



Installing the Avaya Equinox Streaming and Recording Server

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Chapter 1: Introduction

Purpose

This document contains information about how to perform Avaya Equinox Streaming and Recording Server administration tasks, including how to use management tools, how to manage data and security, and how to perform periodic maintenance tasks. This document is intended for people who perform Equinox Streaming and Recording system administration tasks such as backing up and restoring data and managing users.

Chapter 2: Introducing Avaya Equinox Streaming and Recording

New in this release

Use this Avaya Equinox Streaming and Recording Server release to:

- Maintain a high resolution for broadcasts

Avaya Equinox Streaming and Recording Server

For the streaming and recording of conferences, Avaya has developed the Avaya Equinox Streaming and Recording Server (Equinox Streaming and Recording). Equinox Streaming and Recording is the Avaya next generation HD streaming and recording platform. The Avaya Equinox Streaming and Recording Server replaces the Avaya Scopia Content Center Recording Server (SCC) server.

Before you install Equinox Streaming and Recording, you must make a number of decisions in order to ensure that the solution exactly matches the requirements of your deployment. For example, you must make a decision about scalability in accordance with the size of your enterprise. For a small enterprise, you can choose a single appliance which houses all of the Equinox Streaming and Recording components. For a large enterprise, you can choose a distributed solution with multiple media nodes. Equinox Streaming and Recording is highly flexible and easily adaptable, whatever your requirements. In addition, you must decide if you require a high degree of redundancy¹ and whether you would like to enable external access and storage in the 'cloud'. In both the Over The Top (OTT) and Team Engagement (TE) solutions, Equinox Streaming and Recording is optional, however if you want to record and playback videoconferences, you must install it.

If you would like users outside of the enterprise to access recordings, you can deploy Equinox Streaming and Recording in a Demilitarized Zone (DMZ) or use a reverse proxy server. In this way, the Equinox Streaming and Recording is similar to the Avaya Scopia® Web Collaboration server (WCS). If you would like users outside of the enterprise to access the videoconference, you must deploy the WCS in a DMZ or use a reverse proxy server. Equinox Streaming and Recording and WCS also support a Network Address Translation NAT Firewall configuration in a DMZ deployment. NAT Firewall is an additional layer of security. It blocks unrequested inbound traffic.

¹ High Availability is not supported for the Manager in this release. High Availability is not supported for All-in-one servers.

Components

The Equinox Streaming and Recording consists of the following components:

- Equinox Streaming and Recording Conference Point™ (CP)
- Equinox Streaming and Recording Delivery Node™ (DN)
- Equinox Streaming and Recording Virtual Delivery Node™ (VDN)
- Equinox Streaming and Recording Manager™
- Avaya Equinox Recording Gateway™

Equinox Streaming and Recording Conference Point™

You must configure a conference point to capture H.323 video content and deliver live and on demand webcasting. The Equinox Streaming and Recording conference point includes an embedded transcoder to convert H.323 calls into Windows Media or .MP4 format.

Each conference point must be associated with a delivery node. A delivery node streams and optionally archives the content captured by the conference point and delivers it to client systems.

You can configure a conference point to be in a geographic location. This means that you can assign a location to one or more conference points which coincide with locations set for Scopia Elite MCUs and/or Equinox Media Servers in Equinox Management. When a program starts, Equinox Management includes the desired location, and a conference point close to the MCU/Media Server can be selected. If there are no conference points matching the location passed by Equinox Management, then any conference points without a location are treated as a single pool of conference points, and one of those is selected. If there are no conference points available, the call fails.

Each conference point has a limit to the number of simultaneous high definition or standard definition calls it can handle.

The CP includes the following features:

- Video conferencing H.323 capture and transcoding
- High definition support
- Scalability for up to 40 480p, or up to 60 360p recordings, or 75 audio-only recordings
- G.711 and AAC-LC audio capture and transcoding
- H.263, H.263+, H.264 capture and transcoding

The media node or all-in-one server can include the CP and transcoder components. The H.323 video and audio and the optional H.239 stream received by the CP are sent to the internal encoder for transcoding into Windows Media™ format or H.264/AAC MP4/MPEGTS/HLS formats.

- Operating Systems: The transcoder runs on the Windows Server 2012 R2 64-bit operating system with Hyper-V (an add-on to Windows Server 2012 that allows a Linux operating system to run on the same server). The CP runs on the CentOS 6.6 64-bit operating system. Using virtualization software, this enables both applications to run two different operating systems on the same server.
- Licensing: The server requires a single media node license for the CP. The license defines the number of simultaneous H.323 connections. An H.323 connection includes audio, video, and an optional H.239 secondary stream.

- Transcoding H.323 audio and Video: The CP connects H.323 calls to the Scopia Elite MCUs (Multipoint Control Units) and/or Equinox Media Servers. When it establishes a video connection, the CP sends the audio and video data from the MCU/Media Server to the internal transcoder. The transcoder converts the data into a format that is suitable for streaming.
- Transcoding with H.239: H.239 is an ITU recommendation that allows for establishment of multiple channels within a single H.323 session. Existing videoconference equipment can be used to stream audio and video and a secondary channel can stream a slide presentation or another data stream to the viewers of a program. This function is typically used to stream slide presentations synchronized with live audio and video. If a program uses a secondary H.239 channel, the encoder inputs the second stream, decodes, scales and mixes it with the main video input for transcoding/streaming. The streams are then sent to the DN for delivery to the distribution network. The dual stream can also be recorded as a single MP4 program.
- High definition support: The CP supports high definition video and higher rate streaming quality and bandwidth. The CP supports the following ITU recommendations:
 - H.261 up to CIF Video
 - H.262 up to CIF video
 - H.263 up to CIF video
 - H.264 up to 1080p video
 - H.263+ up to 1024 x 768 H.239 data
 - H.264 up to 1080p H.239 data
 - G.711 audio
 - AAC-LC audio

The CP negotiates up to H.264 Level 3.2 video at 1.92 Mbps, and accepts up to 1080p and down to H.261 QCIF along with G.711 or AAC-LC audio. The streaming resolution and bandwidth rate depend on what you select for the bitrate when creating the program and what the Scopia Elite MCU and/or Equinox Media Server negotiates.

Equinox Streaming and Recording Delivery Node™

The DN provides on-demand and broadcast video delivery. Used alone or in a hierarchy of devices, the DN supports thousands of concurrent streams. The DN uses intelligent routing, content caching, and inherent redundancy to ensure transparent delivery of high-quality video.

Delivery nodes (DN) store all content that is created by the conference point and deliver the content to client systems at playback time. You must associate the conference point with the delivery nodes. A source DN is the original DN that receives a recording file from its associated conference point. A source DN sends the recording file to all of the other DNs in the network.

The Delivery Node Details dialog displays a list of recording files, known as **Source Programs** and **Distributed Programs**. Source programs are programs (recording files) for which this delivery node is the main source for storage. Distributed programs are programs which other delivery nodes have forwarded to this delivery node.

Equinox Streaming and Recording Virtual Delivery Node™ (VDN)

A virtual delivery node (VDN) delivers content to a global content delivery network (CDN) provider for cloud-based viewer playback. The appliance and the network of the CDN act as one delivery mechanism. Therefore, the VDN appliance and the CDN together create the Equinox Streaming and Recording VDN solution.

Upon program creation, the publisher includes the options of distributing the program to delivery nodes and to the Equinox Streaming and Recording VDN solution. VDN supports publishing recordings as well as live broadcast.

You can view the programs distributed to the VDN appliance and to be delivered to the CDN with the associated status of the program.

Equinox Streaming and Recording currently only supports the Highwinds Cloud CDN.

Equinox Streaming and Recording Manager™

The Equinox Streaming and Recording Manager provides a web-based interface to configure and manage streaming and recording software, devices, services, and users. The Equinox Streaming and Recording Manager application resides on a single hardware platform and provides access to all content in the Equinox Streaming and Recording environment.

There are two Equinox Streaming and Recording Manager portals:

- Equinox Streaming and Recording Manager Administrator Portal: Administrators use this portal to perform the following tasks:
 - Configure and manage video communications devices
 - Manipulate content
 - Monitor user roles
 - Create and set global policies
 - Identify best practices and usage effectiveness through comprehensive reporting
 - Allow access to the VDN for CDN deployment or programs
 - Manage organizations, in a multi-tenant deployment (including what profiles, categories and CDN settings they can access)
 - Create and manage viewer mappings to associate viewers with the appropriate distribution node location
- Avaya Equinox Unified Portal: Viewers select the **Recordings and Events** tab on the main Avaya Equinox Unified Portal page to access the viewer portal. Users can select the **Schedule** tab to schedule an event. Users can perform the following tasks in relation to recordings:
 - View programs
 - Navigate categories
 - View live or on-demand programs

Avaya Equinox Recording Gateway™

You can configure Equinox Streaming and Recording to record:

- Audio-only conferences
- Audio and web collaboration conferences
- Video, audio, and web collaboration conferences

Audio-only and audio and web collaboration conferences use SIP. Video, audio, and web collaboration conferences use H.323. In order to support this mix of protocols, you must deploy a Avaya Equinox Recording Gateway. You can deploy the Avaya Equinox Recording Gateway using the Avaya Equinox Management interface. The Avaya Equinox Recording Gateway is similar to an Avaya Equinox Media Server but does not accept regular client connections and is only used for

recording purposes. When you add the media server (MCU) configured for high scale audio, you get two additional meeting types - Audio Service and Audio Service with Web Collaboration. Each meeting type is also matched to a particular rate of encoding and screen resolution. This means that recordings do not use unnecessary resources and disk space if they are not required by the meeting type.

When a user records a conference, Avaya Equinox Management identifies the type of recording that is required by the user. It routes the media to the appropriate gateway, if one is required. Avaya Equinox Management also determines the most appropriate capture rate, resolution, frame rate, and encode rate for the Equinox Streaming and Recording Conference Point.

The Avaya Equinox Recording Gateway does not require a separate license. When you buy a media node, you receive an Avaya Equinox Recording Gateway as well. For more information on adding the gateway to Avaya Equinox Management and for information on configuring the meeting types, see *Administering Avaya Equinox Management*, which is available on support.avaya.com.

Related links

[Example of a direct DMZ deployment](#) on page 12

[Example of a high performance audio deployment](#) on page 14

[Example of a reverse proxy deployment](#) on page 14

[Example of a distributed deployment](#) on page 15

[Example of a cloud deployment](#) on page 18

[Scalability](#) on page 18

[The Avaya Common Server and customer-provided servers](#) on page 20

[The pre-installed demonstration port and additional licenses](#) on page 21

[System requirements](#) on page 22

[Minimum specifications](#) on page 23

Example of a direct DMZ deployment

[Figure 1: Example of a Direct DMZ Deployment](#) on page 13 displays an example of a Equinox Streaming and Recording deployment that is situated directly in the demilitarized zone (DMZ). The deployment is a centralized or all-in-one solution, which means that all of the Equinox Streaming and Recording components reside on a single server. An all-in-one solution is suitable for a small or medium deployment that does not require redundancy.

In a typical small deployment, all of the Equinox Streaming and Recording components reside on a single server. The Equinox Streaming and Recording Manager and the transcoder run directly on the host server. The conference point (CP), delivery node (DN), and, optionally, a virtual delivery node (VDN) run as virtual servers. VDNs enable enterprises to host recordings in the cloud.

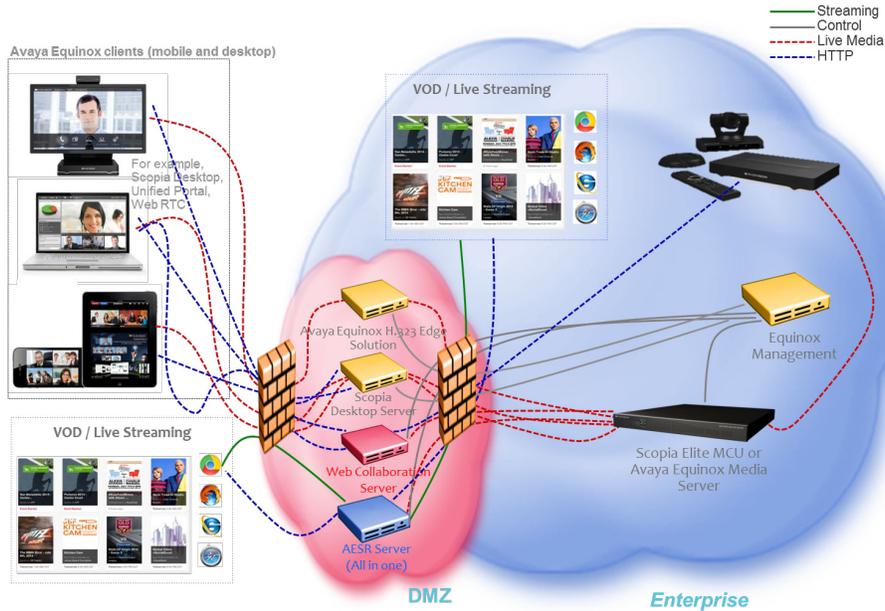


Figure 1: Example of a Direct DMZ Deployment



Figure 2: Components in an All-In-One Deployment with Virtual Software

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

Example of a high performance audio deployment

[Figure 3: Example of a High Performance Audio Deployment](#) on page 14 displays an example of a Equinox Streaming and Recording deployment that includes high performance audio. The deployment has audio and collaboration.

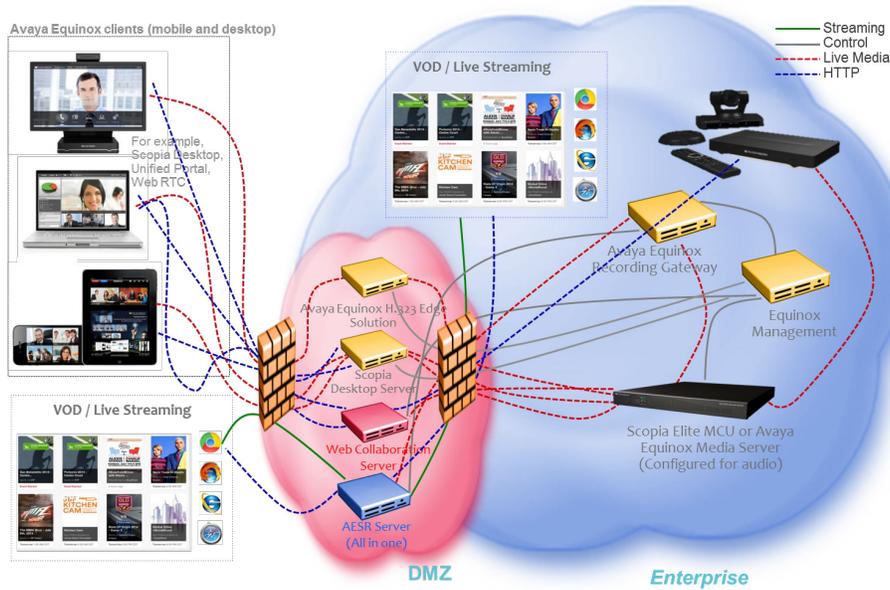


Figure 3: Example of a High Performance Audio Deployment

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

Example of a reverse proxy deployment

[Figure 4: Example of a Reverse Proxy Deployment](#) on page 15 displays an example of a Equinox Streaming and Recording deployment that includes a reverse proxy server. The deployment is a centralized or all-in-one solution.

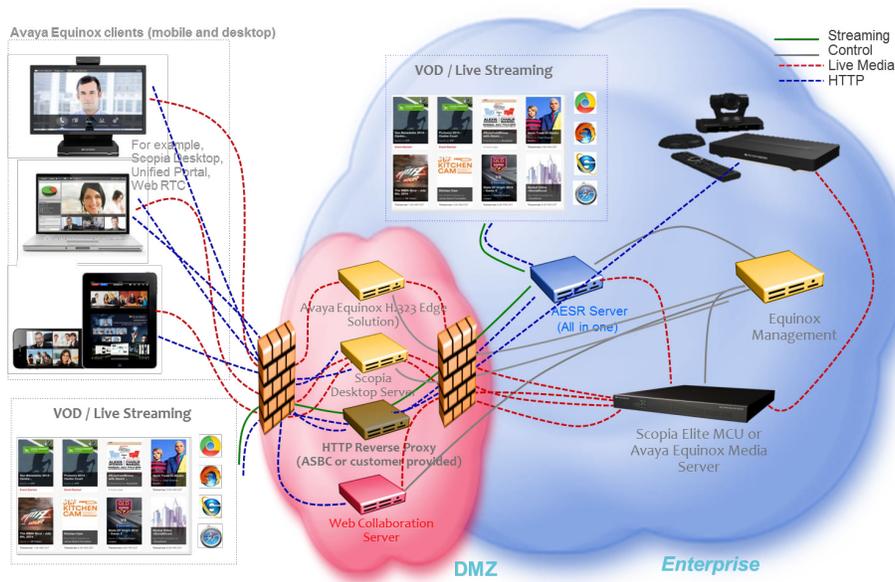


Figure 4: Example of a Reverse Proxy Deployment

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

Example of a distributed deployment

[Figure 5: Example of a Distributed Deployment](#) on page 16 displays an example of a distributed Equinox Streaming and Recording deployment. The deployment also uses a reverse proxy server. In this example, there are several delivery nodes (DNs) and/or conference points (CPs). This configuration enables Equinox Streaming and Recording to host large numbers of recordings. A configuration with multiple media nodes can also provide redundancy.

In a typical distributed deployment, the Equinox Streaming and Recording Manager resides on a separate, dedicated server. The various media nodes can operate as CPs, DN, or virtual delivery nodes (VDNs). VDNs enable enterprises to host recordings in the cloud.

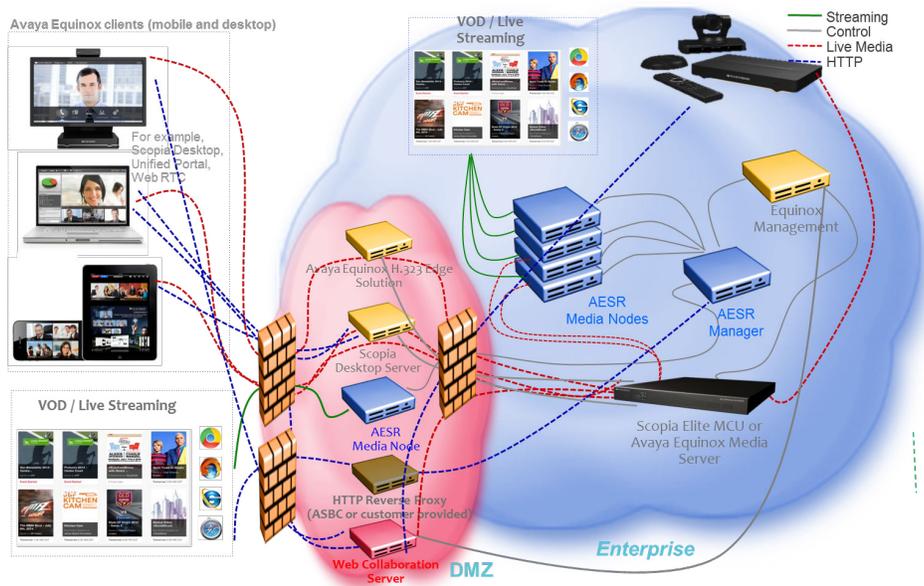


Figure 5: Example of a Distributed Deployment

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

[Deployment choices for centralized and distributed solutions](#) on page 16

Deployment choices for centralized and distributed solutions

The Equinox Streaming and Recording server performs three functions:

- Content recording
- Content delivery
- Content management

Content delivery, in this context, refers to streaming.

When you run the configuration utility (or *wizard*), you choose between three deployment options for the Avaya Equinox Streaming and Recording Server (Equinox Streaming and Recording). You can choose to house all three functions on a single server. Alternatively, you can choose to house the management function on one server and the recording and delivery functions on another server or servers. This configuration involving multiple servers is called a distributed system.

If you intend to house all three functions on a single server, you must run the configuration utility on that server. On the selection screen, you must choose **All-in-One**.

If you intend to install a distributed system, you must run the configuration utility on each server in the system. On the selection screen, you must choose whether the server will house the content management or the recording and delivery functions.

Related links

[Example of a distributed deployment](#) on page 15

[All-in-one](#) on page 17

[Content Management components only](#) on page 17

[Media Node only](#) on page 17

All-in-one

If your Equinox Streaming and Recording deployment is an all-in-one system, all Equinox Streaming and Recording components reside on a single server.

Related links

[Deployment choices for centralized and distributed solutions](#) on page 16

Content Management components only

If your Equinox Streaming and Recording deployment is a distributed system, the Equinox Streaming and Recording components reside on multiple servers. You must install the content management components on one server and install the recording and delivery components on another server or servers.

For a distributed system, you must run the Equinox Streaming and Recording Configuration Utility on each of the servers. When you are running the configuration utility on the server which will act as the content management server, you must select **Content management components only** on the Select Configuration dialog of the configuration wizard.

Related links

[Deployment choices for centralized and distributed solutions](#) on page 16

Media Node only

If your Equinox Streaming and Recording deployment is a distributed system, the Equinox Streaming and Recording components reside on multiple servers. You must install the content management components on one server and install the recording and delivery components on another server or servers.

