



# Using ACLI and EDM on VSP Operating System Software

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# Chapter 1: Introduction

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## Purpose

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

- Avaya Virtual Services Platform 4000 Series
- Avaya Virtual Services Platform 7200 Series
- Avaya Virtual Services Platform 8000 Series

This document describes how to use the Avaya Command Line Interface (ACLI) and Enterprise Device Manager (EDM) interfaces to configure the features and functions on the Avaya Virtual Services Platform 4000 Series, Avaya Virtual Services Platform 7200 Series and 8000 Series switches.

Examples and network illustrations in this document may illustrate only one of the supported platforms. Unless otherwise noted, the concept illustrated applies to all supported platforms.

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## Related resources

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## Documentation

For installation and initial setup information of the Open Networking Adapter (ONA), refer to the Quick Install Guide that came with your ONA.

**\* Note:**

The ONA works only with the Avaya Virtual Services Platform 4000 Series. For more information about configuring features, refer to the VOSS documentation. See *Documentation Reference for VSP Operating System Software*, NN47227-100 for a list of all the VSP 4000 documents.

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 **Note:**

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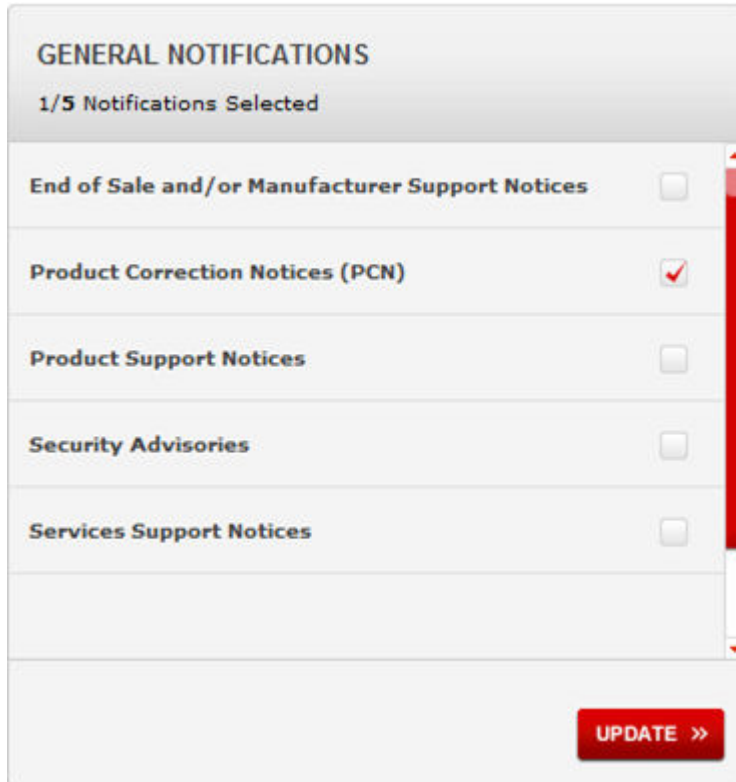
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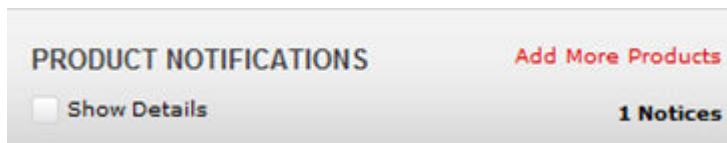
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1. In an Internet browser, go to <https://support.avaya.com>.
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GENERAL NOTIFICATIONS	
1/5 Notifications Selected	
End of Sale and/or Manufacturer Support Notices	<input type="checkbox"/>
Product Correction Notices (PCN)	<input checked="" type="checkbox"/>
Product Support Notices	<input type="checkbox"/>
Security Advisories	<input type="checkbox"/>
Services Support Notices	<input type="checkbox"/>
<b>UPDATE &gt;&gt;</b>	

6. Click **OK**.
7. In the PRODUCT NOTIFICATIONS area, click **Add More Products**.



PRODUCT NOTIFICATIONS	
<input type="checkbox"/> Show Details	<b>1 Notices</b>

8. Scroll through the list, and then select the product name.
9. Select a release version.
10. Select the check box next to the required documentation types.



The screenshot shows two side-by-side panels. The left panel, titled 'PRODUCTS', has a 'My Notifications' link in the top right. It contains a list of products: Virtual Services Platform 7000, Virtualization Provisioning Service, Visual Messenger™ for OCTEL® 250/350, Visual Vectors, Visualization Performance and Fault Manager, Voice Portal, Voice over IP Monitoring, W310 Wireless LAN Gateway, WLAN 2200 Series, and WLAN Handset 2200 Series. The right panel, titled 'VIRTUAL SERVICES PLATFORM 7000', has a 'Select a Release Version' dropdown menu set to 'All and Future'. Below this are several checkboxes: 'Administration and System Programming' (unchecked), 'Application Developer Information' (unchecked), 'Application Notes' (unchecked), 'Application and Technical Notes' (checked), 'Declarations of Conformity' (unchecked), and 'Documentation Library' (checked). A red 'SUBMIT >>' button is located at the bottom right of the right panel.

11. Click **Submit**.

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## Searching a documentation collection

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### Before you begin

- Download the documentation collection zip file to your local computer.
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### Procedure

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2. Navigate to the folder that contains the extracted files and open the file named `<product_name_release>.pdx`.

3. In the Search dialog box, select the option **In the index named <product\_name\_release>.pdx**.
4. Enter a search word or phrase.
5. Select any of the following to narrow your search:
  - Whole Words Only
  - Case-Sensitive
  - Include Bookmarks
  - Include Comments
6. Click **Search**.

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# Chapter 2: New in this document

The following sections detail what is new in *Using ACLI and EDM on VSP Operating System Software*, NN47227-103.

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## Features

### Release 5.1.2

#### Secure Web server with TLS

This release introduces the Secure Web server with TLS feature which enhances communications security by replacing the SSL 3.0 protocol with Mocana NanoSSL to secure the HTTP server using the Transport Layer Security (TLS) cryptographic protocol.

For more information, see:

- [Secure Web server with TLS](#) on page 18
- [Certificate order priority](#) on page 18
- [Setting TLS protocol version on ACLI](#) on page 28
- [Configuring the Web management interface](#) on page 39

# Chapter 3: Avaya Command Line Interface fundamentals

This section describes the Avaya Command Line Interface (ACLI).

ACLI is an industry standard command line interface that you can use for single-device management across Avaya products.

To manage multiple devices through one interface, install Configuration and Orchestration Manager (COM) on a remote server. For more information on COM documentation, see <http://support.avaya.com>.

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## ACLI command modes

ACLI has six major command modes in this release. You start your session on the switch in User EXEC mode. From User EXEC mode, you can enter Privileged EXEC mode. From Privileged EXEC mode, you can enter Global Configuration mode. From Global Configuration mode, you can enter one of the remaining modes.

Each mode provides a specific set of commands. While in a higher mode, you can access most commands from lower modes, except if they conflict with commands of your current mode.

The following list describes the command modes:

- User EXEC mode—the initial mode of access. Only a limited number of commands are available in the User EXEC mode. Most EXEC commands are one-time commands, such as show commands, which show the current configuration status. The EXEC commands are not saved across restarts.
- Privileged EXEC mode—access this mode from the User EXEC mode. The user name and password combination determines your access level in the Privileged EXEC mode and higher modes. Enter **enable** to access this mode from the User EXEC mode. As with the User EXEC mode commands, most EXEC commands are one-time commands, such as show commands, which show the current configuration status. The Privileged EXEC mode commands are also not saved across restarts.
- Global Configuration mode—access this mode from the Privileged EXEC mode. Enter **config {terminal|network}** to access the Global Configuration mode. Use this mode to make changes to the running configuration. If you save the configuration, these settings survive a restart of the system.

