

Deploying Avaya Session Border Controller for Enterprise on a Hardware Platform

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Chapter 1: Introduction

Purpose

This document provides information about how to install and configure Avaya Session Border Controller for Enterprise (Avaya SBCE) installed on an Avaya Aura Appliance Virtualization Platform in an enterprise having Session Initiation Protocol (SIP) trunks.

This document is intended for anyone who wants to install, configure, and verify Avaya SBCE.

Change history

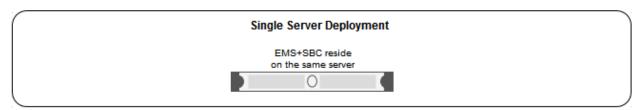
Issue	Date	Summary of changes
6	August 2021	Updated the following items:
		Software to download on page 16
		About licensing requirements on page 96
		Avaya SBCE licensed features on page 97
5	December 2020	Updated the following items:
		Added information about the Dell R620 server that was erroneously removed in Release 8.0. This update is found throughout the document.
		Added the software file names you must download to deploy the Release 8.1.2 software in <u>Software to download</u> on page 16.
		Added more details to the topic <u>Network interfaces</u> on page 16.
		Corrected the management port interface numbering reference in the table of <u>Dell R340 Avaya Solutions Platform 110 Appliance</u> <u>back view</u> on page 21.
		Updated an optional default password in <u>Password policies</u> on page 58.
		Updated some of the procedures in (Optional) Reinstalling the Avaya SBCE software on page 75.
		Added a warning that Portwell servers do not support deployments of EMS or SBCE on dedicated servers.

Issue	Date	Summary of changes		
		Updated CLI procedures with a special step when using Portwell servers.		
		Added a warning that you must not install a license file on the secondary EMS if used in an active-active deployment. For more information, see About licensing requirements on page 96.		
4	August 2020	Updated the following items:		
		Document title.		
		Added a reference to the capacity tables found in Avaya Session Border Controller for Enterprise Overview and Specification.		
		Removed the iDrac and vFlash ports from the Dell R330 servers.		
		Clarified the NIC card locations on the Dell R330 servers.		
		Other minor updates.		
3	June 2020	Update USB port usage on the Dell R330 server as described in Dell R330 front view on page 22 and Dell R330 back view on page 23.		
2	April 2020	Minor edits.		

Chapter 2: Architecture overview

Single server non-HA deployment

In a single server non-HA deployment, the Element Management System (EMS) and SBCE software are installed on a single server. Use this deployment scenario when you want to deploy Avaya SBCE in a basic mode.



Important:

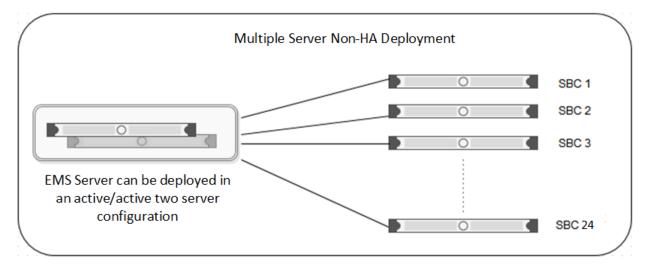
All hardware server types, virtualized environment platforms, and cloud platforms support the single-server non-HA deployment type.

Multiple server non-HA deployment

In a multiple server deployment, the EMS and SBCE software are installed on separate servers.

In a non-HA multiple server deployment, you can have one or more SBCE servers controlled by a single EMS server or a replicated EMS HA pair. In an active/active deployment, the EMS software is installed on two servers. One EMS server is configured as Primary and the other is configured as Secondary. When using a single EMS server, the EMS server is configured as Primary.

You can have up to 24 individual Avaya SBCE servers in this type of configuration.



If you start with a non-HA deployment and want to later move to an HA deployment, you must completely reconfigure the deployment.

Important:

All hardware server types (except Portwell servers), virtualized environment platforms, and cloud platforms support the multi-server non-HA deployment type.

Multiple server HA deployment

In a multiple server deployment, the EMS and SBCE software are installed on separate servers.

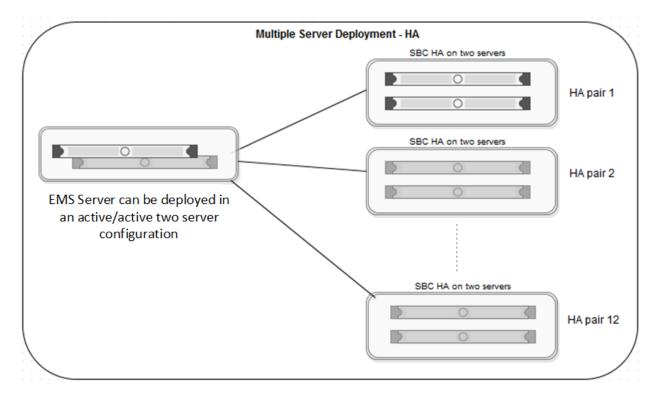
In an HA deployment, SBCE servers are deployed in pairs. Each pair has one SBCE server configured as Primary while the other is configured as Secondary.

Optionally, the EMS software can be replicated in an active/active HA pair deployment. In an active/active deployment, the EMS software is installed on two servers. One EMS server is configured as Primary and the other is configured as Secondary. An EMS HA pair must be reachable to each other and with the SBCE servers, and can be in different geographical locations.

One EMS server or an active/active pair of EMS servers can control up to 12 separate pairs of SBCE servers.

Note:

When deploying an HA configuration on Amazon Web Services, you only have to configure the SBCE software on the primary device



Important:

All hardware server types (except Portwell servers), virtualized environment platforms, and cloud platforms support the multi-server HA deployment type.

Although the HA pairs and non-HA deployments are shown separately in this figure, EMS can control both an SBCE HA server pair as well as a single SBCE server.

SBCE HA server pairs must adhere to the following requirements:

- You can enable and use the HA deployment feature only if the license file contains an HA license.
- The HA pair servers must reachable by the EMS or EMS HA pair servers over the Management Plane (M1).
- The HA pair servers must be reachable between the devices over the Management link (M1).
- The HA pair servers must have the HA link (M2) reachable between the HA pair servers.
- The HA pair servers must set up to have all the data interfaces between the servers replicated so that the servers are connected in same subnets. For example, the A1 data interface in one SBCE server should be in the same subnet as the A1 data interface of the paired SBCE server. This allows you to meet the requirement that failover be functional in an active/standby mode.
- In a multiple server HA virtualized deployment, when there are multiple HA pairs and automatic IP addressing is being used on the HA link (M2), every HA pair should either have their own isolated vSwitch or each HA pair should use different IP addresses reachable with their HA pairs as stated previously for M2 connectivity.

Note:

Note the following recommendations:

- Connect the HA pair servers back-to-back using automatic IP addressing.
- If the HA pair server M2 links are connected over a network (for example, switches or
 routers in the same or different locations) and are not in a back-to-back connection, use
 reachable network IP addresses that have minimum or no latency. You need a good
 quality connection because HA keep-alive messages and failover messages depend on
 this link.
- All connected switches must honor the Generic Attribute Registration Protocol (GARP) sent by Avaya SBCE.

Chapter 3: Planning

About Avaya SBCE servers

The Avaya SBCE servers are fully integrated, user-installable chassis. Avaya SBCE supports the following hardware and VMware servers:

- Dell[™] PowerEdge[™] R640 Avaya Solutions Platform 110 Appliance server Profile 3
- Dell[™] PowerEdge[™] R640 Avaya Solutions Platform 110 Appliance server Profile 5
- Dell[™] PowerEdge[™] R340 Avaya Solutions Platform 110 Appliance server
- Dell R320, Dell R330, Dell R620, and Dell R630 servers
- HP DL360 G8 and HP DL360 G9 servers
- Portwell CAF-0251 and Portwell CAD-0230 servers



Note:

HA deployments are not supported on any Portwell server.

For technical specifications of these servers, see the "Specifications and requirements" section of this document.

Supported device configurations

Hardware server device configurations supported with this release

The following table lists the Avaya SBCE or EMS device configurations supported by each hardware server. The table also contains information about the number of NIC ports available and the hardware category for each server.

Server	NIC	DVD Hardware Supported device conf		evice configur	iguration	
	Ports	drive	category	EMS	SBCE	EMS+SBCE
Dell™ PowerEdge™ R640 Avaya Solutions Platform 110 Appliance server - Profile 3	6	Yes	310	Supported	Supported	Supported

Server	NIC		Hardware	Supported device configuration		
	Ports	drive	category	EMS	SBCE	EMS+SBCE
Dell™ PowerEdge™ R640 Avaya Solutions Platform 110 Appliance server - Profile 5	6	Yes	310	Supported	Supported	Supported
Dell™ PowerEdge™ R340 Avaya Solutions Platform 110 Appliance server	6	No	310	Supported	Supported	Supported
Dell [™] PowerEdge [™] R320	6	Yes	310	Supported	Supported	Supported
Dell™ PowerEdge™ R330	6	Yes	310	Supported	Supported	Supported
Dell [™] PowerEdge [™] R620	6	Yes	310	Supported	Supported	Supported
Dell [™] PowerEdge [™] R630	6	Yes	310	Supported	Supported	Supported
HP DL360 G8	6	Yes	311	Supported	Supported	Supported
HP DL360 G9	6	Yes	311	Supported	Supported	Supported
Portwell CAF-0251	4	No	110	Not supported	Not supported	Supported
Portwell CAD-0230	6	No	110	Not supported	Not supported	Supported

Hardware servers that support new installations for this release

- Dell[™] PowerEdge[™] R640 Avaya Solutions Platform 110 Appliance server Profile 3
- Dell[™] PowerEdge[™] R640 Avaya Solutions Platform 110 Appliance server Profile 5
- Dell[™] PowerEdge[™] R340 Avaya Solutions Platform 110 Appliance server
- Portwell CAD-0230
- Portwell CAF-0251

Capacities

For information about feature capacities on different platforms, see *Avaya Session Border Controller for Enterprise Overview and Specification*.

Software to download

Download the ISO software image file from the Avaya Support Site or from the Avaya PLDS website:

https://support.avaya.com/downloads/

https://plds.avaya.com

Release 8.1.3 files

- sbce-8.1.3.0-31-21052 2dbf5ef8901e7491644bd3ab130125eb.img
- sbce-8.1.3.0-31-21052.iso
- sbce-8.1.3.0-31-21052.iso.md5
- sbce-8.1.3.0-31-21052.iso.asc

Release 8.1.2 files

- sbce-8.1.2.0-31-19809_6cbd282cc8a7703d2dd5fa9a9a1f12c2.img
- sbce-8.1.2.0-31-19809.iso
- sbce-8.1.2.0-31-19809.iso.md5
- sbce-8.1.2.0-31-19809.iso.asc

Release 8.1.1 files

- sbce-8.1.1.0-26-19214 d5611d2a5fa75e5966958161d636383c.img
- sbce-8.1.1.0-26-19214.iso
- sbce-8.1.1.0-26-19214.iso.md5
- sbce-8.1.1.0-26-19214.iso.asc

Release 8.1.0 files

- sbce-8.1.0.0-14-18490 7d0eb4901f3c4c37f910dd768b72a185.img
- sbce-8.1.0.0-14-18490.iso
- sbce-8.1.0.0-14-18490.iso.md5
- sbce-8.1.0.0-14-18490.iso.asc

Network interfaces

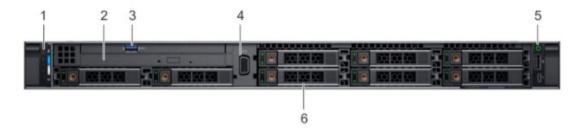
The number of network interfaces that you set up depends the type of Avaya SBCE instance that you are deploying.

The following table shows the relationship between the number of network interfaces and Avaya SBCE deployment configurations:

Number of network interfaces	Type of Avaya SBCE configuration	Interface ports
2	EMS only	M1, M2
4	Small SBCE	M1, A1, B1, M2
6	EMS+SBCE	M1, A1, B1, M2, A2, B2
6	For all other deployment types, such as High Availability (HA)	M1, A1, B1, M2, A2, B2

Front and back panel descriptions

Dell R640 Avaya Solutions Platform 110 Appliance front view



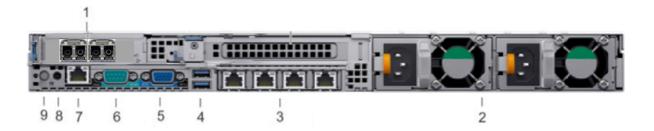
Callout	Item	Icon	Description
1	Left control panel	NA	Displays the system health, system ID, and status LED indicators.
			Status LED: Enables you to identify failed hardware components. There are up to five status LEDs and an overall system health LED (Chassis health and system ID) bar.
2	Optical drive	NA	One slim SATA DVD-ROM drive.
			Note:
			DVD devices are data only.
3	USB port	SS<-	The USB port is USB 3.0 compliant.
4	VGA port	101	Enables you to connect a display device to the system.
5	Right control panel	NA	Contains the power button, USB port, iDRAC Direct micro port, and the iDRAC Direct status LED.
6	Drive slots	NA	Enable you to install hard drives that are supported on your system.

Dell R640 Avaya Solutions Platform 110 Appliance back view

Profile 3 server



Profile 5 server



Callout	Item	Icon	Description
1	NIC ports	N/A	Profile 3 has a 2-port 1GbE RJ45 NIC.
			Profile 5 has a 2 port 10GbE Optical NIC.
2	Power supply unit (2)	N/A	Wattage and voltage type depends on configuration.
3	NIC ports (4)	<u> </u>	The NIC ports that are integrated on the network daughter card (NDC) provide network connectivity.
4	USB ports	884	Allows you to connect USB devices to the system. These ports are USB 3.0-compliant.
5	VGA port	101	Enables you to connect a display device to the system.
6	Serial port	10101	Serial console connections are not supported on Avaya Solutions Platform 110 Appliance server.
7	iDRAC9 port	2º	Enables you to remotely access iDRAC.
8	CMA power port	N/A	The Cable Management Arm (CMA) power port enables you to connect to the CMA.

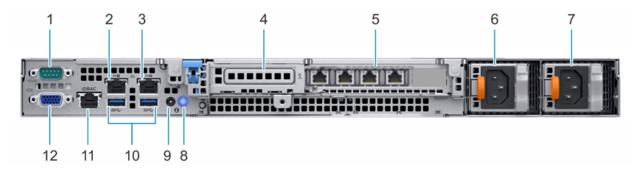
Callout	Item	Icon	Description
9	System identification button	②	The System Identification (ID) button is available on the front and back panel of the systems. Press the button to identify a system in a rack by turning on the system ID button. You can also use the system ID button to reset iDRAC and to access BIOS using the Step Through mode.

Dell R340 Avaya Solutions Platform 110 Appliance front view



Callout	Description			
1	The LCD panel displays system ID, status information, and system error messages. The LCD lights blue during normal system operation. When the system needs attention, the LCD lights amber.			
	★ Note:			
	LCD panel is not available in a cabled hard drive chassis.			
2	The spot where an optional optical drive slot would be located. For Avaya SBCE, an optical drive is not provided.			
3	The System identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status indicator on the back flashes blue until one of the buttons are pressed again.			
	Press to toggle the system ID on and off. If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.			
	To reset the iDRAC (if not disabled in F2 iDRAC setup) press and hold the button for more than 15 seconds.			
4	The information tag is a slide-out label panel, which allows you to record system information, such as Service Tag, NIC, MAC address.			
5	Hard drive slots that contain two 2.5–inch hot-swappable hard drives in 3.5–inch drive carriers.			
6	The USB 2.0 connector enables you to connect USB devices to the system.			
	⚠ Caution:			
	Do not use this USB ports to install Avaya SBCE software on this server.			
7	The micro-USB 2.0 iDRAC managed port provides access to iDRAC Direct features.			
	Caution:			
	Do not use this USB port to install Avaya SBCE software on this server.			

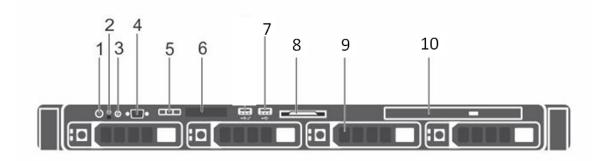
Dell R340 Avaya Solutions Platform 110 Appliance back view



Callout	Description		
1	Serial console connection is not supported on Dell R340 server. Use the VGA console connection for new installations.		
2	The Ethernet connectors enable you to connect integrated 10/100/1000 Mbps NIC interfaces. This interface is for the M2 management port.		
3	The Ethernet connectors enable you to connect integrated 10/100/1000 Mbps NIC interfaces. This interface is for the M1 management port.		
4	This PCIe expansion card slot is not used.		
5	This PCIe expansion card slot is used for a 4-port 10/100/1000 Mbps NIC card. This card provides the four network interfaces A1, A2, B1, and B2.		
6	The power supply unit enables you to connect up to two 350W redundant AC power supply units.		
7	The power supply unit enables you to connect up to two 350W redundant AC power supply units.		
8	The system identification button on the front and back panels enables you to locate a system within a rack. When the system identification button is pressed, the LCD panel on the front and the system status indicator on the back blink until one of the buttons is pressed again. Press to toggle the system ID on and off.		
	If the system stops responding during POST, press and hold the button for more than five seconds to enter the BIOS progress mode.		
	To disable iDRAC, if not disabled in F2 iDRAC setup, press and hold the button for more than 15 seconds.		
9	The system identification connector connects the optional system status indicator assembly through the optional cable management arm.		
10	The USB 3.0 connectors enable you to connect USB devices to the system.		
11	The iDRAC port enables you to install a dedicated management port card.		
12	The video connector enables you to connect a VGA display to the system.		

