

Utilizing the Gateway Products for Rich-Media Communications

RADVISION WHITE PAPER

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Introduction:

Up until a few years ago, communication networks and rich-media conferencing infrastructure required the utilization of separate networks. A data network was needed for transferring data files; Telephony network (PSTN) was used for talking by telephone; ISDN network was required for video communications and videoconferencing.

Today, the ability to use packet-based IP networks is fueling interest in real-time, converged voice, video and data communications. An increasing number of carriers and service providers are also introducing new value-added converged services. With promises of ever-increasing and affordable bandwidth, IP is becoming much more versatile and lends itself to cost effective voice and video conferencing with the additional option of visual data collaboration.

In order for participants to communicate over an IP network, all networking devices and terminal equipment, working in any network and under all communication protocols, need to be interoperable or to “inter-work”. Inter-standard and multi-protocol bridges or gateways, like RADVISION’s gw-P20, are the devices used to interconnect between the different networks in order to achieve single inter-working environment.

What is a Rich-Media Gateway?

A Rich Media Gateway is essentially a hardware product that allows intercommunication of voice, video and data streams between IP networks and legacy networks. The Gateway provides transcoding facilities by receiving; for example, H.320 streams from ISDN lines, converting it to H.323 or SIP based streams and sending it to the IP network. Gateways also perform call set-up and clearing on both sides of an IP to switched-circuit connection.

As many video conferencing systems are still ISDN-bound, the gateway will continue to be an essential device in any IP Centric rich media network. The Gateway protects investments in legacy systems and paves the way for the adoption of newer and more efficient networks. Gateways are essential components for multi-network and multi-protocol environments, used in today market for Voice over IP (VoIP) communication, video conferencing systems and data collaboration.

Implementation Examples

ISDN Video only in the organization

The following diagram displays a typical ISDN-based, legacy video communications network, within an organization (relying on the ITU-T H.320 protocol). The important thing to note in this network is that all communication is carried out via ISDN-enabled PBX and ISDN-based communication lines.

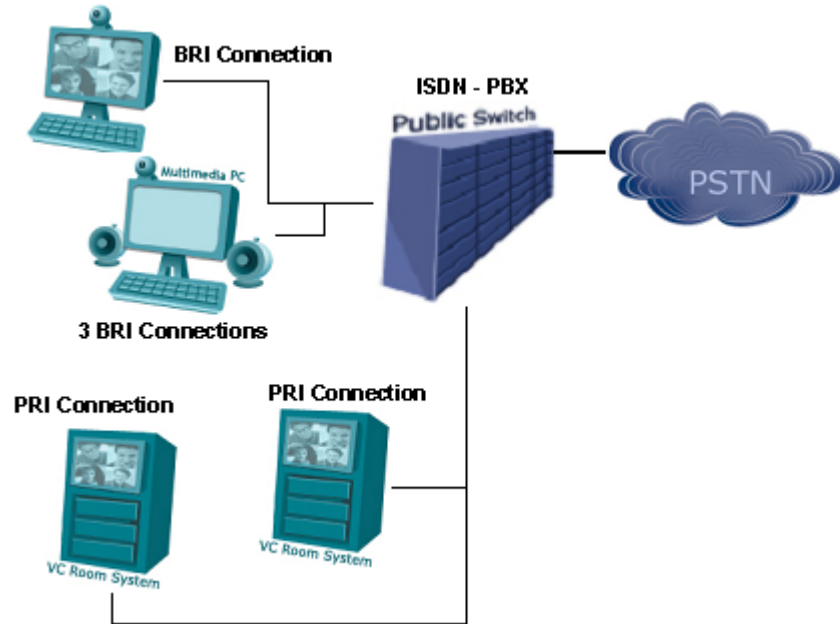


Figure 1: Typical ISDN-Based Legacy Network.

Benefits:

- Built with a well-established and proven Video Conferencing technology with a large install base and availability.
- Guaranteed/dedicated bandwidth per video terminal/system

Disadvantages:

- Very expensive for a large deployment of end-points within the organization -
 - Requires a dedicated PBX port for each end-point used (for 384Kbs channels, one will actually need 3 BRI ports for proper implementation)
 - Requires dedicated ISDN lines from the local carrier with fixed monthly charges
 - Incur telecom carriers communication charges for a minutes of use of any single channel (384Kbs call is charged for 6 calls for every minutes of use)
- It is not a “future proof” solution and relies on ISDN technology only. Today, more than 90% of the end-points sold in the market are available with an IP interface.
- Doesn't integrate easily with desktop business applications like Outlook and Instant Messaging.

