

SCOPIA Solution

Solution Guide

Version 7.5

SCOPIA®
ELITE 5000



SCOPIA®
MANAGEMENT



SCOPIA®
DESKTOP

SCOPIA®
VC240



SCOPIA®
MOBILE



SCOPIA®
XT 1000 SERIES

© 2000-2010 RADVISION Ltd. All intellectual property rights in this publication are owned by RADVISION Ltd. and are protected by United States copyright laws, other applicable copyright laws and international treaty provisions. RADVISION Ltd. retains all rights not expressly granted.

This publication is RADVISION confidential. No part of this publication may be reproduced in any form whatsoever or used to make any derivative work without prior written approval by RADVISION Ltd.

No representation of warranties for fitness for any purpose other than what is specifically mentioned in this guide is made either by RADVISION Ltd. or its agents.

RADVISION Ltd. reserves the right to revise this publication and make changes without obligation to notify any person of such revisions or changes. RADVISION Ltd. may make improvements or changes in the product(s) and/or the program(s) described in this documentation at any time.

If there is any software on removable media described in this publication, it is furnished under a license agreement included with the product as a separate document. If you are unable to locate a copy, please contact RADVISION Ltd. and a copy will be provided to you.

Unless otherwise indicated, RADVISION registered trademarks are registered in the United States and other territories. All registered trademarks recognized.

For further information contact RADVISION or your local distributor or reseller.

Solution Guide for SCOPIA Solution Version 7.5, October 2010

<http://www.radvision.com>

Table of Contents

1 Overview of the RADVISION SCOPIA Solution

The Value of RADVISION's Videoconferencing Solution	1
Components of the SCOPIA Solution	3
SCOPIA Infrastructure Components	5
SCOPIA Client Components	6
SCOPIA Management Components	7
What's New in Version 7.5 of the SCOPIA Solution	8
Integrating with Third Party Products	11
Integrating with Third Party Endpoints	11
Integrating with Third Party Unified Communications Solutions	12
Integrating with Microsoft's Unified Communications Solution	12
Integrating with IBM's Unified Communications Solution	14
Integrating with ALU's Unified Communications Solution	15
Integrating with Third Party SIP Servers	15
Integrating with Third Party Telepresence Systems	15

2 Installing or Upgrading the SCOPIA Solution

Preparing to Install or Upgrade your SCOPIA Solution	17
Installing the SCOPIA Solution for the First Time	19
Upgrading an Existing SCOPIA Solution	22
Backing up Current SCOPIA Solution Settings	22
Stopping SCOPIA Solution Services	24
Upgrading SCOPIA Solution Components	24
Testing and Reinstating the Upgraded SCOPIA Solution	26

3 Selecting Features of your SCOPIA Solution

Securing Your Deployment	30
Authentication and Encryption.....	30
About Media Security	30
About Signaling Security.....	32
About Management Security.....	33
Securing Access to Functionality with User Profiles	33
Planning Scalability and High Availability in the SCOPIA Solution.....	33
High Availability with Multiple SCOPIA iVIEW Management Suite Servers.....	34
High Availability with Multiple MCUs	34
Scalability and High Availability with Multiple SCOPIA Desktop Servers.....	34
High Availability with Alternate Gatekeepers	35
Streaming and Recording Videoconferences.....	35
Superior Video Quality	35
Scalable Video Coding Algorithm	36
Forward Error Correction Algorithm	37
NetSense Algorithm	37
Point-to-Point Functionality.....	38
Auto-Attendant Functionality.....	39
URI Dialing Functionality.....	39
Virtual Room Functionality	40
User Profiles for Video Across an Enterprise.....	41
Defining Video Users Across an Enterprise	42
Assigning Privileges for Video Users Across an Enterprise	42
Scheduling and Resource Reservation	43
Transmitting Data Presentations.....	44
Remote Access to Videoconferencing.....	44
Intuitive Conference Layout Control and Moderator Control	45

4 Considerations for Choosing your SCOPIA Solution

Sizing Your Video Deployment Capacity.....	47
Minimizing WAN Bandwidth.....	48
Distributed MCU Deployments for Cascading Conferences	49
Setting WAN Bandwidth Limits	51

5 Deployments of the SCOPIA Solution

Solution 1: Small Medium Business Solution for Videoconferencing	53
Features of the Small Medium Business Solution for Videoconferencing	53
Limitations of the Small Medium Business Solution for Videoconferencing.....	55
Solution 2: Complete Centralized Videoconferencing	56
Features of Complete Centralized Videoconferencing Solution	56
Limitations of the Complete Centralized Videoconferencing Solution	60
Solution 3: Large Centralized Videoconferencing.....	60
Features of the Large Centralized Videoconferencing Solution	60
Limitations of the Large Centralized Videoconferencing Solution	63
Solution 4: Large Distributed Videoconferencing	63
Features of the Large Distributed Videoconferencing Solution	63
Limitations of the Large Distributed Videoconferencing Solution.....	65

1

Overview of the RADVISION SCOPIA Solution

Welcome to the RADVISION Solution Guide. This book has three sections:

- An overview of the SCOPIA Solution, its components, ease of integration with third party equipment and infrastructures, and also details what's new in this version of the SCOPIA Solution.
- The middle section lists the various features of the SCOPIA Solution and how it impacts on the components and licenses in your final deployment.
- The final section lists the four RADVISION solutions available, depending on your network topology and other considerations like video capacity and bandwidth costs.

This chapter contains these sections:

- [The Value of RADVISION's Videoconferencing Solution](#) page 1
- [Components of the SCOPIA Solution](#) page 3
- [What's New in Version 7.5 of the SCOPIA Solution](#) page 8
- [Integrating with Third Party Products](#) page 11

The Value of RADVISION's Videoconferencing Solution

RADVISION was the first company to deliver an IP MCU and an IP Gateway to the market. RADVISION has leveraged and built upon that product leadership to provide a complete portfolio of video communication solutions for the enterprise market providing the deployment of cost effective, highly advanced visual communication and collaboration solutions. As high definition (HD) endpoints bring higher and higher video quality to traditional room based video conferencing systems, and unified communications and collaboration solutions extend video to the desktop and mobile arenas, more and more organizations are turning to RADVISION for the flexibility to cost-effectively adopt emerging HD and unified communications technologies.

RADVISION's SCOPIA Solution through the powerful combination of hardware and software provide the industry's most comprehensive, robust video platform for visual communication solutions that delivers the scalability and seamless device support organizations need to leverage and protect current standards-based conferencing investments. SCOPIA Solution products are among the leading visual communication solutions in the industry today by virtue of RADVISION's technological innovation in several key areas:

- Connectivity

Today's video conferencing deployments are a mix of heterogeneous device capabilities deployed on different networks. An effective solution will allow interconnectivity and interoperability between all devices and networks - circuit switched, packet IP or 3G based. SCOPIA Solutions allow connectivity between any type of standards based device from high-end telepresence systems through high-end room based systems, executive desktop systems, desktop video clients, unified communications clients to telephony devices or 3G mobile devices. The SCOPIA Solution product line also provides unparalleled connectivity for both inside and outside the private network through firewall traversal solutions.

- Simplicity

RADVISION delivers easy to use and operate video conferencing systems that will connect to any standards-based video conferencing endpoint. This capability is provided through a centralized, comprehensive and simple-to-use management suite, an open architecture with integration to existing enterprise applications and tools, a flexible and dynamic resource management model and with products and features focused on usability and simplicity. The recently introduced SCOPIA Mobile product is an example of one of our latest developments focused on usability and simplicity. SCOPIA Mobile provides video conference control and management capabilities through the touch screen interfaces of the Apple® iPhone® and iPod touch® devices.

- Distributed architecture

Every component of the SCOPIA Solution has been designed for deployment in a distributed IP network. No competing solution can match the capacity of the SCOPIA Solution. Because of its IP architecture, the entire infrastructure does not need to be centrally located but can be distributed throughout a network. This allows the proper sized MCUs to be deployed strategically throughout the network and by distributing intelligence throughout the network, calls are built dynamically across the distributed MCUs (see [Distributed MCU Deployments for Cascading Conferences page 49](#)).

The enterprise benefits from increased redundancy, network traffic optimization, resource management and high scalability. These benefits of huge scalability and distributed architecture are also found in SCOPIA Desktop, which is designed to support mass deployments in large enterprises.

- Extensive protocol support and unified communications integration capabilities

In addition to supporting both ISDN and H.323, the SCOPIA Solution also supports SIP and 3G-324M for desktop and mobile communication. The SCOPIA Solution also delivers multipoint video conferencing capabilities and room systems connectivity to the majority of the unified communications software applications of the main players in the market today (see [Integrating with Third Party Unified Communications Solutions page 12](#)).

- IP protocol expertise

RADVISION is the leader in developing and delivering advanced voice and video protocols over IP networks, primarily H.323 and SIP. As a result, SCOPIA Solutions support the most recent versions of each of the signaling protocols with the associated features they enable. In addition, SCOPIA Solutions are interoperable with nearly any standards-based endpoint on the market today.

- Scalable Video Coding (SVC) for network resiliency

SVC is an extension to the H.264 codec standard that is used by most of today's video conferencing devices. SVC video technology allows video conferencing devices to send and receive multi-layered video streams composed of a small base layer and optional additional layers that enhance resolution, frame rate and quality. Layering provides a dramatically higher degree of error resiliency and video quality with no significant need for higher bandwidth. It is especially effective over networks with packet loss and/or that lack Quality of Service (QoS), typical of many wireless internet networks.

With Scalable Video Coding, the SCOPIA Solution enables full interoperability with existing devices while enjoying all the benefits of very high network error resiliency and high quality support for video conferencing room and telepresence systems. SVC will also improve the quality of connections between cascaded infrastructure devices (MCUs) and allow traditional endpoints without SVC capability to leverage the benefits of SVC.

For more information, see [Scalable Video Coding Algorithm page 36](#).

- Desktop software client

The SCOPIA Desktop software client provides video conferencing capabilities on the Mac platform in addition to the PC. The client provides capabilities to fully extend the video conferencing room system experience to the desktop including HD video, SVC, H.239 interoperable data collaboration and firewall traversal capabilities. It provides a very effective way to extend video communications beyond typical enterprise boundaries to workers at home and on the road. The SCOPIA Desktop client has a very scalable deployment model where it can be installed on every member of an organization's desktop including external guests, clients, prospects, suppliers, etc. This model provides access to high quality video conferencing capabilities extending the utility of a video conferencing deployment.

Components of the SCOPIA Solution

RADVISION provides a comprehensive portfolio of powerful visual communications solutions for the enterprise market that allow advanced voice, data and video conferencing. The SCOPIA Solution includes advanced network infrastructure solutions for multipoint conferencing, network connectivity and firewall traversal; endpoint solutions for board rooms, conference rooms, desktop and personal video conferencing and management software for scheduling, device and bandwidth management and directory services.

The SCOPIA Solution is a powerful combination of hardware and software products that provide the network platform, applications and endpoints to enable advanced video conferencing and collaboration. SCOPIA Solutions are fully standards based and support the highest resolutions available in today's video conferencing solutions providing interoperability and interconnectivity between any video-enabled device, such as a telepresence system, a meeting room or a desktop video conferencing endpoint, with other telephony and video conferencing systems. SCOPIA Solutions are used by institutions, enterprises, and application service providers to create high quality, easy-to-use voice, video, and data communication, collaboration, and entertainment environments, regardless of the communication network - IP, SIP, 3G, H.323, ISDN or next generation networks.

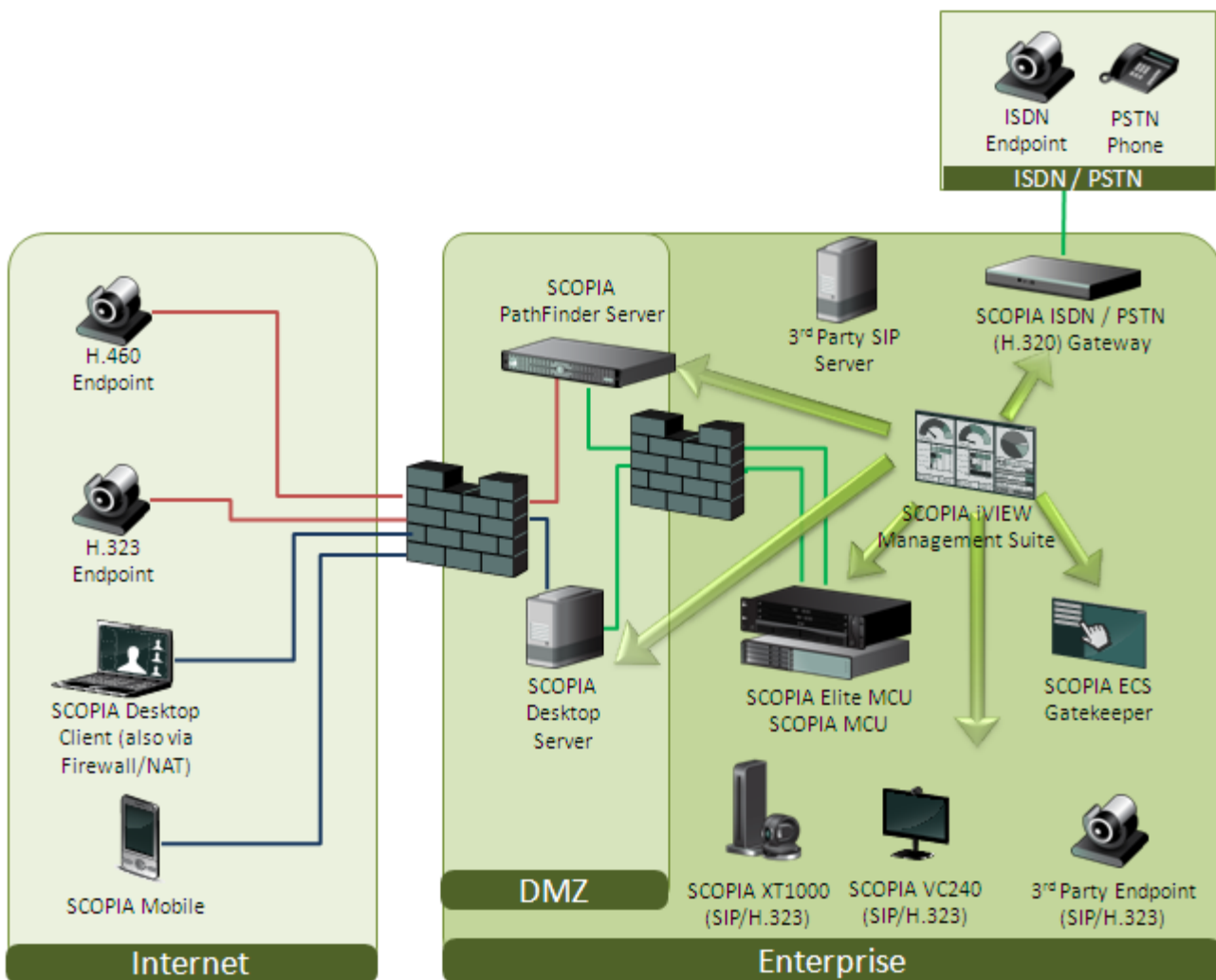
RADVISION's SCOPIA Solution is the industry's most comprehensive, robust video platform for visual communication solutions that delivers the scalability and seamless device support organizations need to leverage and protect current standards-based conferencing investments. As high

definition (HD) endpoints bring higher and higher video quality to traditional room based video conferencing systems, and unified communications and collaboration solutions extend video to the desktop and mobile arenas, RADVISION's SCOPIA Solution provides organizations the flexibility to cost-effectively adopt emerging HD and unified communications technologies.

The powerful combination of hardware and software supports media processing for advanced room system devices and delivers high scalability and distributed processing for desktops and mobile deployments. Our complete SCOPIA Solution includes all the components necessary to provide a total video, voice, and data collaboration solution on a customer's network.

Figure 1-1 on page 4 shows the components of the RADVISION SCOPIA Solution, detailing their functional interaction to create a complete end-to-end video communications solution.

Figure 1-1 Components of the RADVISION Solution



Each of the components in this diagram can be categorized into three types:

- SCOPIA Infrastructure Components page 5
- SCOPIA Client Components page 6
- SCOPIA Management Components page 7

SCOPIA Infrastructure Components

SCOPIA Infrastructure offers advanced features and technology including support for high definition (HD), Scalable Video Coding (SVC), support for bridging and interconnecting devices and networks including the latest telepresence systems.

The components of SCOPIA Infrastructure include:

- SCOPIA Elite MCU

The SCOPIA Elite MCU ([Figure 1-1 on page 4](#)) is RADVISION's next generation MCU architecture for high definition multiparty conferencing. Utilizing the latest in DSP technology, SCOPIA Elite MCU's advanced media processing supports 1080p HD and provides connectivity, dynamic resource allocation, and individual video layouts per participant yielding uncompromised video experience. The new SCOPIA Elite MCU can be configured from 10 to 30 ports of high definition Continuous Presence providing a line of systems to suit a variety of applications and budgets. Each system can also deliver four times the capacity by utilizing SCOPIA Elite MCU's 4X capacity option for enhanced definition endpoints. This maximizes capacity for mixed endpoint environments without any system configuration changes. This flexible model offers significant value and fast return on investment with up to 120 video conferencing ports per system. SCOPIA Elite MCU is the industry's first standards based MCU to natively support advanced H.264 Scalable Video Coding (SVC) technology (see [Scalable Video Coding Algorithm page 36](#)).

- SCOPIA MCUs 100/400/1000

The SCOPIA MCUs ([Figure 1-1 on page 4](#)) provide a very cost effective MCU solution for an enterprise network. These MCUs are optimized for support of standard definition (SD) endpoints but can also fully support high definition (HD) endpoints as well. They can be used as cost effective deployment supporting mixed SD and HD deployments or can augment a deployment of SCOPIA Elite MCUs for cost effective support of SD endpoints in the network. The systems range in size from 1U units supporting 12 or 24 ports up to the 1000 model which is a carrier-grade chassis with full redundancy and support for 21 hot-swappable slots for a flexible configuration of MCU and gateway functions.

- SCOPIA Gateway

The SCOPIA Gateways ([Figure 1-1 on page 4](#)) provide seamless connectivity between different networks and standards to deliver feature-rich, reliable, multimedia conferencing and communications. SCOPIA Gateways are ideal for connecting IP video conferencing networks with ISDN and PSTN networks allowing connectivity to ISDN endpoints or to standard telephones or mobile phones. Also offered are 3G Video Gateways that bridge 3G-324M-based mobile devices with IP-based video conferencing systems and infrastructure for the delivery of video services to a variety of handsets.

- SCOPIA PathFinder Firewall Traversal

The SCOPIA PathFinder ([Figure 1-1 on page 4](#)) provides a complete firewall and NAT traversal solution enabling secure connectivity between enterprise networks and remote sites. SCOPIA PathFinder maintains the security and advantages of firewall and NAT over heterogeneous video networks and allows seamless integration with existing video endpoints and infrastructure components.

SCOPIA Client components offer advanced HD video conferencing endpoints for personal and group use at the desktop, on the road, in the conference room or the board room.

