Avaya

Ethernet Routing Switch 4900 Series

Quick Installation for Avaya Ethernet Routing Switch 4900 Series

You can download all documents referenced in this Quick Installation Guide at www.avaya.com. You do not require a support contract to download documents. When downloading documentation, select the specific software version. Depending on your hardware model, your switch can appear different than the figures shown in this guide.
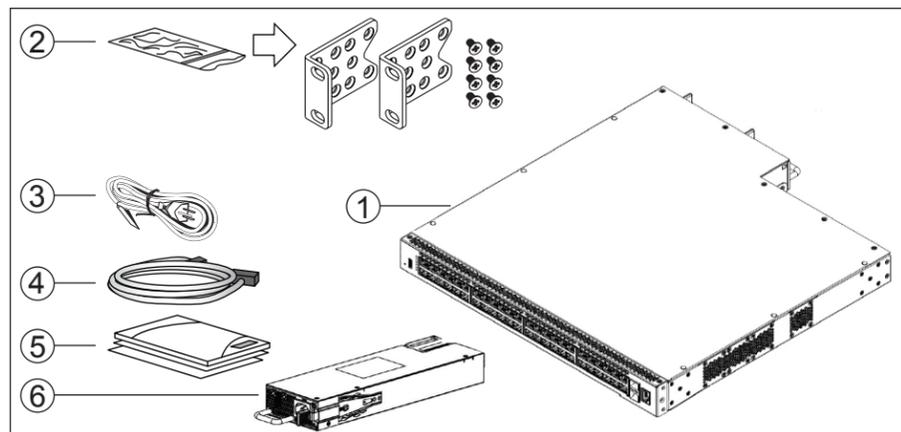
1 Before you start

Confirm that you have the following tools and package contents:

Tools required:
- Phillips #2 screwdriver
- Console cable to match the console connector on the switch (RJ-45)
- Console cable or Ethernet cable (if using the default IP address to access the device for configuration)

Package contents:

1. Avaya Ethernet Routing Switch 4900 Series.
2. Rack-mounting hardware that includes:
   - Rack-mount brackets (2)
   - Screws to attach brackets to the switch (8)
     Note: Screws to attach the rack mount kit to rack are not provided.
3. AC power cord.
   (Note: A power cord is not included for the A variant of the switch)
4. Standard .5 m stacking cable.
5. Documentation includes the Base software license kit, Quick Install poster, and Regulatory documents.
6. Field replaceable power supply.

Note: Two field replaceable power supplies are supported for models ERS 4950GTS, ERS 4926GTS, ERS 4950GTS-PWR+, and ERS 4926GTS-PWR+. One power supply is already installed.

Note: Ensure to order Direct Attach cables and SFP or SFP+ Transceivers if required.

Other optional requirements:

REPLACEMENT/OPTIONAL POWER SUPPLY UNITS		
Model	**Primary PSU**	**Optional Secondary PSU**
ERS 4950GTS, ERS 4926GTS	250W AC power supply (replacement order code: AL1905?09-E6)	250W AC Power Supply (order code: AL1905?09-E6)
ERS 4950GTS-PWR+, ERS 4926GTS-PWR+	1025W AC POE+ power supply (replacement order code: AL1905?19-E6)	1025W AC power supply (order code: AL1905?19-E6)

| CABLES FOR INSTALLING THE SWITCH INTO A NETWORK		
PEC Code	**Name**	**Short Description**
AL2011022-E6	Avaya RJ-45/DB-9 CONSOLE CABLE	1.5m cable with DB-9 Female for terminal/PC on one end and RJ-45 for device console port connectivity on the other.
AL2011021-E6	AVAYA BLUE DB-9 MALE TO RJ-45 CONSOLE CONNECTOR	Converts DB-9 of AL2011013-E6 console cable to RJ-45, a Category 5 RJ-45 straight cable can then connect to RJ-45 console port.
AL2011020-E6	AVAYA RED DB-9 FEMALE TO RJ-45 ADAPTOR	Converts DB-9 MALE to RJ-45 serial port. The adaptor can be used for PC or device with DB-9 MALE console port. Also, can be used with Category 5 RJ-45 straight cable to provide console connection.