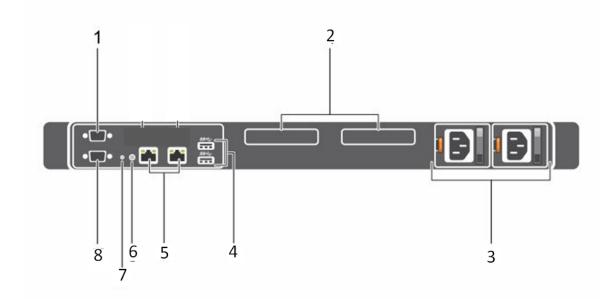
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Dell R330 front view



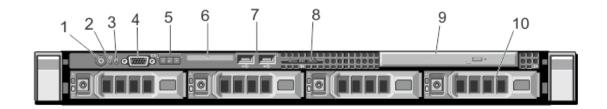
Callout	Description		
1	The power-on indicator lights when the system power is on. The power button controls the power supply output to the system.		
2	NMI button used to troubleshoot software and device driver errors when running certain operating systems. This button can be pressed using the end of a paper clip.		
	Use this button only if directed to do so by qualified support personnel or by the operating system documentation.		
3	The System identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status indicator on the back flashes blue until one of the buttons are pressed again.		
	Press to toggle the system ID on and off. If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.		
4	The video connector allows you to connect a VGA display to the system.		
5	The LCD menu button allows you to navigate the control panel LCD menu.		
6	The LCD panel displays system ID, status information, and system error messages. The LCD lights blue during normal system operation. When the system needs attention, the LCD lights amber.		
	Note:		
	LCD panel is not available in a cabled hard drive chassis.		
7	The USB 2.0 connector enables you to connect USB devices to the system.		
8	The information tag is a slide-out label panel, which allows you to record system information, such as Service Tag, NIC, MAC address.		
9	The hard drive slots enable you to install up to four 3.5–inch hot-swappable hard drives or four 2.5–inch hot-swappable hard drives in 3.5–inch hard drive adapters.		
10	The optical drive slot enables you to install one optional SATA DVD-ROM drive or DVD+/-RW drive.		

Dell R330 back view



Callout	Description		
1	Serial console connection is not supported on Dell R330 server. Use VGA console connection for new installations.		
2	The PCIe expansion card slots enable you to connect PCI Express expansion cards. The Dell R330 Type 1 server has the 4-port NIC card installed in right expansion card slot. The Dell R330 Type 2 server has the 4-port NIC card installed in left expansion card slot.		
3	The power supply unit enables you to connect up to two 350 W redundant AC power supply units.		
4	The USB 3.0 connectors enable you to connect USB devices to the system. Caution: Do not use this USB port to install Avaya SBCE software on this server.		
5	The Ethernet connectors enable you to connect integrated 10/100/1000 Mbps NIC connectors.		
6	The system identification button on the front and back panels enables you to locate a system within a rack. When the system identification button is pressed, the LCD panel on the front and the system status indicator on the back blink until one of the buttons is pressed again. Press to toggle the system ID on and off.		
	If the system stops responding during POST, press and hold the button for more than five seconds to enter the BIOS progress mode.		
7	The system identification connector connects the optional system status indicator assembly through the optional cable management arm.		
8	The video connector enables you to connect a VGA display to the system.		

Dell R320 front view

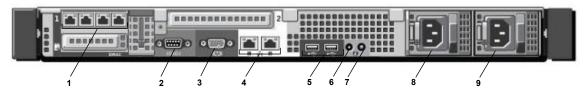


Callout	Item	Description
1	Power-On Indicator, Power Button	The power-on indicator lights when the system power is on. The power button controls the power supply output to the system.
2	NMI Button	Used to troubleshoot software and device driver errors when running certain operating systems. This button can be pressed using the end of a paper clip.
		Use this button only if directed to do so by qualified support personnel or by the operating system documentation.
3	System Identification Button	The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status indicator on the back flashes blue until one of the buttons are pressed again.
		Press to toggle the system ID on and off. If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.
		To reset the iDRAC (if not disabled in F2 iDRAC setup) press and hold the button for more than 15 seconds.
4	Video Connector	Allows you to connect a VGA display to the system.
5	LCD Menu Buttons	Allows you to navigate the control panel LCD menu.
6	LCD Panel	Displays system ID, status information, and system error messages. The LCD lights blue during normal system operation. When the system needs attention, the LCD lights amber and the LCD panel displays an error code followed by descriptive text.
		Note:
		If the system is connected to AC power and an error is detected, the LCD lights amber regardless of whether the system is turned on or off.
7	USB Connectors (2)	Allows you to insert USB devices to the system. The ports are USB 2.0-compliant.
8	Information Tag	A slide-out label panel, which allows you to record system information, such as Service Tag, NIC, MAC address.

Callout	Item	Description
9	Optical drive (optional)	One optional SATA DVD-ROM drive or DVD+/-RW drive.
		Note:
		DVD devices are data only.
10	Hard Drives	Two 2.5 inch hot-swappable hard drives.

More information can be found in the Dell Owner's Manual, in the Front Panel Features and Indicators section.

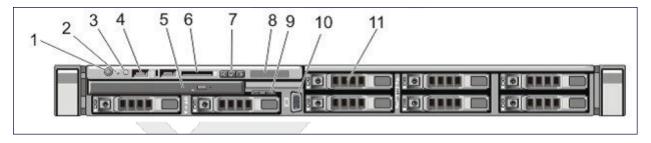
Dell R320 back view



Callout	Item	Description
1	Ethernet connectors	Four 1Gb Ethernet connectors.
2	Serial connector	Serial console connection is not supported on Dell R320 server. Use VGA console connection for new installations.
3	Video connector	Connects a VGA display to the system.
4	Ethernet connectors	Two integrated 10/100/1000 Mbps NIC connectors (Avaya Standard).
5	USB connectors (2)	Connects USB devices to the system.
		The ports are USB 2.0-compliant.
6	System identification connector	Connects the optional system status indicator assembly through the optional cable management arm.
7	System Identification Button	The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status indicator on the back blink until one of the buttons are pressed again.
		Press to toggle the system ID on and off. If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.
		To reset iDRAC (if not disabled in F2 iDRAC setup) press and hold for more than 15 seconds.
8	Power Supply (PSU1)	AC 350W
9	Power Supply (PSU2)	AC 350W

For more information, see the Back Panel Features and Indicators section in the Dell Owner's Manual.

Front view of Dell R620 Server



Note:

The server is shipped with two hard disk drives. The remaining hard drive bays will not be operable.

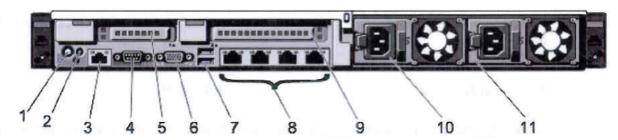
No.	Item	Description	
1	Power-On Indicator, Power Button	The power-on indicator lights when the system power is on. The power button controls the power supply output to the system.	
2	NMI Button	The button to troubleshoot software and device driver errors when running certain operating systems. This button can be pressed using the end of a paper clip.	
		Use this button only if directed to do so by qualified support personnel or by the operating system documentation.	
3	System Identification Button	The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status indicator on the back flashes blue until one of the buttons are pressed again. Press to toggle the system ID on and off. If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.	
4	USB Connectors (2)	The button to insert USB devices to the system. The ports are USB 2.0-compliant.	
5	Optical Drive	SATA DVD-ROM drive or DVD+/-RW drive.	
6	vFlash Media Card Slot (Not populated for Avaya)	The button to insert a vFlash media card.	
7	LCD Menu Buttons	The button to navigate the control panel LCD menu.	

Planning

No.	Item	Description
8	LCD Panel	The button to displays system ID, status information, and system error messages. The LCD lights blue during normal system operation. The LCD lights amber when the system needs attention, and the LCD panel displays an error code followed by descriptive text.
		Note:
		If the system is connected to AC power and an error is detected, the LCD lights amber regardless of whether the system is turned on or off.
9	Information Tag	A slide-out label panel. Service Tag, NIC, MAC address is located here.
10	Video Connector	The button to connect a VGA display to the system.
11	Hard Drives	A typical Avaya configuration has two 5 inch hot-swappable hard drives. The other hard drive bays will not be operable.

For more information, see the Dell Owner's Manual, in the Front Panel Features and Indicators section.

Back view of Dell R620 Server



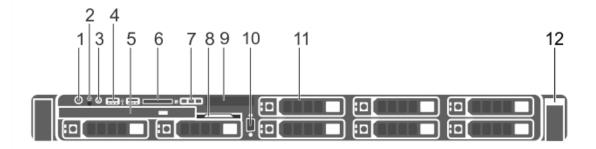
No.	Item	Description
1	System Identification Button	The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status indicator on the back blink until one of the buttons is pressed again. Press to toggle the system ID on and off. If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.
		To reset iDRAC (if not disabled in F2 iDRAC setup), press and hold for more than 15 seconds.
2	System Identification Connector	The button to connect the optional system status indicator assembly through the optional cable management arm.
3	iDRAC Enterprise Port	The button for dedicated management port.
		Note:
		The port is available for use only if the iDRAC7 Enterprise license is installed on your system. (Not normally used in Avaya systems)
4	Serial Connector	The button to connect a serial device to the system.
5	PCIe Expansion Card Slot 1 (riser 2)	The button to connect a PCIe expansion card.
6	Video Connector	The button to connect a VGA display to the system.
7	USB Connectors (2)	The button to connect USB devices to the system.
8	Ethernet Connectors (4)	Four integrated 10/100/1000 Mbps NIC connectors.
		Note:
		Dell R620 NIC port numbers are read from left to right, starting with Port 1, then continuing to port 2, 3, and 4.
9	PCle expansion card slot 2 (riser 3)	The button to connect a PCIe expansion card.

Planning

No.	Item	Description
10	Power Supply (PSU1)	AC 495W, 750W
11	Power Supply (PSU2)	AC 495W, 750W

For more information, see the Dell Owner's Manual, in the Back Panel Features and Indicators section.

Dell R630 front view

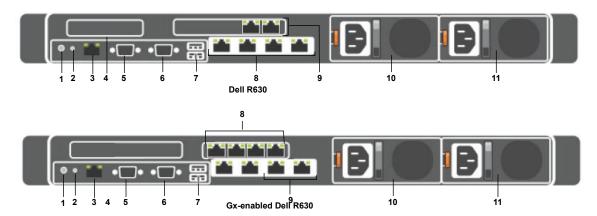


Callout	Item	Icon	Description
1	Power-On Indicator, Power Button	Q	The power-on indicator lights when the system power is on. The power button controls the power supply output to the system.
2	NMI Button	Θ	Used to troubleshoot software and device driver errors when running certain operating systems. This button can be pressed using the end of a paper clip.
			Use this button only if directed to do so by qualified support personnel or by the operating system documentation.
3	System Identification Button	②	The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status indicator on the back flashes blue until one of the buttons are pressed again.
			Press to toggle the system ID on and off. If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.
			To reset the iDRAC (if not disabled in F2 iDRAC setup) press and hold the button for more than 15 seconds.
4	USB Connectors (2)	•4	Allows you to insert USB devices to the system. The ports are USB 2.0-compliant.
5	Optical Drive		One DVD+/-RW drive.
			Note:
			DVD devices are data only.
6	vFlash Media Card Slot		Not used in Avaya configurations.

Callout	Item	Icon	Description
7	LCD Menu Buttons		Allows you to navigate the control panel LCD menu.
8	Information Tag		A slide-out label panel, which allows you to record system information, such as Service Tag, NIC, MAC address.
9	LCD Panel		Displays system ID, status information, and system error messages. The LCD lights blue during normal system operation. When the system needs attention, the LCD lights amber and the LCD panel displays an error code followed by descriptive text.
			Note:
			If the system is connected to AC power and an error is detected, the LCD lights amber regardless of whether the system is turned on or off.
10	Video Connector	Ю	Allows you to connect a VGA display to the system.
11	Hard Drives		Support for up to eight 2.5 inch hot-swappable hard drives.*
			* The first 2 HDDs are placed in the slots under the DVD Drive and read left to right, the remaining HDDs read top to bottom, left to right.
12	Quick Sync		Not used in Avaya configurations.

More information can be found in the *Front-panel features and indicators* section of the Dell Owner's Manual.

Dell R630 back view



Avaya SBCE supports TILEncore Gx-36 Intelligent adapter in the Dell R630 server. The A1, A2, B1, B2, M1 and M2 interfaces for a Gx-enabled R630 server are different from an R630 server.

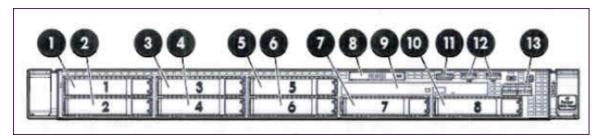
The TILEncore Gx-36 Intelligent adapter requires four small form-factor pluggable (SFP)+ modules which can be either 1 GB Ethernet or 10 GB Ethernet. The 1 GB Ethernet SFP+ modules support RJ45 twisted-pair copper cable connections. The 10 GB Ethernet SFP+ modules support optical fiber connections.

Callout	Item	Description
1	System Identification Button	Used to locate a particular system within a rack.
		When one of these buttons is pressed, the LCD panel on the front and the system status indicator on the back blink until one of the buttons are pressed again.
		Press to toggle the system ID on and off. If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.
		To reset iDRAC (if not disabled in F2 iDRAC setup) press and hold for more than 15 seconds.
2	System Identification Connector	Connects the optional system status indicator assembly through the optional cable management arm.
3	iDRAC8 Enterprise Port	Dedicated management port.
		Note:
		The port is available for use only if the iDRAC7 Enterprise license is installed on your system. (Not normally used in Avaya systems)

Callout	Item	Description
4	PCIe Expansion Card Slot 1 (riser 2)	Connects a low profile PCIe expansion card.
		Note:
		If the server is equipped with 6 or 8 NIC ports, this slot can contain two port 10/100/1000 Mbps NIC connectors or two 100 Mbps/1Gbps/10 Gbps SFP + connectors.
5	Serial Connector	Serial console connection is not supported on Dell R630 server. Use VGA console connection for new installations.
6	Video Connector	Connect a VGA display to the system.
7	USB Connectors (2)	Connects USB devices to the system.
		The ports are USB 3.0-compliant.
8	Ethernet Connectors (4)	 Without a Gx-enabled card: Four integrated 10/100/1000 Mbps NIC ports (Avaya Standard). These are data interfaces A1, A2, B1 and B2. Dell R630 NIC port numbers are read from left to right, starting with Port 1, then continuing 2, 3, and port 4.
		With a Gx-enabled card: Four 1 GB Ethernet or 10 GB Ethernet SFP + ports. These are data interfaces B2, B1, A2 and A1 from left to right.
9	Ethernet Connectors (2)	Without a Mellanox card: Two integrated 10/100/1000 Mbps NIC ports (Avaya Standard). These are management interfaces M1 and M2.
		With a Mellanox card: Four 1 GB Ethernet or 10 GB Ethernet SFP+ ports. These are management interfaces M1 and M2.
10	Power Supply (PSU1)	AC 495W or 750W
		DC 1100W
11	Power Supply (PSU2)	AC 495W or 750W
		DC 1100W

For more information, see the Back Panel Features and Indicators section in the Dell Owner's Manual.

HP DL360p G8 front view

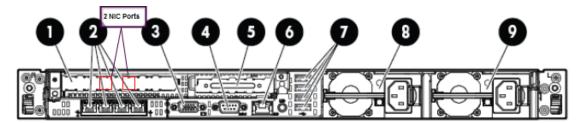


Note:

Servers ship with two hard drives.

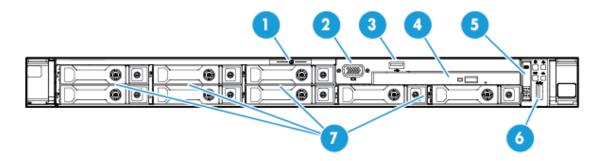
Callout	Description
1	Hard Drive Bay — Drive 1
2	Hard Drive Bay — Drive 2
3	Hard Drive Bay
4	Hard Drive Bay
5	Hard Drive Bay
6	Hard Drive Bay
7	Hard Drive Bay
8	Slide-out System Insight Display (SID)
9	Optical Disk Drive Bay
10	Hard Drive Bay
11	Video Connector (requires Front Video Adapter Kit)
12	Two (2) USB Connectors
13	Active Health and Network Status LEDs

HP DL360p G8 back view



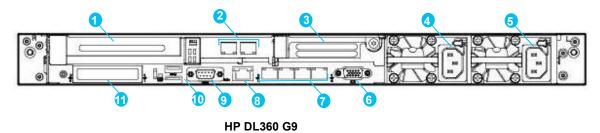
Callout	Description
1	PCIe 3.0 with two NIC ports (1 GB each)
2	Flexible LOM ports (4 ports 1 Gb each)
3	Video connector
4	Serial connector. Serial console connection is not supported on HP DL360p G8 Server. Use VGA console connection for new installations.
5	PCIe 3.0 Low Profile x8 expansion slot
6	iLO Management Engine NIC connector
7	Four (4) USB connectors
8	Power supply bay 2 (Shown populated: Optional Power Supply for Redundant Power)
9	Power supply bay 1 (Primary Power Supply)

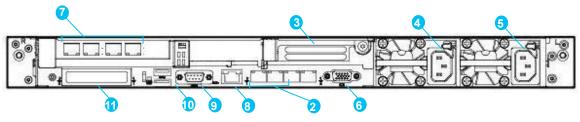
HP DL360 G9 front view



Callout	Description
1	Serial label pull tab
2	Front video connector
3	USB 2.0 connector
4	Optical drive
5	Systems Insight Display (Not used in Avaya configurations)
6	USB 3.0 connector
7	Hard Drive bays*
	* The HDDs read starting with top left, then bottom left, and continues to the right.

