# Video

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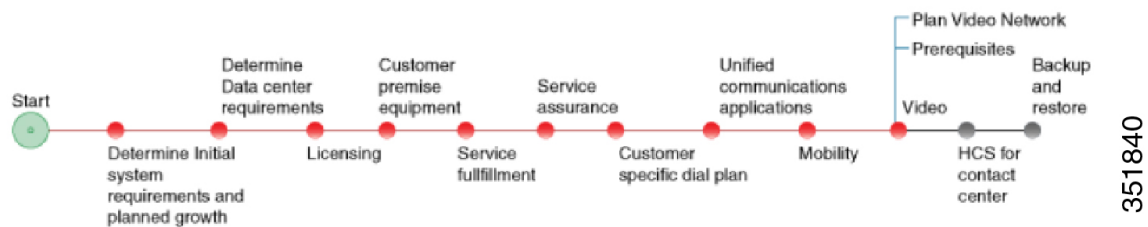- Plan the Video Network , on page 2

## Prerequisites

Before you plan the video deployment, make sure that you review the *Cisco Hosted Collaboration Solution Release 14 Solution Reference Network Design Guide*.

Complete the actions outlined in previous sections of this guide including:

- Initial system requirements and planned growth
- Data center requirements
- Licensing
- Customer premise equipment
- Service fulfillment
- Service assurance

## Video Workflow

# Plan the Video Network

**Procedure**

**Step 1**    Cisco Hosted Collaboration Solution supports dedicated deployment of Video Conferencing on a per tenant basis using TMS, Conductor, and Telepresence Servers (virtual and Physical). Determine whether you intend to offer dedicated TP services along with Centralized TP services using CTX.

**Step 2**    Plan the capacity requirements for dedicated and shared deployment.

**Step 3**    Determine the inter-enterprise and intra-enterprise networking requirements for video dialing.

- Determine if you want to allow video calls between enterprises. To allow outside video calls, set up your video network and set up the SBCs to allow users to place calls outside of the enterprise.
- Decide if you want to do the inter-enterprise routing within the SBC or in the service provider's softswitch.
- Consider policies on selectively enabling inter-enterprise video dialing.
- Investigate and understand the limitations of Lawful Intercept (LI) for inter-enterprise video dialing and the LI exemption for video dialing.

**Step 4**    Determine if you will use scheduled conferencing or virtual meeting rooms.

Cisco offers virtual meeting rooms only for Cisco HCS. Scheduled meetings with Cisco HCS are done through a third-party portal. This portal is supported, but is not validated.

Scheduled Conferencing, Rendezvous Conferencing, and Adhoc Video Conferencing are supported when there are dedicated deployments of Conductor, TMS, and TelePresence servers. For CTX-based Video deployment, Scheduled Video Conferencing is not natively supported in HCS. However, with the use of a third-party portal with CTX, Scheduled Conferencing can be supported.

If you are planning for a third-party portal, evaluate the third-party portal and validate it against your requirements.

**Step 5**    Determine your port capacity for video conferencing based on the following estimations. These estimates provide you with an estimate of the number of users that are expected to take part in a video conference at any time. Base these considerations on whether a centralized or dedicated video conferencing solution is being planned.

- Number of customers using video conferencing.
- Number of video endpoints each customer will use.
- Number of simultaneous video conferences that you expect.
- The average number of participants in each video conference.
- Average duration of video conference.

Use the following calculation to determine the port capacity.

- Number of ports needed. This is the (number of video-enabled customers) x (number of simultaneous video meetings per customer) x (number of participants per meeting) x (average number of ports per participant).
- For example: (10 customers) x (2 simultaneous meetings per customer) x (6 participants per meeting) x (1 port per participant) = 120 ports.

The average number of ports per participant must take into account the distribution of different types of endpoints (number of screens), the quality of the video (HD, SD, Audio only), and presentation sharing. Each port is assumed to provide a 1080p HD quality video.

**Step 6**     Determine the type of video endpoints supported in the network.

- Immersive video endpoints.
- Nonimmersive video endpoints.

Immersive video endpoints enable the best possible in-person TelePresence video collaboration experience, where attendees across multiple locations feel as though they are in the same room. Due to the high quality of the video media, immersive video endpoints consume higher amounts of bandwidth and network resources than nonimmersive video endpoints.

**Step 7**     Determine whether to provide video dialing between different service providers.

- To provide video dialing between different service providers, set up the SBC to provide connectivity between the different service providers.
- Make sure that agreements and routing policies are in place for interprovider video dialing.

**Step 8**     Determine whether you want to support over-the-top (OTT) connectivity for guest clients from other enterprises and integrate Microsoft Lync along with Dedicated Video Conferencing with Conductor/TMS/Virtual TS.

You can use Cisco Expressway to set up connectivity.

**Step 9**     Determine if you need to transcode codecs within your video network.

- If yes, you need to implement the Cisco TelePresence MSE 8710 server for transcoding.
- If no, you can use Multipoint Switch (CTMS). CTMS is a less expensive option than the MSE, but DTLS is not supported with CTMS. Any CTX-based calls are unsecure if you choose CTMS.

**Step 10**    Determine your bandwidth and QoS requirements for video, using the following information:

- Number of ports
- Number of endpoints
- Immersive or nonimmersive video.

  **Note**     Immersive video has higher bandwidth requirements.

- Types of endpoints.

Use the following guidelines to evaluate bandwidth requirements:

- For every (shared) three-screen TelePresence room at 1080p, add 16.7 Mbps (assumes 100-percent utilization because these are shared services).
- For every single-screen TelePresence at 1080p, add 4.5 Mbps (assumes 100-percent utilization).
- For every single-screen TelePresence at 720p, add 1.68 Mbps (assumes 100-percent utilization).
- For shared EX90 at 720p, add 1.5 Mbps (assumes 100-percent utilization).
- For personal (nonshared) EX90 at 720p, add 136 Kbps (assumes much lower utilization).

**Step 11**    Determine your security requirements for signaling and media.

- TLS for signaling encryption.
- DTLS for media encryption.
- SRTP media encryption.

**Step 12**    Determine the CTX model to use.

- Starter Package—If you choose the Starter Package, there is a maximum of 250 ports with no active meeting management license. Active video calls are not preserved. ACE is not required with the Starter Package.
- Classic Package—If you choose the Classic Package, ACE is implemented.

**Step 13**    Consider the following when determining networking requirements:

- Data Center Network for video infrastructure.
- VLANs.
- Virtual routing and forwarding (VRF).
- TPaas network devices and applications which are deployed in a shared environment.