Avaya Mobile Video Overview and Specification

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Chapter 1: Introduction

Purpose

This document describes tested Avaya Mobile Video characteristics and capabilities, including feature descriptions, interoperability, performance specifications, security, and licensing requirements.

This document is for people who want to gain a high-level understanding of Mobile Video features, capacities, and limitations.

Chapter 2: Avaya Mobile Video overview

Avaya Mobile Video overview

Avaya Mobile Video is an is an on-premise solution for Avaya Contact Center customers. With this solution, enterprises whose contact center infrastructure is based on Avaya Aura® Call Center Elite can integrate voice and video communications using the customer mobile devices. This solution provides the infrastructure to handle these calls securely with minimum changes to the contact center including the agent experience. Agents can accomplish the collaboration through deployment of Avaya Media Client for video calls and desktop applications in getting the call through the enterprise system.

The solution delivers a rich interactive experience in a collaborative manner. Enterprises can deploy this solution on top of existing communications capabilities and the core solution enables interaction with customers.

The Avaya Mobile Video solution includes:

- WebRTC platform to integrate with Avaya Aura® Call Center Elite
- Developer SDKs to create iOS, Android, and Chrome applications
- Avaya Media Client as a voice and video endpoint in the contact center

Benefits

Avaya Mobile Video offers the following benefits:

- **Increase customer loyalty**: With Mobile Video, customers can establish face-to-face interactions with agents. Thereby, the solution brings customers closer to the business and improves customer loyalty.

- **Improve customer retention**: Mobile Video provides a personal connection with customers and thereby improves customer retention rates.

- **Make the enterprise easier to do business with**: By implementing the click-to-call feature, customers need not look up or write down the contact center number. With Mobile Video, customers can click to call and reach the right resource without time spent in a queue. This feature reduces the call duration and increases customer satisfaction.

- **Reduce close times**: Seeing a customer improves the information gathered by a contact center agent. Mobile Video increases agents' understanding of the customer and thereby the ability to close cases and sales.
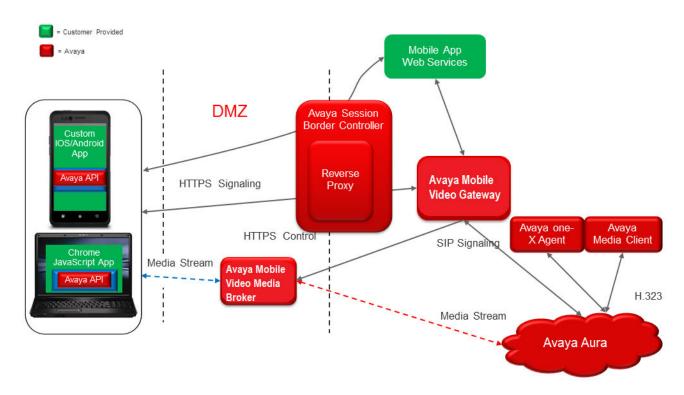
- **Give the best customers the best support**: High value customers can receive a better level of service. Enterprises can take advantage of the solution to offer personal care to their most valued customers.

Mobile Video solution architecture

Avaya Mobile Video consists of the following components:

- Mobile Video SDK
- Avaya Mobile Video Gateway
- Avaya Session Border Controller for Enterprise (Avaya SBCE)
- Avaya Mobile Video Media Broker
- Avaya Media Client
- Avaya one-X® Agent

The following is the high-level architecture of Avaya Mobile Video designed to inter-operate with existing Communication Manager Elite Contact Centers.

A customer starts a video call either from a mobile phone or a browser application built using the appropriate Mobile Video Application Programming Interface (API), located in the public internet. The initial setup, including application authentication, takes place through HTTP(S), passing through the demilitarized zone (DMZ), with the enterprise topology concealed behind Avaya SBCE.

The system streams the media over Secured Real-time Protocol (SRTP) to the Avaya Mobile Video Media Broker component located in the DMZ. The system transmits the signaling and media

securely to Avaya Mobile Video Gateway and Avaya Aura infrastructure respectively. Customers call directly to H.323 endpoints or Communication Manager Elite Contact Center Vector Directory Numbers (VDN) for routing.

You can also use Mobile Video for audio-only calls. Audio-only calls are useful when customers do not have a working camera or are using a browser at a personal computer that does not have a camera. When audio-only calls are made, you cannot later add video as part of the call.

Mobile Video components

Mobile Video SDK

The Mobile Video SDK provides Application Programming Interfaces (APIs) for application designers to develop mobile applications with real-time audio and video capabilities.

The solution also offers SDK support for Android, iOS, and Google Chrome (for Windows OS). The Mobile Video SDK also includes a sample client application.