HP DL360 G9 back view





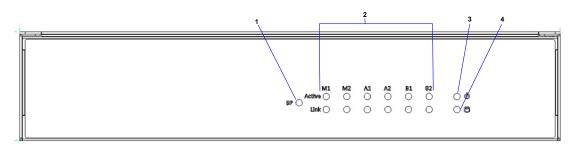
Mellanox Gx-enabled HP DL360 G9

Avaya SBCE supports TILEncore Gx-36 Intelligent adapter in the Dell R630 server. The A1, A2, B1, B2, M1 and M2 interfaces for a Gx-enabled R630 server are different from an R630 server.

The TILEncore Gx-36 Intelligent adapter requires four small form-factor pluggable (SFP)+ modules which can be either 1 GB Ethernet or 10 GB Ethernet. The 1 GB Ethernet SFP+ modules support RJ45 twisted-pair copper cable connections. The 10 GB Ethernet SFP+ modules support optical fiber connections.

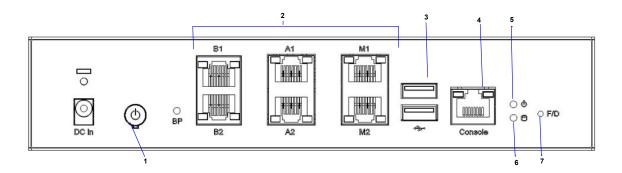
Callout	Description
1	Slot 1 PCle3 x16 (16, 8, 4, 1)
2	Ethernet management ports (2) without Gx-enabled card support. Four 1GbE or 10 GbE SFP+ ports, with the support of Gx—enabled card.
3	Slot 3 PCle 3 x16 (16, 8, 4, 1) The slot 3 PCle 3 riser is optional and requires a second processor before installation.
4	Power supply 2
5	Power supply 1
6	Video connector
7	NIC connectors (4)
8	iLO 4 connector
9	Serial connector (Not used on Avaya configurations). Use VGA console connection for new installations.
10	USB 3.0 connectors
11	Flexible LOM bay

Portwell CAD-0230 front view



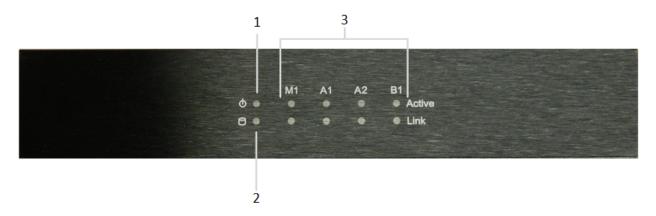
Callout	Description
1	The Bypass LED.
	This LED lights:
	Green for normal mode
	Red for bypass mode
	Off for open mode
2	The Ethernet LEDs.
	Six pairs of Active/Link LEDs labeled M1, M2, A1, A2, B1 and B2. B2 and data ports can be fully utilized but M2 is not usable even though it is detected.
	The upper LEDs light green to indicate link or active LED.
	The lower LEDs light:
	Green for speed of 100 MB
	Orange for speed of 1 GB
	Off for speed of 10 MB
3	The power status LED.
	This LED lights:
	Green to indicate that power is on.
	Orange to indicate that power is off.
4	The data access LED.
	This LED blinks red to indicate data access.

Portwell CAD-0230 back view



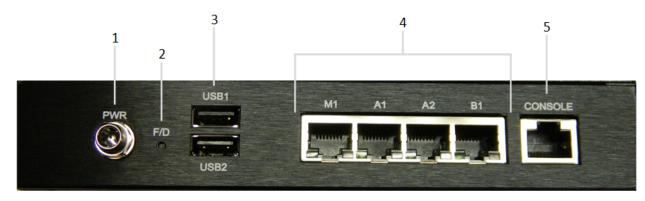
Callout	Description
1	The power button used to switch the system on or off.
2	The ethernet ports.
	Every port has two LEDs.
	The Link or activity indicator when switched on or flashing, indicates that the port is linking and active in data transmission. When the indicator is off, the port is not linking.
	The speed indicator lights orange when the connection speed is 1000 Mbps. The indicator lights green when the speed is 100 Mbps, and the indicator is off when the speed is 10 Mbps.
3	The USB 2.0 ports.
4	The console port from which you can connect the server to a computer by using an RJ45 to DB-9 female cable, for diagnostics or configuration.
	You must configure this port with the following terminal configuration parameters: 19200 baud rate, 8 data bits, no parity, 1 stop bit, and no flow control.
	For more information, see CAD-0230 Series Communication Appliance User's Manual.
5	The Power LED that indicates whether the system is turned on.
	This LED is turned on when the system is turned on.
6	The HDD LED that indicates whether data access activities are in progress.
	This LED blinks when data access activities are in progress.
7	The factory default button to reset the software to factory default settings.

Portwell CAF-0251 front view



Callout	Description
1	The power status LED.
	This LED lights:
	Green to indicate that power is on.
	Orange to indicate that power is off.
2	The disk access LED.
	This LED blinks to indicate data access.
3	The Ethernet LEDs.
	Four pairs of Active/Link LEDs labeled M1, A1, A2, and B1.
	The upper LEDs light green to indicate link or active LED.
	The lower LEDs light:
	Green for speed of 100 MB
	Yellow for speed of 1 GB
	Off for speed of 10 GB

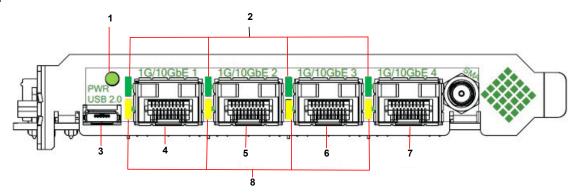
Portwell CAF-0251 back view



Callout	Description
1	Power supply connection.
2	Not used.
3	USB 2.0 ports.
4	Ethernet ports. Every port has two LEDs.
	The Link or activity indicator when switched on or flashing, indicates that the port is linking and active in data transmission. When the indicator is off, the port is not linking.
	The speed indicator lights orange when the connection speed is 1000 Mbps. The indicator lights green when the speed is 100 Mbps, and the indicator is off when the speed is 10 Mbps.
5	The console port from which you can connect the server to a computer by using an RJ45 to DB-9 female cable, for diagnostics or configuration.
	You must configure this port with the following terminal configuration parameters: 19200 baud rate, 8 data bits, no parity, 1 stop bit, and no flow control.

TILEncore-Gx36 Intelligent Application Adapter back view

The TILEncore-Gx36 Intelligent Application Adapter is a PCI card provides four 10 GB Ethernet ports. This card can be installed in the HP DL360 G9 and Dell R630 servers.

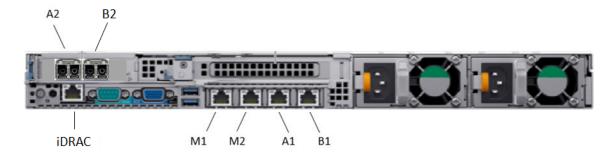


Callout	Description
1	Power LED
	The power LED is lit only when all major board components are powered and functional.
2	Link LEDs
	The green Link LEDs are lit when the Ethernet link is functional.
3	Micro USB port
	The micro USB port provides a console connection to the card.
4	B2 network interface
	This network port operates at 1 Gbps or 10 Gbps depending on the SFP+ type module installed in the port.
5	B1 network interface
	This network port operates at 1 Gbps or 10 Gbps depending on the SFP+ type module installed in the port.
6	A2 network interface
	This network port operates at 1 Gbps or 10 Gbps depending on the SFP+ type module installed in the port.
7	A1 network interface
	This network port operates at 1 Gbps or 10 Gbps depending on the SFP+ type module installed in the port.
8	Activity LEDs
	The yellow activity LEDs are lit when the Avaya SBCE network interfaces are enabled.

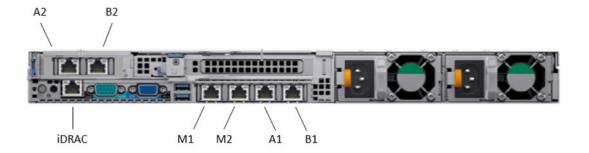
Back panel Ethernet port labeling

Dell PowerEdge R640 Avaya Solutions Platform 110 Appliance Ethernet port labeling

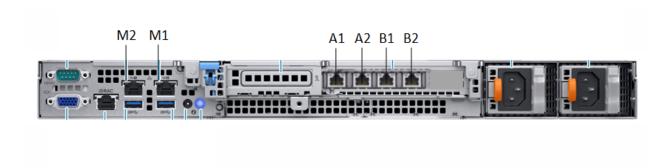
Profile 5 port labeling



Profile 3 port labeling

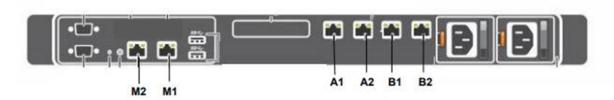


Dell R340 Avaya Solutions Platform 110 Appliance Ethernet port labeling

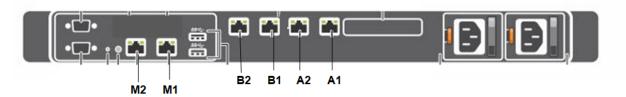


Dell R330 Ethernet port labeling

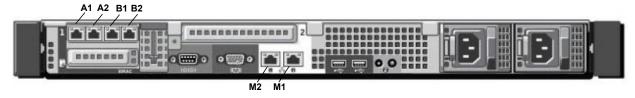
Dell R330 Type 1



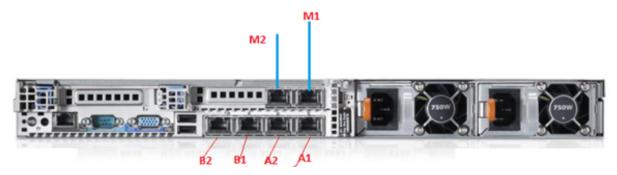
Dell R330 Type 2



Dell R320 Ethernet port labeling



Dell R620 Ethernet port labeling

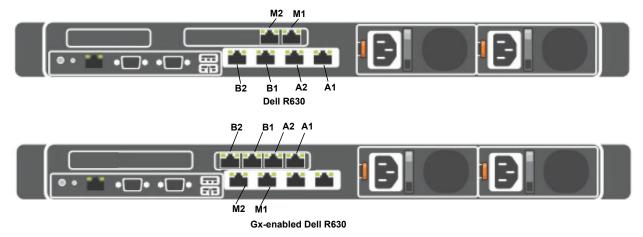


Ethernet port labels	Number of ports
M1, M2, B2, B1, A2 and A1	6

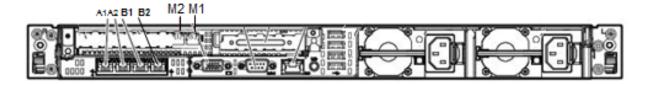
Note:

When you configure the server as EMS, A1, A2, B1, B2, and M2 are not to be used.

Dell R630 Ethernet port labeling



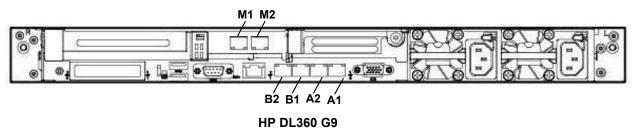
HP DL360p G8 Ethernet port labeling

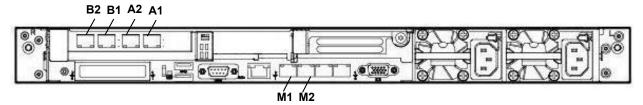


Note:

When you configure the server as an EMS server, A1, A2, B1, B2, and M2 are not used.

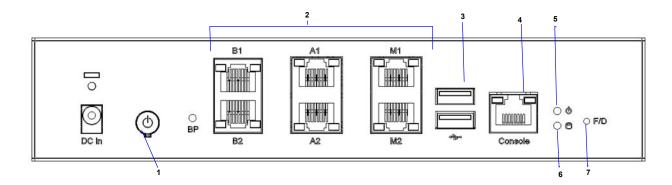
HP DL360 G9 Ethernet port labeling



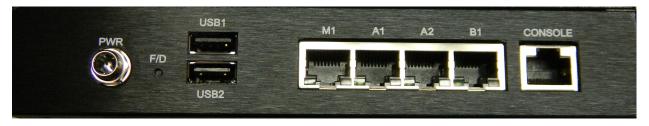


Gx-enabled HP DL360 G9

Portwell CAD-0230 Ethernet port labeling



Portwell CAF-0251 Ethernet port labeling



Note:

The Portwell CAF-0251 does not support interface ports M2 and B2.

The Portwell CAF-0251 does not support HA deployments.

The Portwell CAF-0251 F/D button is not used for Avaya SBCE.

Specifications and requirements

Processors

Server	Processors
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 3	Two Intel Xeon Silver 4114 CPUs per server, 10 cores per CPU, 20 threads per CPU core, 2.20 GHz base frequency, 13.75 MB L3 Cache, 85 W or
	Two Intel Xeon Silver 4210 CPUs per server, 10 cores per CPU, 20 threads per CPU core, 2.20 GHz base frequency, 13.75 MB Cache, 85 W
	Note:
	The model of CPU you will receive depends on when the server was ordered.
Dell R640 Avaya Solutions Platform 110 Appliance	Two Intel Xeon Gold 6132 CPUs per server, 14 cores per CPU, 28 threads per CPU core, 2.60 GHz base frequency, 19.25 MB L3 Cache, 140 W
server - Profile 5	or
	Two Intel Xeon Gold 6226R CPUs per server, 16 cores per CPU, 32 threads per CPU core, 2.90 GHz base frequency, 22 MB Cache, 150 W
	Note:
	The model of CPU you will receive depends on when the server was ordered.
Dell R340 Avaya Solutions Platform 110 Appliance server	One Intel Xeon E-2124 CPU per server, 4 cores per CPU, 4 threads per CPU core, 3.3 GHz base frequency, 8 MB Intel Smart Cache, 71 W
Dell R330	Intel Xeon E3–1200v5 3.6 GHz – Four cores – 80W
Dell R320	Intel Xeon E5–2430v2 2.5 GHz – Six cores – 80W
Dell R620	Intel E5-2630, six core 2.3GHz (Sandybridge)
Dell R630	2 x Intel Xeon E5–2640 2.6 GHz – Eight cores – 90W
HP DL360p G8	Intel E5–2630, Six core / 2.3 GHz (Sandybridge) 4 memory channels per CPU with up to 3 DIMMs per channel
HP DL360 G9	2 x Intel Xeon E5–2640 2.6 GHz – Eight cores – 90W
Portwell CAD-0230	Intel® Atom C2000 1.7 GHz – Dual Core
Portwell CAF-0251	Intel® Atom N3350 1.1 GHz – Dual Core

System memory configuration

Server	System memory configuration
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 3	6 x 8 GB RDIMM (48 GB)
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 5	12 x 16 GB RDIMM (192 GB)
Dell R340 Avaya Solutions Platform 110 Appliance server	16 GB DDR4 2666MT/s ECC UDIMM
Dell R330	16 GB DDR4 2133MT/s UDIMM
Dell R320	8 GB DDR4 1600MT/s UDIMM
Dell R620	4 x 4 GB DDR3 RDIMM (16 GB)
Dell R630	4 x 8 GB DDR4 2133MT/s RDIMM (32 GB, mid-capacity)
	8 x 8 GB DDR4 2133MT/s RDIMM (64 GB, high-capacity)
HP DL360p G8	4 GB or 8 GB DDR3 RDIMM (newer systems have 8 GB)
HP DL360 G9	4 x 8 GB DDR4 2133MT/s RDIMM (32 GB, mid-capacity)
	8 x 8 GB DDR4 2133MT/s RDIMM (64 GB, high-capacity)
Portwell CAD-0230	2 GB (SO-DIMM DDR3L 1333MHz)
Portwell CAF-0251	4 GB DDR3 1600MHz (On board)

Disk drive configuration

Server	Disk drive configuration
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 3	Four 2.5 inch 10 K HDD, SAS, 600 GB SAS HDD
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 5	Six 2.5 inch 10 K HDD SAS, 600 GB SAS HDD
Dell R340 Avaya Solutions Platform 110 Appliance server	Two 300 GB 15 K RPM SAS 12 Gbps 512n 2.5 inch hot-plug Hard Drive, in 3.5 inch HYB carrier
Dell R330	Two 300 GB 10 K (SAS)
Dell R320	Two 300 GB 10 K (SAS)
Dell R620	Two 300 GB 10 K (SAS)
Dell R630	Two 300 GB 10 K (SAS)

Table continues...

Server	Disk drive configuration
HP ProLiant DL360p G8	Two 300 GB 10 K (SAS)
HP ProLiant DL360 G9	Two 300 GB 10 K (SAS)
Portwell CAD-0230	500 GB HDD
Portwell CAF-0251	64 GB HDD

Ethernet, VGA, and USB interfaces

Security alert:

To prevent routing problems and to meet security best practices when using servers that have two management interfaces, configure the M1 and M2 interfaces on a different subnet than the subnets assigned to the A1, A2 or B1 data interface. In High Availability (HA) configurations, connect the M2 interface to both Avaya SBCE servers deployed in pairs with a single wire crossover Ethernet RJ45 cable.