Examples of SCOPIA Clients include:

- SCOPIA XT1000 Room System

The SCOPIA XT1000 ([Figure 1-1 on page 4](#)) is a high definition video conferencing room system supports two streams of HD video each at 1080p resolution and 30 frames per second. The high end PTZ (Pan-Tilt-Zoom) camera supports 10x optical zoom and wide angle capability for viewing details as well as an entire group. The second 1080p video stream can be used with an additional 1080p camera for complete visual coverage or with a PC for data sharing. When used for data collaboration, the system supports high resolution PC data sharing at 30fps so presentations and even video clips can be shared with zero loss of quality. The SCOPIA XT1000 comes with an available embedded HD Multi-party Conferencing Unit (MCU) with support for high definition, continuous presence meetings with up to eight participants - the highest capacity embedded MCU in the industry today. The advanced audio system provides full band audio encoding to ensure high clarity audio transmission with no loss of quality. Beam forming technology is used in the 3-way microphone pod to put the focus on the speaker while isolating background noise.

- SCOPIA VC240

The SCOPIA VC240 ([Figure 1-1 on page 4](#)) is a high resolution desktop monitor with integrated HD video conferencing. It was jointly developed combining the best of breed technologies of RADVISION and SAMSUNG to integrate advanced video conferencing from RADVISION into a SAMSUNG high resolution multimedia LCD monitor. The SCOPIA VC240 can operate as a standalone desktop HD video conferencing device as well as a 24-inch high resolution monitor. The SCOPIA VC240 complements RADVISION's other desktop video solutions.

- SCOPIA Desktop

SCOPIA Desktop ([Figure 1-1 on page 4](#)) is a software based endpoint, a client/server application that extends a room system conferencing application to remote and desktop users for voice, video and data communications. It includes the latest in video technology including support for HD video, Scalable Video Coding (SVC) for unsurpassed error resiliency and HD H.264 for viewing both meeting participants and data collaboration. Its audio system provides echo cancellation, background noise suppression, and is highly resilient to network errors common on the Internet. SCOPIA Desktop is a simple web browser plug-in that is centrally managed and deployed without complex licensing fees or installation issues. Users simply click on a link and in moments are connected to a conference. The system provides automatic firewall traversal to allow anyone to participate regardless of where they are.

SCOPIA Desktop Pro extends the functionality of SCOPIA Desktop by providing a licensed seat based video conferencing client that also supports point to point calling with call initiation from a presence based and corporate configured directory. This client supports authenticated users and advanced capabilities such as point to point calling and seamless escalation to multi participant calls.

- SCOPIA Mobile

SCOPIA Mobile ([Figure 1-1 on page 4](#)) enables users to easily connect to a conference and participate with audio or be called back on an alternate number with mobile devices like the Apple® iPhone®, iPod touch® and BlackBerry® smart phone. SCOPIA Mobile users can also

view presentations, spreadsheets, documents and images shared in a videoconference which uses the H.239 interoperable data collaboration standard. You can also perform meeting moderation functionality directly from your mobile device using SCOPIA Mobile through the touch screen interfaces of these highly popular and inexpensive mobile devices.

SCOPIA Management Components

SCOPIA Management components offer a comprehensive management solution for video communications where enterprises can efficiently manage a diverse, distributed video conferencing network including endpoints and infrastructure.

- SCOPIA iVIEW Management Suite ([Figure 1-1 on page 4](#)) is a set of management, control and scheduling applications providing robust network management and easy-to-use conference scheduling.

The network management component provides enterprises with a single access point to managing all their videoconferencing network devices including SCOPIA Infrastructure components (see [SCOPIA Infrastructure Components page 5](#)), through the call control software applications (SCOPIA ECS Gatekeeper, SIP Back-to-Back User Agents) and to the various endpoint devices deployed in the network, both RADVISION endpoints (see [SCOPIA Client Components page 6](#)) and 3rd party systems. Through the network management of iVIEW Management Suite, administrators can detect and monitor their systems, remotely configure and control them, and upgrade software/firmware to the various systems in the network.

SCOPIA iVIEW Management Suite's scheduling and resource component allows administrators and conferencing operators to conveniently schedule, manage and control their conferences from a single access point. iVIEW Management Suite also provides scalability and redundancy capabilities of a large enterprise or application service provider's global deployment, with unique capabilities such as Virtual MCU with automatic cascading for bandwidth preservation, least cost routing for cross-site communications cost savings, Virtual Conference Room for ease-of-use and other features.

SCOPIA iVIEW Management Suite also integrates with enterprises' existing applications such as Microsoft Active Directory, IBM Lotus Domino for easy user provisioning, Microsoft Outlook or IBM Lotus Notes for an easy and intuitive calendar application scheduling. iVIEW Management Suite also provides the interface to market leading unified communication solutions such as IBM Lotus Sametime and Microsoft Office Communications Server.

The smooth integration with 3rd party SIP servers ([Figure 1-1 on page 4](#)) leverages existing network call control for the videoconferencing system. The SIP server manages the call control and network usage, while the SCOPIA Solution supplies the videoconferencing capabilities.

- SCOPIA ECS Gatekeeper ([Figure 1-1 on page 4](#)) provides standalone address resolution functionality in H.323 networks. SCOPIA ECS Gatekeeper provides the most intelligent, advanced backbone management system for IP telephony and multimedia communication networks. SCOPIA ECS Gatekeeper provides gatekeeper functionality and everything required to simply and easily define, control and manage voice, video and data traffic over IP

networks, no matter how large or complex. SCOPIA ECS Gatekeeper ensures optimal bandwidth utilization to deliver carrier-grade, best-quality call completion and video collaborative communications over any network and any protocol.

- SCOPIA Control enables you to manage and control the visual layout and camera settings of a SCOPIA XT1004 or SCOPIA XT1009 videoconference using the intuitive touch interface of an Apple® iPad®. SCOPIA Control enables you to drag and drop video layouts wirelessly, or change the pan, tilt and zoom features of the XT1000 Standard Camera.

What's New in Version 7.5 of the SCOPIA Solution

RADVISION's latest innovations for this version include high performance room systems, unmatched telepresence and desktop communications, and mobile conferencing solutions. These form key examples of RADVISION's transformation from an infrastructure provider to delivering a comprehensive solution of video conferencing solutions.

Version 7.5 of the SCOPIA Solution is one of the leading visual communication solutions in the industry today by virtue of RADVISION's technological innovation in several key areas:

- Telepresence interoperability

With the new Telepresence Interoperability feature, the SCOPIA Elite MCU can establish connections with telepresence systems from Cisco, Logitech/LifeSize, Polycom and Tandberg, allowing telepresence users to view all meeting participants in a multi-party call, including those on traditional videoconferencing systems or telepresence systems from other vendors.

Users with traditional video conferencing systems will see the telepresence participants in a special video layout where multiple video streams from a telepresence endpoint are combined into a single widescreen image. Telepresence users will also see other conference participants in a special video layout, adding to the telepresence immersive video experience. Telepresence users no longer have to be stranded in their closed solutions with SCOPIA Elite MCU's new breakthrough interoperability technology.

- Revolutionary Advanced Data Collaboration

The new advanced data collaboration functionality combines the interoperability of standard H.239-based data collaboration with access on the Apple iPad and iPhone. With this advanced data collaboration capability, materials such as presentations, spreadsheets, documents and images shared in a video conference can be easily viewed on an Apple iPad or iPhone.

The advanced data collaboration also provides the ability to review previously shared data. Conference participants can now review information and catch up if they arrived late to the meeting or want to spend additional time on critical points in material presented. Preview images of materials presented provide a quick way to jump back to sections of documents previously shared.

For example, if a conference participant wants to view an agenda slide in a presentation that was delivered when the meeting first started, they can easily navigate back to that particular slide, while the conference leader continues the presentation for the other participants.

This review capability is available in both SCOPIA Desktop and SCOPIA Mobile product lines.

- New affordable solution for small and medium businesses

The new SMB Solution (see [Solution 1: Small Medium Business Solution for Videoconferencing page 53](#)) integrates SCOPIA XT Desktop with the SCOPIA XT1000 room system to deliver a unique videoconferencing solution especially suited to the requirements of small and medium businesses, providing an all inclusive HD video conferencing solution, that includes integrated multi-party and desktop video conferencing.

This solution combines the capabilities of the recently introduced SCOPIA XT1000 HD video conferencing room system with the award winning SCOPIA Desktop software to fully extend the SCOPIA XT1000 room system experience to Mac or PC users at home and on the road, or to partners and even to their customers.

The SMB Solution does not require detailed technical skills to install or manage, making it ideal for those organizations with limited IT departments. The desktop conferencing capability can be easily added to existing SCOPIA XT1000 systems or purchased as a total solution.

- Touch screen control for the SCOPIA XT1000 HD room system

The new SCOPIA Control is the first Apple iPad application for control of video conferencing room systems. SCOPIA Control's highly intuitive user interface virtually eliminates the learning curve for using a video conferencing system. First time users can initiate calls, control their SCOPIA XT1000 video conferencing systems and moderate meetings without any training or introduction. Users can easily join meetings from the integrated conference room calendar, place calls and access a corporate directory in addition to inviting other participants. SCOPIA XT1000 control and meeting moderating are simple through the iPad Multi-Touch user interface.

- Mobile device support

The new SCOPIA Mobile extends conferencing and control to mobile devices by providing a free application for the Apple iPhone, iPod touch and iPad. SCOPIA Mobile is a natural extension to the SCOPIA Solution with the increasing smart phone and mobile digital device penetration amongst users. With the Apple iPhone, users can easily connect to a conference and participate with audio or be called back on an alternate number. SCOPIA Mobile users can also view presentations, spreadsheets, documents and images shared in a video conference with H.239 interoperable data collaboration. Participants can immediately review previously shared materials and catch up if they arrived late to a meeting or spend additional time on critical points in material presented ([Figure 1-2 on page 10](#)). Additionally, participants and administrators can directly control and manage video conferences through the touch screen interfaces of these highly popular mobile devices.

Figure 1-2 Advanced Data Collaboration on SCOPIA Mobile



- Enhanced network error handling
RADVISION has added more functionality to further improve performance over compromised networks. Along with our implementation of H.264 SVC, which provides a high degree of error resiliency, a new additional feature called NetSense adapts the bandwidth used to a lower rate before packet loss actually affects call quality through a sophisticated prediction technique. For more information on these and other video quality enhancement algorithms, see [Superior Video Quality page 35](#).
- Stronger media security
Version 7.5 enhances media security of the SCOPIA Solution by enhancing support for communicating using the encrypted Transport Layer Security (TLS) protocol in SIP-based networks. For more information on enhanced security, see [Authentication and Encryption page 30](#).
- Enhanced bandwidth controls
A new bandwidth management feature enables administrators to monitor and manage the bandwidth used by video communications across the entire network. The SCOPIA iVIEW Management Suite can be configured to generate alerts when cross-zone bandwidth usage rises above a given threshold, enabling administrators to keep WAN bandwidth costs to a minimum. You can define the system's behavior if new video calls are attempted which would breach the bandwidth limit defined in the system.
For more information about this functionality and how it can be configured, see the *Administrators Guide for SCOPIA iVIEW Management Suite*.
- Enhanced Unified Communications (UC) support
New UC solutions from the major application and telephony vendors promise to bring conferencing to the desktop and mobile users. Version 7.5 now provides full integration with IBM Lotus SameTime 8.5.1's native support of HD video, enabling SameTime users to enjoy HD

multi-party conferencing and integration with the SCOPIA Solution with no additional installation required. Connectivity to telepresence, HD video conferencing room and desktop systems, along with 3G mobile and standard phones is placed directly into the hands of SameTime users. For more information, see [Integrating with IBM's Unified Communications Solution page 14](#).

- Centralized and unified corporate address book

SCOPIA iVIEW Management Suite's unified corporate address book enables administrators to update the address books for all of their endpoints, from both third parties and RADVISION, from a single place, and they only have to do it one time. This capability is supported for the most popular endpoints from RADVISION, Polycom, Sony and Tandberg.

- New technical documentation

RADVISION's new technical documentation set has a fresh look and a consistent set of documents for each solution component. Installation, User and Administration Guides have been thoroughly re-vamped for efficient and effective navigation and complete coverage. Screenshots and diagrams have been included throughout the documentation set.

Installation Guides now contain all planning and installation related material, including an initial configuration to get started; Administration Guides contain all server maintenance issues, and User Guides contain all client or user-related information.

The new Solution Guide, this document, provides a global view of the solution and its associated components.

Integrating with Third Party Products

- [Integrating with Third Party Endpoints](#) page 11
- [Integrating with Third Party Unified Communications Solutions](#) page 12
- [Integrating with Third Party SIP Servers](#)..... page 15
- [Integrating with Third Party Telepresence Systems](#) page 15

Integrating with Third Party Endpoints

RADVISION's video communications infrastructure has an excellent track record of seamless integration with third party endpoints.

We have performed extensive interoperability tests on the components of the SCOPIA Solution with a broad range of new and legacy third party endpoints.

For detailed information of the test results, refer to these documents:

- *Codec Interoperability Reference Guide for the SCOPIA Elite MCU*
- *Codec Interoperability Reference Guide for the SCOPIA VC240*
- *Codec Interoperability Reference Guide for the SCOPIA XT1000*

The SCOPIA iVIEW Management Suite integrates with third party endpoints through its remote endpoint management features. The iVIEW Management Suite can work with third party endpoints in a number of significant ways:

- Remote download of corporate address books into the third party endpoints;
- Remote software or firmware upgrade of third party endpoints;
- Remote configuration of third party endpoints to define their location for cascading properties when dialling to a conference;
- Remote editing of the Gatekeeper address for third party endpoints.

For more information on these features, see the *Administration Guide for SCOPIA iVIEW Management Suite*.

Integrating with Third Party Unified Communications Solutions

Third party unified communications (UC) solutions can be easily integrated with SCOPIA Solution components. UC installations offer solutions for chat, voice and video communications across networks.

Full integration with a UC solution also requires proper integration with its user directory, with its scheduling services, and of course with its UC servers.

The SCOPIA Solution integrates with any of these UC solutions:

- [Integrating with Microsoft's Unified Communications Solution](#) page 12
- [Integrating with IBM's Unified Communications Solution](#) page 14
- [Integrating with ALU's Unified Communications Solution](#) page 15

Integrating with Microsoft's Unified Communications Solution

The SCOPIA Solution components integrate with Microsoft's UC solution on all three levels:

- Integration with the corporate list of users is performed via SCOPIA iVIEW Management Suite's integration with the Microsoft Active Directory.
- Scheduling of resources is performed via integration with Microsoft Outlook. There are two types of integration with Microsoft Outlook, and only one should be used in an organization:

- The SCOPIA Desktop Server can integrate with Microsoft Outlook to send an ad-hoc meeting using the Outlook calendar feature, with a predefined attachment text to include a web link to the virtual room of the person sending the invitation, enabling anyone within or outside the organization to access the meeting with an automatic download of the SCOPIA Desktop Client.

This method of scheduling is limited to reserving a time in the each of the participant's calendars. It does not set aside any videoconferencing resources, such as the chosen MCUs, nor will it make preparations for any cross-zone bandwidth reductions.

For more information, see the *Administration Guide for SCOPIA Desktop*.

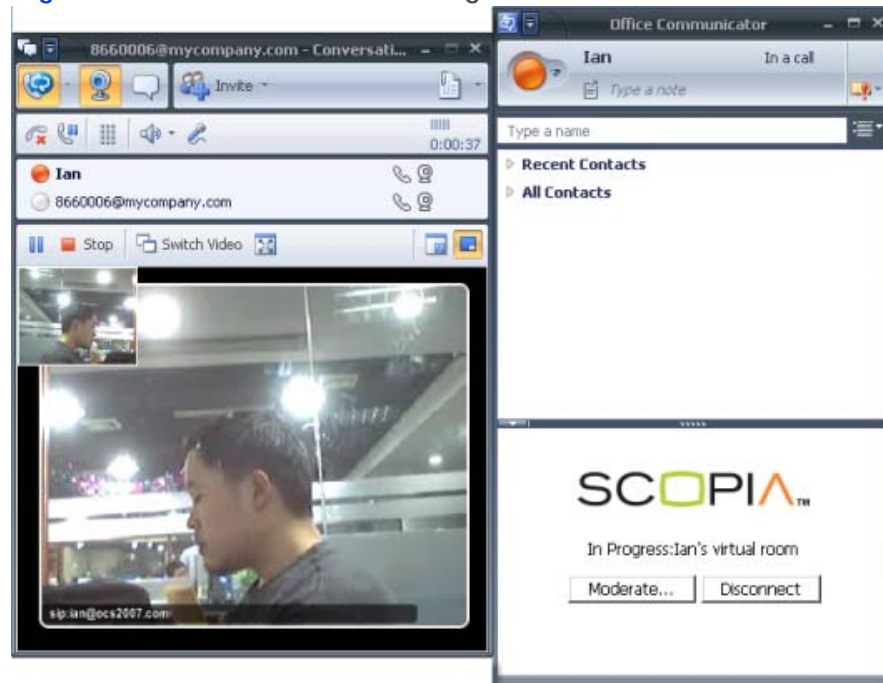
- The SCOPIA iVIEW Management Suite has its own integration with Microsoft Outlook, offering all the features of the SCOPIA Desktop add-on, but it also reserves the videoconferencing resources like the relevant MCUs. This ensures the call will have the required bandwidth and resources reserved at the appointed time.

For more information, see the *Deployment Guide for iVIEW Microsoft Outlook Add-on*.

- Integration with Microsoft's UC infrastructure, the Microsoft Office Communicator Server (OCS) is performed via an add-on called the SCOPIA iVIEW Management Suite Add-on for OCS.

Users see the add-on as an inserted panel inside the Microsoft Communicator client (see [Figure 1-3](#)) to enable video point-to-point and multi-point conferencing.

Figure 1-3 SCOPIA iVIEW Management Suite Add-on for OCS



For more information on the integration of the iVIEW Management Suite Add-on for OCS, see the *Administration Guide* and *User Guide for the iVIEW Management Suite Add-on for OCS*.

The SCOPIA Solution components integrate with IBM's UC solution on all three levels:

- Integration with the corporate list of users is performed via SCOPIA iVIEW Management Suite's integration with Domino.
- Scheduling of resources is performed via integration with Lotus Notes. The SCOPIA iVIEW Management Suite integrates with Lotus Notes, reserving the calendar of each of the participants and reserving the videoconferencing resources required, like the relevant MCUs. This ensures the call will have the required bandwidth and resources reserved at the appointed time.

For more information, see the *Deployment Guide for the SCOPIA IBM Lotus Notes Add-on*.

- Integration with IBM's UC communication solution, Lotus SameTime, is performed via one of two add-ons:
 - For version IBM Lotus SameTime 8.5 and above, use the SCOPIA iVIEW Management Suite Add-on for IBM Lotus SameTime 8.5 (Figure 1-4). For more information, see the *Installation Guide* and *User Guide for SCOPIA iVIEW Management Suite Add-on for IBM Lotus SameTime 8.5*.
 - For versions below IBM Lotus SameTime before version 8.5, use the SCOPIA IBM Lotus Notes Add-on. For more information, see the *SCOPIA IBM Lotus Notes Add-on Deployment Guide* and *User Guide*.