The API supports the following operations:

- Use Click-to-Call (audio only) from a web or mobile application
- Use Click-to-Video Call (two-way video) from a web or mobile application
- Allow customers to add video to an escalatable audio call
- Disable outgoing video
- Mute or unmute audio
- Turn the video off or on from a mobile device while keeping the live audio
- Receive and display appropriate error messages with user-friendly reasons for the failure and an offer for a retry
- Support video resolutions, such as 180p, CIF, 360p, 480p (VGA), 4CIF, and 720p

Avaya Mobile Video Gateway

Avaya Mobile Video Gateway is the signaling component that communicates with web browsers and mobile applications through HTTP or HTTPS protocol.

Avaya Mobile Video Gateway communicates with the client using the TCP-based WebSockets protocol to provide a standardized format for the server to send content to the client and allow messages to be passed back and forth while keeping the connection open.

The primary functions of Avaya Mobile Video Gateway are to:

- Provide Client-to-SIP signaling conversion
- Create and manage application collaboration sessions, sharing data, and sending messages to client applications

Avaya Mobile Video Media Broker

Avaya Mobile Video Media Broker converts the streaming of media between client SRTP with Avaya one-X® Agent and Avaya Media Client.

Avaya Media Client

The solution offers Media Client for video and voice. Media Client is a standalone client application to handle incoming voice and video calls. The Media Client UI provides only media control features unavailable in the controlling application. For example, video mute, video hold, audio mute, and audio hold. Agents install the client application either in silent mode or the desktop installation mode. Media Client supports on a single Communication Manager system in a customer's deployment.

From a UI perspective, agents control the voice and video calls from Avaya one-X® Agent and receive incoming voice and video on Media Client.

Avaya one-X® Agent

Avaya one-X® Agent is a desktop software application built specifically to meet the needs of contact center agents. When using Media Client with Avaya one-X® Agent, there are some operational interactions between the two user interfaces. You can find these interactions in Chapter 6: Interactions between Media Client and Avaya one-X® Agent on page 16.

Chapter 3: Interoperablity

Product compatibility

Mobile Video is compatible with the following Avaya products:

- Avaya Aura® Call Center Elite
- Avaya one-X® Agent (H.323)
- Avaya Media Client
- Avaya Aura® Communication Manager
- Avaya Aura® Session Manager
- Avaya Aura® System Manager
- Avaya Aura® Session Border Controller for Enterprise

For the latest and most accurate compatibility information, go to https://support.avaya.com/CompatibilityMatrix/Index.aspx.

Operating system compatibility

Mobile Video supports the following devices and web browsers:

- Android smartphone and tablet devices using ARM architecture running 5.0 and later software.
- iPhone 5c and above, and iPad air and above, running IOS 8.0 and later software.
- Chrome browser on Microsoft Windows, running stable version 49 and later software.

Chapter 4: Licensing requirements

To adjust the solution size and to meet customer service needs, Mobile Video is available as a full solution. The full solution consists of components, such as Mobile Video SDK, Authorization, and Media Client.

The solution is available based on the number of concurrent sessions, which is either Voice-only or Voice and Video. Each concurrent session consumes one license in PLDS. Customers must buy enough licenses to accommodate their requirements based on the most concurrent sessions expected at peak periods.

Mobile Video SDK licensing requirements

The Mobile Video SDK is available as a free resource from Avaya DevConnect Program. Developers must sign an end-user license agreement (EULA). Users of this SDK must acquire a license for MPEG-LA, and the responsibilities are defined in an EULA.

Media Client licensing requirements

Media Client is sold based on the number of concurrent registered agents. Media Client is licensed within Communication Manager as a Type-3 feature. Each registered client uses one license of type "IP_Phone" which is same as that Avaya deskphones use. Users must sign an EULA.

Chapter 5: Performance specifications

Mobile Video supports the following capacities:

- 100 concurrent video calls
- 300 concurrent audio-only calls
- 500 concurrent agent log-ins

The solution supports multiple Mobile Video Media Brokers, which allows customers to increase the traffic handling. The Mobile Video SDK inherits the capacity limits of Communication Manager (SIP). Media Client inherits the capacity limits of Communication Manager (H.323).

The number of Avaya Mobile Video Media Brokers that you require for the deployment depends on the following factors:

- The type of video call:
  - Pass-through: This is a call where both endpoints in the call use the same codec, such as H. 264 codec.
  - Transcoded: This is a call where the endpoints in a call use a different video codec, such as V8 to H.264 codecs. In this case, Mobile Video Media Broker converts one video stream in to the other codec type for both legs of the call.
- The video resolution.
- The video bit rate used/available.

