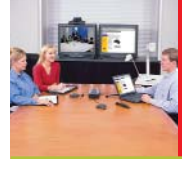
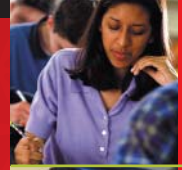


# 2009 Course Catalog



**Polycom® Learning Center**



# Professional Training

**Polycom Instructors** Our instructors are experienced in course development and course delivery in the areas of data communications, telecommunications, and networking. Additionally, instructors are kept abreast of the latest technologies in the industry, as well as new product functions/capabilities, and service topics, through direct contact with engineering and service professionals.

**Prerequisites** Course prerequisites are listed with each course description. The student is responsible for ensuring that they meet all of the prerequisites, either by classroom learning, or from on the job training, before attending courses at Polycom.

**Supported Products** Polycom Learning Center supports two revisions of products, the current version and the previous release.

**Manuals** Students are responsible for returning home with training manuals and/or handout materials that are obtained in the class; books are not sent out to students ahead of the scheduled training course, with the exception of on-site and over video trainings. Polycom will not be held responsible for shipping documentation to students. Students participating in an over video class will receive manuals from Polycom approximately 2-3 business days prior to the scheduled training session.

**Classroom-Based Training** Classes are held frequently at our Polycom office locations in the US, and are scheduled on a regular basis. Class sizes vary based on material covered and location.

**Over Video Training** Training will be conducted via point-to-point video conference, for up to five students per session. These classes do not appear on the posted class schedule. To schedule a session, please contact us at 1-800-POLYCOM. Registration is required at least five business days in advance of the requested date.

**Web-Based Training (WBT)** Web-Based Training is available through Polycom Learning Center Online (PLCO). These web-based courses are displayed in prerecorded video streams, PowerPoint Shows, and complete interactive modules. Registration is required.

**On-Site Training** For larger groups and/or company specific programs, Polycom will deliver the course at your site. The customer is responsible for ensuring a proper classroom environment and adequate equipment; Polycom does not suitcase its classes. For additional information, please contact us at [training@polycom.com](mailto:training@polycom.com).

**Course Schedule & Registration Information** The current schedule is available online at [www.polycom.com/training](http://www.polycom.com/training). Please register online for classes held at a Polycom location. Electronic registrations will be logged within 24 hours of original receipt. Registrations must be paid in full in order for your seat to be confirmed; a confirmation email will be sent to the attendee upon receipt of payment information. \*\*

**\*\*Important Note:** Individuals are encouraged to wait for a class confirmation prior to making their travel arrangements.

**Payment** Payment for classes must be received in the full tuition amount prior to attending the course; confirmations will be sent to the student upon receipt of payment. Prices are subject to change with 30 days notice. Payment options are:

- Company Check, made payable to: Polycom, Inc.
- Major credit cards accepted: American Express, VISA, MasterCard
- Signed Corporate Purchase Order (Net30 day terms noted)
- Polycom Learning Center Training Credit Packs (see page 33) Please note: Not currently applicable to courses on wireless products or CWNA certification

**Cancellations** Polycom reserves the right to cancel classes up to one week prior to the start date. Students will be advised of any changes in the schedule as soon as possible.

**Refund Policy\*:** 100% if cancellation notice is received more than 10 business days prior to scheduled course. 50% if cancellation notice is received less than 10 business days prior to scheduled course. 0% if cancellation notice is received less than 5 business days prior to scheduled course.

\*Students that no-show will be charged for the full cost of the class for which they were registered.

**Electronic Recording/Distribution** Audio and video, or any other electronic recording of training courses or course materials is strictly prohibited.

**Satisfaction Guarantee** At Polycom, we stand behind the quality of our training. If you are not satisfied with the course for which you have paid, Polycom will give you credit toward another course of comparable price.

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Part No. 3726-07794-003

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# Introduction to Video Conferencing (H.320) and Networks

2 Days

**Tuition at Polycom: \$1,450 per student**

**Tuition On-Site: \$11,075 for up to eight students includes travel & expenses of instructor**

**Part No. CS-INTRO-TS01-IN**

**Part No. CS-INTRO-TS01-OS**

**Course Description** This entry-level course is designed to give participants a broad overview of the telecommunications industry, the public switched telephone network, interfaces, and video-conferencing standards. The material presented includes a basic overview of networks with an emphasis on H.320 Video Conferencing. It is delivered through a combination of lecture and hands-on exercises.

## Audience

- Video-conferencing Support Engineers who are responsible for support the configuration, installation, and maintenance of video-conferencing equipment
- System Administrators in charge of overseeing the video-conferencing resources within an organization
- Bridge operators in charge of creating, scheduling, and overseeing a multi-point conference

## Prerequisites

None

## C O U R S E   C O N T E N T

### I. Overview of Video-conferencing Industry

- Major video-conferencing providers
- CODEC
- Analog to Digital and Digital to Analog; Audio
- Video Coding/Compression
- NTSC and PAL – Broadcast Television
- Standards H.32X, H.26X, G.7XX vs. PT and SG

### II. The Public Switched Telephone Network

- Constant Bit Rate vs. Variable Bit Rate
- The Local Loop - Copper, Fiber, Microwave; Local Switching - 5ESS, DMS100 NI-1, NI-2
- Interoffice Facilities - Copper, Fiber, Microwave
- Toll/Tandem Switching - 4ESS, DMS200

### III. Multiplexing Technologies

- Theory of Ops for Multiplexing
- Time Division Multiplexing - T1 vs. E1; Frequency Division Multiplexing - Description
- Statistical Time Division Multiplexing - Static Mux
- Inverse Multiplexing - IMUX and BONDING

### IV. Interface Standards

- EIA/RS232 and EIA/RS449 - Description, Applications
- CCITT V.35, CITT V.25 bus, CCITT X.21 - Description, Applications

### V. Public and Private Networks

- Digital Private Line Service - DDSII 56KBPS,T1 (1.544 MBS) Private Line Service
- 56 KBPS Circuit Switched Data (CSDS)
- Integrated Services Digital Network (ISDN)

### VI. Dedicated Networks

- DACS
- Line Drivers, Fiber Modems
- Digital Subscriber Lines

### VII. Customer to Network Connectivity

- Lines vs. Trunks
- DTE vs. DCE
- CSU, DSU, ISU, TA, NT1,TDM, Line Drivers
- SW56, ISDN, BRI and PRI

# SIP Protocols and Networks for Video and Voice

2 Days

**Tuition at Polycom: \$1,450 per student**

**Tuition On-Site: \$11,075 for up to 8 students includes travel & expenses of Instructor**

**Part No. 4864-05088-001**

**Part No. 4864-05089-002**

**Course Description** This is a fast-paced two-day course that covers both the theory and practical applications of the SIP protocol suite for voice and video. The course is intended for network analysts and engineers as well as other technical personnel who need to understand SIP so that they can decide when and how to implement it in their networks. The course addresses the issues of how SIP relates to H.323 and how SIP can be integrated into current networks. The course begins with a focused, technical analysis of the TCP/IP protocol suite and then continues with a detailed analysis of SIP and the other Internet protocols (such as SDP, RTP, RTCP and RTSP) that are used along with it. The network building blocks (such as SIP proxies, firewalls, and SIP location servers) that are used in a SIP based network are described. SIP call scenarios and protocol implementation options are analyzed in detail (using real-time packet traces) so that students understand how SIP can be integrated within networks that currently support both H.320 and H.323. Network Quality of Service (QoS) and network security are discussed so that students also understand how different network architectures that support video and voice can be implemented. An integral part of the course will be the analysis of real world case studies.

## Audience

- Network planners and analysts
- Network engineers
- Technical personnel responsible for supporting voice or video networks

## Prerequisites

This course assumes that you have a background in networks and protocols, a solid understanding of the TCP/IP protocol suite and experience implementing or supporting networks with H.320 or H.323. Attending the Polycom course "Implementing IP Networks for H.323 Video Conferencing" also provides comparable knowledge of the TCP/IP protocol suite.

## C O U R S E C O N T E N T

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Comparison of the Session Initiation Protocol (SIP) to other Internet protocols</li> <li>• The IETF standards process and the history of SIP</li> <li>• Features and functions provided by SIP to support voice and video</li> <li>• Discussion of the benefits of SIP             <ul style="list-style-type: none"> <li>- Functionality, centralized versus decentralized</li> <li>- Simplicity</li> <li>- Scalability</li> </ul> </li> <li>• Functionality and implementation of the SIP User Agent</li> <li>• Description of SIP Network Building Blocks             <ul style="list-style-type: none"> <li>- Proxies and Network Servers</li> <li>- Registrar Server</li> <li>- Proxy Server</li> <li>- Location and Redirect Servers</li> <li>- Conference and Application Servers</li> </ul> </li> <li>• Requirements for networks that implement SIP             <ul style="list-style-type: none"> <li>- The public Internet</li> <li>- Private corporate networks and VPNs</li> <li>- Access networks using DSL and cable modems</li> </ul> </li> <li>• Detailed comparison of the H.323 protocol suite and SIP</li> <li>• Focused analysis of the relevant portions of the TCP/IP protocol suite</li> <li>• Detailed technical analysis of the SIP Signaling Messages (Methods)             <ul style="list-style-type: none"> <li>- Invite Method</li> <li>- Register and Options Methods</li> <li>- Ack, Cancel and Bye Methods</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Detailed analysis of the SIP trapezoid and SIP Call Scenarios (from simple to complex)             <ul style="list-style-type: none"> <li>- Setting up a call from endpoint to endpoint</li> <li>- Setting up a call via a single outbound proxy</li> <li>- Setting up a call via multiple proxy servers</li> <li>- Detailed analysis using real-time packet traces</li> </ul> </li> <li>• Detailed technical analysis of the real time protocols used for voice and video             <ul style="list-style-type: none"> <li>- Real time transport protocol (RTP)</li> <li>- Real time transport control protocol (RTCP)</li> <li>- Voice and video coding standards</li> </ul> </li> <li>• Analysis of SIP port usage within TCP and UDP</li> <li>• Support for Network Address Translation and firewalls in networks that use SIP</li> <li>• Designing and Implementing SIP addressing schemes</li> <li>• Technical review and comparison with related video and voice protocols such as Megaco, H.248, MGCP, multicast protocols and RTSP</li> <li>• Standards based features versus vendor proprietary features in SIP networks</li> <li>• Technical requirements for managing Quality of Service and security in networks that support SIP</li> <li>• Issues with implementing and supporting new protocols such as SIP within a corporate network and the coexistence of both SIP and H.323 in the same network</li> </ul> |
|--|--|

# Implementing IP Networks for H.323 Video Conferencing

3 Days

**Tuition at Polycom: \$2,050 per student**

**Tuition On-Site: \$14,425 for up to eight students includes travel & expenses of instructor**

**Part No. 4864-05085-001**

**Part No. 4864-05086-002**

**Course Description** Designing, Building and Managing IP Networks for H.323 Video Conferencing is a fast-paced technical course for those who want to implement and manage networks to support H.323 video systems and Voice over IP. The course provides a comprehensive examination of the technical requirements for implementing H.323 video on both corporate networks as well as the Internet. The course begins with a discussion of the design and architectures of corporate network (both LANs and WANs) and how corporate networks today integrate and use the Internet. The course includes a detailed analysis of both the H.323 protocol suite and Voice over IP protocols with an emphasis on how the protocol and systems can be integrated within current networks. We cover Quality of Service and network and system management and debugging in detail. The requirements and techniques for network security will be presented so that students can understand how secure networks that support video and voice are implemented. An integral part of the course will be the analysis of real world case studies.