For a distributed system, you must run the Equinox Streaming and Recording Configuration Utility on each of the servers. You can install the recording component on one server and the delivery component on another server. Alternatively, you can install both aspects on a single server. In this distributed configuration, these servers act as media nodes. When you are running the configuration utility on a server which will act a media node, you must select **Media Node only** on the Select Configuration dialog of the configuration wizard.

A media node that is used for the recording component is called a Conference Point (CP).

A media node that is used for the delivery component is called a Delivery Node (DN).

Related links

[Deployment choices for centralized and distributed solutions](#) on page 16

Example of a cloud deployment

[Example of a cloud deployment](#) on page 18 displays an example of an Equinox Streaming and Recording deployment that hosts recordings in the cloud. The deployment is a centralized or all-in-one solution that uses a reverse proxy server. A cloud deployment uses a virtual delivery node (VDN) to host recordings remotely.

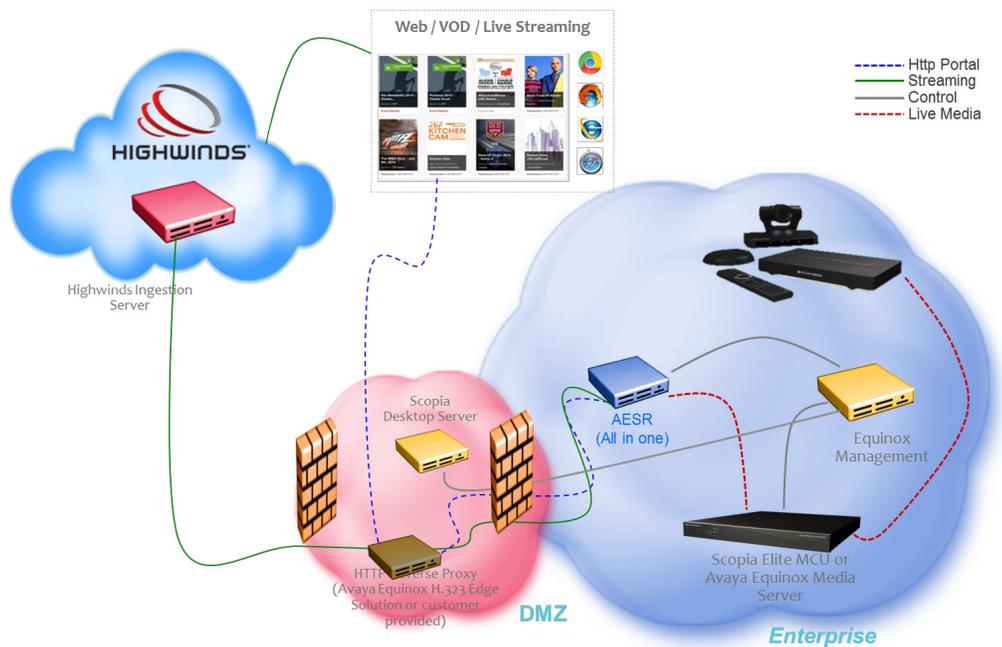


Figure 6: Example of a Cloud Deployment

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

Scalability

Introduction

The Equinox Streaming and Recording is installed on a Dell™ PowerEdge™ R620, Dell™ PowerEdge™ R630, or HP ProLiant DL360 G9 server, provided by Avaya. Alternatively, you can purchase a Microsoft™ Windows Image (WIM) and install Equinox Streaming and Recording on your own server. If you are providing your own server, the specifications must match those of the Avaya-provided servers. For more information about obtaining and installing the Equinox Streaming and

Recording WIM, see the *Equinox Streaming and Recording Disaster Recovery Guide*, which is available from support.avaya.com.

*** Note:**

The Avaya-provided servers: Dell™ PowerEdge™ R620, Dell™ PowerEdge™ R630, and HP ProLiant DL360 G9 are often referred to as the Avaya Common Server(s).

Recording (Dell™ PowerEdge™ R620)

Equinox Streaming and Recording supports up to 10 high definition (1080p) or 30 standard definition (480p) recordings with H.239 simultaneously. The system negotiates high definition whenever possible.

The resolution negotiated is based on the configuration of the MCU/Media Server service as well as the Equinox Streaming and Recording profile. By limiting the profile to 480p or less, you can do 30 simultaneous recordings (trading off higher quality recordings versus the ability to do more recordings).

Equinox Streaming and Recording supports a mix of resolutions, and can do three standard definition calls for every one high definition call. So, for example, if the system is licensed for 10 concurrent recordings, you can do any of the combinations of calls in [Table 1: Call Combinations on the Dell PowerEdge R620](#) on page 19.

Table 1: Call Combinations on the Dell™ PowerEdge™ R620

High Definition	Standard Definition
0	30
1	27
2	24
3	21
4	18
5	15
6	12
7	9
8	6
9	3
10	0

Recording (Dell™ PowerEdge™ R630 and HP ProLiant DL360 G9)

The Dell™ PowerEdge™ R630 and HP ProLiant DL360 G9 (or Avaya-approved equivalent²) offers higher scalability than the Dell™ PowerEdge™ R620. When the CP is configured on an all-in-one server or when it is configured with a DN, Equinox Streaming and Recording supports 20 high definition and 50 low definition simultaneous recordings. These values are an increase from 10 high definition and 30 low definition in a Dell™ PowerEdge™ R620 deployment, as listed in [Table 2: Concurrent recordings on the Dell PowerEdge R630 and HP ProLiant DL360 G9](#) on page 20.

² For more information on supported servers, contact Avaya using <https://support.avaya.com>.

When the CP is on a separate server, it offers even higher scalability with 40 medium definition and 60 low definition simultaneous recordings.

Table 2: Concurrent recordings on the Dell™ PowerEdge™ R630 and HP ProLiant DL360 G9

	CP-only	All-in-one or with a DN
1080p	10	10
720p	20	20
480p	40	30
360p	60	50

Playback

On a standalone media node configured for DN only, Equinox Streaming and Recording supports up to 3,500 viewers at 720p / 768K for live broadcast or video on demand playback simultaneously.

On all-in-one servers or media nodes configured with DN and CP, Equinox Streaming and Recording supports up to 1,500 viewers at 720p / 768K for live broadcast or video on demand playback simultaneously.

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

[Dell R630 server specifications](#)

[HP ProLiant DL360 G9 Server specifications](#) on page 40

The Avaya Common Server and customer-provided servers

The Avaya-provided servers: Dell™ PowerEdge™ R620, Dell™ PowerEdge™ R630, and HP ProLiant DL360 G9 are often referred to as the Avaya Common Server(s).

The Avaya Equinox Streaming and Recording Server Configuration Utility launches automatically when the operating system is loaded for the first time. You can also run the configuration utility at any time from the Start menu or from the desktop shortcut. The Avaya Equinox Streaming and Recording Server Configuration Utility can detect the size of the disk and can identify whether it is a high end server or a low end server. It will allocate the appropriate amount of virtual processors to each of the virtual machines (VMs). Similarly, it will allocate the appropriate amount of RAM to each of the virtual machines. In both cases, the Avaya Equinox Streaming and Recording Server Configuration Utility assumes that the total amount of available processors can be variable, so that it can accommodate deployments that use customer-provided hardware with the Equinox Streaming and Recording WIM. To maximize the space available for the storage of recordings, the Avaya Equinox Streaming and Recording Server Configuration Utility allocates the minimum space to the host and the maximum space to the delivery node. If the Avaya Equinox Streaming and Recording Server Configuration Utility detects that the server does not meet the minimum requirements, it will display an information message and a limited set of options. For example, if it detects a low end server, it will only allow the installation of the delivery node (DN) software and it will prevent the installation of a centralized or all-in-one solution.

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

The pre-installed demonstration port and additional licenses

License Ports	CP Only	1080p	720p	480p	360p and Below
1*	No	1	1	1	1
5	No	5	10	15	25
10	No	10	20	30	50
10**	Yes	10	20	40	60

*

The pre-installed demo port is available on the Equinox Streaming and Recording appliance-only, after unpacking the server and before any license is entered. That is to say, it is available when you buy your hardware (Common Server 3) from Avaya. It is not available for the Windows Imaging Format (WIM) that you install when you provide your own hardware.

*** Note:**

When you enter an All-in-one 5 port license or a Manager license or a Media Node license on an Equinox Streaming and Recording appliance, the license replaces and erases the pre-installed demo port on the appliance. As a result, the only possible numbers of recording ports available on an Equinox Streaming and Recording appliance are either 1 (pre-installed demo port), 5 or 10.

**

Avaya distinguishes between an All-in-one server and a distributed Media Node. You can configure a distributed Media Node for any of the following combinations:

- Both recording and streaming processing. In this case, it provides a recording capacity as shown on row 3 of the table. Row 3 is also the recording capacity of an All-in-one server on which two All-in-one 5 port licenses have been entered. Streaming capacity in both cases is up to 1,500 viewers (live or playback from up to 400 differing content source videos).
- Only recording (shown Conferencing Point (CP) only on the table above). No streaming. It provides a recording capacity as shown on row 4 of the table above.
- Only streaming. No recording. Streaming capacity in this case is up to 3,500 viewers (live or playback from up to 400 differing content source videos). The fourth row is a media node only (distributed deployment) configured for recording only.

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

System requirements

Before you log on to Equinox Streaming and Recording Manager administration pages, your client system must meet the system requirements listed in [Table 3: Requirements](#) on page 22.

Table 3: Requirements

Component	Requirement
Operating system	<ul style="list-style-type: none"> • Mac OS X 10.7 (Lion) or later • Windows Vista™ • Windows 20XX • Windows 7™ (32 and 64 Bit) • Windows 8™ • Windows 10™
Web browser	<ul style="list-style-type: none"> • Microsoft Internet Explorer 8.0™ or later • Microsoft Edge™ • Mozilla Firefox 35™ or later (Mac or Windows) • Chrome 30™ or later (Mac or Windows) • Safari 6™ or later (Mac) JavaScript must be enabled.

Before you log on to Equinox Streaming and Recording Manager user pages (in other words, Avaya Equinox Unified Portal), your client system must meet the system requirements listed in [Table 4: Requirements](#) on page 22.

Table 4: Requirements

Component	Requirement
Web browser	<ul style="list-style-type: none"> • Microsoft Internet Explorer 11.0™ or later • Microsoft Edge™ N-1 or later • Mozilla Firefox™ N-1 or later (Mac or Windows) • Chrome™ N-1 or later (Mac, Windows, or Android) • Safari™ N-2 or later (Mac, iOS) JavaScript must be enabled.
Operating system	<ul style="list-style-type: none"> • Mac OS X 10.7 (Lion) or later • Windows™ 7 (32 and 64 Bit) • Windows™ 8 • Windows™ 8.1

Table continues...

Component	Requirement
	<ul style="list-style-type: none"> • Windows™ 10 • iOS N-1 or later • Android 4.0.3. or later
Media Player	Microsoft Windows Media Player™ Release 9.0, 10.0, or 11.0 to view programs.
Silverlight	Microsoft Silverlight™ player to view programs.
HTMLV5 Browsers	<p>A select number of browsers support video playback directly for MP4 VoD files including:</p> <ul style="list-style-type: none"> • Internet Explorer 9, 10, 11 • Safari 6™ or later • Chrome 30™ or later • Microsoft Edge™
IOS Tablet and Phones, Android Tablets and Phones, Windows Phones/Tablets	Playback function for MP4 VoD files

*** Note:**

To support non-Western language character sets, install the particular language pack on the client system from which you are accessing the Equinox Streaming and Recording Manager. Refer to the operating system documentation for your system.

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

Minimum specifications

Before you log on to Equinox Streaming and Recording Manager administration pages, your client system must meet the minimum specifications listed here.

The minimum server specifications for running the Equinox Streaming and Recording Windows Image on customer provided servers are the same as or similar to the Avaya Common Server 3. Avaya recommends a memory of 64 GB but 48 GB is the minimum. Avaya continues to support Avaya Common Server 2 but the port scalability is non-optimal. The configuration utility detects the host server characteristics and informs the type of Equinox Streaming and Recording processing that will be installed. It may only allow to run a Delivery Node (DN) on low spec servers.

[Table 5: Requirements for the WIM installed to run as a Media Node or as a All-in-one system](#) on page 24 applies for the WIM installed to run as a Media Node or as a All-in-one system. When you install the WIM to run as an Equinox Streaming and Recording Manager to run as a Manager, the requirements are lower. See [Table 6: Requirements for the WIM installed to run as a Manager](#) on page 24.

Table 5: Requirements for the WIM installed to run as a Media Node or as a All-in-one system

Adopting Application (material code)	Server	Size	Processor (Intel® Xeon®)	CPUs	Dynamic RAM	Disk Drive	RAID	No. of Ports	Power Supply
Avaya Streaming and Recording (383528, Alternate)	Common Server Release 3 HP ProLiant DL360 G9	1U	E5-2680 v3 2.5 GHz 12-core Haswell	2	48 GB (4GB RDIMM)	2 x 1.2 TB 10K 1 x DVD R/W	RAID 1 P440ar/ 2G	6	2 x 800 WAC
Avaya Streaming and Recording (383562, Main)	Common Server Release 3 Dell™ PowerEdge™ R630	1U	E5-2680 v3 2.5 GHz 12-core Haswell	2	48 GB (4GB RDIMM)	2 x 1.2 TB 10K 1 x DVD R/W	RAID 1 PERC H730	6	2 x 750 WAC

Table 6: Requirements for the WIM installed to run as a Manager

Server	Size	Processor (Intel® Xeon®)	CPUs	Dynamic RAM	Disk Drive	RAID	No. of Ports	Power Supply
Common Server Release 3 Dell™ PowerEdge™ R630	1U	E5-2620v3 2.4 GHz 6-core Haswell	2	32 GB (4GB RDIMM)	2 x 600 GB 10K 1 x DVD R/W	RAID 1 PERC H730	6	2 x 750 WAC

Related links

[Avaya Equinox Streaming and Recording Server](#) on page 8

Chapter 3: Installing the new streaming and recording server

Installation checklist

Follow the steps in this checklist to install the Avaya Equinox Streaming and Recording Server (Equinox Streaming and Recording).

+ Tip:

It is a good idea to print out this checklist and to mark each task as you complete it.

No.	Task	Description	Notes	✓
1	Learn more about the new streaming and recording server and figure out your deployment type.	Avaya Scopia® Streaming and Recording server on page 8		
2	<ul style="list-style-type: none"> Connect the LAN cables, keyboard, mouse, and monitor for your new server. Alternatively, you can purchase a Microsoft™ Windows Image (WIM) and install Equinox Streaming and Recording on your own server. 	<ul style="list-style-type: none"> Physically connecting the new server on page 26 For more information about obtaining and installing the Equinox Streaming and Recording WIM, see the <i>Equinox Streaming and Recording Disaster Recovery Guide</i>, which is available from support.avaya.com. 		
3	Start up the server.	Starting the new server on page 46	You require the Microsoft Windows product key.	
4	Configure the server using the Avaya Equinox Streaming and Recording Server Configuration Wizard.	Configuring the new server on page 47		
5	Set the IP addresses and apply the licenses.	Licensing the new server on page 51		
6	Configure the network that each device will use to	Configuring external addresses for public interfaces on page 60	Before registering devices, you may want to set which	

Table continues...

No.	Task	Description	Notes	✓
	communicate with the Equinox Streaming and Recording Manager.		network each device uses to communicate with the Equinox Streaming and Recording Manager. This forces the proper communication path to and from the Equinox Streaming and Recording Manager no matter which IP the Equinox Streaming and Recording Manager uses to communicate with the Equinox Streaming and Recording device.	
7	Register each of the components with the main server.	Registering each of the components on page 61		
8	On the delivery node (DN), configure the parent delivery node.	Configuring delivery nodes on page 64		
9	On the conference point (CP), configure the gatekeeper IP and source DN.	Configuring conference points on page 70		
10	On Equinox Streaming and Recording, configure the network address for device communication.	Specifying polling intervals and the network address on page 72		
11	Register Equinox Streaming and Recording with Equinox Management.	Adding and Modifying Recording and Streaming servers in Scopia® Management on page 73		
12	Configure the Avaya Equinox Recording Gateway.	Configuring the Avaya Equinox Recording Gateway on page 76		

Physically connecting the new server

Before you begin

You require a keyboard, a mouse, and a monitor. You also require several IP addresses and up to six category 5e LAN cables. Ensure that you received the following items with your Avaya Equinox Streaming and Recording Server (Equinox Streaming and Recording):

- Power cords

- Rack mount kit

Procedure

1. Connect the keyboard, mouse, and monitor.
2. Connect the LAN cable(s).

All of the Avaya Equinox Streaming and Recording Server NICs are 1Gbit bonded. Connect to at least one. They all respond with a single IP address.

3. Connect the power cable.
4. Power up the unit.

Next steps

Return to the [Installation checklist](#) on page 25 to see your next task.

Installing the Dell PowerEdge R630 Server

Dell server overview

The Avaya Common Servers category includes Dell servers that support several Avaya software solutions, some requiring additional hardware and memory requirements beyond the standard configuration. This document covers the standard configuration only—consult specific Avaya product documentation for application-specific or solution-specific server configurations.

- Avaya Common Servers are supplied under an OEM relationship and Avaya servers are treated differently than other commercially available servers from the vendors.
- Avaya Common Servers are turnkey appliances. No server designed for a particular application can be repurposed for use with another application. The only exception to this is when an application has provided an upgrade or migration path from an existing server state to a different server state with the appropriate kits, tools, documentation, and training materials. For example, System Platform is providing a kit plus documentation for migrating a server running System Platform to Appliance Virtualization Platform.
- Neither customers, business partners, distributors, nor Avaya Associates interacting with customers and business partners, should get BIOS or other firmware updates for any third party OEM servers that are part of Avaya's turnkey appliance offers. Only consult Avaya-provided downloads, information and support. All BIOS or firmware updates are provided through Avaya. Go to the Avaya Support website at <http://support.avaya.com> for additional information.
- Remote access and use of Dell iDRAC hardware management tools for the Dell servers is employed by a limited number of Avaya applications. If iDRAC is supported, that application's documentation will define its configuration and use. Please check with the Avaya application product manager or appropriate documentation to confirm support.
- Do not contact Dell for service. If the server is purchased from Avaya, customer first point of contact is Avaya. All support, warranty, repair, and maintenance must be scheduled through Avaya. Avaya will contact Dell to assist as required.

Service and repair of consumable accessories and cables are not covered under maintenance. Customers must purchase these items.

- Avaya strongly recommends that all servers are protected with an Uninterruptable Power Supply for power surge and interruption protection. Avaya is not responsible for servers damaged by power surges, brown outs, or black outs.
- Substitution of a DC power supply in a server must be approved by the Application Product Manager before any substitution is made. If there is a significant demand for a turnkey solution with a DC power supply, an Avaya GRIP (Global Requirements Integration Process) request must be submitted. Partners registered to use this process can submit a GRIP request at <https://portal.avaya.com/apps/grip/partner.asp>. Avaya Associates may assist and can find information about this process at <http://spark4.avaya.com/grip> Note, a GRIP request must be made for the Avaya application product, not the server model. The decision on whether to include a turnkey offer with a DC power supply is the responsibility of each Avaya application Product Manager. The name of the Product Managers for each application is at the bottom of the application page on the Avaya Global Sales portal.
- Low-end capacity servers do not have RAID batteries.
- Product labels on the servers themselves have the 9-digit base server codes and a base server description for Avaya Services to service and support. These 9-digit codes differ from the 6-digit orderable codes under which servers are ordered. On every server package, there is a Packing Label and a Hierarchy Label. The Hierarchy Label itemizes the stock list in the box of the 6-digit orderable code and Avaya recommends retaining them for reference.
- Quality assurance - product integrity testing and environmental international restrictions were completed by Dell and verified with Avaya using Design for Environmental Checklists. The list includes: batteries, printed wiring boards, plastic parts, product packaging, RoHS, green requirements, and energy efficiency.

Related links

[Physically connecting the new server](#) on page 26

[Registration](#) on page 28

Registration

- Registration is mandatory to receive support from Avaya, as described in the Avaya's SFAP or SAP policy. Avaya SFAP policy is available at <https://downloads.avaya.com/css/P8/documents/100075395>. Also, you can go to the Avaya Support website at <http://support.avaya.com> under **Help & Policies > Policies & Legal > Intellectual Property Policy**.
- Avaya direct customers and Global Business Partners registration must go through the Global Registration Tool (GRT) process through <http://support.avaya.com>, directly accessed by: <https://grt.avaya.com/grt/> - **Create A New Registration**.

Related links

[Dell server overview](#) on page 27

[HP Server overview](#) on page 35

Downloading Dell documentation

Use this procedure to find and download the Dell™ PowerEdge™ R630 documentation from Dell.

Procedure

1. Open a browser and to go <http://www.support.dell.com>.
2. On the Support page, scroll to the **Product support** section and click **View products** under Browse for a product.
3. Click *Servers, Storage, & Networking* in the “select a product” section.
4. Click *PowerEdge*.
5. Click *PowerEdge R630*.
6. Click **Manuals**.
7. Click the link that corresponds to the document that you want to download.
8. Download the documents in the *Dell R630 document set > Documents to download* section below.

Related links

[Physically connecting the new server](#) on page 26

Dell R630 documentation set

Refer to the documents listed below for Dell R630 server installation information and procedures.

* Note:

Download the documents listed in the *Documents to download* section below. Printed copies of the documents listed in the *Documents included in the shipping container* section below ship with the server.