- Interface Configuration mode—access this mode from the Global Configuration mode.

Enter `interface {GigabitEthernet {slot/port[/sub-port]}[-slot/port[/sub-port]][,...]} | loopback <1-256> | mgmtEthernet mgmt | mlt <1-512> | vlan <1-4059>}` to access the Interface Configuration mode. Use this mode to modify either a logical interface, such as a virtual local area network (VLAN), or a physical interface, such as a port or slot. You can configure the following interfaces:

- GigabitEthernet
- Loopback
- mgmtEthernet
- MLT
- VLAN

**\* Note:**

The above mode with `mgmtEthernet mgmt` does not apply to VSP 4000.

- Router Configuration mode—access this mode from the Global Configuration mode. Enter `router {bgp|isis|ospf|rip|vrf WORD<1-16> | vrrp}` to access the Router Configuration mode. Use this mode to modify a protocol. You can configure the following protocols:
  - BGP
  - IS-IS
  - OSPF
  - RIP
  - VRF
  - VRRP
- Application Configuration mode—access this mode from the Global Configuration mode. Enter application to access the Application Configuration mode. Use this mode to access the SLA Monitor application.

From either the Global Configuration mode or the Interface Configuration mode, you can save all of the configuration parameters (global, interface, and router) to a file. The default name for the configuration file is `config.cfg`. You can also use alternative file names.

You can enter most of the show commands from the User EXEC mode. In most cases, you can also enter the show commands in all of the upper-level command modes. If you need to enter a particular command mode to access a show command, the procedure prerequisites will state the required mode.

The following table lists the ACLI command modes, the prompt for each mode, and explains how to enter and exit each mode. The prompt is prefaced by the system name, for example:

- `VSP-4850GTS:1#`
- `VSP-4850GTS-PWR+:1(config-isis)#`

- VSP-4450GSX-PWR+: (config) #
- VSP-7254XSQ:1#
- VSP-7254XTQ:1 (config-bgp) #
- VSP-8284XSQ:1>
- VSP-8404:1 (config-if) #

**Table 1: ACLI command modes**

Command mode	Prompt	Command mode or enter/exit mode
User EXEC	>	This mode is the default command mode and does not require an entrance command. To exit the ACLI, enter <code>logout</code> .
Privileged EXEC	#	Enter <code>enable</code> to access the Privileged EXEC mode from the User EXEC mode. Enter <code>disable</code> to exit the Privileged EXEC mode, and enter the User EXEC mode. To exit the ACLI, enter <code>logout</code> .
Global Configuration	(config)#	From the Privileged EXEC mode, enter <code>configure</code> , followed by either <code>terminal</code> or <code>network</code> to access the Global Configuration mode. Enter <code>exit</code> to exit the Global Configuration mode, and enter the Privileged EXEC mode. To exit the ACLI, enter <code>logout</code> .
Interface Configuration	(config-if)# (config-mlt)#	Entry into this command mode depends on the type of configured interfaces. From the Global Configuration mode, enter <code>interface {GigabitEthernet {slot/port[/sub-port]} [-slot/port[/sub-port]] [, ... ]&gt;   loopback &lt;1-256&gt;   mgmtEthernet mgmt   mlt &lt;1-512&gt;   vlan &lt;2-4059&gt;}</code> to access the Interface Configuration mode. Enter <code>exit</code> to exit the Interface Configuration mode and enter the Global Configuration mode. To return to the Privileged EXEC mode, enter

*Table continues...*

Command mode	Prompt	Command mode or enter/exit mode
		<b>end</b> . To exit the ACLI, enter <b>logout</b> .
Router Configuration	(config-bgp)# (config-isis)# (config-ospf)# (config-rip)# (router-vrf)# (config-vrrp)#	Entry into this command mode depends on the configured protocols. Enter <b>router {bgp isis ospf rip vrf WORD&lt;1-16&gt;   vrrp}</b> to access the Router Configuration mode from the Global Configuration mode. Enter <b>exit</b> to exit the Router Configuration mode and enter the Global Configuration mode. To return to the Privileged EXEC mode, enter <b>end</b> . To exit the ACLI, enter <b>logout</b> .
Application Configuration	(config-app)#	Enter application to access the Application Configuration mode from the Global Configuration mode. Enter <b>exit</b> to exit the Application Configuration mode, and enter the Global Configuration mode. To return to the Privileged EXEC mode, enter <b>end</b> . To exit the ACLI, enter <b>logout</b> .

## Default user names and passwords

The following table contains the default user names and passwords that you can use to log on to the switch using the Avaya command line interface (ACLI). For more information about how to change passwords, see *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601 and *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601.

**Table 2: ACLI default user names and passwords**

User name	Password	Description
rwa	rwa	read-write-all
rw	rw	read-write
ro	ro	read-only
l1	l1	layer 1
l2	l2	layer 2
l3	l3	layer 3

If you enable enhanced secure mode, the user names and passwords are different than the default values documented in the preceding table. For more information on enhanced secure mode, see *Administering Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-600 and *Administration for Avaya Virtual Services Platform 4000 Series*, NN46251-600.

**! Important:**

The default passwords and community strings are documented and well known. Avaya strongly recommends that you change the default passwords and community strings immediately after you first log on. For more information about changing user names and passwords, see *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601 and *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601.

---

## Documentation convention for the port variable

Commands that require you to enter one or more port numbers on the switch use the parameter `{slot/port[/sub-port][-slot/port[/sub-port]][,...]}` in the syntax. The following list specifies the rules for using `{slot/port[/sub-port][-slot/port[/sub-port]][,...]}`.

- `{slot/port[/sub-port]}` — Identifies a single slot and port. If your platform supports channelization for 40 Gbps ports and the port is channelized, you must also specify the sub-port in the format `slot/port/sub-port`. For example, `1/1` indicates the first port on slot 1. `1/41/1` indicates the first channel on slot 1, port 1.
- `{slot/port[/sub-port][-slot/port[/sub-port]][,...]}`— Identifies the slot and port in one of the following formats: a single slot and port (`slot/port`), a range of slots and ports (`slot/port-slot/port`), or a series of slots and ports (`slot/port,slot/port,slot/port`). If your platform supports channelization for 40 Gbps ports and the port is channelized, you must also specify the sub-port in the format `slot/port/sub-port`. For example, `1/1-1/3` indicates ports 1 to 3 on slot 1, or `1/41/1,1/41/3` indicates the first and third channels of slot 1, port 41.

---

## Command completion

The ACLI provides potential command completions to the command string. Completions are provided by using a `?` or by using the ACLI autocompletion feature:

- question mark (`?`)
- ACLI autocompletion

### **? command completion**

The `?` command completion is available for any valid command. By typing a command and using a `?` as the last argument in the command, the system returns a list of possible command completions from the point of the `?`. A short description is provided with each possible completion.



## Example

If you enter the following command:

```
Switch:1(config-isis)#redistribute ?
```

ACL I provides a list of completions for the **redistribute ?** command.

```
Switch:1(config-isis)#redistribute ?
  direct      isis redistribute direct command
  ospf        isis redistribute ospf command
  rip         isis redistribute rip command
  static      isis redistribute static command
```

All the parameters listed under redistribute indicate sub-context commands.

You must use one of the available completions, and if necessary, use the command completion help again to find the next completion.

```
Switch:1(config-isis)#redistribute direct ?
  enable      Enable isis redistribute direct command
  metric      Isis route redistribute metric
  metric-type Set isis redistribute metric type
  route-map   Set isis redistribute direct route-policy
  subnets    Set isis redistribute subnets
<cr>
```

When you see <cr> (Carriage Return/Enter Key) in the list with the additional choices, this means that no additional parameters are required to execute the ACL I command. However, the additional choices listed could be peer commands or sub-context commands.

