



Polycom[®] RMX[®] 1500/2000/4000 Getting Started Guide for Audio Only Conferencing

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System Overview

This Getting Started Guide provides information on the installation and basic operation of your RMX system.



Chairpersons and Operators (users who start and manage conferences for other users) please read:

- *Chapter 1 – System Overview*
- *Chapter 3 – Basic Operation*

System Administrators please read:

- *Chapter 1 – System Overview*
- *Chapter 2 – First Time Installation and Configuration*
- *Chapter 3 – Basic Operation*

For more information on configuring and managing the system, refer to the *RMX 1500/2000/4000 Administrator's Guide* included with the system.



Unless specified differently, all screen captures, Diagrams and Figures included in this guide apply to RMX 1500, RMX 2000 and RMX 4000.

RMX 1500/2000/4000

The Polycom RMX 1500/2000/4000 Multipoint Control Unit (MCU) is a high performance, scalable, IP-network (H.323 and SIP) and ISDN/PSTN solution that provides the user with feature-rich and easy-to-use multipoint voice and video conferencing.

The RMX MCU meets International Telecommunication Union - Telecommunication Standardization Sector, (ITU-T, formerly CCITT) standards for multipoint multimedia bridging devices, and meets ETSI standards for telecommunication products.

The RMX unit has, in addition, been designed in compliance with IETF (Internet Engineering Task Force) – a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet.

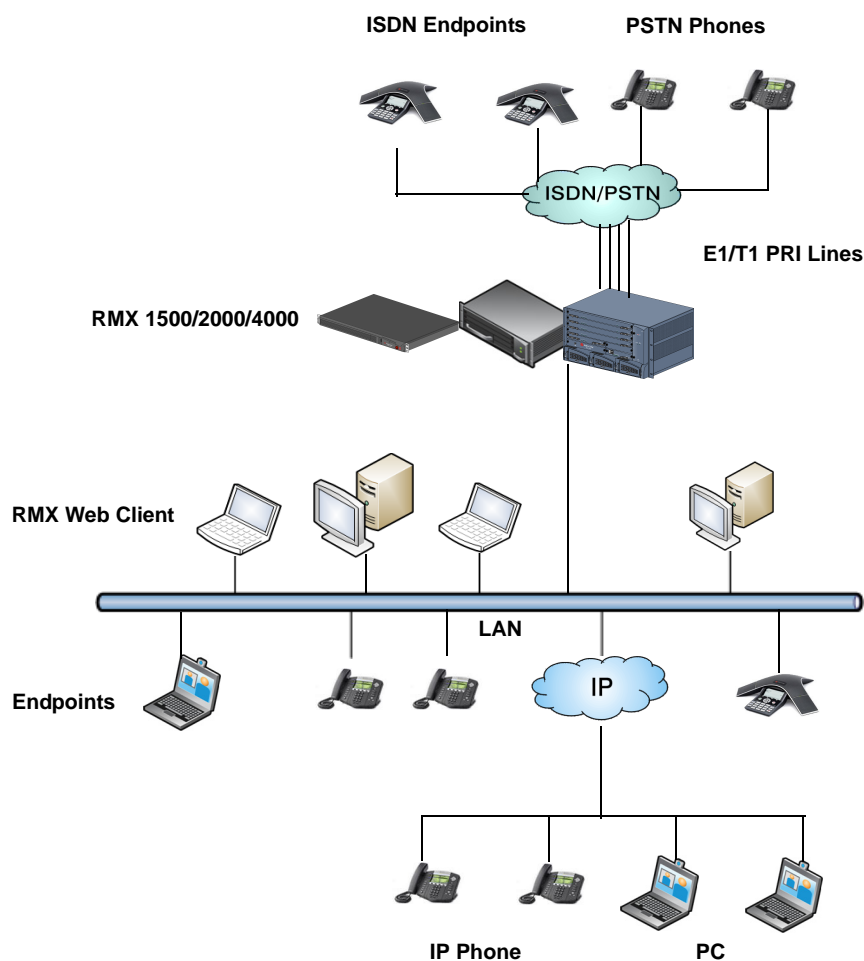


Figure 1-1 Multipoint Audio Conferencing using a Polycom RMX 1500/2000/4000

The Polycom RMX 1500/2000/4000 unit can be controlled via the LAN, by the *RMX Web Client* application, using Internet Explorer® installed on the user's workstation or the RMX Manager application. The RMX Manager can control several RMX units (RMX 1500, RMX 2000 and RMX 4000). For more information about the RMX Manager, see "RMX Manager Application" on page 19-1.

