



User Interface Fundamentals

Avaya Virtual Services Platform 9000

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Chapter 1: Purpose of this document

This document describes the conceptual and procedural information to help you navigate Avaya Command Line Interface (ACLI) and Enterprise Device Manager (EDM). Use the ACLI and EDM interfaces to configure the features and functions on the Avaya Virtual Services Platform 9000.

Purpose of this document

Chapter 2: New in this release

The following sections detail what is new in *Avaya Virtual Services Platform 9000 User Interface Fundamentals*, NN46250–103, for Release 3.2:

Features

See the following sections for information about feature-related changes.

Application command mode

Release 3.2 adds the Application command mode that you can use to configure applications such as VSP Talk. For more information see [ACLI command modes](#) on page 9 and [Changing user modes in ACLI](#) on page 17.

Other changes

See the following sections about changes that are not feature-related.

Configuration and Orchestration Manager

Configuration and Orchestration Manager (COM) chapter is removed from this document. For more information on COM documentation, see [Getting technical documentation](#) on page 47.

Glossary

A glossary of related terms is added to the end of this document.

Moved content

[Configuring the Web management interface](#) on page 33 is moved to this document from *Avaya Virtual Services Platform 9000 Commissioning*, NN46250–300. The Commissioning document is retired in Release 3.2.

Introduction chapter and navigation

Introduction chapter is renamed to Purpose of the document that states the purpose of referring to that document. Navigation is removed to reduce the length of the document.

New in this release

Terminology

Terminology no longer exists in a separate document. Terminology for this document is in a glossary at the end of this document.

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. Install Configuration and Orchestration Manager (COM) on a remote server to configure multiple devices through one interface. For more information on COM documentation, see [Getting technical documentation](#) on page 47.

ACLI command modes

ACLI has six major command modes. You start your session on the Virtual Services Platform 9000 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[-slot/port][,...]> | loopback <1-256> | mgmtEthernet <slot/port>[-slot/port][,...]> | mlt <1-512> | vlan <1-4084>}` 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
- Router Configuration mode—access this mode from the Global Configuration mode. Enter `router {bgp [<0-65535>] | ospf [enable] [ipv6-enable] | rip [enable [vrf <1-255>]] | vrf WORD<0-16> | vrrp}` to access the Router Configuration mode. Use this mode to modify a protocol. You can configure the following protocols:
 - BGP
 - 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 modify the VSP Talk application.

 **Note:**

The VSP Talk application enables a user to communicate with the VSP 9000 through Instant Messaging (IM) and a unique Instant messaging Command Line Interface (IMCLI). The IMCLI interface has features and characteristics that are different from the ACLI interface and are optimized for IM communication. For more information on VSP Talk IMCLI, see *Administration*, NN46250–600.

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 prompts for each mode, and explains how to enter and exit each mode.

Table 1: ACLI command modes

Command mode	Prompt	Command mode or enter/exit mode
User EXEC	VSP-9012:1>	This mode is the default command mode and does not require an entrance command. To exit the ACLI, enter logout .
Privileged EXEC	VSP-9012:1#	Enter enable to access the Privileged EXEC mode from the User EXEC mode. Enter disable to exit the Privileged EXEC mode, and enter the User EXEC mode. To exit the ACLI, enter logout .
Global Configuration	VSP-9012:1(config)#	From the Privileged EXEC mode, enter configure , followed by either terminal or network to access the Global Configuration mode. Enter exit to exit the Global Configuration mode, and enter the Privileged EXEC mode. To exit the ACLI, enter logout .
Interface Configuration	VSP-9012:1(config-if)#	Entry into this command mode depends on the type of configured interfaces. From the Global Configuration mode, enter interface {GigabitEthernet <slot/port[-slot/port]> loopback <interface> mgmtEthernet <slot/port[-slot/port]> mlt <mlt> vlan <VLAN>} to access the Interface Configuration mode. Enter exit to exit the Interface Configuration mode and enter the Global Configuration mode. To return to the Privileged EXEC

