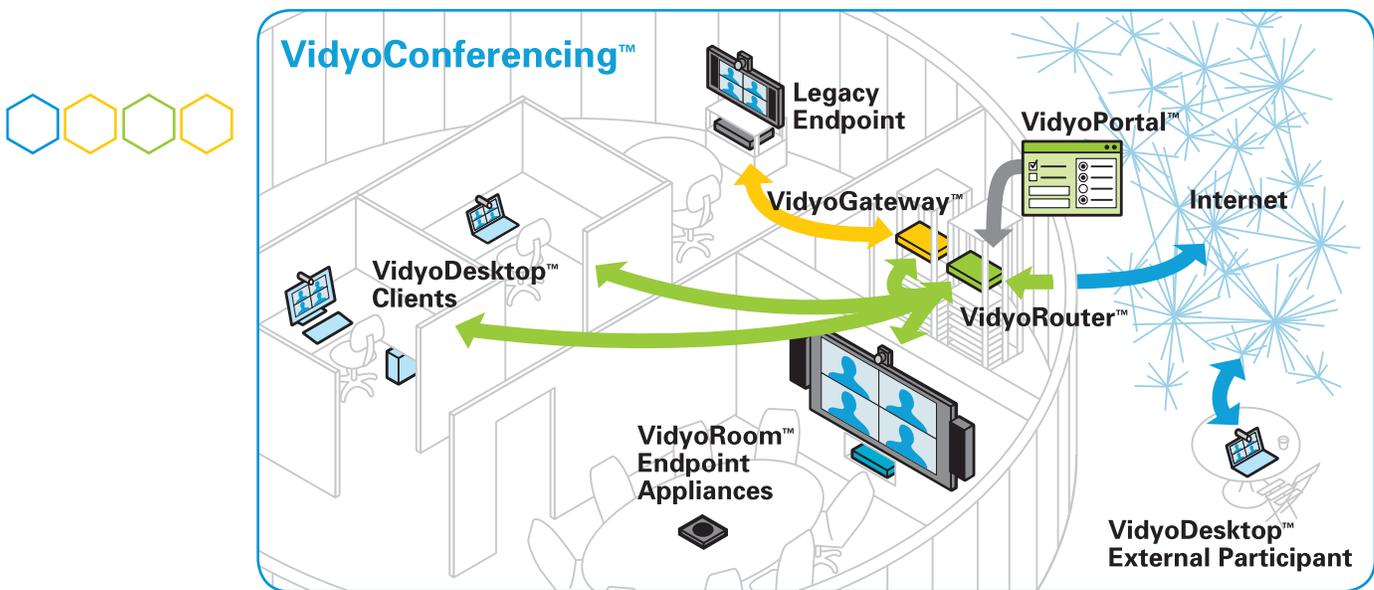


# Vidyo Conferencing

## High Definition Video from the Conference Room to the Desktop

As video communications have become more integral to enterprise applications over the past few years, the limitations of the current crop of solutions have become uncomfortably apparent. Beyond the expense of the systems themselves — not to mention the dedicated video conferencing rooms and dedicated network facilities they require — users have also been forced to bear with decidedly marginal performance ... choppy frames, long delays, broken pictures, and the like. Given the expense of these systems, people have had good reason to expect more.



Now those expectations will finally be realized. Allow us to introduce you to Vidyo Conferencing products that deliver higher-quality experiences and greater deployment flexibility — all at a lower cost — over converged IP networks. Vidyo Conferencing is the first video conferencing solution designed to work like the Internet itself. Out is the old MCU-centric model and in is the first solution for video conferencing designed specifically for the world of distributed computing — all thanks to Vidyo's unique intellectual property and the advent of the VidyoRouter.

Vidyo Conferencing takes the HD experience from the headquarters room setting into the remote office, desktops, laptops, remote workers — everywhere. Just imagine — high quality video at your fingertips wherever you are.

