

# 8x8 Virtual Room Video Conferencing

## Guide to Internet Bandwidth Requirements

Before installing video conferencing service, it is important to verify that there is adequate Internet bandwidth to support it, and that the correct 8x8 Virtual Room plan has been purchased. A properly configured QoS router is also highly recommended. This guide is intended to help determine the Internet connection bandwidth required to support 8x8 video conferencing service.

### Internet Bandwidth Requirements

The following requirements apply to active (concurrent) connections. Other Internet traffic during the video conference such as data or regular phone calls must also be considered. If the existing Internet connection is insufficient to meet these minimum requirements, it should be upgraded prior to installation.

#### Required Bandwidth

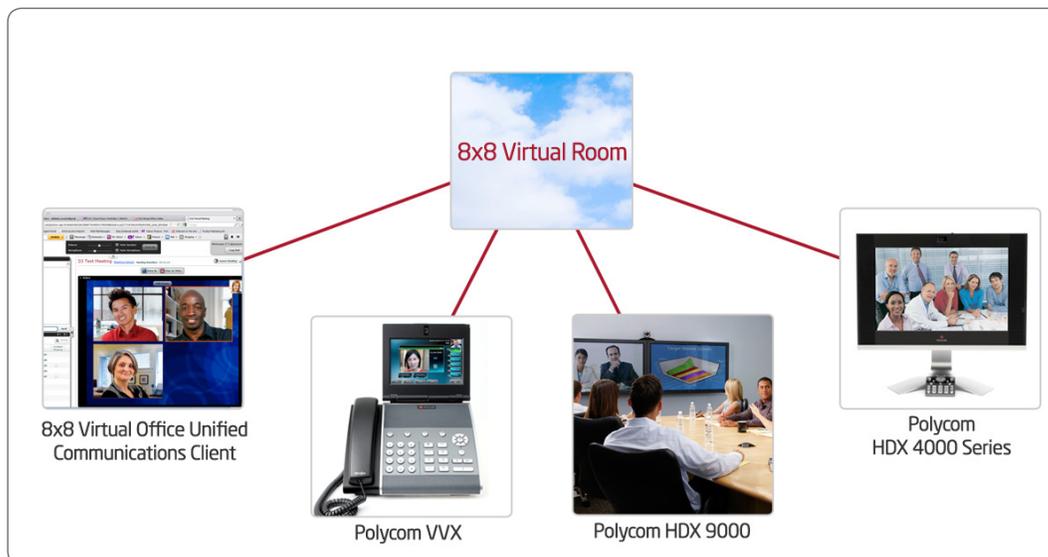
Device	Video Resolution	Per Active/Concurrent Device*
Polycom HDX	HD 1080p	2048 kbps
	HD 720p	1024 kbps
	4CIF (Standard Definition)	512 kbps
Polycom VVX	CIF (Small Screen)	448 kbps
Computer with Webcam***	CIF (Small Screen) Uplink CIF or better Downlink	256 kbps - 1024 kbps** 256 kbps - 1024 kbps (HD 720) and up to 2048 kbps (HD 1080)**

\* Plan for the maximum number of active/concurrent devices during your busiest hour.

\*\* For computers with webcams, the video resolution will adjust dynamically based on available bandwidth. 256 kbps is the minimum. If more bandwidth is available, you will see higher quality video. When having a video call from a computer with webcam, directly to a Polycom HDX, or when connecting to a high definition Virtual Room, bandwidth usage can scale from 256 to 2048 kbps.

\*\*\* Participants in 8x8 Virtual Room video conferences can join by using their PC/Mac equipped with a webcam, and using a browser.

### Supported Devices



## Estimating Bandwidth Requirements

Use a worksheet to estimate the maximum bandwidth required per location during an 8x8 video conference call. Required bandwidth must be available in both directions. Take this into consideration when estimating bandwidth for ADSL connections where the upload speed is much slower than the download speed.