Documents to download

Title
Dell PowerEdge R630 Getting Started With Your System
Dell PowerEdge R630 Owner's Manual

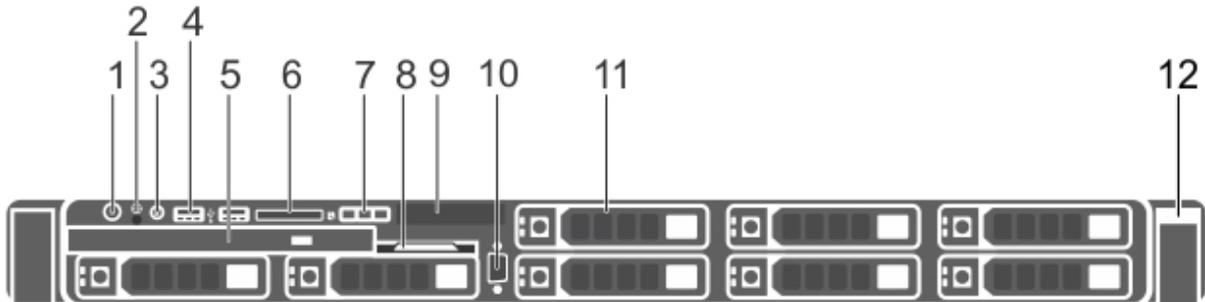
Documents included in the shipping container

Title
Product Information Guide
Rack Installation Instructions

Related links

[Physically connecting the new server](#) on page 26

Front view of Dell™ PowerEdge™ R630 Server



No.	Item	Icon	Description
1	Power-On Indicator, Power Button		<p>The power-on indicator lights when the system power is on. The power button controls the power supply output to the system.</p> <p>* Note: On ACPI-compliant operating systems, turning off the system using the power button causes the system to perform a graceful shutdown before power to the system is turned off.</p>
2	NMI Button		<p>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.</p> <p>Use this button only if directed to do so by qualified support personnel or by the operating system documentation.</p>
3	System Identification Button		<p>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.</p> <p>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.</p> <p>To reset the iDRAC (if not disabled in F2 iDRAC setup) press and hold the button for more than 15 seconds.</p>
4	USB Connectors (2)		<p>Allows you to insert USB devices to the system. The ports are USB 2.0-compliant.</p>
5	Optical Drive		<p>One DVD+/-RW drive.</p> <p>* Note: DVD devices are data only.</p>

Table continues...

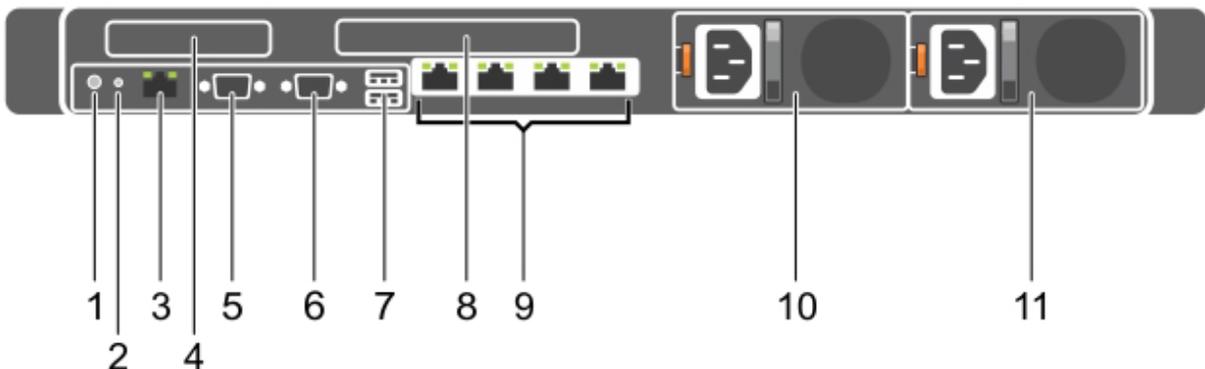
No.	Item	Icon	Description
6	vFlash Media Card Slot		Not used in Avaya configurations.
7	LCD Menu Buttons		Allows you to navigate the control panel LCD menu.
8	Information Tag		A slide-out label panel, which allows you to record system information, such as Service Tag, NIC, MAC address.
9	LCD Panel		Displays 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		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.

Related links

[Physically connecting the new server](#) on page 26

Back view of Dell™ PowerEdge™ R630 Server



No.	Item	Icon	Description
1	System Identification Button		<p>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.</p> <p>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.</p> <p>If you are directed by services to reset the iDRAC port, press and hold the button for more than 15 seconds.</p>
2	System Identification Connector		Allows you to connect the optional system status indicator assembly through the optional cable management arm.
3	iDRAC8 Enterprise Port		<p>Dedicated management port.</p> <p>* Note:</p> <p>The port is available for iDRAC8 Express features only. Avaya systems do not come with an Enterprise license. (Not normally used in Avaya systems.)</p>
4	PCIe Expansion Card Slot 1 (riser 2)		<p>Allows you to connect a low profile PCIe expansion card.</p> <p>* Note:</p> <p>If your 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, 2 CPUs must be installed for this slot to be available for use.</p>
5	Serial Connector		Allows you to connect a serial device to the system.
6	Video Connector		Allows you to connect a VGA display to the system.
7	USB Connectors (2)		Allows you to connect USB devices to the system. The ports are USB 3.0-compliant.
8	PCIe Expansion Card Slot 2 (riser 3)		<p>Allows you to connect a full-height half-length PCIe expansion card.</p> <p>* Note:</p> <p>If your 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.</p>
9	Ethernet Connectors (4)		<p>Four integrated 10/100/1000 Mbps NIC connectors (Avaya Standard).</p> <p>* Note:</p> <p>NIC port numbers are read from left to right, starting with Port 1, then continuing to Ports 2, 3, and 4.</p>
10	Power Supply (PSU1)		Wattage and voltage type depends on configuration.

Table continues...

No.	Item	Icon	Description
11	Power Supply (PSU2)		Wattage and voltage type depends on configuration.

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

Related links

[Physically connecting the new server](#) on page 26

Dell R630 server altitude and air pressure requirements

	Altitude
Operating altitude de-rating	Maximum altitude 3,048m (10,000ft)  Note: <ul style="list-style-type: none"> • Up to 35°C (95°F): Maximum temperature is reduced by 1°C/300 m (1°F/547 ft) above 950 m (3,117 ft). • 35°C to 40°C (95°F to 104°F): Maximum temperature is reduced by 1°C/175 m (1°F/319 ft) above 950 m (3,117 ft). • 40°C to 45°C (104°F to 113°F): Maximum temperature is reduced by 1°C/125 m (1°F/228 ft) above 950 m (3,117 ft).
Storage	Maximum altitude 12,000m (39,370 ft)

Related links

[Physically connecting the new server](#) on page 26

Dell R630 server physical specifications

Type	Description
Dimensions	Height: 4.28 cm (1.69 inch)
	Width: 48.24 cm (18.99 in)
	Depth: 70 cm (27.58 in)
Weight (maximum configuration)	18.6 kg (41 lb)

Related links

[Physically connecting the new server](#) on page 26

Dell R630 server temperature and humidity requirements

Specification	Value
Temperature range	

Table continues...

Specification	Value
Operating (for altitude less than 950m or 3,117ft)	10° to 35 °C (50° to 95 °F) with no direct sunlight on the equipment.
Storage	-40° to 65° C (-40° to 149° F) with a maximum temperature gradation of 20 °C (36 °F) per hour
Relative humidity	
Operating	10% to 80% (non-condensing) with 26 °C (78.8 °F) maximum dew point
Non-operating	5% to 95% with 33°C (91 °F) maximum dew point

Related links

[Physically connecting the new server](#) on page 26

Installing the server in the rack

About this task

*** Note:**

Although not used frequently, Avaya customers are required to have a monitor, USB keyboard, and USB mouse available for use by installation and/or servicing technicians.

Before you begin

Get the *Rack Installation Instructions* that are shipped with the hardware for more information. If not shipped with the hardware, see the Dell documentation Web site for instructions.

Procedure

1. Examine contents of shipping container (Avaya provided equipment), and ensure that the 6-digit material code on the order matches the 6-digit material code on the shipping container.
2. Verify that the rack is installed according to the manufacturer's instructions and in accordance with all local codes and laws. Verify that the rack is grounded in accordance with local electrical code.
3. Remove the cabinet doors, if necessary.
4. Attach the rails to the rack

The rails included with the server will accommodate most square-hole racks. If these rails do not fit the rack, the customer must provide rails or a shelf for rack installation. Also, the rails included with the server might not work with round-hole racks. The customer can obtain rails and/or a shelf from any distributor, for example <http://www.racksolutions.com/>. The customer-provided rails and rack must be on site prior to the first day of installation.

*** Note:**

The customer is responsible for any rack screws.

5. Attach the server to the rack.
6. Connect the power cord(s).

For more information about connecting and securing the power cable, see *Connecting the power cables* and *Securing the power cord* of the *Getting Started Guide*.

Related links

[Physically connecting the new server](#) on page 26

Setting an administrator password

About this task

You can set a password to protect the server from changes to the BIOS settings. In addition, the password protects against configuration changes such as updates to the Boot order, iDRAC configuration, and Boot enable or disable.

If you add password for BIOS, you must protect, retain, and provide the password when changes to the server are required.

Before you begin

Ensure that a monitor and USB keyboard and mouse are connected to the server.

Procedure

1. While restarting or turning on the server, at the Dell splash screen, press **F2** to select **System Setup**.
2. On the System Setup screen, click **System BIOS**.
3. Click **System Security**.
4. In the **Setup Password** field, type a password.
5. In the **Password Status** field, click **Locked**.
6. Click **Back**.

The system displays a prompt to enter the password again.

7. Click **Back**.
8. Click **Finish**.
9. Click **Finish**, and then **Confirm** or **Exit**.

The system exits menus and continues booting the server.

Related links

[Physically connecting the new server](#) on page 26

Installing the HP ProLiant DL360 G9 Server

HP Server overview

The Avaya Common Servers category includes HP servers that support several Avaya software solutions, some requiring more hardware, and memory requirements beyond the standard

configuration. This document covers the standard configuration only—consult specific Avaya product documentation for application-specific or solution-specific server configurations.

- Avaya Common Servers are supplied under an OEM relationship and Avaya servers are treated differently than other commercially available servers from the vendors.
- Avaya Common Servers are turnkey appliances. No server designed for a particular application can be repurposed for use with another application. The only exception to this is when an application has provided an upgrade or migration path from one server state to a different server state with the appropriate kits, tools, documentation, and training materials. For example, System Platform is providing a kit plus documentation for migrating a server running System Platform to Appliance Virtualization Platform.
- Neither customers, business partners, distributors, nor Avaya Associates interacting with customers and business partners, should get BIOS or other firmware updates for any third-party OEM servers forming part of Avaya's turnkey appliance offers. Only consult Avaya-provided downloads, information and support. All BIOS or firmware updates are provided through Avaya. Go to the Avaya Support website at <http://support.avaya.com> for additional information.
- Remote access and use of HP iLO hardware management tools for the HP servers are employed by a limited number of Avaya applications. If HP iLO is supported, that application's documentation will define its configuration and use. Please check with the Avaya application product manager or appropriate documentation to confirm support.
- Do not contact HP for Service; all support, warranty, repair, and maintenance are through the Avaya processes. If the server is purchased from Avaya, customer first point of contact is Avaya to troubleshoot hardware issues.

Service and repair of consumable accessories and cables are not covered under maintenance. Customers must purchase these items.

- Avaya strongly recommends that all servers are protected with an Uninterruptable Power Supply for power surge and interruption protection. Avaya is not responsible for servers damaged by power surges, brown outs, black outs etc.
- Substitution of a DC power supply for a server must be approved by the Application Product Manager before substitution. If there is a significant demand for a turnkey solution with a DC power supply, an Avaya GRIP (Global Requirements Integration Process) request must be submitted. Partners registered to use this process can submit a GRIP request at <https://portal.avaya.com/apps/grip/partner.asp>. Avaya Associates may assist and can find information about this process at <http://spark4.avaya.com/grip>. Note, a GRIP request must be made for the Avaya application product, not the server model. The decision on whether to include a turnkey offer with a DC power supply is the responsibility of each Avaya application Product Manager. The name of the Product Managers for each application is at the bottom of the application page on the Avaya Global Sales portal.
- Product labels on the servers themselves have the 9-digit base server codes and a base server description for Avaya Services in service and support. These 9-digit codes differ from the 6-digit orderable codes under which servers are ordered. On every server package, there is a Packing Label and a Hierarchy Label. The Hierarchy Label itemizes the stock list in the box of the 6-digit orderable code and Avaya recommends retaining them for reference.

- Quality assurance – product integrity testing and environmental international restrictions were completed by HP and verified with Avaya using Design for Environmental Checklists. The list includes: batteries, printed wiring boards, plastic parts, product packaging, RoHS, green requirements, and energy efficiency.

Related links

[Physically connecting the new server](#) on page 26

[Registration](#) on page 28

Registration

- Registration is mandatory to receive support from Avaya, as described in the Avaya's SFAP or SAP policy. Avaya SFAP policy is available at <https://downloads.avaya.com/css/P8/documents/100075395>. Also, you can go to the Avaya Support website at <http://support.avaya.com> under **Help & Policies > Policies & Legal > Intellectual Property Policy**.
- Avaya direct customers and Global Business Partners registration must go through the Global Registration Tool (GRT) process through <http://support.avaya.com>, directly accessed by: <https://grt.avaya.com/grt/> - **Create A New Registration**.

Related links

[Dell server overview](#) on page 27

[HP Server overview](#) on page 35

How to use this document

This guide contains information for installing the server as part of an Avaya deployment and provides:

- Instructions for how to find the appropriate online server documentation from HP.
- References to specific topics in standard HP documentation
- Suggested changes, details, and notes to assist the user in interpreting the manufacturer's documentation and to clarify Avaya's recommended implementation of the equipment
- Topics not covered in standard HP documentation, but which are necessary for successful installation and maintenance of Avaya products

Related links

[Physically connecting the new server](#) on page 26

Downloading HP documentation

Use this procedure to find and download the server documentation.

Procedure

1. Navigate to <http://support.avaya.com/>.
2. At the top of the screen, enter your username and password and click **Login**.
3. Put your cursor over **Support by Product**.

4. Click **Documents**.
5. In the **Enter Your Product Here** search box, type `Common Servers` and then select 3.0.x from the drop-down list.
If there is more than one release, select the appropriate release number from the **Choose Release** drop-down list.
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 displays the documents only from the selected category.
7. Click **Enter**.

Related links

[Physically connecting the new server](#) on page 26

HP ProLiant DL360 G9 document set

Documents

- HP ProLiant DL360 G9 Server User Guide
- HP ProLiant DL360 G9 Server Maintenance and Service Guide
- HP ProLiant DL360 G9 Troubleshooting Guide, Volume I: Troubleshooting
- HP ProLiant DL360 G9 Troubleshooting Guide, Volume II: Error Messages
- HP Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products

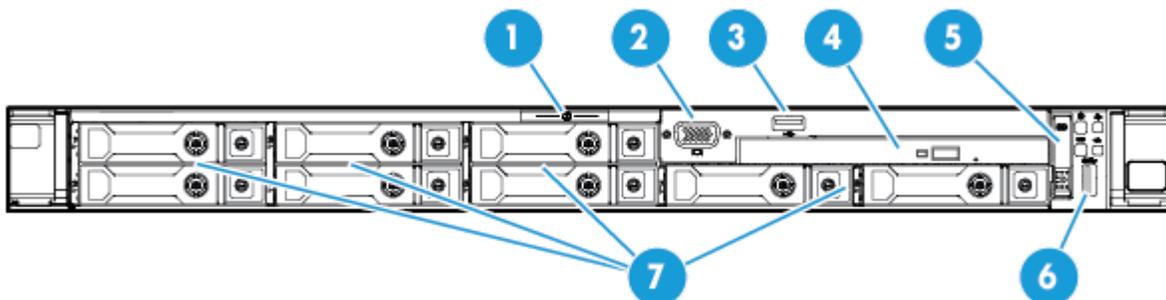
Documents included in the shipping container

Title	Part number
Safety, Compliance, and Warranty Information	703828 - 023
Quick Deploy Rail System Installation Instructions (located in rail kit box)	740122-002

Related links

[Physically connecting the new server](#) on page 26

Front view of HP ProLiant DL360 G9 Server

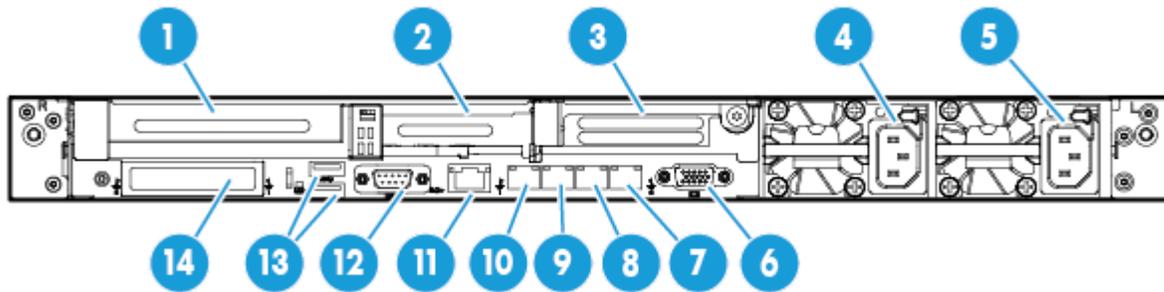


No.	Description
1	Serial label pull tab
2	Front video connector
3	USB 2.0 connector
4	Optical drive
5	Systems Insight Display (Not used in Avaya configurations)
6	USB 3.0 connector
7	Hard Drive bays* * The HDDs read starting with top left, then bottom left, and continues to the right.

Related links

[Physically connecting the new server](#) on page 26

Rear view of HP ProLiant DL360 G9 Server



No.	Description
1	Slot 1 PCIe3 x16 (16, 8, 4, 1)
2	Slot 2 PCIe 3 x8 (8, 4, 1)
3	Slot 3 PCIe 3 x16 (16, 8, 4, 1) (Not used in Avaya configurations)
4	Power supply 2
5	Power supply 1
6	Video connector
7	NIC connector 4
8	NIC connector 3
9	NIC connector 2
10	NIC connector 1
11	iLO 4 connector
12	Serial connector
13	USB 3.0 connectors
14	FlexibleLOM bay (Not used in Avaya configurations)

Related links

[Physically connecting the new server](#) on page 26

HP ProLiant DL360 G9 Server specifications

Base unit	Baseline	Options
DL360 G9	1U Chassis, Dual Socket	DL380p G9 2U Chassis, Dual Socket
Processor	Intel E5-2620v3, Six Core 2.3 GHz (Haswell) 4 memory channels per CPU with up to 3 DIMMs per channel (most applications use 1 or 2 DIMMs per channel to optimize memory speed)	<ul style="list-style-type: none"> Intel E5–2640v3 Eight Core/2.6 GHz (Haswell) Intel E5–2680v3 Twelve Core/2.5 GHz (Haswell)
Memory	4 GB DDR4 RDIMMs	Max Capacity for memory (4 GB RDIMM): <ul style="list-style-type: none"> 48 GB, 12 x 4 GB (1 proc) 96 GB, 24 x 4 GB (2 proc)
HW RAID	P440ar RAID controller with 2 GB Cache and battery backup. Optioned as RAID 1, 5, or 10.	Other RAID configurations available
Hot-Plug disk drive cage	8 Small Form Factor 2.5" hot-plug hard drive bays are available when an optical drive is installed.	N/A
Disk drive	300 GB SAS 2.5" 10K RPM 6G DP Hard Drive. Two base configurations: <ul style="list-style-type: none"> 279 GiB total: RAID 1, 2 x 300 GB drives 559 GiB total: RAID 5, 3 x 300 GB drives 838 GiB total: RAID 5, 4 x 300 GB drives 559 GiB total: RAID 10, 4 x 300 GB drives <p>* Note:</p> <ul style="list-style-type: none"> 1 GB = 10⁹ Bytes 1 GiB = 2³⁰ Bytes 	<ul style="list-style-type: none"> Additional 300 GB 10K RPM SAS drive High performance 300 GB 15K SAS drives High capacity 600 GB 10K SAS drives High performance 900 GB 10K SAS drives High capacity 1.2 TB 10K SAS drives <p>* Note:</p> <p>For each application, the system displays the hard drive capacities that are specified for the application.</p>
NICs	4 or 6 integrated ENET Gigabit NIC ports with TCP offload engine (included on motherboard)	Two additional dual NIC slots may be populated for certain applications.
PCIe slots	Three PCI-Express Gen 3 expansion slots: (1) full-height, 3/4-length slot and (1) low-profile slots	Slot 1 is full height / 3/4-length x16 Slot 1 is low profile / half length x8
Removable media	Slim line SATA DVD-RW optical drive (used in all Avaya configurations)	No additional options supported.

Table continues...

Base unit	Baseline	Options
Power supply	500 W or 800 W hotplug AC power supply	<ul style="list-style-type: none"> 800 W DC power supply Single and dual power supply configurations
Fans	5 Fan modules in 1 processor model	7 fan modules hot-swappable (fan redundancy standard)
Additional items	2 front USB (1–2.0, 1–3.0), 2 back USB (3.0), 1 internal USB port, and front video connector	

Related links

[Physically connecting the new server](#) on page 26

[Dell R630 server specifications](#)

[Scalability](#) on page 18

Altitude and air pressure requirements

The following table lists the altitude and air pressure requirements for the server.