For example, the parameters listed under **redistribute direct ?** are peer commands. One can enter these peer commands on the same line as the root command, for example **redistribute direct enable**. However, the <cr> indicates that one can enter the **redistribute direct** command only and this command does not require any additional parameters at this level.

## ACL I autocompletion

ACL I autocompletion is a feature that you can use to automatically fill in the unique parts of a command string rather than typing the entire command. Autocompletion makes the ACL I experience easier and prevents mistakes in spelling that force you to re-enter the command.

Autocompletion completes the token in the command as soon as it becomes unique.

The **Tab** key autocompletes the command without executing the command, and places the cursor immediately after the last character. The **Enter** key autocompletes the command and executes it.

## Example

To enable redistribution of isis direct routes,

```
Switch:1(config-isis)#redistribute direct
```

When you use **redistribute ?**, you see four possible sub-context commands.

```
direct
static
ospf
rip
```

If you type the following without pressing **Enter**:

```
Switch:1(config-isis)#redistribute direct m
```

and press the **Tab**, the system completes the command to the following point:

```
redistribute direct metric
```

Two possible completions exist. You can type **-t**, and then press **Tab** to finish the command:

```
Switch:1(config-isis)#redistribute direct metric-type
```

---

## Secure Web server with TLS

This release enhances communications security by implementing Mocana NanoSSL to secure HTTP server using Transport Layer Security (TLS) cryptographic protocol.

The following are the key properties of Secure Web server with TLS:

- This feature can be implemented on a maximum of only 10 concurrent client connections.
- VOSS supports version TLS 1.2 and above by default. You can explicitly configure TLS 1.0 and TLS 1.1 version support using ACLI or EDM.
- This feature replaces SSL 3.0 with TLS. SSL 3.0 is not supported anymore.
- TLS server does not support RC4, DES, TDES, and MD5 based cipher suites.

---

## Certificate order priority

Use the following information to understand the certificate order priority when the TLS server and switch connect.

The TLS server selects the server certificate in the following order:

1. A CA-signed certificate if the certificate is already present in the `/intflash/.cert/` folder on the switch.
2. A self-signed certificate if the certificate is already present in the `/intflash/.cert/` folder on the switch.

If the server certificates are not available, TLS server generates a new self-signed certificate on boot and uses that by default. The self-signed certificate is available in `/.intflash/.cert/.ssl`. You can choose to use an online or offline CA signed certificate which will take precedence over the self-signed one.

### SSL-based self-signed certificate

Some earlier releases use the default certificate available in the `/intflash/.ssh` folder, which is the open SSL-based self-signed certificate that is named `host.cert`.

To use the Mocana stack based self-signed certificate, delete the open SSL self-signed certificate prior to upgrading your software release. The Mocana certificate offers better and stronger encryption.

If a user does not delete the `host.cert` file in the `/intflash/.ssh` folder used in earlier releases, forcefully generates a self-signed certificate automatically during upgrade or post upgrade using the command `config ssl certificate`.

If you have a subscribed CA-signed certificate renamed as host.cert in folder `/intflash/.ssh` in the pervious release, it cannot be reused now.

To use your subscribed CA-signed certificate, upgrade with the Mocana-based self-signed certificate, and then use the digital certificates feature to install a CA-signed certificate through the online or offline method.

You cannot obtain a CA-signed certificate and rename the certificate as host.cert. You must use the online or offline method to obtain certificate.

# Chapter 4: ACLI procedures

This chapter contains information about common ACLI tasks. You can access ACLI during runtime to manage the switch.

---

## Logging on to the software

### Before you begin

- The first time you connect to the switch, you must log on to ACLI using the direct console port.

### About this task

After you first connect to ACLI you can log on to the software using the default user name and password. For more information about the default user names and passwords, see [Default user names and passwords](#) on page 15.

### Procedure

1. At the login prompt, enter the user name.
2. At the password prompt, enter the password.

---

## Viewing configurations

You can view the running configuration using the show command.

### Procedure

1. Enter Privileged EXEC mode:

```
enable
```

2. View running configuration:

```
show running-config
```

### Example

```
VSP-8284XSQ:1#show running-config
Preparing to Display Configuration...
#
#
```

```

# Thu Feb 05 18:38:02 2015 UTC
# box type           : VSP-8284XSQ
# software version   : 4.2.0.0_B004 (PRIVATE)
# cli mode           : ACLI
#
#
#!end
#
config terminal
#
#
#BOOT CONFIGURATION
#
boot config flags ftpd
boot config flags telnetd
# end boot flags
auto-recover-delay 10
#
#CLI CONFIGURATION
#
telnet-access sessions 3
password password-history 3
#
#SYSTEM CONFIGURATION
#
ip name-server primary 10.1.1.1
sys msg-control control-interval 30
sys msg-control
#
#

```

---

## Changing user modes in ACLI

Perform this procedure to change user modes in ACLI.

### Before you begin

- You must log on to ACLI.

### About this task

You can enter shortened versions of the commands, if the letter combination is unique.

### Procedure

1. Access the Privileged EXEC mode:  
enable
2. Access the Global Configuration mode:

```
configure terminal
```

3. Access the Interface Configuration mode:

```
interface {GigabitEthernet {slot/port[/sub-port] [-slot/port[/sub-  
port]] [, ...]} | loopback <1-256> | mgmtEthernet mgmt | mlt <1-256> |  
vlan <1-4059>}
```

**\* Note:**

The above mode with **mgmtEthernet mgmt** does not apply to VSP 4000.

4. Access the Router Configuration mode:

```
router {bgp [0-65535] | isis [enable] | ospf [enable] | rip [enable  
[vrf WORD<1-511>]] | vrf WORD<0-16> | vrrp}
```

5. Access the Application Configuration mode:

```
application
```

**Example**

Access Privileged EXEC mode:

```
Switch:1> enable
```

Access Global Configuration mode:

```
Switch:1#configure terminal
```

Access Interface Configuration mode for a VLAN:

```
Switch:1(config)#interface vlan 2
```

Access Router Configuration mode for BGP:

```
Switch:1(config-if)#router bgp
```

Exit back to Global Configuration mode:

```
Switch:1(router-bgp)#exit
```

Access Router Configuration mode for isis:

```
Switch:1(config-if)#router isis
```

Exit back to Global Configuration mode:

```
Switch:1(config-isis)#exit
```

Access Router Configuration mode for OSPF:

```
Switch:1(config)#router ospf
```

Exit back to Global Configuration mode:

```
Switch:1(router-ospf)#exit
```

Access Application Configuration mode:

```
Switch:1(config)#application
```

Exit back to Privileged EXEC mode:

```
Switch:1 (config-app) # end
```

Exit back to User EXEC mode:


```
Switch:1#disable
```

Exit the system:

```
Switch:1>exit
```

## Variable definitions

Use the data in the following table to use the **interface** command.

Variable	Value
GigabitEthernet {slot/port[/sub-port][/-slot/port[/sub-port]][,...]}	<p>Logs on to the GigabitEthernet Interface Configuration mode.</p> <p>Identifies the slot and port in one of the following formats: a single slot and port (slot/port), a range of slots and ports (slot/port-slot/port), or a series of slots and ports (slot/port,slot/port,slot/port). If your platform supports channelization for 40 Gbps ports and the port is channelized, you must also specify the sub-port in the format slot/port/sub-port.</p>
loopback <1-256>	<p>Logs on to the loopback Interface Configuration mode. Use &lt;1-256&gt; to specify which interface to configure.</p>
mgmtEthernet <i>mgmt</i>	<p>Logs on to the mgmtEthernet Interface Configuration mode. Use <i>mgmt</i> for management configurations.</p> <p> <b>Note:</b> This does not apply to VSP 4000.</p>
mlt <1-512>	<p>Logs on to the multi-link trunking (MLT) Interface Configuration mode. Use &lt;1-512&gt; to specify which MLT to configure.</p>
vlan <1-4059>	<p>Specifies the VLAN ID in the range of 1 to 4059. VLAN IDs 1 to 4059 are configurable. The system reserves VLAN IDs 4060 to 4094 for internal use. VLAN ID 1 is the default VLAN and you cannot create or delete VLAN ID 1.</p>

Use the data in the following table to use the **router** command.