## Audience

- Individuals responsible for designing, implementing, and/or managing H.323 Video-conferencing systems within corporate IP networks

## Prerequisites

- Video Conferencing over IP and the Internet (or a detailed course covering the IP protocol suite)
- Real world experience with Internet applications and H.323 Video Conferencing

## C O U R S E   C O N T E N T

- I. **Architecture of integrated corporate voice and data networks**
- II. **Network architectures of corporate networks to support H.323**
- III. **Integrating the Internet within corporate networks to support H.323**
- IV. **Internet and Intranet topology and architecture**
- V. **Technical analysis of TCP/IP and the H.323 protocol suite**
- VI. **Technical requirements for providing Quality of Service: delay, jitter, and bandwidth**
  - Technical alternatives to implementing Quality of Service
    - Integrated services
    - Differentiated services
    - Integrated approaches
  - Requirements for managing networks that provide Quality of Service
  - Technical requirements for providing network security

## VII. Network Security

- Technical alternatives to implementing network security: Firewalls and proxies, Gateways and bridges,
- Integrated approaches
- Requirements for managing network security

## VIII. Technical review of streaming video and its integration within corporate networks

## IX. Technical review of Voice over IP and its integration within corporate networks

## X. Issues with implementing new technology and services in a corporate network

## XI. Detailed technical analysis of the problems of building and managing large networks, which include H.320, H.323, video streaming and Voice over IP. (Case studies)

## XII. Review of new and changing technologies

- Multicast
- SIP
- IPv6

# Best Practices for QoS and Security for SIP-based Video

3 Days

Tuition at Polycom: \$2,050 per student

Part No. 4864-15087-001

**Course Description** This is a fast-paced three-day course that covers both the theory and real-world implementation of Quality of Service (QoS) and network security in network that support SIP based video.

The course begins with a focused, technical analysis of the SIP protocol suite and the IETF and ITU protocols that are used along with it. We will then describe in detail the underlying theory for providing Quality of Service (QoS) in IP-based networks including a discussion of network delay, network queuing, jitter and congestion management. The necessary theory and real-world requirements for network security and network address translation (NAT) will then be presented so that students can understand how secure networks that support video and voice can be implemented.

Using this knowledge as a foundation, we will describe the specific techniques that are used to implement QoS in corporate network, both LANs and WANs, and how these corporate networks integrate and use the Internet. We will discuss the design, implementation and management of QoS in both layer-2 switching and layer-3 routing using a combination of VLANs, 802.1P and Differentiated Services (DiffServ).

The course includes a detailed analysis of the techniques and building blocks used to implement and manage network security in both private and public networks. We describe the operation of firewalls, application layer gateways (ALGs), proxies, SIP servers, border controllers and multiple-port bridges. We compare the features and functionality of each and how they are used in different types of networks. The implementation and support of Network Address Translation (NAT) in each device is reviewed and compared.

The emphasis throughout the course is the implementation of the protocols and building blocks needed to provide security and QoS in real-world networks. We demonstrate the configuration and operation of different firewalls and show how QoS using DiffServ is implemented. An integral part of the course is the analysis and discussion of case studies.

## Intended Audience

- Network planners and analysts
- Network engineers
- Technical personnel responsible for supporting voice or video networks

## Prerequisites

This course assumes that you have a background in networks and protocols, a solid understanding of the TCP/IP protocol suite and experience implementing or supporting networks with SIP or H.323. Attending the Polycom course "Implementing IP Networks for H.323 Video Conferencing" or the course "SIP Protocols and Networks for Video and Voice" also provides comparable knowledge of the TCP/IP protocol suite.

## C O U R S E C O N T E N T

- Analysis of different architectures & topologies for integrated networks that support video, voice, data
- Detailed, focused analysis of TCP/IP and the SIP protocol suite
- Technical analysis of the RTP and RTCP protocols and how they are used for voice and video
- Detailed analysis of network queuing (FIFO, fair queuing, WFQ, etc.)
- Detailed analysis of packet loss, network delay and jitter
- The IETF standards process and the history of RSVP and DiffServ
- Detailed analysis of VLANs, the 802.1Q protocol, and how VLANs are used to support video and voice in corporate networks
- Detailed technical analysis of layer-2 switching and 802.1P
- Detailed analysis of IP Precedence and Differentiated Services (DiffServ)
- Discussion of congestion management and traffic shaping
- Review of traffic engineering and MPLS
- Testing requirements for QoS
- Options for supporting QoS within an Intranet versus Extranets (shared wide area network between business partners)
- Analysis of network security & firewall theory of operation
- Detailed description of the different devices used to provide network security, including:
  - Proxy servers
  - Firewalls (multiple implementation types)
  - Traversal Servers (TS)
  - Application Layer Gateways (ALG)
  - Multiple port video bridges (MCU)
- Network Address Translation (NAT) – theory of operation and detailed analysis
- Discussion of different security requirements for different networks:
  - The public Internet
  - Private corporate networks and VPNs
  - Access networks using DSL and cable modems
- Security requirements & support for in-bound video calls
- Firewall implementation planning for video
- Standards based features versus vendor proprietary features for network security and QoS
- Requirements for managing QoS and security
- Options for the placement of the SIP Server, border controller and MCU (bridge) components and the impact on network security and QoS

# Best Practices for QoS and Security for H.323-based Video

3 Days

Tuition at Polycom: \$2,050 per student

Part No. 4864-15087-002

**Course Description** This is a fast-paced three-day course that covers both the theory and real-world implementation of Quality of Service (QoS) and network security in a network that supports H.323 based video.

The course begins with a focused, technical analysis of the H.323 protocol suite and the IETF and ITU protocols that are used along with it. We will then describe in detail the underlying theory for providing Quality of Service (QoS) in IP-based networks including a discussion of network delay, network queuing, jitter and congestion management. The necessary theory and real-world requirements for network security and network address translation (NAT) will then be presented so that students can understand how secure networks that support video and voice can be implemented.

Using this knowledge as a foundation, we will describe the specific techniques that are used to implement QoS in corporate network, both LANs and WANs, and how these corporate networks integrate and use the Internet. We will discuss the design, implementation and management of QoS in both layer-2 switching and layer-3 routing using a combination of VLANs, 802.1P and Differentiated Services (DiffServ.)

The course includes a detailed analysis of the techniques and building blocks used to implement and manage network security in both private and public networks. We describe the operation of firewalls, application layer gateways (ALGs), proxies, border controllers and H.323 multiple-port bridges. We compare the features and functionality of each and how they are used in different types of networks. The implementation and support of Network Address Translation (NAT) in each device is reviewed and ITU standards (such as H.460) are presented.

The emphasis throughout the course is the implementation of the protocols and building blocks needed to provide security and QoS in real-world networks. We demonstrate the configuration and operation of different firewalls and show how QoS using DiffServ is implemented. An integral part of the course is the analysis and discussion of case studies.

## Intended Audience

- Network planners and analysts
- Network engineers
- Technical personnel responsible for supporting voice or video networks

## Prerequisites

This course assumes that you have a background in networks and protocols, a solid understanding of the TCP/IP protocol suite and experience implementing or supporting networks with H.323. Attending the Polycom course "Implementing IP Networks for H.323 Video Conferencing" also provides comparable knowledge of the TCP/IP protocol suite.

## C O U R S E C O N T E N T

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Analysis of different architectures and topologies for integrated networks that support video, voice and data</li> <li>• Detailed, focused analysis of TCP/IP and the H.323 protocol suite</li> <li>• Technical analysis of the RTP and RTCP protocols and how they are used for voice and video</li> <li>• Detailed analysis of network queuing (FIFO, fair queuing, WFQ, etc.)</li> <li>• Detailed analysis of packet loss, network delay and jitter</li> <li>• The IETF standards process and the history of RSVP and DiffServ</li> <li>• Detailed analysis of VLANs, the 802.1Q protocol, and how VLANs are used to support video and voice in corporate networks.</li> <li>• Detailed technical analysis of layer-2 switching and 802.1P</li> <li>• Detailed analysis of IP Precedence and Differentiated Services (DiffServ)</li> <li>• Discussion of congestion management and traffic shaping</li> <li>• Review of traffic engineering and MPLS</li> <li>• Testing requirements for QoS</li> <li>• Options for supporting QoS within an Intranet versus Extranets (shared wide area network between business partners.)</li> <li>• Analysis of network security and firewall theory of operation</li> </ul> | <ul style="list-style-type: none"> <li>• Detailed description of the different devices used to provide network security, including:                         <ul style="list-style-type: none"> <li>– Proxy servers</li> <li>– Firewalls (multiple implementation types)</li> <li>– Traversal Servers (TS)</li> <li>– Application Layer Gateways (ALG)</li> <li>– Multiple port video bridges (MCU)</li> </ul> </li> <li>• Network Address Translation (NAT) – theory of operation and detailed analysis</li> <li>• Discussion of different security requirements for different networks:                         <ul style="list-style-type: none"> <li>– The public Internet</li> <li>– Private corporate networks and VPNs</li> <li>– Access networks using DSL and cable modems</li> </ul> </li> <li>• Security requirements and support for in-bound video calls</li> <li>• Firewall implementation planning for video</li> <li>• ITU standards work (H.460) for NAT and firewall traversal</li> <li>• Standards based features versus vendor proprietary features for network security and QoS.</li> <li>• Requirements for managing QoS and security.</li> <li>• Options for the placement of the Gatekeeper, Gateway and MCU (bridge) components and the impact on network security and QoS</li> </ul> |
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# VBP Technical Training

2 Days

Tuition at Polycom: \$1,450 per student

Part No. 4864-07104-001

**Course Description** This is an instructor-led two-day course that covers the theory, configuration, implementation and support of the Polycom VBP firewall. The VBP is an advanced network firewall that seamlessly supports H.323 video in both private corporate networks and the Internet. This course features both lectures and hands-on exercises with the VBP.

The course begins with a focused, technical analysis of TCP/IP and the H.323 protocol suite followed by a discussion of both the theory and real-world requirements for network security and network address translation (NAT.) This knowledge serves as a foundation so that students understand how secure networks that support video and voice can be implemented with the VBP.

The technical features and functions of the VBP are presented in detail. This includes information on the VBP's embedded gatekeeper functionality as well as its ability to work with other video gatekeepers. The addressing features of the VBP are presented along with information on how to securely support both in-bound and out-bound video calls. Installation planning and system troubleshooting are described in detail. The configuration of the VBP for the support of VLANs and QoS is also presented. An integral part of the course is the analysis of network topologies so that students understand how the VBP can be implemented and used in their networks.

## Intended Audience

- Technical Support Engineers
- Systems and Network engineers
- Technical personnel responsible for supporting voice or video networks
- Network planners and analysts

## Prerequisites

This is a fast-paced course and it is assumed that students have a background in data networks and protocols, a solid understanding of the TCP/IP protocol suite and experience implementing or supporting networks with H.323. Attending the Polycom course "Implementing IP Networks for H.323 Video Conferencing" also provides comparable knowledge of these topics. An understanding of how video Gatekeepers (such as the Path Navigator) and firewalls work is also important.

## C O U R S E C O N T E N T

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Introduction to the VBP and its features and functions</li> <li>• VBP theory of operation</li> <li>• Review of the different devices used to provide network security</li> <li>• Network Address Translation (NAT) – theory of operation and detailed analysis</li> <li>• VBP hardware configurations</li> <li>• Installation and software configuration of the VBP</li> <li>• Implementation planning and security policies for the VBP</li> <li>• Configuration of the VBP data firewall features</li> <li>• Configuration of the VBP for out-bound video calls</li> <li>• Review of security requirements and support for in-bound video calls</li> </ul> | <ul style="list-style-type: none"> <li>• Configuration of the VBP for in-bound video calls</li> <li>• Configuration of gatekeeper options with the VBP</li> <li>• Discussion and analysis of different security requirements for different networks:             <ul style="list-style-type: none"> <li>– The public Internet</li> <li>– Private corporate networks and VPNs</li> <li>– Access networks using DSL and cable modems</li> </ul> </li> <li>• Implementing options for the VBP in networks with other firewalls</li> <li>• Trouble shooting techniques for the VBP</li> <li>• VBP software update procedures</li> </ul> |
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# VSX Technical Maintenance Training

2 Days

**Tuition at Polycom: \$1,450 per student**

**Tuition On-Site: \$11,075 for up to 8 students, includes Instructor travel & expenses**

**Part No. 4864-27007-001**

**Part No. 4864-27007-002**

**Course Description** This two-day instructor-led program is delivered through interactive lecture and hands-on exercises. The course delivers the knowledge and builds the skills that Support Technicians/Engineers and System Administrators need to successfully install, configure, operate, troubleshoot and maintain a V500, V700 VSX 3000, VSX 5000, VSX6000, VSX 7000 or VSX 8000.