| STACKING CABLES FOR STACKING	
Material code	**Description**
700511668	0.5 m stacking cable
700511669	1.5 m stacking cable
700511670	3.0 m stacking cable
700511671	5.0 m stacking cable

2 Prepare the rack

1. Provide the equivalent of one rack of vertical space for each switch in an EIA or IEC-standard 19-inch (48.2-centimeter) equipment rack.
2. Ensure that the equipment rack is stable and securely attached to a permanent structure.
3. Ground the rack to the same grounding electrode used by the power service in the area. The ground path must be permanent and must not exceed 1 Ohm of resistance from the rack to the grounding electrode. AVAYA recommends using a filter or surge suppressor.

3 Front-mount the switch in a rack

1. Attach the brackets to each side of the device using the screws provided.
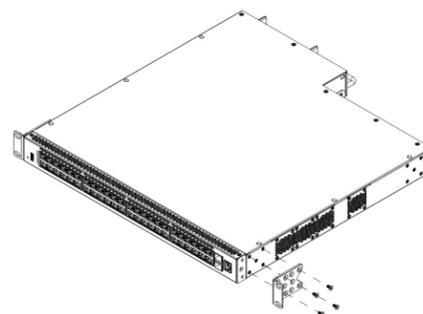
2. Slide the switch into the rack. Insert and tighten the rack-mount screws.
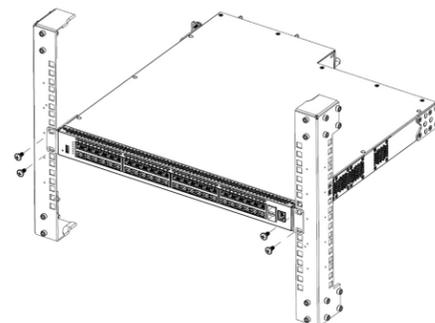
To rear-mount the switch in a rack, see *Installing the Avaya Ethernet Routing Switch 4900 Series, NN47212-301*

4 Stacking

The Avaya ERS 4900 Series provides fail-safe stackability. You can connect up to eight 4900 Series devices in a stack to provide uninterrupted connectivity for up to 400 ports. The stack is managed as single unit, using the IP address of the base unit.

ERS4900 series rear panel

The switch back panel provides a Base Unit Select switch, Cascade Down connector, and Cascade Up connector for stacking purposes as shown below:
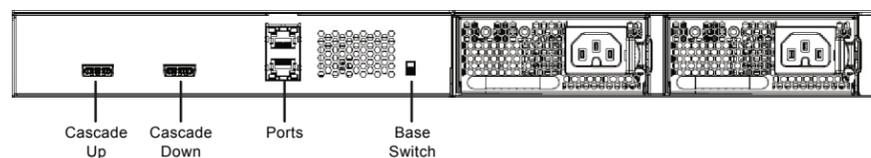

Base Unit Select switch – used to designate the base unit in a stack. When set DOWN, this unit acts as the Base Unit for the stack. Only one switch in the stack must have the Base Unit Select in base position.

Ports – used for device management and cannot be used to access network (out-of-band management). For more information, see *Quick Start Configuration for Avaya Ethernet Routing Switch 4900 and 5900 Series* (NN47211-500)
Note: The port labeled AUX is disabled.