In the RMX 1500 and RMX 2000, RMX management and IP conferencing are performed via a single LAN port. The networks can be separated in the Enhanced Security Environment such as DoD environment.

In the RMX 4000, RMX management and IP conferencing are performed via two different LAN ports. The networks can be separated in the Enhanced Security Environment.

The RMX 1500 supports one ISDN card with 4 E1/T1 PRI lines.

On the RMX 2000/4000 a maximum of two RTM ISDN cards are supported, each providing connection for up to either 7 E1 or 9 T1 PRI lines (E1 and T1 connections cannot be used simultaneously).

On RMX 1500/2000/4000, E1 and T1 connections cannot be used simultaneously.

System Capacities

The following table summarizes the different conferencing capacities.

Table 1-1 System Functions and Capacities

| System Functions | RMX 1500 | RMX 2000 | | | RMX 4000 | |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| | MPMx | MPM | MPM + | MPM x | MPM+ | MPMx |
| Maximum no. of VOIP (Audio only) participants in a conference | 360 | 160 | 400 | 720 | 800 | 800 |
| Maximum no. of PSTN participants in a conference | 120 | 160 | 400 | 400 | 400 | 400 |
| Maximum number of conferences | 400 | 200 | 400 | 400 | 800 | 800 |
| Maximum number of Meeting Rooms | 1000 | 1000 | 1000 | 1000 | 2000 | 2000 |
| Maximum number of Entry Queues | 40 | 40 | 40 | 40 | 80 | 80 |
| Maximum number of Profiles | 40 | 40 | 40 | 40 | 80 | 80 |
| Maximum number of Conference Templates | 100 | 80 | 200 | 200 | 200 | 200 |
| Maximum number of SIP Factories | 40 | 40 | 40 | 40 | 80 | 80 |
| Maximum number of IP Services | 1 | 1 | 1 | 1 | 1 | 1 |
| Maximum number of ISDN Services | 2 | 2 | 2 | 2 | 2 | 2 |
| Maximum number of IVR Services | 40 | 40 | 40 | 40 | 80 | 80 |
| Maximum number of Recording Links | 20 (default) | 20 (default) | 20 (default) | 20 (default) | 20 (default) | 20 (default) |

Table 1-1 System Functions and Capacities (Continued)

| System Functions | RMX 1500 | RMX 2000 | | | RMX 4000 | |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| | MPMx | MPM | MPM + | MPM x | MPM+ | MPMx |
| Maximum number of Log Files (1Mb max.) | 4000 | 1000 | 4000 | 4000 | 8000 | 8000 |
| Maximum number of CDR Files | 2000 | 1000 | 2000 | 2000 | 4000 | 4000 |
| Maximum number of Fault Files | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Number of Participant alerts | Unlimited | Unlimited | Unlimited | Unlimited | Unlimited | Unlimited |
| Maximum number of concurrent RMX Web Client connections to the MCU | 20 | 20 | 20 | 20 | 20 | 20 |
| Maximum number Address Book entries | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| Maximum number of Users | 100 | 100 | 100 | 100 | 100 | 100 |
| Maximum number of gateway profiles | 40 | 40 | 40 | 40 | 80 | 80 |
| Maximum number of Reservations (Internal Scheduler) | 2000 | 2000 | 2000 | 2000 | 4000 | 4000 |

RMX Audio Only Main Features

The Polycom RMX conferencing system offers a comprehensive range of capabilities for audio conferencing:

Scheduling Interfaces

Conferences can be started immediately or scheduled in advance on the Polycom MCU by means of the following applications:

- Windows-based RMX Manager
- Browser-based Web Client
- Microsoft Outlook using the Polycom Conferencing for Microsoft Outlook add-in
- Polycom CMA application
- Polycom DMA application

Conference scheduling options

- Ad Hoc conferencing
- On-demand conferencing (Ongoing)
- “Meet Me” reservationless conferences (Meeting Rooms)
- Scheduled conferences (Reservations)
- Recurrent conferences

Conferencing Modes

- Operator Assisted conferences; reserved and reservationless
- Unattended conference; reserved and reservationless

Operator Conference

In addition to the standard conference, a special conference that enables the RMX user, acting as an operator, to assist participants without disturbing ongoing conferences and without being heard by other conference participants can be created. The operator can move a participant from an Entry Queue or ongoing conference to a private, one-on-one conversation in the Operator conference.

