

Avaya™ C460

Modular Multilayer Switch

Quick Start Guide



Note:

Refer to "Important Information" before starting the installation



Important Information

1

Unpack the Chassis

2

Position the Chassis

3

Install the Supervisor Module and PSU

4

Configure the Switch

5

Run the Embedded Device Manager (optional)

6

Important Information

Before installing or removing any components of a device, or carrying out any maintenance work, you must read the safety information provided.

Notes, Cautions and Warnings

- ① Text with the ① symbol contains helpful information or hints or reference to material in other documentation.



Caution: Take care. You could do something that may damage equipment or result in loss of data.



Warning: This means danger. Failure to follow the instructions or warnings might result in bodily injury. Ensure that you are qualified for this task and have read and understood *all* the instructions

Safety Information



Warning: To avoid injury, Avaya recommends that two people lift or move the switch. A fully loaded C460 switch weighs at least 100 lbs (45 kg).



Caution: The Avaya C460 switch and modules contain components sensitive to electrostatic discharge. Do not touch the circuit boards unless instructed to do so. Do not leave any slots open. Use the blanking plates supplied to cover empty slots. Do not insert any objects into the C460 chassis other than specifically designed Avaya products.



Warning: The fans are on whenever the power is on in the chassis, whether supervisor modules are installed or not. Keep your fingers and other objects clear of the fans when removing the Fan module. The fans continue to turn briefly after you have removed the module.

Power Supplies

1



CAUTION: Risk of electric shock. Disconnection of one power supply cord disconnects one power supply module only. To isolate unit completely from the mains disconnect all power supply cords.



ACHTUNG: Gefahr des elektrischen Schocks. Entfernen des Netzsteckers eines Netzteils legt nur dieses Netzteil spannungsfrei. Um alle Einheiten spannungsfrei zu machen. Sind die Netzstecker aller Netzteile zu entfernen



ATTENTION: Risque d'électrocution. Le débranchement d'un câble d'alimentation ne déconnecte qu'un seul module d'alimentation. Pour isoler complètement l'unité du secteur, débranchez tous les câbles d'alimentation.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications to this equipment not expressly approved by Avaya Inc. could void the user's authority to operate the equipment.

Warranty:

Avaya Inc. provides a limited warranty on this product. Refer to your sales agreement or other applicable documentation to establish the terms of the limited warranty. In addition, Avaya's standard warranty language as well as information regarding support for this product, while under warranty, is available through the following website: support.avaya.com.

- ① Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

Unpack the Switch

Check the package contents for the following:

Equipment

- One C460 chassis with fan module.
 - If you purchased an Avaya C460ML-CFG (Material code 700255003) or C460ML PWR CONFIG (Material code 700281603) , then one Supervisor Module, PSU and the Fan Module are already installed.
 - ① Ethernet connection cables are not supplied.
-

Documentation

- Avaya C460 Quick Start Guide (this document).
 - Avaya C460 Release Notes.
 - Avaya C460 Documentation and Utilities CD.
 - Avaya Warranty and License Agreement.
-

CD Contents

User's Guides

- Avaya C460 Installation and Maintenance Guide
- Avaya C460 Configuration Guide
- Avaya C460 Reference Guide
- Avaya™ MSNM C460 Manager User's Guide

Auxiliary Files for the use with the Device Manager

- Java plug-in
- Help files

Adobe Acrobat Reader

This application allows you to view and print the User's Guides on this CD

- ① If any items are missing or damaged, contact your supplier.

Position the Switch

Environmental Prerequisites



Warning: To avoid injury, Avaya recommends that two people lift or move the switch. A fully loaded C460 switch weighs at least 100 lbs (45 kg).

You can position the Avaya C460 in free-standing mode on a suitable shelf or table, or mount it in a standard 19-inch equipment rack in a wiring closet or equipment room.

When deciding where to position the chassis, ensure that:

- It is accessible and cables can be connected easily and according to the configuration rule.
 - Cables are away from sources of electrical noise such as:
 - radio transmitters
 - broadcast amplifiers
 - power lines
 - fluorescent lighting fixtures.
 - Water or moisture cannot enter the case of the chassis.
 - There is a free flow of air around all sides the chassis.
 - The vents on the sides of the case are not blocked.
 - The table or shelf can hold the weight of the chassis with the PSUs and modules.
 - The environmental conditions match the requirements listed in Table 1.
- ① Refer to the *Avaya C460 Installation and Maintenance Guide* for additional information.

