

Cisco AVVID Network Infrastructure IP Videoconferencing Solution

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Cisco AVVID – Enabling E-Business

Cisco AVVID (Architecture for Voice, Video and Integrated Data) is the intelligent network infrastructure for today's Internet business solutions. As the industry's only enterprise-wide, standards-based network architecture, Cisco AVVID provides the roadmap for combining your business and technology strategies into one cohesive model.

Cisco AVVID Network Infrastructure

Businesses operating large enterprise networks increasingly seek an enterprise-wide infrastructure to serve as a solid foundation for emerging technologies such as IP telephony, content delivery, and IP storage. Cisco AVVID Network Infrastructure provides a documented roadmap for planning, building, and expanding enterprise networks with consideration for quality of service (QoS), high availability, and security. Cisco AVVID Network Infrastructure extends beyond a single-box approach, focusing on good design principles, interoperability between different network components, and the use of features and protocols needed to build a converged voice, video, and data network. Through solution network reference design guides (SRND), which provide best-practice designs and implementation, Cisco AVVID Network Infrastructure enables enterprises to design networks that facilitate rapid and seamless deployment of emerging technologies to meet

current and future business demands, and accelerate deployment cycles across the enterprise.

Cisco AVVID IP Videoconferencing

Historically, videoconferencing was done primarily over ISDN and time-division multiplexed (TDM) networks using the standard H.320 protocol. Running interactive video over data networks was not an option because of the shared media characteristics of video, its connectionless nature, and its lack of guaranteed data flows. With the introduction of switched 10/100-Mbps networks, high-end routers, and Layer 2 and Layer 3 quality of service (QoS), delivering interactive video over IP is now a reality. Today there is a large installed base of H.320 networks, but they incur large monthly access and switched usage charges.

With the current advances in IP networks, it is now possible to run interactive video over an IP network, thus saving customers thousands of dollars a month by converging voice, video, and data traffic over a common path. Costs drop even further because videoconferencing terminals no longer need to support complex network aggregation devices such as Inverse Multiplexers (IMUXs) but can instead rely on simple Ethernet network interface cards (NICs) for network connectivity.

Today, the H.323 protocol builds on top of existing IP data networks, ultimately saving money and scaling to larger deployments. The resulting drop in cost per seat is causing an exponential increase in the number of H.323 terminals deployed, as users move videoconferencing assets from shared areas, such as conference rooms, to the user desktop. For example, distance learning and business meetings are two common applications that can be deployed effectively with H.323 over IP networks.

Designed for Scalability

Customers can choose from the following IP videoconferencing designs:

- Single-site campus
- Multisite campus
- Single-site WAN
- Multisite WAN

Solutions Benefits

Cisco AVVID IP videoconferencing solutions offer strategic benefits to the enterprise, including:

- End-to-end IP video connectivity across the corporate infrastructure, with business quality transmission (30 frames per second with a minimum of Common Intermediate Format resolution)
- Quality of service (QoS) – high availability with low latency and low jitter (delay variability)
- Reduced ISDN costs by eliminating the need for ISDN connections directly to video terminals
- Public switched telephone network (PSTN) access to legacy H.320 systems through shared gateway resources
- Multipoint calling through Multipoint Conference Units (MCUs)
- Conservation of WAN bandwidth by distributing MCU and gateway resources across the IP infrastructure
- Lower total cost of ownership for the video network by utilizing the existing IP infrastructure
- Manageability of multiple H.323 elements in a distributed network topology

Technology Overview

Cisco AVVID IP videoconferencing solutions consist of the following major components:

- Video terminal

Video terminals come in many forms, ranging from standalone desktop units installed on PCs to shared conference room devices.

- Gatekeeper

The gatekeeper is one of the most important components of an H.323 videoconferencing network because it performs all address resolution, bandwidth management, call admission control, zone management, and call routing.

- Gateway

Gateways provide interoperability between H.323 elements and existing H.320 units on the network. Video gateways perform translation between the various protocols, audio encoding formats, and video encoding formats used by the other components.

- Multipoint Conference Unit (MCU)

An MCU enables three or more participants to join a videoconference. The MCU manages call control functions, conference resources, and audio and video media streams.

- Proxy

A proxy is a call-processing agent that terminates H.323 calls from a local LAN or zone and establishes sessions with H.323 endpoints located in other LANs or zones. The proxy provides QoS on inter-zone segments as well as a method for tunneling videoconferencing connections through firewalls and Network Address Translation (NAT) environments.

In addition to the above components, Cisco AVVID IP videoconferencing solutions support a dial plan architecture that allows for easy implementation, management, expansion, and use. To accommodate the needs of various enterprise deployments, Cisco AVVID IP videoconferencing solutions also support a number of call routing methodologies, including direct inward dialing (DID), interactive voice response (IVR), TCS4, and a default extension for special applications such as a call center.

Service and Support

Technology and equipment are only one component of an end-to-end Cisco AVVID IP videoconferencing solution based on tested and verified designs and materials. These end-to-end services enable businesses to configure and optimize each Cisco AVVID solution to deliver a fully interoperable solution. Delivered directly or through an ecosystem of specialized channel partners, Cisco AVVID solutions provide strategic and consultative support for planning, design, implementation, operation, and optimization.

Choosing an end-to-end Cisco AVVID IP videoconferencing solution ensures that you receive best practices, design capabilities, proven materials, faster deployment, and complete system interoperability.

Get Started

To learn more about verified Cisco AVVID IP videoconferencing solutions, contact your Cisco Channel Account Manager or your Cisco AVVID Specialized Partner, or visit <http://www.cisco.com/discuss/voice> to download the Cisco IP Videoconferencing SRND (Cisco.com login required).

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