Variable	Value
bgp [<0-65535>] [enable]	Enter Border Gateway Protocol (BGP) Router Configuration mode. You can specify a specific autonomous system number. The <code>router bgp</code> command allows you to enter BGP Router Configuration mode. <0-65535> allows you to specify the AS number and the <code>enable</code> option allows you to enable BGP.
bgp [as-4-byte enable]	Enable 4-byte autonomous system numbers globally.
bgp [as-dot enable]	Enable the AS dot representation for 4-byte AS numbers globally.
bgp [WORD <0-11> [enable]]	Specifies the AS number and enables BGP. You cannot enable BGP until you change the local AS to a value other than 0.
isis [enable]	Enter IS-IS Router Configuration mode. The command <code>router isis</code> allows you to enter IS-IS Router Configuration mode. After the configuration, use <code>router isis enable</code> to enable IS-IS globally.
ospf [enable] [ipv6-enable]	Enter Open Shortest Path First (OSPF) Router Configuration mode. You can specify <code>ospf</code> or <code>ipv6</code> . The command <code>router ospf</code> allows you to enter OSPF Router Configuration mode. After the configuration, use <code>router ospf enable</code> to enable OSPF globally.  The options <code>enable</code> or <code>ipv6-enable</code> enable OSPF for the switch.
rip [enable] [vrf <1-255>]	Enter Routing Information Protocol (RIP) Router Configuration mode. You can specify to enable RIP or to enable RIP on a specific Virtual Router Forwarding (VRF) ID. The command <code>router rip</code> allows you to enter RIP Router Configuration mode. After the configuration, use <code>router rip enable</code> to enable RIP globally.
vrf WORD<1-16>	Enter Virtual Router Forwarding (VRF) Router Configuration mode. Specify the VRF name to configure. The command <code>router vrf WORD&lt;1-16&gt;</code> allows you to enter VRF Router Configuration mode.
vrrp	Enter Virtual Router Redundancy Protocol Router Configuration mode.



## Saving the configuration

After you change the configuration, you must save the changes to the module. Save the configuration to a file to retain the configuration settings.

### About this task

File Transfer Protocol (FTP) and Trivial File Transfer Protocol (TFTP) support both IPv4 and IPv6 addresses, with no difference in functionality or configuration.

### Procedure

1. Enter Privileged EXEC mode:

```
enable
```

2. Save the running configuration:

```
save config [backup WORD<1-99>] [file WORD<1-99>] [verbose]
```

### Example

```
Switch:1> enable
```

Save the configuration to the default location:

```
Switch:1# save config
```

Identify the file as a backup file and designate a location to save the file:

```
Switch:1# save config backup 46.140.54.40/configs/backup.cfg
```

## Variable definitions

Use the data in the following table to use the **save config** command.

Variable	Value
backup <i>WORD</i> <1-99>	<p>Saves the specified file name and identifies the file as a backup file.</p> <p><i>WORD</i>&lt;1-99&gt; uses one of the following formats:</p> <ul style="list-style-type: none"> <li>• a.b.c.d:&lt;file&gt;</li> <li>• /intflash/&lt;file&gt;</li> </ul> <p>The file name, including the directory structure, up to 1 to 99 characters.</p>
file <i>WORD</i> <1-99>	<p>Specifies the file name in one of the following formats:</p> <ul style="list-style-type: none"> <li>• /intflash/&lt;file&gt;</li> <li>• a.b.c.d:&lt;file&gt;</li> </ul>

*Table continues...*

Variable	Value
	The file name, including the directory structure, up to 1 to 99 characters.
verbose	Saves the default and current configuration. If you omit this parameter, the command saves only parameters you change.

## Configuring the Web server using ACLI

Perform this procedure to enable and manage the Web server using the Avaya Command Line Interface (ACLI). After you enable the Web server, you can connect to EDM.

HTTP and FTP support both IPv4 and IPv6 addresses, with no difference in functionality or configuration. The TFTP server supports both IPv4 and IPv6 addresses. The TFTP client is not supported, only the server.

### About this task

This procedure assumes that you use the default port assignments. You can change the port number used for HTTP and HTTPS.

#### Important:

If you want to allow HTTP access to the device, you must disable the Web server secure-only option. If you want to allow HTTPS access to the device, the Web server secure-only option is enabled by default.

### Procedure

1. Enter Global Configuration mode:
 

```
enable
configure terminal
```
2. Enable the Web server:
 

```
web-server enable
```
3. Disable the secure-only option (for HTTP access) :
 

```
no web-server secure-only
```
4. Enable the secure-only option (for HTTPs access) :
 

```
web-server secure-only
```
5. Display the Web server status:
 

```
show web-server
```

## Example

Enable the secure-only web-server, and configure the access level to read-write-all, for a username of smith2 and the password to 90Go243.

```
Switch:1>enable
Switch:1#configure terminal
Switch:1(config)#web-server enable
Switch:1(config)#web-server secure-only
Switch:1(config)#web-server password rwa smith2 90Go243
Switch:1(config)#show web-server
```

Web Server Info :

```

      Status                : on
      Secure-only           : disabled
      TLS-minimum-version   : tlsv11
      RWA Username          : admin
      RWA Password          : *****
      Def-display-rows      : 30
      Inactivity timeout    : 900 sec
      Html help tftp source-dir :
      HttpPort              : 80
      HttpsPort             : 443
      NumHits                : 232
      NumAccessChecks       : 12
      NumAccessBlocks       : 0
      NumRxErrors           : 178
      NumTxErrors           : 0
      NumSetRequest         : 0
      Minimum password length : 8
      Last Host Access Blocked : 0.0.0.0

```

## Variable definitions

Use the data in the following table to use the **web-server**

Variable	Value
def-display-rows <10-100>	Configures the number of rows each page displays, between 10 and 100.
enable	Enables the Web interface. To disable the Web server, use the no form of this command:  no web-server [enable]
help-tftp WORD<0-256>	Configures the TFTP or FTP directory for Help files, in one of the following formats: a.b.c.d:/  peer:/ [-dir>]. The path can use 0–256 characters. The following example paths illustrate the correct format: <ul style="list-style-type: none"> <li>• 47.17.82.25:/VSP_help</li> <li>• 47.17.82.25:/</li> </ul>
http-port <80-49151>	Set web server HTTP port.
https-port <443-49151>	Set web server HTTPS port.

*Table continues...*

Variable	Value
<code>inactivity-timeout&lt;30–65535&gt;</code>	Configures the web-server session inactivity timeout.
<code>password&lt;min-passwd-len &lt;1–32&gt; ro rw rwa&gt;</code>	Configures the password length or the password permission level. You can choose from the following: <ul style="list-style-type: none"> <li>• <code>min-passwd-len &lt;1–32&gt;</code> — Specifies the minimum password length.</li> <li>• <code>ro</code> – Specifies the password as read-only.</li> <li>• <code>rw</code> – Specifies the password as read-write.</li> <li>• <code>rwa</code> – Specifies the password as read-write access.</li> </ul>
<code>secure-only</code>	Enables secure-only access for the web server.
<code>tls-min-ver&lt;tlsv10 tlsv11 tlsv12&gt;</code>	Configures the minimum version of the TLS protocol supported by the web-server. You can select among the following: <ul style="list-style-type: none"> <li>• <code>tlsv10</code> – Configures the version to TLS 1.0.</li> <li>• <code>tlsv11</code> – Configures the version to TLS 1.1.</li> <li>• <code>tlsv12</code> – Configures the version to TLS 1.2</li> </ul> <p>The default is <code>tlsv12</code>.</p>

## Setting the TLS protocol version

The switch by default supports version TLS 1.2 and above. You can explicitly configure TLS 1.0 and TLS 1.1 version support using ACLI.