Command mode	Prompt	Command mode or enter/exit mode
		mode, enter end . To exit the ACLI, enter logout .
Router Configuration	VSP-9012:1(router-bgp)# VSP-9012:1(config-ospf)# VSP-9012:1(config-rip)# VSP-9012:1(router-vrf)# VSP-9012:1(config-vrrp)#	Entry into this command mode depends on the configured protocols. Enter router {bgp [<autonomous system number>] ospf [enable] [ipv6-enable] rip [enable] vrf <vrf> vrrp} to access the Router Configuration mode from the Global Configuration mode. Enter exit to exit the Router Configuration mode and enter the Global Configuration mode. To return to the Privileged EXEC mode, enter end . To exit the ACLI, enter logout .
Application Configuration	VSP-9012:1(config-app)#	Enter application to access the Application Configuration mode from the Global Configuration mode. Enter exit to exit the Application Configuration mode, and enter the Global Configuration mode. To return to the Privileged EXEC mode, enter end . To exit the ACLI, enter logout .

Default user names and passwords

The following table contains the default user names and passwords that you can use to log on to Virtual Services Platform 9000 Avaya command line interface (ACLI). For more information about how to change Virtual Services Platform 9000 passwords, see *Avaya Virtual Services Platform 9000 Security*, NN46250-601.

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

 **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 *Avaya Virtual Services Platform 9000 Security*, NN46250-601.

Documentation convention for the port variable

Commands that require you to enter one or more port numbers on Virtual Services Platform 9000 use the parameter `{slot/port[-slot/port][,...]}` in the syntax. The following list specifies the rules for using `{slot/port[-slot/port][,...]}`.

- `{slot/port[-slot/port][,...]}` can be one port on a particular slot (for example, port 3/1 indicates the first port of the third slot).
- `{slot/port[-slot/port][,...]}` can be a range of numbers (for example, port 3/1–3/3).
- You can add additional slot and port numbers to the list, separated by a comma (for example, port 3/1,4/8,6/10).
- You can specify a range of slots and ports (for example, port 2/3–4/5 indicates slot 2, port 3 through slot 4, port 5).

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:

```
VSP-9012:1(router-bgp)#redistribute ?
```

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

```
VSP-9012:1(router-bgp)#redistribute ?
direct      Ip bgp redistribute direct command
ipv6-direct Ip bgp redistribute ipv6-direct command
ipv6-static Ip bgp redistribute ipv6-static command
ospf        Ip bgp redistribute ospf command
ospfv3      Ip bgp redistribute ospfv3 command
rip         Ip bgp redistribute rip command
static      Ip bgp 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.

```
VSP-9012:1(router-bgp)#redistribute ipv6-static ?
enable      Enable bgp redistribution ipv6-static command
metric      Bgp route redistribution metric
route-map   Bgp route redistribution route-policy
<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 cli command. However, the additional choices listed could be peer commands or sub-context commands.

For example, the parameters listed under **redistribute ipv6-static ?** are peer commands. One can enter these peer commands on the same line as the root command, for example **redistribute ipv6-static enable**. However, the <cr> indicates that one can enter the **redistribute ipv6-static** command only and this command does not require any additional parameters at this level.

ACLI autocompletion

ACLI 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 ACLI 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 IPv6 direct routes,

```
VSP-9012:1(router-bgp)#redistribute ipv6-direct
```

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

```
direct
ipv6-direct
ipv6-static
ospf
ospfv3
rip
static
```

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

```
VSP-9012:1(router-bgp)#redistribute ip
```

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

```
redistribute ipv6-
```

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

```
VSP-9012:1(router-bgp)#redistribute ipv6-direct
```


Chapter 4: ACLI procedures

This chapter contains information about common ACLI tasks. You can access ACLI during runtime to manage Virtual Services Platform 9000.

Logging on to the software

Before you begin

- The first time you connect to Virtual Services Platform 9000, you must log on to ACLI using the direct console port.

About this task

After you first connect to ACLI on Virtual Services Platform 9000, 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 12.