Figure 1-4 SCOPIA iVIEW Management Suite Add-on for IBM Lotus SameTime 8.5



Integrating with ALU's Unified Communications Solution

Alcatel-Lucent OmniTouch My Teamwork can be set up to communicate in video conferences using RADVISION's video infrastructure.

For more information, consult with an Alcatel-Lucent representative about the setup and configuration of a RADVISION video integration.

Integrating with Third Party SIP Servers

The components of the RADVISION SCOPIA Solution operate in dual-protocol mode, supporting both SIP and H.323 devices easily and transparently. In the SIP environment, call control functionality is accessed via third party SIP servers or proxies. There are several which integrate smoothly with RADVISION components.

The third party SIP server or proxy integrations with RADVISION are:

- Broadsoft SIP servers can be configured to integrate with a RADVISION SCOPIA Solution. Besides setting up the SIP server to connect to the SCOPIA iVIEW Management Suite, the SCOPIA Elite MCU, and iVIEW Management Suite must be configured with the SIP server's address. For more information, see the *Integration Guide for SCOPIA Solution in SIP Environments with Broadsoft SIP Servers*.
- The Cisco Unified Call Manager (CUCM) can be configured as a SIP proxy with RADVISION's components by defining a SIP trunk from the CUCM to the SCOPIA iVIEW Management Suite, and defining routing patterns which are aligned with the overall dial plan of the network.

For example, a routing pattern might define the dial prefix '5' to route the call to the iVIEW Management Suite. Dialing the number 5-1234 would send the number 1234 to the iVIEW Management Suite.

For more information, see the *Integration Guide for SCOPIA Solution in SIP Environments with the Cisco Unified Call Manager*.

Integrating with Third Party Telepresence Systems

The SCOPIA Solution offers seamless integration with several third party telepresence systems through the functionality of SCOPIA iVIEW Management Suite and SCOPIA Elite MCU. This technology enables smooth integration with telepresence systems using innovative screen layouts and standards-based communications protocols.

Telepresence capabilities on the SCOPIA Elite MCU are enabled through a license key, with no additional separate systems required.

Figure 1-5 Third party telepresence system integrated with RADVISION infrastructure



The SCOPIA iVIEW Management Suite integrates with several third party telepresence systems:

- Logitech / LifeSize
- Polycom
- Tandberg
- Magor

For more information, see the *Administration Guide for SCOPIA iVIEW Management Suite*.

In addition, the SCOPIA Solution can also connect to Cisco's Telepresence System, to integrate it with standard video conferencing endpoints and desktop applications in both SIP and H.323 environments. This deployment could work in parallel to other deployments of the SCOPIA Solution and work smoothly with other communication systems such as unified communication integrations, ISDN (H.320) and desktop deployments. For more information, see the *Integration Guide for Cisco Telepresence System in the SCOPIA Solution*.

2

Installing or Upgrading the SCOPIA Solution

This section describes the procedures to be followed for installing or upgrading the SCOPIA Solution version 7.5. The version numbers for each of the components tested as complete SCOPIA Solution are:

- Version 7.5 of SCOPIA iVIEW Management Suite
- Version 7.5 of SCOPIA ECS Gatekeeper, if your deployment requires a standalone gatekeeper.
- Version 7.5 of SCOPIA Elite MCU and/or version 5.7 of SCOPIA MCU
- Version 7.5 of SCOPIA Desktop
- Version 7.1.2 of SCOPIA PathFinder
- Version 5.7 of SCOPIA Gateway 320
- Version 2.0.2 of SCOPIA VC240
- Version 2.0 of SCOPIA XT1000

To install or upgrade to Version 7.5 of the SCOPIA Solution, follow these procedures:

- [Preparing to Install or Upgrade your SCOPIA Solution.....](#) page 17
- [Installing the SCOPIA Solution for the First Time](#) page 19
- [Upgrading an Existing SCOPIA Solution](#) page 22

Preparing to Install or Upgrade your SCOPIA Solution

Before starting an upgrade or installation of the SCOPIA Solution, there are a number of preparation steps to ensure you are ready to begin the installation.

Procedure

Step 1

Verify you have the technical documentation of each of the components of the SCOPIA Solution that you intend to install. Newly released solution components have a dedicated Installation Guide:

- Installation Guide for SCOPIA iVIEW Management Suite
- Installation Guide for SCOPIA Desktop Server
- Installation Guide and Administrators Guide for SCOPIA Elite MCU

- User Guide and Release Notes for the SCOPIA MCU
- User Guide and Release Notes for the SCOPIA Gateway
- User Guide for SCOPIA PathFinder Server and User Guide for SCOPIA PathFinder Client
- Installation Guide and Administrators Guide for the SCOPIA XT1000
- User Guide, Quick Setup Guide and Upgrade document for the SCOPIA VC240

Step 2

Verify you have the license keys relevant for your deployment:

- SCOPIA Desktop Server license key
- SCOPIA PathFinder Server license key
- SCOPIA Elite MCU license key
- SCOPIA MCU license key
- SCOPIA Gateway license key

Online licenses and upgrade packages can be found on the web at this address:

<http://www.radvision.com/Support/ProductSupport/ProductRegistration/>

Step 3

Verify you have the relevant software installation discs:

- SCOPIA iVIEW Management Suite product disc
- SCOPIA Desktop Server product disc
- SCOPIA PathFinder Client installation kit
- SCOPIA ECS Gatekeeper product disc

In the case of upgrades, ensure you have downloaded all relevant upgrade packages supplied by RADVISION to a drive which is easily accessible.

Note: The hardware components of the SCOPIA Solution, such as SCOPIA Elite MCU, SCOPIA MCU, SCOPIA Gateway, SCOPIA PathFinder Server, SCOPIA XT1000 and SCOPIA VC240 are always shipped with the latest version preinstalled.

In cases where you need to upgrade or downgrade the version installed, see [Upgrading an Existing SCOPIA Solution page 22](#).

Step 4

Set aside the time required to perform the installation or upgrade. That time is the sum total of the following components:

- The time required for a graceful shutdown of existing services. This is important when performing an upgrade.
- The time required for the upgrade or installation procedure itself (see [Table 2-1 on page 19](#)).
- The time required to test the service after upgrade to verify all functionality is working correctly.

When performing upgrades to an existing installation, be sure to book all the available videoconferencing ports in advance, for the duration of the entire upgrade procedure, to prevent users from scheduling meetings at that time.

Table 2-1 Typical times required to install or upgrade each component of the SCOPIA Solution

Product	Average Installation Time	Average Upgrade Time
SCOPIA iVIEW Management Suite	20 mins	40 mins
SCOPIA ECS Gatekeeper (standalone)	15 mins	20 mins
SCOPIA Elite MCU	N/A	20 mins
SCOPIA MCU	N/A	15 mins
SCOPIA Desktop Server	15 mins	30 mins
SCOPIA PathFinder Server	15 mins	15 mins
SCOPIA Desktop Client	2 mins	2 mins
SCOPIA PathFinder Client	10 mins	10 mins
SCOPIA Gateway 320	N/A	15 mins
SCOPIA VC240	N/A	5 mins
SCOPIA XT1000	N/A	5 mins

Installing the SCOPIA Solution for the First Time

Installing a fresh installation of the SCOPIA Solution should be performed in the following order:

1. SCOPIA iVIEW Management Suite
2. SCOPIA ECS Gatekeeper if working in standalone mode
3. Endpoints: SCOPIA VC240 and/or SCOPIA XT1000
4. SCOPIA Elite MCU and/or SCOPIA MCU
5. SCOPIA Desktop Server and SCOPIA Desktop Clients
6. SCOPIA Gateway 320
7. SCOPIA PathFinder

Before You Begin

Verify you have the necessary server hardware and operating system prerequisites for these software components:

- For SCOPIA iVIEW Management Suite, see the *Installation Guide for SCOPIA iVIEW Management Suite*.
- For SCOPIA ECS Gatekeeper, see the *Reference Guide for SCOPIA ECS Gatekeeper*, if your deployment requires a standalone gatekeeper.
- For SCOPIA Desktop Server, see the *Installation Guide of SCOPIA Desktop*.

Furthermore, verify you have the physical environment and connectivity requirements for these hardware components:

- For SCOPIA Elite MCU, see the *Installation Guide for SCOPIA Elite MCU*.
- For SCOPIA MCU, see the *Administrator Guide for SCOPIA MCU*.
- For SCOPIA Gateway, see the *Administrator Guide for SCOPIA Gateway*.
- For SCOPIA PathFinder Server, see the *User Guide for SCOPIA PathFinder Server*.

Procedure

Step 1

Set up the hardware physically and switch on each unit.

- Set up and switch on the hardware components of the SCOPIA Solution, and assign an IP address to each. to and the servers for the software components.
- Set up and switch on the server PCs, and ensure their IP addresses are also properly assigned.
- Perform basic IP connectivity tests, like ping or telnet, on each of the components to ensure their IP addresses can be easily accessed.

Step 2

Install the software components of the SCOPIA Solution.

Note: Typically the upgrade or downgrade of firmware is not required, since the product is delivered with the latest version already installed. Only change the firmware in the rare case where a different version is required for full compatibility with other solution components.

- Perform the installation of the SCOPIA iVIEW Management Suite on the designated server. For more information, see the *Installation Guide for SCOPIA iVIEW Management Suite*.
- Perform the installation of the SCOPIA ECS Gatekeeper on the designated server. For more information, see the *Installation Guide for SCOPIA ECS Gatekeeper*.
- Upgrade or downgrade the firmware of the SCOPIA VC240 if relevant. For more information, see the *SCOPIA VC240 Software Upgrade Procedure* document for a manual upgrade, or for an automatic remote upgrade use the SCOPIA iVIEW Management Suite.
- Upgrade or downgrade the firmware of the SCOPIA XT1000 if relevant. For more information, see the *Installation Guide for SCOPIA XT1000*.
- Upgrade or downgrade the firmware of the SCOPIA Elite MCU or the SCOPIA MCU units if required.
- Complete the installation of the SCOPIA Desktop Server. For more information, see the *Installation Guide for SCOPIA Desktop Server*.
- Upgrade or downgrade the firmware of the SCOPIA Gateway. For more information, see the *User Guide for SCOPIA Gateway*.
- Upgrade or downgrade the firmware of the SCOPIA PathFinder Server. For more information, see the *User Guide for SCOPIA PathFinder Server*.

Step 3

Define the SCOPIA Solution components in SCOPIA iVIEW Management Suite and verify their connectivity.

For more information, see the *Administrator Guide for SCOPIA iVIEW Management Suite*.

- Define the SCOPIA Elite MCU and/or SCOPIA MCU under the **Resource Management** section of iVIEW Management Suite.

- b. From the iVIEW Management Suite, synchronize with each MCU to retrieve their profile. Initially, we recommend using the MCU's default service.
- c. Define the SCOPIA ECS Gatekeeper if relevant under the **Resource Management** section of iVIEW Management Suite.
- d. Define at least three H.323 endpoints under the **Resource Management** section of iVIEW Management Suite.
- e. Create a videoconference by dialing from the H.323 endpoints to the MCU's default service.
- f. Define the SCOPIA Desktop Server under the **Resource Management** section of iVIEW Management Suite.
- g. Install at least two SCOPIA Desktop Clients by accessing the SCOPIA Desktop Server's portal from PCs.
- h. Create a new videoconference, dialing to the MCU's default service from each of the SCOPIA Desktop Clients and H.323 endpoints.
- i. End the conference.
- j. Define the SCOPIA Gateway under the **Resource Management** section of iVIEW Management Suite.
- k. Define at least one ISDN endpoint under the **Resource Management** section of iVIEW Management Suite. Initially we recommend using one of the default services.
- l. Make a point-to-point call from the ISDN endpoint to an H.323 endpoint.
- m. Make a point-to-point call from an H.323 endpoint to the ISDN endpoint.
- n. Create a new videoconference, dialing to the MCU's default service from one of the other endpoints and the ISDN endpoint.
- o. End the conference.
- p. Create a new conference. From the iVIEW Management Suite's Conference Control page, invite the ISDN endpoint to the conference.

Step 4

After the components are in place and you have verified they can communicate with each other in conferences, you can start customizing the settings of each of the SCOPIA Solution's components. This might include:

- Directory integration
- Securing your deployment
- Redundancy and high availability
- SIP server integration
- Recording and streaming, and so on.

We recommend performing each of these configurations one at a time, incrementally conducting tests to ensure the basic functionality and additional configurations are functioning properly.

Upgrading an Existing SCOPIA Solution

Before you begin upgrading your SCOPIA Solution, verify you have the necessary upgrade packages downloaded from RADVISION and stored locally.

Also verify you have the technical documentation for the products being upgraded.

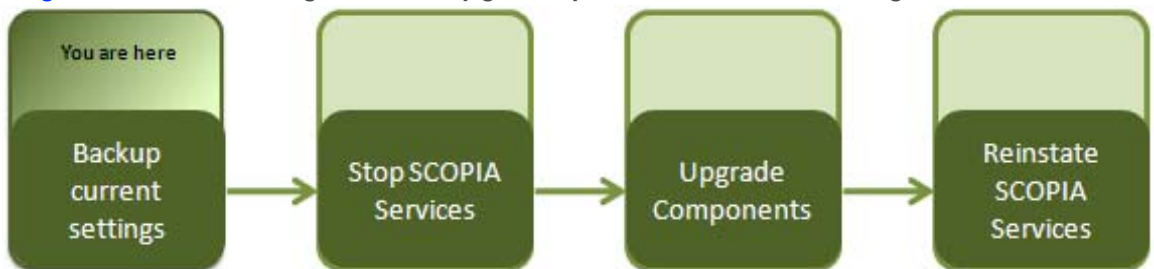
The steps required to upgrade an existing SCOPIA Solution should be performed in this order:

- [Backing up Current SCOPIA Solution Settings](#)..... page 22
- [Stopping SCOPIA Solution Services](#) page 24
- [Upgrading SCOPIA Solution Components](#) page 24
- [Testing and Reinstating the Upgraded SCOPIA Solution](#)..... page 26

Backing up Current SCOPIA Solution Settings

Before the upgrade itself, it is important to backup the current settings of your existing SCOPIA Solution ([Figure 2-1 on page 22](#)).

Figure 2-1 First stage of the upgrade process for an existing SCOPIA Solution



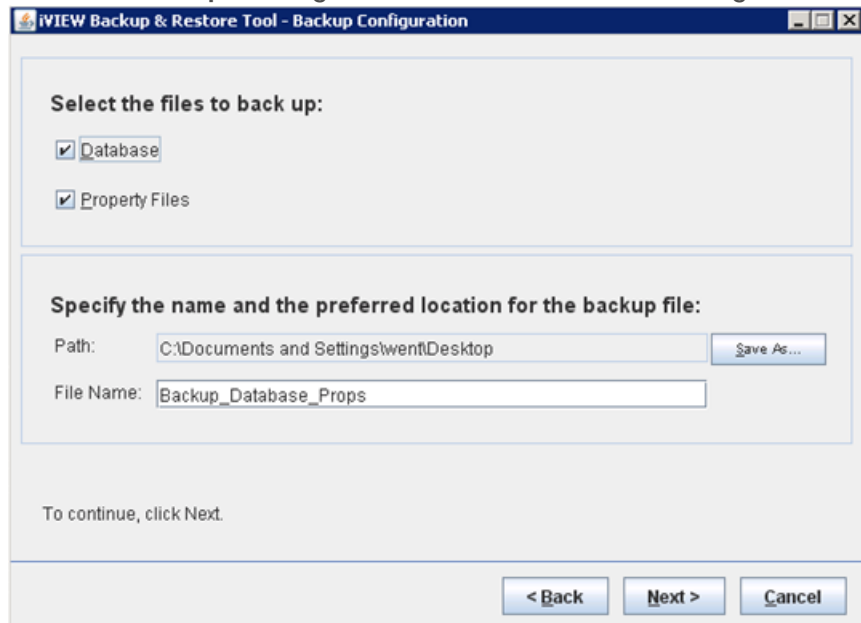
Procedure

Step 1

Back up the SCOPIA iVIEW Management Suite settings on the server.

- From the Start menu, launch the iVIEW Management Suite Backup and Restore Tool.
- Select **Backup Configuration**.
- Select **Next**.
- To backup all the settings of iVIEW Management Suite, verify both **Database** and **Property Files** are selected ([Figure 2-2 on page 23](#)).
- Choose a pathname for the backup files ([Figure 2-2 on page 23](#)).

Figure 2-2 Backup Configuration tool for iVIEW Management Suite



- f. Select **Next**.
- g. Select **Start** to begin the backup procedure.

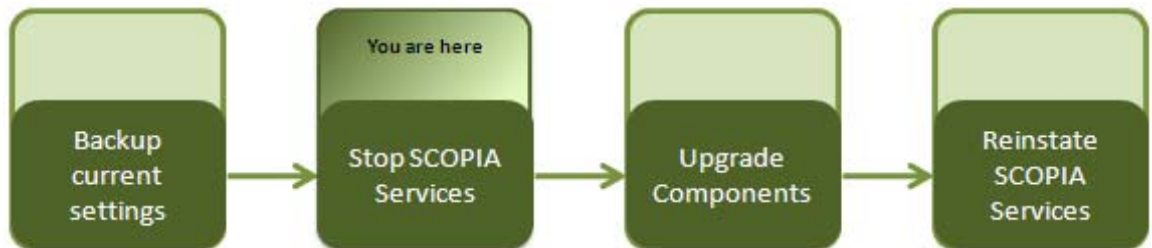
The system will notify you when the process has completed.

- Step 2** Backup your SCOPIA Desktop Server configuration. For more information, see the *Administrator Guide for SCOPIA Desktop*.
- Step 3** Backup the SCOPIA ECS Gatekeeper configuration with the export feature in the ECS user interface. For more information, see the *User Guide for SCOPIA ECS Gatekeeper*.
- Step 4** Backup the SCOPIA Elite MCU configuration file using the Backup Configuration feature in the MCU user interface. For more information, see the *Administrator Guide for SCOPIA Elite MCU*.
- Step 5** Backup the SCOPIA Gateway 320 configuration file with the backup and restore feature of SCOPIA iVIEW Management Suite. For more information, see the *Administrator Guide for SCOPIA iVIEW Management Suite*.
- Step 6** Backup the SCOPIA PathFinder Server configuration file using the SCOPIA PathFinder's **Backup/Restore** menu. For more information, see the *User Guide for SCOPIA PathFinder Server*.
- Step 7** Backup the SCOPIA XT1000 configuration files with the backup and restore feature of SCOPIA iVIEW Management Suite. For more information, see the *Administrator Guide for SCOPIA iVIEW Management Suite*.

Stopping SCOPIA Solution Services

After backing up the current settings of your existing SCOPIA Solution, the next stage ([Figure 2-1 on page 22](#)) is to halt all currently active videoconferencing services, and ensure no one starts new video calls during the upgrade.

Figure 2-3 Second stage of the upgrade process for an existing SCOPIA Solution



Procedure

- Step 1** Open the SCOPIA iVIEW Management Suite.
- Step 2** Use the meeting monitor to view the current video usage in the company.
- Step 3** If there is ongoing video usage, you can either wait for all meetings to end, or terminate all meetings from the iVIEW Management Suite.