## Audience

- Video-conference Support Technicians, Engineers, and System Administrators who are responsible for installing and supporting the V500, V700 VSX 3000, VSX 5000, VSX6000, VSX 7000 or VSX 8000 product line

## Prerequisites

- Familiarity with navigation in the MS Windows OS environment
- Video Over IP & Introduction to Video Conferencing (H.320) and Networks (if new to video conferencing)

## C O U R S E   C O N T E N T

### I. VSX Product Line Overview

- VSX Models
- Component Specifications
- Supported Network Options
- Supported Audio Compression Protocols and Features
- Supported Video Compression Protocols and Features
- Supported Peripherals and their Specifications

### II. Installation (labs)

- Installation of a V500 Step-by-Step
- Installation of a VSX 3000 Step-by-Step
- Installation of a VSX 7000 Step-by-Step
- Installation of a VSX 8000 Step-by-Step
- Installing Optional Audio, Video and Data Equipment

### III. Configuration (labs)

- Out-of-Box Set-up Wizard
- System Configuration: Local and Remote
- Network Configuration Menus
- Designing the User Experience Menus
- Admin Menus
- Security and Limiting User Access

### IV. Operation (labs)

- Remote Control Overview
- Placing Calls
- Answering Calls
- Ending Calls
- Pacing Audio Only Calls
- Volume Control
- Mute Operation
- Camera Control and Presets
- PIP Operation
- Content Sharing: Video and Graphics
- Peripherals in use with the Students System
- Multipoint Calling
- Directory
- Customizing the workspace

### V. Troubleshooting and Maintenance

- Remote Management
- Diagnostics Tools
- Troubleshooting (labs)

# Global Management System™ Software Training

1 Day

Tuition at Polycom: \$725 per student

Part No. 4864-06970-001

**Course Description** The GMS Technical Training course is a hands-on session covering how to install and configure the product, and manage and maintain endpoints from a System Administrator level. The curriculum is delivered through a combination of lecture and student lab exercises.

**Audience**

- Video System Users and Administrators

**Prerequisites**

- Experience with video-conference networks
- Knowledge of Networks and Windows
- ViewStation Technical Training

**Through Hands-on Exercises You Will Learn How To...**

- Perform all the functions and features of the GMS
- Add, modify and delete endpoints; remotely monitor and manage endpoints; provision endpoints
- Create multiple address books
- Create user groups and detailed CDRs

C O U R S E C O N T E N T

**Introduction**

- What is Global Management System
- Product Overview
- System Management
- Global Directory
- Software Update
- Account Management
- Reports
- Provisioning
- System Configuration

**II. Technical Overview**

- Technical Specifications
  - Hardware Requirements
  - Software Requirements
- License Pack
- Extended Warranty
- Technologies Used
- Components

**III. Installation and Configuration**

- Installation
- License information
- Logging On
- Configuration
  - ILS and LDAP
  - SNMP Configuration
  - Server Preferences
  - Remote Alert Notification

**IV. Monitoring**

- System Management Overview
- Modifying the System List
  - Searching for Systems
  - Adding Systems
  - Delete a System
  - Edit System

- Other System Management Functions
  - Sending a Message
  - Acknowledge Help
  - Manage a System
- System Information
- Global Directory
  - Global Directory Console
  - Modifying the Address Book
  - New Address book
  - Modifying Addresses in the Address Book
  - To create a dynamic entry:
  - Importing and Exporting the Global Directory
- Global Directory Configurations
  - General Settings
  - Adding LDAP and ILS Support
- Reporting
  - Call Detail Record
  - Call Detail Record for Billing
  - Call Detail Record for Troubleshooting
  - Generating a Call Detail Record
  - Exporting Call Detail Record

**V. Maintenance**

- Provisioning
- Account Management
- Software Update
- Troubleshooting
- Frequently Asked Questions

**VI. Troubleshooting Licensing**

- Warranty checking process
- Supported Installation Paths
- Provisioning Logs
- System Management

# HDX Technical Maintenance Training

2 Days

**Tuition at Polycom: \$1,450 per student**

**Tuition On-Site: \$11,075 for up to eight students including travel & expenses of Instructor**

**Part No. 4864-27005-001**

**Part No. 4864-27005-002**

**Course Description** This technical course is delivered through interactive lecture and hands-on exercises and builds the knowledge and skills that Support Technicians/Engineers and System Administrators need to successfully install, configure, operate, troubleshoot and maintain any system within the HDX product line.

## Audience

Video-conference Support Technicians/Engineers and System Administrators who are responsible for installing and supporting the HDX 4000, HDX 8000, and HDX 9000 series product line.

## Prerequisites

- Familiarity with H.320 and H.323 Video Conferencing

## C O U R S E C O N T E N T

### I. The Magic of Video Conferencing

- The role of the codec
- Encoding and Decoding
- Audio Compression Protocols and Features
- Video Compression Protocols and Features
- Other ITU-T supported protocols

### II. High Definition Primer

- High Definition defined
- Video Resolutions
- Interlaced vs. Progressive
- Aspect Ratios
- HD video-conferencing Requirements
- Ultimate HD

### III. Polycom HDX Product Line

- HDX Product Line Comparison
- HDX 9001 technical specifications
- HDX 9002 technical specifications
- HDX 9004 technical specifications
- HDX Options and Bundles

### IV. H.320, H.323 and SIP Networking

- H.320 Networks
- H.320 Interfaces and Supported Bandwidths
- H.323 Networks
- H.323 and SIP Supported Bandwidths

### V. HDX Video Inputs and Outputs

- Video Input and Output Devices and Cables
- Video Input and Output Connections and Configurations
- Video Subsystem and Matrix

### VI. HDX Standard and Optional Hardware and Features

- HDX Remote Control
- People+ Content/IP
- People On Content
- Multipoint Plus Conferencing
- Transcoding
- Encryption

### VII. Installation

- Cables and Connections
- Out of Box Set Up Wizard
- Component Tweaking
- Administrative Menus
- User Setting Menus

### VII. Operation

- Place, Receive and End Point-to-Point and Multipoint Calls
- Near and Far-End Camera Controls and Presets
- Audio Controls
- Video Switching

### VII. Maintenance

- Diagnostic Menus
- System Information Menus
- Remote Management
- Software Updates
- Troubleshooting Logs
- Factory Restore and USB Recovery

# HDX Differences from VSX Technical Training

1 Day

**Tuition at Polycom: \$725 per student**

**Part No. 4864-27004-001**

Upon completion of this hands-on one-day course, you will understand the differences in operations, installation, configuration and troubleshooting the Polycom HDX systems compared to the VSX product family. Through a combination of lecture and hands-on laboratory exercises, you will be provided with technical product information as well as key strategies that will help you to better operate and to manage your HDX system.

## Prerequisites - Mandatory

- Prior attendance of the 2-Day VSX Technical Maintenance Course

# SoundPoint IP Technical Maintenance

2 Days

**Tuition at Polycom: \$1,450 per student**

**Tuition On-Site: \$11,075 for up to eight students includes travel & expenses of instructor**

**Part No.4864-37003-001**

**Part No.4864-37003-002**

**Course Description** Designing, Building and Managing IP Networks for H.323 Video Conferencing is a fast-paced technical course for those who want to implement and manage networks to support H.323 video systems and Voice over IP. The course provides a comprehensive examination of the technical requirements for implementing H.323 video on both corporate networks as well as the Internet. The course begins with a discussion of the design and architectures of corporate network (both LANs and WANs) and how corporate networks integrate and use the Internet. The course includes a detailed analysis of both the H.323 protocol suite and Voice over IP protocols with an emphasis on how the protocol and systems can be integrated within current networks. Quality of Service and network and system management and debugging is covered in detail. The requirements and techniques for network security will be presented so that students can understand how secure networks that support video and voice are implemented. An integral part of the course will be the analysis of real world case studies.

**Audience**

- Individuals responsible for designing, implementing, and/or managing H.323 video conferencing systems within corporate IP networks

**Prerequisites**

- Experience with Video conferencing over IP (or a detailed course covering the IP protocol suite)
- Real world experience with Internet applications and H.323 video conferencing

**C O U R S E C O N T E N T**

- I. Architecture of integrated corporate voice and data networks**
- II. Network architectures of corporate networks to support H.323**
- III. Integrating the Internet within corporate networks to support H.323**
- IV. Internet and Intranet topology and architecture**
- V. Technical analysis of TCP/IP and the H.323 protocol suite**
- VI. Technical requirements for providing Quality of Service: delay, jitter, and bandwidth**
  - Technical alternatives to implementing Quality of Service
    - Integrated services
    - Differentiated services
    - Integrated approaches
  - Requirements for managing networks that provide Quality of Service
  - Technical requirements for providing network security

- VII. Network Security**
  - Technical alternatives to implementing network security: Firewalls and proxies, Gateways and bridges
  - Integrated approaches
  - Requirements for managing network security
- VIII. Technical review of streaming video and its integration within corporate networks**
- IX. Technical review of Voice over IP and its integration within corporate networks**
- X. Issues with implementing new technology and services in a corporate network**
- XI. Detailed technical analysis of the problems of building and managing large networks, which include H.320, H.323, video streaming and Voice over IP (Case studies)**
- XII. Review of new and changing technologies**
  - Multicast
  - SIP
  - IPv6

# SoundStructure Technical Training

3 Days

**Tuition at Polycom: \$2,050 per student**

**Tuition On-Site: \$14,425 for up to eight students includes travel & expenses of instructor**

**Part No.4864-37003-001**

**Part No.4864-37003-002**

**Course Description** The SoundStructure Technical Training is a three-day, instructor-led, hands-on course. It provides the participant with an understanding of installation, implementation and troubleshooting of the SoundStructure products. This program also discusses in detail, the basics of audio principles, room acoustic considerations, audio interface devices, sound reinforcement, and system design for audio applications. Real-life product implementations and design examples are explored. During the lab exercises and demonstrations, students will install, configure, and troubleshoot SoundStructure systems.

## Audience

- Video-conferencing sales engineers
- Technical support engineers

## Prerequisites

- One or more years working with the audio conferencing technologies
- Some experience with audio technologies, specifically in a conferencing environment
- Experience installing video-conferencing technologies
- Understanding of local area networks (LAN)

## C O U R S E C O N T E N T

### I. Audio Basics

- Define basic SoundStructure functionality
- Define key features of the SoundStructure
- Define basic audio terminology
- Define audio reproduction issues
- Define devices used for signal processing

### II. Installation and Configuration

- Install SoundStructure system
- Communicate with SoundStructure
- Configure SoundStructure with Studio

### III. SoundStructure Studio

- Define Studio configuration pages
- Saving projects
- Generating reports

### IV. Microphones and Speakers

- Define Microphones and Loudspeakers Fundamentals
- Define Microphone and Loudspeakers Use and Consideration

### V. Sound Reinforcement

- Define the purpose of sound reinforcement
- Define the basics of sound reinforcement
- Define the devices used in sound reinforcement

### VI. Advanced Setup

- Define advanced features
- Determine how to test the system
- Determine basics troubleshooting techniques

### VII. Audio Design

- Implementing Acoustic Echo Cancellers
- Implementing Equalization and Noise Cancellation
- Detail Room Concerns and Design Goals

# Vortex Technical Training

3 Days

**Tuition at Polycom: \$2,050 per student**

**Tuition On-Site \$14,425 for up to 8 students, includes instructor travel & expenses**

**Part No. 4864-37001-001**

**Part No. 4864-37001-002**

**Course Description** The Vortex Technical Training is a three-day, instructor-led, hands-on course. It provides the participant with an understanding of installation, implementation and troubleshooting of the Vortex. This program also discusses in detail, the basics of audio principles, room acoustic considerations, audio interface devices, sound reinforcement, and system design for audio applications. Also discussed are the Real-life product implementations and design examples are explored. During the lab exercises and demonstrations, students will install, configure, and troubleshoot Vortex systems.