Procedure

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

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:

```
config terminal
```

3. Access the Interface Configuration mode:

```
interface {GigabitEthernet <slot/port[-slot/port][,...]> |
loopback <1-256> | mgmtEthernet <slot/port>[-slot/port]
[,...]> | mlt <1-256> | vlan <1-4084>}
```

4. Access the Router Configuration mode:

```
router {bgp [<0-65535>] | ospf [enable] [ipv6-enable] | rip
[enable [vrf <1-255>]] | vrf WORD<0-16> | vrrp}
```

5. Access the Application Configuration mode:

```
application
```

Example

Access Privileged EXEC mode:

```
VSP-9012:1>enable
```

Access Global Configuration mode:

```
VSP-9012:1#configure terminal
```

Access Interface Configuration mode for a VLAN:

```
VSP-9012:1(config)#interface vlan 2
```

Access Router Configuration mode for BGP:

```
VSP-9012:1(config-if)#router bgp
```

Exit back to Global Configuration mode:

```
VSP-9012:1(router-bgp)#exit
```

Access Router Configuration mode for OSPF:

```
VSP-9012:1(config)#router ospf
```

Exit back to Global Configuration mode:

```
VSP-9012:1(router-ospf)#exit
```

Access Application Configuration mode:

```
VSP-9012:1(config)#application
```

Exit back to Privileged EXEC mode:

```
VSP-9012:1(config-app)#end
```

Exit back to User EXEC mode:

```
VSP-9012:1#disable
```

Exit the system:

```
VSP-9012:1>exit
```

Variable definitions

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

Variable	Value
GigabitEthernet <slot/port[-slot/port][,...]>	Logs on to the GigabitEthernet Interface Configuration mode. Use <slot/port[-slot/port][,...]> to specify which interface to configure.
loopback <1-256>	Logs on to the loopback Interface Configuration mode. Use <1-256> to specify which interface to configure.
mgmtEthernet <slot/port>[-slot/port][,...]>	Logs on to the management Ethernet Interface Configuration mode. Use <slot/port[-slot/port][,...]> to specify which interface to configure.
mlt <1-512>	Logs on to the multi-link trunking (MLT) Interface Configuration mode. Use <1-512> to specify which MLT to configure.
vlan <1-4084>	Logs on to the Virtual Local Area Network (VLAN) Interface Configuration mode. Use <1-4084> to specify which VLAN to configure.

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

Table 3: Variable definitions

Variable	Value
bgp [<0-65535>]	Enter Border Gateway Protocol (BGP) Router Configuration mode. You can specify a specific autonomous system number.
ospf [enable][ipv6-enable]	Enter Open Shortest Path First (OSPF) Router Configuration mode. You can specify to enable OSPF or ipv6.
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.

Variable	Value
vrf WORD<0-16>	Enter Virtual Router Forwarding (VRF) Router Configuration mode. Specify the VRF name to configure.
vrrp	Enter Virtual Router Redundancy Protocol Router Configuration mode.

Viewing configurations

You can view the running configuration using the show command.

Before you begin

- You must log on to the Privileged EXEC mode in ACLI.

Procedure

View running configuration:
`show running-config`

Example

```
VSP-9012:1#show running-config
Preparing to Display Configuration...
#
# Tue Jul 19 06:55:18 2011 UTC
# box type          : VSP-9012
# software version  : 3.1.0.0.GA
# cli mode          : ACLI
#

#ASIC Info :
#Slot #1:
#  Module: 9080CP
#  OXATE CPLD: 10032310
#  OXIDE FPGA: 10040918
#  CATSKILL FPGA: 10052013
#  QE version: QE2000_A0

#Slot #4:
#  Module: 9048GT
#  K2 FPGA: 11052520
#  IODATEDC CPLD: 09041015
#  IODATEBB CPLD: 09041016
#  PIM48TX CPLD: 09050110
#  LED48TX CPLD0: 09041016

--More-- (q = quit)
```

Saving the configuration

After you change the configuration, you must save the changes to both the master and the standby CP modules. Save the configuration to a file to retain the configuration settings.

Before you begin

- You must log on to the Privileged EXEC mode in ACLI.
- To save a file to the standby CP module, you must enable the Trivial File Transfer Protocol (TFTP) on the standby CP module.

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

Save the running configuration:

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

Example

```
VSP-9012:1>enable
```

Save the configuration to the default location:

```
VSP-9012:1>save config
```

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

```
VSP-9012:1#save config backup 4717:0:0:0:0:0:7933:6:/configs/
backup.cfg
```

Variable definitions

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

Variable	Value
backup WORD<1-99>	Saves the specified file name and identifies the file as a backup file.