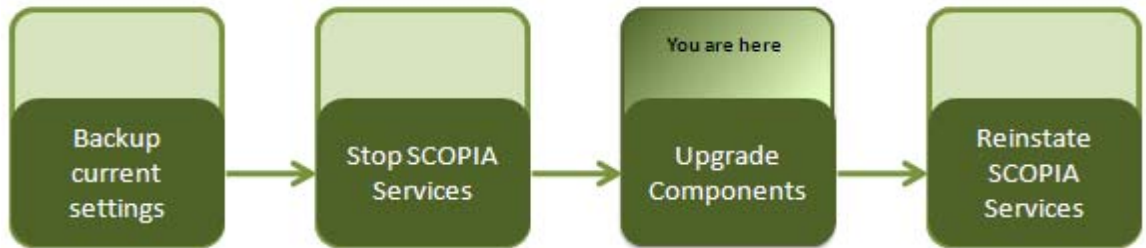
Note: Reserving all ports beforehand for the designated upgrade period ensures that no new meetings can be started during this time. For more information, see [Preparing to Install or Upgrade your SCOPIA Solution page 17](#).

Upgrading SCOPIA Solution Components

After backing up your current SCOPIA Solution settings and stopping all active videoconferencing services, the third stage in the process of the upgrade ([Figure 2-1 on page 22](#)) is to perform the individual upgrades of each of the SCOPIA Solution components.

Note: Do not perform integration tests of the upgrade until all the upgrades have been properly installed. To perform correctly as an integrated solution, all the components of the SCOPIA Solution should have aligned version numbers.

Figure 2-4 Third stage of the upgrade process for an existing SCOPIA Solution



Solution component upgrades should be performed in this order:

1. SCOPIA iVIEW Management Suite
2. SCOPIA ECS Gatekeeper if working in standalone mode
3. Endpoints: SCOPIA VC240 and/or SCOPIA XT1000
4. SCOPIA Elite MCU and/or SCOPIA MCU
5. SCOPIA Desktop Server and SCOPIA Desktop Clients
6. SCOPIA Gateway 320
7. SCOPIA PathFinder

Note:

If the unit is located on a remote site, we do not recommend upgrading via SCOPIA iVIEW Management Suite. Perform the upgrade locally by copying the upgrade file to a local machine and performing the unit's upgrade procedure locally.

Procedure

Step 1

Upgrade your SCOPIA iVIEW Management Suite by following the procedure in the *Installation Guide for SCOPIA iVIEW Management Suite*.

Note:

The installation guide specifies different procedures depending on whether your deployment has iVIEW Management Suite with an internal ECS, or if your iVIEW Management Suite is standalone.

If you have more than one instance of iVIEW Management Suite, upgrade the master first, then upgrade the slave server.

- Step 2** Upgrade the standalone SCOPIA ECS Gatekeeper if relevant.
If you have more than one instance of SCOPIA ECS Gatekeeper, upgrade the master first, then upgrade the slave ECS.
- Step 3** Upgrade any SCOPIA VC240 units. For a manual upgrade, see the *SCOPIA VC240 Software Upgrade Procedure* document. For automatic upgrades, use the SCOPIA iVIEW Management Suite.
- Step 4** Upgrade any SCOPIA XT1000 units. For more information, see the *Administrator Guide for SCOPIA XT1000*.
- Step 5** Upgrade your SCOPIA Elite MCU and/or SCOPIA MCU using the upgrade functionality of SCOPIA iVIEW Network Manager. For more information, see the *Administrator Guide for SCOPIA iVIEW Management Suite*.
- Step 6** Upgrade your SCOPIA Desktop Server as defined in the *Installation Guide for SCOPIA Desktop*.

Note: SCOPIA Desktop Clients are automatically upgraded when they first access the upgraded SCOPIA Desktop Server.

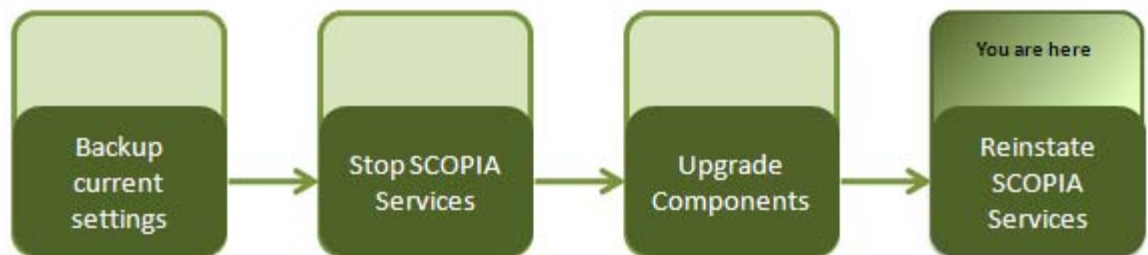
- Step 7** Upgrade your SCOPIA Gateway using the upgrade functionality of SCOPIA iVIEW Network Manager. For more information, see the *Administrator Guide for SCOPIA iVIEW Management Suite*.
- Step 8** Upgrade your SCOPIA PathFinder Servers and Clients by following the procedures detailed in the *User Guides for SCOPIA PathFinder*.

Testing and Reinstating the Upgraded SCOPIA Solution

After the upgrade of each of the components has been completed, the final stage in the upgrade process ([Figure 2-1 on page 22](#)) is to test the integration and functionality of the upgraded components, and then to reinstate the videoconferencing services throughout the organization.

Note: It is important to wait until this stage of the upgrade to perform integration tests, once all the upgrades have been completed. All the components of the SCOPIA Solution should have aligned version numbers.

Figure 2-5 Fourth stage of the upgrade process for an existing SCOPIA Solution



Recommended tests include:

Procedure

Step 1 Perform a point-to-point call between two room systems which are registered with either SCOPIA ECS Gatekeeper (standalone) or the gatekeeper built-in to SCOPIA iVIEW Management Suite.

Step 2 Access the iVIEW Management Suite and dial from there to an MCU and two endpoints. Verify the conference starts correctly.

Note: If your deployment includes both the SCOPIA Elite MCU and the SCOPIA MCU, perform the test separately with each MCU.

Step 3 Access an MCU and dial from that unit to two endpoints to create one conference.

If your deployment includes both the SCOPIA Elite MCU and the SCOPIA MCU, perform the test separately with each MCU.

Step 4 Connect to the SCOPIA Desktop Server's web portal and run the automatic SCOPIA Desktop Client upgrade.

Step 5 Perform a point-to-point call between two upgraded SCOPIA Desktop Clients (SCOPIA Desktop Pro only).

Step 6 Create a conference on an MCU with a variety of endpoint types, including room systems and one or more SCOPIA Desktop Clients.

From one of the SCOPIA Desktop Clients, share a presentation, and verify its visibility in the other endpoints.

From one of the SCOPIA Desktop Clients, invite another participant.

Note: If your deployment includes both the SCOPIA Elite MCU and the SCOPIA MCU, perform the test separately with each MCU.

Step 7 Make a point-to-point call from a room system like the SCOPIA XT1000 to an ISDN endpoint and verify correct functionality. Then terminate the call.

Make the same point-to-point call in the other direction, calling from the ISDN endpoint to the room system. Verify it functions correctly, then terminate the call.

Step 8 Create a conference on an MCU. Access the SCOPIA iVIEW Management Suite and dial from there to an ISDN endpoint to add it to the conference.

Perform the same test by dialing from the MCU conference control to the ISDN endpoint to invite it to the conference.

Step 9 Access an H.460 compliant remote endpoint, and dial in to an existing conference using the SCOPIA PathFinder Server.

Access an H.323 endpoint that does not support H.460. Dial in to an existing conference via the SCOPIA PathFinder Client and SCOPIA PathFinder Server.

3

Selecting Features of your SCOPIA Solution

To determine the nature of your SCOPIA Solution deployment, we recommend reviewing the features you require, and then use this as a guide to the required components of your video solution.

The list of features include:

- [Securing Your Deployment](#) page 30
- [Planning Scalability and High Availability in the SCOPIA Solution](#)..... page 33
- [Streaming and Recording Videoconferences](#)..... page 35
- [Superior Video Quality](#) page 35
- [Point-to-Point Functionality](#) page 38
- [Auto-Attendant Functionality](#) page 39
- [URI Dialing Functionality](#)..... page 39
- [Virtual Room Functionality](#) page 40
- [User Profiles for Video Across an Enterprise](#)..... page 41
- [Scheduling and Resource Reservation](#) page 43
- [Transmitting Data Presentations](#)..... page 44
- [Remote Access to Videoconferencing](#)..... page 44
- [Intuitive Conference Layout Control and Moderator Control](#) page 45

Securing Your Deployment

SCOPIA Solution deployments offer robust security in video communications based on standard protocols and powerful encryption algorithms, resulting in a well-integrated and secure solution. There are several aspects to the security of a deployment:

- The content of a video call, including its video, audio and data presentations can be encrypted to protect from eavesdroppers. Connections can also be authenticated to ensure each member of the call is who they claim to be.

In addition to the media content of a call, the signaling and management streams can also be secured when crossing network zones, depending on the nature of your deployment and network topology.

- The permissions and rights of users can be defined via user groups, to determine the functionality available to each user of the system. Enabling or disabling a feature can be achieved by defining groups and moving users among the various groups.

This sections in this chapter are:

- [Authentication and Encryption..... page 30](#)
- [Securing Access to Functionality with User Profiles page 33](#)

Authentication and Encryption

The authentication and encryption of the SCOPIA Solution's infrastructure uses standard protocols to provide a solution that is secure, effective and reliable. There are three types of data streams to a video communication in the SCOPIA Solution infrastructure that can be secured:

- The media refers to the actual content of the video call: audio, video and data presentations.
- The signalling refers to the control messages that run alongside the media in SIP and H.323 protocols.
- The management refers to the messages of coordination, control and monitoring that are sent between different SCOPIA Solution components, in protocols like HTTP, XML, SNMP and so on.

The sections in this chapter are:

- [About Media Security page 30](#)
- [About Signaling Security page 32](#)
- [About Management Security..... page 33](#)

About Media Security

Securing the media communications in the SCOPIA Solution refers to encrypting the content of a call, including its audio, video, and any data presentations that are transmitted. In a SCOPIA Solution deployment, call content in both SIP and H.323 environments are encrypted.

[Figure 3-1 on page 32](#) gives an overview of the security of media connections in a SCOPIA Solution deployment.

In SIP environments, the media layer is encrypted and authenticated using the Secure Real-time Transport Protocol (S-RTP).

In H.323 environments, encryption of call content is secured with the H.235 encryption annex standard. This includes all H.323 communication, including H.323 endpoints, which can access the SCOPIA PathFinder Client with an encrypted H.235 connection, provided the endpoint itself supports the H.235 standard.

The SCOPIA Desktop Server's secure connection with the SCOPIA Desktop Client is another line of communication that must be secured, since it often stretches across network zones and outside the corporate network. SCOPIA Desktop's media over a TCP connection is encrypted using HTTPS, while under UDP connections, media is encrypted using S-RTP, using random encryption keys exchanged over HTTPS.

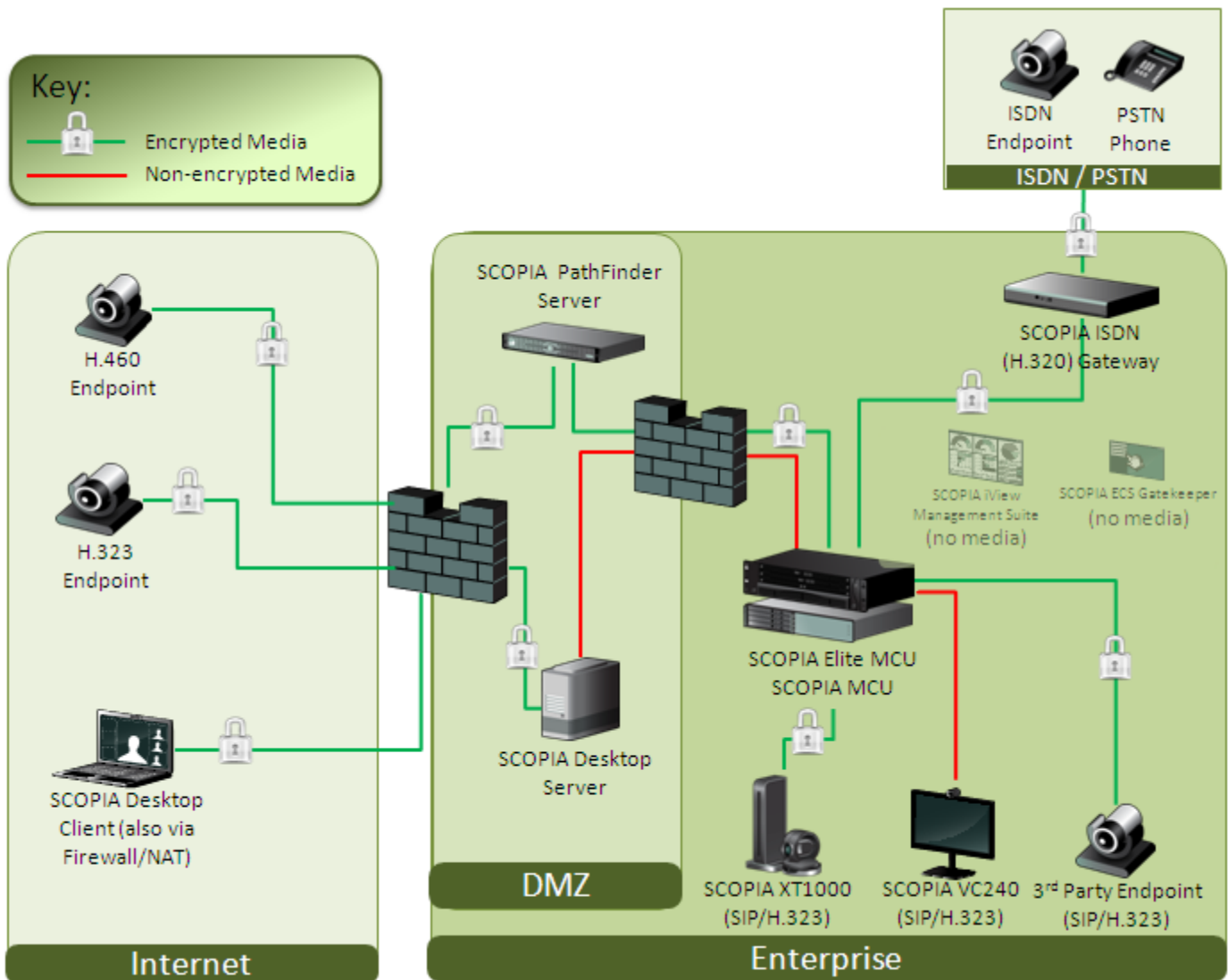
H.460 endpoints can access the SCOPIA PathFinder Server directly with an encrypted data stream.

ISDN communications via the SCOPIA Gateway for ISDN works with the MCU using the secure H.235 protocol, and then connects with an ISDN endpoint using encryption in the H.233 and H.234 protocols.

Note:

Components associated with coordinating and directing calls, such as the SCOPIA iVIEW Management Suite or SCOPIA ECS Gatekeeper, do not directly send or receive call content, since their function is to direct traffic and manage network connections. Therefore they do not feature in the media layer of the solution.

Figure 3-1 Encrypted media connections of the SCOPIA Solution



About Signaling Security

Signaling refers to the H.323 and SIP protocols which control the multimedia sessions. These protocols can create, modify or terminate a session, whether a two-party session (unicast) or a multiparty (multicast) session. Each session can contain one or several media streams.

In a SIP environment, much of the signaling that crosses network zones is now encrypted and authenticated using the Transport Layer Security (TLS) standard. This feature is new in version 7.5 of the SCOPIA Solution.

For example, all signaling messages sent from SCOPIA iVIEW Management Suite’s Back-to-Back User Agent to SIP servers are secured via the Transport Layer Security (TLS) protocol.

SCOPIA Desktop Clients, which are the software-based endpoints that might be outside a VPN in the public network, are encrypted and authenticated over HTTPS, using either SSL or TLS.

About Management Security

Management messages within a video call refer to the coordination messages sent between various SCOPIA Solution components to coordinate their activities, or when an administrator configures a component using its web interface. Management messages are usually transmitted along protocols like HTTP, SNMP, FTP or XML.

An example of a management communication would be when the SCOPIA iVIEW Management Suite monitors the activities of an MCU, or when it authorizes the MCU to allow a call to proceed.

All management communications which are performed using a web interface are secured and authenticated via the HTTPS protocol.

In addition, management messages which cross network zones are typically encrypted and authenticated. For example, iVIEW Management Suite's management messages to the SCOPIA Desktop Server are protected using TLS.

Management layer communications between SCOPIA Desktop Server and SCOPIA Desktop clients are encrypted and authenticated using HTTPS.

Securing Access to Functionality with User Profiles

User groups and the functionality granted to each group can be defined in a number of components of the SCOPIA Solution. Each server component can only be accessed with a login, and depending on the credentials of that username, different functionality will be visible to that user. However, from the perspective of the SCOPIA Solution, you can define a single repository of users and user groups with the SCOPIA iVIEW Management Suite.

iVIEW Management Suite can define its own user database, or it can use the LDAP corporate database like Microsoft's Active Directory.

Once iVIEW Management Suite has a user database, that information can be pushed or downloaded to the various components of a SCOPIA Solution deployment, so they are all synchronized with the same user profiles and rights.

For more information on setting up a unified user database, see the *Administrator Guide for iVIEW Management Suite*.

Planning Scalability and High Availability in the SCOPIA Solution

There are several ways to ensure your deployment of the SCOPIA Solution maintains a very high degree of availability, and also add extra capacity to your video infrastructure:

- [High Availability with Multiple SCOPIA iVIEW Management Suite Servers.....](#) page 34
- [High Availability with Multiple MCUs.....](#) page 34
- [Scalability and High Availability with Multiple SCOPIA Desktop Servers.....](#) page 34
- [High Availability with Alternate Gatekeepers.....](#) page 35

High Availability with Multiple SCOPIA iVIEW Management Suite Servers

The high availability and service preservation of the SCOPIA iVIEW Management Suite is based on two SCOPIA iVIEW Management Suite Servers which act as a master/slave hot swap mechanism. This deployment configuration supports an internal gatekeeper and an internal database, or an external gatekeeper, like the SCOPIA ECS Gatekeeper with its own high availability solution (see [High Availability with Alternate Gatekeepers page 35](#)).

Once iVIEW Management Suite's high availability is configured, you can view the redundancy real-time status at any time, including:

- The master server's native IP
- The slave server's native IP
- The date of the last hot swap
- Slave server status

Note:

SCOPIA iVIEW Management Suite servers purchased for redundancy requirements also require an iVIEW Management Suite license, though when purchased for redundancy only, its price is discounted.

For more details on setting up additional iVIEW Management Suite servers, see the *Administration Guide for SCOPIA iVIEW Management Suite*.