Combined IP/ISDN Video in the Organization

When an organization implements rich media telephony within the organization it is cost effective to use the LAN for internal communication and provide a shared gateway device for communication with external end-points:

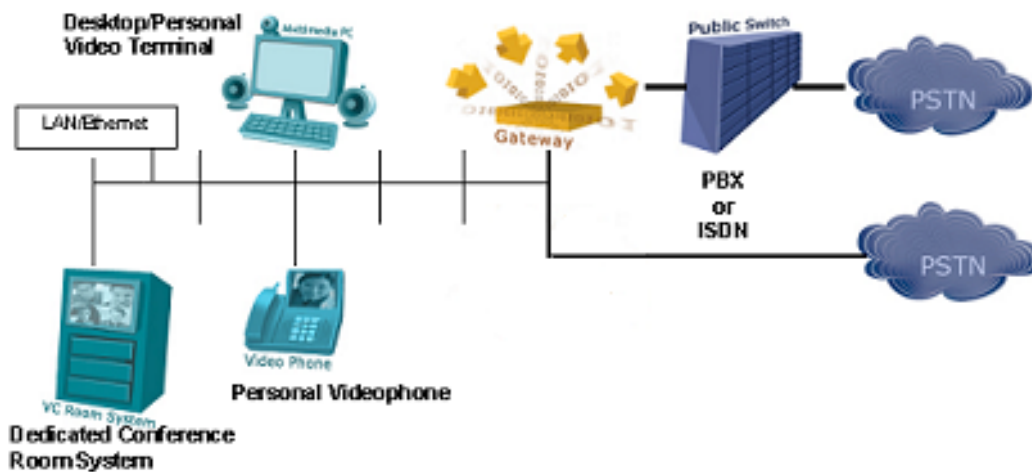


Figure 2. Combined IP and ISDN network.

Benefits:

- No need for dedicated ISDN channels for each Videophone, saves money on PBX/CO lines
- The ISDN line coming from the telecom carrier central office is shared between all users (like a PBX trunk) with direct saving in infrastructure costs
- Callers from outside the organization can call on the public network with guaranteed QoS and interoperability with any ISDN end-point
- The LAN infrastructure in the organization is used for data and rich-media services utilizing common maintenance and better resource utilization.
- Within the organization video is over IP – hence integrated with the common business software like Outlook and IM to improve productivity

IP infrastructure in a distributed architecture

The gateway allows for distributed organizations to conduct better business practice and improve the “human touch” on inter-office collaboration over the WAN between the different branch offices.