Variable	Value
	<p><i>WORD</i><1–99> uses one of the following formats:</p> <ul style="list-style-type: none"> • x:x:x:x:x:x:x:<file> • a.b.c.d:<file> • peer:<file> • /intflash/ <file> • /extflash/ <file> • /usb/<file> <p>The file name, including the directory structure, can include up 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"> • x:x:x:x:x:x:x:<file> • a.b.c.d:<file> • peer:<file> • /intflash/ <file> • /extflash/ <file> • /usb/<file> <p>The file name, including the directory structure, can include up to 99 characters.</p>
standby <i>WORD</i> <1–99>	<p>Saves the specified file name to the standby CPU in the following formats:</p> <ul style="list-style-type: none"> • /intflash/ <file> • /extflash/ <file> • /usb/ <file> <p>The file name, including the directory structure, can include up to 99 characters.</p>
verbose	<p>Saves the default and current configuration. If you omit this parameter, the command saves only parameters you change. You cannot use this variable if you enable HA mode.</p>

Chapter 5: Enterprise Device Manager fundamentals

This section details the Enterprise Device Manager (EDM).

EDM is a Web-based graphical user interface (GUI) you can use to configure a single Virtual Services Platform 9000. EDM runs from Virtual Services Platform 9000 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.

Install Configuration and Orchestration Manager (COM) on a remote server to configure multiple devices through one interface. For more information on COM documentation, see [Getting technical documentation](#) on page 47.

Enterprise Device Manager access

To access EDM, open `http://<deviceip>/login.html` or `https://<deviceip>/login.html` from either Microsoft Internet Explorer 8.0, or Mozilla Firefox 7.x.



Important:

You must enable the Web server from ACLI 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.

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 Virtual Services Platform 9000 using EDM. For more information about changing the Virtual Services Platform 9000 passwords, see *Avaya Virtual Services Platform 9000 Security*, NN46250-601.

Table 4: 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 *Avaya Virtual Services Platform 9000 Security*, NN46250-601.

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, a module, 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 modules and 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 module, a port, a power supply, a fan module, 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 module 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, and amber indicates an enabled port that is not connected to anything.

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 Virtual Services Platform 9000.

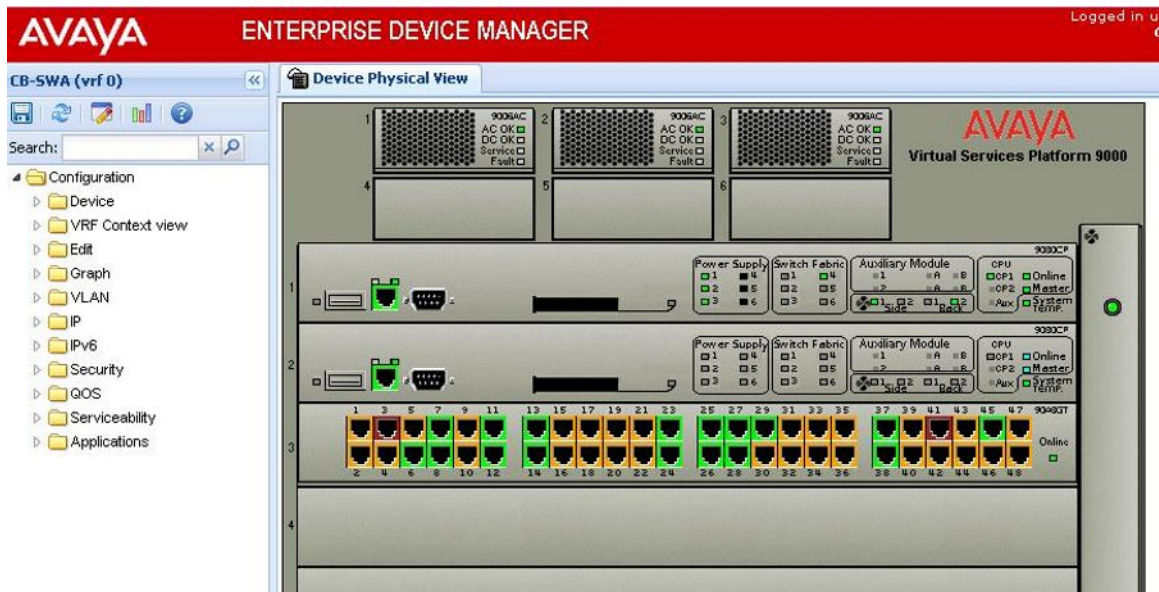


Figure 1: EDM window

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 5: Navigation pane buttons

Button	Name	Description
	Save Config	Saves the running configuration.

