <code>access-policy by-mac action deny</code>, but not both.</p>

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## Documentation and Training

Find Extreme Networks product information at the following locations:

[Current Product Documentation](#)

[Release Notes](#)

[Hardware and software compatibility](#) for Extreme Networks products

[Extreme Optics Compatibility](#)

[Other resources](#) such as white papers, data sheets, and case studies

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For details, visit [www.extremenetworks.com/education/](http://www.extremenetworks.com/education/).

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## Getting Help

If you require assistance, contact Extreme Networks using one of the following methods:

### [Extreme Portal](#)

Search the GTAC (Global Technical Assistance Center) knowledge base; manage support cases and service contracts; download software; and obtain product licensing, training, and certifications.

### [The Hub](#)

A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

### [Call GTAC](#)

For immediate support: (800) 998 2408 (toll-free in U.S. and Canada) or 1 (408) 579 2826. For the support phone number in your country, visit: [www.extremenetworks.com/support/contact](http://www.extremenetworks.com/support/contact)

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

### **Subscribe to Service Notifications**

You can subscribe to email notifications for product and software release announcements, Vulnerability Notices, and Service Notifications.

1. Go to [www.extremenetworks.com/support/service-notification-form](http://www.extremenetworks.com/support/service-notification-form).
2. Complete the form (all fields are required).
3. Select the products for which you would like to receive notifications.

 **Note:**

You can modify your product selections or unsubscribe at any time.

4. Select **Submit**.

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## Providing Feedback

The Information Development team at Extreme Networks has made every effort to ensure the accuracy and completeness of this document. We are always striving to improve our documentation and help you work better, so we want to hear from you. We welcome all feedback, but we especially want to know about:

- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information in the document.
- Broken links or usability issues.

If you would like to provide feedback, you can do so in three ways:

- In a web browser, select the feedback icon and complete the online feedback form.
- Access the feedback form at <https://www.extremenetworks.com/documentation-feedback/>.
- Email us at [documentation@extremenetworks.com](mailto:documentation@extremenetworks.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.



# Chapter 2: New in this Document

The following section details what is new in this document.

## **Obsolete Documents**

The following documents are obsolete:

- Locating Software and Release Notes for Ethernet Routing Switch 4900 Series.
- Locating Software and Release Notes for Ethernet Routing Switch 5900 Series.
- Regulatory Reference for Ethernet Routing Switch 4900 Series.
- Regulatory Reference for Ethernet Routing Switch 4900 Series.

# Chapter 3: Roadmap

Use this section as a guide to find information to perform work involving the VSP Operating System Software (VOSS).

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## Product Fundamentals

Product fundamentals documentation contains information that is relevant to multiple job functions, and overview and reference information about the product and the product documentation.

**Table 3: Product fundamentals documents**

Technical document	Description
<a href="#">Documentation Reference for VOSS</a>	This document contains an overview of the documentation suite and explains how to use task-based documentation.
<a href="#">Quick Start Configuration for VOSS</a>	This document provides instructions to perform initial provisioning of the software.
<a href="#">Configuring User Interfaces and Operating Systems for VOSS</a>	This document describes how to navigate the command line interface and how to use Enterprise Device Manager to configure your switch, as well and information about operating systems that can run on the switch.
<a href="#">Command Line Interface Commands Reference for VOSS</a>	This document provides default values and proper syntax of the command line interface commands.
<a href="#">VOSS Feature Support Matrix</a>	This document identifies the release that first introduced feature support on a hardware platform. Use this document to determine if features are supported on your platform.

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## Upgrades

Upgrades documentation enables you to upgrade hardware and software from one release to another for the product.

**Table 4: Upgrades documents**

Technical document	Description
<a href="#">Release Notes for VSP 8600</a>	This document describes new features and important information about the latest release. Release notes include a list of known issues (including workarounds where appropriate) and a list of fixed issues. This document also describes known limitations and expected behaviors that may first appear to be issues.

## Installation and Commissioning

Installation and commissioning documentation enables you to install the product hardware and software and perform the initial configuration.