Number of video calls supported per Mobile Video Media Broker

The following tables lists the number of calls a single Avaya Mobile Video Media Broker can support at various resolutions and bit rates:

Table 1: Pass-through

Resolution	450 Kbps	620 Kbps	768 Kbps
320x240@30fps	66	50	NA
640x480@30fps	66	50	50
1280x720@30fps	NA	50	50

✳ **Note:**

768 Kbps is the maximum supported video bandwidth for this product

Table 2: Transcoded

Resolution	450 Kbps	620 Kbps	768 Kbps
320x240@30fps	13	12	NA
640x480@30fps	10	7	7
1280x720@30fps	NA	6	6

Support for 100 Video Calls

The following table lists the number of Mobile Video Media Brokers you require to support 100 video calls at each of the different configurations:

Table 3: Pass-through

Resolution	450 Kbps	620 Kbps	768 Kbps
320x240@30fps	2	2	NA
640x480@30fps	2	2	2
1280x720@30fps	NA	2	2

⊛ **Note:**

768 Kbps is the maximum supported video bandwidth for this product

Table 4: Transcoded

Resolution	450 Kbps	620 Kbps	768 Kbps
320x240@30fps	8	9	NA
640x480@30fps	10	15	15
1280x720@30fps	NA	17	17

Support on 3G and 4G/LTE networks

Mobile Video calls made over 3G and 4G/LTE mobile networks might experience poor video quality, poor audio quality, and dropped calls caused by low mobile network bandwidth. Avaya does not provide support to troubleshoot 3G and 4G/LTE mobile network issues that might cause problems with Mobile Video calls.

Chapter 6: Security

Security specification

Mobile Video provides secure implementation in an enterprise.

The following section describes the components that secure the Mobile Video environment.

External firewall

With external firewall, the Mobile Video client gains access to both Avaya Mobile Video Gateway through Avaya SBCE and Avaya Mobile Video Media Broker. For example, Denial of Service attacks. The external firewall only communicates with Avaya SBCE and Avaya Mobile Video Media Broker.

Avaya SBCE

Avaya SBCE ensure only authenticated connections reach the internal network. Avaya SBCE also decrypts the data on behalf of the application and establish a secure context with the client.

Avaya Mobile Video Media Broker

Avaya Mobile Video Media Broker relays real-time media between clients inside and outside of the network.

Mobile Video SDK with Secure-Real Time Protocol

The Mobile Video SDK secures the media stream between the client and Avaya Mobile Video Media Broker using Secure-Real Time Protocol (SRTP). The WebRTC specification mandates that this media stream is secure.

Internal firewall

The internal firewall allows the firewall to send traffic to Avaya one-X Agent and Avaya Media Client devices on the internal network for routing the media.

Avaya Mobile Video Gateway

Avaya Mobile Video Gateway communicates securely to web browsers and mobile applications through HTTP or HTTPS protocol.

Chapter 7: Interactions between Media Client and Avaya one-X® Agent

The following sections describe the Interactions betweenMedia Client and Avaya one-X® Agent during different call scenarios:

Interactions between Media Client and Avaya one-X® Agent during conference

The following are interactions betweenMedia Client and Avaya one-X® Agent during conference:

- During a video call with the customer, the agent establishes a conference with the supervisor who has video capability. The system puts the customer call on hold and establishes a call to the supervisor. When the agent establishes the conference, the system puts all participants in the audio conference and video is not active among any participants. If the supervisor puts the call on hold, the video starts between the agent and the customer. In this context, the Mute Video and Stop Video buttons are available on Media Client but not on Avaya one-X® Agent.

- During the video conference between the supervisor and the customer, if the supervisor stops video, the audio conversation between the supervisor and the customer continues. If the supervisor tries to start the video again with the customer, the system may or may not allow the video depending on the state and the video capability of the agent. If the agent does not have video capability or has put the conference on hold, the system restarts the video between the supervisor and the agent. This occurs because Media Client supports video between two participants only at any given point.

Interactions between Media Client and Avaya one-X® Agent during consultative conference
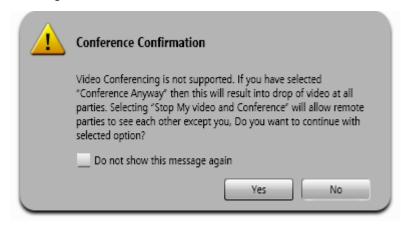
Media Client does not support video consultative conference. At any given time, a maximum of two parties can view each other if other participants from the conference stop the video or if they are not video enabled. With this limitation, there is a small change in the regular consultative conference behavior in Avaya one-X® Agent. For more information about Consultative Conference, see *Using Avaya one-X® Agent*.