Dell R640 Avaya Solutions Platform 110 Appliance Profile 5 server

• Rear-accessible PCI-Express 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
A1	Data interface
B1	Data interface
M1	Management interface
M2	HA link

• Rear-accessible SFP+ 10 GB optical transceiver Ethernet ports

Port	Purpose
A2	Data interface
B2	Data interface

- One front- and rear-accessible VGA port for system monitor
- Two front-accessible USB 3.0 ports
- Two rear-accessible USB 3.0 ports

Dell R640 Avaya Solutions Platform 110 Appliance Profile 3 server

• Rear-accessible PCI-Express 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
A1	Data interface
B1	Data interface
M1	Management interface
M2	HA link

Rear-accessible SFP 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
A2	Data interface
B2	Data interface

- One front- and rear-accessible VGA port for system monitor
- Two front-accessible USB 3.0 ports
- Two rear-accessible USB 3.0 ports

Dell R340 Avaya Solutions Platform 110 Appliance server

• Rear-accessible PCI-Express 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
A1	Data interface
A2	Data interface
B1	Data interface
B2	Data interface

• Rear-accessible 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
M1	Management interface
M2	HA link

- One front- and rear-accessible VGA port for system monitor
- Two front-accessible USB 2.0 ports
- Two rear-accessible USB 3.0 ports

Dell R330 server

• Rear-accessible PCI-Express 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
A1	Data interface
A2	Data interface
B1	Data interface
B2	Data interface

• Rear-accessible 1 GB RJ45 twisted pair Ethernet ports

Port	Puspose
M1	Management interface
M2	HA link

- One front- and rear-accessible VGA port for system monitor
- Two front-accessible USB 2.0 ports
- Two rear-accessible USB 3.0 ports

Dell R320 server

• Rear-accessible PCI-Express 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
A1	Data interface
A2	Data interface
B1	Data interface
B2	Data interface

Rear-accessible 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
M1	Management interface
M2	HA link

- One front- and rear-accessible VGA port for system monitor
- Two front-accessible USB 2.0 ports
- Two rear-accessible USB 2.0 ports

Dell R620 server

Four integrated 10/100/1000 Mbps NIC connectors (Avaya standard).



Dell R620 NIC port numbers are read from left to right, starting with Port 1.

Dell R630 server

• Rear-accessible PCI-Express 1 GB RJ45 twisted pair Ethernet ports. The interfaces on the TILEncore Gx-36 can be of RJ45 type or optical fiber type depending on the SFP+ module associated with the card.

Port	Purpose
A1	Data interface
A2	Data interface
B1	Data interface
B2	Data interface

• Rear-accessible PCI-Express 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
M1	Management interface
M2	HA link

- One iDRAC 8 Enterprise port (Dedicated Management port)
- One front- and rear-accessible VGA port for system monitor
- Two front-accessible USB 2.0 ports
- Two rear-accessible USB 2.0 ports

• One front-accessible SD vFlash media card slot (Not supported)

HP ProLiant DL360p G8 server

Four integrated ENET Gigabit NIC ports with TCP offload engine (included on motherboard).

HP ProLiant DL360 G9 server

Rear-accessible 1 GB RJ45 twisted pair Ethernet ports. The interfaces on the TILEncore G9
version and later can be of RJ45 type or optical fiber type depending on the SFP+ module
associated with the card.

Port	Purpose
A1	Data interface
A2	Data interface
B1	Data interface
B2	Data interface

• Rear-accessible PCI-Express 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
M1	Management interface
M2	HA link

- One iLO Enterprise port (dedicated management port)
- One rear-accessible VGA port for system monitor
- Two front-accessible USB 2.0 ports
- Two rear-accessible USB 2.0 ports

Portwell CAD-0230 server

Rear-accessible 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
A1	Data interface
A2	Data interface
B1	Data interface
B2	Data interface

• Rear-accessible 1 GB RJ45 twisted pair Ethernet ports

Port	Purpose
M1	Management interface

Note:

The Portwell CAD-0230 does not support interface port M2.

The Portwell CAD-0230 does not support HA deployments.

Portwell CAF-0251 server

• Rear-accessible 1 GB RJ-45 twisted pair Ethernet ports

Port	Purpose
A1	Data interface
A2	Data interface
B1	Data interface

• Rear-accessible 1 GB RJ45 twisted pair Ethernet port

Port	Purpose
M1	Management interface

Note:

The Portwell CAF-0251 does not support interface ports M2 and B2.

The Portwell CAF-0251 does not support HA deployments.

The Portwell CAF-0251 F/D button is not used for Avaya SBCE.

Hardware dimensions

Server	Height	Width	Depth	Weight
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 3	1.69 in (4.28 cm)	19 in (48.2 cm)	31.8 in (80.85 cm)	48.3 lbs (21.9 kg)
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 5	1.69 in (4.28 cm)	19 in (48.2 cm)	31.8 in (80.85 cm)	48.3 lbs (21.9 kg)
Dell R340 Avaya Solutions Platform 110 Appliance server	1.68 in (4.28 cm)	17.08 in (43.4 cm)	18.98 in (48.2 cm)	29.1 lbs (13.2 kg)
Dell PowerEdge R330	1.68 in. (4.28 cm)	17.09 in. (43.42 cm)	24 in (61.0 cm)	29.54 lbs (13.4 kg)
Dell PowerEdge R320	1.7 in. (4.318 cm)	17.1 in. (43.434 cm)	24 in (60.69 cm)	25 lbs (11.34 kg)
Dell PowerEdge R620	1.7 in. (4.318 cm)	17.1 in. (43.434 cm)	26.9 In. (68.326 cm)	41.0 lbs (19.1 kg)
Dell PowerEdge R630	1.7 in. (4.318 cm)	19 in. (48.26 cm)	27.6 in (70.104 cm)	43.0 lbs (19.50 kg)

Table continues...

Server	Height	Width	Depth	Weight
HP Proliant DL360 G8	1.7 in. (4.318 cm)	17.1 in. (43.434 cm)	27.5 in. (69.85 cm)	42.3 lbs (19.19 kg)
HP Proliant DL360 G9	1.7 in. (4.318 cm)	17.2 in. (43.68 cm)	27.5 in (69.85 cm)	44.0 lbs (19.95 kg)
Portwell CAD-0230	1.65 in. (4.20 cm)	8.27 in. (21.00 cm)	8.27 in. (21.00 cm)	6.4 lbs (2.9 kg)
Portwell CAF-0251	1.18 in. (3.3 cm)	7.08 in. (18 cm)	5.11 in. (13 cm)	1.39 lbs (0.63 kg)

Temperature and humidity requirements

Server	Operating Temperature	Storage Temperature	Relative Humidity
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 3	50 °F to 95 °F (10 °C to 35 °C)	23 °F to 113 °F (–5 °C to 45 °C)	5% to 85%, noncondensing
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 5	50 °F to 95 °F (10 °C to 35 °C)	23 °F to 113 °F (–5 °C to 45 °C)	5% to 85%, noncondensing
Dell R340 Avaya Solutions Platform 110 Appliance server	50 °F to 95 °F (10 °C to 35 °C)	-40 °F to 149 °F (− 40 °C to 65 °C)	Operating: 10% to 80% RH with 84.2 °F (29 °C) maximum dew point.
			Storage: 5% to 95% RH with 91 °F (33 °C) maximum dew point.
			Atmosphere must be noncondensing at all times.
Dell R330	41 °F to 104 °F (5 °C to 40 °C)	23 °F to 113 °F (–5 °C to 45 °C)	5% to 85%, noncondensing
Dell R320	50 °F to 95 °F (10 °C to 35 °C)	-40 °F to 149 °F (– 40 °C to 65 °C)	20% to 80%, noncondensing
Dell R620	50 °F to 95 °F (10 °C to 35 °C)	-40 °F to 149 °F (– 40 °C to 65 °C)	5% to 95%, noncondensing
Dell R630	50 °F to 95 °F (10 °C to 35 °C)	-40 °F to 149 °F (– 40 °C to 65 °C)	1% to 80%, noncondensing
HP DL 360 G8	50 °F to 95 °F (10 °C to 35 °C)	101.7 °F (38.7 °C)	5 to 95% nonoperating
			10 to 90% operating
HP DL 360 G9	50 °F to 95 °F (10 °C to 35 °C)	-22 °F to 140 °F (-30 °C to 60 °C)	8% to 80%, noncondensing

Table continues...

Server	Operating Temperature	Storage Temperature	Relative Humidity
Portwell CAD-0230	32 °F to 104 °F (0 °C to 40 °C)	14 °F to 158 °F (– 10 °C to 70 °C)	20% to 90%, noncondensing
Portwell CAF-0251	32°F to 104 °F (0 °C to 40 °C)	14°F to 158 °F (-10 °C to 70 °C)	5% to 95%, noncondensing

Note:

For altitudes greater than 900 m or 2952 ft, see Dell documentation for operating temperature ranges.

Power requirements

Server	Input	AC Power Max
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 3	110–240 VAC	457 W
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 5	110–240 VAC	655 W
Dell R340 Avaya Solutions Platform 110 Appliance server	110-240 VAC	275 W
Dell R330	110-240 VAC	350 W
Dell R320	110-240 VAC	300 W
Dell R620	110-240 VAC	430 W
Dell R630	110-240 VAC	440 W
HP DL360p G8	100-240 VAC	430 W
HP DL 360 G9	110-240 VAC	540 W
Portwell CAD-0230	12 V DC	40 W
Portwell CAF-0251	12 V DC	24 W

Physical system protection requirements

The server is equipped with air vents on either side of the equipment chassis, and exhaust vents on the back. Be sure to follow these guidelines:

- Do not block these air vents.
- Do not place the server in a location where dirt or dust might clog the air vents or enter the chassis and damage internal components.
- Do not install the device in or near a source of heat, including proximate high-current or highpower consuming equipment such as switch banks. Excessive heat might cause the server to overheat and fail.

Note:

The customer must ensure that environmental hazards do not interfere with the operation of the Avaya SBCE server. These hazards could include excessive heat, excessive humidity, improper ventilation, or electromagnetic interference from proximate equipment.

Regulatory standards

Server	Certifications
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 3	CSA, FCC, CE, UL, RoHS
Dell R640 Avaya Solutions Platform 110 Appliance server - Profile 5	CSA, FCC, CE, UL, RoHS
Dell R340 Avaya Solutions Platform 110 Appliance server	CSA, FCC, CE, UL, RoHS
Dell R330	CSA, FCC, CE, UL, RoHS
Dell R320	CSA, FCC, CE, UL, RoHS
Dell R620	CSA, FCC, CE, UL, RoHS
Dell R630	CSA, FCC, CE, UL, RoHS
HP DL360 G8	CSA, FCC, CE, UL, RoHS
HP DL360 G9	CSA, FCC, CE, UL, RoHS
Portwell CAD-0230	CE, FCC
Portwell CAF-0251	CE, FCC, UL

Password policies

The root and ipcs passwords are set during product installation. The EMS GUI has a separate password. The default user IDs and passwords are:

- root/Avaya 123
- ucsec/ucsec

Security alert:

You must change the default passwords for the CLI root and ipcs login IDs after first boot during the installation procedure. You are prompted to enter and confirm the new password. Password restrictions are enforced on the root, ucsec, and ipcs accounts. The new password must meet the following criteria:

- · Minimum of 8 characters.
- One uppercase letter, one lowercase letter, and one number.

One special character from the following: hyphen (-), underscore (_), at sign (@), asterisk (*), or exclamation point (!). You must not use the number sign (#), dollar sign (\$), or ampersand (&).

Related links

<u>Console and SSH passwords complexity</u> on page 59 <u>Grub password complexity</u> on page 59

Console and SSH passwords complexity

The Console and SSH passwords must adhere to the following requirements:

- Contain at least eight characters.
- Contain at least two uppercase characters, not including the first character of the password.
- Contain at least one lowercase character.
- Contain at least one special character.
- Contain at least two digits, not including the last character of the password.

The Console and SSH passwords do not have a limit on the maximum length and are hashed by MD5 hash algorithm.



Password Authentication Module (PAM) enforces password security, and hashes are stored in: /etc/shadow

Related links

Password policies on page 58

Grub password complexity

The Grub password must adhere to the following requirements:

- Contain at least eight characters.
- Contain uppercase and lowercase characters.
- Contain at least special character except %, &, and \$.
- Contain at least two digits.

You can change the Grub password with the sbceconfigurator.py change-grub-password command.

Related links

Password policies on page 58

Chapter 4: Preparing for installation

Introduction

This chapter presents the recommended placement, installation options, and preparations required for proper physical installation of the equipment chassis.

Throughout this document, when referring to Avaya SBCE devices, the terms Primary and Secondary are used interchangeably with the terms Active and Stand-by, respectively.

! Important:

If Release Notes shipped with your equipment chassis has different information, then follow the Release Notes.

The requirements described in this document are intended for system administrators, network managers, or other qualified network equipment technicians and maintenance personnel. A working knowledge of general communications equipment protocols and network security requirements is necessary. Installation, maintenance, and removal of the Avaya SBCE 1U equipment chassis must be done only by qualified service personnel. For information about security guidelines, see *Avaya SBCE Security Configuration and Best Practices Guide*.

For information about the Avaya port matrix, see "Accessing the port matrix document" topic.

Important:

The Avaya SBCE 1U equipment chassis does not contain user-serviceable subsystems or components. Opening the chassis voids the product warranty.

Hardware safety

The following general safety precautions must be observed during all phases of operation, service, and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual could result in personal injury, network outage, or damage to the equipment.

The following safety precautions listed below represent warnings of certain dangers of which Avaya is aware. As the user of the product, you must follow these warnings and all other safety precautions necessary for the safe operation of the equipment in your operating environment.

Ground the equipment

To minimize shock hazard, the equipment chassis and enclosure must be properly grounded. If the equipment is supplied with a three-conductor AC power cable, the power cable must be plugged into an approved three-contact electrical outlet. The grounding wire must be reliably connected to an electrical ground (safety ground) at the power outlet. The power jack and mating plug of the power cable must meet International Electrotechnical Commission (IEC) safety standards and local electrical regulatory codes.

Do not operate in an explosive atmosphere

Do not operate the equipment in any explosive atmosphere such as in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment could result in an explosion and cause injury or damage.

Keep away from live circuits inside the equipment

Operations and maintenance personnel are *not* authorized to remove chassis equipment covers. Only Factory Authorized Service Personnel or other qualified service personnel designated by Avaya may remove equipment covers for internal subassembly or component replacement or any internal adjustment. Service personnel must not replace components with power cable connected unless explicitly directed to do so, such as when replacing a disk drive or power supply. Under certain conditions, dangerous voltages might exist even with the power cable removed. To avoid injuries, such personnel must always disconnect power and discharge circuits before touching components.

Observe all cautions and warnings in the manual

Warnings, such as the following example, precede potentially dangerous procedures throughout this manual. Instructions contained in the warnings must be followed. You should also employ all other safety precautions that you deem necessary for the operation of the equipment in your operating environment.



Danger:

To prevent serious injury or death from dangerous voltages, use extreme caution when handling, testing, and performing maintenance on this equipment and its components.

Flammability

All Avaya Printed Circuit Boards are manufactured with a flammability rating of 94V-0 by ULrecognized manufacturers.

EMI caution



A Caution:

The Avaya SBCE equipment chassis generates electromagnetic interference (EMI).

Lithium battery warning

The Avaya SBCE equipment chassis contains a lithium battery to power the internal clock and calendar circuitry.



Marning:

If the lithium battery is replaced incorrectly, there is a danger of explosion. Currently, only authorized Avaya personnel or their agents may open the equipment chassis to replace the battery.

Equipment inventory

Each Avaya SBCE equipment chassis is packaged with the following items.

Item	Description
Avaya SBCE equipment chassis	One preconfigured Avaya SBCE equipment chassis
	Product Information Guide
Rack installation kit	Rack Installation Guide
	Two slide assemblies for mounting the equipment chassis.
	Two stop blocks
	Eight 10-32 x 0.5-inch flange-head Phillips screws
Cable binding	Two Cable Clips
	Eight Zip Ties
Cables	One power cable
	One USB-to-Serial converter cable (Portwell only). Driver can be downloaded from PLDS.
	DB9 Console cable. The type of cable depends on the server. DB9 cables are provided for Dell and HP servers.
Adaptors	

Table continues...

Item	Description
Thumb drive	One thumb drive
	The procedure for restoring a system from this drive must be used only when directed to by Avaya support.
	Note:
	The thumb drive is available only with the Portwell server when sold with IP Office. For all other servers and when the Portwell server is sold without IP Office, the thumb drive is shipped separately if ordered by the customer.

Site requirements

After the customer site survey has been completed and submitted to Avaya, check the physical location where the server will be installed. This location must meet several requirements for a safe and successful installation, which are the responsibility of the customer.

Building and electrical code requirements

Building codes

Three major building codes are:

- Uniform Building Code: Produced by the International Conference of Building Officials (ICBO), 5360 South Workman Mill Road, Whittier, CA 90601 USA.
- BOCA Basic Building Code: Produced by the Building Officials and Code Administrators (BOCA) International, Inc., 4051 West Flossmoor Road, Country Club Hills, IL 60478 USA. www.bocai.org
- Standard Building Code (SBC: Produced by the Southern Building Code Congress International, Inc., 900 Montclair Road, Birmingham, AL 35213 USA. www.sbcci.org

Note:

The customer must ensure that all relevant building codes have been complied with prior to installing this equipment.