Table 1 Environmental Requirements

Ambient temperature	23° to 122°F (-5° to 50°C)
Relative humidity	5% to 95%, non condensing
Minimum clearance for ventilation	2" (5 cm) on each side
Weight support	50 lb. (23 kg) to 100 lbs (45 kg)

- The power source matches the specifications shown in Table 2.

Table 2 AC Power Requirements

Voltage	100 to 240 VAC, 50/60 Hz
Current for one MPS4603-AC 300 W PSU	3.9 A@100 VAC 1.5 A@240 VAC
Current for one MPS4610-AC 1000 W PSU	11.5 A@100 VAC 5.6 A@240 VAC

Table 3 Dimensions

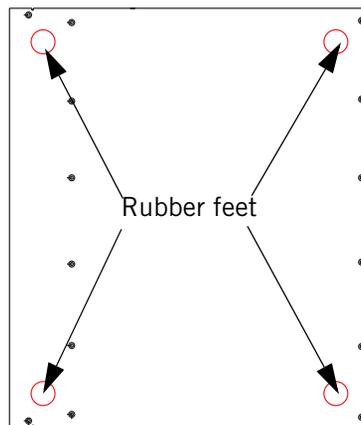
Height	10U (17.5", 444.5 mm)
Width	17.4" (442 mm)
Depth	15" (375 mm)

3

Installing the C460 on a Table Top

- 1 Place the system on a surface that supports at least 100 lbs (45 kg).
- 1 Install the supplied rubber feet to the bottom of the switch, placing the feet in the square recesses provided. See Figure 4.
Clean the surface of any oils or residue before applying the feet.

Figure 4 Table-Top Installation



- 2 Ensure that all the preinstalled components are firmly installed in the chassis. These include:
 - Supervisor modules
 - Power supply
 - Fan module



Caution: Do not place other equipment on top of the C460.

Rack Mounting (optional)



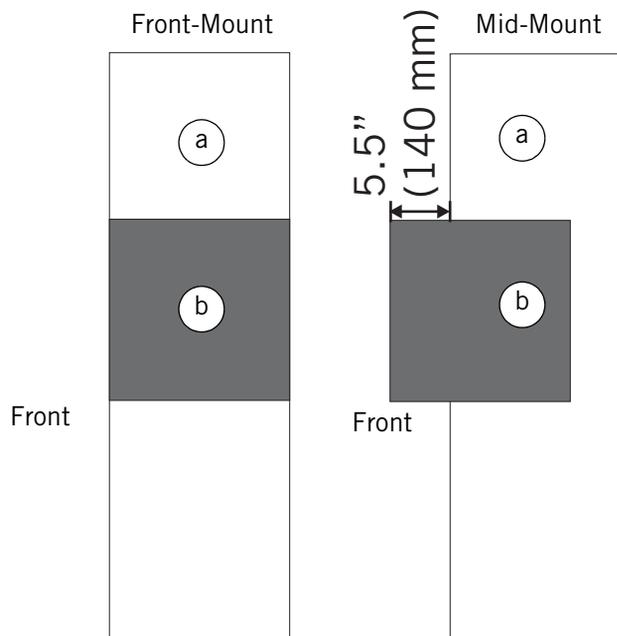
Warning: To avoid injury, Avaya recommends that two people lift or move the switch. A fully loaded C460 switch weighs at least 100 lbs (45 kg).

You can mount the Avaya C460 in a standard 19" rack either in "front-mount" or "mid-mount" positions with the brackets supplied with the chassis.

The brackets are symmetric: you can fix either bracket one either side.