**Table 5: Installation and commissioning documents**

Technical document	Description
VSP 4000 Series	
<a href="#">Installing the Virtual Services Platform 4450GSX-PWR+</a>	This document provides procedures and conceptual information to install the VSP 4450GSX-PWR+ .
<a href="#">Installing the Virtual Services Platform 4450GTX-HT-PWR+</a>	This document provides procedures and conceptual information to install the VSP 4450GTX-HT-PWR+.
<a href="#">Installing the Virtual Services Platform 4850GTS Series</a>	This document provides procedures and conceptual information to install the VSP 4850GTS Series.
<a href="#">Virtual Services Platform 4450GSX Series switch Quick Install Guide</a>	This document provides quick installation instructions to install the VSP 4450GSX-PWR+ switch.
<a href="#">Virtual Services Platform 4450GTX-HT-PWR+ Quick Install Guide</a>	This document provides quick installation instructions to install the VSP 4450GTX-HT-PWR+ switch.
<a href="#">Virtual Services Platform 4850GTS Series Quick Install Guide</a>	This document provides quick installation instructions to install the VSP 4850GTS Series switch.
VSP 4900 Series	
<a href="#">VSP 4900 Series Switches: Hardware Installation Guide</a>	This document provides procedures and conceptual information to install the VSP 4900 Series.
<a href="#">VSP 4900 Series Switches Quick Reference</a>	This document provides quick installation instructions to install the VSP 4900 Series.
VSP 7200 Series	

*Table continues...*

Technical document	Description
<a href="#">Installing the Virtual Services Platform 7200 Series</a>	This document provides procedures and conceptual information to install the VSP 7200 Series.
<a href="#">Virtual Services Platform 7200 Series Quick Install Guide</a>	This document provides quick installation instructions to install the VSP 7200 Series.
VSP 7400 Series	
<a href="#">VSP 7400 Series Switches: Hardware Installation Guide</a>	This document provides procedures and conceptual information to install the VSP 7400 Series.
<a href="#">VSP 7400 Series Switches Quick Reference</a>	This document provides quick installation instructions to install the VSP 7400 Series.
VSP 8000 Series	
<a href="#">Installing the Virtual Services Platform 8000 Series</a>	This document provides procedures and conceptual information to install the VSP 8000 Series.
<a href="#">Virtual Services Platform 8000 Series Quick Install Guide</a>	This document provides quick installation instructions to install the VSP 8000 Series hardware and software.
VSP 8600 Series	
<a href="#">Installing the Virtual Services Platform 8600</a>	This document provides procedures and conceptual information to install the VSP 8600 Series.
<a href="#">Virtual Services Platform 8608 Chassis Installation</a>	This document provides quick installation instructions and commissioning for the VSP 8600 Series.
<a href="#">Virtual Services Platform 8608 Module Installation</a>	This document provides quick installation instructions for the VSP 8600 Series I/O and control (IOC) and switch fabric (SF) modules.
XA1400 Series	
<a href="#">XA1400 Series Switches: Hardware Installation Guide</a>	This document provides procedures and conceptual information to install the XA1400 Series.
<a href="#">XA1400 Series Switches Quick Reference</a>	This document provides quick installation instructions to install the XA1400 Series.
All Products	
<a href="#">Extreme Networks Pluggable Transceivers Installation Guide</a>	This guide provides descriptions of the pluggable transceiver modules supported by Extreme Networks switches and routers, along with information about how to install and use them.

**Table 6: Installation and commissioning reference documents**

Technical document	Description
<a href="#">Regulatory Reference for Virtual Services Platform 4000 Series</a>	These documents provide information about regulatory conformity and compliance.

*Table continues...*

Technical document	Description
<a href="#">Regulatory Reference for Virtual Services Platform 7200 Series</a> <a href="#">Regulatory Reference for Virtual Services Platform 8000 Series</a>	
<a href="#">Locating Software and Release Notes for Virtual Services Platform 4000 Series</a> <a href="#">Locating Software and Release Notes for Virtual Services Platform 7200 Series</a> <a href="#">Locating Software and Release Notes for Virtual Services Platform 8000 Series</a>	These documents ship with their respective VOSS components.
<a href="#">Minimum Software Requirements to Support Virtual Services Platform 8400 ESMs</a>	This document provides the minimum software release for each module in the VSP 8400 Series.
<a href="#">Read Me First—Important Notes and Minimum Software Requirements for VSP 8600 Modules</a>	This document provides important information to read before you install modules in the VSP 8600 Series, and also provides the minimum software release for each IOC and SF module.