Cascade Down and Cascade Up connectors – used connect a switch to the next unit in the stack through a cascade cable. Connect one end of the Cascade Down cable to the Cascade Up connector of the next switch in the stack (shown in the simple two-switch stack connection block diagram below):

Simplified Stacking diagram
1= Base unit
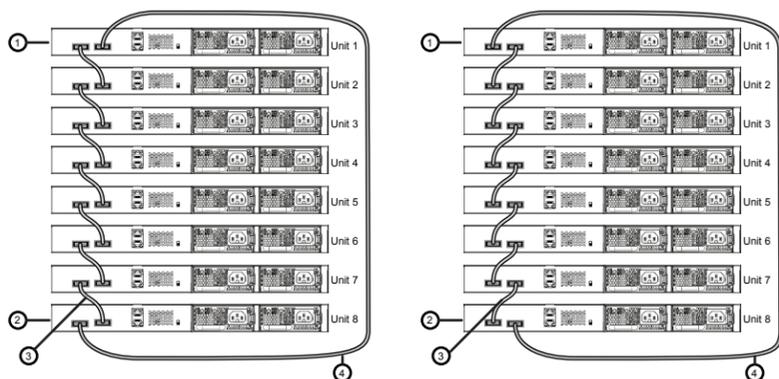2= Last unit
3= Cascade/Stack Cable
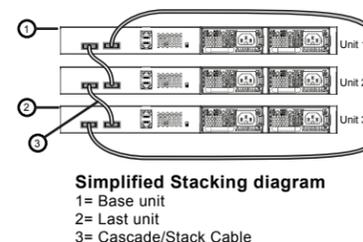
To create a stack connection, order the appropriate Avaya ERS 4900 Series cascade cables to ensure fail-safe stacking. For stacking three or more units (maximum eight units per stack), order the cables as applicable (see other optional requirements).

1. Ensure that all switches for the stack are rack mounted.
2. Slide the Base Unit Select switches on the back of the units to the appropriate position, depending on whether they are a base unit or non-base unit:
   - **Base Unit** (Unit 1) - Slide the Base Unit Select switch DOWN
   - **Non-Base Unit** (Units 2-8) - Slide the Base Unit Select switch UP. Because stack parameters are associated with the base unit, the physical stack order depends on the base unit position and whether you configure the stack cascade up (stack up) or cascade down (stack down). This designation depends on the stack cabling arrangement.

   IMPORTANT: Avaya recommends you to use a Cascade Down configuration.

3. Connect stacking cables as required for a Cascade Up (stack up) or Cascade Down (stack down) configuration as shown below:

Cascade Down (Stack Down) configuration
1= Base unit
2= Last unit
3= Cascade/Stack Cable
4= Cascade/Stack Cable
(Return cable to make stack resilient.
Use longer stack cable if required.)

Cascade Up (Stack Up) configuration
1= Base unit
2= Last unit
3= Cascade/Stack Cable
4= Cascade/Stack Cable
(Return cable to make stack resilient.
Use longer stack cable if required.)

5 Powering Up

Connect the AC power cord to the back of the switch, and then plug the other end of the cord into an AC power outlet.

Warning: You must use a power cord set approved for the 4900 Series switch and the power receptacle type in your country.

Ensure you have properly grounded the switch before powering up the unit.
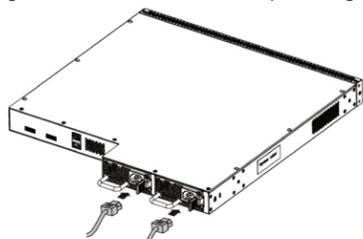
The switch will power on immediately when it is connected to a suitable AC power source. The switch does not have a power switch.

6 Status LEDs

Check the front-panel LEDs as the device powers on to be sure the PWR LED is lit green. If not, check if the power cord is correctly connected.