Specification	Value
Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Related links

[Physically connecting the new server](#) on page 26

Hardware dimensions and clearance requirements

The following table lists the dimensions and clearance requirements for the server.

Type	Description
Dimensions	Height: 4.29 cm (1.69 in)
	Width: 43.46 cm (17.11 in)
	Depth: 69.90 cm (27.50 in)
Weight (maximum: 10 drives, two processors, two power supplies, two heatsinks, one Smart Array controller, seven fans)	15.31 kg (33.36 lb)

Related links

[Physically connecting the new server](#) on page 26

Temperature and humidity requirements

The following table lists the temperature and humidity requirements for the server.

Specification	Value
Temperature range	<p>* Note:</p> <p>All temperature ratings shown are for sea level. An altitude derating of 1°C per 304.8 m (1.8° per 1,000 ft.) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight.</p>
Operating	10° to 35°C (50° to 95°F) Maximum rate of change is 20°C/hr (36°F/hr). The upper limit might be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative humidity (non-condensing)	
Operating	8 to 90% relative humidity (Rh), 24°C (75.2°F) maximum wet bulb temperature, non-condensing.
Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Related links

[Physically connecting the new server](#) on page 26

Power requirements

The following table lists the power requirements for the server.

Table 7: HP 800 W CS power supply (92% efficiency)

Specification	Value
BTU	917 BTU/hr
Voltage	100V — 240V
Plug Type	NEMA — 15
Circuit Breaker	15 Amp
Pole	1
AMP Draw	2.7 @ 100VAC
Total Watts	269 W

* Note:

These numbers are based on the following typical Avaya configuration:

- qty=2 – E5-2620v3 six core processors
- qty=8x4 GB – Memory (1Rx4 PC4-2133P –R Kit)
- qty=3 – 2.5” SFF SAS HDDs

- qty=1 – Ethernet 1Gb 2-port 332T adaptor
- qty=2 – 800W power supplies

Related links

[Physically connecting the new server](#) on page 26

Physical system protection requirements

To properly ventilate the system, you must provide a minimum clearance of:

- 63.5 cm (25 in) in front of the rack
- 76.2 cm (30 in) behind the rack

* Note:

You must ensure that no environmental hazards, such as, excessive heat, excessive humidity, improper ventilation, or electromagnetic interference from proximate equipment interfere with the operation of the server.

Related links

[Physically connecting the new server](#) on page 26

Checklist for installing the server in the rack

This installation checklist contains the principle steps that are necessary to install the server in the rack. The notation in the *Reference* column is a section in the appropriate HP document that contains the step-by-step procedures. Where applicable, additional information and clarifications appear in the *Avaya recommendation* column. Perform each task in the order specified.

* Note:

Avaya customers are required to have a monitor and USB keyboard available for server maintenance.

No.	Task	Reference	Avaya recommendation
1	Observe safety warnings.	User Guide: Installing the server into the rack.	
2	Examine contents of shipping container (Avaya provided equipment).	User Guide: Identifying the contents of the server shipping carton	<ul style="list-style-type: none"> • Server • Rail Kit • Printed setup documentation • Rack mounting hardware kit and documentation
3	Examine installation environment (customer	User Guide: Optimum Environment	When installing the server in a rack, select a location that meets the environmental standards.

Table continues...

Installing the new streaming and recording server

No.	Task	Reference	Avaya recommendation
	provided equipment).		
4	Verify that the rack is installed according to the manufacturer's instructions and in accordance with all local codes and laws.	User Guide: Installing the server into the rack	To install the server into a rack with square, round, or threaded holes, refer to the instructions that ship with the rack hardware kit.
5	Verify that the rack is grounded in accordance with local electrical code.	User Guide: Electrical grounding requirements	The server must be grounded for proper operation and safety.
6	Determine and plan the vertical spacing of the servers in the frame.	User Guide: Space and Airflow Requirements	Servers draw in cool air through the front and expel warm air through the rear. Therefore, the front rack doors must be adequately ventilated to allow ambient room air to enter the cabinet, and the rear door must be adequately ventilated to allow the warm air to escape from the cabinet.
7	Attach the rails to the rack.	User Guide: Installing the server into the rack	To install the server into a rack with square, round, or threaded holes, refer to the instructions that ship with the rack hardware kit. If these rails do not fit the rack the customer must provide rails or a shelf for rack installation. Also the rails included with the server might not work with round hole racks, in which case the customer can obtain rails and/or a shelf from a distributor. (RackSolutions.com)
8	Attach the server to the rack.	User Guide: Installing the server into the rack	<p> Warning:</p> <p>This server is very heavy. To reduce the risk of personal injury or damage to the equipment:</p> <ul style="list-style-type: none"> • Get help lifting and stabilizing the product during installation or removal, especially when the product is not fastened to the rails. HP recommends that a minimum of two people are required for all rack server installations. A third person may be required to help align the server if the server is installed higher than chest level. • Use caution when installing the server in or removing the server from the rack; it is unstable when not fastened to the rails.
9	Connect the peripheral devices to the server.	User Guide: Setup • Connecting peripheral	Network connections, power cords See Avaya application installation documentation.

Table continues...

No.	Task	Reference	Avaya recommendation
		devices to the server <ul style="list-style-type: none"> Connecting the power cord to the power supply 	
10	Power up the server.	User Guide: Power up the server	Once the server is powered on, see Avaya application installation instructions. Server comes pre-installed with Avaya approved firmware, settings and RAID configuration. Do not go to the HP website for any updates unless instructed by Avaya.

Related links

[Physically connecting the new server](#) on page 26

Setting an administrator password

About this task

You can set a password to protect the server from changes to the BIOS settings. In addition, the password protects against configuration changes such as updates to the Boot order, iLO configuration, and Boot enable or disable.

If you add password for BIOS, you must protect, retain, and provide the password when changes to the server are required.

Before you begin

Ensure that a monitor and USB keyboard are connected to the server.

Procedure

1. While restarting or turning on the server, at the HP splash screen press **F9** to select **System Utilities**.
2. Select **System Configuration > BIOS Platform Configuration (RBSU) > Server Security**.
3. Move the cursor to the **Set Admin Password** field, and press **Enter**.
4. Type a password and press **Enter**.
The system displays a message to confirm the password.
5. Press **Esc** to go back to **System Utilities** in the menu.
6. Press **Enter** to exit.

Related links

[Physically connecting the new server](#) on page 26

Starting the new server

If you have the Avaya-provided server (The Avaya Common Server), the Microsoft Windows™ 2012 R2 license is already configured on your server.

If you are providing your own hardware, Avaya provides a temporary license for Microsoft Windows™ 2012 R2, which you should replace with a permanent license after the installation. The Windows Imaging Format (WIM) prompts it after the boot.

Procedure

1. Start up the server.
2. Press Ctrl+Alt+Delete to log in.
3. Choose **C** to configure the network settings.

You can configure the network addresses statically or dynamically. Avaya recommends using statically assigned IP addresses, as the IP address needs to remain constant. If you do choose to use dynamically assigned IP addresses, your network must be DHCP-enabled.

4. Choose **S** for statically assigned IP addresses or **D** for dynamically assigned IP addresses.

If you choose **D**, the setup tries to obtain an address. If you choose **S**, you are prompted to enter the IP address.

5. Enter your subnet mask by choosing an appropriate prefix length.
6. Enter the gateway address.

You must enter a valid gateway address that fits within the IP and subnet mask that you previously entered. The system provides a valid range of IPs that you can use for the gateway. You must pick one of these IP addresses.

7. Enter your primary DNS Server IP.

This is a mandatory step.

8. **(Optional)** Enter a secondary DNS IP or press **Enter** if you want to skip this step.

9. **(Optional)** Enter a DNS suffix.

You should enter a DNS suffix for FQDN/SSL configurations.

10. Enter the server host name, or press **Enter** to use the default generated hostname.

You should enter a hostname for FQDN/SSL configurations.

You are then prompted to enter a new password.

11. At the **You must choose a new Administrator password. Enter new Administrator password:** prompt, type a new password.

12. At the **Reenter new Administrator password to confirm:** prompt, re-type your new password.

13. Confirm the configuration and select **Y** if it is correct, or **N** if you would like to reenter the data.

When you enter **Y**, the server reboots.

14. When the server starts up again, press Ctrl+Alt+Delete to log in.
15. **(Optional)** Synchronize the time on the new server with the time on your NTP server.
 - a. Click on the time and date in the task bar.
 - b. Click **(Change date and time settings...)**.
 - c. On the Date and Time tab, perform the following actions:
 - Set the correct date and time using the **Change date and time** button.
 - Set the correct timezone using the **Change timezone** button.
 - d. On the Internet Time tab, click **Change settings...** and perform the following actions:
 - Ensure that **Synchronize with an Internet time server** is selected.
 - Enter the NTP server in the **Server** list.
 - Click **OK**.
16. Click **OK**.

Next steps

Return to the [Installation checklist](#) on page 25 to see your next task.

Configuring the new server

The Avaya Equinox Streaming and Recording Server Configuration Utility launches automatically when the operating system is loaded for the first time. You can also run the configuration utility at any time from the Start menu or from the desktop shortcut.

If you previously installed a Delivery Node (DN), either as part of an all-in-one deployment or on its own, you can add or remove a Virtual Delivery Node (VDN) or an external storage device called a storage area network (SAN), without disrupting the server configuration. If you have not previously installed a DN, the configuration utility erases any previous configurations on the Equinox Streaming and Recording server.

About this task

This task describes how to configure Equinox Streaming and Recording in an enterprise deployment. If yours is a service provider deployment, the steps vary slightly.

Procedure

1. On the Choose Setup Language dialog, select your preferred language.
2. On the next screen, click **Next**.

The first time you run the configuration utility, a Welcome screen is displayed.

If you have not configured a delivery node (DN) and you run the configuration utility again, a Warning screen is displayed because you may be about to perform a harmful action.

If you have configured a DN and you run the configuration utility again, you can add or remove a virtual delivery node (VDN) or an external storage device without disturbing the server configuration.

3. On the End-User License Agreement screen, select **I accept the terms of the License Agreement** to accept the license agreement.
4. Click **Next**.
5. On the Select Configuration screen, select your deployment type.

For more information, see [Deployment types](#) on page 16.



Figure 7: Select Configuration

6. On the Deployment Type screen, perform one of the following actions:
 - If you have selected **All-in-One** on the Select Configuration screen, select **Enterprise deployment** or **Multi-tenant** to match your Equinox Management deployment.

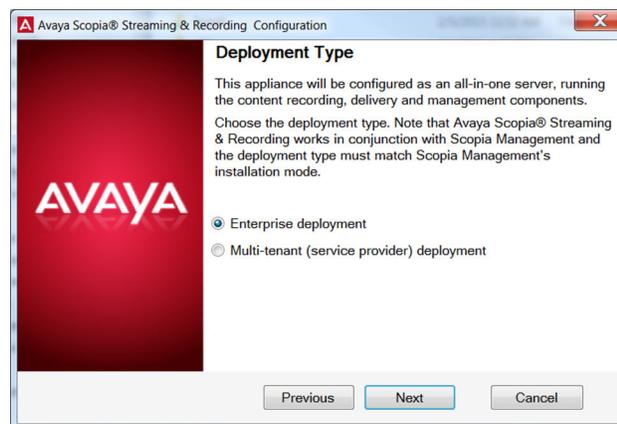


Figure 8: Deployment Type

- If you have selected **Content management components only** on the Select Configuration screen, select **Enterprise deployment** or **Multi-tenant** to match your Equinox Management deployment. The screen is similar to [Figure 8: Deployment Type](#) on page 48.

- If you have selected **Media Node only** on the Select Configuration screen, select whether you want to install the recording and delivery (streaming) components, the recording components, or the delivery components by selecting **Configure content recording and streaming components**, **Configure content recording components only**, or **Configure content streaming components only**.



Figure 9: Deployment Type

7. Click **Next**.
8. **(Optional)** At this point, you can choose to install a Virtual Delivery Node (VDN).
9. **(Optional)** At this point, you can choose to install a SAN.
10. Click **Next** to skip the optional screens.
11. On the Finish Configuration screen, click **Finish**.

The Equinox Streaming and Recording Configuration Utility installs the Equinox Streaming and Recording components.

12. On the Complete Configuration screen, click **View Addresses** to display the MAC addresses of the Equinox Streaming and Recording server.

You require these MAC addresses in order to license the Equinox Streaming and Recording server. The MAC addresses are also stored in `C:\assrconfigtool\MAC_Addresses.txt`.

13. Make note of the MAC addresses.

This information is required when you access the Avaya PLDS system to obtain a license key.

Next steps

Return to the [Installation checklist](#) on page 25 to see your next task.

Related links

[Running the configuration utility to configure a VDN](#) on page 50

[Running the configuration utility to configure a SAN](#) on page 50

Running the configuration utility to configure a VDN

The Avaya Equinox Streaming and Recording Server Configuration Utility launches automatically when the operating system is loaded for the first time. You can also run the configuration utility at any time from the Start menu or from the desktop shortcut.

About this task

This task describes how to configure a VDN using the configuration utility provided as part of the Equinox Streaming and Recording package.

Procedure

1. On the Equinox Streaming and Recording host server (which contains the DN), run the configuration utility and select **Perform Maintenance Tasks**.

If you are installing Equinox Streaming and Recording for the first time, follow the steps in [Configuring the new server](#) on page 47.

2. Click **Next**.

The Equinox Streaming and Recording Configuration Utility runs in the normal way. If the server includes a DN, the Equinox Streaming and Recording Configuration Utility displays the Virtual Delivery Node (VDN) installation screen.

You should only use a VDN if you subscribe to the Highwinds Content Delivery Network (CDN). CDN is a cloud-based streaming system.

3. Select **Install a Virtual Delivery Node (VDN) on this server**.
4. Click **Next** and **Next** again.
5. On the Finish Configuration screen, click **Finish**.

Next steps

Return to your checklist to see your next task.

Related links

[Configuring the new server](#) on page 47

Running the configuration utility to configure a SAN

The Avaya Equinox Streaming and Recording Server Configuration Utility launches automatically when the operating system is loaded for the first time. You can also run the configuration utility at any time from the Start menu or from the desktop shortcut.

About this task

This task describes how to configure external storage using the configuration utility provided as part of the Equinox Streaming and Recording package.

Procedure

1. On the Equinox Streaming and Recording host server (which contains the DN), run the configuration utility and select **Perform Maintenance Tasks**.

If you are installing Equinox Streaming and Recording for the first time, follow the steps in [Configuring the new server](#) on page 47.

2. Click **Next**.

The Equinox Streaming and Recording Configuration Utility runs in the normal way. If the server includes a DN, the Equinox Streaming and Recording Configuration Utility displays the **External Storage Configuration** screen, after the Virtual Delivery Node (VDN) installation screen.

3. On the **External Storage Configuration** screen, select **Enable external storage for the Delivery Node**.

4. **(Optional)** Enter the IP address and netmask.

This enables you to assign a new IP in the Windows host on the SAN network so that you can open a browser on the server and access the SAN administration console. You should not enter the SAN IP address here.

5. Click **Next**.

6. On the Finish Configuration screen, click **Finish**.

The Equinox Streaming and Recording Configuration Utility now performs multiple configuration steps to prepare the Windows host server and DN virtual machine for SAN networking. The DN virtual machine is stopped and re-started as part of this process. This process interrupts service.

7. On the Complete Configuration screen, click **View Addresses** to display the MAC addresses of the Equinox Streaming and Recording server.

Next steps

Return to your checklist to see your next task.

Related links

[Configuring the new server](#) on page 47

Licensing checklist

Follow the steps in this checklist to license the Avaya Equinox Streaming and Recording Server (Equinox Streaming and Recording).

No.	Task	Description	Notes	✓
1	Set the IP address of each of the remaining components. You have already set the IP address of the Equinox Streaming and Recording Manager.	Setting the IP address of the recording component (Conference Point) on page 52 Setting the IP address of the delivery component (Delivery Node) on page 56		
2	Restart services.	Restarting services on page 57		
3	Apply the license to each of the components.	Applying the license to the management component on page 57 Applying the license to the recording component (Conference Point) on page 58 Applying the license to the delivery component (Delivery Node) on page 58	You must apply the license to all components.	

Related links

- [Setting the IP address of the recording component \(Conference Point\)](#) on page 52
- [Setting the IP address of the delivery component \(Delivery Node\)](#) on page 56
- [Restarting services](#) on page 57
- [Applying the license to the management component](#) on page 57
- [Applying the license to the recording component \(Conference Point\)](#) on page 58
- [Applying the license to the delivery component \(Delivery Node or Virtual Delivery Node\)](#) on page 58

Setting the IP address of the recording component (Conference Point)

The recording component is known as the conference point or CP.

About this task

You should set an IPv4 address.

Before you begin

Obtain the Avaya Equinox Streaming and Recording Server license keys from the Avaya Product Licensing and Delivery System (PLDS).

Procedure

1. Double-click on the Hyper-V Manager shortcut on the desktop.
2. In the Virtual Machines panel, double-click on the **CP** entry.

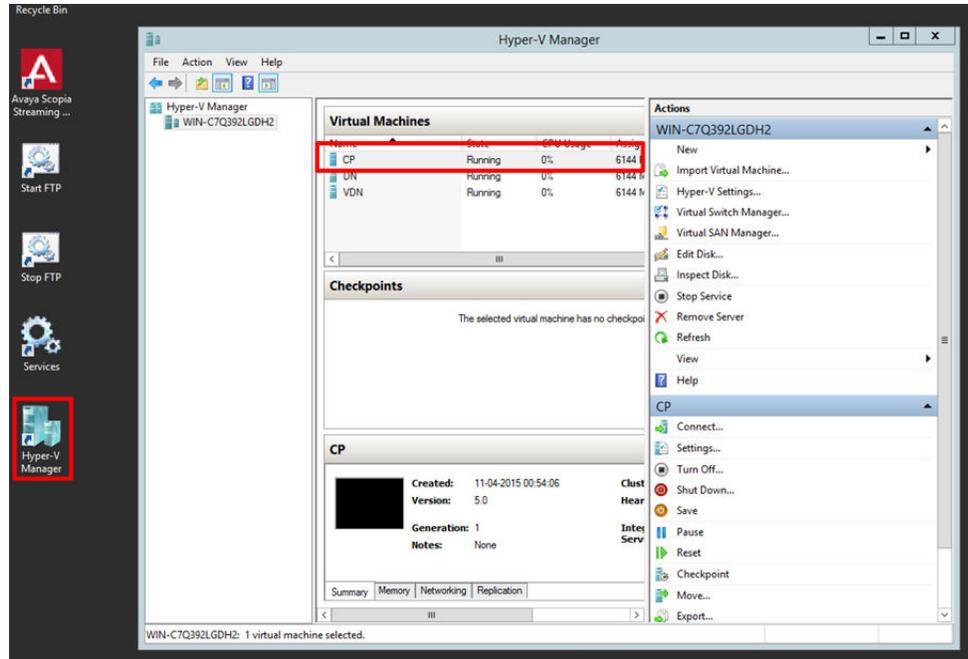


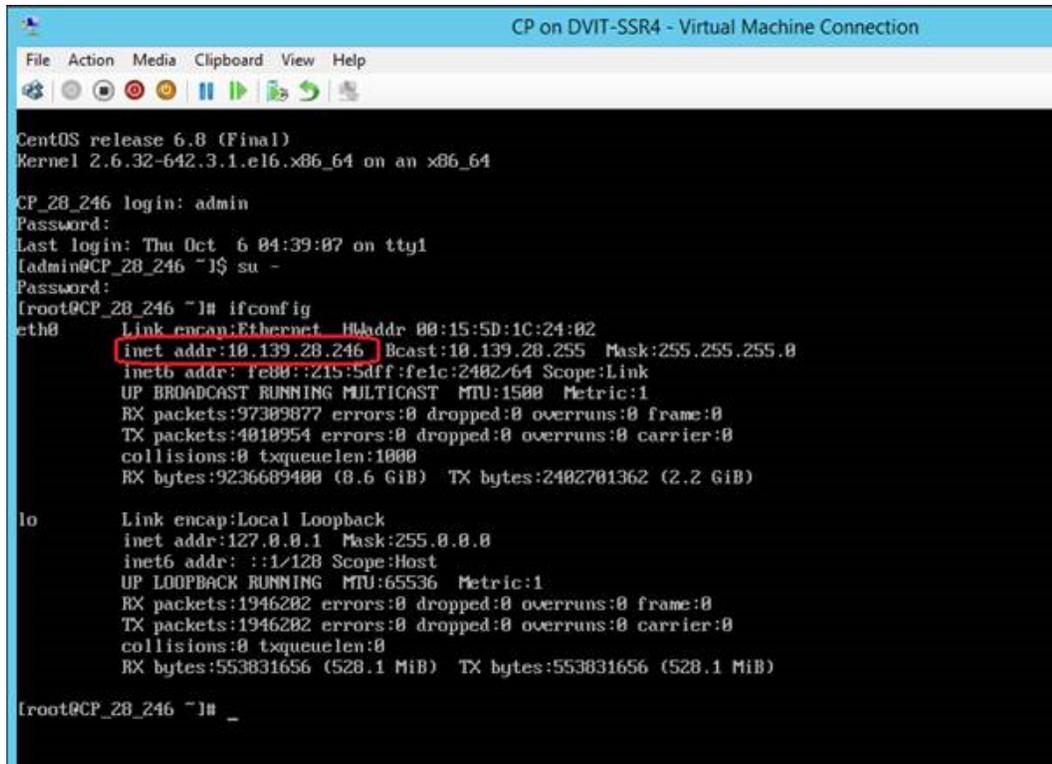
Figure 10: Hyper-V Manager

3. Log in to the Conference Point (CP) on the console as `admin`.

The default password is `admin`.