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## Administration and Security

Administration and security documentation supports the configuration and management of systems data, resources, users, and security for the product.

**Table 7: Administration and security documents**

Technical document	Description
<a href="#">Administering VOSS</a>	<p>This document provides procedures and conceptual information to administer base system-level topics such as Domain Name System, network clock synchronization, and Network Time Protocol.</p> <p>It also describes important administration procedures to upgrade software, save configurations and shutdown, restart or reset the VOSS switches.</p>
<a href="#">Configuring Security for VOSS</a>	<p>This document provides procedures and conceptual information to administer and configure security features for the VOSS switches.</p>

## Operations

Operations documentation provides information that enables you to configure services and applications, manage accounting and billing, and perform routine maintenance of hardware and software for the product.

**Table 8: Operations documents**

Technical document	Description
<a href="#">Configuring VXLAN Gateway for VOSS</a>	This document contains procedural and conceptual information to help you configure and manage VXLAN Gateway on supported platforms.
<a href="#">Configuring VLANs, Spanning Tree, and NLB for VOSS</a>	This document describes how to configure VLANs, Multiple Spanning Tree Protocol, and Rapid Spanning Tree Protocol.  This document also includes information about how to configure the switches with Network Load Balancer clusters.
<a href="#">Configuring QoS and ACL-Based Traffic Filtering for VOSS</a>	The QoS documents provide procedures and conceptual information to administer and configure Quality of Service. These documents describe filters (access control lists, access control entries), policing, shaping, and DiffServ.
<a href="#">Configuring IP Multicast Routing Protocols for VOSS</a>	This document describes conceptual and procedural information to administer and configure IP Multicast Routing protocols.
<a href="#">Configuring IPv4 Routing for VOSS</a>	This document provides instructions to configure general routing operations.
<a href="#">Configuring OSPF and RIP for VOSS</a>	This document provides procedures and conceptual information to administer and configure Open Shortest Path First and the Routing Information Protocol.
<a href="#">Configuring Link Aggregation, MLT, SMLT and vIST for VOSS</a>	This document describes how to configure and manage link aggregation and MultiLink Trunking.
<a href="#">Configuring IPv6 Routing for VOSS</a>	This document provides instructions to configure IPv6 routing operations. Operations include TCP and UDP, DHCP Relay, VRRP, static routes, OSPFv3, and RSMLT.
<a href="#">Configuring BGP Services for VOSS</a>	This document describes the conceptual and procedural information to configure Border Gateway Protocol (BGP) services on VOSS. This includes the configuration of internal BGP (iBGP) and external BGP (eBGP).
<a href="#">Configuring Fabric Basics and Layer 2 Services for VOSS</a>	This document provides instructions to configure SPBM operations on VOSS. Operations include

*Table continues...*

Technical document	Description
	Shortest Path Bridging MAC (SPBM), Intermediate System to Intermediate System (IS-IS).
<a href="#">Configuring Fabric Layer 3 Services for VOSS</a>	This document describes the conceptual and procedural information to configure IPv4 and IPv6 shortcuts, routes, policies and redistribution. Operations include Unicast configuration of Layer 3 Virtual Services Network (VSN).
<a href="#">Configuring Fabric Multicast Services for VOSS</a>	This document describes the conceptual and procedural information to configure PIM Gateway to provide multicast interdomain communication between an SPB network and a Protocol Independent Multicast-Sparse Mode (PIM-SM) network.

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## Fault and performance management

Fault and performance management documentation enables you to manage faults, and measure and optimize the performance of the product.

**Table 9: Fault and performance management documents**

Technical documents	Description
<a href="#">Troubleshooting VOSS</a>	This document describes common problems and error messages with the techniques to resolve them as well as information about traps and command logging.  This document also provides information about troubleshooting tools.
<a href="#">Monitoring Performance for VOSS</a>	This document provides information about switch management tools, the dynamic network applications feature, and graphing of port and chassis statistics.  This document also provides information about how to prevent faults and improve the performance of the product, including configuration procedures for link state change, key health indicators, and logs and traps.
<a href="#">Configuring the SLA Mon Agent for VOSS</a>	This document provides conceptual and procedural information to perform end-to-end network Quality of Service (QoS) validation and to distribute monitoring devices.