Status LEDs are on the left front side of the switch. For more information on all status LEDs, see Installing Avaya ERS 4900 Series (NN47212-301).
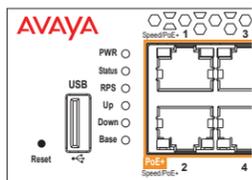

7 Installing SFP and SFP+ transceivers

Before installing SFP and SFP+ transceivers, ensure the switch is up, fully booted, and operating normally. Verify that the SFP or SFP+ transceivers and network cabling support your network configuration.
Install SFP transceivers by performing this procedure.
1. Remove the transceiver from the protective packaging.
2. Verify that the transceiver is the correct model for the network configuration.
3. Grasp the transceiver between your thumb and forefinger.
4. Insert the transceiver into the proper module on the switch. Apply a light pressure to the transceiver until it clicks and locks into position in the module.
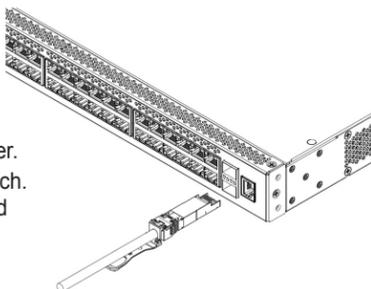
Commissioning the ERS 4900

To set IP parameters using the console port and CLI Quickstart, perform the following tasks:

8 Connect the console cable to the ERS 4900

The console port uses the RJ-45 port outlined with a blue border. Use an RJ-45 to DB-9 cable, or a DB-9 to DB-9 serial cable to connect the switch console port to your management terminal. Adapters are available to provide different connection options. The maximum length of a console cable is 25 feet (8.3 meters). The following table describes the RJ-45 console port pin-out information. You can use the pin-out information to verify or create a console cable for use with your maintenance terminal.

RJ–45 Console port pin assignments

Connector	Pin Number	Signal
12345678	1	Ready to send (RTS) - optional
	2	Data terminal ready (DTR) - optional
	3	Transmit data (TXD) - mandatory
	4	Carrier detect (DCD) - optional (provided on SR)
	5	Ground (GND) - mandatory
	6	Receive data (RXD) - mandatory
	7	Data set ready (DSR) - optional
	8	Clear to send (CTS) - optional (some sources indicated swapped with or tied to pin1)

---

1. Connect the console cable from the terminal to the console port of the switch to allow initial configuration. Any terminal or PC with the appropriate terminal emulator can be used as the management station.
2. Set the terminal protocol on the terminal or terminal emulation program to VT100 or VT100/ANSI.
3. Connect to the switch using the terminal or terminal emulation application.
4. The Avaya switch banner appears when you connect to the switch through the Console port. There is no default password for the switch for CLI console access. Enter `Ctrl+Y` and type the following CLI commands:
   ```
   enable
   install
   ```
5. The CLI Quickstart welcome screen helps you enter the information requested at each prompt.
   Note: The ERS 4900 uses the default IP address of 192.168.1.1/24 if the switch does not get its IP address from another source. The default IP address is not applicable to the out-of-band management port.

Terminal emulation settings

Property	Value
Baud Rate	9600 bps
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None

```
####################################################################################################
Welcome to the ERS4900 setup utility.
You will be requested to provide the switch basic connectivity settings. After entering the requested
info, the configuration will be applied and stored into the switch NVRAM.
Once the basic connectivity settings are applied, additional configuration can be done using the available
management interfaces. Use Ctrl+C to abort the configuration at any time.
####################################################################################################
Please provide the Quick Start VLAN <1-4094> [1]:
Please provide the in-band IP Address[172.16.120.20]:
Please provide the in-band sub-net mask[255.255.255.0]:
Please provide the Default Gateway[172.16.120.1]:
Please provide the management sub-net mask [0.0.0.0]:
Please provide the management IP address [0.0.0.0]:
Please provide the management Default Gateway [0.0.0.0]:
Please provide the Read-Only Community String[**********]:
Please provide the Read-Write Community String[**********]:
Please provide the in-band IPV6 Address/Prefix_length[::/0]:
Please provide the in-band IPV6 Default Gateway[::]:
Please provide the management IPv6 Address/Prefix length [::/0]:
Please provide the management IPv6 Default Gateway [::]:
####################################################################################################
Basic switch parameters have now been configured and saved.
####################################################################################################
```

Avaya Command Line Interface (ACLI)

You can manually load the ACLI script from the console menu or automatically load the script at startup.