High Availability with Multiple MCUs

SCOPIA iVIEW Management Suite can be configured to maintain high availability of video call service by coordinating amongst multiple MCUs. SCOPIA iVIEW Management Suite can hot switch to an alternative unit if an MCU fails to maintain and preserve high availability of the service.

For details of how to configure SCOPIA iVIEW Management Suite for high availability, see the *Administration Guide for SCOPIA iVIEW Management Suite version 7.5*.

For more information on the possible location of MCUs, see [Distributed MCU Deployments for Cascading Conferences page 49](#).

Scalability and High Availability with Multiple SCOPIA Desktop Servers

You can configure SCOPIA Desktop Servers for scalability and high availability in one of several ways:

- Place several in a Tomcat cluster and using a Round Robin DNS on the DNS server to route requests to the different servers within the cluster.
- Use a generic load balancer, with the added advantage of continued service even when one or more of the servers fails.
- Alternatively you can deploy multiple SCOPIA Desktop Servers using Radware WSD.

For more information on the configuration of each of these deployments, see the *Administrator Guide for the SCOPIA Desktop Server*.

High Availability with Alternate Gatekeepers

You can deploy an additional SCOPIA ECS Gatekeeper to maintain high availability of gatekeeper services.

High availability makes ECS failures transparent to the endpoints that are registered to the ECS. Each online ECS can have its own alternate gatekeeper, which copies and uploads the primary ECS's registration table. If the ECS goes offline, the alternate version replaces its services within ten seconds of downtime.

The license for the alternate SCOPIA ECS Gatekeeper is limited to 14 days. The 14-day period restarts each time the online and backup ECS switch roles.

For more information, see the *Reference Guide for SCOPIA ECS Gatekeeper version 7.5*.

Streaming and Recording Videoconferences

SCOPIA Desktop allows users to record meetings and to view recorded meetings. A recording includes all media types: audio, video and presentation. Servers used for recording meetings must have a recording license installed on them.

SCOPIA Desktop's streaming functionality enables participants to watch a videoconference passively, where the videoconference signal is sent out one-way to each of the streaming recipients, where they would not use a microphone or camera to communicate back to the conference. Streaming can be received with any client that can accept Real Time Streaming Protocol (RTSP), such as Apple Quicktime.

To configure a SCOPIA Desktop Server to manage streaming, enable streaming on that server.

For more information on streaming and recording features and how to configure them in the SCOPIA Desktop Server, see the *Administration Guide for SCOPIA Desktop*.

Superior Video Quality

RADVISION's SCOPIA Solution employs a number of algorithms in parallel to improve end-to-end video quality standards and ensure they are among the highest in the industry. Much of the work on these algorithms are new for version 7.5 or have been significantly enhanced for this version.

The following video quality algorithms are implemented in the SCOPIA Solution:

- [Scalable Video Coding Algorithm](#) page 36
- [Forward Error Correction Algorithm](#) page 37
- [NetSense Algorithm](#) page 37

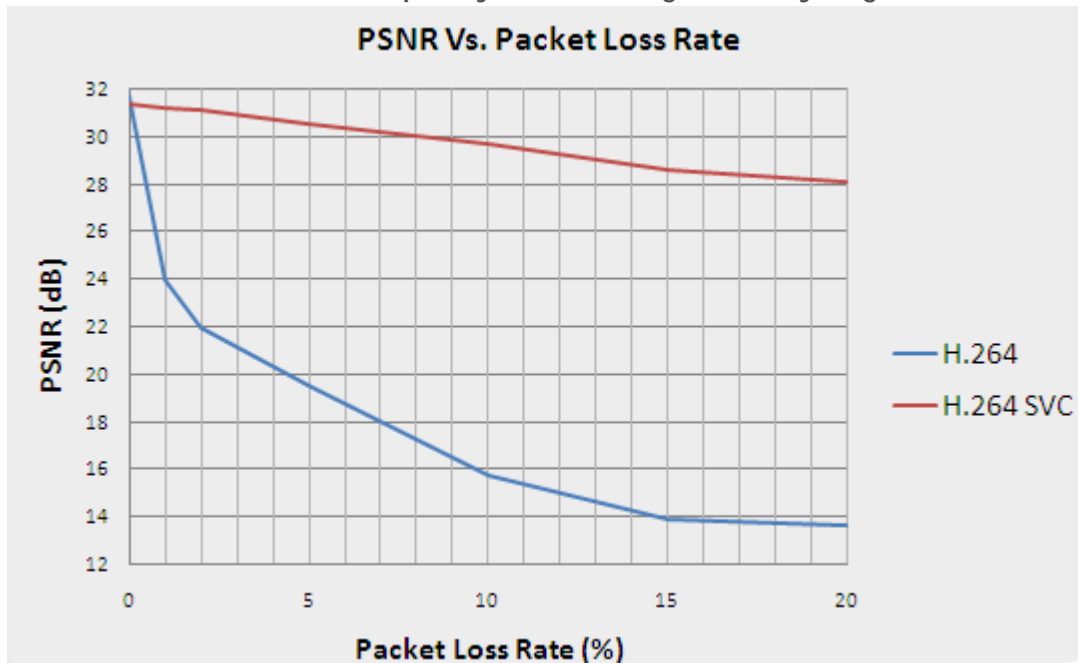
Scalable Video Coding Algorithm

Scalable Video Coding (SVC) is an extension to the H.264 codec standard. SVC video technology allows video conferencing devices to send and receive multi-layered video streams composed of a small base layer and optional additional layers that enhance resolution, frame rate and quality.

Layering provides a dramatically higher degree of error resiliency and video quality with no significant need for higher bandwidth. Additionally, a single multi-layer SVC video stream can support a broad a range of devices and networks.

Figure 3-2 illustrates that as the signal degrades and packet loss increases, the video quality or peak signal to noise ratio (PSNR) does not significantly fall, in comparison to the regular H.264 transmission.

Figure 3-2 Graph showing SVC's resilience to packet loss; as packet loss increases, video quality does not significantly degrade



With SVC, RADVISION enables full interoperability with existing devices while enjoying all the benefits of very high network error resiliency and high quality support for room and telepresence systems. SVC will also improve the quality of connections between cascaded MCUs and allow H.264 Advanced Video Coding (AVC) endpoints to leverage the benefits of SVC.

SVC has been implemented in several components of the SCOPIA Solution:

- SCOPIA Elite MCU
- SCOPIA Desktop
- SCOPIA VC240

By applying SVC in an MCU, rather than a gateway approach, the SCOPIA Solution enables an evolution rather than revolution to reap the benefits of scalable video in a mixed video coding world. RADVISION's SVC-enabled desktop and video conferencing infrastructure interoperates with any standards-based endpoint, with no need for dedicated transcoding gateways.

You can download a white paper on SVC at <http://www.radvision.com/svc>

Forward Error Correction Algorithm

The Forward Error Correction (FEC) algorithm is a proactive method of sending redundant information in the video stream to preempt quality degradation. The proactive element is the reason it is referred to as a 'forward' algorithm. FEC relies on another algorithm, SVC (see [Scalable Video Coding Algorithm page 36](#)) to identify the key frames in the video stream that should be protected by FEC.

There are several variants of the FEC algorithm. The Reed-Solomon algorithm (FEC-RS) sends redundant packets per block of information, enabling the sender (like the SCOPIA Elite MCU) to manage up to 10% packet loss in the video stream with minimal impact on the smoothness and quality of the video.

FEC is implemented in several components of the SCOPIA Solution:

- SCOPIA Elite MCU
- SCOPIA Desktop
- SCOPIA VC240

NetSense Algorithm

NetSense is a proprietary RADVISION technology which optimizes the video quality according to the available bandwidth to minimize packet loss. As the available bandwidth of a connection varies depending on data traffic, NetSense dynamically scans the video stream, and then reduces or improves the video resolution to maximize quality with the available bandwidth.

Whether sending or receiving video, a RADVISION product armed with NetSense can send a flow control request to other participants, including third party endpoints oblivious to NetSense, to lower or raise their video resolution based on its information of the available bandwidth. Therefore using SCOPIA Solution infrastructure with third party endpoints ensures you get the best performance of that endpoint whatever the bandwidth connection.

The criteria by which NetSense is measured is three-fold:

- Can the algorithm make the most use of available bandwidth? For example, if there is an extra 200kb/s available on a connection, how much of that extra bandwidth will be used?
- What is the resulting level of packet loss?
- How quickly can the algorithm respond to changes in the bandwidth?

Our tests demonstrate that RADVISION's NetSense algorithm scores consistently high on all three counts, leading to a more reliable and higher quality video signal than other products on the market.

Point-to-Point Functionality

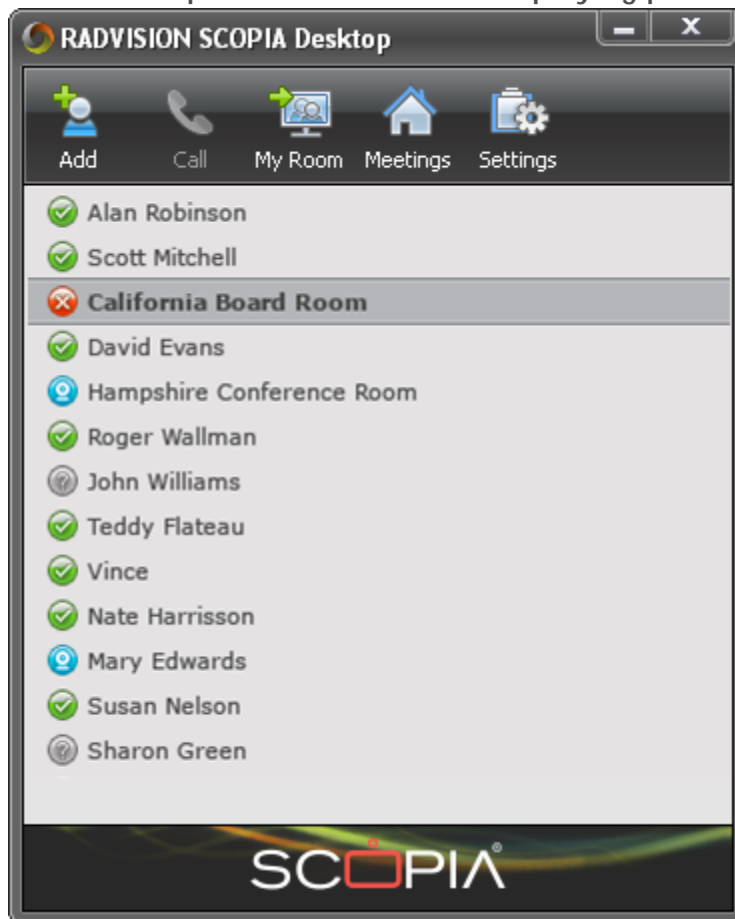
Point-to-point functionality enables two clients like SCOPIA Desktop Pro Clients to directly communicate with a video call without using additional MCU ports.

A point-to-point call between two SCOPIA Desktop Pro Clients is carried out over a SIP connection in HD, up to 720p.

In the SCOPIA Solution, point-to-point calls feature:

- HD video quality up to 720p using SVC for added network tolerance. For more information, see [Scalable Video Coding Algorithm page 36](#).
- Data presentation alongside the video call.
- List of contacts (XMPP), displaying the availability, or presence, of each contact at that time ([Figure 3-3 on page 38](#)).
- Transparent firewall traversal
- Seamless escalation to a multi-party call.
- Secure encrypted media connection.

Figure 3-3 SCOPIA Desktop Conference Client displaying presence of contacts



Point-to-point calls can be made either directly between terminals or relayed via a server. Depending on the deployed location of the SCOPIA Desktop Server, the XMPP Server and the STUN Server, clients can be located both within and outside the company firewall. For an example of a deployment of these servers in both the DMZ and the private network, see [Features of the Large Centralized Videoconferencing Solution page 60](#).

To enable point-to-point functionality in SCOPIA Desktop Server, see the *Installation Guide for SCOPIA Desktop Server*.

Auto-Attendant Functionality

The auto-attendant feature in the SCOPIA Solution, also known as video IVR, enables users to dial a central number to receive a list of menu options, rather like an audio IVR system but enhanced to include video. This is especially useful when users are not aware of the specific number of a conference but would like to join by choosing from a list of conferences currently active.

This functionality is available in both the SCOPIA Elite MCU and the SCOPIA iVIEW Management Suite.

When iVIEW Management Suite is present, we recommend using its auto-attendant feature in preference to the MCU, as its list of available conferences would cover the entire system, and would not be limited to those active on any one MCU.

For more information on configuring the auto-attendant of iVIEW Management Suite, see the *User Guide for SCOPIA iVIEW Management Suite*. For details of configuring the video IVR on the MCU, see the *Administration Guide for SCOPIA Elite MCU 5000 Series*.

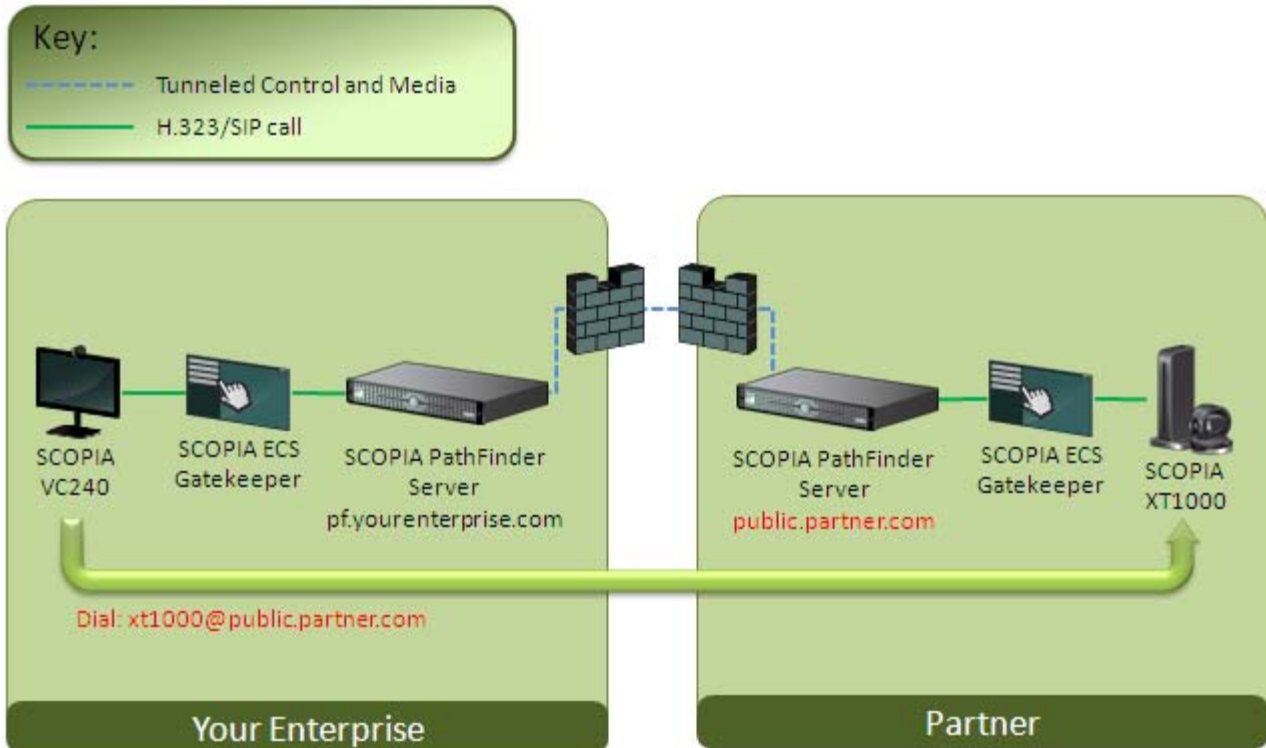
URI Dialing Functionality

The SCOPIA Solution fully supports URI dialing, a dial format for contacting endpoints outside your organization. The dial format looks a little like an email address: name@domain_name, or number@domain_name.

All SCOPIA Solution endpoints work transparently with URI dials, including the SCOPIA VC240, SCOPIA XT1000 and SCOPIA Desktop Clients> You can also perform URI dials from the conference control of SCOPIA iVIEW Management Suite.

URI dialing is compatible with SCOPIA PathFinder and other third party firewall traversal systems. Dialing an endpoint from one organization to another requires first traversing your own firewall with SCOPIA PathFinder, out through the internet, and then into the firewall of the recipient's organization using their firewall traversal system ([Figure 3-4 on page 40](#)).

Figure 3-4 URI dialing between two enterprises using SCOPIA PathFinder



To access an endpoint in the other company, the URI's domain name must be the second company's firewall traversal system, like the name of their SCOPIA PathFinder Server. For example, in [Figure 3-4 on page 40](#), dialing to the partner company requires knowing the name or number of the endpoint, in this example 'xt1000', and the domain name of the SCOPIA PathFinder Server of that company, 'public.partner.com'.

Note:

As with regular web domain names, the name of the SCOPIA PathFinder Server resolves to an IP address via a standard DNS lookup if it has been allocated a global DNS name. If the server's IP address does not have a DNS name, the URI dial should directly specify the server's IP address instead. For example, the URI xt1000@123.456.789.1 specifies the alias followed by the server's IP address.

To set up this connection, you need to configure the SCOPIA PathFinder Server to accept inbound H.323 calls and forward them. You also need to configure the SCOPIA ECS Gatekeeper to define the SCOPIA PathFinder Server as the ECS's parent or neighbor, to facilitate the routing of these calls. For more information, see *URI Dialing and Direct Public Access in SCOPIA PathFinder*.

Virtual Room Functionality

The SCOPIA Solution provides each member of the organization with their own personalized virtual room for creating and hosting video meetings. It is the ideal setting for ad-hoc calls or scheduled meetings that require reserved video resources. Users can personalize their virtual

rooms with PIN numbers, custom welcome slides and so on. Virtual meeting rooms are dialed like phone extension numbers, where a user's virtual room number is based on that person's phone extension number.

Accessing a virtual room is easy. After an administrator sets up the company's video dial prefix, users need only dial the prefix followed by an extension number to access a virtual room.

For example, if someone's phone extension number is 9495, and the company's video prefix is defined as 88, then dialing 88-9495 would connect you directly to that person's virtual room for a video meeting.

For administrators, setting up virtual rooms is simple. SCOPIA iVIEW Management Suite enables administrators to use the corporate address book to automatically set up virtual rooms for everyone in the organization based on their existing phone extension.

When you access a virtual room, you are presented with a welcome slide on video and an audio welcome message.

Users can customize their personal virtual rooms from the SCOPIA Desktop Client in a number of ways:

- You can define a PIN required to become the moderator of a meeting in this virtual room.
- You can also define an access PIN which would require all participants to enter the access PIN to join the meeting.
- You can change the text of your welcome slide. For example, replacing 'Welcome to John Smith's virtual room' to 'Welcome to the Roadmap Meeting'.
- You can configure a waiting room, where the welcome slide is displayed until the moderator joins the meeting, and only then start the meeting.
- You can automatically record meetings in this virtual room.
- You can enable streaming of meetings from this virtual room, enabling participants with streaming clients like Apple QuickTime to view and hear the participants in the meeting.

For more information on how to perform these customizations, see the *Quick Reference Card for SCOPIA Desktop*.