Figure 5 shows the two mounting positions:

Figure 5 C460 Front-Mount and Mid-Mount Positions (side view)



Key

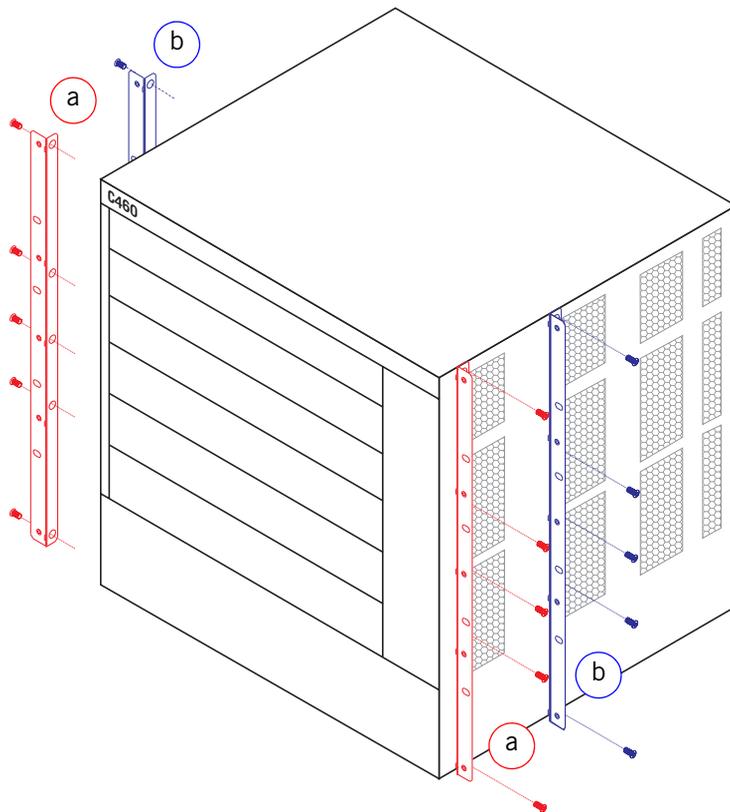
- a Rack
- b C460 switch

① The chassis height is 10U.

C460 Rack mounting procedure:

- 1 Position the brackets as shown in Figure 6

Figure 6 Positioning the rack-mounting brackets



Key

- a Front-mount position
- b Mid-mount position

- 2 Firmly fix the brackets to the chassis with the screws provided. Use five screws for each bracket.
 - 3 Position the switch in the rack.
 - 4 Fasten the switch in the rack with the screws provided.
- ① The screw size is 8-32x $\frac{1}{4}$



Caution: Do not place other equipment on top of the C460

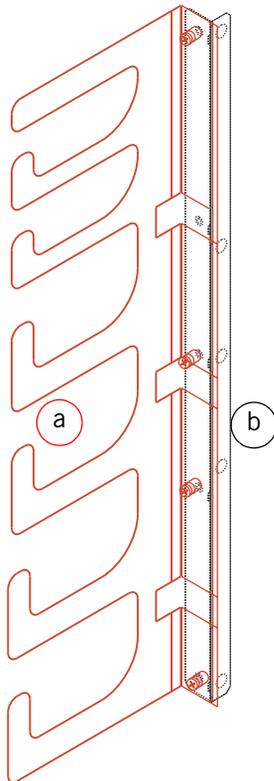
Cable Guide Installation

You can use the cable guide to tidy cables from the Supervisor and I/O modules. The cable guide is symmetric: you can install the bracket on either side of the switch.

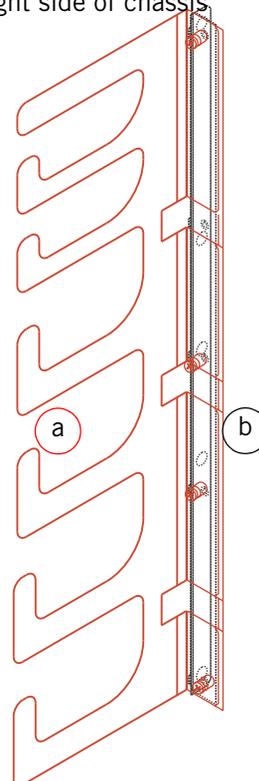
- ① Avaya recommends that you install the cable guide on the *left side* of the switch to allow easier access to the fan module.
- ① You need to install the rack mounting brackets before you can install the cable guides.
- ① Install the switch in the rack *before* installing the cable guide.
- Secure the cable guide to the rack mounting bracket using the captive screws on the cable holder. See Figure 7.