IVR-Enabled Conferencing

Interactive Voice Response (IVR) is a software module that automates the connection process and lets participants perform various operations during ongoing conferences. The participants use their endpoints’ keypads and remote control to interact with the conference’s menu-driven scripts using DTMF codes.

Operations that can be performed by participants or chairpersons during a conference include:

- Manually terminate the conference.
- Mute or unmute the participant’s audio channel.
- Adjust the participant’s broadcasting and listening audio volume.
- Play the Help menu.
- Mute or unmute undefined dial-in participants upon their connection to the conference.
- Request a Roll Call and stop the Roll Call names review
- Secure and unsecure a conference.
- Invite Participants
- Request individual and conference assistance.

Entry Queue

An Entry Queue is a special routing lobby for video and audio participants. After dialing the Entry Queue ID or dial-in number (ISDN/PSTN), voice prompts from an IVR service are used to connect the participants to the appropriate conference.

This service can also be used (if required) to verify the participant’s right to start an Ad Hoc conference or to join an ongoing conference.

Conferencing Capabilities and Options

On Demand Conferencing

The following options are available to set up conferences:

- *New Conference* – set up once, use once.
The conference is deleted from the MCU after it ends.
- *Meeting Rooms* – set up once, use many times.
Meeting Rooms are saved in memory (using no resources) and can be activated as many times as needed.
- *Ad Hoc Entry Queue* – no setup, a new conference can be created when a user dials in and enters a conference ID that is not being used by an existing conference or Meeting Room.
- *Gateway calls* – from IP endpoints to other participants, using the direct dialing method, with up to 10 destination numbers contained in a single dial string.

Scheduled Conferencing / Reservations

Reservations provide calendar-based scheduling of single or recurring conferences. These conferences can be launched immediately or become ongoing, at a specified time on a specified date.

Polycom Conferencing for Microsoft Outlook®

Polycom Conferencing for Microsoft Outlook is implemented by installing the *Polycom Conferencing Add-in for Microsoft Outlook* on the *Microsoft Exchange Server*® and *Microsoft Outlook* e-mail clients. It enables meetings to be scheduled with video endpoints from within *Outlook*. The add-in also adds a *Polycom Conference* button in the *Meeting* tab of the *Microsoft Outlook* e-mail client ribbon.

Connection Methods

IPv4, IPv6, ISDN and PSTN communication protocols are supported for connection to the conference.

- Dial-out: automatically, to pre-defined participants (line rate detection is automatic)
- Dial-in:
 - for participants defined in advance (IP participants only)
 - for undefined participants directly to a conference (IP and ISDN/PSTN)
 - for undefined participants via a single dial Entry Queue (IP and ISDN/PSTN)

Cascading Conferences

- Simple Cascading (Star Topology).
- Multi Hierarchy Cascading (MIH).

Gateway

Using a special Gateway Profile, the RMX can be used as a gateway that provides connectivity across different physical networks such as H.323, SIP, ISDN and PSTN. The Gateway also provides connectivity between the ISDN/PSTN endpoints and the DMA.

Security

- Media Encryption (IP only), available at conference and participant levels, based on AES 128 Media Encryption and DH 1024 Key Exchange standards.
- Secured Communication Mode (SSL/TLS).
- Secured conferences via DTMF codes and limited monitoring of secured conferences.
- Auditor to analyze configuration changes and unusual or malicious activities in the RMX system.
- Network security can be enhanced by separation of the Signaling and Management Networks.
- RMX Users can be disabled by the administrator, or automatically when inactive. Disabled Users can be enabled by the administrator.
- Enhanced Security Environment can be implemented.
In such an environment, the following attributes are implemented:
 - Password management:
 - Strong Passwords and password re-use / history rules,
 - password aging rules, password change frequency and forcing password change
 - Conference and Chairman Passwords
 - Locking out Users
 - Displaying the User Login record
 - Controlling the User Sessions includes:
 - Limiting the maximum number of concurrent user sessions
 - Connection Timeout
 - User session timeout
 - Limiting the maximum number of users that can connect to the system

Conference Management and Monitoring Features

The Polycom RMX 1500/2000/4000 Web Client provides capabilities for management and monitoring of participants and conferences, including the following:

- Automatic termination of idle (no participants) conferences.
- Automatic extension of conference duration.
- Control of listening and broadcasting audio volume for individual participants.
- *Auto Gain Control* (AGC) noise and audio volume regulation for individual participants.
- Conference control via DTMF codes from participant's endpoint or telephone.
- Entry, exit and end-of-conference indications.
- Media encryption.
- Active display of all conferences and participants with option to limit display in secured conferences.
- Real-time monitoring of each participant's connection status and properties.
- Multiple drag & drop of participants.
- Easily accessed Call Detail Records
- Active display of all system resources.
- Operator Assistance & Participant Move for conferences in Continuous Presence mode.