There are additional customizations currently only available in SCOPIA iVIEW Management Suite:

- Setting the geographical location of a virtual room in iVIEW Management Suite.
- Automatically allocate video resources in a virtual room by reserving ports.
- When this virtual room is accessed, automatically dial out to a list of additional endpoints.

For more information on how to perform these customizations, see the *User Guide for SCOPIA iVIEW Management Suite*.

User Profiles for Video Across an Enterprise

For administrators, the SCOPIA Solution has many features for efficient user management throughout the organization, enabling centralized management of usernames, user groups, and user privileges.

There are two aspects to user management in the SCOPIA Solution:

- [Defining Video Users Across an Enterprise](#) page 42
- [Assigning Privileges for Video Users Across an Enterprise](#) page 42

Defining Video Users Across an Enterprise

Profiles of users and groups of users can be defined within SCOPIA iVIEW Management Suite, or they can be sourced directly from the organization's user directory, interfacing with popular solutions like Microsoft's Active Directory or IBM's Domino.

iVIEW Management Suite's new unified corporate address book feature synchronizes the enterprise's directory to all endpoints in the organization from one central location, making contact lists easy to manage. This feature is also fully compatible with third party endpoints, since iVIEW Management Suite employs standard protocols when updating endpoint contact lists.

Synchronizing endpoint address books with the enterprise directory applies equally to both local and remote endpoints that may be located in different branches or sites.

For more information, see the *Administrator Guide for SCOPIA iVIEW Management Suite*.

Assigning Privileges for Video Users Across an Enterprise

User rights and privileges can be regulated by assigning a user type, and by provisioning a user or group of users according to specific video features.

There are four predefined types of users that can be assigned in the SCOPIA iVIEW Management Suite:

- **Users**
Users in this category can create, participate and moderate their own meetings, view scheduled meetings, and modify their own profile, but they are not allocated a virtual room.
- **Meeting organizers**
Organizers have all the abilities of regular users, but they also have their own virtual rooms, and can manage their own personal address books. They can also create and manage meetings for others.
- **Operators**
Meeting operators have all the rights of organizers, and additionally they can view and manage all meetings in an organization.
- **Administrators**
Administrators have all the rights of an operator, and additionally they can view and manage all network devices, room terminals, and users with their virtual rooms in the organization.
- **Service Provider Administrators**
This category of users can manage devices and meetings across multiple organizations.

In addition to the above user types, you can grant privileges to individuals or groups of users including:

- Limiting the choice of users to a subset of defined MCU services, known as meeting types. In this way, you can limit functionality to lower resolution calls, to a specific MCUs, or to audio-only calls. You can also define a default meeting type for users.
- Enabling or disabling meeting recordings for users.
- Limiting the number of ad-hoc participants per meeting for various users or groups.
- Determining which group or individuals are allocated a SCOPIA Desktop Pro license with its extra features.
- Determining the maximum bandwidth allowed for SCOPIA Desktop calls for various users or groups.

For more information, see the *Administrator Guide for SCOPIA iVIEW Management Suite*.

Scheduling and Resource Reservation

Scheduling a video meeting is similar to the scheduling of any other meeting. Usually you find a free slot via the participants' calendars, and physical meetings typically require the resources of a free conference room. Video meetings, however, can include both physical and virtual meeting rooms, thereby requiring additional resource reservation: video capacity and bandwidth.

Scheduling video resources of a planned meeting reserves the required number of MCU video ports for the meeting, to ensure sufficient capacity and bandwidth at the time of the call.

These criteria lead to three videoconferencing scheduling options in the SCOPIA Solution:

- Ad-hoc calls are unscheduled, and enable any endpoint to make a call.
- Time-only scheduling notifies participants of the time and virtual location of a videoconference, but no video resources are reserved.

You can use the Outlook Add-on for SCOPIA Desktop to create time-only schedules in Microsoft Outlook. For more information, see the *Administrator Guide for SCOPIA Desktop*.

For Lotus Notes integration, use the SCOPIA IBM Lotus Notes Add-on, which can act as a time-only scheduler in deployments which lack iVIEW Management Suite. For more information, see the *Deployment Guide for SCOPIA IBM Lotus Notes Add-on*.

- Time and resource scheduling is used for meetings where high quality video is imperative. It notifies both the participants and the SCOPIA iVIEW Management Suite of the time, the number of participants, and the virtual location of the videoconference. The iVIEW Management Suite then reserves the number of MCU ports to be used for the meeting at that time.

Using this information, iVIEW Management Suite will allow or disallow any ad-hoc calls made at that time based on the resources it has set aside for the scheduled meeting.

Use the Outlook Add-on for SCOPIA iVIEW Management Suite to create time and resource schedules in Microsoft Outlook. For more information, see the *Deployment Guide for SCOPIA iVIEW Management Suite Microsoft Outlook Add-on*.

For Lotus Notes integration, use the SCOPIA IBM Lotus Notes Add-on, which extends its functionality to time and resource scheduling in deployments with iVIEW Management Suite. For more information, see the *Deployment Guide for SCOPIA IBM Lotus Notes Add-on*.

Transmitting Data Presentations

A central feature of the SCOPIA Solution is the ability to transmit data alongside HD video, whether as presentations or as desktop sharing, streamed as a separate H.239 data channel from a connected PC. This feature is available in:

- SCOPIA XT1000 Series
- SCOPIA VC240
- SCOPIA Desktop
- SCOPIA Elite MCU
- iVIEW Management Suite

Note: Data presentations in SIP-only environments will be supported in forthcoming versions of the SCOPIA Solution.

In addition, a unique feature implemented in SCOPIA Desktop from version 7.5 is the SCOPIA Content Slider. It enables conference participants viewing a presentation to go back and view slides that were previously transmitted to their SCOPIA Desktop Client at any time during the call, even if those slides are no longer presented in view by the conference lecturer.

Remote Access to Videoconferencing

The SCOPIA Solution includes a number of ways to access video calls from remote locations outside the company network. There are three categories of remote users:

- Home workers
 - When using a PC from home, the SCOPIA Desktop Client offers an easy way to turn a PC into an HD endpoint. This technology includes all the tunneling functionality required to maintain an encrypted connection with the company while traversing both a home wireless router (NAT) and accessing a SCOPIA Desktop Server in the company's DMZ. For an example of this deployment, see [Figure 5-2 on page 58](#).
 - Dedicated H.323 endpoints like SCOPIA VC240 can also traverse the NAT router and access the SCOPIA PathFinder Server in the company's DMZ.
- On the road
 - SCOPIA Mobile enables people with video-enabled phones to participate in a conference. The phone connects to the SCOPIA Desktop Server in the company's DMZ.
 - A laptop PC can be an effective way to connect to videoconferences by installing SCOPIA Desktop Client. Its tunneling technology does not require any gateway or dedicated firewall traversal.
- Partner organizations with their own firewall

- A PC installed with SCOPIA Desktop Client can join a videoconference even when it is located in a partner organization behind its firewall. SCOPIA Desktop Client can easily traverse both that firewall and the firewall of the company housing the video infrastructure to reach the SCOPIA Desktop Server located in the DMZ. For an example of this deployment, see [Figure 5-2 on page 58](#).
- If you have an H.323 endpoint which supports the secure H.460 protocol, like the SCOPIA XT1000, it can directly access the SCOPIA PathFinder Server in the target company's DMZ. Alternatively, H.323 endpoints which do not support the H.460 protocol, like the SCOPIA VC240, would use a local gatekeeper and a SCOPIA PathFinder Client to navigate both firewalls. See [Figure 5-3 on page 59](#) for an illustration of a typical SCOPIA PathFinder deployment.

Intuitive Conference Layout Control and Moderator Control

When presenting a video call with more than two participants, there is always a question of choosing the best arrangement of video images on a screen in a way that is both convenient and relevant. Key features like the automatic highlighting of a participant currently speaking makes the layout choices of the SCOPIA Solution among the best in the industry.

Moderator control, sometimes known as chair control, is also a central feature in SCOPIA Solution video conferences. This functionality offers the ability to control a conference by muting or un-muting participants, determining security settings, deciding whether a user can join a conference and other similar features.

Both these functionalities are available from a number of SCOPIA Solution components:

- SCOPIA Desktop Clients and SCOPIA Mobile
- SCOPIA Control
- SCOPIA Elite MCU
- SCOPIA iVIEW Communications Manager

Administrators would use the layout and moderator control from the SCOPIA Elite MCU to control a single MCU's conferences, or the SCOPIA iVIEW Communications Manager to manage conference layouts on a corporate level across the organization.

Users of the video conferencing system can control their own endpoint's layout through the settings in a SCOPIA Desktop Client or on their SCOPIA Mobile. In addition, an end-user can control the layout of the SCOPIA XT1000 Series room system using SCOPIA Control. You can also use the SCOPIA Control to connect to the SCOPIA Desktop Server and connect to the meeting as a moderator.

For more information on the moderator and layout controls of the MCU, see the *User Guide for SCOPIA Elite MCU 5000 Series*. For details of configuration from the SCOPIA iVIEW Communications Manager, see the *User Guide for SCOPIA iVIEW Management Suite*.

4

Considerations for Choosing your SCOPIA Solution

There are a number of criteria that must be considered to choose the most appropriate deployment for your organization, aside from the list detailed in [Selecting Features of your SCOPIA Solution page 29](#):

- [Sizing Your Video Deployment Capacity](#) page 47
- [Minimizing WAN Bandwidth](#)..... page 48

Sizing Your Video Deployment Capacity

Choosing the capacity of your SCOPIA Solution is a key deployment consideration.

The most appropriate solution for your organization is dependent on the number of video users:

- For up to 100 users, consider deploying the new SMB Solution (see [Solution 1: Small Medium Business Solution for Videoconferencing page 53](#)).

Note: The SMB Solution can manage up to nine participants in a single videoconference, one meeting at a time.

- For up to 1500 users, consider deploying the Complete Centralized Solution (see [Solution 2: Complete Centralized Videoconferencing page 56](#)).
- For up to 10,000 users, consider deploying either the Large Centralized Solution (see [Solution 3: Large Centralized Videoconferencing page 60](#)) or the Large Distributed Solution, depending on the organization's existing network topology.

There are additional considerations when deciding on the number of solution components required within your solution deployment.

To determine the number of MCUs required in a deployment, estimate the number of people accessing the MCU simultaneously. This can be calculated by estimating:

- The number of employees using the video infrastructure.
- What is the average number of participants expected per videoconference?

- How many simultaneous videoconference calls do you expect?
If your video usage only requires one conference at a time for less than nine participants within and outside the company, consider deploying the new SMB Solution. For more information see [Solution 1: Small Medium Business Solution for Videoconferencing page 53](#).
- How many users require HD quality, versus the number required in SD quality?
For example, the SCOPIA Elite MCU 5230 has a capacity of 30 HD ports. This translates to 30 simultaneous users accessing video conferences on the unit in HD. When the MCU has an Increased Capacity license, each HD port can be switched to four SD ports, enabling a mix between HD and SD users, with a maximum of $4 \times 30 = 120$ SD ports.

To determine the number of room systems like the SCOPIA XT1000 required in a deployment, estimate:

- How many conference rooms does your company have?
- How many of the conference rooms should be equipped with the SCOPIA XT1000 room system?

To determine the number of dedicated HD endpoints and PC-based endpoints to deploy, estimate:

- The number of employees using the video infrastructure.
- The number of employees, usually executives, who would use dedicated high definition endpoints like the SCOPIA VC240.
- The remainder of employees and remote desktop users would normally use a PC-based endpoint like the SCOPIA Desktop Client.

Minimizing WAN Bandwidth

When the network topology of your deployment is geographically distributed over more than one site, communications between the sites will incur WAN costs. Typically, those costs would be proportional to the volume of the cross-site bandwidth used.

Therefore minimizing cross-zone bandwidth usage becomes a significant priority in most globally distributed organizations, to help reduce costs and maintain efficiency.

To assess whether a deployment would be better distributed or centralized:

- Determine the number of sites or branches that would normally participate in a conference.
- Determine the number of conference participants in each of the sites.

If your organization has more than one site spread out in different locations, you can benefit from significant savings in WAN bandwidth with a distributed deployment of MCUs in each of the branches.

RADVISION's SCOPIA Solution has a number of powerful features to help manage bandwidth usage in distributed network topologies to keep costs down:

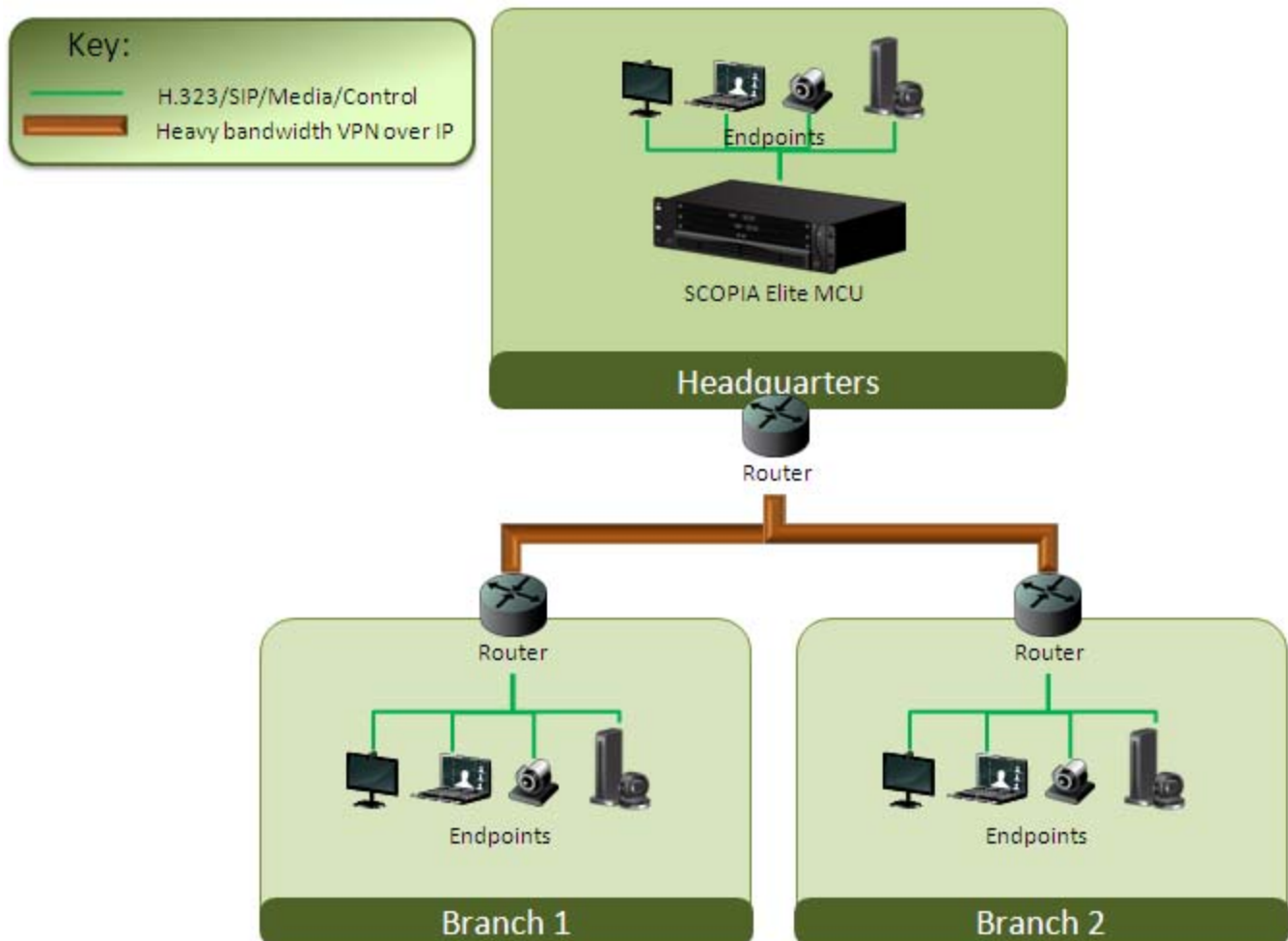
- [Distributed MCU Deployments for Cascading Conferences](#) page 49
- [Setting WAN Bandwidth Limits](#) page 51

Distributed MCU Deployments for Cascading Conferences

When your organization has more than one site, like a headquarters and several branches, RADVISION offers a unique method of cutting video bandwidth costs. Administrators can choose whether to place all MCUs centrally in the headquarters (Figure 4-1 on page 49), or they can opt for a distributed deployment, where multiple MCUs are spread over multiple sites (Figure 4-2 on page 50).

Centralized MCU deployments can be expensive for frequent conferences between branches with multiple participants from each site, since each participant must utilize extra bandwidth on the WAN connection between sites (Figure 4-1 on page 49).

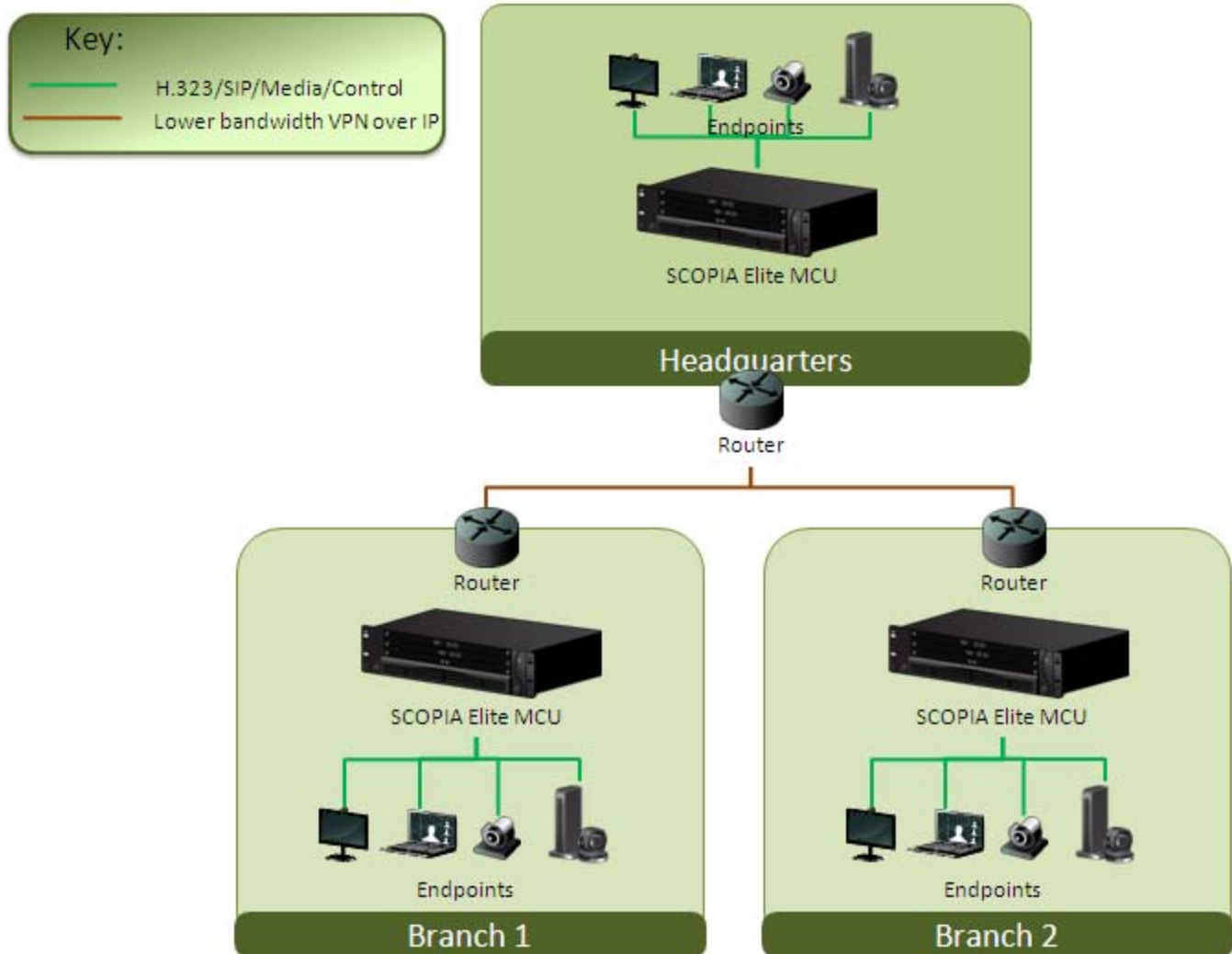
Figure 4-1 Centralized MCU deployment, where all branches use the HQ MCU



To reduce cross-site bandwidth costs, a distributed MCU deployment (Figure 4-2 on page 50) can perform cascaded conferences, where local participants connect to their local MCU, and the conference is cascaded by connecting between the MCUs using a fraction of the bandwidth compared to the centralized deployment.