If this is the first time that you have logged into the CP, you are prompted to change your password.

4. **(Optional)** If you are using DHCP, retrieve your IP address and make a note of it.
 - a. Run `ifconfig`.
 - b. Look at `inet addr` for `eth0`.



```
CP on DVIT-SSR4 - Virtual Machine Connection
File Action Media Clipboard View Help
CentOS release 6.8 (Final)
Kernel 2.6.32-642.3.1.el6.x86_64 on an x86_64
CP_28_246 login: admin
Password:
Last login: Thu Oct 6 04:39:07 on tty1
[admin@CP_28_246 ~]$ su -
Password:
[root@CP_28_246 ~]# ifconfig
eth0      Link encap:Ethernet  HWaddr 08:15:5D:1C:24:02
          inet addr:10.139.28.246  Bcast:10.139.28.255  Mask:255.255.255.0
          inet6 addr: fe80::215:5dff:fe1c:2402/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:97309877 errors:0 dropped:0 overruns:0 frame:0
          TX packets:4010954 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:9236609400 (8.6 GiB)  TX bytes:2402701362 (2.2 GiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:1946202 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1946202 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:553031656 (528.1 MiB)  TX bytes:553031656 (528.1 MiB)

[root@CP_28_246 ~]# _
```

Figure 11: Retrieving the IP Address

5. Type `network` to open the configuration screens.
6. On the Terminal window, highlight **Device configuration** and press `Enter`.

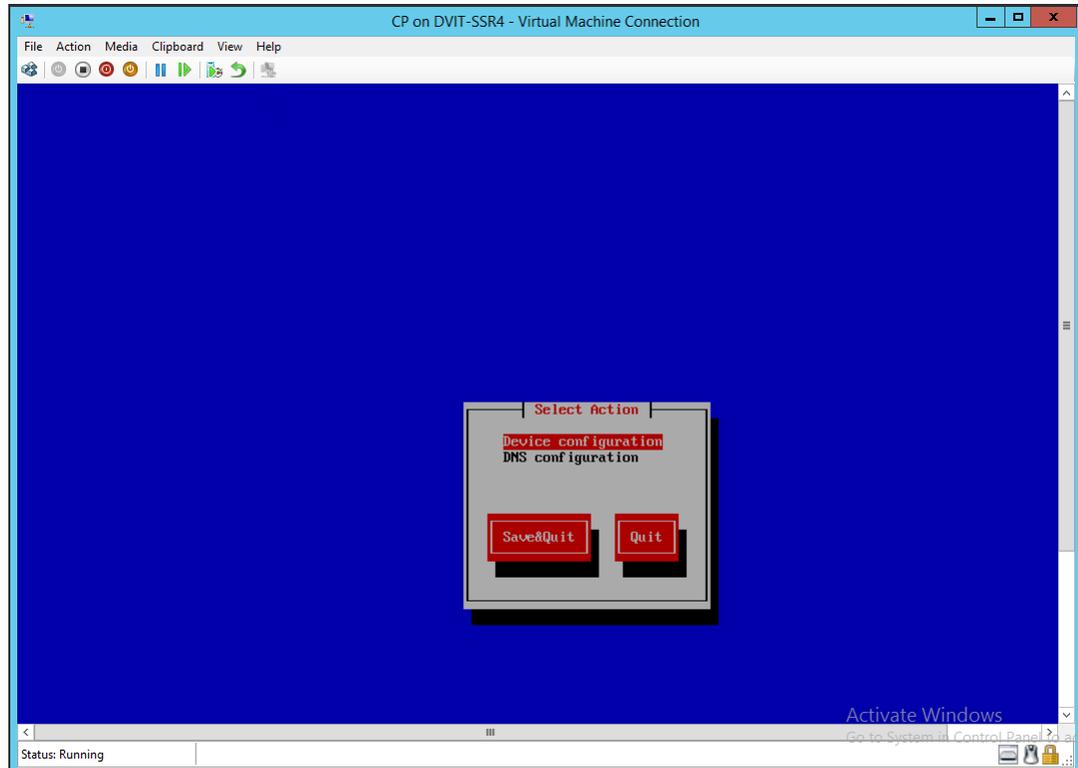


Figure 12: Device Configuration

7. On the Select A Device window, highlight **eth0** and press `Enter`.
8. Use the **Tab** key to highlight **Use DHCP** and press the **Spacebar** key to disable DHCP.
9. Use the **Tab** key to navigate to the other fields and enter the following details:
 - Static IP
 - Netmask
 - Default gateway IP
 - Primary DNS Server
 - Secondary DNS Server

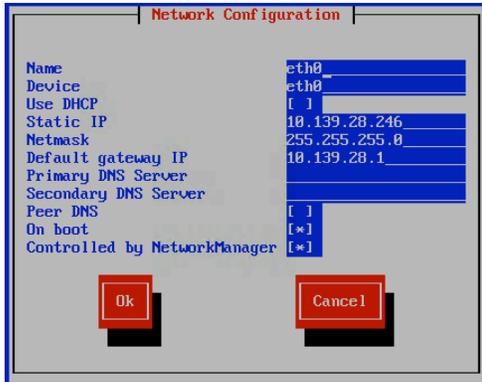


Figure 13: Network Configuration

10. Use the **Tab** key to highlight **Ok** and press `Enter`.
11. On the Select A Device window, use the **Tab** key to highlight **Save** and press `Enter`.
12. On the Select Action window, use the **Tab** key to highlight **Save** and press `Enter`.
13. In the terminal window, type `service network restart` to restart network services.

Next steps

Return to the [Licensing checklist](#) on page 51 to see your next task.

Related links

[Licensing checklist](#) on page 51

Setting the IP address of the delivery component (Delivery Node)

A Delivery Node (DN) can be a Virtual Delivery Node (VDN). You should only use a VDN if you subscribe to the Highwinds Content Delivery Network (CDN). CDN is a cloud-based streaming system. The delivery component is also called streaming.

Procedure

Use the same set of steps that you used for [Setting the IP address of the recording component \(Conference Point\)](#) on page 52.

Next steps

Return to the [Licensing checklist](#) on page 51 to see your next task.

Related links

[Licensing checklist](#) on page 51

Restarting services

About this task

The services that you must restart are:

- Apache Tomcat
- Apache 2.4
- Avaya Equinox Streaming and Recording Server Transcoder

Procedure

1. Double-click on the Services icon on the desktop.
2. On the Services screen, right-click **Apache Tomcat 7.0 Tomcat7** and select **Restart** from the menu options.
3. Right-click **Apache2.4** and select **Restart** from the menu options.
4. Right-click **Avaya Equinox Streaming & Recording Transcoder** and select **Restart** from the menu options.

Next steps

Return to the [Licensing checklist](#) on page 51 to see your next task.

Related links

[Licensing checklist](#) on page 51

Applying the license to the management component

Procedure

1. Type `https://<Scopia SR Manager FQDN/IP address>:8445` in a web browser.
2. If this is the first time that you have logged in to the system, you are prompted to update your password.

The preset credentials are:

- Username: `admin`
- Password: `admin`

3. At the prompt, enter the license key in the **License Information** field and click **Update**.
4. Refresh the browser.

Next steps

Return to the [Licensing checklist](#) on page 51 to see your next task.

Related links

[Licensing checklist](#) on page 51

Applying the license to the recording component (Conference Point)

Procedure

1. Open a browser and type the Conference Point (CP) IP address or fully qualified domain name (FQDN).
2. On the Conference Point license screen, enter the license key in the **License Key** field and click **Submit**.



Figure 14: Conference Point

Next steps

Return to the [Licensing checklist](#) on page 51 to see your next task.

Related links

[Licensing checklist](#) on page 51

Applying the license to the delivery component (Delivery Node or Virtual Delivery Node)

There can only be a single virtual delivery node (VDN) in a deployment.

Procedure

1. Open a browser and type the delivery node (DN) or virtual delivery node (VDN) IP address or fully qualified domain name (FQDN).
2. On the Delivery Node license screen, enter the license key in the **License Key** field and click **Submit**.
3. Select the type of delivery node.

The available options are:

- DN (Delivery Node)
- VDN (Virtual Delivery Node)

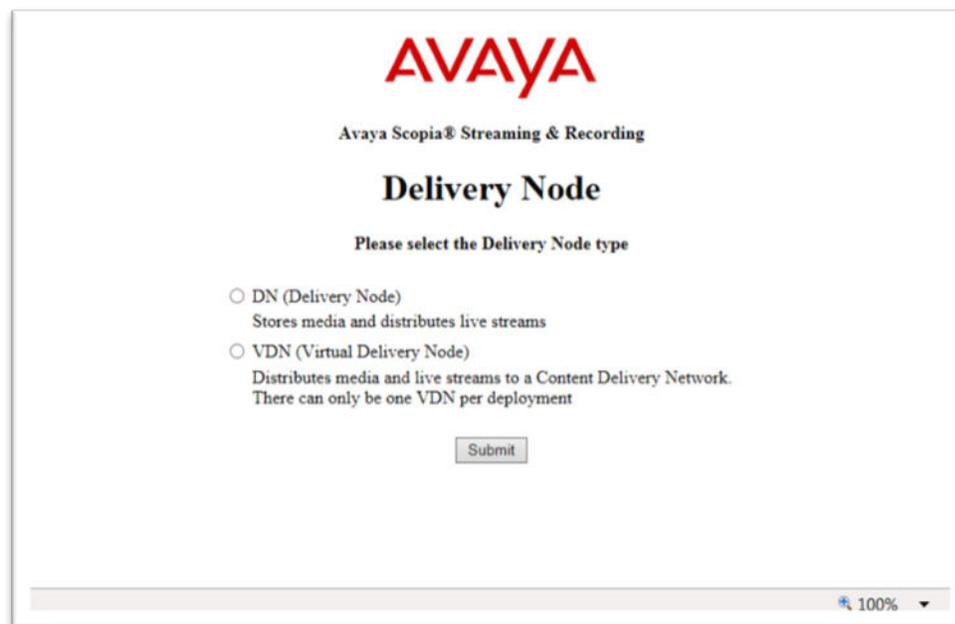


Figure 15: Delivery Node

4. Click **Submit**.

The DN or VDN is ready for use. The login screen is displayed.

Next steps

Return to the [Installation checklist](#) on page 25 to see your next task.

Related links

[Licensing checklist](#) on page 51

Configuring external addresses for public interfaces

About this task

To secure the Equinox Streaming and Recording public interfaces, proper certificates have to be generated. The certificates have to match the fully qualified domain name (FQDN) or the IP address of the machine. Avaya recommends setting the use of FQDNs.

When you configure your system to use FQDNs, they need to be used to register every device with the Equinox Streaming and Recording Manager.

You must also configure Equinox Streaming and Recording to use external addresses, using the FQDN, and not the IP address.

Procedure

1. Configure the external address of the delivery node.
 - a. Type `https://<DN FQDN/IP Address>:8445/` in a web browser.
 - b. Log in to the system using the credentials that you configured when you updated the default username and password.
 - c. Click the **Network** tab.
 - d. Enter the external address in the **External Address (optional)** field in the **Global Network Configuration** section.
 - e. Click **Submit**.
2. Configure the external address for the conference point.
 - a. Type `https://<CP FQDN/IP Address>:8445/` in a web browser.
 - b. Log in to the system using the credentials that you configured when you updated the default username and password.
 - c. Navigate to **System Configuration > Network Configuration**.
 - d. Enter the external address in the **External Address (optional)** field in the **Global Network Configuration** section.

You can now optionally enter a DNS name or specific external or internal IP address that you want to use when communicating with the Equinox Streaming and Recording Manager. This functionality enables you to enter externally statically mapped IP addresses and so on. If you leave this field empty then Equinox Streaming and Recording automatically uses the IP addresses assigned to the operating system statically or from DHCP. This address is passed to the Equinox Streaming and Recording Manager when the device registers and is used by the Equinox Streaming and Recording Manager to access the device. The Equinox Streaming and Recording Web GUI reports the IP address and other network information and on some of the Equinox Streaming and Recording devices, you can set the IP address and other key network settings. This functionality is especially helpful for the systems that are virtualized to ensure the proper network device IP address set. The CP and DN show up as one "eth0" virtualized NIC to the host windows machine taking advantage of the bonded NICS of the host.

- e. Click **Finish**.
3. Configure the external address for the transcoder.
 - a. Type `https://<CP FQDN/IP Address>:8445/` in a web browser.
 - b. Log in to the system using the credentials that you configured when you updated the default username and password.
 - c. Navigate to **System Configuration > Transcoder Configuration**.
 - d. Enter the external address in the **Transcoder Address**.
This is the address of the transcoder, which is the Windows server hosting the CP virtual machine.
 - e. Click **Finish**.

*** Note:**

If you are using IP addresses, the certificates have to be generated for the IP address. The IP address has to be included on both the **Common Name** field and the **Subject Alternative Name** field when generating the certificates. If the IP address is not included in the **Subject Alternative Name** field, certain devices, such as Mac computers or Android mobile devices may not operate correctly.

Registering each of the components

After you have applied a license to each of the components of the Avaya Equinox Streaming and Recording Server, you must register them with the Avaya Equinox Streaming and Recording Server Manager.

You must register all delivery nodes, virtual delivery nodes, and conference points with the Manager. In addition, you must register the transcoder with the conference point. You do not have to register the transcoder with the Manager.

About this task

The registration process is the same for all delivery nodes, virtual delivery nodes, and conference points.

Procedure

1. Type `https://<Equinox Streaming and Recording manager FQDN/IP address>:8445` in a web browser.
2. Log in to Equinox Streaming and Recording. The following credentials are the default credentials, but when you first log in, you are prompted to update your password:
 - Username: admin
 - Password: admin

3. Select the **Devices** tab.
4. Click on **Register Devices** from the left **Actions** menu.
5. Enter the IP address or FQDN of the component that you want to register and click **Register**.
6. Repeat this step for each of the components.
7. **(Optional)** Verify the registration for the conference point.
 - a. Type `https://<CP FQDN/IP Address>:8445/` in a web browser.
 - b. Log in using the following credentials:
 - Username: administrator
 - Password: administrator
 - c. **(Optional)** If this is the first time that you have logged in, you are prompted to update your password.
 - d. From the left menu bar, click **System Configuration**.
 - e. Click **Enable Services**.
 - f. Under Manage Device, click **Configure**.
 - g. Verify that the **Manage Registration State** is Registered and the **Manager Host** is the proper manager IP.
8. **(Optional)** Verify the registration for the delivery node or virtual delivery node.
 - a. Type `https://<DN FQDN/IP Address>:8445/` in a web browser.
 - b. Log in using the following credentials:
 - Username: administrator
 - Password: administrator
 - c. **(Optional)** If this is the first time that you have logged in, you are prompted to update your password.
 - d. From the menu bar, click **Configuration**.
 - e. Verify that the **Manage Registration State** is Registered and the **Network Address** is the proper manager IP.
9. Register the transcoder.
 - a. Type `https://<CP FQDN/IP Address>:8445` in a web browser.
 - b. Log in using the following credentials:
 - Username: administrator
 - Password: administrator
 - c. **(Optional)** If this is the first time that you have logged in, you are prompted to update your password.

- d. From the left menu bar, click **System Configuration**.
- e. Click **Transcoder Configuration**.
- f. Enter the IP address or FQDN of the transcoder and click **Finish**.

The transcoder is running on the host operating system. The CP is running on a virtual machine which runs on the host. The IP address/FQDN of the transcoder is the IP of the host Windows™ 2012 server. When you are securing the system with certificates, this address must match the address that you specify in the transcoder server certificate.

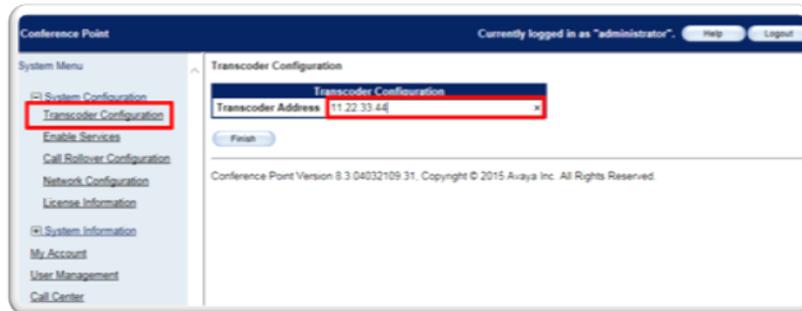


Figure 16: Transcoder Registration

Next steps

Return to the [Installation checklist](#) on page 25 to see your next task.

Unregistering each of the components

If you plan to move a device to a different Equinox Streaming and Recording environment, unregister the device before changing its location. If you do not unregister the device using the Equinox Streaming and Recording Manager, you must unregister it using its local web interface before you can register it to the new Equinox Streaming and Recording environment.

About this task

The process of unregistering is the same for all delivery nodes, virtual delivery nodes, and conference points.

Procedure

1. Log in to Equinox Streaming and Recording.
2. Click the **Devices** tab.
3. From the **Browse** menu, select the device you want to access.
A list of devices of that type is displayed.
4. Click **Advanced Options**.
5. Select one of the devices.
The device details dialog is displayed.

6. Click **Unregister**.

Configuring delivery nodes

Delivery nodes (DN) store all content that is created by the conference point and deliver the content to client systems at playback time. You must associate the conference point with the delivery nodes. A source DN is the original DN that receives a recording file from its associated conference point. A source DN sends the recording file to all of the other DNs in the network.

Equinox Streaming and Recording supports deployments containing a mix of different servers with varying amounts of storage capacities. You can have DNs with large amounts of free space and DNs with limited space. To maximize available storage, you can configure DNs which delete old recordings when the disk is almost full and you can configure DNs which permanently store all recordings.

- An edge DN is a DN on which content is stored wherever possible but this content can expire. Older content makes way for newer content.
- A master DN is a delivery node which permanently holds all content. Typically, you assign master status to the DN with the largest storage capacity. If your deployment only contains a single DN, that DN is automatically added as the master DN.

For playback, you can configure rules to determine which DN is selected when a user wants to access a recording. For example, you might want to use the DN closest to the user location, or you might want to direct the user to the original source DN. The DN closest to the user location or the original source DN may be edge DNs. Typically, if you have a master DN, that DN becomes the source DN for all recordings. If you want to expand your storage capabilities with an external storage device, it is a good idea to make the DN which is connected to the external storage device the master DN.

Edge DNs are programmed with rules which determine how recordings are selected for deletion. When the disk capacity reaches 90%, content is removed until the capacity reaches 70%. Only recordings which have been copied to other DNs can be deleted. Recordings are scheduled for deletion as follows:

- Recordings created over a week ago and never accessed.
- Recordings created over a week ago with the greatest amount of elapsed time since the last access attempt.
- Recordings created less than a week ago and never accessed, oldest creation time first.
- Recordings created less than a week ago with the greatest amount of elapsed time since the last access attempt.

Equinox Streaming and Recording stops creating new recordings and triggers an alert when capacity on the master DN reaches 90%. Equinox Streaming and Recording stops any recordings in progress and triggers an alert when capacity on the master DN reaches 95%. If the capacity on an edge DN reaches 90%, Equinox Streaming and Recording stops creating new recordings on that

particular edge DN. Technically, this should never happen because of the intelligent expiration and deletion rules.

Avaya recommends performing regular backups on the master DN. You do not have to perform backups on the edge DNs. Equinox Streaming and Recording enables you to redistribute and synchronize any media if you have to restore a master DN using the **Replace with new DN** field in the **Advanced Options** panel.

The Delivery Node Details dialog displays a list of recording files, known as **Source Programs** and **Distributed Programs**. Source programs are programs (recording files) for which this delivery node is the main source for storage. Distributed programs are programs which other delivery nodes have forwarded to this delivery node.

Procedure

1. Log in to Equinox Streaming and Recording. The following credentials are the default credentials, but when you first log in, you are prompted to update your password:
 - Username: admin
 - Password: admin
2. Select the **Devices** tab.
3. From the **Browse** menu on the left, click **Delivery Nodes**.
4. Click the name of the delivery node to display the delivery node details.