### About this task

Disable the web server before changing the TLS version. By disabling the web server, other existing users with a connection to the web server are not affected from changing to a different version after you run the `tls-min-ver` command.

### Procedure

1. Enter Global Configuration mode:

```
enable
configure terminal
```

2. Disable the Web server:

```
no web-server enable
```

3. Set the TLS protocol version:

```
web-server tls-min-ver [tlsv10 | tlsv11 | tlsv12]
```

## 4. Enable the Web server:

```
web-server enable
```

## 5. Verify the protocol version:

```
show web-server
```

**Example**

```
Switch> enable
Switch# configure terminal
Switch(config)# web-server tls-min-ver tlsv11
```

**Verify the protocol version.**

```
Switch> show web-server

Web Server Info :

      Status                : on
      Secure-only           : disabled
      TLS-minimum-version   : tlsv11
      RWA Username          : admin
      RWA Password          : *****
      Def-display-rows      : 30
      Inactivity timeout    : 900 sec
      Html help tftp source-dir :
      HttpPort              : 80
      HttpsPort             : 443
      NumHits               : 198
      NumAccessChecks       : 8
      NumAccessBlocks       : 0
      NumRxErrors           : 198
      NumTxErrors           : 0
      NumSetRequest         : 0
      Minimum password length : 8
      Last Host Access Blocked : 0.0.0.0
```

## Variable definitions

Use the data in the following table to use the **web-server** command.

Variable	Value
def-display-rows <10-100>	Configures the number of rows each page displays, between 10 and 100.
enable	Enables the Web interface. To disable the Web server, use the no form of this command:  no web-server [enable]
help-tftp WORD<0-256>	Configures the TFTP or FTP directory for Help files, in one of the following formats: a.b.c.d:/  peer:/ [ <dir>]. The path can use 0–256 characters. The following example paths illustrate the correct format:  • 47.17.82.25:/VSP_help

*Table continues...*

Variable	Value
	<ul style="list-style-type: none"> <li>• 47.17.82.25:/</li> </ul>
http-port <80-49151>	Set web server HTTP port.
https-port <443-49151>	Set web server HTTPS port.
inactivity-timeout<30-65535>	Configures the web-server session inactivity timeout.
password<min-passwd-len <1-32> ro rw rwa>	<p>Configures the password length or the password permission level. You can choose from the following:</p> <ul style="list-style-type: none"> <li>• min-passwd-len &lt;1-32&gt; — Specifies the minimum password length.</li> <li>• ro – Specifies the password as read-only.</li> <li>• rw – Specifies the password as read-write.</li> <li>• rwa – Specifies the password as read-write access.</li> </ul>
secure-only	Enables secure-only access for the web server.
tls-min-ver<tlsv10 tlsv11 tlsv12>	<p>Configures the minimum version of the TLS protocol supported by the web-server. You can select among the following:</p> <ul style="list-style-type: none"> <li>• tlsv10 – Configures the version to TLS 1.0.</li> <li>• tlsv11 – Configures the version to TLS 1.1.</li> <li>• tlsv12 – Configures the version to TLS 1.2</li> </ul> <p>The default is tlsv12.</p>

# Chapter 5: Enterprise Device Manager fundamentals

This section details Enterprise Device Manager (EDM).

EDM is a Web-based graphical user interface (GUI) you can use to configure a single switch. EDM runs from the switch and you can access it from a web browser. You do not need to install additional client software, and you can access it with all operating systems.

To manage multiple devices through one interface, install Configuration and Orchestration Manager (COM) on a remote server. For more information on COM documentation, see <http://support.avaya.com>.

---

## Enterprise Device Manager access

To access EDM, open `http://<deviceip>/login.html` or `https://<deviceip>/login.html` from either Microsoft Internet Explorer or Mozilla Firefox. Ensure you use a supported browser version. For more information, see *Release Notes for VSP Operating System Software*, NN47227-401.

### Important:

- You must enable the Web server from ACLI (see [Configuring the Web server using ACLI](#) on page 26) to enable HTTP access to the EDM. If you want HTTP access to the device, you must also disable the Web server secure-only option. The Web server secure-only option, allowing for HTTPS access to the device, is enabled by default. Avaya recommends that you take the appropriate security precautions within the network if you use HTTP
- EDM access is available to read-write users only

If you experience any issues while connecting to the EDM, check the proxy settings. Proxy settings may affect EDM connectivity to the switch. Clear the browser cache and do not use proxy when connecting to the device. This should resolve the issue.

---

## Default user name and password

The following table contains the default user name and password that you can use to log on to the switch using EDM. For more information about changing the passwords, see *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601 and *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601.

**Table 3: EDM default username and password**

Username	Password
admin	password

**! Important:**

The default passwords and community strings are documented and well known. Avaya strongly recommends that you change the default passwords and community strings immediately after you first log on. For more information about changing user names and passwords, see *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601 and *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601

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## Device Physical View

After you access EDM, the first screen displays a real-time physical view of the front panel of the device. From the front panel view, you can view fault, configuration, and performance information for the device or a single port. You can open this tab by clicking the Device Physical View tab above the device view.

You can use the device view to determine the operating status of the various ports in your hardware configuration. You can also use the device view to perform management tasks on specific objects. In the device view, you can select a port or the entire chassis. To select an object, click the object. EDM outlines the selected object in yellow, indicating your selection.

The conventions on the device view are similar to the actual device appearance. The port LEDs and the ports are color-coded to provide status. Green indicates the module or port is up and running, red indicates the module or port is disabled, dark pink indicates a protocol is down, and amber indicates an enabled port that is not connected to anything. Except VSP 4000, the chassis LEDs for all other platforms appear on the far right. The chassis LEDs for VSP 4000 are located on the far left.



## EDM window

The following figure shows the different sections of the EDM window:

- navigation tree—Located in the navigation pane on the left side of the window, the navigation tree displays all the available command tabs in a tree format. A row of buttons at the top of the navigation tree provides a quick method to perform common functions.
- menu bar—Located at the top of the window, the menu bar shows the most recently accessed primary tabs and their respective secondary tabs.
- toolbar—Located just below the menu bar, the toolbar gives you quick access to the most common operational commands such as Apply, Refresh, and Help.
- work area—Located on the right side of the window, the work area displays the dialog boxes where you can view or configure parameters on the switch.