Button	Name	Description
	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 6: Navigation tree folders

Menu	Description
Device	<p>Use the Device menu to refresh and update device information or enable polling or hot swap detection.</p> <ul style="list-style-type: none"> • Preference Setting — Enable polling or hot swap detection. Configure the frequency to poll the device. • Refresh Status — Use this option to refresh the device view. • Rediscover Device — Use this to trigger a rediscovery to update all of the device information.
VRF Context view	<p>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.</p>
Edit	<p>Use the Edit menu to view and configure parameters for the chassis or for the currently selected object. The selected</p>

Menu	Description
	<p>object can be a module, fan, port, power supply, or another object. You can also use the Edit menu to perform the following tasks:</p> <ul style="list-style-type: none"> • check and update security settings for the device • run diagnostic tests • change the configuration of the file system, NTP, service delivery, and SNMPv3 settings for the device
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, MAC Learning, SMLT, Global MAC Filtering, and SLPP.
IP	Use the IP menu to view and configure IP routing functions for the system, including TCP/UDP, OSPF, RIP, VRRP, Multicast, IGMP, DHCP, BGP, RSMLT, PIM, UDP forwarding, and policies.
IPv6	Use the IPv6 menu to view and configure IPv6 routing functions, including TCP/UDP, tunnels, and OSPF.
Security	Use the Security menu to view and configure policies, filters, and protocols such as RADIUS, SSH, 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 view and configure RMON alarms and view the RMON alarm log and history log. You can use this menu to enable or disable RMON history or statistics on all ports. You can also use the Serviceability menu to view and configure IP Flow Information eXport (IPFIX).
Applications	Use the Applications menu to view and configure VSPTalk.

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.

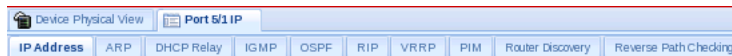


Figure 2: Menu bar

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 Virtual Services Platform 9000.

The following figure is a sample work area showing the dialog box for the Port 4/1 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 39.

The image shows a screenshot of a configuration table within a dialog box. The table has 10 columns: Interface, Ip Address, Net Mask, BcastAddr Format, ReasmMaxSize, VlanId, Brouter Port, MacOffset, and VrfId. There are 19 rows of data, all with identical values for each column: Interface is '5/1', Ip Address is '1.12.12.12', Net Mask is '0.255.255.255', BcastAddr Format is 'ones', ReasmMaxSize is '1500', VlanId is '2', Brouter Port is 'true', MacOffset is '0', and VrfId is '0'.

Interface	Ip Address	Net Mask	BcastAddr Format	ReasmMaxSize	VlanId	Brouter Port	MacOffset	VrfId
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 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 Virtual Services Platform 9000, and you do not need to install additional software.

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.

FTP now supports both IPv4 and IPv6 addresses, with no difference in functionality or configuration. The TFTP server is updated to support both IPv4 and IPv6. The TFTP client is not supported in VSP 9000, only the server.

Before you begin

- You must log on to the Global Configuration mode in ACLI.

About this task

This procedure assumes that you use the default port assignments.

Procedure

1. Enable the Web server:
`web-server enable`
2. Display the Web server status:
`show web-server`

Variable definitions

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

Table 7: Variable definitions

Variable	Value
<code>def-display-rows <10-100></code>	Configures the number of rows each page displays, between 10 and 100.

Variable	Value
enable	Enables the Web interface for Virtual Services Platform 9000. 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"> • 47.17.82.25:/VSP9000_help • 47.17.82.25:/
password {ro rw rwa} WORD<1-20> WORD<1-20>	Configures the logon and password for the Web interface, where the first WORD<1-20> is the new logon and the second WORD<1-20> is the new password.
secure-only	Enables HTTPS access to EDM. If you enable this parameter, you cannot use HTTP to connect to EDM. The default value for the secure-only option is enabled.

Connecting to EDM

Before you begin

- Ensure that the Virtual Services Platform 9000 is running.
- Note the IP address of the Virtual Services Platform 9000.
- Open one of the following browsers:
 - Mozilla FireFox, version 7.x
 - Microsoft Internet Explorer, version 8.0

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. For more information about configuring the secure-only option, see [Configuring the Web server using ACLI](#) on page 31.