## Audience

- Video-conferencing sales engineers
- Technical support engineers

## Prerequisites

- One or more years working with the audio conferencing technologies
- Some experience with audio technologies, specifically in a conferencing environment
- Experience installing video-conferencing technologies
- Understanding of local area networks (LAN)

## C O U R S E C O N T E N T

### I. Audio Basics

- Introduction to the Vortex
- Terminology
- Audio Issues
- Signal Processing Devices

### II. Acoustic Room Considerations

- Construction
- Environment
- Acoustical Design
- Audio Elements

### III. Microphones & Loudspeakers

### IV. Sound reinforcement

### V. Audio Design

- Mics and Loudspeakers
- Reducing Multipath
- Automixers
- Acoustic Echo Cancellers
- Room Concerns

### VI. Equipment Setup

- Overview
- Installation
- Communicating with the Vortex
- InstantDesigner
- Conference Composer

### VII. Advanced Setup

- Testing the System
- Troubleshooting
- Advanced Features
- Bussing
- Advanced Applications

# MGC System Administrator Training

2 Days

**Tuition at Polycom: \$1,450 per student**

**Tuition On-Site \$11,075 for up to 8 students, includes instructor travel & expenses**

**Part No.CS-ACCORD-AD01-IN**

**Part No.CS-ACCORD-AD02-OS**

**Course Description** MGC System Administrator training is a hands-on program covering how to configure and control the multipoint video conferences running on the family of MCUs – the 25, 50 and 100 Models – from a Users and System Administrators level. The curriculum is delivered through a combination of lecture and hands-on laboratory exercises. A Network that supports Dedicated and Switched sites is available and ready for students to connect and configure the MGC for video conferencing to allow the participants to experience various types of multipoint calls.

## Through Hands-on Exercises You Will Learn How To...

- Setup Connectivity MGC Manager to MGC
- Control of Site and Conference Database
- Add / Modify /Assign Network Services
- Read and Examine Faults and CDR's
- Use MGC Manager to Start, Schedule, and Control Conferences
- Understand all conference features

## Audience

- MGC-25/50/100 System operators and System administration Staff

Note: Students do not need to attend both MGC System Administration and MGC Technical Maintenance programs.

## Prerequisites

- Implementing IP Networks for H.323 Video Conferencing (or equivalent knowledge)
- Introduction to Video Conferencing (H.320) and Networks (or equivalent knowledge)
- Prior experience with video-conference networks
- Prior participation in a multi-point video-conference call
- Basic understanding of MS Windows & PC's electronic equipment
- Video / Audio Capabilities of your Codecs
- Switched & Dedicated Network Operations

## C O U R S E C O N T E N T

### I. Multi-point Video Conferencing

- Concept of video conferencing over a Multi-point Bridge and features Of Audio, Video and Data for the MGC
- MGC and Multi-point Integration
- H.320/323/324 (Audio vs. Video Transco)
- DSP Processing Resources
- Audio / Video / Data Processors
- Review all Network Services

### II. MGC Manager Setup and Navigation

- Parameters and Window layout
- Adding and /or Modifying MCU/Users/Date-Time/System configurations

### III. Site Database and All Parameters

- Creating Site database
- Review Advanced Properties & Identification TAB
- Understand Site Compatible Connection Types (H.320/323/324)

### IV. Conferences Database

- Conference Parameters and "Auto"
- Video Switching (VAS)
- Transcoding and Continuous Presence
- Virtual Conference Suite all features
- Adding, Deleting Sites to a Conference
- Managing the Templates

### V. Conference Control and other Features

- Meet me per part/channel/conf-MCU
- Video Force and the Lecturer / Auto Scan
- Auto Detect vs. Auto Add vs. Auto Term
- Single Number Dialing

### VI. Greet and Guide (Hands – on)

- Build Message Services Audio/Video Conversion
- Setup G&G Conference Attend Mode
- Control Attend / Put on Hold / Enter Conf.

### VII. Maintenance

- Reading the Faults Log and CDR's
- Using the Monitor Status Info for trouble-shooting connectivity problems.
- Review all Connection Info 1&2

### VIII. Troubleshooting

- Interpreting the Icons
- Site Connection Statuses and Site Monitor
- H.221 Statuses
- Verifying if sites in a conference are up
- How to interpret the Sync Loss Status

# MGC Technical Maintenance

5 Days

**Tuition at Polycom: \$3,350 per student**

**Tuition On-Site \$18,025 for up to 8 students, includes instructor travel & expenses**

**Part No. CS-ACCORD-TS01-IN**

**Part No. CS-ACCORD-TS01-OS**

**Course Description** The MGC Technical Maintenance course is a hands-on program covering system installation, configuration, operation, and maintenance of the MGC and the connected MGC Manager Workstation. The curriculum is delivered in a combination of lecture and laboratory exercises. (listed in item VI)

**Through Hands-on Exercises You Will Learn How To...**

- Install / Configure MGC 100/50/25 optionally using The MGC Plus Chassis hardware and software
- Describe functions of the Audio, Video, Data, Mux Standard and Plus Processors and Network Interfaces - T1/E1-MPI (V.35/RS449)- H.320 & IP H.323 modules
- Perform Network Labs to integrate MGC with both IP and ISDN Networking (optionally including V.35 & RS449)
- Install / Configure / Navigate all MGC Managers Options and Functions
- Schedule / Monitor / Control a Video Conference
- Describe MGC architecture and major features, Build Real Customer Configurations, including MGC Hardware Diagnostics
- Troubleshoot Site connectivity problems; perform backups and restore
- Capture and Read fault logs and traces for conference diagnostics and obtain site status information
- Cascade MCU labs including Content Cascading between multiple MGC Systems

**Audience**

- Technical support engineers; help desk technicians, field service technicians, System Administrators & Operators

**Prerequisites**

- Knowledge of Networks, H.320 standards and H.323 standards, and Windows operating environment

**C O U R S E C O N T E N T**

**I. Introduction and Overview Multipoint**

- Elements of a video conference
- Elements of H.320 & H.323 Standards
- Functions and features of the MGC Releases

**II. Introduction to Polycom MGC Manager**

- Model Descriptions & Specifications
- Network Interfaces and Processors Revs.
- Overview of Workstation

**III. Installation and Configuration**

- Identify Processing Module Units and properties
- Identify Network Interface Modules and properties
- Install MGC Manager Software
- File Maintenance and File Directory Structure

**IV. Intro. To Work Station-MGC Manager**

- PC Manager software, loading, requirements
- Defining Operators and System configuration file
- Starting the Application and connection
- Windows Navigation of the MGC Manager

**V. Set-up Management Interfaces**

- Configure MGC for LAN or Dial/Direct Com
- Set-up LAN for MGC Manager
- Set-up COM Port for Serial MGC Manager

**VI. Configurations of MCS, Network Interfaces, Troubleshooting Lab Exercises over 4 days**

- Lab 1 – Setup LAN Management Port
- Lab 2 – Configure ISDN Primary Rate and T1/E1
- Lab 3 – IP / H.323 / SIP Configurations
- Lab 4 – Configure MCU Clocking
- Lab 5 - Configure V35/RS449 MPI Interface
- Lab 6 - Cascade MCU's and Internal Cascade

**VII. Create Network and Sites for Labs**

- Create, Edit and Configure Network Resource
- Create and Define Site Records Templates
- Setup Dial-In vs. Dial-Out for all Labs

**VIII. Define and Conduct Conference for Labs**

- Create and Manage Conference Templates
- Define video-conference Properties
- Audio/Video/Content/Data – T.120 Conferences

- Control / Verify Sites w/ MGC Manager
- Scheduling and Conference Reservations
- Reoccurrence Reservations
- Auto Add, Meet Me Sites; Meeting Rooms, Meet Me Services

**IX. Maintenance**

- Read CDR log, resource report, monitor status window
- Collect Trace files on a video conference
- Faults Log and Major Vs. Minor Alarms
- Understanding Alarms and Faults

**X. External & Internal Cascading**

- What is Cascading?
- Launch Cascading
- Simple and H243 Cascading
- Manage Cascading Content

**XI. Backup and Restore Operations**

**XII. IVR Operations and Entry Queue Operations**

- Overview of Interactive Voice Response
- IVR and EQ Parameters
- Exercise most DTMF Common Commands

**XIII. IP Configuration**

- H.323 dial in and dial out configuration
- MCU IP addressing and DHCP

**XIV. LEDs and Card and Power supply status**

- Main Control Unit
- Card Indicators
- Power Supply Indicators

**XV. MCU Troubleshooting**

- Reset MCU Vs. Reset Modules
- Disabling and Enabling Units
- IP Terminal Traces
- Fault Log details; Logger Diagnostic Files
- Alarms
- Troubleshooting Site connectivity
- Loop Backs and Diagnosing Errors
- Falcon Diagnostic
- SNMP Configuration and MGC - MIBs

# PathNavigator™ Technical Training

4 Days

**Tuition at Polycom: \$2,675 per student**

**Tuition on-site: \$16,475 for up to eight students including travel & expenses of instructor**

**Part No. CS-PNAV-TS01-IN**

**Part No. CS-PNAV-TS01-OS**

**Course Description** This course is a hands-on program covering how to configure and control the Call Processing Server from a Users and System Administrators level. The curriculum is delivered through a combination of lecture and hands-on laboratory exercises. A network that supports dedicated and switched sites is available and ready for students to connect and configure the CPS for video conferencing, allowing class participants to experience various types of video-conference calls and product features. This class is not offered over video conference, as the delivery of material in such a format is not recommended for optimal learning.

## Through Lecture and Hands-on Exercises You Will Learn How To...

- Describe functions of the Call Processing Server and Gatekeeper
- Create / Monitor /Control a Video conference
- Describe MCU and Gateway Architecture and major features
- Build Real Customer Configuration
- Create Network Topology for WAN, ISDN
- Create User Administration Groups

## Audience

- Video Conference Support Engineers, System Administrators and Engineers, MCU System Operators

## Prerequisite

- Prior attendance in MGC Training
- Familiarity with PC's electronic equipment
- Video / Audio Capabilities of your Codecs
- Knowledge of Switched and Dedicated Networks Operations
- H.320 & H.323 Standards

## C O U R S E   C O N T E N T

### I. Introduction and Overview of PathNavigator

- Functions and Features of Call Processing Software
- Functions and Features of Gatekeeper
- Model Descriptions and Specifications
- Single and Multiple CPS with single and multiple campuses
- Review of all Network Services

### II. PathNavigator Software Setup and Navigation

- Parameters and Window layout
- Configuration, Registration Policy, Call Policy
- System Services, Gateway & MCU Services, Hunt Group Services
- Network Topology: Tabs for WAN and ISDN
- Neighborhood Gatekeepers
- User Administration Groups

### III. Adding Sites and Controlling sites and calls

- Adding Endpoints
- Review all Properties and Endpoint Tabs
- Monitor network and WAN usage by endpoints
- Monitor Active Calls

### IV. Reporting

- Summary of reports and call detail records
- Reports on network usage
- Reports on WAN usage

### V. Troubleshooting

- Diagnostics /Errors
- Diagnostics / Rogues
- Diagnostics / All Events
- All Events / Calls
- All Events / Neighbors
- All Events / Registrations

# MGC VoicePlus/VideoPlus System Administrator Training

1 Day

Tuition at Polycom: \$725 per student

Part No. 4864-07009-001

**Course Description** The Polycom Voice / Video Plus course is a Hands-on program covering Polycom MGC-100/50/25 Operation, Integration, and Configuration, of all Voice / VideoPlus IVR Features controlled by the MGC Manager Software. The curriculum is delivered in a combination of Lecture and Hands-on Laboratory exercises.