Users of distributed MCU deployments do not need to choose a specific MCU. The powerful functionality of virtual rooms enables you to dial the same number anywhere in the world, while the SCOPIA Solution infrastructure transparently directs you to the correct meeting on the correct MCU.

Figure 4-2 Distributed MCU deployment enabling reduced WAN bandwidth



SCOPIA iVIEW Management Suite's sophisticated cascading algorithms enable administrators to customize the priority given to cascading in a distributed topology.

There are a number of factors that might influence when the system chooses to cascade to a different MCU. For example, if the maximum bandwidth threshold is breached, the system would attempt cascading with a different MCU.

The priorities of cascading can be customized in a number of ways:

- Default to using a local MCU first, and only cascade conferences if required.
- Prioritize cascading wherever possible, to keep bandwidth costs to an absolute minimum.
- Avoid cascading as often as possible.

For more information on distributed topologies and their integration with other SCOPIA Solution components, see [Solution 4: Large Distributed Videoconferencing page 63](#). For details on configuring cascading conferences, see the *Administrator Guides for SCOPIA Elite MCU and SCOPIA iVIEW Management Suite*.

Setting WAN Bandwidth Limits

Version 7.5 of the SCOPIA iVIEW Management Suite includes new bandwidth management functionality which enables administrators to set limits on WAN bandwidth usage, and trigger system alerts when that usage rises above a defined threshold. You can also define the system behavior when the bandwidth limit has been reached.

This powerful feature enables administrators to monitor and manage WAN bandwidth usage and keep it under a defined limit at all times.

For more information, see the *Administrator Guide for SCOPIA iVIEW Management Suite*.

5

Deployments of the SCOPIA Solution

The various components of the SCOPIA Solution can be combined to fit the existing network topology and the video requirements of the organization. This chapter details four types of deployments that can comprise the SCOPIA Solution in different types of organizations.

These deployments represent archetypes, and do not represent an all inclusive list:

- [Solution 1: Small Medium Business Solution for Videoconferencing](#) page 53
- [Solution 2: Complete Centralized Videoconferencing](#) page 56
- [Solution 3: Large Centralized Videoconferencing](#) page 60
- [Solution 4: Large Distributed Videoconferencing](#) page 63

Solution 1: Small Medium Business Solution for Videoconferencing

The Small Medium Business (SMB) solution is a new addition in version 7.5, bringing high quality videoconferencing at a price that shatters preconceptions of high cost deployments.

- [Features of the Small Medium Business Solution for Videoconferencing](#)..... page 53
- [Limitations of the Small Medium Business Solution for Videoconferencing](#) page 55

Features of the Small Medium Business Solution for Videoconferencing

The Small Medium Business (SMB) Solution offers a full HD video experience to businesses of approximately 10 and 50 employees or more, with perhaps one or more meeting rooms and some remote desktop users. It is both simple to deploy, and it has an easy administration control.

The SMB solution has two central components: the SCOPIA XT1004 or XT1009 with its embedded MCU that houses the conference, and the SCOPIA XT Desktop which enables PC-based SCOPIA Desktop Clients to join the conference from inside and outside the organization (see [Figure 5-1 on page 55](#)).

The SCOPIA XT1004 can host up to four participants in a conference, while the XT1009 can host up to nine participants. You can upgrade from the XT1004 to the XT1009 by purchasing a different license.

The SCOPIA XT1000 Series represents an innovative and unique combination of a room system endpoint with an embedded MCU, enabling you to set up a videoconferencing deployment with minimal budgetary requirements.

Note:

When using the SCOPIA XT Desktop, the XT1009 can host a maximum of eight participants.

An H.323 endpoint within the firewall, like the SCOPIA VC240 or the SCOPIA XT1000 or many other H.323 compliant endpoints can also connect to the SCOPIA XT1000 Series by dialing its extension or IP address ([Figure 5-1 on page 55](#)). For more information about the list of endpoints compatible with the SCOPIA VC240 and XT1000, see the *Codec Interoperability Guide for SCOPIA XT1000 or SCOPIA VC240*.

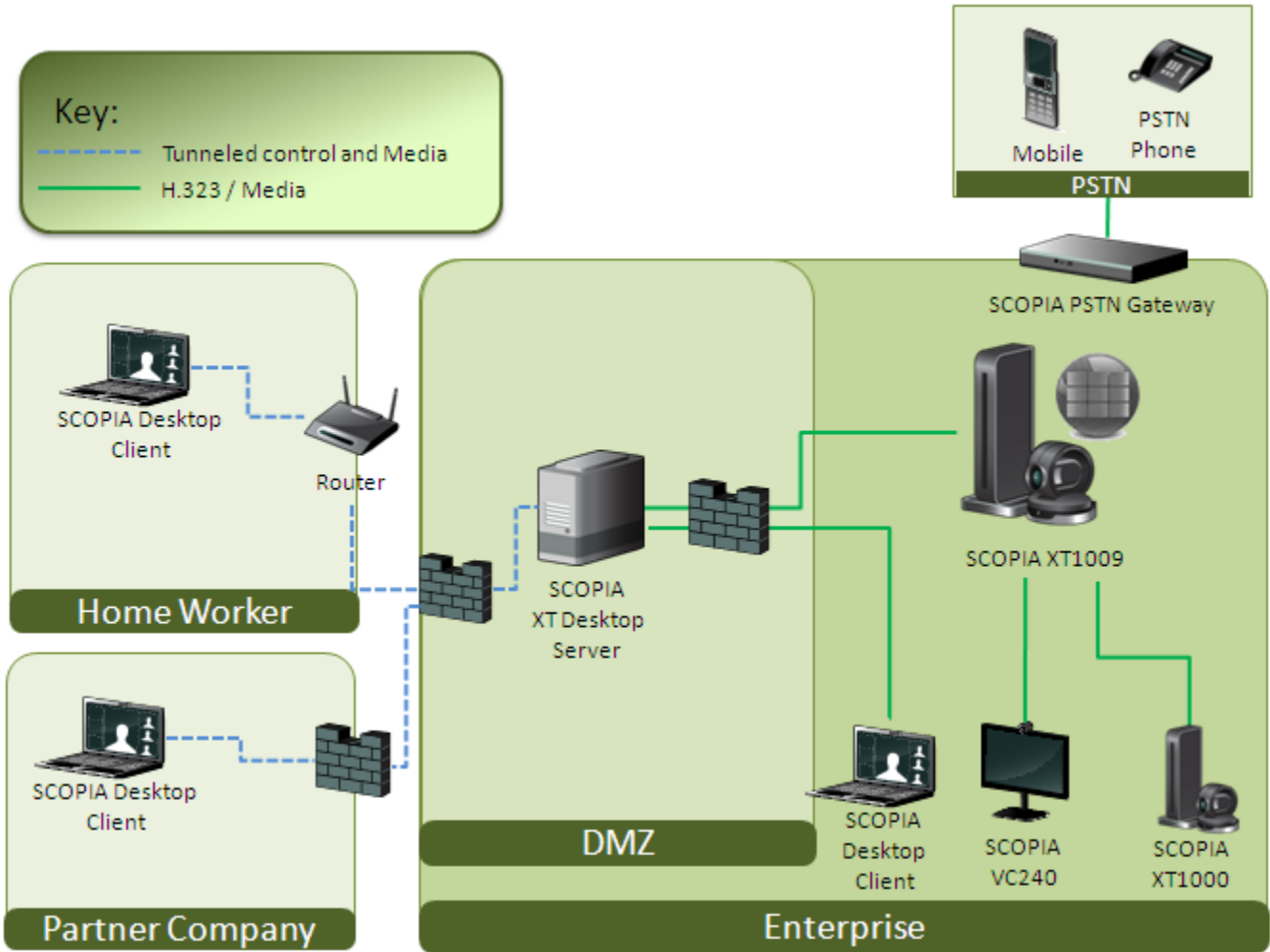
The SCOPIA XT Desktop comes built-in with NAT and firewall traversal (see [Figure 5-1 on page 55](#)), enabling secure remote connections from SCOPIA Desktop Clients to be made to the conference hosted on the embedded MCU in the SCOPIA XT1000 Series.

The SCOPIA Desktop Clients can be distributed freely without any licensing restrictions, and run on a standard PC and browser, making it easy to invite partners or investors to join video conferences with no additional cost. A meeting organizer simply distributes the web address of the SCOPIA XT Desktop to invite participants to a video call.

You also have the option to connect to PSTN environments, enabling participants with a PSTN phone or a mobile phone to connect to a videoconference using the SCOPIA Gateway for PSTN.

Therefore the SMB solution requires almost no ancillary infrastructure, just one general purpose server, making it easy to install, benefiting from high-quality video conferencing, and making it perfectly suited to small and medium-sized organizations working with tight budgets and small-scale infrastructure needs.

Figure 5-1 SMB Solution shown with SCOPIA XT1009



Limitations of the Small Medium Business Solution for Videoconferencing

While the SMB solution offers compelling value, it has a number of limitations:

- This is not a scalable solution. The maximum number of participants in a conference for the SCOPIA XT1009 is nine, and it can only hold one conference at a time. Moving to more simultaneous conferences requires purchasing a different standalone MCU (like the SCOPIA Elite MCU).
- The video quality does not yet benefit from SVC and FEC (see [“Superior Video Quality” on page 35](#)). This functionality is expected in future releases.
- No network central management, including intelligent bandwidth management, address book synchronizations or remote upgrading. These features are available with the SCOPIA iVIEW Management Suite.
- Limited user experience:

- The layout of the video conference screen cannot be customized.
- There is no integration with unified communications systems like Microsoft Office Communicator, or IBM SameTime.

Solution 2: Complete Centralized Videoconferencing

The Complete Centralized Videoconferencing solution fits larger organizations, bringing a scalable solution for multiple simultaneous conferences. It delivers higher video quality, improved user experience, and the ability to stream and record video conferences.

- [Features of Complete Centralized Videoconferencing Solution](#) page 56
- [Limitations of the Complete Centralized Videoconferencing Solution](#) page 60

Features of Complete Centralized Videoconferencing Solution

The Complete Centralized Videoconferencing solution offers the full range of SCOPIA Solution features, particularly multiple simultaneous conferences, by deploying the minimal complete set of videoconferencing infrastructure at the company's site ([Figure 5-2 on page 58](#)).

This solution is tailored for companies with a single main branch, several meeting rooms, whose video needs accommodate up to 1500 users in a variety of ways, including up to 240 simultaneous conference users in standard definition (known as multipoint ports), or up to 600 point-to-point calls.

Note:

This solution also supports full high definition (HD) calls. For a deployment with a capacity of 240 standard definition users, this is equivalent to 60 HD simultaneous users.

This solution is also highly scalable. It assumes a deployment of one or two MCUs. To increase the capacity of the solution, you can add additional components like MCUs and SCOPIA Desktop Servers to an existing deployment. As part of its inherent scalability, the single server located in the DMZ ([Figure 5-2 on page 58](#)) can be separated into separate servers as required. For example, see the Large Centralized solution ([Solution 3: Large Centralized Videoconferencing page 60](#)).

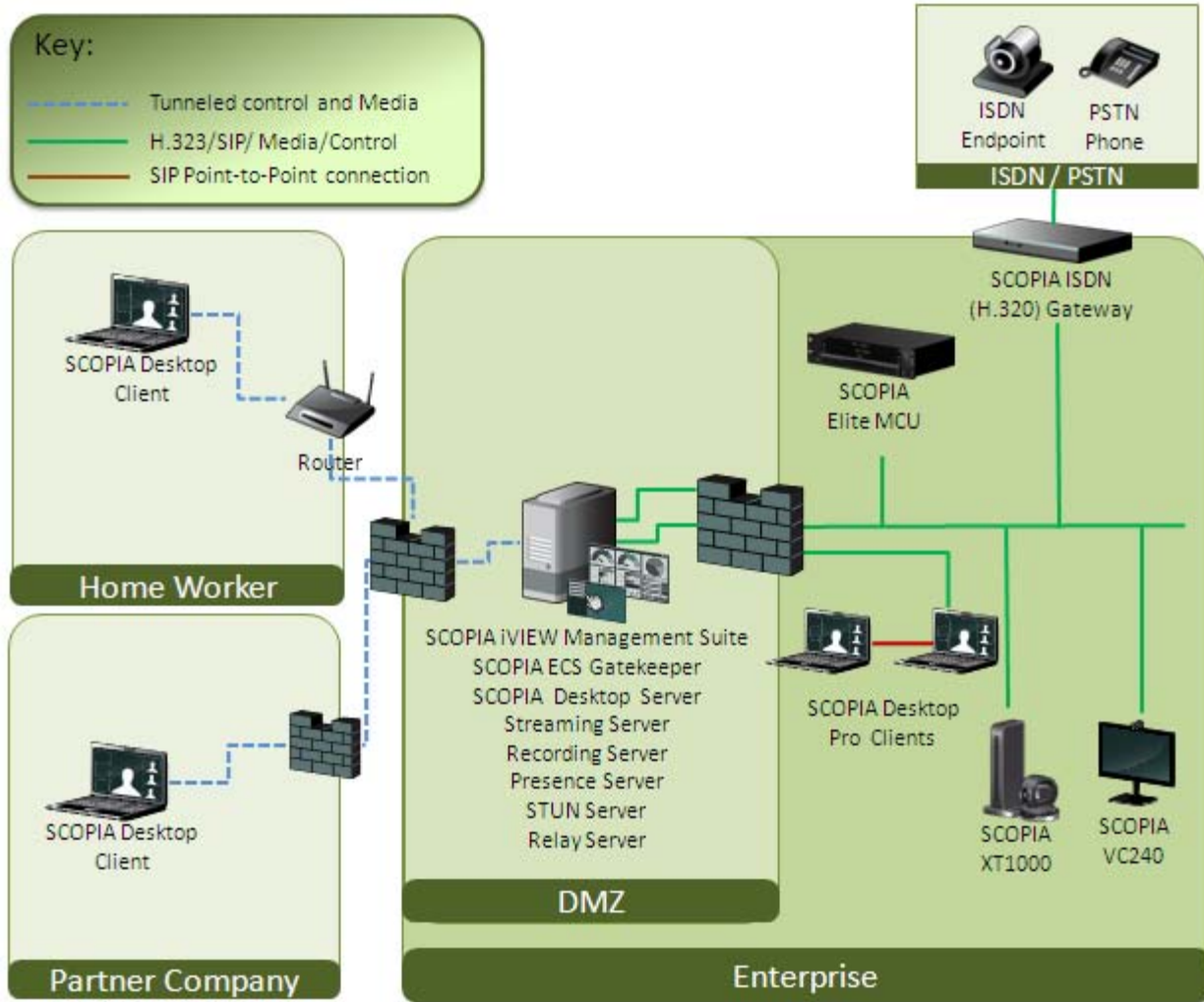
Improved video quality is provided via the SCOPIA Elite MCU's implementation of scalable video coding (SVC) and forward error correction (FEC) algorithms, delivering higher quality and smoother video for which RADVISION's products are well-known.

The user interface of video conferences can also be customized with several advanced features, including changing the layout presentation of multiple video streams, and the ability for a client to scroll back and forth on a data presentation independently of the slides displayed by a lecturer.

The Complete Centralized Videoconferencing solution ([Figure 5-2 on page 58](#)) offers the complete feature set of the SCOPIA Solution, including:

- Integrate the organization's network management with SCOPIA iVIEW Management Suite, including full integration with the company's active directory, and intelligent bandwidth management.
- Schedule video meetings using integration with Microsoft Outlook, and reserve the necessary resources and bandwidth for the call.
- Catch up with slides that were previously presented in video call using the SCOPIA Content Slider. This feature stores presented slides on the client side, to give control of the order and pace of presentation to conference participants.
- Include remote H.323 endpoints in calls, with complete firewall traversal using SCOPIA DesktopSCOPIA PathFinder (Figure 5-3 on page 59).
- Point-to-point calls using the SIP protocol.
- Secure calls across zones using powerful encryption standards.
- Assign dial numbers to video endpoints and route calls to endpoints using SCOPIA ECS Gatekeeper.
- Assign virtual rooms to users and intelligently route a user's dialed number to their virtual room.
- Integrate video functionality with unified communications (UC) tools such as Microsoft Office Communicator or IBM SameTime.
- Stream video calls to a client using the Streaming Server.
- Record video calls using the Recording Server
- Include remote ISDN (H.320) endpoints in calls via the SCOPIA Gateway.