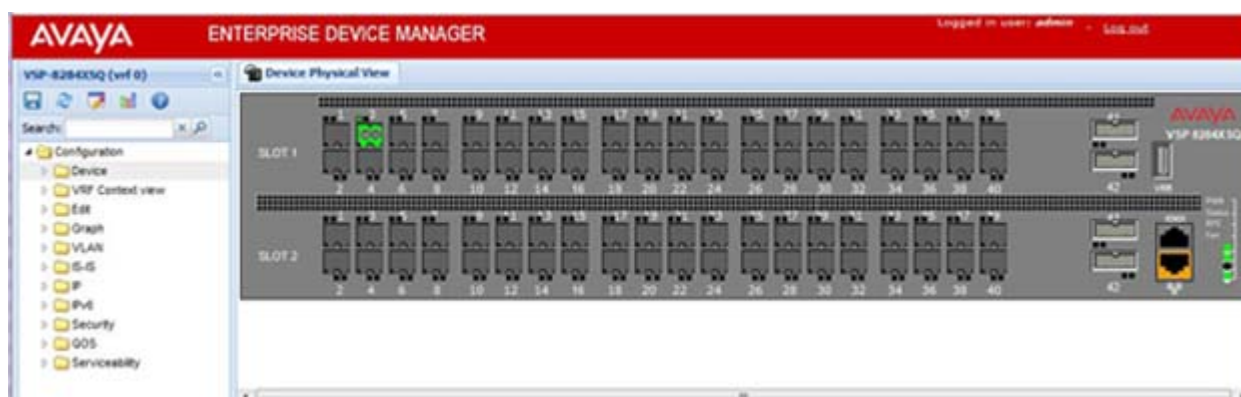


Figure 1: EDM window

## Navigation tree






You can use the navigation tree to see what commands are available and to quickly browse through the command hierarchy. A row of buttons at the top of the navigation tree provides a quick method to perform common functions.

### ! Important:

Menu options related to a specific module are activated only after the chassis contains the required module, and you must select that module.

The following table describes the buttons that appear at the top of the navigation tree.

**Table 4: Navigation pane buttons**

Button	Name	Description
	Save Config	Saves the running configuration.
	Refresh Status	Refreshes the Device Physical View.
	Edit	Edits the selected item in the Device Physical View.
	Graph	Opens the graph options for the selected item in the Device Physical View.
	Help Setup Guide	Opens instructions about how to install the Help files and configure EDM to use the Help files.

Expand a folder by clicking it. Some folders have subfolders such as the Edit folder, which has the Port, Diagnostics, and SNMPv3 subfolders.

Within each folder and subfolder, there are numerous tabs. To open a tab, click it. The selected tab appears in the menu bar and opens in the work area. The following table describes the main folders in the navigation tree.

**Table 5: Navigation tree folders**

Menu	Description
Device	Use the Device menu to refresh and update device information or enable polling. <ul style="list-style-type: none"> <li>• Preference Setting — Enable polling or hot swap detection. Configure the frequency to poll the device.</li> <li>• Refresh Status — Use this option to refresh the device view.</li> <li>• Rediscover Device — Use this to trigger a rediscovery to update all of the device information.</li> </ul>
VRF Context view	Use the VRF Context view to switch to another VRF context view when you use the embedded EDM. GlobalRouter is the default view at log in. You can configure both Global Router (GRT) and Virtual Routing and Forwarding (VRF) instances when you launch a VRF context view. You can open only five tabs for each EDM session.
Edit	Use the Edit menu to view and configure parameters for the chassis or for the currently selected object.

*Table continues...*

Menu	Description
	<p>The selected object can be a port. You can also use the Edit menu to perform the following tasks:</p> <ul style="list-style-type: none"> <li>• check and update security settings for the device</li> <li>• run diagnostic tests</li> <li>• change the configuration of the file system, NTP, service delivery, and Fabric Attach, SNMPv3 settings for the device</li> </ul>
Graph	Use the Graph menu to view and configure EDM statistics and to produce graphs of the chassis or port statistics.
VLAN	Use the VLAN menu to view and configure VLANs, spanning tree groups (STG), MultiLink Trunks/LACP, SMLT, and SLPP.
IS-IS	Use the IS-IS menu to view and configure IS-IS, Shortest Path Bridging MAC (SPBM), statistics and ISID.
IP	Use the IP menu to view and configure IP routing functions for the system, including VRF, IP-VPN, IP-MVPN, IP, TCP/UDP, OSPF, RIP, VRRP, RSMLT, BGP, Multicast, IGMP, PIM, DHCP Relay, UDF Forwarding, IS-IS, Policy.
IPv6	Use the IPv6 menu to view and configure IPv6 routing functions, including IPv6, TCP/UDP, Tunnel, OSPF, VRRP, BGP+, RSMLT, DHCP Relay, Policy, IPSec, FHS, IPv6 RIPng.
Security	Use the Security menu to view and configure policies, filters, and protocols such as RADIUS, SSH, TACACS+ and EAPoL.
QOS	Use the QOS menu to view and configure QoS mapping tables, filters, profiles, and policy statistics.
Serviceability	Use the Serviceability menu to enable RMON and view statistics.

---

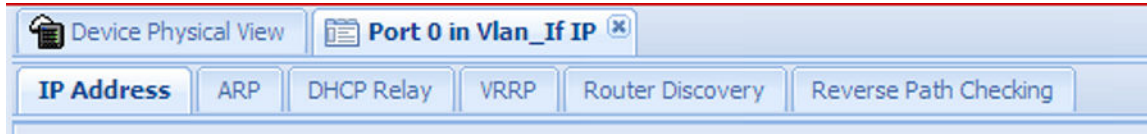
## Menu bar

The menu bar is above the work area and consists of two rows of tabs.

- The top row displays the tabs you can open through the navigation tree. These primary tabs appear in the sequence that you open them.
- After you click a primary tab, the secondary tabs associated with it appear in the bottom row. Click a secondary tab to open it in the work area.

In both the top and bottom rows of the menu bar, arrows appear on the left and right sides if the number of tabs exceeds the available space. Click either arrow to scroll to the tab that you want to select.

To reduce the number of tabs on the top row, you can click the X on the top right of a tab to remove it from the row. The following figure shows a sample menu bar.



**Figure 2: Menu bar**

---

## Toolbar

The toolbar buttons provide quick access to commonly used operational commands. The buttons that appear vary depending on the tab you select. However, the Apply, Refresh, and Help buttons are on almost every screen. Other common buttons are Insert and Delete. The following list detail the common toolbar buttons.

- Apply—Use this button to execute all edits that you make.
- Refresh—Use this button to refresh all data on the screen.
- Help—Use this button to display online help that is context sensitive to the current dialog box.
- Insert—Use this button to display a secondary dialog box related to the selected tab. After you edit the configurable parameters, click the Insert button in the dialog box. This causes a new entry to appear in the dialog box of the selected tab.
- Delete—Use this button to delete a selected entry.

The following figure shows a sample toolbar.



**Figure 3: Toolbar**

---

## Work area

The work area is the main area on the right side of the window that displays the configuration dialog boxes. Use the work area to view or configure parameters on the switch.

The following figure is a sample work area showing the dialog box for the Port 1/3 General, Interface tab. If you want to compare the information in two dialog boxes, you can undock one, then open another tab. For more information about undocking a tab, see [Undocking and docking tabs](#) on page 43.

Interface	Ip Address	Net Mask	BcastAddr Format	ReasmMaxSize	Vlanid	Brouter Port	MacOffset	VrId
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0
5/1	1.12.12.12	0.255.255.255	ones	1500	2	true	0	0

Figure 4: Work area

---

## EDM user session extension

If the EDM user session remains unused for a duration of ten minutes, the user is prompted with a dialog box with the message *Your session will expire in about 5 minute(s). Would you like to extend the session?* .

If there is no response from the user, the EDM automatically ends the session with a message *Your session has expired* and logs out the user. If the user wants to continue using the EDM, he/she has to login again.

# Chapter 6: EDM interface procedures

This chapter contains procedures for starting and using Enterprise Device Manager (EDM). The software is built-in to the switch, and you do not need to install additional software.

---

## Connecting to EDM

### Before you begin

- Ensure that the switch is running
- Note the IP address of the switch
- Ensure you use a supported browser version. For more information, see *Release Notes for VSP Operating System Software*, NN47227-401
- Ensure you enable the web server using ACLI

### About this task

Perform this procedure to connect to EDM to configure and maintain your network through a graphical user interface.