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 *Avaya Virtual Services Platform 9000 Security*, NN46250-601

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.

FTP now supports both IPv4 and IPv6 addresses, with no difference in functionality or configuration. The TFTP server is updated to support both IPv4 and IPv6. The TFTP client is not supported in VSP 9000, only the server.

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
WebUserName	Specifies the username from 1–20 characters. The default is admin.
WebUserPassword	Specifies the password from 1–20 characters. The default is password.
SecureOnly	Controls whether the secure-only option is enabled.
HelpTftp/Ftp_SourceDir	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"> • 47.17.82.25:/VSP9000_help • 47.17.82.25:/
DefaultDisplayRows	Configures the Web server display row width between 10–100. The default is 30.
LastChange	Shows the last Web-browser initiated configuration change.
NumHits	Shows the number of hits to the Web server.
NumAccessChecks	Shows the number of access checks performed by the Web server.
NumAccessBlocks	Shows the number of access attempts blocked by the Web server.
LastHostAccessBlocked	Shows the IP address of the last host access blocked the Web server.
NumRxErrors	Shows the number of receive errors the Web server encounters.
NumTxErrors	Shows the number of transmit errors the Web server encounters.
NumSetRequest	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
Edit	Edits chassis parameters.
Graph	Graphs chassis statistics.
Refresh Port Tooltips	Refreshes the port tooltip data of the system. The port tooltip data contains the following variables: Slot/Port, PortName, and PortOperSpeed.
Refresh Status	Refreshes the status of the chassis and modules.

Using the module shortcut menu

About this task

The module shortcut menu provides a quick way to view or configure the module parameters. This shortcut menu is context-sensitive and is based on the currently selected module type.

Procedure

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

Module shortcut menu field descriptions

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

Name	Description
Edit	Configures the selected module.
Enable	Enables the selected module.
Disable	Disables the selected module.

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
Edit General	Configures the general options for the port.
Edit IP	Configures the IP options for the port.
Edit IPv6	Configures the IPv6 options for the port.
Graph	Displays the statistics for the port.
Enable	Enables the port.
Disable	Disables the port.

Using a table-based tab

About this task

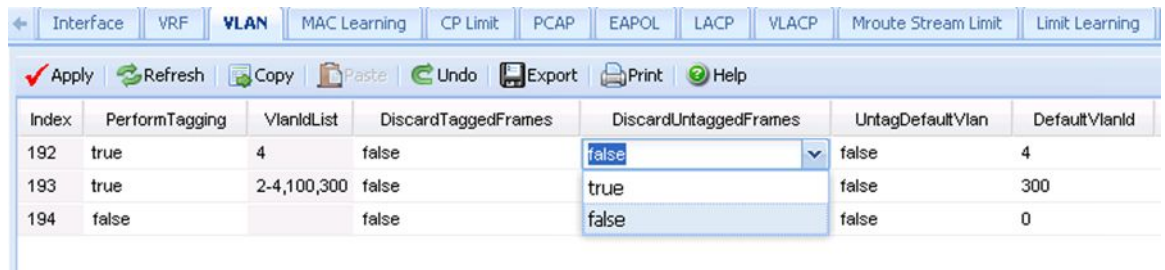
Change an existing configuration using a table-based tab. You cannot edit grey-shaded fields in the table.

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.

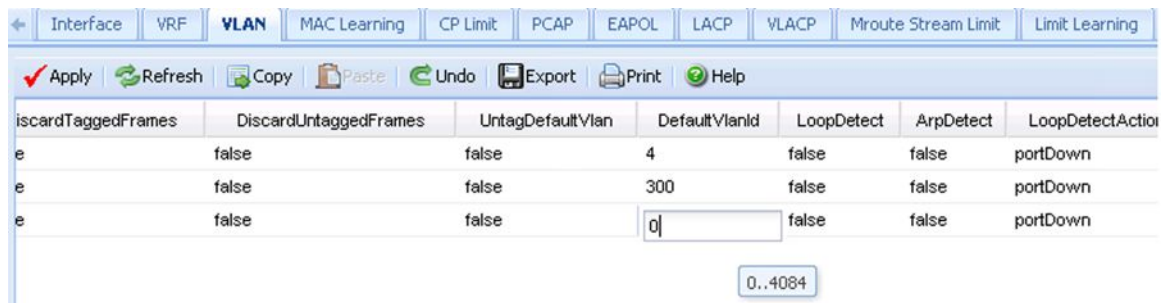
Procedure

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



Index	PerformTagging	VlanIdList	DiscardTaggedFrames	DiscardUntaggedFrames	UntagDefaultVlan	DefaultVlanId
192	true	4	false	false	false	4
193	true	2-4,100,300	false	true	false	300
194	false		false	false	false	0