Command Mode	Description	Entrance Commands	Exit Commands

User Executive (Exec mode) `4900>`	• Default and Initial access code
	• Requires only Read access
	• Used for basic commands such as show, ping, and logoff
		No entrance command, default mode	`exit`
			or
			`logout`

Privileged EXEC (PrivExec mode) `4900#`	• Used for basic switch level management tasks; for example, downloading software images, setting passwords, starting the switch
	• Default and Initial access mode
	• Requires only Read access
		`enable`	`exit`
			or
			`logout`

Global Configuration (Config mode) `4900(config)#`	• Used to set and display general switch parameters such as IP address, ANMP parameters, Telnet access and VLANs
	• Requires Read-Write access
		From Privileged EXEC mode, enter: `configure`	`exit`
			or
			`logout`

Interface Configuration (ifconfig mode) `4900(config-if)#`	• Used to set and display general switch parameters such as IP address, ANMP parameters, Telnet access and VLANs • Requires Read-Write access	From Global Configuration mode, to configure a port, enter: `interface Ethernet <port_number>` To configure a VLAN, enter: `interface vlan <vlan_number>` To configure a loopback, enter: `interface loopback <loopback number>` To configure a management, enter: `interface mgmt <mgmt number>`	To return to Global Configuration mode, enter: `exit` To return to Privileged EXEC mode, enter: `end` To exit ACLI completely, enter: `logout`

For more information on additional modes, see Using ACLI and EDM on Avaya ERS 4900 and 5900 Series (NN47211-104)

Manual configuration
Use the following ACLI command to manually configure the in-band management IP address:
```
ip address <A.B.C.D> [netmask <A.B.C.D>] [default-gateway <A.B.C.D>]
```
Example:
1. Enter Privileged Exec mode:
   ```
   4900GTS>enable
   ```
2. Enter the Global Config mode:
   ```
   4900GTS#config terminal
   ```
3. Manually configure in-band management IP information:
   ```
   4900GTS(config)#ip address 192.0.2.1 netmask 255.255.255.0 default-gateway 192.0.2.0
   ```
4. Verify the information
   ```
   4900GTS(config)show ipCommand Mode
   Bootp/DHCP Mode: BootP When Needed

                     Configured      In Use        Last BootP/DHCP
                     ----------      ------        ---------------
   Stack IP Address:  0.0.0.0                        0.0.0.0
   Switch IP Address: 192.0.2.1       192.0.2.1      0.0.0.0
   Switch Subnet Mask: 255.255.255.0  255.255.255.0  0.0.0.0
   Mgmt Stack IP Address: 0.0.0.0
   Mgmt Switch IP Address: 0.0.0.0
   Mgmt Subnet Mask:  0.0.0.0
   Mgmt Def Gateway:  0.0.0.0
   Default Gateway:   192.0.2.0       192.0.2.0      0.0.0.0
   ```

ACLI boot and factory-default commands:
`boot` - reboot the switch
`boot default` - reboot and use the factory default configuration
`boot partial-default` - reboot and use the partial factory default configuration
`restore factory-default` - reset the switch to factory default configuration

Recommended reading
For more information, go to http://support.avaya.com
and download the following ERS 4900 guides:
• Locating Documentation (NN47212-101)
• Regulatory Reference (NN47212-100)
• Documentation Reference for Avaya Ethernet Routing Switch 4900 and 5900 Series (NN47211-103)
• Installing Avaya Ethernet Routing Switch 4900 Series (NN47212-301)
• Quick Start Configuration (NN47211–500)
• Configuring Systems (NN47211–501)
• Release Notes (NN47211-400)

AVAYA