### A Better Video Conferencing Experience Starts with Better Technology

Vidyo's unique intellectual property leverages the recently approved H.264/SVC standard — Scalable Video Coding

— to create Vidyo Conferencing. This new technology makes it possible to separate video bitstreams into high-reliability and low-reliability channels. These different bit-stream components allow the system to dynamically adapt to varying network conditions such as packet loss, jitter, network bandwidth, network delay, and the like. Similarly, the use of multiple bit-stream components permits the flexibility to adapt to changing processing power at the video source as well as at the receiving endpoints.

This is absolutely vital when communicating over low-cost, general-purpose IP networks as it makes possible the delivery of a quality video conferencing experience to all participants regardless of their location. Since virtually all the packet loss will occur in the low reliability channel, Vidyo uses it purely as an enhancement layer while delivering the high-reliability channel — or baseline layer — intact. Thus even under extremely adverse conditions, participants in a Vidyo conference will continue to see crisp images and smooth motion.



By contrast, traditional video conferencing systems are highly sensitive to packet loss. Dropped frames add significant latency, which in turn makes for blurred motion and choppy images on the receiving end. As a consequence, other systems break with as little as 5% packet loss. Vidyo, on the other hand, can work on any network that allows just web browsing.



### **VidyoRouter** A Video Conferencing Breakthrough

At the heart of the VidyoConferencing system is the VidyoRouter, a breakthrough in video conferencing technology that introduces the first major architectural change in decades. While traditional video conferencing systems have not been able to take advantage of the obvious cost efficiencies available through Internet utilization, Vidyo hasn't repeated that mistake. Instead, all encoding and decoding occurs at the endpoints — leaving only video routing to be accomplished within the network itself. Vidyo's intelligent VidyoRouter ensures that this packet-switching is handled with optimal efficiency — without either degrading the quality of the video or adding noticeable latency.

The VidyoRouter significantly improves network utilization efficiency by sending along only as many packets as an endpoint is capable of handling, due either to limitations in bandwidth, processing power or screen resolution. And because the amount of processing power and bandwidth available is dynamic, the VidyoRouter constantly tests and recalibrates what it should be passing along ensuring that each endpoint is provided with the highest quality video it's capable of receiving — even as local conditions change from one minute to the next.

Each VidyoRouter supports up to 100 HD ports. Ports may move among a set of VidyoRouters and since they

can all be managed by a single VidyoPortal, the cost of redundancy and geographical distribution is greatly reduced. Given that endpoints can produce a large number of resolution and frame rate combinations, the VidyoRouter ensures a video experience of continuous quality that is free of blurry images and broken pictures. The VidyoRouter doesn't decode, but replaces the traditional ways to achieve rate matching.



### **VidyoPortal** A Powerful, Easy to Use Environment

The VidyoPortal is a Web-based environment that allows end-users to access and administrators to manage the VidyoConferencing system. The VidyoPortal's flexible user interface features single-click-action buttons that take care of everything required to initiate a call. It is so incredibly straightforward, in fact, that even ordinary conference participants can use it to initiate meetings — via the Web — from anywhere. The VidyoPortal provides a consistent environment that's compatible with Microsoft Internet Explorer, Firefox and Safari.

The VidyoPortal also serves as a central management environment allowing administrators to set system-wide parameters and policies, establish end-user and association privileges, and control and customize user conferencing capabilities.

Vidyo's unique approach signifies the advent of reservation-less video conferencing since participants can join a conference without first making elaborate arrangements. What's more, they can connect from wherever they are, using whatever equipment happens to be available to them — whether a room system or a desktop computer — over whatever line they might otherwise use to access email or surf the Web.



### **VidyoRoom** HD Quality Delivered at 60 Frames/Second

Every video conferencing company has an HD room system, but only Vidyo delivers 720p at 60 frames per second! Designed specifically for use over converged IP networks, the VidyoRoom can decode and display multiple HD participants at video quality unequaled by systems that require dedicated bandwidth to perform at their best.



The VidyoRoom system is simple to use, easy to configure and voice-activated with continuous presence. Flexible conference control options make it a snap to manage, using either the VidyoPortal or a remote control device. And because video conferencing ought to be a natural extension of the way people normally work, the VidyoRoom interoperates seamlessly with VidyoDesktop clients, making it possible for people to join a conference from their home office or wherever they happen to be.