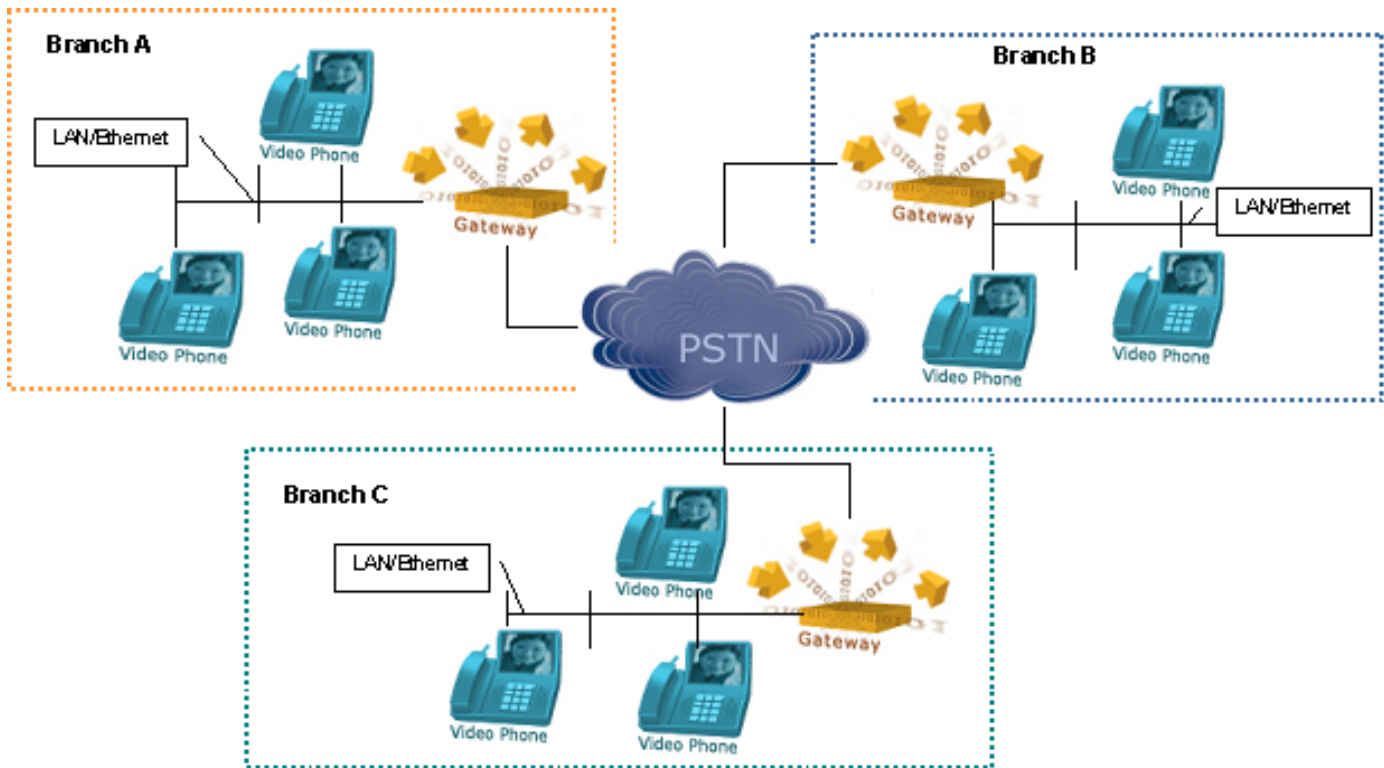


Figure 3. IP-based distributed networks

Benefits

- Intra-branch communication is carried out over the LAN utilizing the high bandwidth availability of the local IP network. No additional costs are required for video communication
- Inter-organization communications is carried out over ISDN connection, avoiding the need to provide broadband IP connection between the different branches. No need to overload MIS/IT departments with: Setting-up extranets, VPNs, dealing with unified numbering plans and overcoming firewall blockages and security between sites.

Everything you need to know before buying a gateway?

While looking at the different options available when choosing a gateway product, you should seriously consider the following key factors

- 1. Ensure interoperability with most Video terminals on the market (both ISDN and IP) –**
RADVISION's gw-P20 is developed around the RADVISION award winning protocol stacks, the most widely used product in today IP network. The gw-P20 is repeatedly tested in RADVISION labs to ensure interoperability with any end-point and video conferencing components offered in the market.
- 2. Buy a product from a reputable manufacturer –**
RADVISION is a leading provider of IP communications solutions for video conferencing equipment. RADVISION was the first company to introduce gateway devices that integrate the ISDN network with the IP network and it currently provide its third generation gateway products.
- 3. Buy high quality market proven products -**
RADVISION gw-P20 product line is the most widely used gateway in the market today. According to WainHouse research study, the gw-P20 has about 60% of the video gateway market. The equipment is private labeled by Cisco and Siemens and distributed by leading vendors like Sony, Tandberg and others.
- 4. Buy future proof technology –**
RADVISION gw-P20 is built with next-generation packet-based technology ideally suited for use on the IP network. All components in the RADVISION solution inter-communicate over the IP bus, assuring scalability and adaptability to distributed IP networks
- 5. Ensure high standards for quality and serviceability -**
The gw-P20 provides an enhanced feature set supporting excellent voice and video quality as well as high availability operation. Features including - support for resource reservation and scheduling, support for the DiffServ/TOS QoS standard, support for industry standard firewall solutions including Cisco's PIX implementation.
- 6. Ensure support for standard based architecture –**
The gw-P20 is built around industry standard protocols and technologies to ensure a smooth integration in next-gen networks. The product utilizes H.323 and SIP standards for IP communication, H.320 standard for ISDN connectivity, XML and SNMP based APIs for remote maintenance and control over the WEB, support most common video formats H.261 and H.263 in CIF and QCIF format, audio formats of G.711, G.723.1, G.728, and G.722.

About RADVISION

RADVISION is a leading provider of products and technology for real-time voice, video, and data communications over packet networks. Recognized universally as the experts in real-time voice and video over IP (V²oIP), RADVISION offers the broadest and most complete set of enabling technology and networking systems needed to enable enterprises and service providers to migrate their voice and video communications from traditional telephone networks to new converged networks. Today, hundreds of thousands of end-users around the world communicate over next-generation networks, using IP-centric products and solutions built around RADVISION products and technology. RADVISION's V²oIP videoconferencing network products include: gateways for communication between IP and ISDN networks, conferencing bridges, and gatekeeper applications. RADVISION's enabling technology includes developer toolkits for SIP, MEGACO/H.248, MGCP, and H.323 and the ProLab™ Test Management Suite. For more information, please visit our website at www.radvision.com.

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