Application features

- Customizable voice messages.
- Configurable new event alert.
- Easily accessible Call Detail Records (CDR) for administrator.
- Recording to an external device.

Card Configuration Modes

Two *Card Configuration Modes* are supported:

- **MPM Mode** – Supported with *MPM cards* on the current, and all previous RMX versions. *Applicable to RMX 2000 only*. MPM cards are not supported with version 7.1 and later.
- **MPM+ Mode** – Supported from Version 4.0, with *MPM+ cards* installed in the RMX 2000 and RMX 4000. It offers:
 - Two *Video/Voice Resource Capacity* resource allocation modes for increased control over system resource allocation.
 - Enhanced *Resource Report* for more accurate system management.
- **MPMx Mode** – Supported from Version 7.0, with *MPMx cards* installed in the RMX 1500 and RMX 4000.

Prerequisites

This manual assumes the user has the following knowledge:

- Familiarity with Windows® XP or Vista® operating systems and interface.
- Familiarity with Microsoft® Internet Explorer® Version 6 or higher.
- Basic knowledge of video conferencing concepts and terminology.

Workstation Requirements

The *RMX Web Client* and *RMX Manager* applications can be installed in an environment that meets the following requirements:

- **Minimum Hardware** – Intel® Pentium® III, 1 GHz or higher, 1024 MB RAM, 500 MB free disk space.
- **Workstation Operating System** – Microsoft® Windows® XP, Vista®
- **Network Card** – 10/100 Mbps.
- **Web Browser** – Microsoft® Internet Explorer® Version 6 or higher.



.Net Framework 2.0 is required and installed automatically.
If ActiveX installation is blocked please see the *RMX 1500/2000/4000 Administrator's Guide*, "ActiveX Bypass" on page [20-66](#).



When installing the *RMX Web Client*, Windows Explorer >Internet Options> Security Settings must be set to *Medium* or less.



RMX Web Client does not support larger Windows text or font sizes. It is recommended to set the text size to 100% (default) or Normal in the Display settings in Windows Control Panel on all workstations. Otherwise, some dialog boxes might not appear properly aligned. To change the text size, select **Control Panel>Display**. For Windows XP, click the **Appearance** tab, select **Normal** for the Font size and click **OK**. For Windows 7, click the **Smaller - 100%** option and click **OK**.



It is not recommended to run RMX Web Client and Polycom CMAD applications simultaneously on the same workstation.

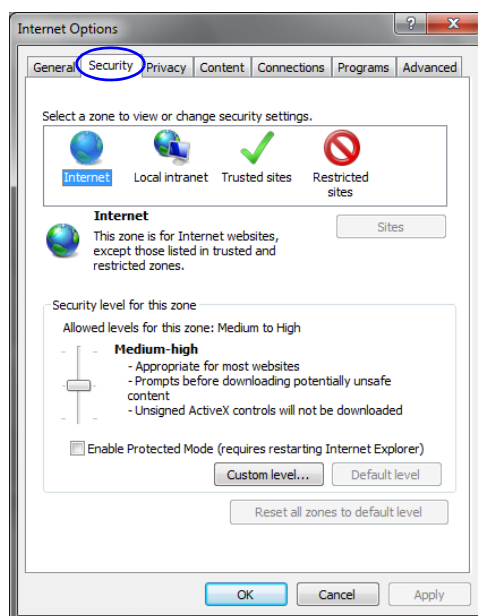
Windows 7™ Security Settings

If *Windows 7* is installed on the workstation, *Protected Mode* must be disabled before downloading the Version 7.6.x software to the workstation.