Figure 5-2 Complete Centralized Videoconferencing solution depicted (without SCOPIA PathFinder)



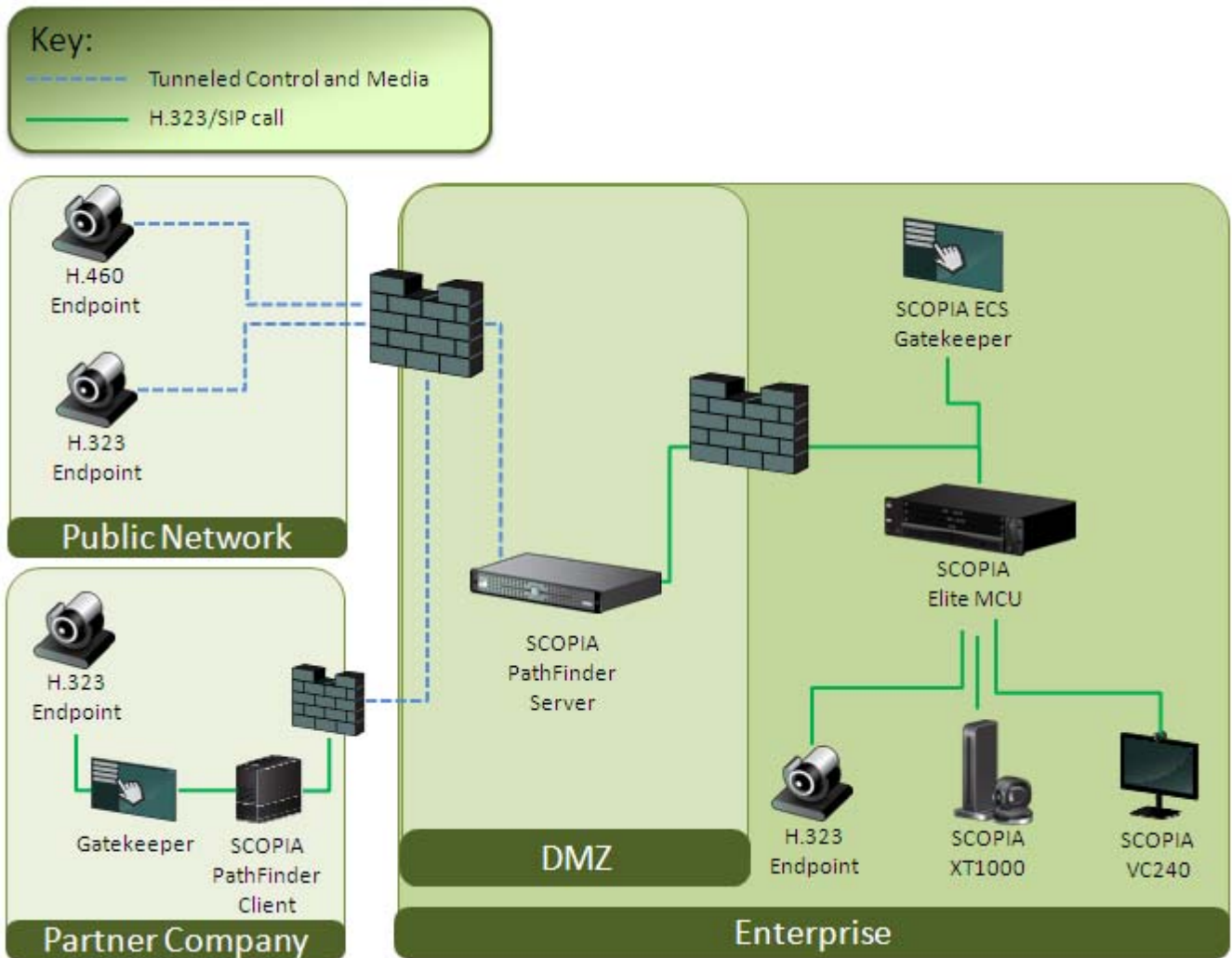
Firewall traversal for H.323 endpoints, including those which are H.460 compliant, is managed by SCOPIA PathFinder Server and SCOPIA PathFinder Client (Figure 5-3 on page 59).

Note: The Complete Centralized Videoconferencing solution fully supports SCOPIA PathFinder functionality. This layer of the diagram was separated to make it easier to read. Therefore the solution includes two layers: Figure 5-2 on page 58 and Figure 5-3 on page 59.

The SCOPIA PathFinder Server can house two NIC cards, enabling it to have one card connected in the DMZ while the other is linked to the private network (Figure 5-3 on page 59). Deploying the server in this way increases security since it requires fewer ports to remain open.

When an H.460 compliant H.323 endpoint is located outside the company and joins a video conference, can access the SCOPIA PathFinder Server directly behind the company's firewall. In contrast, remote H.323 endpoints which do not support H.460 require the presence of a SCOPIA PathFinder Client to successfully traverse the company's firewall (Figure 5-3).

Figure 5-3 Remote access connectivity options using SCOPIA PathFinder



Limitations of the Complete Centralized Videoconferencing Solution

There are a number of limitations of the Complete Centralized Videoconferencing solution:

- A centralized deployment requires all calls to be directed to the MCUs located in one place. This puts a strain on bandwidth if video conferences involve many remote endpoints.
- This solution typically deploys one or two MCUs, limiting the capacity to 240 simultaneous SD conference users or 60 simultaneous HD conference users. However, the solution is scalable and can be expanded by adding additional infrastructure. For more information, see the alternative solution deployments in this chapter.

Note: The system supports dynamic allocation of ports. A user working in HD is equivalent to four SD users. Therefore an organization can support a mix of SD and HD users until the full capacity of the infrastructure is reached.

- This solution does not include support for high availability through redundant infrastructure. Nevertheless, since this is a scalable solution, redundancy can be added if required. For more information, see the alternative solution deployments in this chapter.

Solution 3: Large Centralized Videoconferencing

The Large Centralized Videoconferencing solution is aimed at large organizations. This solution can also serve service providers, offering a scalable solution with high availability and service preservation for up to 10,000 users.

- [Features of the Large Centralized Videoconferencing Solution](#) page 60
- [Limitations of the Large Centralized Videoconferencing Solution](#) page 63

Features of the Large Centralized Videoconferencing Solution

The Large Centralized Videoconferencing solution builds on the scalability of the Complete Centralized solution by adding more capacity and strengthening availability and service preservation, enabling commitments to promised levels of availability.

This solution is tailored for service providers or large enterprises whose video infrastructure is deployed in the main branch with several meeting rooms. The video usage requirements can scale up to a maximum of 10,000 users, which is up to 20 MCUs, offering up to 1000 simultaneous conference users (known as multipoint ports), or up to 5000 point-to-point calls.

Note: This solution also supports full high definition (HD) calls. Ports can be allocated dynamically, where a user working in HD is equivalent to four SD users. Therefore an organization can support a mix of SD and HD users until the full capacity of the ports is reached.

The features of the Large Centralized Videoconferencing solution includes all those from the Complete Centralized Videoconferencing solution (see [Features of Complete Centralized Videoconferencing Solution page 56](#)) with several important additions:

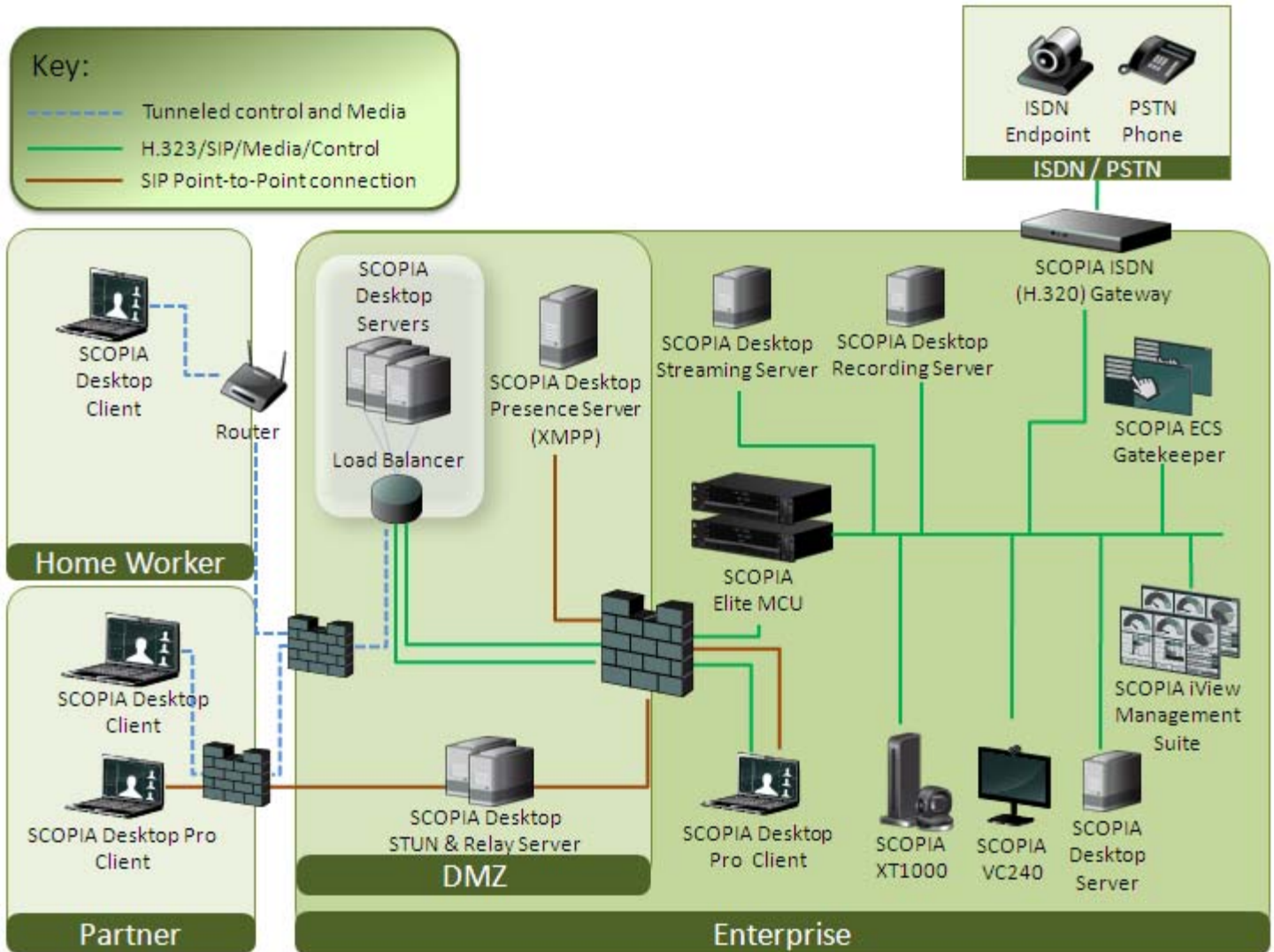
- A single video conference can accommodate far more participants, more than the capacity of two MCUs, by cascading several MCUs in a single conference.
- Redundancy of key components (see [Figure 5-4 on page 62](#)) including:
 - SCOPIA iVIEW Management Suite for high availability
 - SCOPIA ECS Gatekeeper for scalability and high availability
 - SCOPIA Elite MCU for scalability and high availability
 - SCOPIA Desktop Servers clustered behind a load balancer for scalability and high availability.

Note: This solution also accommodates deploying one or more SCOPIA Desktop Servers in the private network to facilitate internal calls and meetings.

For more information on configuring scalability and high availability, see [Planning Scalability and High Availability in the SCOPIA Solution page 33](#).

- Point-to-point calls can be made within the private network using the SCOPIA Desktop STUN and Relay servers (see [Figure 5-4 on page 62](#)). For point-to-point calls with remote endpoints, these servers can also be deployed in the DMZ, or you can place one server in the DMZ and one internally. The availability of contacts for point-to-point calls is determined with the SCOPIA Desktop Presence Server, which is can also be located in the DMZ for remote endpoints.

Figure 5-4 Large Centralized Videoconferencing Solution depicted without SCOPIA PathFinder's remote connectivity



Firewall traversal for H.323 endpoints, including those which are H.460 compliant, is managed by SCOPIA PathFinder Server and SCOPIA PathFinder Client (see [Figure 5-3 on page 59](#)).

Note:

The Large Centralized Videoconferencing solution fully supports SCOPIA PathFinder functionality. This layer of the diagram was separated to make it easier to read. Therefore the solution includes both layers: [Figure 5-4 on page 62](#) and [Figure 5-3 on page 59](#).

Limitations of the Large Centralized Videoconferencing Solution

The main limitation of this solution stems from it being centralized. It requires all calls to be directed to the MCUs located in one place. This puts a strain on bandwidth if video conferences involve many remote endpoints.

Solution 4: Large Distributed Videoconferencing

The Large Distributed Videoconferencing solution is aimed at large organizations with multiple branches, offering a distributed, scalable solution with high availability and service preservation for up to 10,000 users.

- [Features of the Large Distributed Videoconferencing Solution](#)..... page 63
- [Limitations of the Large Distributed Videoconferencing Solution](#)..... page 65

Features of the Large Distributed Videoconferencing Solution

The Large Distributed Videoconferencing solution builds on the inherent scalability of the SCOPIA Solution by geographically distributing the same video capacity over several branches within a VPN, opening to the possibility of significant savings in WAN bandwidth costs.

This solution is tailored for large enterprises structured as a headquarters and several branches. Typically, each branch would have one or more meeting rooms, and the headquarters would have several meeting rooms. In this solution, the video infrastructure is distributed, with deployments in both the headquarters and the branches. The capacity of the Large Distributed Videoconferencing solution is still a maximum of 20 MCUs, which can accommodate a total of 10,000 users in a variety of ways, including up to 1000 simultaneous conference users (known as multipoint ports), or up to 5000 point-to-point calls.

Note:

Like all the other deployments, this solution supports full high definition (HD) calls. Ports can be allocated dynamically, where a user working in HD is equivalent to four SD users. Therefore an organization can support a mix of SD and HD users until the full capacity of the ports is reached.

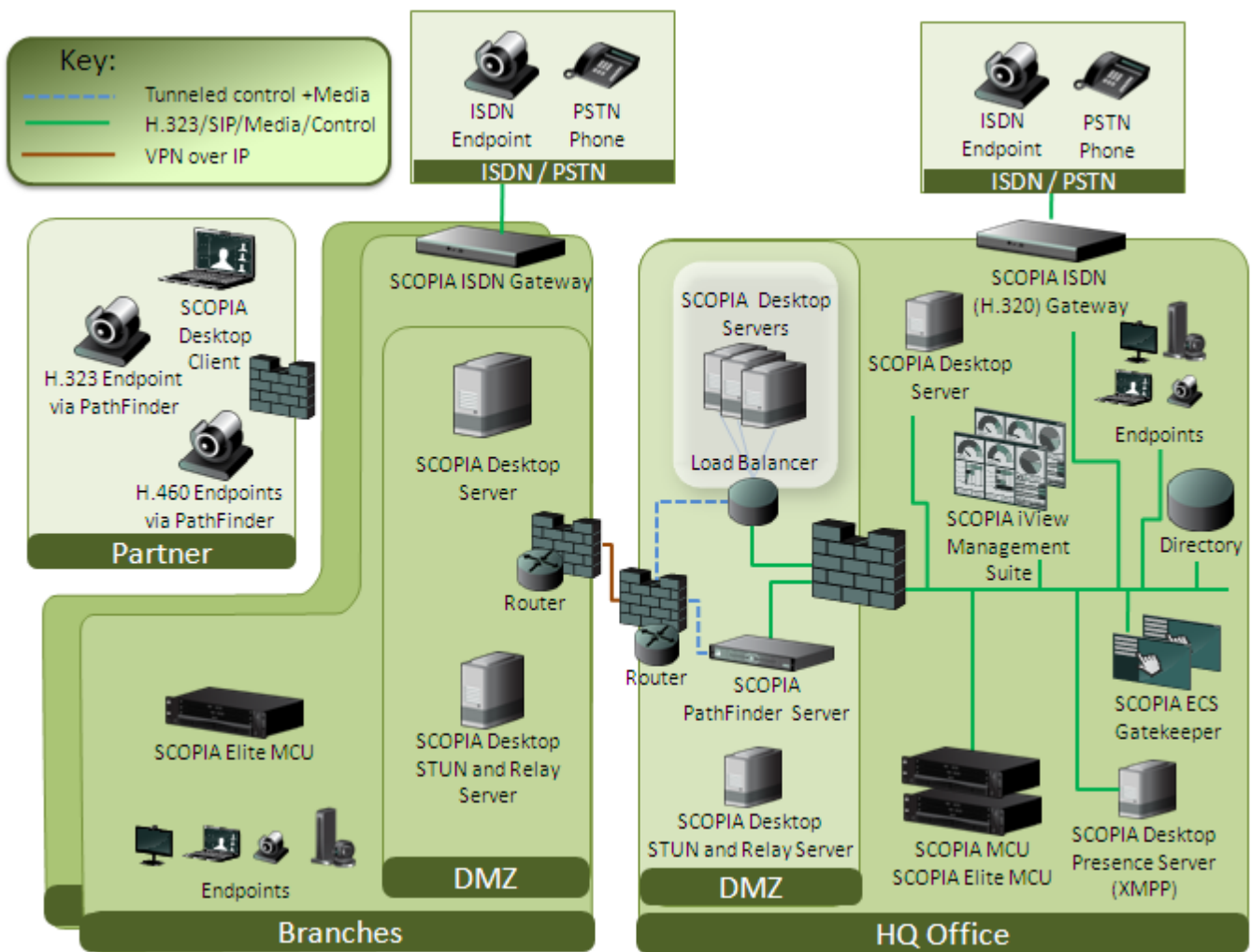
The main advantage of a distributed architecture is felt when a video conference includes participants from several locations, like the headquarters, several branches, and endpoints located outside the VPN. SCOPIA iVIEW Management Suite's intelligent bandwidth management ensures that the WAN bandwidth costs are minimized according to the configuration set up by the system administrators.

In Large Distributed solutions ([Figure 5-5 on page 64](#)):

- Branches of the enterprise are connected to the headquarters via a secured VPN.
- Each branch can have its own local MCU deployment if required. This may be one or more MCU units, depending on the branch's requirements for call capacity and high availability. SCOPIA iVIEW Management Suite views the set of MCUs as a single virtual MCU, so the management is transparent to administrators.

- Each branch can have its own local SCOPIA Desktop Server deployment if required. This can be more than one server depending on the branch's requirements for call capacity and high availability.
- Communicating with remote endpoints outside the organization is handled in the same way as the other deployments, encompassing all types of endpoints:
 - H.323 endpoints without H.460 compliance using SCOPIA PathFinder Client;
 - H.323 endpoints which support H.460;
 - SCOPIA Desktop Clients with their own built-in firewall traversal.
- The SCOPIA iVIEW Management Suite's most useful functionality in distributed topologies enables remote management of the entire video infrastructure, including synchronizing with the Active Directory, remote updates of firmware across the enterprise, and advanced dial plans for virtual rooms.

Figure 5-5 Large Distributed Videoconferencing Solution



Limitations of the Large Distributed Videoconferencing Solution

A limitation of the Large Distributed Videoconferencing solution relates to the automatic cascading of conferences across more than one MCU. While this solution encompasses the ultimate in flexibility and low bandwidth in a large enterprise, it is possible that smaller conferences might be unnecessarily cascaded between different MCUs.



www.radvision.com

About RADVISION

RADVISION (NASDAQ: RVSN) is the industry's leading provider of market-proven products and technologies for unified visual communications over IP and 3G networks. With its complete set of standards based video networking infrastructure and developer toolkits for voice, video, data and wireless communications, RADVISION is driving the unified communications evolution by combining the power of video, voice, data and wireless - for high definition video conferencing systems, innovative converged mobile services, and highly scalable video-enabled desktop platforms on IP, 3G and emerging next generation networks. For more information about RADVISION, visit www.radvision.com

USA/Americas

T +1 201 689 6300

F +1 201 689 6301

infoUSA@radvision.com

EMEA

T +44 20 3178 8685

F +44 20 3178 5717

infoUK@radvision.com

APAC

T +852 3472 4388

F +852 2801 4071

infoAPAC@radvision.com