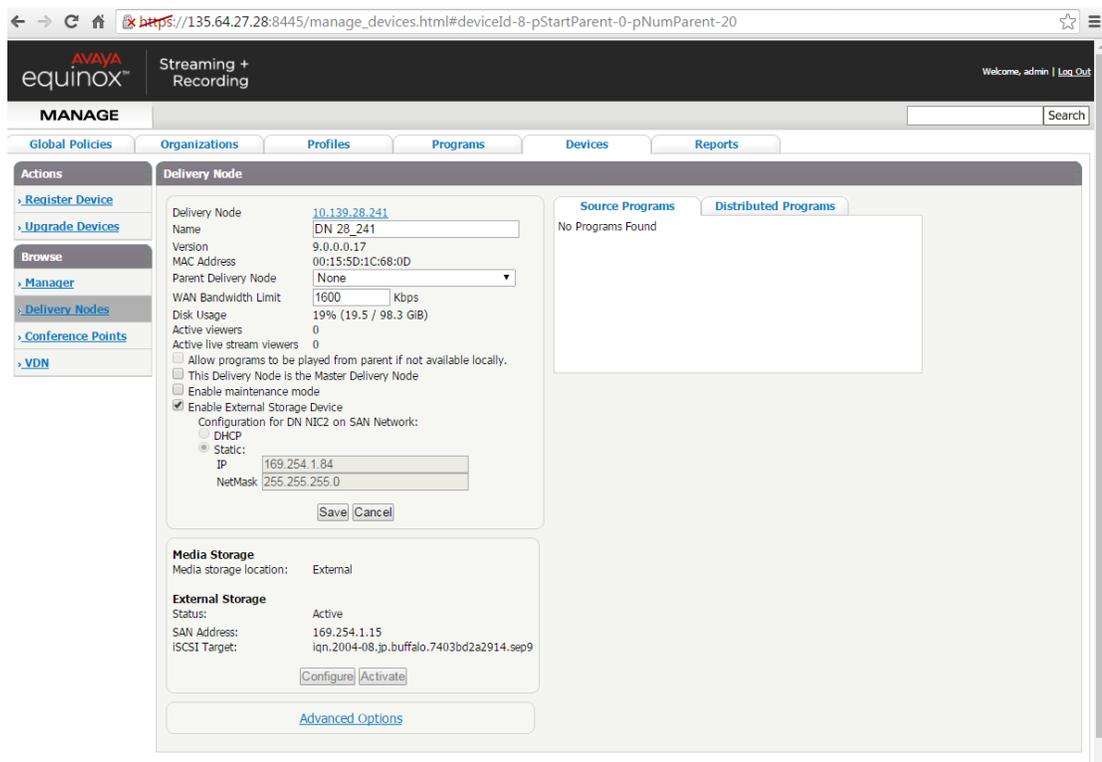


Figure 17: Delivery Node Details

5. Configure the settings, as described in [Table 8: Delivery Node Details](#) on page 66.

Table 8: Delivery Node Details

Field Name	Description
Name	Enter a name for the delivery node.
Version	Verify the version and MAC address of the delivery node.
Parent Delivery Node	Select a delivery node. The Parent Delivery Node distributes content to the delivery node and vice versa (child to parent). If this is a core or parent for the system then change the value from Not Configured to None .
WAN Bandwidth Limit	Specify the maximum bandwidth, in Kbps, that this delivery node can use when receiving/transferring content. If you enter 0 (zero), the bandwidth is unlimited.
Disk Usage	The percentage of storage space that is currently used to store recordings. You can also view the number of users who are currently accessing recordings or broadcasts.
Active Viewers	You can view the number of users who are currently accessing recordings.
Active Live Stream Viewers	You can view the number of users who are currently accessing broadcasts.
Allow programs to be played from parent if not available locally	If your deployment contains a hierarchical relationship between DNs, you can enable playback from a 'parent' DN if the recording is not available on the 'child' DN. Select this checkbox to enable playback from a parent. If you have not configured hierarchical relationships in your deployment, this checkbox is not available.
This Delivery Node is the Master Delivery Node	Select this checkbox to assign master status to this DN. This means that programs on this delivery node are protected from automatic expiration (deletion). A master DN is a delivery node which permanently holds all content. Typically, you assign master status to the DN with the largest storage capacity. If your deployment only contains a single DN, that DN is automatically added as the master DN.

Table continues...

Field Name	Description
Enable maintenance mode	Select to disable the device so that you can add or remove external storage (DN) or take it out of service (CP and DN). When a device is in maintenance mode, it does not accept new recordings and users cannot playback recordings that are stored on it.
Enable External Storage Device	You can expand your storage capacity by installing and configuring an external storage device called a storage area network (SAN), which uses the SCSI protocol over TCP/IP (iSCSI). Select this checkbox to enable this configuration.

6. **(Optional)** If you have configured your system to enable individual delivery nodes to specify the distribution policy, then an additional panel is displayed. Configure the settings, as described in [Table 9: Override Default Distribution Policy Panel](#) on page 67.

Table 9: Override Default Distribution Policy Panel

Field	Description
Unicast Only	Select to enable only unicasting from the source delivery node.
Multicast Only	Select to enable only multicasting from the source delivery node. If you select this option and the client technically supports the playing of multicast but the network location does not support multicasting, viewers cannot view the program.
Multicast and Unicast (Unicast Rollover if Multicast is Unsuccessful)	Select to enable the stream to be unicast from the source delivery node if the client does not support multicasting. If you select this option but multicast facilities are not available on the source delivery node, the unicast rollover does not occur.

*** Note:**

These settings only impact MMS streams. You can specify **Multicast Only** and still deliver HLS streams.

7. **(Optional)** Click **Advanced Options** and configure the settings as described in [Table 10: Advanced Options](#) on page 68.

Table 10: Advanced Options

Field	Description
Distribute All Programs	Select to take all the programs in the system from other source nodes and copy them to this delivery node.
Replace with new DN	Use this setting when bringing on a replacement delivery node for an older or broken system.
Synchronize	<p>Select to ensure that all programs are distributed to their assigned delivery nodes. Only perform this step if programs have indicated failure or pending for some time.</p> <p>When you click Synchronize, Equinox Streaming and Recording attempts to complete any failed or pending distributions for a given DN. You can check the progress of the synchronization by checking the DN program listing on the Delivery Node screen. This feature is useful when adding a new DN, or moving an existing DN within a DN hierarchy. The programs are not updated until you click Synchronize . You may also want to click Synchronize if a delivery node has been offline for some time and needs to synchronize programs that have occurred during this time.</p>

8. Click **Save**.

Related links

[Identifying the master delivery node](#) on page 68

Identifying the master delivery node

About this task

You can assign master delivery node status to a delivery node when you add it to the Equinox Streaming and Recording deployment. In a deployment with many delivery nodes, you may need to check which delivery node is the master delivery node.

A master DN is a delivery node which permanently holds all content. Typically, you assign master status to the DN with the largest storage capacity. If your deployment only contains a single DN, that DN is automatically added as the master DN.

Procedure

1. Log in to Equinox Streaming and Recording.
2. Select the **Devices** tab.
3. From the **Browse** menu on the left, click **Delivery Nodes**.

- View the master delivery node in the **Master Delivery Node** field.

Related links

[Configuring delivery nodes](#) on page 64

Configuring virtual delivery nodes

A virtual delivery node (VDN) delivers content to a global content delivery network (CDN) provider for cloud-based viewer playback. The appliance and the network of the CDN act as one delivery mechanism. Therefore, the VDN appliance and the CDN together create the Equinox Streaming and Recording VDN solution.

Upon program creation, the publisher includes the options of distributing the program to delivery nodes and to the Equinox Streaming and Recording VDN solution. VDN supports publishing recordings as well as live broadcast.

You can view the programs distributed to the VDN appliance and to be delivered to the CDN with the associated status of the program.

Procedure

- Log in to Equinox Streaming and Recording. The following credentials are the default credentials, but when you first log in, you are prompted to update your password:
 - Username: `admin`
 - Password: `admin`
- Select the **Devices** tab.
- From the **Browse** menu on the left, click **VDN**.
- Click the name of the VDN to display the VDN details.

Equinox Streaming and Recording supports a single VDN in any deployment.
- Configure the settings, as described in the table below.

Table 11: VDN Details

Field Name	Description
Name	Enter a name for the delivery node.
Version MAC Address	Verify the version and MAC address of the delivery node.
Source DN	Select a delivery node from where this VDN retrieves content.
Status	View the status of the VDN. It can be Up or Unreachable. View the disk usage. The delivery

Table continues...

Field Name	Description
Disk Usage	node supports a total of approximately 600GB (Avaya Common Server 2) or 900GB (Avaya Common Server 3) at RAID level 1.
If this system is in enterprise mode, the CDN panel is displayed here. If this system is in multi-tenant mode, the CDN panel is displayed in the Organizations tab.	
Account Hash	Enter the account hash value taken from Strike Tracker 3 Portal.
Host Hash	Enter the host hash value taken from Strike Tracker 3 Portal Host Configuration.
Username Password	Enter the StrikeTracker 3 username and password that you used to purchase the CDN service.
FTP User Name FTP Password	This field enables the uploading of recordings to the CDN. Enter proper cloud storage FTP credentials specific to the customer account. You receive these credentials when you purchase the CDN service.
Enable maintenance mode	Select to disable the device so that you can add or remove external storage (DN) or take it out of service (CP and DN). When a device is in maintenance mode, it does not accept new recordings and users cannot playback recordings that are stored on it.

6. Click **Save**.

Next steps

In order for the VDN to push content to the CDN, you must configure your network to enable external access because the VDN must have access to the Internet in order to communicate with the CDN. If you have a firewall, you can place the VDN in a DMZ or you can open the appropriate ports on the firewall to enable external communication. Specifically, the VDN must be able to access `upload.hwcdn.net` using FTP on port 21. In addition, the VDN requires HTTP or HTTPS access to the CDN.

Configuring conference points

You must configure a conference point to capture H.323 video content and deliver live and on demand webcasting. The Equinox Streaming and Recording conference point includes an embedded transcoder to convert H.323 calls into Windows Media or .MP4 format.

Each conference point must be associated with a delivery node. A delivery node streams and optionally archives the content captured by the conference point and delivers it to client systems.

You can configure a conference point to be in a geographic location. This means that you can assign a location to one or more conference points which coincide with locations set for Scopia Elite

MCUs and/or Equinox Media Servers in Equinox Management. When a program starts, Equinox Management includes the desired location, and a conference point close to the MCU/Media Server can be selected. If there are no conference points matching the location passed by Equinox Management, then any conference points without a location are treated as a single pool of conference points, and one of those is selected. If there are no conference points available, the call fails.

Each conference point has a limit to the number of simultaneous high definition or standard definition calls it can handle.

Procedure

1. Log in to Equinox Streaming and Recording. The following credentials are the default credentials, but when you first log in, you are prompted to update your password:
 - Username: admin
 - Password: admin
2. Select the **Devices** tab.
3. From the **Browse** menu on the left, click **Conference Points**.
4. Click the name of the conference point to display the conference point details.

Figure 18: Conference Point Details

5. Configure the settings, as described in [Table 12: Conference Point Details](#) on page 71.

Table 12: Conference Point Details

Field Name	Description
Name	Enter a name for the conference point.
Version	Verify the version and MAC address of the conference point.

Table continues...

Field Name	Description
Source DN	Select a delivery node. Alternatively, you can select a delivery node from the Source Group field.
Source Group	Select a delivery node viewer group. Alternatively, you can select a delivery node from the Source DN field. The Source Group field displays any viewer groups. A viewer group is a group of delivery nodes and these groups offer redundancy. If one of the delivery nodes in a group is not available, an alternative delivery node from the same group is selected.
Location	Enter a location. The location must match a location specified for a Scopia Elite MCU and/or Equinox Media Server in Equinox Management. If you are not specifying locations in Equinox Management, you should leave it blank.
Enable maintenance mode	Select to disable the device so that you can add or remove external storage (DN) or take it out of service (CP and DN). When a device is in maintenance mode, it does not accept new recordings and users cannot playback recordings that are stored on it.
Gatekeeper IP	Enter the IP address for the gatekeeper with which you plan to register. The gatekeeper must be the same as the one used by Equinox Management.
Gatekeeper Service Prefix	This is an optional field. Enter the service prefix designator for this conference point. You should leave this field as blank.

6. Click **Save**.

Specifying polling intervals and the network address

About this task

You must specify how frequently the Equinox Streaming and Recording communicates with the other components, such as the conference points and delivery nodes. You must also specify the network on which the Equinox Streaming and Recording resides. The polling interval should be in proportion to the number of devices. The fewer the devices, the shorter the intervals. For example, if you have over 200 delivery nodes, Avaya recommends setting the polling to 5 minutes.

The polling frequency affects the latency between the status transitions of the remote device and the appearance of the status on the details page for the device.

Procedure

1. Log in to Equinox Streaming and Recording.
2. Click the **Global Policies** tab.
3. Click **General Options**.
4. Configure the settings, as described in [Table 13: Polling Settings](#) on page 73.

Table 13: Polling Settings

Field Name	Description
Conference Point Polling Frequency	Specify how often the Equinox Streaming and Recording Manager checks for device configuration or status changes for each of the conference points.
Delivery Node Polling Frequency	Specify how often the Equinox Streaming and Recording Manager checks for device configuration or status changes for each of the delivery nodes.
Network Address for Device Communication	Enter the IP address or DNS name of the Equinox Streaming and Recording Manager. This is the address that the other devices (delivery nodes, conference points, virtual delivery nodes) will use to communicate with the Equinox Streaming and Recording Manager. If split-horizon DNS is being used, use the DNS name for the Equinox Streaming and Recording Manager. Since this address is used by the other devices to communicate back to the Equinox Streaming and Recording Manager, it is important to specify the correct routable address.
Retain Deleted Recordings For	For more information, see <i>Administering Avaya Equinox Streaming and Recording</i> , which is available on https://support.avaya.com/ .

5. Click **Save**.

Adding and Modifying Equinox Streaming and Recording Servers in Equinox Management

About this task

This section explains how to configure Avaya Equinox Streaming and Recording Server settings in Equinox Management. For example, you can configure the URL of the Avaya Scopia Desktop Server that users connect to in order to see broadcasts.

If you are using the Avaya Scopia Content Center Streaming and Recording Server, you need to configure and manage the servers using the Avaya Scopia Desktop Server. For more information, see the *Administrator Guide for Avaya Scopia Desktop Server*, which is from a previous release and is available on support.avaya.com.

! Important:

Once you configure a Equinox Streaming and Recording Server you cannot revert back to the Scopia Content Center Streaming Server or the Scopia Content Center Recording Server.

Procedure

1. Access the Equinox Management administrator portal.
2. In the **Devices** tab, select **Streaming & Recording Server**.
3. If you are modifying the Equinox Streaming and Recording Server, select the link in the **Name** column, or select **Add** to create the Equinox Streaming and Recording Server profile. The **Add Streaming & Recording Server** page appears ([Figure 19: Adding an Avaya Equinox Streaming and Recording server](#) on page 74).

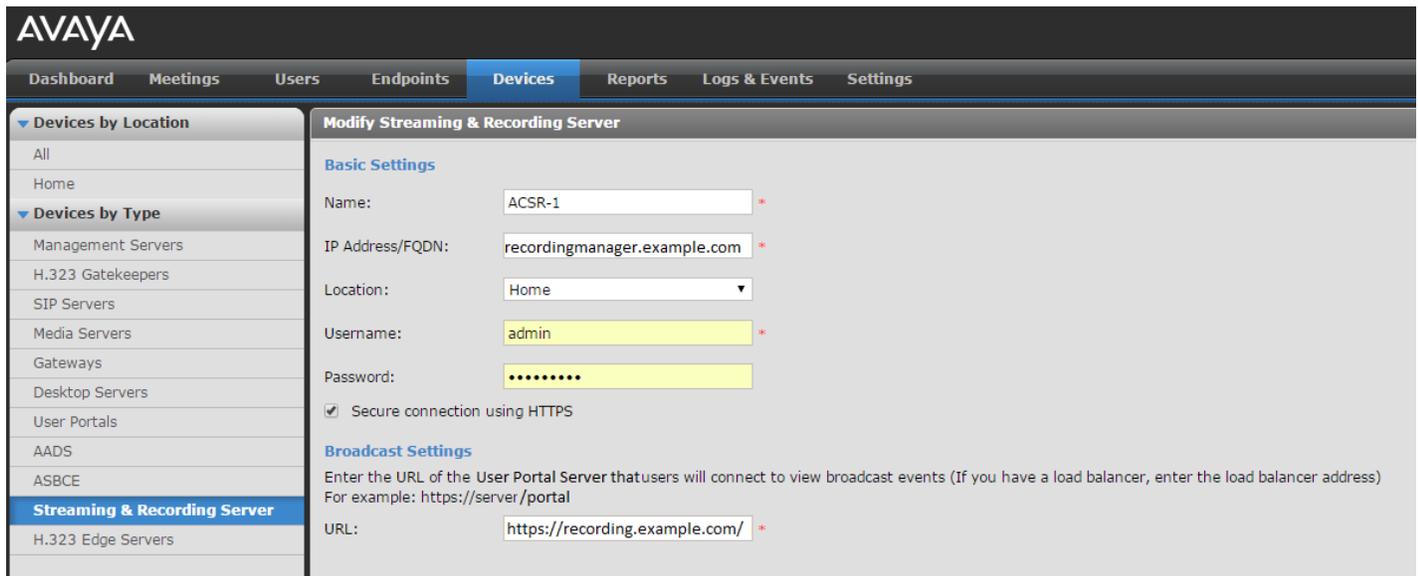


Figure 19: Adding an Avaya Equinox Streaming and Recording server

4. Configure the Equinox Streaming and Recording Server’s settings, as described in ([Table 14: Configuring the Avaya Equinox Streaming and Recording](#) on page 74).

Table 14: Configuring the Avaya Equinox Streaming and Recording

Field Name	Description
Name	Enter a name to identify the Equinox Streaming and Recording Server.
IP address/FQDN	Enter the management IP address or the FQDN of the Equinox Streaming and Recording Server. This is the address that clients use to access the Equinox Streaming and Recording Server portal within

Table continues...

Field Name	Description
	Scopia Desktop. If the server is being deployed in the DMZ, this value must be an FQDN or an IP address that everyone can access. If the server is being deployed inside the network but is accessible externally using reverse proxy, this value must be an FQDN which resolves to the reverse proxy when outside the network.
Username	Enter the administrative username used to login to the Equinox Streaming and Recording Server portal. The default is admin . If you change the username in the Equinox Streaming and Recording Server, you must update the username here.
Password	Enter the administrative password used to login to the Equinox Streaming and Recording Server portal. The default is admin . If you change the password in the Equinox Streaming and Recording Server, you must update the password here.
Secure connection using HTTPS	<p> Important:</p> <p>This option is not available until you first configure the server in Equinox Management, and it connects to the Equinox Streaming and Recording Server. When you subsequently open this screen, the option only becomes available if you have a regular license. If you have a non-encrypted license you cannot secure the connection.</p> <p>Select to enable HTTPS, which encrypts the communication between the Equinox Streaming and Recording Server and the client. It is important to be consistent. If the Avaya Scopia Desktop Server is configured for HTTPS, you must select this checkbox to ensure that the Equinox Streaming and Recording Server matches the Avaya Scopia Desktop Server. To enable HTTP deselect the checkbox.</p> <p>HTTPS is the secured version of the standard web browser protocol HTTP. It secures communication between a web browser and a web server through authentication of the web site and encrypting communication between them. For example, you can use HTTPS to secure web browser access to the web interface of many Equinox Solution products.</p>
URL	This field is not used by the Equinox Streaming and Recording Server or by the new Unified Portal. Avaya plans to remove it in the next release of Equinox Management. You can enter any HTTP URL. Only the legacy User Portal Scheduler uses this field. For this specific use, enter the actual HTTP URL of the Unified Portal. For example: https://server/portal

5. Select **OK** to save your changes.

Configuring the Avaya Equinox Recording Gateway

Audio-only and audio and web collaboration conferences use SIP. Video, audio, and web collaboration conferences use H.323. In order to support this mix of protocols, you must deploy a Avaya Equinox Recording Gateway. You can deploy the Avaya Equinox Recording Gateway using the Avaya Equinox Management interface.

When a user records a conference, Avaya Equinox Management identifies the type of recording that is required by the user. The Audio Service and Audio Service with Web Collaboration meeting types are used when a user requests the recording of an audio-only or audio and web collaboration conference. When a user requests the recording of a full video, audio, and web collaboration conference, Avaya Equinox Recording Gateway is not used.

About this task

This section summarizes the steps for configuring the Avaya Equinox Recording Gateway to enable it to be used for the recording of conferences that use SIP. For more information on adding the gateway to Avaya Equinox Management and for information on configuring the meeting types, see *Administering Avaya Equinox Management*, which is available on support.avaya.com.

Procedure

- Add the Avaya Equinox Recording Gateway as a gateway, in Avaya Equinox Management. There is a drop-down menu, called **Avaya Recording Gateway**.
- Upload the default audio prompts to the Avaya Equinox Recording Gateway.
- Verify that the two new meeting types are displayed in the Avaya Equinox Management interface.
- Ensure that you are logged into Avaya Equinox Management as an administrator.
- Two meeting types are available and can be selected when configuring your virtual room or scheduling a meeting. They are Audio Service and Audio Service with Web Collaboration.

Chapter 4: Resources

Documentation

See the following related documents at <http://support.avaya.com>.