## Through Hands-on Exercises You Will Learn How To...

- Verify that Voice/Video Plus is Active Installed
- Review the Audio and Video Plus Processor Resources and the Network Resources
- Verify Voice/VideoPlus Activation of Interactive Voice Response Services
- Review IVR Settings
- Introduce the Audio Look and Feel Manager
- Describe Audio Voice Messages and Video Clips
- Uploading IVR Message Services
- Review the Video Clip / Voice Message Process
- Customize Entry queue and IVR queue
- Create live conferences with all IVR variations

## Audience

- Voice/Video Plus System Administrators, Operators or End-Users

## Prerequisites - Mandatory

- Prior attendance of MGC100/50/25 2-Day System Administration or 5-Day Tech Maintenance training
- Familiarity with Telephony and Circuit Switched
- Knowledge of Windows

## C O U R S E C O N T E N T

### I. Introduction Voice / Video Plus

- Voice / VideoPlus Features
- Voice / VideoPlus Operations
- VR and Entry Queue Operations

### II. Introduction to the Polycom MGC Manager

- Voice/ Video Plus functions
- Audio Look and Feel Manager Window
- Preferences
- Options

### III. Review IVR

- IVR Entry Parameters
- Entry Queue Parameters
- Language settings

### IV. Intro to Manager for Voice / Video Plus

- PC Manager software, loading, requirements
- Verifying IVR Enabled
- Review all VoicePlus Status Icons
- Windows Navigation of Voice Plus

### V. Review the Browser categories

- Entry Queue
- Interactive Voice Response Queues

### VI. Configurations of Interactive Voice Response Services

- Global Settings
- Welcome Message Settings
- Conference Chairperson Settings
- Conference Password Settings
- General Settings
- Operator Assistance Settings
- Roll Call Settings
- DTMF Code Settings

### VII. Configurations of Entry Queue Services

- Default Entry Queue
- Building Additional Entry Queue
- Navigating the Entry Queue

### VIII. Recording Audio and Video Review

- Review the Recording Requirements
- Review Video Clip Requirements
- Review the Audio Convert Utility
- Review the Video Convert Utility
- Review the Uploading / Install on MGC

### IX. Building and Monitoring Audio Conferences

- Without the IVR
- With IVR
- With Entry Queue
- Without Entry Queue

### X. IVR Features

- Setup and Using Roll Call
- Setup and Using Voting Sessions
- Printing the DTMF Code list

### XI. Chair Person Controls

### XII. Operator Conference

- Operator Assistance
- Operator Controls
- Operator Audio Prompts

### XIII. Audio Prompting

- Understanding all Audio Prompts
- Conference Passwords

### XIV. Meeting Room

- Theory of Ops
- Auto Add and Audio Conference Activation

### XV. Meet me per and Entry Queue

- Meet me per MCU Single number dial-in
- Meet me per Conference

# MGC VoicePlus/VideoPlus Technical Maintenance Training

2 Days

**Tuition at Polycom: \$1,450 per student**

**Tuition On-Site: \$11,075 for up to eight students including travel & expenses of instructor**

**Part No. 4864-07003-001**

**Part No. 4864-07004-002**

**Course Description** The MGC VoicePlus & VideoPlus course is a Hands-on program covering VoicePlus Installation, Integration, and Configuration, of all VoicePlus Operations on the Polycom MGC platform controlled by the MGC Manager software. The curriculum is delivered in a combination of Lecture and Hands-on Laboratory exercises.

## Through Hands-on Exercises You Will Learn How To...

- Install / Configure VoicePlus Software
- Describe functions of the Audio Plus Processor and the Primary Rate NET-2/4/8 modules
- Verify Voice Plus Activation of Interactive Voice Response Services
- Install / Configure -MGC Manager for IVR
- Introduce the Audio Look & Feel Manager; Describe Audio Module Voice Messages
- Uploading IVR Message Services
- Capture Voice Messages and Convert Formats
- Customize Entry and IVR queues; Create live conferences with all IVR variations

## Audience

- VoicePlus/VideoPlus Support Engineers, System Administrators, or End-Users

## Prerequisites - *Mandatory*

- Prior attendance in MGC Technical Maintenance or MGC System Administration Training
- Familiarity with Telephony, Knowledge of Windows

## C O U R S E   C O N T E N T

### I. Introduction and Overview Voice Plus

- Elements of a Voice Plus
- Elements of Audio Terminals / Q.23
- Functions and features of Voice Plus

### II. Introduction to the Polycom MGC Manager

- Voice Plus functions
- Audio Look and Feel Manager Window
- Preferences
- Options

### III. Installation and Configuration

- Identify Processing Modules for Voice Plus
- Identify Interface Modules for Voice Plus
- Install VoicePlus in system configuration

### IV. Introduction to Manager for Voice Plus

- PC Manager software, loading, requirements
- Verifying IVR Enabled
- Review all VoicePlus Status Icons
- Windows Navigation of Voice Plus

### V. Review the Browser categories of Voice Plus

- Entry Queue
- Interactive Voice Response Queue

### VI. Configurations of Interactive Voice Response Services

- Global Settings
- Welcome Message Settings
- Conference Chairperson Settings
- Conference Password Settings
- General Settings
- Operator Assistance Settings
- Roll Call Settings
- DTMF Code Settings

### VII. Entry Queue

- Default Entry Queue
- Building Additional Entry Queue
- Navigating the Entry Queue

### VIII. Recording / Converting Audio Messages

- Using the Recorder
- Creating Compatible Audio Format for MGC
- Converting Audio to ACA format
- Control / Verify ACA files
- Uploading to the Audio Processor

### IX. Building and Monitoring Audio Conferences

- Without the IVR
- With IVR
- With Entry Queue
- Without Entry Queue

### X. IVR Features

- Setup and Using Roll Call
- Setup and Using Voting Sessions
- Printing the DTMF Code list

### XI. Chair Person Controls

### XII. Operator Conference

- Operator Assistance
- Operator Controls
- Operator Audio Prompts

### XIII. Audio Prompting

- Understanding all Audio Prompts
- Conference Passwords

### XIV. Meeting Room

- Theory of Ops
- Auto Add and Audio Conference Activation

### XV. Meet me per & Entry Queue

- Meet me per MCU Single number dial-in
- Meet me per Conference

# MGC WebCommander System Administration Training

1 Day

Tuition at Polycom: \$725 per student

Part No. 4864-07007-003

**Course Description** The MGC WebCommander System Administration training course is a hands-on program covering system operations, configurations, and support of the MGC Web Server. The curriculum is delivered in a combination of lecture and hands-on classroom exercises.

## Through Hands-on Exercises You Will Learn How To...

- Understand the concept of the Web Server and the WebCommander
- Use the Web Browser application to connect to the WebCommander site
- Start, monitor, and perform operations during on-going conferences
- Schedule future and recurrent video conferences
- Define Conference and Participant templates to run conferences
- View the list of Meeting Rooms and Gateway calls
- Configure and Use the MGC Web Server
- Use the Web Configuration tool to change the WebCommander appearance

## Audience

- Video-conferencing Support Engineers
- System Administrators & Engineers
- System Operators or End-Users

## Prerequisite

- MGC 100/50 System Administrator or technical training
- Familiarity with electronic equipment
- Knowledge of Internet, Browsers and Windows

## C O U R S E C O N T E N T

### I. Introduction / Overview of WebCommander

- WebCommander main features
- System Configuration Overview
- WebCommander Entities and functions

### II. Web Commander Basics

- Login to WebCommander Web Site
- Start On-going Conference from a Template
- Monitor Conference Status
- Monitor Participant Status
- Lab Exercises

### III. Operations Performed During On-Going Conference

- Perform Dial-out Connections
- Add, Disconnect, and Reconnect Participants
- View Participant Properties
- Control Audio to Participants/Sites
- Delete a Participant from the Conference
- Control Video - Layouts, Forcing
- Change Conference Duration
- Access Meeting Director from Main Menu

### IV. Scheduling a Conference

- Scheduling Conferences to Start in the Future
- Schedule a Recurrent Reservation
- View the Reservations in the Calendar
- View the Reservation Properties

### V. Defining Conference Templates

- Define new Conference Template for specific modes
- Assign and Delete Participants from Template
- Delete Conference Template from Database
- Define and View list of Meeting Rooms
- Define Conference Templates in Partial View Mode

### VI. Define Participant Templates

- List Participant Templates in Database
- Define and Delete Participant Templates
- Modify Properties of Participant Templates
- Define a new Participant during the Conference Template Definition

# MGC WebCommander Technical Maintenance Training

2 Days

**Tuition at Polycom: \$1,450 per student**

**Tuition On-Site: \$11,075, up to 8 students includes travel & expenses of instructor**

**Part No. 4864-07007-001**

**Part No. 4864-07008-002**

**Course Description** The MGC WebCommander Technical Training course is a two-day instructor-led program covering system operations, configuration, and support of the Polycom MGC Web Server. The curriculum is delivered in a combination of lecture and hands-on classroom exercises.

## Through Hands-on Exercises You Will Learn How To...

- Install the MGC Web Server and the MGC Web Server Manager and Integrate with MGC MCUs
- Understand the concept of the Web Server and the WebCommander
- Use the Web Terminal Browser application to connect to the WebCommander site
- Start, monitor, and perform operations during on-going conferences from the Web Terminal
- Schedule future and recurrent video conferences
- Define Conference and Participant templates to run conferences
- View the list of Meeting Rooms
- Configure and Use the MGC Web Server
- Use the Web Configuration tool to change the WebCommander appearance

## Audience

- Video-conferencing Support Engineers
- System Administrators & Engineers
- System Operators or End-Users

## Prerequisite

- MGC 100/50 System Administrator or Technical Maintenance training (mandatory)
- Familiarity with electronic equipment
- Knowledge of Internet, Browsers and Windows

## C O U R S E C O N T E N T

### I. Introduction / Overview of WebCommander

- WebCommander main features
- System Configuration Overview
- WebCommander Entities and functions

### II. Web Commander Basics

- Web Commander Languages
- Login to WebCommander Web Site
- Start On-going Conference from a Template
- Monitor Conference Status
- Monitor Participant Status
- Lab Exercises

### III. System Installation

- Install the IIS and SQL (optional)
- Install the MGC Web Server
- Configure the Access and SQL databases
- Configure the MGC Web Server
- Setup the Centralized Shared Database
- MGC Manager Integration

### IV. MGC Server Manager and Database

- Connect to the MGC Web Server
- Define MCUs
- Connect or Disconnect to/from MCUs
- Modify the Communication Parameters
- Define Groups
- Define Permissions
- Define Users
- Set Defaults for Reservation and Participation Templates
- Refresh the Database
- Converting the Database

### V. MGC Web Configuration Tool

- Select the Languages that will be Available in the WebCommander
- Modify Web Site by Changing Site Appearance

### VI. Scheduling a Conference

- Scheduling Conferences to Start in the Future
- Schedule a Recurrent Reservation
- View the Reservations in the Calendar
- View the Reservation Properties

### VII. Defining Conference Templates

- Define new Conference Template for all modes
- Assign and Delete Participants from Template
- Delete Conference Template from Database
- Define and View list of Meeting Rooms
- Define Conference Templates in Partial View Mode

### VIII. Define Participant Templates

- List Participant Templates in Database
- Define and Delete Participant Templates
- Modify Properties of Participant Templates
- Define a new Participant during the Conference Template Definition

### IX. Monitor and Control Operations Performed During

- On-Going Conference
- Meeting Director Access Methods
- Perform Dial-out Connections
- Add, Disconnect, and Reconnect Participants
- View Participant Properties
- Control Audio to Participants/Sites
- Delete a Participant from the Conference
- Control Video - Layouts, Forcing
- Change Conference Duration

# MGC 10-Day Advanced Technical Training

10 Days

Tuition at Polycom: \$6,500 per student

Part No. 4864-07011-001

**Course Description** MGC Advanced 10 -Day Technical Maintenance and Operations training is an instructor-led program which focuses on the MGC and the integration of all Unified Conferencing Suite Features, including: Voice/VideoPlus, WebCommander, Gatekeeper, and Gateway with Centralized Access including SQL database and IIS configurations. Students attending this course will learn how to install, configure, operate, maintain, and troubleshoot the MGC. This course is delivered through interactive lecture and hands-on laboratory exercises.