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



DiscardTaggedFrames	DiscardUntaggedFrames	UntagDefaultVlan	DefaultVlanId	LoopDetect	ArpDetect	LoopDetectAction
DiscardTaggedFrames	false	false	4	false	false	portDown
DiscardTaggedFrames	false	false	300	false	false	portDown
DiscardTaggedFrames	false	false	0	false	false	portDown

0..4084

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

Monitoring multiple ports and configuration support

About this task

Avaya Virtual Services Platform 9000 allows you to 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.

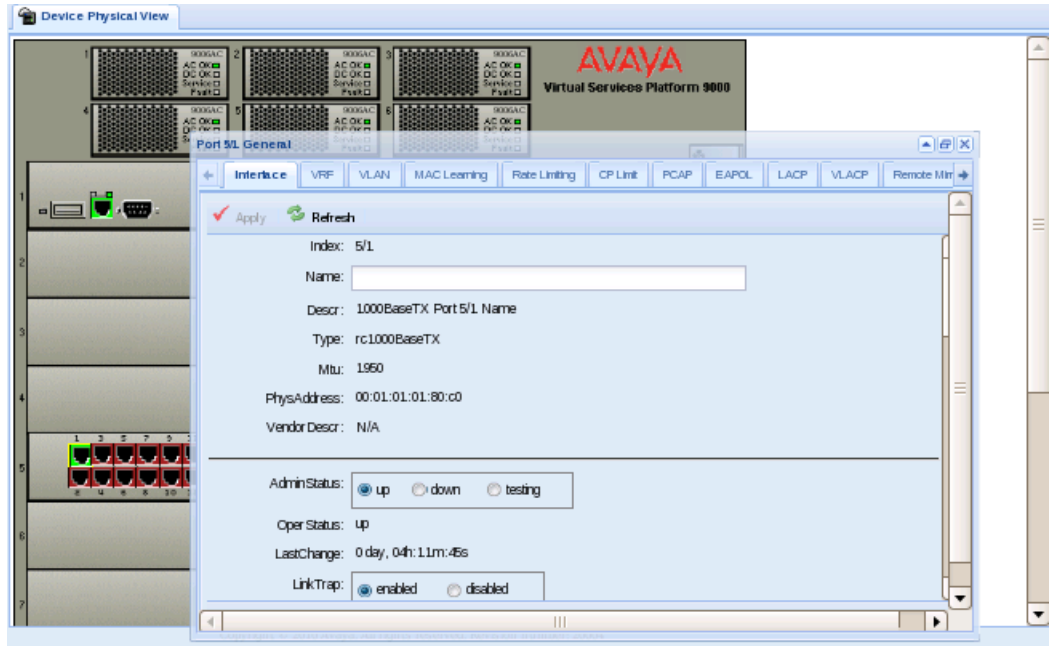
Procedure

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

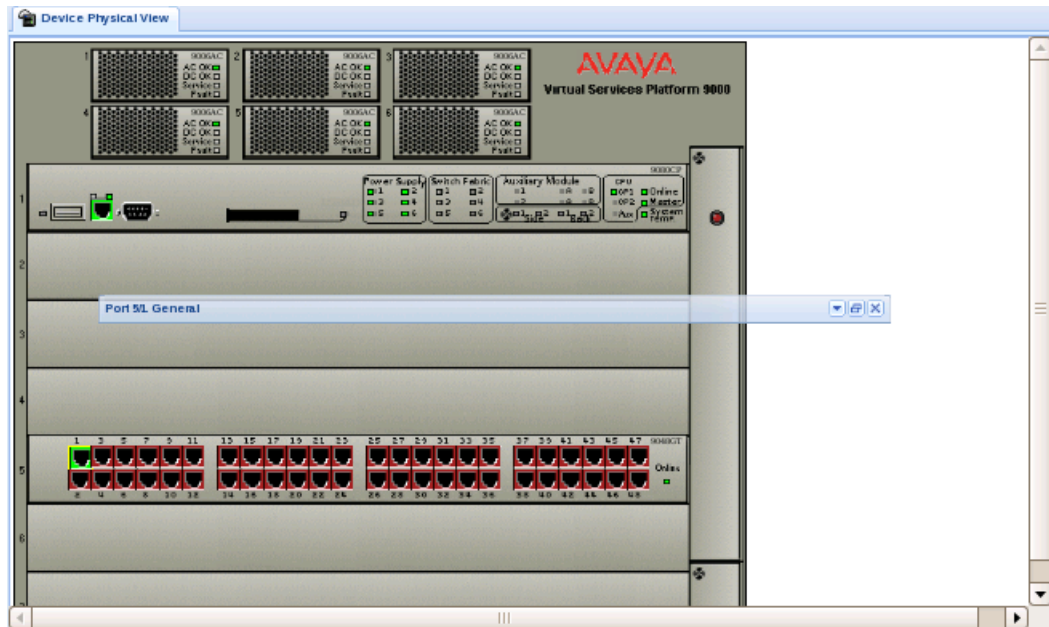
1. Click the Device Physical View tab.
2. In the Device Physical View, select a port. In this example, right-click port 1 in slot 5.
3. In the Port shortcut menu, click **Edit General**.
4. Click and drag the Port 5/1 General tab wherever you want on the screen as shown in the following figure.



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

About this task

While the EDM GUI is bundled with Virtual Services Platform 9000 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. Do not install the EDM help files on intflash and extflash. The EDM application supports the Internet Explorer 8.0 and Mozilla Firefox 7.x browsers. Use one of these browsers. EDM performs better on Mozilla Firefox.

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 VSP 9000, create a directory called **VSP9000_Help**.
Ensure the VSP 9000 is configured with the host user name and password if using 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, 48.16.48.9:/home/VSP9000_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, an external flash card, or a Universal Serial Bus (USB) mass storage device.
- Verify the name, size, and storage date of each file present in the internal flash memory, the external flash card, and the USB mass storage device.

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 forms:
 - /intflash/filename
 - /extflash/filename
 - /usb/filename
 - ipaddress:/home/user/filename
4. In the **Destination** field, specify the file you want to copy in one of the following forms:
 - /intflash/filename
 - /extflash/filename
 - /usb/filename
 - ipaddress:/home/user/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 Virtual Services Platform 9000. This displays the name of the storage, which Control Processor (CP) module it is located in, the number of bytes used, and the number of bytes free.

Procedure

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