### Procedure

1. In the address bar, enter the IP address of the system using the following formats: **https://<IP\_address>** (default) or **http://<IP\_address>**.

 **Note:**

By default the Web server is configured with the secure-only option, which requires you to use https to access EDM. To access EDM using http, you must disable the secure-only option..

2. In the **User Name** box, type the user name. The default is admin.
3. In the **Password** box, type a password. The default is password.
4. Click **Log On**.

For information about changing the Log On credentials, see *Security for Avaya Virtual Services Platform 4000 Series*, NN46251-601 and *Configuring Security on Avaya Virtual Services Platform 7200 Series and 8000 Series*, NN47227-601.

## Configuring the Web management interface

### Before you begin

- The Web server is enabled.

### About this task

Configure the Web management interface to change the usernames and passwords for management access to the switch using a Web browser.

HTTP, FTP, and TFTP server supports both IPv4 and IPv6 addresses, with no difference in functionality or configuration.

### Procedure

1. In the navigation tree, open the following folders: **Configuration > Security > Control Path**.
2. Click **General**.
3. Click the **Web** tab.
4. Complete the **WebUserName** and **WebUserPassword** fields to specify the user name and password for access to the Web interface. You use the other fields to specify the path and file name for the Web Help files and to assign the number of rows in the Web display.
5. Click **Apply**.

## Web field descriptions

Use the data in the following table to use the **Web** tab.

Name	Description
<b>WebUserName</b>	Specifies the username from 1–20 characters. The default is admin.
<b>WebUserPassword</b>	Specifies the password from 1–20 characters. The default is password.
<b>MinimumPasswordLength</b>	Specifies the minimum password length. The range is from 1–32. The default is 8.
<b>HttpPort</b>	Specifies the HTTP port for web access. The default value is 80.
<b>HttpsPort</b>	Specifies the HTTPS port for web access. The default value is 443.
<b>SecureOnly</b>	Controls whether the secure-only option is enabled. The default is enabled.
<b>InactivityTimeout</b>	Specifies the web server login session inactivity time-out. The default value is 900 seconds.

*Table continues...*

Name	Description
<b>TlsMinimumVersion</b>	Specifies the minimum version of TLS protocol supported by the web server. Supported values are tlsv10, tlsv11, and tlsv12. The default value is tlsv12.
<b>HelpTftp/Ftp_SourceDir</b>	Configures the TFTP or FTP directory for Help files, in one of the following formats: a.b.c.d:/  peer:/ [<dir>]. The path can use 0–256 characters. The following example paths illustrate the correct format: <ul style="list-style-type: none"> <li>• 47.17.82.25:/VSP_help</li> <li>• 47.17.82.25:/</li> </ul>
<b>DefaultDisplayRows</b>	Configures the Web server display row width between 10–100. The default is 30.
<b>LastChange</b>	Shows the last Web-browser initiated configuration change.
<b>NumHits</b>	Shows the number of hits to the Web server.
<b>NumAccessChecks</b>	Shows the number of access checks performed by the Web server.
<b>NumAccessBlocks</b>	Shows the number of access attempts blocked by the Web server.
<b>LastHostAccessBlocked</b>	Shows the IP address of the last host access blocked the Web server.
<b>NumRxErrors</b>	Shows the number of receive errors the Web server encounters.
<b>NumTxErrors</b>	Shows the number of transmit errors the Web server encounters.
<b>NumSetRequest</b>	Shows the number of set-requests sent to the Web server.

---

## Using the chassis shortcut menu

### About this task

Perform the following procedure to display the chassis shortcut menu.

### Procedure

1. In the Device Physical View, select the chassis.
2. Right-click the chassis.



---

## Chassis shortcut menu field descriptions

Use the data in the following table to use the Chassis shortcut menu.

Name	Description
<b>Edit</b>	Edits chassis parameters.
<b>Graph</b>	Graphs chassis statistics.
<b>Refresh Status</b>	Refreshes the status of the chassis and MDAs.
<b>Refresh Port Tooltips</b>	Refreshes the port tooltip data of the system. The port tooltip data contains the following variables: Slot/Port, PortName, and PortOperSpeed.

---

## Using the port shortcut menu

### About this task

Perform this procedure to display the port shortcut menu.

### Procedure

1. In the Device Physical View, select a port.
2. Right-click the selected port.

---

## Port shortcut menu field descriptions

Use the data in the following table to use the port shortcut menu.

Name	Description
<b>Edit General</b>	Configures the general options for the port.
<b>Edit IP</b>	Configures the IP options for the port.
<b>Graph</b>	Displays the statistics for the port.
<b>Enable</b>	Enables the port.
<b>Disable</b>	Disables the port.

## Using a table-based tab

### About this task

Change an existing configuration using a table-based tab. You cannot edit grey-shaded fields in the table.

#### \* Note:

You can expand the appropriate folders for any feature you are configuring and select a table-based tab. The following procedure is an illustration on how to use a table-based tab.

### Procedure

1. In the Device Physical View, select multiple ports.
2. In the navigation tree, open the following folders: **Configuration > Edit > Port > General**.
3. Click the **VLAN** tab. A table-based tab appears displaying the VLAN information.
4. Select a table-based tab.
5. Double-click a white-shaded field to edit the value.
6. Click the arrow in the list field to view the options, and select the appropriate value.

Index	PerformTagging	VlanIdList	DiscardTaggedFrames	DiscardUntaggedFrames	UntagDefaultVlan	DefaultVlanId	LoopD
219	false		false	false	false	0	false
224	false		false	false	false	0	false
226	false		false	false	false	0	false
228	false		false	false	false	0	false

7. In a text-entry field, double-click and edit the value.

Index	PerformTagging	VlanIdList	DiscardTaggedFrames	DiscardUntaggedFrames	UntagDefaultVlan	DefaultVlanId	LoopDetect	AutoDete
219	false		false	false	false	0	false	false
224	false		false	false	false	0	false	false
226	false		false	false	false	0	false	false
228	false		false	false	false	0	false	false

8. Click **Apply** to save the configuration changes.

---

## Monitoring multiple ports and configuration support

### About this task

You can monitor or apply the same configuration changes to more than one port by using the Multiple Port Selection function. You can use the standard menu or the shortcut menu to edit the configuration settings using the Multiple Port selection. Selected ports appear within a yellow outline on the Device Physical View.

### Procedure

On the Device Physical View, perform one of the following to select multiple ports.

- Click and drag to select multiple adjacent ports.  
Ensure that you click outside the first port in the group and drag the mouse pointer over the group.
- Press Ctrl and click to select multiple ports.

#### **Note:**

Note: If you are using an embedded Enterprise Device Manager (EDM), you can select a maximum of 24 ports. However, there is no port limitation for COM users.

---

## Opening folders and tabs

### About this task

Perform this procedure to navigate in EDM.

### Procedure

1. In the navigation tree, click the **Configuration** folder.
2. Click the subfolder, for example, the **VLAN** folder.
3. In a folder or subfolder, click a tab to open that tab.

---

## Undocking and docking tabs

### About this task

Perform this procedure to undock a tab. You can undock tabs to have more than one tab visible at a time.