Electrical codes

Five authorities on electrical codes are:

- National Electrical Code (NEC) Classification (USA only): A recognized authority on safe electrical wiring. Federal, state, and local governments use NEC standards to establish their own laws, ordinances, and codes on wiring specifications. The NEC classification is published by the National Fire Protection Association (NFPA). The address is NFPA, 1 Batterymarch Park, Quincy, MA 02269 USA. www.nfpa.org
- Underwriters' Laboratory (UL) (USA only): An independent research and testing laboratory.
 UL evaluates the performance and capability of electrical wiring and equipment to determine

compliance with certain safety standards when properly used. Acceptance is usually indicated by the words "UL Approved" or "UL Listed." The address is UL, 333 Pfingsten Road, Northbrook, IL 60062-2096 USA. www.ul.com

- National Electrical Manufacturing Association (NEMA) (USA only): An organization of electrical product manufacturers. Members develop consensus standards for cables, wiring, and electrical components. The address is NEMA, 2101 L Street N.W, Washington, D.C. 20037 USA. www.nema.org
- Electronics Industry Association (EIA): A trade association that develops technical standards, disseminates marketing data, and maintains contact with government agencies in matters relating to the electronics industry. The address is EIA, 2001 Eye Street N.W., Washington, D.C. 20006 USA. www.eia.org
- Federal Communications Commission (FCC): A commission that regulates all interstate and foreign electrical communication systems that originate in the United States according to the Communications Act of 1934. The FCC regulates all U.S. telephone and cable systems. The address is FCC, 1919 M Street N.W., Washington, D.C. 20554 USA.

Physical system protection requirements

The server is equipped with air vents on either side of the equipment chassis, and exhaust vents on the back. Be sure to follow these guidelines:

- · Do not block these air vents.
- Do not place the server in a location where dirt or dust might clog the air vents or enter the chassis and damage internal components.
- Do not install the device in or near a source of heat, including proximate high-current or highpower consuming equipment such as switch banks. Excessive heat might cause the server to overheat and fail.

Note:

The customer must ensure that environmental hazards do not interfere with the operation of the Avaya SBCE server. These hazards could include excessive heat, excessive humidity, improper ventilation, or electromagnetic interference from proximate equipment.

Rack requirements

Racks must conform to conventional standards:

- In the United States, use EIA Standard RS-310C: Racks, Panels, and Associated Equipment.
- In countries other than the United States, use IEC Standard 297.

In addition, verify that your rack meets the following basic mechanical and space requirements.

Mechanical requirements for the rack

Use distribution racks that meet the following mechanical recommendations:

- An open style, 19-inch (48.26 cm) rack facilitates easy maintenance and to provide proper ventilation.
- The rack must use the universal mounting rail hole pattern that is identified in EIA Standard RS-310C (in countries other than the US, use IEC Standard 297).
- The mounting holes should be flush with the rails to accommodate the chassis.
- The rack must be made of steel or aluminum.
- The rack must be able to easily support an additional load of approximately 50 pounds.

Grounding requirements for the rack

Use a rack grounding kit and a ground conductor that is carried back to earth or to another suitable building ground.

All Extreme Networks switches are designed with mounting brackets that provide solid metal-tometal connection to the rack. If you do not use equipment racks, you can attach wiring terminals directly to the mounting brackets for appropriate grounding. At a minimum, follow these guidelines:

- · Ground equipment racks to the earth.
- CAD weld appropriate wire terminals to building I-beams or earth ground rods.
- Use #4 copper wire.
- Drill and tap wire terminals to equipment racks.
- Position the earth ground as close to the equipment rack as possible to maintain the shortest wiring distance possible.
- Properly test the quality of the earth ground.

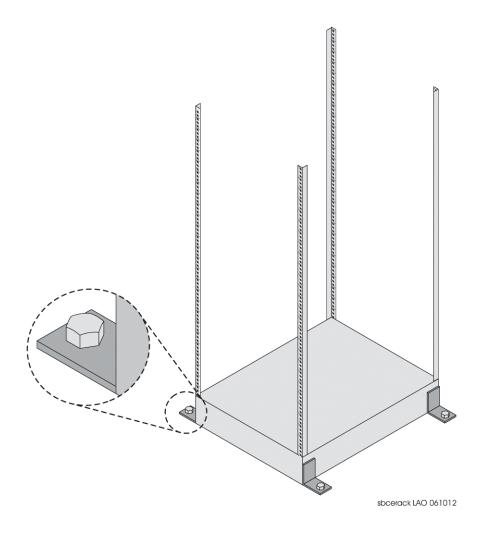
Space requirements for the rack

The following space requirements ensure adequate space to easily service the server:

- Minimum distance of 48 inches in front of the rack.
- Minimum distance of 24 inches behind the rack.
- Space on either side of the equipment rack is not a concern.

Securing the rack

Attach the equipment rack to the equipment room floor with 3/8 inch lag screws or equivalent hardware. The floor under the rack must be level within 3/16 inch. Use a floor-leveling cement compound if necessary or bolt the racks to the floor as shown in the following figure.



Cabling requirements

Once the site survey has been completed and site requirements have been met, evaluate the existing cable plant. You must ensure that proper connections can be accommodated and maintained between the Avaya SBCE server and the VoIP network call servers.

Cabling standards

Applicable cabling standards are promulgated by Building Industry Consulting Service International (BICSI) and must be planned and installed by a Registered Communications Distribution Designer (RCDD).

Cable labeling and record keeping

A reliable cable labeling system is essential when planning and installing communications equipment into a network. Maintaining accurate records is important to:

- Isolate faults and facilitate troubleshooting.
- Easily relocate equipment.
- · Quickly and accurately make changes.

Power requirements

About this task

An uninterruptable back-up power supply is strongly recommended.



Caution:

Do not apply power to the server using extension cords or power strips.

Procedure

Ensure unobstructed access exists to an adequate power receptacle that provides AC 110V – 240V.

Preparing a USB device or DVD for upgrade

Preparing a USB device on Windows

Before you begin

Ensure the USB device has minimum storage capacity of 4 GB.

Download the .img file as described in Software to download on page 16.

Procedure

- 1. Download and set up a disk imaging utility like Win32 Disk Imager.
- Copy the Avaya SBCE USB image file to the Windows system.
- Ensure that the checksum matches the checksum calculated by any checksum utility.
- 4. Plug in the USB device on the Windows system.

If you get an error indicating that the system is in use, format the USB device before using the Win32 Disk Imager application.

5. In the Win32 Disk Imager application, select the Avaya SBCE image that you downloaded and the correct USB device and click Write.



Warning:

Do not change the label of the filesystem on the USB drive. The default label is SBC USB.

6. Wait for the image to be written to the USB device.

Preparing a USB device on Linux

Before you begin

Ensure the USB device has minimum storage capacity of 4 GB.

Download the .img file as described in Software to download on page 16.

Procedure

- 1. Copy the Avaya SBCE USB image file to the Linux system.
- 2. Go to the location where you copied the image file, and run the following command:

```
md5sum sbce-<ReleaseNumber <MD5sum>.img
```

The system displays an alphanumeric hash followed by the image filename.

- 3. Compare and ensure that the alphanumeric hash matches the checksum value in the file name.
- 4. Plug in the USB device on the Linux server.

The device can be detected as /dev/sda, /dev/sdb, or /dev/sdc. Check with your system administrator if you are not sure.

5. Run the following command:

dd if=sbce-<ReleaseNumber <MD5sum>.img of=/dev/sdX bs=16M

For example, If your USB is detected as /dev/sdb, type the following command:

dd if=sbce-<ReleaseNumber <MD5sum>.img of=/dev/sdb bs=16M

The command takes several minutes to complete.

Preparing a DVD

About this task

Use this procedure to prepare a DVD for installing or upgrading Avaya SBCE if the server is unable to detect a USB drive.

Before you begin

Ensure that your system has the software to burn the ISO image on the DVD.

Download the .iso file as described in Software to download on page 16.

Procedure

- 1. Insert the DVD in a Windows or Linux system.
- 2. Burn the ISO image to the DVD.

Disabling Spectre and meltdown mitigation

About this task

Use this procedure to disable Spectre and for meltdown mitigation only if the server is secure and if maximum capacity is required.

Security alert:

Disabling Spectre and meltdown mitigation is not recommended from a security perspective. This option is available for customers to use with their best judgment for their deployment and is at customer's own risk.

Procedure

- 1. Log in to Avaya SBCE as ipcs user with root credentials.
- 2. Run the following command:

kernel_opts.sh disable

Chapter 5: Installing the Avaya SBCE servers

Read through the information in this chapter thoroughly before attempting to install, provision, or remove the Avaya SBCE servers.

Installation checklist

Task	Notes	~
Mount the server on an equipment rack or an electrically grounded table top.	Mounting the servers on page 71	
Connect the server to the existing network.	Connecting the servers to the network on page 71	
(Optional) Avaya ships the Avaya SBCE servers preinstalled with the software. You must perform this step only when you have to reinstall the software. Download the ISO software image file	Software to download on page 16 Thumb drives are shipped separately if ordered by the customer.	
Deploy the Avaya SBCE software and configure the required parameters and passwords.	About deploying Avaya SBCE software using the CLI on page 82	

Note:

Use the VGA connection to connect a monitor and keyboard to the system. You must use a serial connection on the Portwell servers, for all other servers use VGA connection for installing Avaya SBCE on the supported server.

Avaya SBCE supports multiple methods of installation, such as ISO-based DVD or USB.

Mounting the servers

The Avaya SBCE and EMS servers can be installed either in a standard 19" equipment rack or placed free-standing on an equipment tabletop. For information about mounting the servers in a rack, see installation instructions for the server or the equipment rack.

Connecting the servers to the network

After the Avaya SBCE servers have been properly installed, you must connect the networking cables. The connection of the Avaya SBCE servers to the network is determined by the particular configuration of the enterprise network and the desired location of the server with that topology.



Caution:

Do not interrupt existing network connections without being thoroughly certain of how Avava SBCE is integrated into existing operations. If you are uncertain how to proceed, call Avaya Customer Service for assistance.

Connection summary and considerations

The following table summarizes how each interface connection is used.

Interface	Usage
A1	The A1, A2, B1, and B2 Ethernet interfaces connect to trusted (internal) networks and untrusted (public) networks. Typically, you will use one pair of interfaces to connect within the trusted network and one pair of interfaces to connect to the untrusted network.
A2	
B1	
B2	In some connectivity solutions, you will bond A1 to A2 and B1 to B2 to expand the bandwidth of the interfaces.
M1	The M1 interface is used for the connection to the Graphical User Interface (GUI) on a combined Avaya SBCE and EMS server, or for a dedicated EMS server. For all servers, M1 is also used for the SSH-based Command Line Interface (CLI).
M2	The M2 interface is used for the connection between a pair of Primary and Secondary Avaya SBCE HA servers or a pair of active/active EMS servers. The connection is made using a straight or patch Ethernet cable.
VGA	The VGA interface is used only for the connection to the CLI.



Note:

The Portwell CAF-0251 server only supports the A1, A2, B2, and Console interfaces.

Consider the following when connecting Avaya SBCE components:

 When Avaya devices are all in the same subnet, you must use a one-cable deployment. For example, use only interface A1 instead of using interfaces A1 and B1 (signaling and media interfaces). When Avaya devices are all within the DMZ, the use of internal or external firewalls is optional, depending upon the deployment.

• There is no GUI connection available on a dedicated Avaya SBCE-only component.

Connectivity diagrams

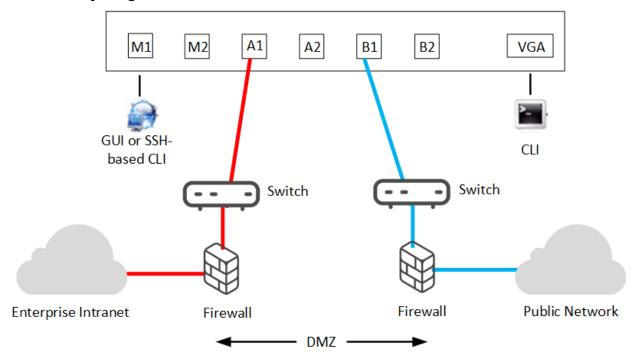


Figure 1: Combined Avaya SBCE and EMS single server deployment

If there is a single combined Avaya SBCE and EMS server, the deployment process is run on the combined server and both types of software are deployed.

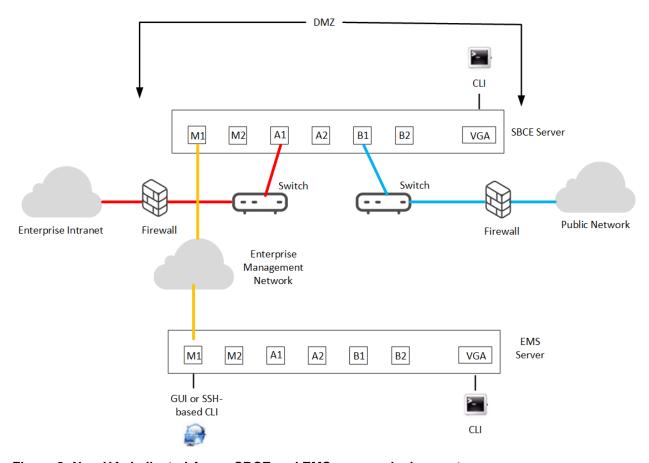


Figure 2: Non-HA dedicated Avaya SBCE and EMS servers deployment

If there is a single Avaya SBCE server being managed by a single EMS server, the deployment process is first run remotely on the EMS server. The system then runs the deployment process remotely on the Avaya SBCE server.

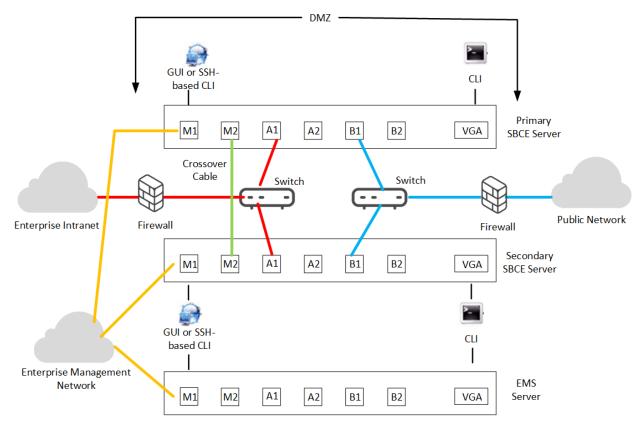


Figure 3: HA Avaya SBCE server with single EMS connections

If there are a pair of Avaya SBCE HA servers being managed by a single EMS server, the deployment process is first run remotely on the EMS server. The system then runs the deployment process remotely on each of the Avaya SBCE servers.

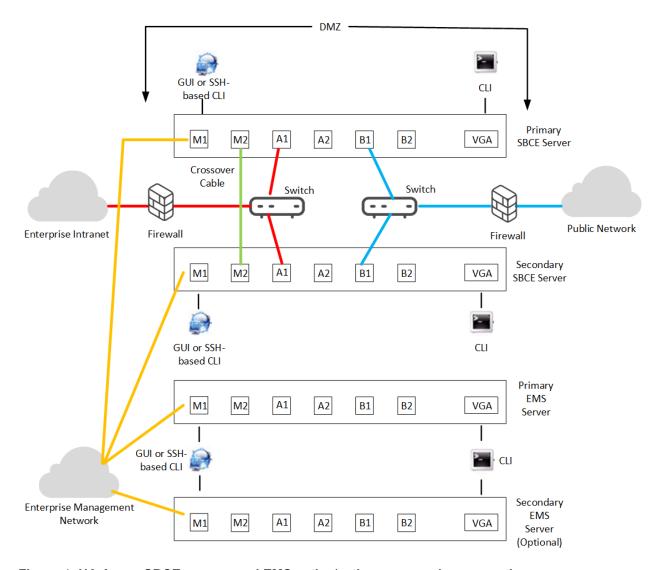


Figure 4: HA Avaya SBCE servers and EMS active/active server pairs connections

If there are a pair of Avaya SBCE HA servers being managed by a pair of active/active EMS servers, the deployment process is first run remotely on the EMS servers, primary first followed by the secondary. The system then runs the deployment process remotely on each of the Avaya SBCE servers.

(Optional) Reinstalling the Avaya SBCE software



Caution:

Reinstalling the Avaya SBCE software deletes all existing data from the server. Any administration done on the system will be deleted.

Important:

Avaya ships the Avaya SBCE servers preinstalled with the Avaya SBCE software. When you have a server with the preinstalled software, reinstalling the software is not required. Continue with the procedures in the chapter "Deploying Avaya SBCE and EMS software".

If you do need to reinstall the Avaya SBCE software, continue with the procedures in Reinstalling Avaya SBCE software from a USB flash device or DVD on page 77.

Downloading software from PLDS

When you place an order for an Avaya PLDS-licensed software product, PLDS creates the license entitlements of the order and sends an email notification to you. The email includes a license activation code (LAC) and instructions for accessing and logging into PLDS. Use the LAC to locate and download the purchased license entitlements.

In addition to PLDS, you can download the product software from http://support.avaya.com using the **Downloads and Documents** tab at the top of the page.

Note:

Only the latest service pack for each release is posted on the support site. Previous service packs are available only through PLDS.

Procedure

- 1. Enter http://plds.avaya.com in your Web browser to access the Avaya PLDS website.
- 2. Enter your login ID and password.
- 3. On the PLDS home page, select **Assets**.
- Click View Downloads.
- 5. Click the search icon (magnifying glass) for **Company Name**.
- 6. In the **%Name** field, enter **Avaya** or the Partner company name.
- 7. Click Search Companies.
- 8. Locate the correct entry and click the **Select** link.
- 9. Enter the Download Pub ID.
- 10. Click Search Downloads.
- 11. Scroll down to the entry for the download file and click the **Download** link.
- 12. In the **Download Manager** box, click the appropriate download link.

Note:

The first link, **Click to download your file now**, uses the Download Manager to download the file. The Download Manager provides features to manage the download

(stop, resume, auto checksum). The **click here** link uses your standard browser download and does not provide the download integrity features.

- 13. If you use Internet Explorer and get an error message, click the install ActiveX message at the top of the page and continue with the download.
- 14. Select a location where you want to save the file and click **Save**.
- 15. If you use the Download Manager, click **Details** to view the download progress.