Figure 7 Installing the Cable Guide

Left side of chassis



Right side of chassis



Key

- a Cable Guide
- b Rack-mounting bracket

Install the Supervisor Module and PSU

Install the Supervisor Module

- ① If you purchased an Avaya C460ML-CFG (Material code 700255003, PEC Code 4548-009), then one Supervisor Module, PSU and the Fan Module are already installed.

Figure 8 shows the positions of the SPV Supervisor installed in the C460 chassis.

Figure 8 Location of the Avaya C460 Supervisor Modules



- ① You can install Supervisor modules in the top two slots – 1 and 2 – only.

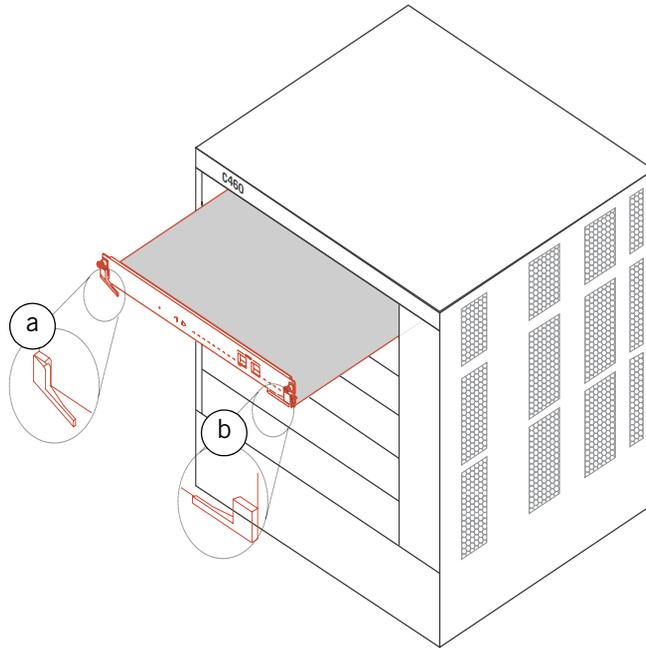


Caution: Do not leave any slots open. Use the blanking plates supplied to cover empty slots.



Caution: The Supervisor modules contain components that are sensitive to static discharge. Handle the module by the edges only. Use appropriate anti-static equipment when handling the modules.

Figure 9 Installing the C460 Supervisor Module



Key

- a Open locking handle
- b Closed locking handle

To install a Supervisor module:

- 1 Remove the blanking plate.
 - 2 Open the locking handles at the edge of the front panel.
 - 3 Position the module in the slot. See Figure 9.
 - 4 Gently slide the module in.
 - 5 Close the locking handles.
 - 6 Gently tighten the screws.
- ① For information on configuring redundant supervisor modules, refer to “M460ML-SPV Supervisor Module Redundancy” in the *Avaya C460 Installation and Maintenance Guide*.

Installing a PSU



Caution: Do not leave any PSU slots open. Use the blanking plates supplied to cover empty slots.

- ① In order to support Power over Ethernet, you need to install MPS4610-AC 1000W PSUs.
 - ① Use the handle on the front panel of the PSU to lift it.
 - ① You can install the PSU in any of the three slots.
- 1 Remove the blanking plate by unscrewing the four retaining screws and gently tugging the plate towards you.
 - 2 Position the PSU with the label facing up and to the right.
 - 3 Gently slide the PSU back until the socket on the back of the PSU engages in the plug on the chassis.
 - ① Ensure the guiding pins on the front panel of the PSU align with the holes on the front panel of the C460 chassis.
 - 4 Gently tighten the screws on the PSU.
-

Turn on the Switch

Once you have installed the supervisor module and PSU, you can turn on the switch:

- 1 Connect the PSU to the electricity supply.
- 2 Set the rocker switch on the front panel of the PSU to “I” to turn the switch on.
 - ▶ The LED on the front panel of the PSU is lit green.
 - ▶ The fans start
 - ▶ The boot process starts:

Stage	PWR LED	OPR LED	ACT LED
1	ON	Flashes for about 50 seconds	OFF
2	ON		ON after about 30 seconds
3	ON	ON	