Title	Use this document to:	Audience
Implementing		
<i>Deploying Avaya Equinox Solution</i>	Plan for and deploy Avaya Equinox Solution	Partners, Services, and Support personnel
<i>Deployment Guide for Avaya Equinox H.323 Edge</i>	Plan for and deploy Avaya Equinox H.323 Edge	Partners, Services, and Support personnel
<i>Deployment Guide for Avaya Scopia® XT Series</i>	Plan for and deploy Avaya Scopia® XT Series	Partners, Services, and Support personnel
<i>Deployment Guide for XT Telepresence</i>	Plan for and deploy XT Telepresence	Partners, Services, and Support personnel
<i>Deployment Guide for Avaya Video Collaboration Solution for IP Office</i>	Plan for and deploy Avaya Video Collaboration Solution for IP Office	Partners, Services, and Support personnel
<i>Deployment Guide for Avaya Equinox Add-in for IBM Lotus Notes</i>	Plan for and deploy Avaya Equinox Add-in for IBM Lotus Notes	Partners, Services, and Support personnel
<i>Deployment Guide for Avaya Scopia® Video Gateway for Microsoft Lync</i>	Plan for and deploy Avaya Scopia® Video Gateway for Microsoft Lync	Partners, Services, and Support personnel
<i>OCS Deployment Guide for Avaya Scopia® Video Gateway for Microsoft Lync</i>	Plan for and deploy Avaya Scopia® Video Gateway for Microsoft Lync	Partners, Services, and Support personnel
<i>Deployment Guide for Avaya Scopia XT Desktop Server for IP Office</i>	Plan for and deploy Avaya Scopia XT Desktop Server for IP Office	Partners, Services, and Support personnel

Table continues...

Title	Use this document to:	Audience
<i>Deployment Guide for Avaya Scopia XT Desktop Server</i>	Plan for and deploy Avaya Scopia XT Desktop Server	Partners, Services, and Support personnel
<i>Avaya Equinox Solution Guide for Small to Medium (SMB) Enterprises</i>	Plan for and deploy Avaya Equinox Solution for small and medium enterprises	Partners, Services, and Support personnel
<i>Avaya Equinox Solution Guide for Medium to Large Enterprises</i>	Plan for and deploy Avaya Equinox Solution for medium and large enterprises	Partners, Services, and Support personnel
<i>Avaya Equinox Solution Guide for Large Enterprises and Service Providers</i>	Plan for and deploy Avaya Equinox Solution for large enterprises and service providers	Partners, Services, and Support personnel
<i>Installation Notes — Discovering the IP address of the XT Server</i>	Install XT Server	Partners, Services, and Support personnel
<i>Installation Guide for Avaya Scopia XT Desktop Server</i>	Install Avaya Scopia XT Desktop Server	Partners, Services, and Support personnel
<i>Installation Guide for Avaya Scopia Desktop Server for Avaya Aura® Power Suite</i>	Install Avaya Scopia Desktop Server for Avaya Aura® Power Suite	Partners, Services, and Support personnel
<i>Installation Guide for Kerberos in Avaya Equinox Management</i>	Install Kerberos in Avaya Equinox Management	Partners, Services, and Support personnel
<i>Rack Mounting Guide for Avaya Scopia® Elite 6000 MCU</i>	Install the Avaya Scopia® Elite 6000 MCU hardware	Partners, Services, and Support personnel
Administering		
<i>Administrator Guide for Avaya Scopia® Elite 6000 MCU</i>	Perform administration tasks for Avaya Scopia® Elite 6000 MCU	System administrators
<i>Administrator Guide for Avaya Scopia® Elite 6000 MCU for Avaya Aura® Power Suite</i>	Perform administration tasks for Avaya Scopia® Elite 6000 MCU for Avaya Aura® Power Suite	System administrators
<i>Administering Avaya Equinox Media Server</i>	Perform administration tasks for Avaya Equinox Media Server	System administrators
<i>Administrator Guide for Avaya Equinox Management</i>	Perform administration tasks for Avaya Equinox Management	System administrators
<i>Administrator Guide for Avaya Equinox Application Server for Avaya Aura® Power Suite</i>	Perform administration tasks for Avaya Equinox Application Server for Avaya Aura® Power Suite	System administrators
<i>Administrator Guide for Avaya Equinox Streaming and Recording Server</i>	Perform administration tasks for Avaya Equinox Streaming and Recording Server	System administrators

Table continues...

Title	Use this document to:	Audience
<i>Administrator Guide for Avaya Scopia Desktop Server</i>	Perform administration tasks for Avaya Scopia Desktop Server	System administrators
<i>Administrator Guide for Avaya Scopia Desktop Server for Avaya Aura® Power Suite</i>	Perform administration tasks for Avaya Scopia Desktop Server for Avaya Aura® Power Suite	System administrators
<i>Quick Setup Guide for Avaya Scopia® XT5000 Codec Only</i>	Perform administration tasks for the Avaya Scopia® XT5000 codec	System administrators
<i>Avaya Scopia® XT5000 Codec Only</i>	Perform administration tasks for the Avaya Scopia® XT5000 codec	System administrators
<i>Avaya Scopia® XT Executive 240</i>	Perform administration tasks for Avaya Scopia® XT Executive 240	System administrators
<i>Avaya Scopia® XT5000 Server for IP Office</i>	Perform administration tasks for Avaya Scopia® XT5000 Server for IP Office	System administrators
<i>Avaya Scopia® XT Premium 3-way Microphone Pod</i>	Perform administration tasks for Avaya Scopia® XT Premium 3-way Microphone Pod	System administrators
<i>Avaya Scopia® XT4300</i>	Perform administration tasks for Avaya Scopia® XT4300	System administrators
<i>Avaya Scopia® XT4300 Codec Only</i>	Perform administration tasks for the Avaya Scopia® XT4300 codec	System administrators
<i>Avaya Scopia® XT7100 Codec Only</i>	Perform administration tasks for the Avaya Scopia® XT7100 codec	System administrators
<i>Avaya Scopia® XT Deluxe Camera</i>	Perform administration tasks for Avaya Scopia® XT Deluxe Camera	System administrators
<i>Avaya Scopia® XT Flex Camera</i>	Perform administration tasks for Avaya Scopia® XT Flex Camera	System administrators
<i>Quick Tips for Avaya Scopia® XT Series</i>	Perform administration tasks for Avaya Scopia® XT Series	System administrators
Supporting		
<i>Reference Guide for Avaya Equinox Management XML API</i>	Understand how to perform administration tasks on Avaya Equinox Management	System administrators, Customers, Partners, Services, and Support personnel
<i>SAMPLE Reference Guide for Avaya Equinox Management XML API</i>	Understand how to perform administration tasks on Avaya Equinox Management	System administrators, Customers, Partners, Services, and Support personnel
<i>Reference Guide for Avaya Equinox Management SNMP Traps</i>	Understand how to configure Avaya Equinox Management to send information to a	System administrators, Customers, Partners,

Table continues...

Title	Use this document to:	Audience
	remote SNMP management client of its operational status	Services, and Support personnel
<i>Reference Guide for Avaya Equinox Management CDR Files</i>	Understand how to perform administration tasks on Avaya Equinox Management	System administrators, Customers, Partners, Services, and Support personnel
<i>Reference Guide for Port Security for Avaya Equinox Solution</i>	Understand how to perform the administration tasks on Avaya Equinox Solution	System administrators, Customers, Partners, Services, and Support personnel
<i>Purchasing Guide for AvayaLive™ Video</i>	Understand how to purchase AvayaLive™ Video	System administrators, Customers, Partners, Services, and Support personnel
Using		
<i>Using Avaya Equinox Unified Portal</i>	Understand the features of and use Avaya Equinox Unified Portal	Customers
<i>User Guide for Avaya Scopia® Elite 6000 MCU</i>	Understand the features of and use Avaya Scopia® Elite 6000 MCU	Customers
<i>Using Avaya Equinox Media Server</i>	Understand the features of and use Avaya Equinox Media Server	Customers
<i>User Guide for Avaya Equinox H.323 Edge Client</i>	Understand the features of and use Avaya Equinox H.323 Edge Client	Customers
<i>User Guide for Avaya Scopia® XT Series</i>	Understand the features of and use Avaya Scopia® XT Series	Customers
<i>User Guide for Avaya Equinox Management</i>	Understand the features of and use Avaya Equinox Management	Customers
<i>User Guide for Avaya Equinox Add-in for IBM Lotus Notes</i>	Understand the features of and use Avaya Equinox Add-in for IBM Lotus Notes	Customers
<i>User Guide for Avaya Equinox Add-in for Microsoft Outlook</i>	Understand the features of and use Avaya Equinox Add-in for Microsoft Outlook	Customers
<i>User Guide for Avaya Equinox Add-in for Microsoft Outlook for Avaya Aura® Power Suite</i>	Understand the features of and use Avaya Equinox Add-in for Microsoft Outlook for Avaya Aura® Power Suite	Customers
<i>User Guide for Avaya Scopia® Video Gateway for Microsoft Lync</i>	Understand the features of and use Avaya Scopia® Video Gateway for Microsoft Lync	Customers
<i>User Guide for Avaya Scopia® XT Desktop Client</i>	Understand the features of and use Avaya Scopia® XT Desktop Client	Customers

Table continues...

Title	Use this document to:	Audience
<i>User Guide for Avaya Scopia Mobile</i>	Understand the features of and use Avaya Scopia Mobile	Customers
<i>User Guide for Avaya Scopia® Control</i>	Understand the features of and use Avaya Scopia® Control	Customers

Finding documents on the Avaya Support website

Procedure

1. Navigate to <http://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 an appropriate release number.
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 displays the documents only from the selected category.

7. Click **Enter**.

Training

The following courses are available on the Avaya Learning website at <http://www.avaya-learning.com>. After logging in to the website, enter the course code or the course title in the **Search** field and press **Enter** or click **>** to search for the course.

Course code	Course title
Avaya Equinox administration training course	
2038W	Avaya Equinox Administration
Avaya Equinox Team Engagement solution courses	
3140W	Avaya Equinox Solutions Overview
3170W	Avaya Equinox Solutions Customer Field Study
3171T	APDS Avaya Enterprise Team Engagement Solutions Online Test
Avaya Equinox Over The Top solution courses	
3281W	Avaya Video Conferencing Solutions Overview

Table continues...

Course code	Course title
3283W	Avaya Video Conferencing Solutions Customer Field Study
3271T	APDS Avaya Video Conferencing Solutions Online Test
Avaya Equinox Sales course	
3140WD02	Designing Avaya Equinox Clients & Breeze Client SDK Sales Readiness Quiz
3140WD03	Avaya Equinox Sales Readiness — Design Delta Training

Support

Go to the Avaya Support website at <http://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 questions, or request an agent to connect you to a support team if an issue requires additional expertise.

Using the Avaya InSite Knowledge Base

The Avaya InSite Knowledge Base is a web-based search engine that provides:

- Up-to-date troubleshooting procedures and technical tips
- Information about service packs
- Access to customer and technical documentation
- Information about training and certification programs
- Links to other pertinent information

If you are an authorized Avaya Partner or a current Avaya customer with a support contract, you can access the Knowledge Base without extra cost. You must have a login account and a valid Sold-To number.

Use the Avaya InSite Knowledge Base for any potential solutions to problems.

1. Go to <http://www.avaya.com/support>.
2. Log on to the Avaya website with a valid Avaya user ID and password.
The system displays the Avaya Support page.
3. Click **Support by Product > Product Specific Support**.
4. In **Enter Product Name**, enter the product, and press `Enter`.
5. Select the product from the list, and select a release.
6. Click the **Technical Solutions** tab to see articles.
7. Select relevant articles.

Glossary

1080p	See Full HD on page 87.
2CIF	2CIF describes a video resolution of 704 x 288 pixels (PAL) or 704 x 240 (NTSC). It is double the width of CIF, and is often found in CCTV products.
2SIF	2SIF describes a video resolution of 704 x 240 pixels (NTSC) or 704 x 288 (PAL). This is often adopted in IP security cameras.
4CIF	4CIF describes a video resolution of 704 x 576 pixels (PAL) or 704 x 480 (NTSC). It is four times the resolution of CIF and is most widespread as the standard analog TV resolution.
4SIF	4SIF describes a video resolution of 704 x 480 pixels (NTSC) or 704 x 576 (PAL). This is often adopted in IP security cameras.
720p	See HD on page 89.
AAC	AAC is an audio codec which compresses sound but with better results than MP3.
AGC (Automatic Gain Control)	Automatic Gain Control (AGC) smooths audio signals through normalization, by lowering sounds which are too strong and strengthening sounds which are too weak. This is relevant with microphones situated at some distance from the speaker, like room systems. The result is a more consistent audio signal within the required range of volume.
Alias	An alias in H.323 represents the unique name of an endpoint. Instead of dialing an IP address to reach an endpoint, you can dial an alias, and the gatekeeper resolves it to an IP address.
Auto-Attendant	Auto-Attendant is a video-based IVR which provides quick access to meetings through a set of visual menus. Participants can select the DTMF tone-based menu options using the standard numeric keypads of endpoints. Auto-Attendant works with H.323 and SIP endpoints.
Avaya Equinox Streaming and Recording Manager	The Avaya Equinox Streaming and Recording Manager provides a web-based interface to configure and manage Equinox Streaming and Recording Server software, devices, services, and users. The Equinox Streaming and Recording Server Manager application resides on a single

hardware platform and provides access to all content in the Equinox Streaming and Recording Server environment.

Avaya Equinox Streaming and Recording Manager Portals

The Equinox Streaming and Recording Server Manager provides a portal for administering content. When you log in to the web interface, you can access the Administrator portal.

Avaya Scopia Content Slider

See [Content Slider](#) on page 85.

Balanced Microphone

A balanced microphone uses a cable that is built to reduce noise and interference even when the cable is long. This reduces audio disruptions resulting from surrounding electromagnetic interference.

BFCP (Binary Floor Control Protocol)

BFCP is a protocol which coordinates shared videoconference features in SIP calls, often used by one participant at a time. For example, when sharing content to others in the meeting, one participant is designated as the presenter, and is granted the floor for presenting. All endpoints must be aware that the floor was granted to that participant and react appropriately.

Bitrate

Bitrate is the speed of data flow. Higher video resolutions require higher bitrates to ensure the video is constantly updated, thereby maintaining smooth motion. If you lower the bitrate, you lower the quality of the video. In some cases, you can select a lower bitrate without noticing a significant drop in video quality; for example during a presentation or when a lecturer is speaking and there is very little motion. Bitrate is often measured in kilobits per second (kbps).

Call Control

See [Signaling](#) on page 94.

Cascaded Videoconference

A cascaded videoconference is a meeting distributed over more than one physical Scopia Elite MCU and/or Equinox Media Server, where a master MCU/Media Server connects to one or more slave MCUs/Media Servers to create a single videoconference. It increases the meeting capacity by combining the resources of several MCUs/Media Servers. This can be especially useful for distributed deployments across several locations, reducing bandwidth usage.

CDN

Equinox Streaming and Recording enables you to publish content to the cloud, using a virtual delivery node (VDN) and a content delivery network (CDN). The VDN and the network of the CDN act as one delivery mechanism. When a user creates a recording (program), they can choose to distribute it to the CDN, as well as to the regular delivery node (DN).

CIF

CIF, or Common Intermediate Format, describes a video resolution of 352 × 288 pixels (PAL) or 352 × 240 (NTSC). This is sometimes referred to as Standard Definition (SD).

Conference Point	The Avaya Equinox Streaming and Recording Conference Point is a video conferencing gateway appliance that captures standard or high definition video conferences. It transcodes, creates, and records the video conferences in a streaming media format. You can use it to capture H.323 video for instant video webcasting or on-demand publishing.
Content Slider	The Avaya Scopia Content Slider stores the data already presented in the videoconference and makes it available for participants to view during the meeting.
Continuous Presence	Continuous presence enables viewing multiple participants of a videoconference at the same time, including the active speaker. This graphics-intensive work requires scaling and mixing the images together into one of the predefined video layouts. The range of video layouts depends on the type of media processing supported, typically located in the MCU/Media Server.
Control	Control, or media control, sets up and manages the media of a call (its audio, video and data). Control messages include checking compatibility between endpoints, negotiating video and audio codecs, and other parameters like resolution, bitrate and frame rate. Control is communicated via H.245 in H.323 endpoints, or by SDP in SIP endpoints. Control occurs within the framework of an established call, after signaling.
CP	See Continuous Presence on page 85.
Dedicated Endpoint	A dedicated endpoint is a hardware endpoint for videoconferencing assigned to a single user. It is often referred to as a personal or executive endpoint, and serves as the main means of video communications for this user. For example, XT Executive. It is listed in the organization's LDAP directory as associated exclusively with this user.
Delivery Node	The Avaya Equinox Streaming and Recording Delivery Node provides on-demand and broadcast video delivery. You can use it alone or in a hierarchy of devices. It supports thousands of concurrent streams. The Delivery Node uses intelligent routing, content caching, and inherent redundancy to ensure transparent delivery of high-quality video.
Dial Plan	A dial plan defines a way to route a call and to determine its characteristics. In traditional telephone networks, prefixes often denote geographic locations. In videoconferencing deployments, prefixes are also used to define the type and quality of a call. For example, dial 8 before a number for a lower bandwidth call, or 6 for an audio-only call, or 5 to route the call to a different branch.
Dial Prefix	A dial prefix is a number added at the beginning of a dial string to route it to the correct destination, or to determine the type of call. Dial prefixes are

defined in the organization's dial plan. For example, dial 9 for an outside line, or dial 6 for an audio only call.

Distributed Deployment

A distributed deployment describes a deployment where the solution components are geographically distributed in more than one network location.

DNS Server

A DNS server is responsible for resolving domain names in your network by translating them into IP addresses.

DTMF

DTMF, or touch-tone, is the method of dialing on touch-tone phones, where each number is translated and transmitted as an audio tone.

Dual Video

Dual video is the transmitting of two video streams during a videoconference, one with the live video while the other is a shared data stream, like a presentation.

Dynamic Video Layout

The dynamic video layout is a meeting layout that switches dynamically to include the maximum number of participants it can display on the screen (up to 9 on the XT Series, or up to 28 on Scopia Elite MCU and/or Equinox Media Server). The largest image always shows the active speaker.

E.164

E.164 is an address format for dialing an endpoint with a standard telephone numeric keypad, which only has numbers 0 - 9 and the symbols: * and #.

Endpoint

An endpoint is a tool through which people can participate in a videoconference. Its display enables you to see and hear others in the meeting, while its microphone and camera enable you to be seen and heard by others. Endpoints include dedicated endpoints, like XT Executive, software endpoints like Scopia Desktop Client, mobile device endpoints like Scopia Mobile, room systems like XT Series, and telepresence systems like XT Telepresence.

Endpoint Alias

See [Alias](#) on page 83.

FEC

Forward Error Correction (FEC) is a proactive method of sending redundant information in the video stream to preempt quality degradation. FEC identifies the key frames in the video stream that should be protected by FEC. There are several variants of the FEC algorithm. The Reed-Solomon algorithm (FEC-RS) sends redundant packets per block of information, enabling the sender (like the Scopia Elite MCU and/or Equinox Media Server) to manage up to ten percent packet loss in the video stream with minimal impact on the smoothness and quality of the video.

FECC

Far End Camera Control (FECC) is a feature of endpoint cameras, where the camera can be controlled remotely by another endpoint in the call.

Forward Error Correction	See FEC on page 86.
FPS	See Frames Per Second on page 87.
Frame Rate	See Frames Per Second on page 87.
Frames Per Second	Frames Per Second (fps), also known as the frame rate, is a key measure in video quality, describing the number of image updates per second. The average human eye can register up to 50 frames per second. The higher the frame rate, the smoother the video.
FTP	The File Transfer Protocol (FTP) is a standard network protocol used to transfer computer files from one host to another host over a TCP-based network, such as the Internet. FTP is built on a client-server architecture and uses separate control and data connections between the client and the server. FTP users may authenticate themselves using a clear-text sign-in protocol, normally in the form of a username and password, but can connect anonymously if the server is configured to allow it.
Full HD	Full HD, or Full High Definition, also known as 1080p, describes a video resolution of 1920 x 1080 pixels.
Full screen Video Layout	The full screen view shows one video image. Typically, it displays the remote presentation, or, if there is no presentation, it displays the other meeting participant(s).
Gatekeeper	A gatekeeper routes audio and video H.323 calls by resolving dial strings (H.323 alias or URI) into the IP address of an endpoint, and handles the initial connection of calls. Gatekeepers also implement the dial plan of an organization by routing H.323 calls depending on their dial prefixes. Equinox Management includes a built-in Avaya Equinox H.323 Gatekeeper, while H.323 Gatekeeper is a standalone gatekeeper.
Gateway	A gateway is a component in a video solution which routes information between two subnets or acts as a translator between different protocols. For example, a gateway can route data between the headquarters and a partner site, or between two protocols like the Equinox TIP Gateway, or the 100 Gateway.
GLAN	GLAN, or gigabit LAN, is the name of the network port on the XT Series. It is used on the XT Series to identify a 10/100/1000MBit ethernet port.
H.225	H.225 is part of the set of H.323 protocols. It defines the messages and procedures used by gatekeepers to set up calls.
H.235	H.235 is the protocol used to authenticate trusted H.323 endpoints and encrypt the media stream during meetings.