Displaying external flash file information

About this task

Display information about the files in external flash memory to view general file information.

Procedure

1. In the Device Physical view, select a CP module.
 2. In the navigation tree, open the following folders: **Configuration > Edit**.
 3. Click **Card**.
 4. Click the **External Flash Files** tab.
-

External Flash Files field descriptions

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

Name	Description
Slot	Specifies the slot number where the CP module is installed.

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.

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 Device Physical view, select a CP module.
 2. In the navigation tree, open the following folders: **Configuration > Edit**.
 3. Click **Card**.
 4. Click the **USB Files** tab.
-

USB Files field descriptions

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

Name	Description
Slot	Specifies the slot number where the CP module is installed.
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.

Chapter 8: Customer service

Visit the Avaya Web site to access the complete range of services and support that Avaya provides. Go to www.avaya.com or go to one of the pages listed in the following sections.

Getting technical documentation

To download and print selected technical publications and release notes directly from the Internet, go to www.avaya.com/support.

Getting product training

Ongoing product training is available. For more information or to register, you can access the Web site at www.avaya.com/support. From this Web site, you can locate the Training contacts link on the left-hand navigation pane.

Getting help from a distributor or reseller

If you purchased a service contract for your Avaya product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

Getting technical support from the Avaya Web site

The easiest and most effective way to get technical support for Avaya products is from the Avaya Technical Support Web site at www.avaya.com/support.

Customer service

Glossary

Avaya command line interface (ACLI)	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.
Configuration and Orchestration Manager (COM)	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.
Enterprise Device Manager (EDM)	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.
graphical user interface (GUI)	A graphical (rather than textual) computer interface.
Trivial File Transfer Protocol (TFTP)	A protocol that governs transferring files between nodes without protection against packet loss.