In case of consultative conference, if an agent has an active video call with customer and tries to add a video enabled supervisor or another agent into a video conference by clicking the **Complete Conference** button on an active call interaction, then Avaya one-X® Agent displays the menu as shown in the below illustration:

- If the agent clicks **Stop My Video and Conference**, the system stops the video and continues with the conference which results into an audio-only conference. However, the system establishes the video communication between the customer and the supervisor. The agent can continue the conference without the video.

- If the agent clicks **Conference Anyway**, the system adds the video enabled supervisor/agent into the conference which results into loss of video communication at all parties, including the customer, the supervisor and thereby leads to an audio-only conference.

If the agent clicks any of the above menu options, the system displays the video conference warning message as shown below:

- If the agent clicks **Yes**, the system continues with the selected option.

- If the agent clicks **No**, the system cancels the complete conference operation.

If the agent selects the **Do not show this message again** option and clicks **Yes**, then the system saves the preference throughout the session. The system does not display the message again for the entire session. If the agent logs in to the next session, the system displays the message again while the agent tries to complete the video conference.

The system displays the **Stop My Video and Conference** and **Conference Anyway** options only if the agent is on a video call and adds another video enabled participant into the consultative conference. The system does not display these menu options for the audio-only conference or if any of the participants are not video enabled. Also, the system does not display these options for non-consultative video conferences or any other conference scenarios where the system does not display the **Complete Conference** button.

During a video call with a customer, if the agent stops the video by clicking the **Stop Video** button either on Avaya one-X® Agent or Media Client and adds another caller to the conference with audio-only, the system starts the video between the agent and the customer. This issue is due to Communication Manager behavior. Agent must stop the video again either from Avaya one-X® Agent or Media Client.

The following are some of the other Interactions betweenMedia Client and Avaya one-X® Agent during consultative conference:

- During a video conference with a customer, the Media Client window might close and reopen. This instance occurs while establishing the conference and creates the impression that the video call has ended and another video call has started. However, the video call remains active.

- During a video conference with a customer, if the agent selects the audio **Mute** or **Unmute** button from the Media Client window, the system changes the audio **Mute** and **Unmute** status accordingly on Media Client. However, the audio **Mute** or **Unmute** buttons does not change in the Avaya one-X® Agent UI.

Interactions between Media Client and Avaya one-X® Agent during hold operations

The following are the interactions betweenMedia Client and Avaya one-X® Agent during hold operations:

- If an agent stops a video during a call and the customer puts the call on hold, Media Client and Avaya one-X® Agent displays the **Start Video** button, but the button does not work until customer takes the call off hold.

- If either participants during the call stops the video, another party performs hold/unhold, and the participant clicks the **Start Video** button, the video does not start. The participant must first hold and then unhold the call.

Interactions between Media Client and Avaya one-X® Agent during mute operations

If an agent has not selected the **Send Video image automatically** option from the Video setting panel. In this case, if the agent unmutes the video call either from Avaya one-X® Agent or Media Client to establish a conference with the supervisor, the system mutes the video call on Media Client, although the agent has unmuted the video call.

Interactions between Media Client in multi-Communication Manager scenarios

The transfer or forwarding of mobile video calls from the target Communication Manager system to a second Communication Manager system is not supported in this release. Only a single Communication Manager system is supported.

Chapter 8: Resources

Documentation

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

Document number	Title	Use this document to:	Audience
Planning			
	Avaya Mobile Video Planning and Security Reference	Plan an installation of Avaya Mobile Video Server in terms of security considerations. Use this document during the preparation and planning of installation.	Implementation Engineers and Support Personnel
Implementing			
	Installing Avaya Mobile Video Server and Media Broker	Install, administer, maintain, and troubleshoot Avaya Mobile Video Server.	Implementation Engineers and Support Personnel
	Installing Avaya Media Client	Install, administer, maintain, and troubleshoot Avaya Media Client.	Implementation Engineers and Support Personnel
Administering			
	Administering Avaya Mobile Video	Administer Avaya Mobile Video during the initial system setup and to change the configuration.	Implementation Engineers and Support Personnel
Using			
	Using Avaya Media Client	Perform all user tasks in Avaya Media Client.	Sales Engineers, Solution, Architects, Implementation Engineers, and Support Personnel
Customizing			
	Avaya Mobile Video Server Software Development Guide	The API for customers to develop applications.	External Customers.

Training

The following courses are available for the Avaya Oceana™ Solution program.

Course code	Course title	Delivery Type
3420W	Avaya Oceana™ Solution Design Fundamentals	LMS
3470T	Avaya Oceana™ Solution Design Fundamentals APDS Online Test	LMS
2402W	Avaya Oceana™ Workspaces Agent Desktop Training	Along with the license
2404W	Avaya Oceana™ Workspaces Supervisor Desktop Training	Along with the license

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.

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