Latest software updates and patch information

Before you start the deployment or upgrade of an Avaya product or solution, download the latest software updates or patches for the product or solution. For more information, see the latest release notes, Product Support Notices (PSNs), and Product Correction Notices (PCNs) for the product or solution on the Avaya Support web site at https://support.avaya.com/.

After deploying or upgrading a product or solution, use the instructions in the release notes, PSNs, or PCNs to install any required software updates or patches.

For third-party products used with an Avaya product or solution, see the latest release notes for the third-party products to determine if you need to download and install any updates or patches.

Reinstalling Avaya SBCE software from a USB flash device or DVD

About this task



Caution:

Reinstalling the Avaya SBCE software deletes all existing data from the server. Any administration done on the system will be deleted.

Important:

Avaya ships the Avaya SBCE servers preinstalled with the Avaya SBCE software. When you have a server with the preinstalled software, reinstalling the software is not required. Continue with the procedures in the chapter "Deploying Avaya SBCE and EMS software".

Use this procedure to reinstall Avava SBCE software. This procedure is done using either an installation disc or a USB flash device. You must download the software from the Avaya Support Site using PLDS.

To access the GUI, use a serial connection on the Portwell servers or the VGA connection on all other supported servers.

Procedure

- 1. Do one of the following actions:
 - Insert the Avaya SBCE installation USB flash device into the USB port.



A Caution:

You cannot use the front panel USB ports of the Dell R340 or Dell R330 server to install Avaya SBCE software. You must use the back panel USB ports.

- Insert the Avaya SBCE installation disc into the DVD drive. If the server does not have internal DVD drive, connect an external DVD device to the USB port and insert the installation disc into the DVD drive.
- 2. Reboot the server, ensuring that the boot device is set to DVD or USB. For information about booting servers, see Booting servers with a USB flash device on page 79.
- 3. On the Welcome screen, select one of the following options:
 - Select Install or Migrate SBC system (VGA) for VGA connection, and then press Enter.
 - · Select Install or Migrate SBC system (Serial) for serial connection with baud speed of 19200, and then press Enter.
- 4. Wait until the system displays the installation or upgrade warning screen.
 - If the system has Avaya SBCE software already installed on it, the system displays the Upgrade screen. In "Proceed with Upgrade?" prompt, type no to be presented with the Installation screen.
 - If the system does not have Avaya SBCE installed on it, the system displays the Installation screen. In the "Proceed with Installation?" prompt, type yes to start the installation.



Caution:

Reinstalling the Avaya SBCE software deletes all existing data from the server. Any administration done on the system will be deleted.

- 5. When the system displays the Please select default console type (vga or serial)? field, type one of the following values.
 - If you are installing on a Portwell server, use the serial connection mode, type serial and press Enter.
 - If you use the VGA mode, type vga and press Enter.
- 6. Wait until the system creates partitions and installs packages.

This process might take up to 30 minutes.

- 7. Once RPM installation is complete, press Enter to reboot the system
- 8. After the system is rebooted, remove the USB flash device or installation disc from the server. A complete reboot is indicated with a display of the first BIOS boot screen.

The system displays configuration screen and is now ready to be configured. For a multiserver deployment, repeat the task for other servers.

- 9. On Portwell servers, instead of the configuration menu, the user will get a login prompt after first system boot. Do the following steps:
 - a. Log on using the following credentials:

Username: root

Password: Avaya 123

- b. Wait for five minutes to allow the system processes to stabilize.
- c. After five minutes, enter the following command to access the configuration menu:

sbce-init restart



Note:

The restart option of this command is mandatory. Do not use the start and stop

The system displays configuration screen and is now ready to be configured.

Related links

Booting servers with a USB flash device on page 79

Booting servers with a USB flash device

This section covers the procedures to boot each server type from a USB flash device.



Note:

The procedures for booting servers with a USB flash device is applicable to USB based DVD drivers as well.

Booting the Dell R320, Dell R330, or Dell R340 with a USB flash device **Procedure**

- 1. Insert the USB flash device into the USB port.
- Reboot the server.
- 3. Press F11 to start BIOS Boot Menu.

The system displays the BIOS Boot Menu.

- 4. Use arrow keys to navigate to the **One Time Boot to USB Drive Key** option.
- 5. Select the USB flash device and press Enter.

Booting the Dell R620 with a USB flash device **Procedure**

- 1. Insert the USB flash device into the USB port.
- Reboot the server.

The system display the **F11 = Boot Manager** on the top-right corner of the VGA or serial console.

3. Press F11 to start BIOS Boot Manager.

The system displays the BIOS Boot Manager menu.

4. Use arrow keys to navigate to the Boot from Entry option and press Enter.

The system displays a list of devices.

- 5. Use arrow keys to navigate to the **One Time Boot to USB Drive Key** option.
- 6. Select the USB flash device and press Enter.

Booting the Dell R630 or Dell R640 with a USB flash device Procedure

- 1. Insert the USB flash device into the USB port.
- 2. Reboot the server.
- 3. Press F11 to start Boot Manager.
- 4. Select One-Shot BIOS Boot Menu.
- 5. Select your USB drive by pressing **Enter**.

Booting the HP DL 360p G8 with a USB flash device

Procedure

- 1. Insert the USB flash device into the USB port.
- 2. Reboot the server.

The server takes a few minutes before showing any messages on the VGA console. The system displays the F11 Boot Menu option at the bottom of the screen.

- 3. Press F11 to launch the Boot menu.
- 4. From the menu, select **One Time Boot to USB Drive Key** by entering the corresponding option number.

Boot the HP DL360 G9 with a USB flash device

Procedure

- 1. Insert a USB flash device into the USB port.
- 2. Reboot the server.
- 3. Press F11.
- 4. Select Legacy BIOS One-Time Boot Menu, and press Enter.
- 5. From the menu, select **One Time Boot to USB Drive Key** by entering the corresponding option number.

Booting the Portwell CAD-0230 or CAF-0251 with a USB flash device Procedure

- 1. Connect a terminal device to the console using the serial port adapter. Set the communication options to 19200, 8, N, 1.
- 2. Insert the USB flash device into the USB port.
- 3. Turn on the server or cycle power on the server.
- 4. Do one of the following steps:
 - For the Portwell CAD-0230 server, select **Install or Migrate SBC system (Serial port 0)**.
 - For the Portwell CAF-0251, select Install or Migrate SBC system (Serial port 2 CAF0251).
- 5. Press **Enter**.

The installation process begins. The system displays **Proceed with install?**.

6. Type yes and press Enter.

If the server was already installed with a previous version of Avaya SBCE , the system displays an upgrade screen message. If this occurs, type no and press **Enter**. Then type yes and press **Enter**.

The system displays a console type message.

7. Select serial.

The system displays a reboot message.

Important:

Reboot the server only when ready to monitor server reboot process.

8. Press Enter to reboot.

Important:

Remove the USB flash device only after the server has completely rebooted.

The system displays a message to enter Setup.

9. Remove the USB flash device when the system displays the Setup message.

Chapter 6: Deploying Avaya SBCE and EMS software

About deploying Avaya SBCE software using the CLI

Depending on your deployment option, do the following procedures for each deployment option:

- Single server:
 - Deploying EMS and SBCE on a single server using CLI on page 82
- Multiple servers:
 - Deploying EMS on a dedicated server using CLI on page 85
 - Deploying SBCE on a dedicated server using CLI on page 89

! Important:

Portwell servers do not support deploying EMS or SBCE on dedicated servers. You must deploy EMS and SBCE on a single Portwell server. For more information, see Deploying EMS and SBCE on a single server using CLI on page 82.

For a multiple server configuration, configure the servers in the following sequence:

- 1. Primary EMS server
- 2. Secondary EMS server (optional)



Caution:

When deploying the Secondary EMS server, verify that the software version of the Secondary EMS server matches the software version of the Primary EMS server. If the software versions do not match, the system will not work properly.

3. Avaya SBCE servers in non-HA or HA pair configurations

Deploying EMS and SBCE on a single server using CLI

About this task

Use this task when you want to deploy the EMS and SBCE software on the same physical or virtual server.

Procedure

- 1. To access the GUI, use a serial connection on the Portwell servers or the VGA connection on all other supported servers.
- 2. Turn on the system.
- 3. On Portwell servers, instead of the configuration menu, the user will get a login prompt after first system boot. Do the following steps:
 - a. Log on using the following credentials:

Username: root

Password: Avaya 123

- b. Wait for five minutes to allow the system processes to stabilize.
- c. After five minutes, enter the following command to access the configuration menu:

sbce-init restart



☑ Note:

The restart option of this command is mandatory. Do not use the start and stop options.

The system displays configuration screen and is now ready to be configured.

4. Wait for the configuration menu to appear.

The options are:

- 1-configure: Command line mode
- 2-Reboot SBCE
- 3-Shutdown SBCE
- 4-SBCE Shell Login
- 5. Type 1 for CLI mode.
- 6. Depending on the IP address used in your network, type the IP Mode from the following choices and press Enter:
 - IPv4
 - DUAL STACK

Voice interfaces (A1, A2, B1, B2) support both IPv4 and IPv6 address configurations. If you are using dual stack for any of the data interfaces, then configure the system with dual stack. The IP Address on Management interface (M1) supports only IPv4 addresses — it does not depend on the type of IP Mode.

- 7. Type the Appliance Type as EMS+SBCE and press Enter.
- 8. Type a name for the appliance in the **Appliance Name** and press Enter.
- 9. Type the management IP address in the **Management IP address** field and press Enter.

- 10. Type the subnet mask in the **Management subnet mask** field and press Enter.
- 11. Type the IP address of the gateway in the **Management Gateway IP Address (IPv4)** field and press Enter.
- 12. Type the IP address of the gateway in the **Management Gateway IP Address (IPv6)** field and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press <code>Enter</code>.
- 13. Type the prefix length in the **Management subnet network prefix length** field and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press Enter.
- 14. Type the IPv6 address in the **Management Gateway IP Address (IPv6)** field and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press Enter.
- 15. Type the IP address of the NTP server in the NTP server IP Address (IPv4) field and press Enter.
- 16. Type the IPv6 address of the NTP server in the NTP server IP Address (IPv6) field and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press Enter.
- 17. Type the IP address of the DNS server in the **List of DNS Servers** field and press Enter.
 - You can either enter comma-separated list of DNS servers or single IP address if only one DNS server is present.
- 18. Type the domain suffix in the **Domain Suffix** field and press Enter.
- 19. Type appropriate value in the **First and Last Name** field and press Enter.
- 20. Confirm the details and press Enter. Type No, if you want to re-enter the details.
- 21. Type a name of your organizational unit in the **Organizational Unit** field and press Enter.
- 22. Type your organization name in the **Organization** field and press Enter.
- 23. Type your city or locality name in the City or Locality field and press Enter.
- 24. Type your state or province name in the **State or Province** field and press Enter.
- 25. Type the two characters code of your country in the Country Code field and press Enter.
- 26. Type the number of your country in the **Please select a country** field to select your country from the list.
- 27. Confirm the details and press Enter. Type No, if you want to re-enter the details.

- 28. Type the continent and ocean details in the **Continent** and **Ocean** fields for your timezone.
- 29. Type your choice in the **Set Timezone**. and when following message is displayed, type Yes to confirm.

Is the above information OK?



Note:

If you have specified an NTP server that is not reachable, then system will prompt you to set the date and time manually and following two fields will be displayed:

- 30. Type date in yyyy/mm//dd format in the **Date** field and press Enter.
- 31. Type time in hh:mm:ss format in the **Time** field and press Enter.
- 32. Type and confirm the password for root user and then press Enter.
- 33. Type and confirm the same password for the ipcs user and press Enter.

Use this password for secure shell (ssh) to gain access to Avaya SBCE.

34. Type and confirm the grub password, and press Enter.

A series of scripts automatically run, which configure Avaya SBCE with the information that you type. As these scripts run, the video display shows a series of outputs reflecting the progress of the configuration. The configuration is successfully complete when the system displays the login prompt.

! Important:

If you are installing Avaya SBCE on a Portwell CAF-0251 server, you might see an error message similar to the following example:

```
54.300613] EDAC pnd2: Failed to register device with error -22.
 54.443452] EDAC pnd2: Failed to register device with error -22.
146.642506] EDAC pnd2: Failed to register device with error -22. 146.685959] EDAC pnd2: Failed to register device with error -22.
```

You can ignore this message and continue with the deployment process.

Related links

Appliance Configuration field descriptions on page 92 Management Interface Setup field descriptions on page 93

Deploying EMS on a dedicated server using CLI

About this task

Use this procedure when you want dedicated EMS servers. For EMS, you must deploy at least one EMS server, which is called the Primary EMS. You can optionally deploy a Secondary EMS server.



Caution:

When deploying the Secondary EMS server, verify that the software version of the Secondary EMS server matches the software version of the Primary EMS server. If the software versions do not match, the system will not work properly.

For example, a version mismatch might occur if the Primary EMS server was deployed but the Secondary EMS server was not deployed until a later time. If the Primary EMS server gets a software update before you deploy the Secondary EMS server, a version mismatch occurs.

! Important:

Portwell servers do not support deploying EMS on a dedicated server. You must deploy EMS and SBCE on a single Portwell server. For more information, see Deploying EMS and SBCE on a single server using CLI on page 82.

Before you begin

Verify that the server you are deploying for EMS has the Avaya SBCE software installed. To confirm that the primary and secondary EMS servers have the same version of software, do the following steps:

- 1. To access the GUI, use a serial connection on the Portwell servers or the VGA connection on all other supported servers.
- 2. Turn on the primary EMS server.
- 3. Wait for the configuration menu to appear.
- 4. From the menu, select **4** to go to the shell prompt.
- 5. Run the following command: rpm -qa | grep sbce
- 6. Repeat these steps on the secondary EMS server.
- 7. Compare the software versions. If the versions do not match, you must reinstall the Avaya SBCE software on one or both servers so that the same software version is on both EMS servers. If you need to reinstall the Avaya SBCE software, see the software installation instructions given earlier in this document.

Procedure

- 1. To access the GUI, use a serial connection on the Portwell servers or the VGA connection on all other supported servers.
- 2. Turn on the system.
- 3. Wait for the configuration menu to appear.

The options are:

- 1-configure: Command line mode
- 2-Reboot SBCE
- 3-Shutdown SBCE
- 4-SBCE Shell Login
- 4. Type 1 for CLI mode.

- 5. Depending on the IP address used in your network, type the IP Mode from the following choices and press Enter:
 - IPv4
 - DUAL STACK

If you are using dual stack for any of the data interfaces, then configure the system with dual stack. The IP Address on Management interface (M1) or (M2) supports only IPv4.address, it does not depend on the type of IP Mode.

- 6. Type the Appliance Type as EMS and press Enter:
- 7. Type the passphrase in the **Network Passphrase** field and press Enter.
- 8. Type a name for the appliance in the **Appliance Name** field and press Enter.
- 9. Type the installation type for EMS in the **Installation Type** field from the following choices and press Enter:
 - Primary
 - Secondary



Caution:

When deploying the Secondary EMS server, verify that the software version of the Secondary EMS server matches the software version of the Primary EMS server. If the software versions do not match, the system will not work properly.

For more information, see *Before you begin*.

- 10. Type the management IP address in the Management IP address field and press Enter.
- 11. Type the subnet mask in the **Management subnet mask** field and press Enter.
- 12. Type the IP address of the gateway in the Management Gateway IP Address (IPv4) field and press Enter.
- 13. Type the IP address of the gateway in the Management Gateway IP Address (IPv6) field and press Enter.

This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the IP Mode field, otherwise press Enter.

14. Type the prefix length in the Management subnet network prefix length field and press Enter.

This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the IP Mode field, otherwise press Enter.

15. Type the IPv6 address in the Management Gateway IP Address (IPv6) field and press Enter.

This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the IP Mode field, otherwise press Enter.

- 16. Type the IP address of the NTP server in the NTP server IP Address (IPv4) field and press Enter.
- 17. Type the IPv6 address of the NTP server in the NTP server IP Address (IPv6) field and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press Enter.
- 18. Type the IP address of the DNS server in the **List of DNS Servers** field and press Enter.
 - You can either enter comma-separated list of DNS servers or single IP address if only one DNS server is present.
- 19. Type the domain suffix in the **Domain Suffix** field and press Enter.
- 20. Confirm the details and press Enter. Type No, if you want to re-enter the details.
- 21. Type appropriate value in the **First and Last Name** field and press Enter.
- 22. Type a number of your organizational unit in the **Organizational Unit** field and press Enter.
- 23. Type your organization name in the Organization field and press Enter.
- 24. Type your city or locality name in the City or Locality field and press Enter.
- 25. Type your state or province name in the **State or Province** field and press Enter.
- 26. Type the two characters code of your country in the Country Code field and press Enter.
- 27. Type the name of your country in the **Please select a country** field to select your country from the list.
- 28. Confirm the details and press Enter. Type No, if you want to re-enter the details.
- 29. Type the continent and ocean details in the **Continent** and **Ocean** fields for your timezone.
- 30. Type your choice in the **Set Timezone**. and when following message is displayed, type Yes to confirm.

Is the above information OK?



☑ Note:

If you have specified an NTP server that is not reachable, then system will prompt you to set the date and time manually and following two fields will be displayed:

- 31. Type date in yyyy/mm//dd format in the **Date** field and press Enter.
- 32. Type time in hh:mm:ss format in the **Time** field and press Enter.
- 33. Type and confirm the password for root user and then press Enter.
- 34. Type and confirm the same password for the ipcs user and press Enter. Use this password for secure shell (ssh) to gain access to Avaya SBCE.
- 35. Type and confirm the grub password, and press Enter.

A series of scripts automatically run, which configure Avaya SBCE with the information that you type. As these scripts run, the video display shows a series of outputs reflecting the progress of the configuration. The configuration is successfully complete when the system displays the login prompt.