## Through Hands-on Exercises You Will Learn How To...

- Install and operate MGC MCUs and Manager, including Voice/VideoPlus
- Install and operate WebCommander and Access Database, SQL server and Accord SQL database
- Modify the Internet Information Services (IIS) and Server remote database login requirements
- Manage the servers and fault files
- Install and integrate the Gatekeeper database; configure gatekeeper conferences
- Install WebCommander and Admin tables
- Define conference and participant templates to run all variations of conferences
- Build Meeting rooms, entry queues and IVRs
- Customize and convert audio and video clips
- Create a centralized database and configure details of the administrator tables

## Audience

- Video-conferencing Support Engineers; Technical Support, Field Engineering, Sales Engineers

## Prerequisites

- H320/323 Video Conferencing and Multipoint
- Knowledge of ISDN and Internet, Browsers and Windows operations

## C O U R S E C O N T E N T

### I. Introduction / Overview of MGC and Web Server Configurations

- MGC, GW, GK, VoiceVideoPlus Operations
- System Configuration Overview
- MGC Conferencing Entities and functions

### II. MGC Hardware

- Functional Module Units
- Internal Hardware and BUS Ops Details
- Understanding Resources for H323 Vs. H320

### III. Software for MGC Manager and MCU

- Install the Manager and review all MGC Browser Details and parameters
- Install and upgrade the MGC Software
- Upgrade the Dongle & Sys Config
- Perform all Manager Admin Functions

### IV. MGC Network Services

- LAB to Configure ISDN
- LAB to Configure T1/E1 full / fractional
- LAB to Configure Public and Private IP
- LAB to Configure V35/RS449/RS530
- Backup and Restore
- Fault Log and Resources Report

### V. MGC Database of Participants

- Parameter Details and all Settings

### VI. MGC Reservations / Conferences

- All Conference Settings Exercised

### VII. Starting, Scheduling, Monitoring, & Controlling and Troubleshooting Connectivity

- Scheduling and Recurrent Reservation
- Monitoring Parameters and all values
- Exercise all Conference Controls - Manager

### VIII. Call Detail Records

- Reports and Describes the events details
- CDR Formatted Vs. Unformatted

### IX. Meet me, Auto Add and Meeting Rooms, Greet and Guide Operator Conferences

- Build and run all versions of Virtual Conference Suite Features

### X. MGC Troubleshooting

- MGC Led Status and Power supply status
- MGC to VTC Testing and Loop backs
- Dial up Modem Manager configuration

### XI. Cascading

- Labs for Internal & External Cascade
- Cascading Audio, Video, and Content

### XII. Install Voice and Video Plus

- Install and describe IVR File system
- Customize Audio and Video Clips
- Build and customize IVR and EQ Services
- Exercise all IVR and Entry DTMF controls

### XIII. Install and Integrate the Gatekeeper and Gateway Operation

- Integrate all Polycom VTCs and MGCs
- Exercise Gatekeeper Dial Methods
- Build and Configure all MGC Gateways

### XIV. Install and Integrate the SQL Server

- Install and Integrate the AccordSQLDB
- Internet Information Services fine-tuning
- Remote Login and Authorizations

### XV. Install and Integrate the WebCommander

- Install the Web Manager Server
- Configure the Access Accord DB
- Customizing the Web Home Page
- Describe and Customize the Accord DB Administrator Tables
- Exercising and use all the Web Terminal Functions available with WebCommander for all MGC Operations

# RSS 2000 Technical Operations Training

1 Day

Tuition at Polycom: \$725 per student

Part No.4864-07106-001

**Course Description** The Polycom RSS 2000 Technical Operations Training course is a one-day instructor-led program, designed to follow the MGC System Administrator Course or the VSX technical Maintenance course to provide pre-requisite curriculum for RSS 2000. This course is delivered through a combination of Lecture and Hands-On Lab exercises, where students will have the opportunity to gain working knowledge of the features and functions of the RSS 2000.

## Through Hands-On Exercises You Will Learn How To...

- Operate and manage all the Features and Functions in the RSS 2000 Recorder Playback Streaming System
- Install and Configure the RSS 2000
- Exercise and Review all Video Menu Controls, Settings, and Operations
- Exercise all Administrative options
- Use Optional Features (Backup/Delete)
- Integration with the MGC and Gatekeeper Systems
- Recording Link Configurations
- DTMF Controls
- FECC Controls

## Audience

- RSS 2000 Support Technicians
- Field Customer Service, System Administrators and End-Users

## Prerequisites - Mandatory

- Prior attendance of MGC100/50/25 2-Day System Administration or Technical Maintenance training, optionally the ViewStation/VSX Technical Maintenance Training

## C O U R S E   C O N T E N T

### I. Introduction RSS 2000

- Recorder Features
- Playback Features
- Streaming Features

### II. Review Video Terminal Main Menu

- Menu Navigation
- Menu Control Methods
- Language settings

### III. Intro to Web-terminal

- Administrator Access
- Ordinary Access
- Windows Navigation

### IV. Review the RSS Browser categories

- System Settings and Streaming Settings
- Account Settings and User Groups
- Recording Settings for Single Point
- Point to Point Recording Settings

### V. Recording / Playback Configurations

- Dial Out Operations and Settings
- Dial In Operations and Settings
- General Settings
- DTMF Controls
- Roll Call Settings
- FECC Controls

### VI. Point to Point Recording

- Single Point Recording
- Point to Point Recording
- RSS 2000 Bridging Recording

### VII. Multipoint Recording

- Review VSX Recording Requirements
- Review the MGC Recording Requirements
- Integrate MGC Conference Settings
- Recording Links and Participants

### VIII. Monitoring Recording Conferences

- Status for Connected and Recording
- Control Operations
- Understanding all Audio Prompts

### IX. Archiving

- File Management
- Deleting Files
- Recording Rates and File Growth

### X. MGC Chair Person Recording Controls

- Chair Person controls and IVR Interaction

### XI. Streaming

- Setup and Theory of Streaming
- Streaming Operation and Control
- Audio Prompts for Playback and Streaming

### XII. Gatekeeper Integration - Optional

- Configure with Gatekeeper
- Monitor the Gatekeeper Status

# RMX 2000 Technical Maintenance and ReadiManager Integration and Operations

3 Days

**Tuition at Polycom: \$2,050 per student**

**Tuition on-site: \$14,425 for up to eight students including travel & expenses of instructor**

**Part No. 4864-20001-001**

**Part No. 4864-20001-002**

**Course Description** The RMX Technical Maintenance and ReadiManager Integration course is a hands-on program covering system installation, integration, configuration, maintenance, and operations of RMX. The curriculum is delivered in a combination of lecture and hands-on lab exercises. (Listed in item VI). Important Note: This course does not include SE200 ReadiManager installation, VTC monitoring & soft-updating, Gatekeeper modes and resource management.

**Through Hands-On Exercises You Will Learn How To...**

- Install & configure RMX hardware and software integrated with ReadiManager for database and scheduling
- Perform network labs to integrate RMX with IP domain networking along with live Gatekeeper
- Install / Configure Microsoft.NET™ for Management
- Ad Hoc Video-conferencing Monitor / Control
- Build Real Customer Configurations
- Troubleshoot connectivity problems; capture, read fault logs & traces for conference diagnostics and status information
- Perform upgrades, backups and system restore

**Audience**

- Video-conferencing Support Engineers and System Administrators

**Prerequisites**

- Prior participation in a multipoint call, familiarity with electronic equipment, knowledge of networks, standards (H.320/H.323) and Windows operating environment

C O U R S E C O N T E N T

**I. Introduction and Overview**

- Elements of a RMX Video Conference
- Elements of H.320 & H.323 Standards
- Functions and features of RMX

**II. Web terminal RMX interface basics**

- What is MS NET
- Network Interfaces and Port usage for TCP/UDP
- RMX Workplace
- PC Requirements Hardware Platform for Terminal

**III. Installation and Configuration**

- Identify MPM Module Units and properties
- Identify Network Interface Services
- RMX details of Install and RMX Interfaces

**IV. RMX Status LEDs**

- MPM and control card indicators
- GIG Internal Switch Interfaces
- External Ethernet connections details

**V. Shelf Management Interfaces**

- Configurations
- Access Functions

**VI. Set-up COM Port for Serial MGC Manager Install, Configure Network Interfaces, Troubleshooting**

- Lab 1 – Setup LAN Management Port and use access
- Lab 2 – IP / H.323 / SIP Configurations
- Lab 3 – Configure Gatekeeper Integrations
- Lab 4 - SE200/IAM ReadiManager Integration
- Lab 5 - Cascade MCUs

**VII. Define and Conduct Conference for Labs**

- Address Book Site Records and parameters
- Setup Predefined Dial-In vs. Dial-Out for all Labs
- Create and Manage Conference Profiles
- Define Video-conference Troubleshooting Properties
- Audio/Video/Content/Data – T.120 Conferences
- Control / Verify Sites with RMX Desktop

- Auto Add or Meet Me Sites; Meeting Rooms and Meet Me Services

**VIII. Integrate the SE200/IAM**

- Scheduling and Conference Reservations
- Video Site Records
- Gatekeeper Sites lists

**IX. Other RMX Functions**

- Reading the CDR log, Resources Report and Alert Windows
- Collect Trace files on a Video Conference
- Faults Log and Major vs. Minor Alarms
- Understanding Alarms and Faults

**X. External & Internal Cascading**

- What is Cascading?
- Launch Cascading, simple and H243 Cascading
- Manage a Cascading Video Conference and cascading content

**XI. MCU Fine Tuning**

- System Configuration Flags
- Administration Menu Items, set-up Menu Items and Help
- RMX Time

**XII. IP Configuration**

- H.323 Configuration
- Management IP addressing

**XIII. LEDs and Card and Power supply status**

- Control Unit
- Card Indicators
- Power Supply Indicators

**XIV. Troubleshooting**

- Reset MCU vs. reset modules
- Disabling and enabling units
- Terminal Traces and signal monitoring
- Fan and voltage Status
- SNMP MGC - MIBs

# RMX 1000 Technical Maintenance Training

3 Days

**Tuition at Polycom: \$1,450 per student**

**Tuition on-site: \$11,075 for up to eight students including travel & expenses of instructor**

**Part No. 4864-21001-001**

**Part No. 4864-21001-002**

**Course Description** The RMX 1000 Technical Maintenance course is a hands-on program covering system installation, integration, configuration, maintenance, and all operations of RMX1000. The curriculum is delivered in a combination of lecture and networking hands-on laboratory exercises. (Listed in item IV).