- H.239** H.239 is a widespread protocol used with H.323 endpoints, to define the additional media channel for data sharing (like presentations) alongside the videoconference, and ensures only one presenter at a time.
- H.243** H.243 is the protocol used with H.323 endpoints enabling them to remotely manage a videoconference.
- H.245** H.245 is the protocol used to negotiate call parameters between endpoints, and can control a remote endpoint from your local endpoint. It is part of the H.323 set of protocols.
- H.261** H.261 is an older protocol used to compress CIF and QCIF video resolutions. This protocol is not supported by the XT Series.
- H.263** H.263 is an older a protocol used to compress video. It is an enhancement to the H.261 protocol.
- H.264** H.264 is a widespread protocol used with SIP and H.323 endpoints, which defines video compression. Compression algorithms include 4x4 transforms and a basic motion comparison algorithm called P-slices. There are several profiles within H.264. The default profile is the H.264 Baseline Profile, but H.264 High Profile uses more sophisticated compression techniques.
- H.264 Baseline Profile** See [H.264](#) on page 88.
- H.264 High Profile** H.264 High Profile is a standard for compressing video by up to 25% over the H.264 Baseline Profile, enabling high definition calls to be held over lower call speeds. It requires both sides of the transmission (sending and receiving endpoints) to support this protocol. H.264 High Profile uses compression algorithms like:
- CABAC compression (Context-Based Adaptive Binary Arithmetic Coding)
 - 8x8 transforms which more effectively compress images containing areas of high correlation
- These compression algorithms demand higher computation requirements, which are offered with the dedicated hardware available in Equinox Solution components. Using H.264 High Profile in videoconferencing requires that both the sender and receiver's endpoints support it. This is different from SVC which is an adaptive technology working to improve quality even when only one side supports the standard.
- H.320** H.320 is a protocol for defining videoconferencing over ISDN networks.
- H.323** H.323 is a widespread set of protocols governing the communication between endpoints in videoconferences and point-to-point calls. It defines the call signaling, control, media flow, and bandwidth regulation.

H.323 Alias	See Alias on page 83.
H.350	H.350 is the protocol used to enhance LDAP user databases to add video endpoint information for users and groups.
H.460	H.460 enhances the standard H.323 protocol to manage firewall and NAT traversal using ITU-T standards. H.460–compliant endpoints can directly communicate with Equinox H.323 Edge. The endpoints act as H.460 clients and Equinox H.323 Edge acts as an H.460 server.
HD	A HD ready device describes its high definition resolution capabilities of 720p, a video resolution of 1280 x 720 pixels.
High Availability	High availability is a state where you ensure better service and less downtime by deploying additional servers. There are several strategies for achieving high availability, including deployment of redundant servers managed by load balancing systems.
High Definition	See HD on page 89.
High Profile	See H.264 High Profile on page 88.
HTTP	<p>The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web.</p> <p>Hypertext is structured text that uses logical links (hyperlinks) between nodes containing text. HTTP is the protocol to exchange or transfer hypertext.</p>
HTTPS	HTTPS is the secured version of the standard web browser protocol HTTP. It secures communication between a web browser and a web server through authentication of the web site and encrypting communication between them. For example, you can use HTTPS to secure web browser access to the web interface of many Equinox Solution products.
Image Resolution	See Resolution on page 93.
KBps	Kilobytes per second (KBps) measures the bitrate in kilobytes per second, not kilobits, by dividing the number of kilobits by eight. Bitrate is normally quoted as kilobits per second (kbps) and then converted to kilobytes per second (KBps). Bitrate measures the throughput of data communication between two devices.
kbps	Kilobits per second (kbps) is the standard unit to measure bitrate, measuring the throughput of data communication between two devices. Since this counts the number of individual bits (ones or zeros), you must divide by eight to calculate the number of kilobytes per second (KBps).

LDAP	LDAP is a widespread standard database format which stores network users. The format is hierarchical, where nodes are often represented <i>as branch location > department > sub-department, or executives > managers > staff members</i> . The database standard is employed by most user directories including Microsoft Active Directory. H.350 is an extension to the LDAP standard for the videoconferencing industry.
Lecture Mode	Scopia Desktop's lecture mode allows the participant defined as the lecturer to see all the participants, while they see only the lecturer. All participants are muted except the lecturer, unless a participant asks permission to speak and is unmuted by the lecturer. This mode is tailored for distance learning, but you can also use it for other purposes like when an executive addresses employees during company-wide gatherings.
Legacy endpoints	Legacy endpoints are H.323-based endpoints that might or might not support H.460.
Load balancer	A load balancer groups together a set (or cluster) of servers to give them a single IP address, known as a virtual IP address. It distributes client service requests amongst a group of servers. It distributes loads according to different criteria such as bandwidth, CPU usage, or cyclic (round robin). Load balancers are also known as application delivery controllers (ADC).
Location	A location is a physical space (building) or a network (subnet) where video devices can share a single set of addresses. A distributed deployment places these components in different locations, often connected via a VPN.
Management	Management refers to the administration messages sent between components of the Equinox Solution as they manage and synchronize data between them. Management also includes front-end browser interfaces configuring server settings on the server. Management messages are usually transmitted via protocols like HTTP, SNMP, FTP or XML. For example, Equinox Management uses management messages to monitor the activities of an MCU/Media Server, or when it authorizes the MCU/Media Server to allow a call to proceed.
MBps	Megabytes per second (MBps) is a unit of measure for the bitrate. The bitrate is normally quoted as kilobits per second (kbps) and then converted by dividing it by eight to reach the number of kilobytes per second (KBps) and then by a further 1000 to calculate the MBps.
MCU	An MCU, or Multipoint Control Unit, connects several endpoints to a single videoconference. It manages the audio mixing and creates the video layouts, adjusting the output to suit each endpoint's capabilities.
MCU service	See Meeting Type on page 91.
Media	Media refers to the live audio, video and shared data streams sent during a call. Presentation and Far end camera control (FECC) are examples of

information carried on the data stream. Media is transmitted via the RTP and RTCP protocols in both SIP and H.323 calls. The parallel data stream of both live video and presentation, is known as dual video.

Media Control	See Control on page 85.
Meeting Type	Meeting types (also known as MCU/Media Server services) are meeting templates which determine the core characteristics of a meeting. For example, they determine if the meeting is audio only or audio and video, they determine the default video layout, the type of encryption, PIN protection and many other features. You can invoke a meeting type by dialing its prefix in front of the meeting ID. Meeting types are created and stored in the Avaya Equinox Media Server, with additional properties in Equinox Management.
Moderator	A moderator has special rights in a videoconference, including blocking the sound and video of other participants, inviting new participants, disconnecting others, determining video layouts, and closing meetings. In Scopia Desktop Client, an owner of a virtual room is the moderator when the room is protected by a PIN. Without this protection, any participant can assume moderator rights.
MTU	The MTU, or Maximum Transmission Unit, is the maximum size of data packets sent around your network. This value must remain consistent for all network components, including servers like the MCU and/or Equinox Media Server and Scopia Desktop Server, endpoints like XT Series and other network devices like network routers.
Multi-Point	A multi-point conference has more than two participants.
Multi-tenant	Service provider, or multi-tenant, deployments enable one installation to manage multiple organizations. All the organizations can reside as tenants within a single service provider deployment. For example, Equinox Management can manage a separate set of users for each organization, separate local administrators, separate bandwidth policies etc. all within a single multi-tenant installation.
Multicast Streaming	Multicast streaming sends a videoconference to multiple viewers across a range of addresses, reducing network traffic significantly. Scopia Desktop Server multicasts to a single IP address, and streaming clients must tune in to this IP address to view the meeting. Multicasts require that routers, switches and other equipment know how to forward multicast traffic.
NAT	A NAT, or Network Address Translation device, translates external IP addresses to internal addresses housed in a private network. This enables a collection of devices like endpoints in a private network, each with their own internal IP address, can be represented publicly by a single, unique IP address. The NAT translates between public and private addresses,

enabling users to place calls between public network users and private network users.

NetSense

NetSense is a proprietary Equinox Solution technology which optimizes the video quality according to the available bandwidth to minimize packet loss. As the available bandwidth of a connection varies depending on data traffic, NetSense's sophisticated algorithm dynamically scans the video stream, and then reduces or improves the video resolution to maximize quality with the available bandwidth.

Packet Loss

Packet loss occurs when some of the data transmitted from one endpoint is not received by the other endpoint. This can be caused by narrow bandwidth connections or unreliable signal reception on wireless networks.

PaP Video Layout

The PaP (Picture and Picture) view shows up to three images of the same size.

Phantom Power

Microphones which use phantom power draw their electrical power from the same cable as the audio signal. For example, if your microphone is powered by a single cable, it serves both to power the microphone and transmit the audio data. Microphones which have two cables, one for sound and a separate power cable, do not use phantom power.

PiP Video Layout

The PiP (Picture In Picture) view shows a video image in the main screen, with an additional smaller image overlapping in the corner. Typically, a remote presentation is displayed in the main part of the screen, and the remote video is in the small image. If the remote endpoint does not show any content, the display shows the remote video in the main part of the screen, and the local presentation in the small image.

Point-to-Point

Point-to-point is a feature where only two endpoints communicate with each other without using MCU/Media Server resources.

PoP Video Layout

The PoP (Picture out Picture) view shows up to three images of different size, presented side by side, where the image on the left is larger than the two smaller images on the right.

Prefix

See [Dial Prefix](#) on page 85.

PTZ Camera

A PTZ camera can pan to swivel horizontally, tilt to move vertically, and optically zoom to devote all the camera's pixels to one area of the image. For example, the XT Standard Camera is a PTZ camera with its own power supply and remote control, and uses powerful lenses to achieve superb visual quality. In contrast, fixed cameras like webcams only offer digital PTZ, where the zoom crops the camera image, displaying only a portion of the original, resulting in fewer pixels of the zoomed image, which effectively lowers the resolution. Fixed cameras also offer digital pan and tilt only after

zooming, where you can pan up to the width or length of the original camera image.

Q.931	Q.931 is a telephony protocol used to start and end the connection in H.323 calls.
QCIF	QCIF, or Quarter CIF, defines a video resolution of 176 × 144 pixels (PAL) or 176 x 120 (NTSC). It is often used in older mobile handsets (3G-324M) limited by screen resolution and processing power.
Quality of Service (QoS)	Quality of Service (QoS) determines the priorities of different types of network traffic (audio, video and control/signaling), so in poor network conditions, prioritized traffic is still fully transmitted.
Recordings	A recording of a videoconference can be played back at any time. Recordings include audio, video and shared data (if presented). Users can access recordings from the Scopia Desktop web portal or using a web link to the recording on the portal.
Redundancy	Redundancy is a way to deploy a network component, in which you deploy extra units as 'spares', to be used as backups in case one of the components fails.
Registrar	A SIP Registrar manages the SIP domain by requiring that all SIP devices register their IP addresses with it. For example, once a SIP endpoint registers its IP address with the Registrar, it can place or receive calls with other registered endpoints.
Resolution	Resolution, or image/video resolution, is the number of pixels which make up an image frame in the video, measured as the number of horizontal pixels x the number of vertical pixels. Increasing resolution improves video quality but typically requires higher bandwidth and more computing power. Techniques like SVC, H.264 High Profile and FEC reduce bandwidth usage by compressing the data to a smaller footprint and compensating for packet loss.
Restricted Mode	Restricted mode is used for ISDN endpoints only, when the PBX and line uses a restricted form of communication, reserving the top 8k of each packet for control data only. If enabled, the bandwidth values on these lines are in multiples of 56kbps, instead of multiples of 64kbps.
Room System	A room system is a hardware videoconferencing endpoint installed in a physical conference room. Essential features include its camera's ability to PTZ (pan, tilt, zoom) to allow maximum flexibility of camera angles enabling participants to see all those in the meeting room or just one part of the room.

RTCP	Real-time Control Transport Protocol, used alongside RTP for sending statistical information about the media sent over RTP.
RTP	RTP or Real-time Transport Protocol is a network protocol which supports video and voice transmission over IP. It underpins most videoconferencing protocols today, including H.323, SIP and the streaming control protocol known as RTSP. The secured version of RTP is SRTP.
RTSP	RTSP or Real-Time Streaming Protocol controls the delivery of streamed live or playback video over IP, with functions like pause, fast forward and reverse. While the media itself is sent via RTP, these control functions are managed by RTSP
Sampling Rate	The sampling rate is a measure of the accuracy of the audio when it is digitized. To convert analog audio to digital, it must collect or sample the audio at specific intervals. As the rate of sampling increases, it raises audio quality.
SBC	A Session Border Controller (SBC) is a relay device between two different networks. It can be used in firewall/NAT traversal, protocol translations and load balancing.
Scalability	Scalability describes the ability to increase the capacity of a network device by adding another identical device (one or more) to your existing deployment. In contrast, a non-scalable solution would require replacing existing components to increase capacity.
SD	Standard Definition (SD), is a term used to refer to video resolutions which are lower than HD. There is no consensus defining one video resolution for SD.
Service	Also known as MCU/Media Server service. See Meeting Type on page 91.
SIF	SIF defines a video resolution of 352 x 240 pixels (NTSC) or 352 x 288 (PAL). This is often used in security cameras.
Signaling	Signaling, also known as call control, sets up, manages and ends a connection or call. These messages include the authorization to make the call, checking bandwidth, resolving endpoint addresses, and routing the call through different servers. Signaling is transmitted via the H.225.0/Q.931 and H.225.0/RAS protocols in H.323 calls, or by the SIP headers in SIP calls. Signaling occurs before the control aspect of call setup.
Single Sign On	Single Sign On (SSO) automatically uses your network login and password to access different enterprise systems. Using SSO, you do not need to separately login to each system or service in your organization.
SIP	Session Initiation Protocol (SIP) is a signaling protocol for starting, managing and ending voice and video sessions over TCP, TLS or UDP.

Videoconferencing endpoints typically are compatible with SIP or H.323, and in some cases (like Avaya Scopia® XT Series), an endpoint can be compatible with both protocols. As a protocol, it uses fewer resources than H.323.

SIP Registrar	See Registrar on page 93.
SIP Server	A SIP server is a network device communicating via the SIP protocol.
SIP URI	See URI on page 97.
Slider	See Content Slider on page 85.
SNMP	Simple Network Management Protocol (SNMP) is a protocol used to monitor network devices by sending messages and alerts to their registered SNMP server.
Software endpoint	A software endpoint turns a computer or portable device into a videoconferencing endpoint via a software application only. It uses the system's camera and microphone to send image and sound to the other participants, and displays their images on the screen. For example, Scopia Desktop Client or Scopia Mobile.
SQCIF	SQCIF defines a video resolution of 128 x 96 pixels.
SRTP	Secure Real-time Transport Protocol (SRTP) adds security to the standard RTP protocol, which is used to send media (video and audio) between devices in SIP calls. It offers security with encryption, authentication and message integrity. The encryption uses a symmetric key generated at the start of the call, and being symmetric, the same key locks and unlocks the data. So to secure transmission of the symmetric key, it is sent safely during call setup using TLS.
SSO	See Single Sign On on page 94.
Standard Definition	See SD on page 94.
Streaming	Streaming is a method to send live or recorded videoconferences in one direction to viewers. Recipients can only view the content; they cannot participate with a microphone or camera to communicate back to the meeting. There are two types of streaming supported in Equinox Solution: unicast which sends a separate stream to each viewer, and multicast which sends one stream to a range of viewers.
STUN	A STUN server enables you to directly dial an endpoint behind a NAT or firewall by giving that computer's public internet address.
SVC	SVC extends the H.264 codec standard to dramatically increase error resiliency and video quality without the need for higher bandwidth. It is especially effective over networks with high packet loss (like wireless

networks) which deliver low quality video. It splits the video stream into layers, comprising a small base layer and then additional layers on top which enhance resolution, frame rate and quality. Each additional layer is only transmitted when bandwidth permits. This allows for a steady video transmission when available bandwidth varies, providing better quality when the bandwidth is high, and adequate quality when available bandwidth is poor.

SVGA

SVGA defines a video resolution of 800 x 600 pixels.

Switched video

Switching is the process of redirecting video as-is without transcoding, so you see only one endpoint's image at a time, usually the active speaker, without any video layouts or continuous presence (CP). Using video switching increases the port capacity of the Scopia Elite MCU and/or Equinox Media Server only by four times.

! Important:

Use switched video only when all endpoints participating in the videoconference support the same resolution. If a network experiences high packet loss, switched video might not be displayed properly for all endpoints in the videoconference.

SXGA

SXGA defines a video resolution of 1280 x 1024 pixels.

Telepresence

A telepresence system combines two or more endpoints together to create a wider image, simulating the experience of participants being present in the same room. Telepresence systems always designate one of the endpoints as the primary monitor/camera/codec unit, while the remainder are defined as auxiliary or secondary endpoints. This ensures that you can issue commands via a remote control to a single codec base which leads and controls the others to work together as a single telepresence endpoint.

Telepresence - Dual row telepresence room

Dual row telepresence rooms are large telepresence rooms with two rows of tables that can host up to 18 participants.

TLS

TLS enables network devices to communicate securely using certificates, to provide authentication of the devices and encryption of the communication between them.

Transcoding

Transcoding is the process of converting video into different sizes, resolutions or formats. This enables multiple video streams to be combined into one view, enabling continuous presence, as in a typical videoconferencing window.

UC (Unified Communications)

UC, or unified communications deployments offer solutions covering a wide range of communication channels. These include audio (voice), video, text

(IM or chat), data sharing (presentations), whiteboard sharing (interactive annotations on shared data).

Unbalanced Microphone	An unbalanced microphone uses a cable that is not especially built to reduce interference when the cable is long. As a result, these unbalanced line devices must have shorter cables to avoid audio disruptions.
Unicast Streaming	Unicast streaming sends a separate stream of a videoconference to each viewer. This is the default method of streaming in Scopia Desktop Server. To save bandwidth, consider multicast streaming.
Unified Portal	Unified Portal is a graphic user interface (GUI) for Avaya Equinox Solution users. Using this GUI, users can schedule and attend meetings. They can also access their recordings and broadcasts. It is the typical way that users interact with and access Avaya Equinox Streaming and Recording . There is a user guide for Unified Portal available on https://support.avaya.com/ . Avaya recommends distributing this guide to all users.
URI	URI is an address format used to locate a SIP device on a network, where the address consists of the endpoint's name or number, followed by the domain name of the server to which the endpoint is registered. For example, <i><endpoint name>@<server_domain_name></i> . When dialing URI between organizations, the server might often be the Avaya Equinox H.323 Edge of the organization.
URI Dialing	Accessing a device via its URI on page 97.
User profile	A user profile is a set of capabilities or parameter values which can be assigned to a user. This includes available meeting types (services), access to Scopia Desktop and Scopia Mobile functionality, and allowed bandwidth for calls.
VFU	See Video Fast Update (VFU) on page 97.
VGA	VGA defines a video resolution of 640 x 480 pixels.
Video Fast Update (VFU)	Video Fast Update (VFU) is a request for a refreshed video frame, sent when the received video is corrupted by packet loss. In response to a VFU request, the broadcasting endpoint sends a new intra-frame to serve as the baseline for the ongoing video stream.
Video Layout	A video layout is the arrangement of participant images as they appear on the monitor in a videoconference. If the meeting includes a presentation, a layout can also refer to the arrangement of the presentation image together with the meeting participants.
Video Resolution	See Resolution on page 93.
Video Switching	See Switched video on page 96.

- Videoconference** A videoconference is a meeting of more than two participants with audio and video using endpoints. Professional videoconferencing systems can handle many participants in single meetings, and multiple simultaneous meetings, with a wide interoperability score to enable a wide variety of endpoints to join the same videoconference. Typically you can also share PC content, like presentations, to other participants.
- Viewer Portal** The Avaya Equinox Streaming and Recording Viewer Portal is embedded in the Avaya Scopia Desktop user portal. To access the Viewer Portal, you can select **Recordings and Events** on the main Scopia Desktop page. From the Viewer Portal, you can watch recordings and navigate through the categories.
- Virtual Delivery Node** The Avaya Equinox Streaming and Recording Virtual Delivery Node (VDN) is a device to push content to an external Content Delivery Network (CDN). The method for publishing content to a CDN is tightly coupled to the Avaya Equinox Streaming and Recording platform which allows a company's video assets to be managed from a central location.
- If you want to use a VDN and a CDN, you must buy cloud storage and services from Highwinds, with the appropriate bandwidth and capacity for your needs. You apply the credentials you receive from Highwinds in the Avaya Equinox Streaming and Recording Manager to securely access the CDN.
- Virtual Room** A virtual room in Scopia Desktop and Scopia Mobile offers a virtual meeting place for instant or scheduled videoconferences. An administrator can assign a virtual room to each member of the organization. Users can send invitations to each other via a web link which brings you directly into their virtual room. Virtual meeting rooms are also dialed like phone extension numbers, where a user's virtual room number is often based on that person's phone extension number. You can personalize your virtual room with PIN numbers, custom welcome slides and so on. External participants can download Scopia Desktop or Scopia Mobile free to access a registered user's virtual room and participate in a videoconference.
- VISCA Cable** A crossed VISCA cable connects two PTZ cameras to enable you to use the same remote control on both.
- Waiting Room** A waiting room is a holding place for participants waiting for the host or moderator to join the meeting. While waiting, participants see a static image with the name of the owner's virtual room, with an optional audio message periodically saying the meeting will start when the host arrives.
- Webcast** A webcast is a streamed live broadcast of a videoconference over the internet. Enable Scopia Desktop webcasts by enabling the streaming feature. To invite users to the webcast, send an email or instant message

containing the webcast link or a link to the Scopia Desktop portal and the meeting ID.

WUXGA

WUXGA defines a video resolution of 1920 x 1200 pixels.

XGA

XGA defines a Video resolution of 1024 x 768 pixels.

Zone

Gatekeepers like H.323 Gatekeeper split endpoints into zones, where a group of endpoints in a zone are registered to a gatekeeper. Often a zone is assigned a dial prefix, and usually corresponds to a physical location like an organization's department or branch.

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