### Example Worksheet: Video Conference for ABC Company

#### Location 1

Device	Video Resolution	Number of Devices*	Bandwidth per Device	Required Bandwidth
Polycom HDX	HD 720p	1	1024 kbps	1024 kbps
Polycom VVX	CIF	1	448 kbps	448 kbps
Computer with Webcam	CIF	2	256 kbps - 1024 kbps (Uplink) 256 kbps - 1024 kbps (Downlink)	512 kbps - 2048 kbps (Uplink) 512 kbps - 2048 kbps (Downlink)
Other estimated Internet traffic (~10 normal office users)				1000 kbps
<b>Required Bandwidth for Location 1**</b> (This estimate for video up to HD 720p)				<b>2984 kbps - 4520 kbps (Uplink)</b> <b>2984 kbps - 4520 kbps (Downlink)</b>

#### Location 2

Device	Video Resolution	Number of Devices*	Bandwidth per Device	Required Bandwidth
Polycom VVX	CIF	1	448 kbps	448 kbps
Computer with Webcam	CIF	2	256 kbps - 1024 kbps (Uplink) 256 kbps - 1024 kbps (Downlink)	512 kbps - 2048 kbps (Uplink) 512 kbps - 2048 kbps (Downlink)
Other estimated Internet traffic (~5 normal office users)				500 kbps
<b>Required Bandwidth for Location 2**</b> (This estimate for CIF Video which can be run up to 1024 kbps on the 8x8 UC client)				<b>1460 kbps - 2996 kbps (Uplink)</b> <b>1460 kbps - 2996 kbps (Downlink)</b>

\* Use number of concurrent devices needed during busiest hour to estimate bandwidth requirements.

\*\* Higher available bandwidth provides higher quality video, 8x8 video client adjusts bandwidth consumption dynamically.

## Managing Bandwidth Use

Once the video conferencing service has been installed, you can increase or decrease the default video bandwidth used for each Polycom VVX and Polycom HDX.

Refer to this document for details: **Managing Bandwidth Usage on Polycom Video Endpoints**. It can be found at <http://sims.8x8.com/GetDocument.aspx?docid=710588>.

## Using a QoS Router

8x8 recommends the use of a router with QoS capabilities to prioritize delay-sensitive voice and video traffic, while allocating sufficient bandwidth for data traffic. Without a properly-configured QoS router, you may end up overbuying Internet bandwidth in an effort to resolve quality issues that can be addressed by traffic prioritization.

Check to see whether the existing router has QoS capabilities and is properly configured. Common areas to examine are:

- Known ports to be prioritized for low latency treatment
- Differentiated services packet identifiers for voice and video (DSCPs, TOS) to be prioritized

8x8 Support can provide the port and TOS/DSCP parameters to help you correctly configure your router. 8x8 also sells preconfigured QoS routers.

## PRODUCT REQUIREMENTS

### Guide to Internet Bandwidth Requirements

## 8x8 Virtual Room Plans

8x8 offers three plans for video conferencing customers. The video devices you will be using will determine which plan is right for you.

### Virtual Room Plans and Pricing

Virtual Room Plan	Low Def	Standard Def	High Def
Cost Per Month	\$ 199.99	\$349.99	\$ 499.99
Supported Video Definition	CIF (Small Screen)	CIF and 4CIF (Standard Definition)	CIF, 4CIF, and HD (720p/1080p)
Maximum Video Bandwidth (Room Video Rate Limit)	384 kbps (per device)	512 kbps (per device)	2048 kbps (per device)
Recommended Devices by Plan	Computer with Webcam Polycom VVX (HDX not recommended)	Computer with Webcam Polycom VVX Polycom HDX	Computer with Webcam Polycom VVX Polycom HDX

### Guide to Choosing the Right Plan

Virtual Room Plan	Guidelines
Low Def	Recommended plan for customers without high resolution or high quality video requirements; ideal for internal use; ideal for extensive webcam conferencing use in organizations
Standard Def	<ul style="list-style-type: none"><li>• Lower cost alternative to High Def plan for customers with an HDX who only require 4CIF resolution small screen video, or moderate quality video</li><li>• Delivers better video quality (smoother movement, higher perceived image quality) for Polycom VVX than the Low Def plan</li></ul>
High Def	Required plan for Polycom HDX with 720p or 1080p resolution to experience high-def video

### Plans by Video Devices

Plan Recommendations based on equipment:

Video Devices	Resolution (of your device)	8x8 Virtual Room Plan
Polycom HDX	1080p or 720p High Definition	Virtual Room High Def
Polycom HDX	4CIF Video Resolution	Virtual Room Standard Def
Polycom VVX	CIF (Small Screen)	Virtual Room Low Def*
Computer with Webcam	CIF (Small Screen)	Virtual Room Low Def*

\*Or choose Standard Def for higher video quality on the VVX or on a computer with webcam.

Only one video conference can be held in a Virtual Room at a time. To hold overlapping video conferences, an additional Virtual Room is required to avoid overage charges. Virtual Room also requires the purchase of at least one Virtual Office Pro extension to schedule and host meetings.



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