## Audience

- Video-conference Support Technicians/Engineers and System Administrators – all days required

## Prerequisites

- Prior participation in a multipoint call
- Familiarity with electronic equipment
- Knowledge of details for Networks and Windows
- H.323 / H.225 / H.245 standards

## C O U R S E C O N T E N T

### I. Introduction and Overview Multipoint

- Elements of RMX 1000 video conference
- Elements of H.323 Standards
- Functions and features of RMX 1000

### II. Web terminal RMX interface basics

- Network Interfaces and Port usage for TCP/UDP
- RMX 1000 Protocols and Ports Used
- RMX Workplace
- PC Requirements Hardware Platform for Terminal

### III. Installation and Configuration

- Identify Processing Units and properties
- Identify Network Interface Services
- RMX 1000 details of Install and RMX Interfaces

### IV. Install and Configure Network Interfaces,

#### Troubleshooting - Lab Exercises

- Lab 1 – Setup LAN interface
- Lab 2 – IP / H.323 / SIP Configurations
- Lab 3 – Building Address book and Meeting Database
- Lab 4 – Using Polycom Conference Manager
- Lab 5 – Cascade MCUs
- Exercise Create, Edit and Configure all Types of RMX 1000 Audio, Video, and Content Conferences during the above listed Lab Configurations

### V. Define and Conduct Labs

- Address Book Site Records and parameters
- Setup Predefined Dial-In vs. Dial-Out for all Labs
- Create and Manage Conference Profiles
- Define Video-conference Troubleshooting Properties
- Audio/Video/Content/Data Conferences
- Control / Verify Sites with RMX Desktop
- Auto Add or Meet Me Sites
- Meeting Rooms and Meet Me Services

### VI. Dial In and using Polycom Conference Manager(PCM)

- Creating New Conference Feature
- Password ID vs. Personal Code
- Joining Existing Conferences
- Starting Ad Hoc from the PCM

### VII. RMX 1000 Log Functions

- Reading the CDR log
- Reading the Resources Report
- Reading the Alert Windows
- Collect Trace files on a Video Conference
- Faults Log and Major Vs. Minor Alarms
- Understanding Alarms and Faults

### VIII. Cascading

- What is Cascading?
- Launch Cascading
- Simple and H243 Cascading
- Manage a Cascading Video Conference
- Cascading Content

### IX. MCU Fine Tuning and Help Docs

- System Configuration Flags
- Administration Menu Items
- Setup Menu Items and Help
- RMX Time

### X. RMX 1000 Capabilities

- H.323 Link Status
- Conference Statistics
- Describe the Caps exchange process
- Connections Statistics
- Highest Common
- Content Management
- System Alerts

### XI. LEDs, Card and Power Supply Status

- Chassis Indicators
- Power Supply Indicators

### XII. Troubleshooting

- Reset MCU Vs. Reset Modules
- Voltage Status
- Temperature Status
- SNMP and MIBs

# CMA 4000/5000 Technical Operations Training

5 Days

**Tuition at Polycom: \$3,350 per student**

**Tuition on-site: \$18,025 for up to eight students including travel & expenses of instructor**

**Part No. 4864-17007-001**

**Part No. 4864-17007-002**

**Course Description** The CMA Technical Maintenance training course is a 5-day, instructor-led, hands-on program covering installation and configuration of the CMA 5000, and management, monitoring and scheduling of video-conference systems in an enterprise network. The curriculum is delivered in a combination of lecture and hands-on laboratory exercises.

## Course Objectives

At the end of this training, students will be able to:

- Identify functions of CMA 4000/5000
- Install CMA system hardware
- Configure CMA system software
- Deploy, install, and manage CMA Desktop
- Define Areas, Zones, Resources and Equipment
- Enable Simplified Dialing
- View logging of RAS messages
- Schedule and manage conferences
- Monitor endpoint status
- Manage a Global Directory
- Remotely update endpoint configurations using Provisioning
- Remotely update endpoint software
- Generate activity reports

## Audience

- Video-conferencing Support Engineers
- System Administrators
- System Operators

## Prerequisites

- Prior attendance of the Polycom MGC 25/50/100 or RMX administrator training, or equivalent experience
- Prior attendance of an administrator training course for Polycom endpoints, or equivalent experience
- Ability to operate software in a Microsoft Windows environment

## C O U R S E C O N T E N T

### I. Overview

- Product Overview and Features
- CMA Hardware & Software Components

### II. Initial Installation & Configuration

- CMA Desktop CMA 4000/5000 First-time Setup
- Configuration and Setup
- User Management & Roles
- Managing Resources

### III. Gatekeeper Functions

- Gatekeeper Functionality
- Network Topology
- Endpoint Alias Dialing
- Simplified Dialing
- Dialing Rules & Neighbor Gatekeepers
- Conference On Demand
- Least Cost Routing
- Alternate Routing
- Gatekeeper Reports

### IV. Scheduling & Managing Conferences

- Scheduling Conferences
- Recurring Conferences
- Managing Schedules
- Installing the MS Outlook plug-in for CMA
- Scheduling using the Outlook plug-in
- Managing Conferences

### V. Device Management

- Policy Groups
- Monitoring Endpoint Status
- CDR Reports
- Global Directory
- Remote Software Updates
- Remote System Provisioning
- Network Monitoring

# ReadiManager® SE200 Technical Operations Training

4 Days

**Tuition at Polycom: \$2,675 per student**

**Tuition On-Site: \$16,475 for up to eight students including travel & expenses of instructor**

**Part No. 4864-17003-001**

**Part No. 4864-17003-002**

**Course Description** The ReadiManager SE200 Technical Operations training course is a four-day, instructor-led, hands-on program covering installation and configuration of the SE200, and management, monitoring and scheduling of video-conference systems in an enterprise network. The curriculum is delivered in a combination of lecture and hands-on laboratory exercises.

## Through Hands-on Exercises You Will Learn How To...

- Identify functions of SE200 ReadiManager
- Install SE200 system hardware
- Configure SE200 system software
- Define Areas, Zones, Resources and Equipment
- Enable Simplified Dialing
- View logging of RAS messages
- Schedule and manage conferences
- Monitor endpoint status
- Manage a Global Directory
- Remotely update endpoint configurations using Provisioning
- Remotely update endpoint software
- Generate activity reports

## Audience

- Video-conferencing Support Engineers
- System Administrators
- System Operators

## Prerequisites

- Prior attendance of the Polycom MGC 25/50/100 administrator training, or equivalent experience
- Prior attendance in an administrator training course for Polycom endpoints, or equivalent experience
- Ability to operate software in a Microsoft Windows environment

## C O U R S E   C O N T E N T

### I. Overview

- Product Overview and Features
- SE200 Hardware & Software Components
- ReadiManager SE200 vs. Stand-alone products (PathNavigator, PCS, and GMS)

### II. Initial Installation & Configuration

- ReadiManager SE200 First-time Setup
- Client configuration
- ReadiManager User Management
- Managing Resources
- Endpoint Compatibility

### III. Network Topology

- Network Topology
- Sites, Inter-site Links, and Regions
- Defining Network Resources
- Defining Equipment

### IV. Gatekeeper Setup

- Configure endpoint alias dialing
- Configure Simplified Dialing
- Least Cost Routing
- Conference On Demand
- Neighbor Gatekeeper Support
- Alternate Routing

### V. Scheduling & Managing Conferences

- Scheduling Conferences
- Recurring Conferences
- Managing Schedules
- Installing the MS Outlook plug-in for SE200
- Scheduling using the Outlook plug-in
- Managing Conferences

### VI. Device Management

- Device Management
- Monitoring Endpoint Status
- Global Directory
- Remote software updates
- Remote system provisioning
- Reports

# Certified Videoconferencing Engineer (CVE) 2.0 Core Training Curriculum

5 Days

**Tuition at Polycom: \$2,325 per student \*includes voucher for exam**

**Tuition On-Site: \$18,025 for up to ten students including travel & expenses of instructor**

**Part No. CS-CVE-CC-IN**

**Part No. CS-CVE-OS01-OS**

**Course Description** The Certified Videoconferencing Engineer (CVE) Core Training Curriculum is a focused, highly valuable preparation tool that maps to the four major areas of the CVE Core exam: audio, video, networks and standards. During this five-day course, a comprehensive review of the core technologies for video-conferencing planning, implementation and support is presented.

\*Course is lecture-based and does not present an opportunity for hands-on work with Polycom equipment.\*

## Audience

- Sales engineers, product support specialists, technical trainers, and industry consultants providing video-conferencing planning, implementation and support services

## Prerequisites

- One or more years working with the technologies surrounding audio and video conferencing
- Solid experience with local (LAN) and wide area networks (WAN), including ISDN
- Solid understanding of video-conferencing standards

Note: Those new to the field of audio & video conferencing should attend the following courses prior to enrollment: Implementing IP Networks for H.323 video conferencing and Introduction to H.320 (ISDN) and Networks

## C O U R S E C O N T E N T

### I. Networks Course

- Telecommunications Industry Overview
- PSTN, Public and Private Networks
- Multiplexing Technologies-TDM, FDM, StatMUX, IMUX
- Local Area Networking, Ethernet Standards, CAT3/5
- ISO / OSI Seven Layer Model details and functions
- T1/E1 Networks & ISDN Networks
- Internet and Intranets and ISPs, NAPs, MAEs
- LEC, IEC, (IXC), CLEC, PTT, & PBX
- E1/T1 framing & E1/T1 line coding & NI vs. Euro ISDN
- E.163, E.164, X.121 Numbering plans
- SONET/SDH OC-3 and Fiber Optic Interfaces  
MMF Vs. SMF
- Frame Relay Theory of Ops, addressing, and QoS
- ATM Theory of Ops, addressing VPI-VCI, and QoS
- DTE vs. DCE & Interface functionality for V.35, RS449/530
- Asynchronous and Synchronous Interface Parameters
- Digital Data - Bit oriented vs. Byte oriented and Packets
- SW56T1 vs. PRIMARY RATET1
- Red Alarm vs. Yellow Alarm and BPVs and OOS Alarms
- Keep Alive and Loop Backs
- Network Timeouts, BERTs, and Clocking
- E1 CAS vs. E1 CCS
- CODEC (VTC or VCS) and MCU component breakdown
- A to D and D to A conversion
- Nyquist Theorem and PCM for Audio and Video
- Constant Bit Rate Networks vs. Variable Bit Rate Networks
- Q.921 and LAP/D - D-Channel operation
- Q.931, ISDN Signaling Call Establishment & Breakdown
- 802.3 IEEE Ethernet Frame Structure
- TCP/IP Stack for Video Conferencing and Packet Overhead
- QOS issues for packet network media channels
- Packet delay, jitter, loss, discards and prioritization
- ARP, ICMP, TCP Vs. UDP Ports, RTP Streams and RTCP
- Video and / or Voice over Packet Networks (H.225)
- Gatekeeper Theory of Ops and the RAS protocol
- Gateway Theory of Ops (IP to ISDN vs. ISDN to IP)
- IP Addressing V4 vs. V6; Mask & Classes; Sub-Net Masks
- Routing, Switching, Bridging LAN Data Theory of Ops

### Objectives for Networks Course

- Describe Telecommunications industry including types of services provided and equipment utilized
- List components and describe ISP, Internet vs. Intranet
- Describe DSL, the Online WEB, and Streaming Video
- Describe T1 & E1 both dedicated and Primary Rate
- Describe Frame Relay, ATM, and other Wide Area Networks
- Describe the components of ISDN and call setup
- Describe the major LAN architectures and Internetworking
- Describe function Video / IP Call Setup w/RAS and without RAS
- Define specifications for RS-232, RS-449, RS-422, and V.35
- Differences & functions of Ethernet Switching (bridges), routers, gateways, gatekeepers, RAS
- Describe how the communication of Gatekeeper works with gateways, endpoints MCUs, and IP phones

### II. Audio and Video Technologies Course

- Audio Equipment, applications and engineering
- Acoustic Echo Cancellation and room acoustics
- Video Equipment, Video considerations and engineering basics
- Lighting and Room Layout

### Objectives for A/V Course

- Mics, acoustic principles, mic pick-up patterns, loudspeaker characteristics and acoustic echo cancellation
- Understand electrical interactions between audio components
- Interconnect microphones, room electronics and video codec
- Understand video camera functions relative to conferencing; video framing, pixels, and compression
- Understand video transport media
- Apply video presentation techniques and dynamic limitations to conferencing

### III. ITU Conferencing Standards

#### Objectives for Standards Course

- Understand ITU-T Standards body and documents access
- Understand the functions, relationship and details for audio G series, video H series, and data T series ITU conferencing standards (listed above)

# Polycom Learning Center Training Credit Packs

## What are Polycom Learning Credits?

A Great Solution! Offered by the Polycom Learning Center, Polycom Learning Credits are pre-paid training packs that offer the unrivaled ability to purchase, redeem and manage Polycom authorized training at any classroom location around the world. Learning Credits empower you to optimize your Polycom product investment. Learning Credits may be added to your purchase order when ordering other Polycom services and products – or purchased separately. Each Polycom Learning Center Credit pack (sold in packs of 10, 15, and 25 days) pays for high-quality training, is valid for one year, and enables you to:

- Secure training budget upfront and prepay in the form of credits at time of product purchase or separately
- Streamline administrative processes by utilizing single budget and purchase order
- Develop a customized and flexible training plan while working with the Polycom Learning Center team
- Manage, track, and redeem training expenditures online
- Easily track and manage ongoing employee development
- Save money, offered at a significant discount from individual class purchases

## Why Train?

Training increases the technical competencies of your staff, enabling them to more effectively manage and operate your investment in a collaborative communication solution... Getting you and your staff the training needed at the right time will increase productivity, reduce the cost of ownership, and help drive the adoption of new technologies providing you a competitive edge.