### **VidyoDesktop** Quality Conferencing from Anywhere

Vidyo brings quality video conferencing to the desktop — over converged IP networks! And by “quality” we mean better than most of the room video conferencing systems you’ve experienced.

VidyoDesktop is a software client that’s easy to use and manage via the VidyoPortal, and it decodes HD! All users are assigned a password-protected personal space, thus making it possible for meetings to be held anytime — whether impromptu or by prior arrangement. Finally, the same reservation-less conferencing capabilities for video that have been available for voice and the Web.

All you need is a good-quality USB webcam, a Mac or PC, and you’re ready to participate in multipoint video calls with other participants, whether they’re gathered in special video conference rooms or sitting in front of VidyoDesktops of their own. Now there’s a way for everyone to participate no matter where they happen to be.



### **VidyoGateway** Allowing Legacy Systems to be Incorporated

Vidyo recognizes that when a company has existing video conferencing investments it’s unlikely they’re going to junk all their legacy systems to move up to a better solution, so we created the VidyoGateway. Via the VidyoGateway, your Polycom, Tandberg or other MCU-based systems can be given the boost they need to interoperate with your new H.264/SVC systems.

The VidyoGateway supports H.323 and SIP. H.264 and H.263 are supported for video and wide band audio.

## **VidyoConferencing at a Glance..**

### **VidyoDesktop**

A software-based solution that provides a quality video conferencing experience on the desktop.

- ✓ Encodes up to VGA and decodes up to HD 60 frames per second
- ✓ Downloadable and managed through the VidyoPortal
- ✓ Supports Windows & Macintosh computers

### **VidyoRoom**

A robust appliance for all your conference rooms delivering HD quality video up to 60 frames per second.

- ✓ Voice activated and continuous presence
- ✓ Optional Camera and Speakerphone available

### **VidyoPortal**

A powerful server that incorporates the VidyoRouter technology and VidyoPortal software all in one unit.

- ✓ Web-based management for point-to-point and multipoint communication
- ✓ Provides a consistent user experience for all endpoints
- ✓ Built-in VidyoRouter supports up to 100 HD ports (ports licensed separately)
- ✓ Controls and manages licensed ports
- ✓ Combines ease of use with a feature rich conferencing environment
- ✓ Provides high availability and floating license mechanism for the VidyoRouters

### **VidyoRouter**

Additional routers to expand and/or decentralize your VidyoConferencing system.

- ✓ Adds additional capacity (up to 100 HD ports) to an existing VidyoConferencing system
- ✓ Routes video and audio streams between endpoints
- ✓ Intelligently identifies and adjusts to bandwidth and network constraints

### **VidyoGateway**

A rack-mountable appliance that easily connects legacy equipment, including MCUs, to your VidyoConferencing system.

- ✓ Point-to-point and multipoint support
- ✓ Supports a wide range of legacy video and audio standards including SIP, H323, G.711, G.722, H.263, & H.264 (up to HD)
- ✓ A single VidyoGateway supports multiple endpoints



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## Features & Benefits:

### Scalable Multipoint HD Video Conferencing

High resolution and high frame rate encode and decode at multiple frame rates and resolutions

### Standards-based Coding Technology

H.264/AVC/SVC based (H.263 support provided for legacy devices)

### Error Resilience

Maintains continuous high-quality video without broken pictures or other artifacts in environments with high packet loss

### Resolution and Rate matching

Supports sending video to multiple endpoints with different bandwidths and resolution capabilities without transcoding

### Dynamic Rate Control

Automatically and continuously senses the current network condition and adjusts bit rates accordingly

### Error Localization

Individual client network errors do not affect other conference participants

### Built-in Investment Protection

Allows for the incorporation of legacy video conferencing equipment

### Firewall/NAT Traversal

Provides a safe and secure connection through any firewall with no feature or quality loss

### Robust Media Switching/Routing and Random Entry

Existing conference participants are not affected as new participants join conference

### Easy to Use Web-based Interface

A consistent environment across endpoints with single-click action buttons

### Personal video layout

Gives the user – instead of the MCU limitations – control over the layout

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