### Procedure

1. In the navigation tree, click a tab.
2. In the menu bar, click and drag a tab to undock it.

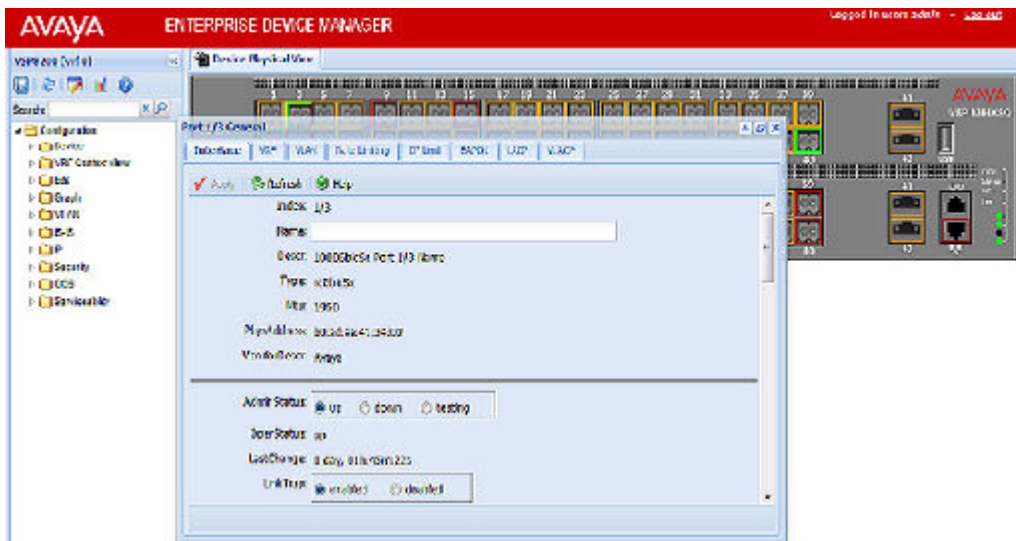
3. In the top right corner of the tab, click the pages button to dock the tab.

---

## Example of undocking and docking tabs

### Procedure

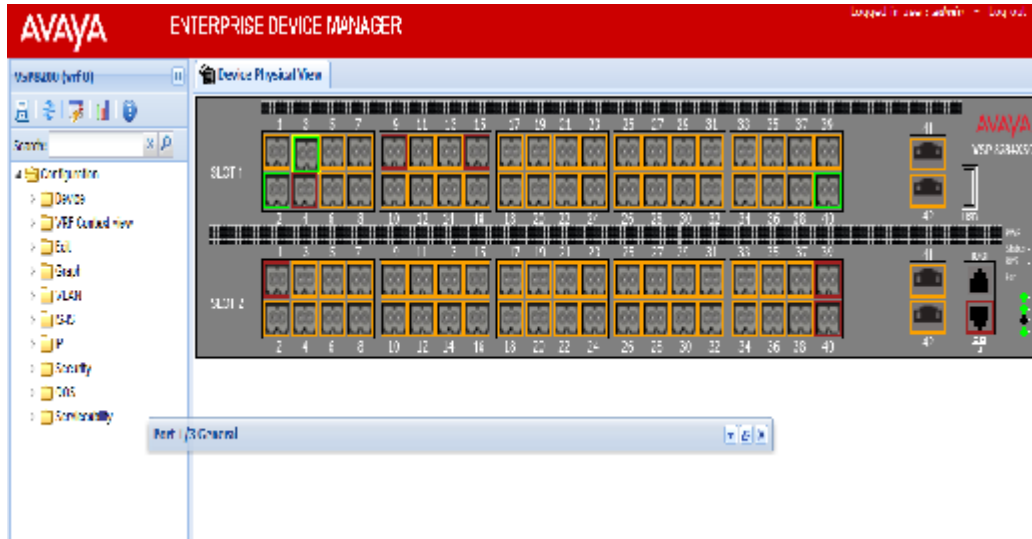
1. Click the **Device Physical View** tab.
2. In the Device Physical View, select a port. In this example, right-click port 3.
3. In the Port shortcut menu, click **Edit General**.
4. Click and drag the Port 1/3 General tab wherever you want on the screen as shown in the following figure.



5. To reposition the tab anywhere on the screen, click and drag the title bar.
6. To manipulate the tab, click on the buttons in the top-right of the dialog box.



7. Click the up arrowhead to minimize the tab as shown in the following figure.



8. Click the down arrowhead button to restore the tab to its original size.
9. Click the pages button to dock the tab back into the menu bar.
10. Click the X button to close the tab.

---

## Installing EDM help files

While the EDM GUI is bundled with the switch software, the associated EDM help files are not. To access the help files from the EDM GUI, you must install the EDM help files on a TFTP or FTP server in your network.

For information on supported browsers, see *Release Notes for VSP Operating System Software*, NN47227-401.

Use the following procedure to install the EDM help files on a TFTP or FTP server.

### Procedure

1. Download the EDM help file from Avaya.
2. On a TFTP or FTP server reachable from the switch, create a directory called **VSP\_Help**.  
Ensure that you configure the switch with the host user name and password if you use FTP.
3. Unzip the EDM help zip file into the directory created in step 2.
4. Select **Configuration > Security > Control Path** from the EDM navigation tree.
5. Click **General**.
6. Click **Web**.
7. Enter the IP address of the file server and the path to the help files in the **HelpTFTPSourceDir** field, for example, 192.0.2.15:/home/VSP\_Help/.

# Chapter 7: File management in EDM

This chapter contains procedures for managing files with Enterprise Device Manager (EDM).

Use the File System tab to perform the following tasks:

- Copy a file.
- Check the amount of memory used and the number of files stored in the internal flash memory.
- Verify the name, size, and storage date of each file present in the internal flash memory.

---

## Copying files

### About this task

Perform this procedure to copy a file.

### Procedure

1. In the navigation tree, open the following folders: **Configuration > Edit**.
2. Click **File System**.
3. In the **Source** field, specify the file you want to copy in one of the following form:
  - /intflash/filename
4. In the **Destination** field, specify the file you want to copy in one of the following form:
  - /intflash/filename
5. In the **Action** field, click **start**.
6. Click **Apply** to start copying the files.

The results of the copy action appear in the Result field.

---

## Viewing file storage information

### About this task

Perform this procedure to view the file storage information for the switch. This displays the name of the storage, the number of bytes used, and the number of bytes free.

**Procedure**

1. In the navigation tree, expand the following folders: **Configuration > Edit**.
2. Click **File System**.
3. Click the **Device Info** tab.

---

## Displaying internal flash files

Display information about the files on the internal flash.

 **Note:**

Following procedure is supported on VSP 7000 series and VSP 8000 series only.

**Procedure**

1. In the navigation tree, expand the following folders: **Configuration > Edit**.
2. Click **Chassis**.
3. Click the **Flash Files** tab.

---

## Flash Files field descriptions

Use the data in the following table to use the **Flash Files** tab.

Name	Description
<b>Name</b>	Specifies the directory name of the flash file.
<b>Date</b>	Specifies the creation or modification date of the flash file.
<b>Size</b>	Specifies the size of the flash file.

---

## Displaying USB file information

**About this task**

Display information about the files on a USB flash device to view general file information.

**Procedure**

1. In the navigation pane, expand the following folders: **Configuration > Edit**.
2. Click **Chassis**.
3. Click the **USB Files** tab.

---

## USB Files field descriptions

Use the data in the following table to use the **USB Files** tab.

Name	Description
Name	Specifies the directory name of the file.
Date	Specifies the creation or modification date of the file.
Size	Specifies the size of the file.



# Glossary

<b>Avaya command line interface (ACLI)</b>	A textual user interface. When you use ACLI, you respond to a prompt by typing a command. After you enter the command, you receive a system response.
<b>Configuration and Orchestration Manager (COM)</b>	A management system in the network, which manages multiple network devices by offering Web-based user-interfaces to the user. You must purchase and install COM separately from the individual product.
<b>Enterprise Device Manager (EDM)</b>	A web-based embedded management system to support single-element management. EDM provides complete configuration management functionality for the supported devices and is supplied to the customer as embedded software in the device.
<b>graphical user interface (GUI)</b>	A graphical (rather than textual) computer interface.
<b>Trivial File Transfer Protocol (TFTP)</b>	A protocol that governs transferring files between nodes without protection against packet loss.