## Training Needs Assessment

When your company goals are straightforward, it may be easy to establish a training plan, however most organizations have needs that are more complex. Assessing those needs and determining the appropriate training plan requires skill and experience. That is where The Polycom Learning Center can help. Contact a member of our team today to help you to develop a training plan for your team, by calling 1-888-248-4143 or emailing [Training@polycom.com](mailto:Training@polycom.com)

## How to Purchase Polycom Learning Credits

Each Polycom Learning Credit pays for high-quality classroom training and are valid for one year. Polycom Learning Credits are listed on the Polycom Global Product and Services price list and may be ordered along with Polycom services and products or as a stand-alone item.

**List Price: \$6,500**  
Credits for 10 Days of Training at PLCM public classes

**Part No. 4864-07010-005**

**List Price: \$9,200**  
Credits for 15 Days of Training at PLCM public classes

**Part No. 4864-07015-005**

**List Price: \$14,425**  
Credits for 25 Days of Training at PLCM public classes

**Part No. 4864-07025-005**

## How to Redeem Polycom Learning Credits

Customers can redeem Polycom Learning Credits online and can choose from any of our many classroom-based programs offered. As credits are used, you will be notified with the status of your Learning Credits account.

## Wireless Telephone End User Training (Customer Site)

**Tuition On-Site: \$1,540 per day for up to 10 students not including instructor travel & expenses**

**Part No. TRU100**

**Course Description** This class provides detailed instruction on any SpectraLink Wireless Telephone; including telephone switch feature access, handset features and capabilities, and battery management. The training session incorporates system implementation details for the specific site. The training day is implemented as a single day of eight identical 30-45 minute training sessions scheduled hourly during traditional business hours of 6:00 AM-6:00 PM. (After-hours training may be available, subject to after-business hours/weekend service charges [per day] - AAC100.)

## SpectraLink 6100 WTS MCU Installation and Maintenance

**1 Day**

**Tuition at Polycom: \$725 per student**

**Part No. TRN410**

**Tuition on-site: \$5,675 for up to 8 students, not including instructor travel & expenses**

**Part No. TRN610**

**Course Description** This single-day course covers installation, administration, maintenance and troubleshooting for SpectraLink 6100 Wireless Telephone System (WTS) with the SpectraLink 6100 Master Control Unit (MCU.) The student will learn Base Station wiring; connection to the existing phone system/PBX; programming telephones system features for use on SpectraLink Wireless Telephones; and verification of system installation and performance and gain hands-on experience working with live laboratory equipment.

## SpectraLink 6300 WTS MCU Maintenance Only

**1 Day**

**Tuition at Polycom: \$725 per student**

**Part No. TRN450**

**Tuition on-site: \$5,675 for up to 8 students, not including instructor travel & expenses**

**Part No. TRN650**

**Course Description** This single-day course covers administration, maintenance and troubleshooting for SpectraLink 6000 Wireless Telephone System (WTS) with the SpectraLink 6300 Master Control Unit (MCU.) The student will learn to identify system components, program system function and features, verification and troubleshooting techniques. Appropriate for SpectraLink 6300 administrators who will not be installing SpectraLink 6300 systems.

## SpectraLink 6300 MCU Installation and Maintenance

**1 Day**

**Tuition at Polycom: \$725 per student**

**Part No. TRN430**

**Tuition on-site: \$5,675 for up to 8 students, not including instructor travel & expenses**

**Part No. TRN630**

**Course Description** This one-day course includes all materials covered in TRN450 "SpectraLink 6300 WTS MCU Maintenance Only" and also covers installation of the Link 3000 Wireless Telephone System (WTS). The student will learn Base Station wiring, connection to the existing phone systems/PBX, plus advanced aspects of SpectraLink 6300 WTS such as multi shelf installations and remote-site T1 support. Appropriate for SpectraLink customers and partners who wish to be certified to install and administer all aspects of SpectraLink 6300 systems.

## SpectraLink 8000 System Installation and Maintenance

1.5 Days

**Tuition at Polycom: \$1,075 per student**

**Tuition on-site: \$11,075 for up to 8 students, not including instructor travel & expenses**

**Part No. TRN500**

**Part No. TRN700**

**Course Description** This one and a half-day course covers installation, administration, maintenance and troubleshooting for SpectraLink 8000 Wireless Telephones integrated with traditional circuit-switched PBXs. Students will learn about 802.11b/g wireless local area networks (WLAN) as they related to voice over Wi-Fi (VoWi-Fi). Successful students will be certified to install, maintain and troubleshoot the SpectraLink 8000 Telephony Gateway system, as well as participate in customer-site WLAN system design planning.

## SpectraLink 8000 System Advanced Technical Training

4 Days

**Tuition at Polycom: \$2,675 per student**

**Part No. TRN765**

**Course Description** This four-day course is designed to equip technical staff with the knowledge required to perform advanced troubleshooting and problem resolution of the SpectraLink 8000 system 802.11x wireless telephones. The course covers voice over Wi-Fi fundamentals, advanced SpectraLink 8000 architecture and packet flow, WLAN design and configuration fundamentals, diagnostic tools, and problem determination and resolution. This course includes extensive hands-on lab sessions covering use of diagnostic tools such as Sniffers, spectrum analyzers and syslogs as well as practical problem determination and rectification.

## Certified Wireless LAN Network Administration - CWNA® Training

5 Days

**Tuition at Polycom: \$2,570 per student**

**Part No. TRN910**

**Course Description** The CWNA® (Certified Wireless LAN Network Administration) five-day course offers detailed instruction on the foundation concepts and technologies of wireless data networking including: radio frequency (RF) fundamentals; spread spectrum technologies; hardware installation, configuration, and management; antennas and accessories; organizations and standards; 802.11 network architecture; physical and MAC layers; wireless LAN security; site surveying; and troubleshooting wireless LANs. Upon completion of the CWNA Certification course, students will be prepared to pass the CWNA Certification Exam (Exam #PW0-100) at Prometric Testing Centers. The VoWi-Fi (Voice over Wireless LAN) one day course offers detailed instruction on the foundation concepts and technologies of Voice over IP (VoIP) and the application of that technology on a wireless data network including: VoIP basics; signaling protocols; Codecs; VoIP challenges; wireless characteristics; Quality of Service (QoS); VoWi-Fi site survey fundamentals; wired infrastructure considerations; troubleshooting fundamentals; and typical problems and solutions.

## Certified Wireless Security Professional - CWSP® Training

**Tuition at Polycom: \$2,827 per student**

**Part No. TRN960**

**Course Description** The CWSP® (Certified Wireless Security Professional) certification will advance your career by ensuring you have the skills to successfully secure wireless networks from hackers. CWSP is an advanced level wireless LAN certification for the CWNP Program. This course takes the foundation of learning from the CWNA course and expands on it. Teaching: WLAN discovery techniques, intrusion and attack techniques, 802.11 protocol analysis, wireless intrusion prevention systems (WIPS) implementation, layer 2 and 3 VPNs used over 802.11 networks, enterprise/SMB/SOHO/Public-Network Security design models, managed endpoint security systems, 802.11 authentication and key management protocols, enterprise/SMB/SOHO/Public-Network Security Solution implementation, building robust security networks from the ground up, fast BSS transition (aka Fast/Secure Roaming) techniques, thorough coverage of all 802.1X/EAP types used in WLANs, Wireless LAN management systems (WNMS) authentication Infrastructure design models, using secure applications, 802.11 design architectures, Implementing a thorough Wireless Security Policy.

# KWS600 Technical Training

3 Days

Tuition at Polycom: \$2,050 per student

Part No. 4864-57001-001

**Course Description** After successfully passing the course, the participant will have achieved basic knowledge of the KWS600 solution. This includes general system architecture, installation in IP networks, user creation, and administration, update of the solutions as well as basic troubleshooting and different assignments/hands-on tasks.

## Audience

- Technical staff at new/old customers who are dedicated to working with KIRK IP solutions in areas such as installation, deployment, troubleshooting and daily maintenance of the KWS600 solutions

## Prerequisites

- Basic analogue telephony knowledge
- Basic PBX knowledge
- Basic IP knowledge

## C O U R S E C O N T E N T

### I. General Description of the KIRK Wireless Server 600

- Definitions and explanations
- KWS600 main equipment
- Technical data

### II. Protocols, Software Applications & Tools

- DECT
- Basic SIP
- KIRK equipment maintenance software

### III. KWS600 Installation

- Deployment

### IV. KWS600 System Configuration

- KWS600 system programming
- P master
- Media Resource
- Base Station
- Repeater
- Codec
- Handset programming/subscription
- KWS600 data backup/restore
- KWS600 S/W upgrading
- KWS600 troubleshooting

### V. Practical training/Hands-on

# KWS6000 Technical Training

3 Days

Tuition at Polycom: \$2,050 per student

Part No. 4864-57005-001

**Course Description** After successfully passing the course, the participant will have achieved basic knowledge of the KWS6000 solution. This includes general system architecture, installation in IP networks, user creation, and administration, update of the solutions as well as basic troubleshooting and different assignments/hands-on tasks..

## Audience

- Technical staff at new/old customers who are dedicated to working with KIRK IP solutions in areas such as installation, deployment, troubleshooting and daily maintenance of the KWS6000 solutions

## Prerequisites

- Basic analogue telephony knowledge
- Basic PBX knowledge
- Basic IP knowledge

## C O U R S E C O N T E N T

### I. General Description of the KIRK Wireless Server 6000

- Definitions and explanations
- KWS6000 main equipment
- Technical data

### II. Protocols, Software Applications & Tools

- DECT
- Basic SIP
- KIRK equipment maintenance software

### III. KWS6000 Installation

- Deployment

### IV. KWS6000 System Configuration

- KWS6000 system programming
- P master
- Media Resource
- Base Station
- Repeater
- Codec
- Handset programming/subscription
- KWS6000 data backup/restore
- KWS6000 S/W upgrading
- KWS6000 troubleshooting

### V. Practical training/Hands-on

Call us at:  
**1-800-POLYCOM**

Or visit:  
**[www.polycom.com/training](http://www.polycom.com/training)**  
for more information



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**Part No. 3726-07794-003**