Important:

If you are installing Avaya SBCE on a Portwell CAF-0251 server, you might see an error message similar to the following example:

```
54.300613] EDAC pnd2: Failed to register device with error -22.
54.443452] EDAC pnd2: Failed to register device with error -22. [ 146.642506] EDAC pnd2: Failed to register device with error -22. [ 146.685959] EDAC pnd2: Failed to register device with error -22.
```

You can ignore this message and continue with the deployment process.

36. Repeat this procedure if you are installing a Secondary EMS.

Related links

Appliance Configuration field descriptions on page 92 Management Interface Setup field descriptions on page 93

Deploying SBCE on a dedicated server using CLI

About this task

Use this procedure when you want dedicated Avava SBCE servers. For Avava SBCE, you can deploy several non-HA servers or several pairs of HA servers.



Important:

Portwell servers do not support deploying SBCE on a dedicated server. You must deploy EMS and SBCE on a single Portwell server. For more information, see Deploying EMS and SBCE on a single server using CLI on page 82.

Before you begin

Ensure that the EMS server is accessible over the network when deploying Avaya SBCE.

Procedure

- 1. Turn on the system.
- 2. Wait for the configuration menu to appear.

The options are:

- 1-configure: Command line mode
- 2-Reboot SBCE
- 3-Shutdown SBCE
- 4-SBCE Shell Login

- 3. Type 1 for CLI mode.
- 4. Depending on the IP address used in your network, type the **IP Mode** from the following choices and press <code>Enter</code>:
 - IPv4
 - DUAL STACK

Voice interfaces (A1, A2, B1, B2) support both IPv4 and IPv6 address configuration. If you are using dual stack for any of the data interfaces, then configure the system with dual stack and the IP Address on Management interface (M1) must be the IPv4.address.

- 5. Type the **Appliance Type** as SBCE.
- 6. Type a name for the appliance in the **Appliance Name** field and press Enter.
- 7. Type the management IP address in the Management IP address field and press Enter.
- 8. Type the subnet mask in the Management subnet mask field and press Enter.
- 9. Type the IP address of the gateway in the **Management Gateway IP Address (IPv4)** field and press Enter.
- 10. Type the IP address of the gateway in the **Management Gateway IP Address (IPv6)** field and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press Enter.
- 11. Type the IP address of the EMS in EMS IP address (IPv4) and press Enter.
- 12. Type the IPv6 address of the EMS in EMS IP address (IPv6) and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press Enter.
- 13. Type the prefix length in the **Management subnet network prefix length** field and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press Enter.
- 14. Type the IPv6 address in the **Management Gateway IP Address (IPv6)** field and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press Enter.
- 15. Type the IP address of the NTP server in the NTP server IP Address (IPv4) field and press Enter.
- 16. Type the IPv6 address of the NTP server in the **NTP server IP Address (IPv6)** field and press Enter.
 - This field is applicable only to the IPv6 addresses. Type the value only if you have selected DUAL STACK in the **IP Mode** field, otherwise press Enter.

- 17. Type the IP address of the DNS server in the **List of DNS Servers** field and press Enter.
 - You can either enter comma-separated list of DNS servers or single IP address if only one DNS server is present.
- 18. Type the domain suffix in the **Domain Suffix** field and press Enter.
- 19. Confirm the details and press Enter. Type No, if you want to re-enter the details.
- 20. Type appropriate value in the First and Last Name field and press Enter.
- 21. Type a name of your organizational unit in the **Organizational Unit** field and press Enter.
- 22. Type your organization name in the **Organization** field and press Enter.
- 23. Type your city or locality name in the City or Locality field and press Enter.
- 24. Type your state or province name in the **State or Province** field and press Enter.
- 25. Type the two characters code of your country in the Country Code field and press Enter.
- 26. Type the number of your country in the **Please select a country** field to select your country from the list.
- 27. Confirm the details and press Enter. Type No, if you want to re-enter the details.
- 28. Type the continent and ocean details in the **Continent** and **Ocean** fields for your timezone.
- 29. Type your choice in the **Set Timezone**. and when following message is displayed, type Yes to confirm.

Is the above information OK?



If you have specified an NTP server that is not reachable, then system will prompt you to set the date and time manually and following two fields will be displayed:

- 30. Type date in yyyy/mm//dd format in the **Date** field and press Enter.
- 31. Type time in hh:mm:ss format in the **Time** field and press Enter.
- 32. Type and confirm the password for root user and then press Enter.
- 33. Type and confirm the same password for the ipcs user and press Enter.
 - Use this password for secure shell (ssh) to gain access to Avaya SBCE.
- 34. Type and confirm the grub password, and press Enter.

A series of scripts automatically run, which configure Avaya SBCE with the information that you type. As these scripts run, the video display shows a series of outputs reflecting the progress of the configuration. The configuration is successfully complete when the system displays the login prompt.



Important:

If you are installing Avaya SBCE on a Portwell CAF-0251 server, you might see an error message similar to the following example:

```
54.300613] EDAC pnd2: Failed to register device with error -22.
   54.443452] EDAC pnd2: Failed to register device with error -22. 146.642506] EDAC pnd2: Failed to register device with error -22.
[ 146.685959] EDAC pnd2: Failed to register device with error -22.
```

You can ignore this message and continue with the deployment process.

Next steps

After configuring Avaya SBCE, take a snapshot of the Avaya SBCE configuration. For information about backing up the Avaya SBCE database, see Maintaining and Troubleshooting Avaya Session Border Controller for Enterprise.

Related links

Appliance Configuration field descriptions on page 92 Management Interface Setup field descriptions on page 93

Field descriptions

Appliance Configuration field descriptions

Name	Description		
Appliance Name	A descriptive name assigned to the EMS or Avaya SBCE.		
	Note:		
	Ensure that the appliance name is unique.		
Domain Suffix (Optional)	The domain within which this server is deployed.		
List of DNS Servers	The IP address of each Domain Name Server (DNS).		
	Note:		
	The list of DNS server names must be commaseparated, with no spaces. Only two IP addresses are allowed here.		

Table continues...

Name	Description	
NTP Server IP Address (ipv4)	The IPv4 IP address of the Network Time Protocol (NTP) server. If no NTP is present, configure manually. Only one IP address can be configured.	
	For an HA pair, both Avaya SBCE servers must have the NTP address.	
	You must configure NTP Server IP Address (ipv4) if TLS or encryption is enabled.	
Network Passphrase	A unique password that the EMS server and Avaya SBCE security devices deployed throughout the network will use for authentication. This field is displayed for Avaya SBCE-only installations.	
	Important:	
	The same passphrase must be configured on all the SBCE instances that are managed by an EMS and on the managing EMS as well. Different passphrases prevent the EMS and Avaya SBCE security devices from communicating with one another.	

Management Interface Setup field descriptions

Name	Description	
Management IP Address (ipv4)	The IPv4 address of the management network.	
Management Network Mask	The network mask of the management network.	
Management Gateway IP Address (ipv4)	The IPv4 address of the gateway to the management network.	
Management IP Address (ipv6)	The IPv6 address of the management network.	
	The system displays this field only when you select Dual Stack on the Management IP Configuration screen.	
	Note:	
	In Dual Stack the IPv6 address is optional but the IPv4 address is compulsory.	
Management Network Pfx length	The length of the prefix for the management network IPv6 address.	
	The system displays this field only when you select Dual Stack on the Management IP Configuration screen.	

Table continues...

Name	Description	
Management Gateway IP Address (ipv6)	The IPv6 address of the gateway to the management network.	
	The system displays this field only when you select Dual Stack on the Management IP Configuration screen.	
	Note:	
	In Dual Stack the IPv6 address is optional but the IPv4 address is compulsory.	
EMS Server IP Address (ipv4)	The IP address of the EMS server.	
	This field is displayed for Avaya SBCE only installations.	
Self-signed certificate fields		
First and Last Name	The name used to refer to or identify the company or group creating the certificate.	
Organizational Unit	The group within the company organization creating the certificate.	
Organization	The name of the company or organization creating the certificate.	
City or Locality	The city or locality where the certificate is being created.	
State or Province	The state or province where the certificate is being created.	
Country Code	The number to identify the country where the certificate is being created.	

Important:

- When using SSL or VPN is configured on the M1 interface, the IP address associated
 with the M1 interface will need *outbound* internet access. The M1 interface requires
 outbound internet access to initiate connectivity with the Avaya VPN Gateway (AVG)
 server. M1 is the management interface that is the required interface for SSL or VPN.
- All the self-signed certificate fields are applicable only on the management interface, for communication with the user interface and with the Avaya Aura® components. The values for self signed certificate are optional, if you will not provide any value then certificate will be generated by using the default values of the fields.

Note:

For security reasons for Voice Over IP (VoIP) systems, segment the data or data management network from the voice network. For Avaya SBCE deployments, segmentation means configuring the Management Interface (M1) on a separate subnet from the subnet used for the Voice Interfaces (A1, A2, B1, and B2). Avoid placing M1 IP address on a PBX core network. For more information about this recommendation, see

Avaya: Security Best Practices Checklist.

- Network Security Agency: Recommended IP Telephony Architecture.
- National Institute of Standards and Technology (NIST): Security Considerations for Voice Over IP Systems.

Remote access

Secure Access Link

Use Secure Access Link (SAL) for remote access to Avaya SBCE systems in non-IP Office environments. Register Avaya SBCE for remote access with the customer SAL. For information about configuring SAL, see *Implementing Secure Access Link Gateway*.

Chapter 7: Licensing requirements

About licensing requirements

Avaya SBCE uses the Avaya Product Licensing and Delivery System (PLDS) to create licenses and download Avaya SBCE software. PLDS is not integrated with WebLM. Use PLDS to perform operations such as license activations, license upgrades, license moves and software downloads.

There are two licensed versions of Avaya SBCE:

- Standard Services delivers non-encrypted SIP trunking.
- Advanced Services adds Mobile Workspace User, Media Replication, and other features to the Standard Services offer.

Avaya Aura® Mobility Suite and Collaboration Suite licenses include Avaya SBCE.

Avaya SBCE uses WebLM version 8.0 or later for licensing requirements. You can install the Avaya SBCE license file on a primary Element Management System (EMS) using the Device Management page.

Important:

You must not enable the local WebLM option and install an Avaya SBCE license file on the secondary EMS if used in an active-active deployment. If you install a license file on a secondary EMS in an active-active deployment, the licensing system will always show that the secondary EMS is in **Grace Period State**.

Ensure that the license file of the WebLM server displays the product code Session Border Controller E AE. Before you configure the license file, you can view the **License State**, **Grace Period State**, and **Grace Period Expiration Date** fields on the Dashboard page. You have a 30-day grace period from the day of installation or upgrade to install the license. Avaya SBCE works normally during the grace period.

Important:

Licenses and a WebLM server are required for new installations or upgrades.

The license file contains the following information:

- Product name
- Supported software version
- · Expiration date
- Host ID

The primary host ID of WebLM is used for creating the license file.

- Licensed features
- · Licensed capacity

All hardware Avaya SBCE devices can use a local WebLM server for licenses. However, for mixed deployment environments with EMS on VMware and Avaya SBCE on hardware, use a WebLM server installed on VMware or System Manager WebLM.

Avaya SBCE supports pooled licensing. As opposed to static license allocation, Avaya SBCE dynamically reserves and unreserves pooled licenses when needed. For example, customers with multiple Avaya SBCE devices can use a pool of licenses dynamically across the devices as required.

For integration with Microsoft[®] Teams, Avaya SBCE requires the Premium license and Premium HA license permissions in addition to the Standard Services and Advanced Services licenses.

For the use of AMR-WB codec, Avaya SBCE requires counting license for AMR-WB codec license and AMR-WB codec HA tracking license. This is applicable to both static and dynamic licenses.

Avaya SBCE licensed features

To use a feature, you must ensure that the license file that you upload to WebLM has the appropriate licenses for the feature. You cannot configure or use a feature if the correct license for that feature is not present in the license file.

License feature	Description	
VALUE_SBCE_STD_SESSION_1	Specifies the number of standard session licenses.	
VALUE_SBCE_STD_HA_SESSION_1	Specifies the number of standard service HA session licenses.	
VALUE_SBCE_ADV_SESSION_1	Specifies the number of session licenses for remote worker, media recording, and encryption.	
	* Note:	
	You must buy and deploy a standard session license with every advanced license feature.	
VALUE_SBCE_ADV_HA_SESSION_1	Specifies the number of advanced service HA session licenses.	
VALUE_SBCE_PREM_SESSION	Specifies the number of premium session licenses. Premium licenses are required when using Microsoft Teams.	

Table continues...

License feature	Description
VALUE_SBCE_PREM_HA_SESSION	Specifies the number of premium service HA session licenses. Premium licenses are required when using Microsoft Teams.
VALUE_SBCE_VIDEO_CONF_SVC_SESSION_1	Specifies the number of Avaya Meetings Server video conferencing session licenses.
VALUE_SBCE_VIDEO_CONF_HA_SVC_SESSION_1	Specifies the number of Avaya Meetings Server video conferencing HA session licenses.
VALUE_SBCE_CES_SVC_SESSION_1	Specifies the number of Client Enablement Services session licenses.
VALUE_SBCE_CES_HA_SVC_SESSION_1	Specifies the number of Client Enablement Services HA session licenses.
VALUE_SBCE_TRANS_SESSION_1	Specifies the number of transcoding session licenses.
VALUE_SBCE_TRANS_HA_SESSION_1	Specifies the number of transcoding HA session licenses.
VALUE_SBCE_ELEMENTS_MANAGED_1	Specifies the maximum number of Avaya SBCE elements managed.
VALUE_SBCE_VIRTUALIZATION_1	Specifies that the download of virtual system installation files for VMware, KVM, Amazon Web Services, and Microsoft® Azure is permitted.
VALUE_SBCE_ENCRYPTION_1	Specifies that both media and signaling can be encrypted for Avaya SBCE. This license is required when using any advanced licenses.
FEAT_SBCE_HIGHAVAILABILITY_CONFIG_1	Specifies the configuration of HA for the setup.
FEAT_SBCE_DYNAMIC_LICENSING_1	Specifies that dynamic or pooled licensing is permitted for Avaya SBCE. The quantity of this license must match the quantity of standard licensing in the system being managed.
VALUE_SBCE_RUSSIAN_ENCRYPTION_1	Specifies Avaya SBCE encryption only for signaling.
VALUE_SBCE_NG911	Specifies the number of AMR-WB codec licenses.
VALUE_SBCE_NG911_HA	Specifies the number of AMR-WB codec HA licenses.

License installation

You can install Avaya SBCE license on either of the following servers:

- The WebLM server on System Manager
- The local WebLM server

Installing a license on WebLM server on System Manager

Before you begin

Get the license file from the Avaya Product Licensing and Delivery System (PLDS) website at https://plds.avaya.com/.

About this task

If you experience problems while installing the license file, see the License file installation errors section in *Administering standalone Avaya WebLM*.

Procedure

- 1. Log in to the System Manager web interface.
- 2. On the home page, in the **Services** section, click **Licenses**.
- 3. In the left navigation pane, click **Install license**.
- 4. Browse to the location where you saved the license file, and select the file to upload.
- 5. Click **Install**.
- 6. Verify that the license is installed. If the installation is successful, a new menu item named ASBCE appears in the left navigation pane. Click **ASBCE** to view the licensed features.

Installing a license file on the local WebLM server

Procedure

- 1. Log in to the WebLM application. If you are logging in for the first time, the system prompts you to change the default password.
- 2. In the left navigation pane, click **Install License**.
 - The system displays the Install License page.
- 3. In the **Enter license path** field, select the downloaded license from your computer and click **Install**.
 - After the license is successfully installed, the system displays a new menu **ASBCE**.
- 4. Click **ASBCE** to view the license information.

Configuring the WebLM server IP address using the EMS web interface

Before you begin

Install the Avaya SBCE license file on a WebLM Release 8.0 or later server installed on System Manager, a local WebLM, or a standalone WebLM server. For more information about installing license files and WebLM, see *Administering standalone Avaya WebLM*.

Get the URL for the WebLM server.

Procedure

- 1. Log on to the EMS web interface with administrator credentials.
- 2. Navigate to **Device Management > Licensing**.
- 3. Do one of the following tasks:
 - For a WebLM server or standalone server installed on System Manager, in the WebLM Server URL field, type the URL of the WebLM server and click Save.

The URL format of the WebLM server installed on System Manager is:

```
https://<SMGR server IP>:52233/WebLM/LicenseServer
```

The URL format of the standalone WebLM server is:

```
https://<WEBLM_server_IP>:52233/WebLM/LicenseServer.
```

- For an external WebLM server, type the link for the external WebLM server in **External WebLM Server URL** and click **Save**.
- 4. Click **Refresh Existing License** to refresh the existing licenses.
- 5. Click **Verify Existing License** to verify the existing WebLM license to confirm it is trusted.

If the WebLM license is trusted, a pop window will display the certificate details. Otherwise, you can select the option to trust the WebLM certificate manually.

6. On the Dashboard screen, check the **License State** field.

If the configuration is successful, the **License State** field shows OK.

- 7. Click the **Devices** tab.
- 8. Locate the Avaya SBCE device you configured, and click **Edit**.

The EMS server displays the Edit Device dialog box.

- In the Standard Sessions, Advanced Sessions, Scopia Video Sessions, and CES Sessions fields, type the number of licensed sessions depending on the license you purchased.
- 10. Click Finish.

Configuring the WebLM server IP address using CLI

Before you begin

Install the Avaya SBCE license file on a WebLM Release 8.0 or later server installed on System Manager, a local WebLM, or a standalone WebLM server. For more information about installing license files and WebLM, see *Administering standalone Avaya WebLM*.

Get the URL for the WebLM server.