To disable Protected Mode:

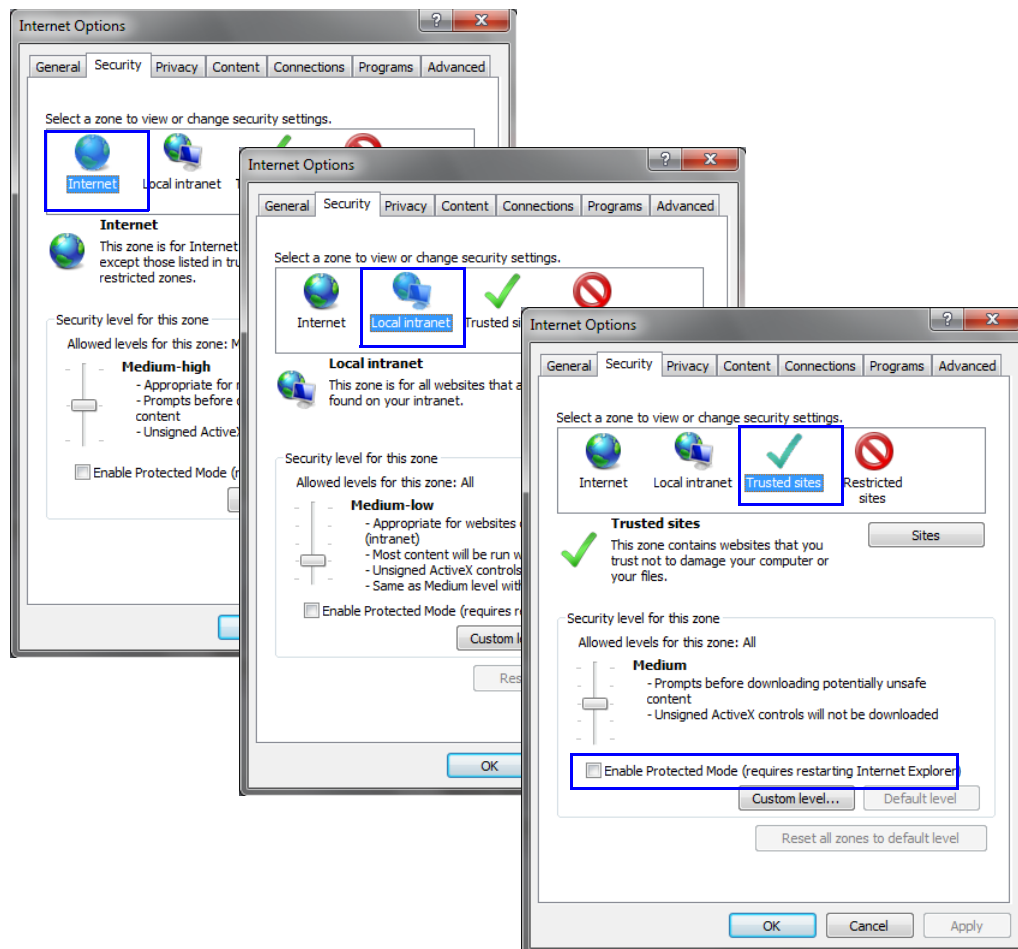
- 1 In the *Internet Options* dialog box, click the **Security** tab.

The **Security** tab is displayed.



2 Clear the *Enable Protected Mode* check box for each of the following tabs:

- *Internet*
- *Local intranet*
- *Trusted sites*



3 After successful connection to RMX, the *Enable Protected Mode* check boxes can be selected to enable *Protected Mode* for the following tabs:

- *Internet*
- *Local intranet*

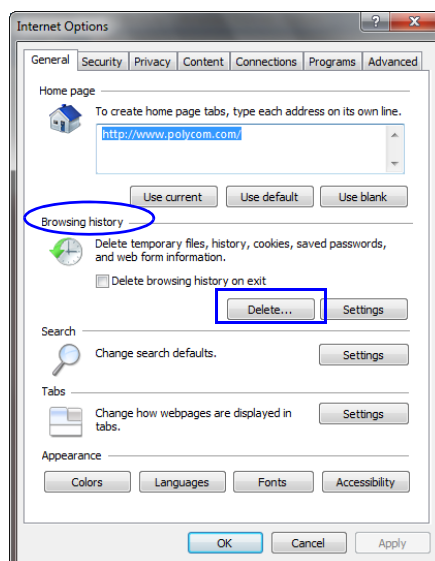
Internet Explorer 8 Configuration

When using *Internet Explorer 8* to run the *RMX Web Client* or *RMX Manager* applications, it is important to configure the browser according to the following procedure.