- ① If you have installed two supervisor modules, the boot process is as follows:

Stage	Active supervisor module			Second supervisor module		
	PWR LED	OPR LED	ACT LED	PWR LED	OPR LED	ACT LED
1	ON	Flashes for	OFF	ON	Flashes for	OFF
2	ON	about 50	ON after	ON	about 50	ON after
		seconds	about 30		seconds	about 30
3	ON	ON	seconds	ON	ON	seconds
					Flashes*	

*Supervisor in “halted” mode

- ① Refer to the *Avaya C460 Installation and Maintenance Guide* for further information.
- ① The C460 is now ready for operation with its default settings (see Table 12, “Default System Parameters”). If you wish to configure the switch, see “Configure the Switch”.

Configure the Switch

- ① Before you can set up the C460 you must install at least one supervisor module and PSU and then turn on the switch.
- ① You can configure the switch via sideband, inband or outband interfaces.

Connecting the Serial Console Port

Each Avaya C460 supervisor module has one serial port on the front panel for connecting a terminal, a terminal emulator, or a modem. The serial port on the front panel is labeled “RS-232” and has an RJ-45 socket.

- 1 Insert the RJ-45 plug on the console cable into the Console port of the supervisor module.
- 2 Insert the other end into the RJ-45 socket in the supplied DB-9 adapter.
- 3 Insert the DB-9 plug into the serial (COM) port on the PC or terminal.
 - ① To connect a modem, use the cable and an RJ-45 to DB-25 adapter.
 - ① The cable and two adapters are in the Avaya C460 accessory set supplied with the switch.

Avaya CLI Hints and Tips

CLI Command Conventions

- CLI commands for you to enter are in the **computer bold** font.
- Information displayed on screen as well as parameters of a command are displayed in `computer` font.
- Parameters that you enter are in pointed brackets `<>`.
- Alternate but mandatory keywords are grouped in braces `{}` and separated by a bar `|`.
- Optional keywords are in square brackets `[]` and options are separated by a bar `|`.
- If you enter an alphanumeric string of two words or more, enclose the string in quotes.

The Avaya CLI has several features which improve ease of use:

- To display all commands available in a context type a question mark.
- To display all commands starting with a certain string, type the first few letters followed by a question mark.
- To get help containing all commands parameters with their legal values as well as its syntax and an example, type a question mark at the end of command or at the stage where it is unique.
- Use the Tab key to complete an unambiguous command.

Establishing a Console Connection with the C460

Figure 10 M460ML-SPV Supervisor Module Serial Console Port



Perform the following steps to connect a terminal to the C460 Serial Console port for configuration of switch parameters:

- 1 Use the serial cable supplied to attach the RJ-45 RS-232 console connector to the Console port of the active M460ML-SPV module. Connect the DB-9 connector to the serial (COM) port on your PC/terminal.
 - ① The active Supervisor module is indicated by the ACT and OPR LEDs being lit.
- 2 Ensure that the serial port settings on the terminal are:
 - 9600 baud
 - 8 bits
 - 1 stop bit
 - no parity.
 - ▶ If you reset or powered up the switch after connecting and configuring the terminal, Welcome to C460 appears followed by the Login Name prompt.
 - ① If the login prompt does not appear, press a key on the terminal.
- 3 Enter the default login: **root**.
 - ▶ The Password prompt appears
- 4 Enter the user level password: **root**.
 - ① If you connect your terminal to the Standby SPV (OPR and PWR LEDs are on, ACT LED is off), you can get access to all the CLI commands by opening a Session to the Active SPV.

Establishing a Telnet Connection (Outband)

Figure 11 M460ML-SPV Supervisor Module Fast Ethernet Console Port



Perform the following steps to establish a Telnet connection to the C460 for configuration:

- ① You need to assign an outband interface IP address using a direct connection to the console serial port before you can establish the Telnet session.
- 1 Connect a terminal to the RS-232 console port.
 - 2 When you are prompted for a Login Name, enter the default name **root**.
 - 3 When you are prompted for a password, enter the password **root**. You are now in read-write level.