Procedure

- 1. Log on to the CLI with administrator credentials.
- 2. Run the following command to configure an external WebLM server URL:

sbceconfigurator.py config-weblm-url <WebLM URL>

About centralized licensing

Using Centralized Licensing feature, the WebLM server can directly distribute the licenses to Avaya SBCE connected to different Element Management System (EMS) in different networks.

The Centralized Licensing feature provides the following advantages:

- Eliminates the need to install and configure multiple WebLM servers, one for each Avaya SBCE setup.
- Eliminates the need to log in to each WebLM server to manage licenses for each Avaya SBCE setup.
- Reduces the VMware licensing cost for installing and configuring multiple WebLM OVAs on VMware.
- Provides a centralized view of license usage for Avaya SBCE.

Note:

- The setup does not support the Centralized Licensing feature.
- The Centralized Licensing feature is optional. Use the Centralized Licensing feature when you have more than one Avaya SBCE setup.

Chapter 8: Verifying a successful deployment

You can verify the successful deployment of EMS using one of the following methods:

- Access the EMS server using the web interface.
- Access the EMS server through console.
- Establish a CLI session through a secure shell session (SSH).

Logging on to the EMS web interface

Procedure

- 1. Open a new browser tab or window.
- 2. Type the following URL:

https://<Avaya EMS IP address>

3. Press Enter.

The system displays a message indicating that the security certificate is not trusted.

4. Accept the system message and continue to the next screen.

If the Welcome screen is displayed, the EMS is operating normally and available for use. You can log in to EMS and perform normal administrative and operational tasks. See *Administering Avaya Session Border Controller for Enterprise*.

- 5. Type the username and password as ucsec.
 - On first login, system prompts you to change the password.
- 6. Enter a new password and login with the new password.

Logging in to EMS through console

To log in to EMS through a console, use the same connection that was used during installation that is serial connection for Portwell servers and VGA connection for non-Portwell servers.

Logging in to Avaya SBCE server through a serial console for Portwell servers

Before you begin

Change the BIOS settings and enable serial redirection.

About this task

Connect the laptop to the serial port on the Avaya SBCE server by using the cable that Avaya provided or a DB9 null modem cable.

Procedure

1. Configure the serial connection parameters of the terminal program to the settings in the following table.

Parameter	Value
Baud rate	19200
Parity	None
Data bits	8
Stop bits	1
Connection Setting	Direct to Com1
	Note:
	Because the com port number is not fixed, use Device Manager to find out the correct port number.

2. Press **Enter** to establish a serial connection.

The system displays a prompt asking for the User Name and Password.

3. Provide the required information and press **Enter**.

Logging in to EMS through VGA connection for non-Portwell servers

Before you begin

Connect the monitor to EMS through a VGA cable. Connect a keyboard to EMS.

Procedure

1. Press Enter to establish a communications connection.

The system prompts you to enter the username and password.

2. Enter your username and password, and press Enter.

Logging in to the EMS using SSH

Procedure

- 1. Log in to SSH client using PuTTy.
- 2. Type the IP address for Avaya SBCE.
- 3. Specify the port as 222.
- 4. Select the connection type as SSH and press Enter.
- 5. Enter the user name and password to log in.



Note:

You cannot gain access to shell with user account ucsec.

User account ipcs or user accounts that have shell access can be used for logging in to Avaya SBCE.

Chapter 9: Resources

Documentation

The following table lists the documents related to this product. Download the documents from the Avaya Support website at http://support.avaya.com

Title	Description	Audience	
Design	Design		
Avaya Session Border Controller for Enterprise Overview and Specification	High-level functional and technical description of characteristics and capabilities of the Avaya SBCE.	Sales engineers, solution architects, and implementation engineers	
Avaya Session Border Controller for Enterprise Release Notes	Describes any last minute changes to the product, including patches, installation instructions, and upgrade instructions.	Sales and deployment engineers, solution architects, and support personnel	
Avaya Solutions Platform Overview and Specification	Describes the key features of Avaya Solutions Platform servers.	IT Management, sales and deployment engineers, solution architects, and support personnel	
Implementation			
Deploying Avaya Session Border Controller for Enterprise on a Hardware Platform	Describes how to plan and deploy an Avaya SBCE system on the supported set of hardware servers.	Sales and deployment engineers, solution architects, and support personnel	
Deploying Avaya Session Border Controller for Enterprise on a Virtualized Environment Platform	Describes how to plan and deploy an Avaya SBCE system on customer-provided VMware servers.	Sales and deployment engineers, solution architects, and support personnel	
Deploying Avaya Session Border Controller for Enterprise on an Avaya Aura® Appliance Virtualization Platform	Describes how to plan and deploy an Avaya SBCE system on a virtualized appliance.	Sales and deployment engineers, solution architects, and support personnel	

Table continues...

Title	Description	Audience
Deploying Avaya Session Border Controller for Enterprise on an Amazon Web Services Platform	Describes how to plan and deploy an Avaya SBCE system on Amazon Web Services.	Sales and deployment engineers, solution architects, and support personnel
Deploying Avaya Session Border Controller for Enterprise on a Microsoft® Azure Platform	Describes how to plan and deploy an Avaya SBCE system on a Microsoft [®] Azure platform.	Sales and deployment engineers, solution architects, and support personnel
Avaya Session Border Controller for Enterprise Port Matrix	Describes the incoming and outgoing port usage required by the product.	Sales and deployment engineers, solution architects, and support personnel
Upgrading Avaya Session Border Controller for Enterprise	Describes how to upgrade to the latest release of Avaya SBCE.	Sales and deployment engineers, solution architects, and support personnel
Installing the Avaya Solutions Platform 110 Appliance	Describes how to install Avaya Solutions Platform 110 Appliance servers.	Sales and deployment engineers, solution architects, and support personnel
Administration		
Administering Avaya Session Border Controller for Enterprise	Describes configuration and administration procedures.	Implementation engineers and administrators
Maintenance and Troubleshooting		
Maintaining and Troubleshooting Avaya Session Border Controller for Enterprise	Describes troubleshooting and maintenance procedures for Avaya SBCE.	Implementation engineers
Maintaining and Troubleshooting Avaya Solutions Platform 110 Appliance	Describes procedures to maintain and troubleshoot Avaya Solutions Platform 110 Appliance servers.	Implementation engineers
Using		
Working with Avaya Session Border Controller for Enterprise and Microsoft® Teams	Describes how to set up, maintain, and use Avaya SBCE with Microsoft Teams.	Implementation engineers and administrators
Working with Avaya Session Border Controller for Enterprise Multi-Tenancy	Describes how to set up, maintain, and use the Avaya SBCE Multi-tenancy feature.	Implementation engineers and administrators
Working with Avaya Session Border Controller for Enterprise Geographic-Redundant Deployments	Describes how to set up, maintain, and use the Avaya SBCE Geographic-redundant deployment feature.	Implementation engineers and administrators

For Dell documentation, go to https://www.dell.com/support/.

For HP documentation, go to https://www.hpe.com/support.

For Portwell documentation, go to https://portwell.com/.

Finding documents on the Avaya Support website

Procedure

- 1. Go to https://support.avaya.com.
- 2. At the top of the screen, type your username and password and click **Login**.
- 3. Click Support by Product > Documents.
- 4. In **Enter your Product Here**, type the product name and then select the product from the list.
- 5. In **Choose Release**, select the appropriate release number.

The **Choose Release** field is not available if there is only one release for the product.

6. In the **Content Type** filter, click a document type, or click **Select All** to see a list of all available documents.

For example, for user guides, click **User Guides** in the **Content Type** filter. The list only displays the documents for the selected category.

7. Click Enter.

Accessing the port matrix document

Procedure

- 1. Go to https://support.avaya.com.
- 2. Log on to the Avaya website with a valid Avaya user ID and password.
- 3. On the Avaya Support page, click **Support by Product > Documents**.
- 4. In **Enter Your Product Here**, type the product name, and then select the product from the list of suggested product names.
- 5. In **Choose Release**, select the required release number.
- 6. In the **Content Type** filter, select one or both the following categories:
 - Application & Technical Notes
 - Design, Development & System Mgt

The list displays the product-specific Port Matrix document.

7. Click Enter.

Avaya Documentation Center navigation

For some programs, the latest customer documentation is now available on the Avaya Documentation Center website at https://documentation.avaya.com.

! Important:

For documents that are not available on Avaya Documentation Center, click **More Sites** > **Support** on the top menu to open https://support.avaya.com.

Using the Avaya Documentation Center, you can:

Search for keywords.

To filter by product, click **Filters** and select a product.

· Search for documents.

From **Products & Solutions**, select a solution category and product, and then select the appropriate document from the list.

- Sort documents on the search results page.
- Click **Languages** (((a)) to change the display language and view localized documents.
- Publish a PDF of the current section in a document, the section and its subsections, or the entire document.
- Add content to your collection using My Docs (☆).

Navigate to the **Manage Content > My Docs** menu, and do any of the following:

- Create, rename, and delete a collection.
- Add topics from various documents to a collection.
- Save a PDF of the selected content in a collection and download it to your computer.
- Share content in a collection with others through email.
- Receive collection that others have shared with you.
- Add yourself as a watcher using the Watch icon (

Navigate to the **Manage Content > Watchlist** menu, and do the following:

- Enable **Include in email notification** to receive email alerts.
- Unwatch selected content, all content in a document, or all content on the Watch list page.

As a watcher, you are notified when content is updated or deleted from a document, or the document is removed from the website.

- Share a section on social media platforms, such as Facebook, LinkedIn, and Twitter.
- Send feedback on a section and rate the content.

Note:

Some functionality is only available when you log in to the website. The available functionality depends on your role.

Training

The following courses are available on the Avaya Learning website at www.avaya-learning.com. After logging into the website, enter the course code or the course title in the Search field and click Go to search for the course.

Note:

Avaya training courses or Avaya learning courses do not provide training on any third-party products.

Course code	Course title
20600W	Avaya SBCE 8.1.x Technical Delta
21098W	Avaya SBCE 8.0.x Technical Delta
20660W	Administering Avaya SBCE Release 8 for SIP Trunking
60660W	Administering Avaya SBCE Release 8 for Remote Worker
20660T	Administering Avaya SBCE Release 8 Test
20800C	Implementing and Supporting Avaya SBCE — Platform Independent
20800T	Avaya SBCE Platform Independent and Support Test
20800V	Implementing and Supporting Avaya SBCE — Platform Independent
26160W	Avaya SBCE Fundamentals
7008T	Avaya SBCE for Midmarket Solutions Implementation and Support Test
7008W	Avaya SBCE for Midmarket Solutions Implementation and Support
2035W	Avaya Unified Communications Roadmap for Avaya Equinox Clients
43000W	Selling Avaya Unified Communications Solutions
71300	Integrating Avaya Communication Applications
72300	Supporting Avaya Communication Applications

Viewing Avaya Mentor videos

Avaya Mentor videos provide technical content on how to install, configure, and troubleshoot Avaya products.

About this task

Videos are available on the Avaya Support website, listed under the video document type, and on the Avaya-run channel on YouTube.

- To find videos on the Avaya Support website, go to https://support.avaya.com/ and do one of the following:
 - In Search, type Avaya Mentor Videos, click Clear All and select Video in the Content Type.
 - In Search, type the product name. On the Search Results page, click Clear All and select **Video** in the **Content Type**.

The **Video** content type is displayed only when videos are available for that product.

In the right pane, the page displays a list of available videos.

- To find the Avaya Mentor videos on YouTube, go to www.youtube.com/AvayaMentor and do one of the following:
 - Enter a key word or key words in the Search Channel to search for a specific product or
 - Scroll down Playlists, and click a topic name to see the list of videos available for the topic. For example, Contact Centers,



Note:

Videos are not available for all products.

Support

Go to the Avaya Support website at https://support.avaya.com for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes. downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to guestions, or request an agent to connect you to a support team if an issue requires additional expertise.

Appendix A: BIOS recommendations

Changing boot mode for HP DL360 G9

About this task

By default, boot mode is set to UEFI Mode. The boot mode must match the operating system installation. For HP DL360 G9, you must change the boot options to Legacy BIOS mode. If you do not change the boot mode, the server might not boot to the installed operating system.

Procedure

- 1. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Boot Options > Boot Mode and press Enter.
- 2. Select Legacy BIOS Mode and press Enter.

This boot mode configures the system to boot to a traditional operating system in Legacy BIOS compatibility mode.

- 3. Press F10 to save your selection.
- 4. Reboot the server for the change to take effect.

Configuring BIOS settings for HP DL360 G9

About this task

In addition to the settings for boot mode, the BIOS settings recommended for HP DL360 G9 are different from the settings for other HP ProLiant servers. For the recommended BIOS settings for other HP ProLiant servers, see the HP ProLiant Servers section.

Procedure

1. Configure the server with RAID 1.

The HP DL360 G9 is shipped without any RAID configuration.

- 2. From the System Utilities screen, select **System Configuration > BIOS/Platform Configuration (RBSU)**.
- 3. Enable Intel Hyperthreading Options.
- 4. Set the HP Power Profile to Maximum Performance.

- 5. Disable Intel Turbo Boost Technology.
- 6. Disable ACPI Slit Preferences.
- 7. Disable Virtualization Technology.
- 8. Disable Intel VT-d.

Changing boot mode for Avaya Solutions Platform 110 Appliance

About this task

By default, boot mode is set to UEFI Mode. The boot mode must match the operating system installation.

Procedure

- From the System Setup screen, navigate to System BIOS > System BIOS Settings > Boot Settings.
- 2. Select BIOS in the **Boot Mode** option and press Enter.
- 3. Enable Boot Sequence Retry and Disable Hard-Disk Failover.
- 4. Reboot the server for the change to take effect.

Configuring a server with RAID 10 for Avaya Solutions Platform 110 Appliance

Procedure

- 1. Navigate to System BIOS Settings > System Profile Settings.
- In System Profile select Performance.
- 3. Create a virtual disk by selecting RAID Level as **RAID 10**.
- 4. Click **Select Physical Disks** to configure the virtual disk parameters.
- 5. Select **Select All** check box to use the available physical disks to create the logical disk.
- 6. Click Apply Changes to save the changes.
- 7. Click Create Virtual Disk and save the changes.

Configuring BIOS settings for Avaya Solutions Platform 110 Appliance

Procedure

- 1. Configure the server with RAID 10.
- 2. From the System Utilities screen, select System BIOS Settings > Processor Settings.
- 3. Enable Logical Processor.
- 4. Set the CPU Interconnect Speed to Maximum data rate..
- 5. Disable Virtualization Technology.
- 6. Enable Adjacent Cache Line Prefetch.
- 7. Enable Hardware Prefetcher.
- 8. Enable DCU Streamer Prefetcher.
- 9. Disable Sub NUMA Cluster.
- 10. Enable UPI Prefetch.
- 11. Disable Dell Controlled Turbo.

Dell PowerEdge Server

The following are the BIOS recommendations for Dell PowerEdge Servers supported by Avaya SBCE:

When the Dell server starts, press F2 to display the system setup options.

- Set the Power Management Mode to **Maximum Performance**.
- Set the CPU Power and Performance Management Mode to Maximum Performance.
- In Processor Settings, set:
 - Turbo Mode to enable.
 - C States to disabled.

HP ProLiant G8 and G9 Servers

The following are the recommended BIOS settings for the HP ProLiant G8 and G9 servers:

• Set the Power Regulator Mode to **Static High Mode**.

- Disable Processor C-State Support.
- Disable Processor C1E Support.
- Disable QPI Power Management.
- Enable Intel Turbo Boost.

Changing boot mode for Portwell CAF-0251 server

About this task

The boot mode must match the operating system installation.

Procedure

- From the System Setup screen, navigate to System BIOS > System BIOS Settings > Boot Settings.
- 2. Select Boot option and press Enter.
- 3. Set the **Setup Prompt Timeout** to **5**.
- 4. Set the Bootup Numlock State to On.
- 5. Disable Quiet Mode.
- 6. Set the Boot mode select to Legacy..
- 7. Set the **Fixed Boot Order** Priorities as follows:
 - Boot Option #1: USB Key
 - Boot Option #2 : Hard Disk: SATADOM
 - Boot Option #3 : Network:IBA GE Slot
 - Boot Option #4: USB Hard Disk
 - Boot Option #5 : CD/DVD
 - Boot Option #6 : eMMC: MMC Q2J54A
 - Boot Option #7: USB CD/DVD
 - Boot Option #8: USB Floppy
 - Boot Option #9: USB Lan
- 8. Reboot the server for the change to take effect.

Important:

You must use serial port 2 that is COM2 to install Avaya SBCE on CAF-0251 server.

Configuring BIOS settings for Portwell CAF-0251 server Procedure

- 1. From the System Utilities screen, select **System BIOS Settings > Advanced**.
- 2. Select **Console Redirection Settings** to configure the serial port and do the following:
 - a. Set the **Terminal Type** to **VT100+**.
 - b. Set the Bits per second to 19200.
 - c. Set the Data Bits to 8.
 - d. Set the Parity to None.
 - e. Set the **Stop Bits** to **1**.
 - f. Set the Flow Control to None.
 - g. Enable VT-UTF8 Combo Key Sup.
 - h. Disable Recorder Mode.
 - i. Disable Resolution 100*31.
 - j. Set the **Putty KeyPad** to **VT100**.

Appendix B: Acronyms and abbreviations

This appendix contains an alphabetical list of Avaya-specific acronyms and abbreviations used in this manual.

Acronym	Definition
CLI	Command Line Interface
СМ	Call Manager
CS	Call Server
EMS	Element Management System
GARP	Gratuitous Address Resolution Protocol
НА	High-Availability
NOC	Network Operations Center
POP	Point-of-Presence
RCDD	Registered Communications Distribution Designer
SBCE	Session Border Controller for Enterprise

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