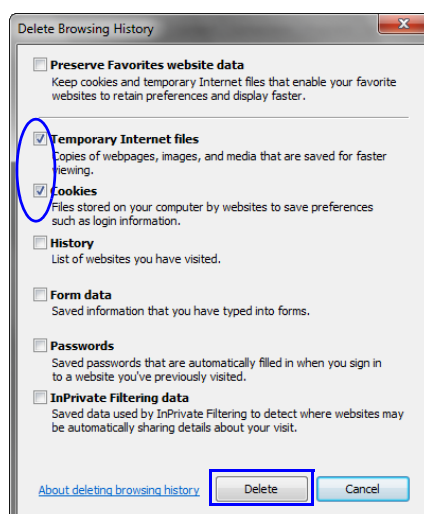
To configure Internet Explorer 8:

- 1** Close **all** browsers running on the workstation.
- 2** Use the *Windows Task Manager* to verify that no *iexplore.exe* processes are running on the workstation. If any processes are found, use the **End Task** button to end them.

- 3 Open *Internet Explorer* but do **not** connect to the *RMX*.
- 4 In the *Internet Explorer* menu bar select **Tools >> Internet Options**.
The *Internet Options* dialog box is displayed with *General* tab open.

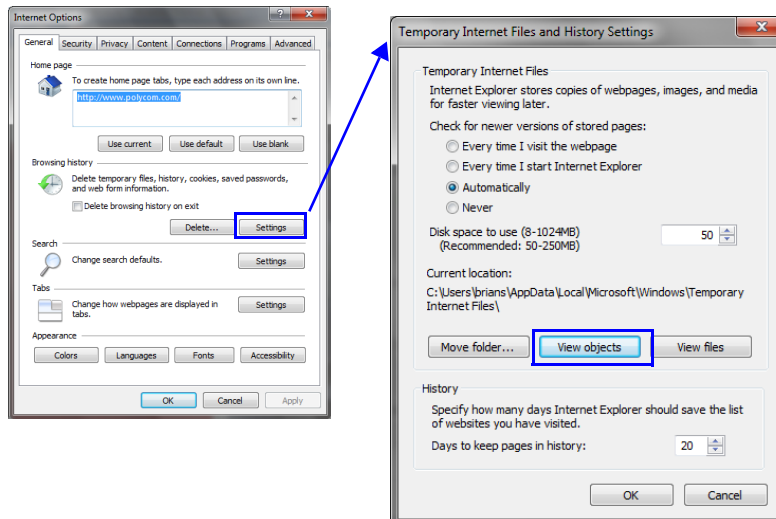


- 5 In the *Browsing history* section, click the **Delete** button.
The *Delete Browsing History* dialog box is displayed.



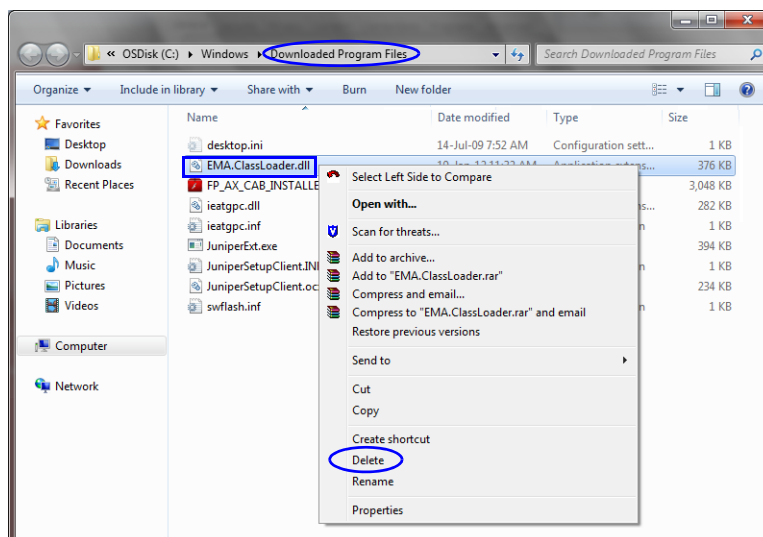
- 6 Select the **Temporary Internet** files and **Cookies** check boxes.
- 7 Click the **Delete** button.
- 8 The *Delete Browsing History* dialog box closes and the files are deleted.
- 9 In the *Internet Options* dialog box, click the **Settings** button.