- 4 At the prompt, type:
set interface outband <ip_addr><net-mask>
with an IP address and netmask to be used by the Avaya C460 Supervisor module to connect via its PPP interface.
 - ① The outband interface should be on a different subnet from the inband interface.
- 5 Connect your station to the Fast Ethernet console port (directly or via the network).
 - ① Use a UTP Category 5 cable with an RJ45 connector. The maximum UTP cable length connected to the 10/100 Mbps port operating as 10/100BASE-T is 100 m (328 ft.).
 - ① You can obtain appropriate cables from your local supplier.
- 6 Verify that you can communicate with the C460 using “ping” to the outband interface IP of the C460. If there is no response using the Ping command, check the IP address and default gateway of both the C460 and the station.
- 7 Start a Telnet session:
 - From the Microsoft Windows taskbar of your PC click **Start** and then **Run** or access the command prompt
 - Start the Telnet session by typing: **telnet** <C460_IP_address>
For example: **telnet 149.49.35.214**
 - ▶ The Login Name prompt is displayed
- 8 Enter the default name **root**
 - ▶ The password prompt is displayed
- 9 Enter the password **root** in lower case letters.
 - ① You can now configure the C460.
 - ① You can connect the outband interface to either of the supervisor module Fast Ethernet ports.

Establishing a Telnet Connection with the Switch (Inband)

Perform the following steps to establish a Telnet connection to the C460 for configuration:

- ① You need to assign an inband interface IP address using a direct connection to the console serial port before you can establish the Telnet session.
- 1 Connect a terminal to the RS-232 console port.
- 2 When you are prompted for a Login Name, enter the default name **root**.
- 3 When you are prompted for a password, enter the password **root**. You are now in read-write level.
 - ① At the prompt, type:
set interface outband <ip_addr><net-mask>
with an IP address and netmask to be used by the Avaya C460 Supervisor module to connect via its PPP interface.
- 4 Connect your station to the I/O module (directly or via the network).
- 5 Verify that you can communicate with the C460. Use the ping command to the inband interface IP of the C460. If there is no response using the Ping command, check the IP address and default gateway of both the C460 and the station.
 - ① The default subnet mask is 255.255.255.0.

- 6 Start a Telnet session:
 - From the Microsoft Windows taskbar of your PC click **Start** and then **Run** or access the command prompt
 - Start the Telnet session by typing: **telnet** <C460_IP_address>
For example: **telnet 149.49.35.214**
 - ▶ The Login Name prompt is displayed
- 7 Enter the default name **root**
 - ▶ The password prompt is displayed
- 8 Enter the password **root** in lower case letters.
 - ① You can now configure the C460.

Avaya C460 Default Settings

We recommend that you use the CLI to change default parameters. Refer to the Avaya C460 documentation for more information.

Table 12 Default System Parameters

Parameter	Default Value
All IP addresses	N/A (0.0.0.0)
CLI timeout	15 minutes
User name	root
Password	root
PPP interface	Disabled
Outband interface	Disabled
Inband interface	Disabled
Inband ARP Tx interval	5 seconds
Outband ARP Tx interval	5 seconds
VLANs	1 on all ports
Spanning Tree	Enabled
Bridge priority for Spanning Tree	32,768
NTP server IP address	N/A
Time zone offset	0 hours
Timezone	GMT
Read-only SNMP community string	public
Read-write SNMP community string	public
Trap SNMP community string	public
Number of SNMP retries	3
SNMP timeout	2,000
Intelligent multicast	Disabled
Boot bank	B
Broadcast storm control	Disabled
PSU redundancy	On

Run the Avaya C460 Embedded Device Manager (optional)

PC System Requirements for Running the Avaya C460 Embedded Device Manager

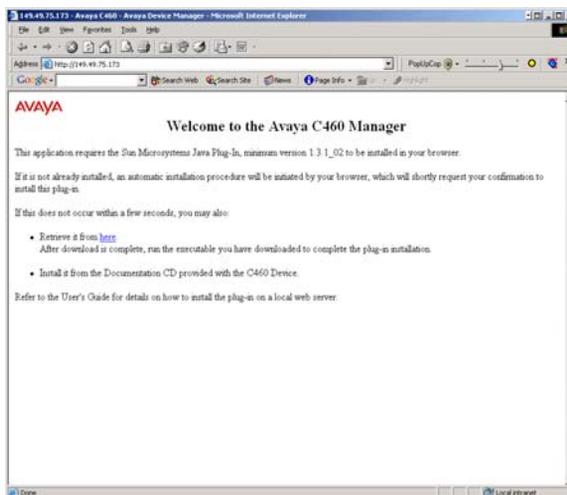
Minimum hardware and Operating System requirements are:

- Pentium II 400 Mhz-based computer with 128 Mb of RAM
- Screen resolution of 1024 x 768 pixels
- Microsoft Internet Explorer 5 or higher
- Microsoft Windows 2000 Workstation or Windows XP
- Sun Microsystems Java plug-in (supplied on the “Documentation and Utilities” CD)
 - ① Refer to the Release Notes for the exact version of the Java plug-in

Running the Avaya C460 Embedded Device Manager

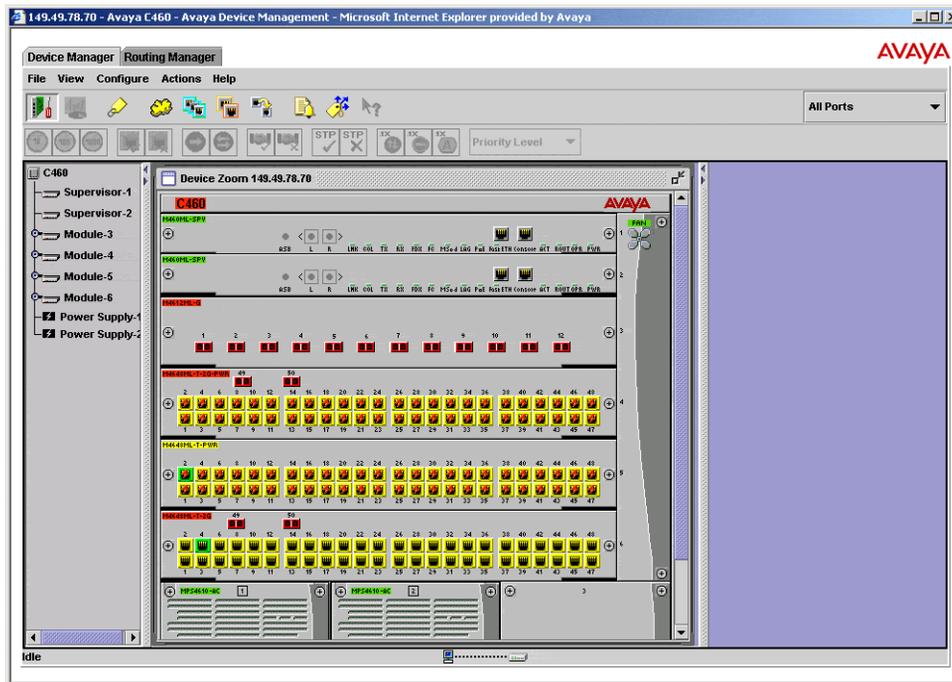
- ① You should assign an inband or out-of-band interface IP address to the switch before beginning this procedure.
- 1 Open your browser.
 - 2 Enter the URL of the switch in the format **http://aaa.bbb.ccc.ddd** where **aaa.bbb.ccc.ddd** is the inband or outband interface IP address of the switch.
 - ① The user name is “root”
The default passwords for read-write access is “root”.
 - ① The C460 Manager passwords are the same as those of the CLI. If you change the passwords of the CLI then those passwords become active for Web management as well. For further information on the passwords, refer to the *Avaya C460 Installation and Maintenance Guide*
 - ▶ The welcome page is displayed.

Figure 13 The Welcome Page



- ▶ If you have the Java plug-in installed, the C460 Manager opens in a new window. See Figure 14

Figure 14 C460 Device Manager



- ① If you do **not** have the Java plug-in installed, follow the instructions on the Welcome page that offers a variety of options to install the plug-in.
- ① You cannot configure Layer 3 parameters if you run the C460 Device Manager over the Outband interface.

Avaya Support

Avaya provides a telephone number for you to use to report problems or to ask questions about your contact center. The support telephone number is 1-800-242-2121 in the United States. For additional support telephone numbers, see the Avaya Web site: <http://www.avaya.com>



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