The *Temporary Internet Files and History Settings* dialog box is displayed.



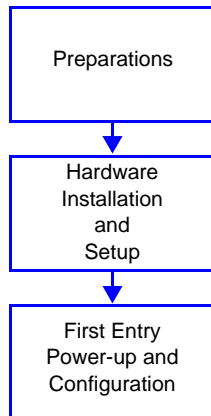
- 10 Click the **View objects** button.

The *Downloaded Program Files* folder containing the installed *Program Files* is displayed.



- 11 Select the **EMAClassLoader.dll** file and press the **Delete** key on the workstation or right-click the *EMA.ClassLoader.dll* file and then click **Delete**.
- 12 Close the *Downloaded Program Files* folder and the *Temporary Internet Files and History Settings* dialog box.
- 13 In the *Internet Options* dialog box, click the **OK** button to save the changes and close the dialog box.

First Time Installation and Configuration



First Time Installation and Configuration of the Polycom RMX 1500/2000/4000 consists of the following procedures:

1 Preparations:

- Gather Network Equipment and Address Information - get the information needed for integrating the RMX into the local network.
- Unpack the RMX.
- Modify the *Management Network parameters* on the USB Key.

2 Hardware Installation and Setup

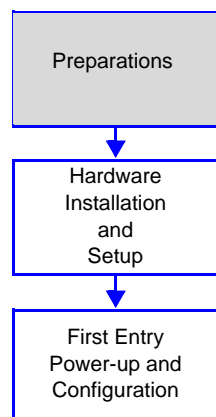
- Mount the RMX in a rack.
- Connect the necessary cables.

3 First Entry Power-up and Configuration

- Power up the RMX.
- Register the RMX.
- Connect to the RMX
- Configure the *Default IP Network Service*.
- Configure the *ISDN/PSTN Network Service*.

Preparations

Gather Network Equipment and Address Information



IP Services

The IP addresses and network parameters which enable communication between the RMX, its management application and the conferencing devices are organized in two IP services:

- **Management Network (Control Unit)**
- **Default IP Service (Conferencing Service)**

During the *First Entry Configuration*, the parameters of these two network services are modified to comply with your local network settings.

Management Network

The *Management Network* enables communication between the RMX *Control Unit* and the RMX *Web Client* and is used to manage the RMX.

The RMX is shipped with default IP addresses as listed in Table 2-1.

Management Network Definition

The definition of the Management Network can be done by two methods:

- **USB key (recommended method)** – The system is shipped with a *USB key* containing the default IP addresses for the control unit and the shelf management. These defaults are first modified in the PC and then uploaded to the RMX.
- **Direct connection** – Creating a private network between the RMX and the computer and modifying the management network parameters using *Fast Configuration Wizard* in the RMX *Web Client*.

For more information, see the RMX 1500/2000/4000 *Administrator's Guide*, "Configuring Direct Connections to RMX" on page G-1.

Default IP Service (Conferencing Service)

The *Default IP Service (Conferencing Service)* is used to configure and manage communications between the RMX and conferencing devices.

IP Network Services Required Information

When installing an RMX unit, these default IP addresses must be modified to your local network settings. Therefore it is important that before powering the RMX unit up for the first time, that you obtain the information needed to complete the **Local Network Settings** section of the table from your network administrator.



Media, signaling and Management networks can be physically separated on the RMX system to provide enhanced security. Up to eight media and signaling networks can be defined for RMX 4000, or four for RMX 2000 and two for RMX 1500. For more information see "Multiple Networks" in the RMX 1500/2000/4000 *Administrator's Guide*.

For each RMX, an IP address must be allocated in the local network for the:

- *Control Unit*
- *Signaling Host*
- *Shelf Management* (optional for RMX 1500)

An additional IP address is also required for each *MPM* card installed in the *RMX*.

Examples:

- **RMX 1500** - the network administrator should allocate:
 - **Three** IP addresses in the local network for an *MCU*.
 - **Four** IP addresses in the local network for an *MCU*, if a separate *Shelf Management IP Address* is required.
- **RMX 2000** - the network administrator should allocate:
 - **four** IP addresses in the local network for an *MCU* with one *MPM/MPM+/MPMx* card.
 - **five** IP addresses for an *MCU* with two *MPM/MPM+/MPMx* cards.
- **RMX 4000** - the network administrator should allocate:
 - **four** IP addresses in the local network for an *MCU* with one *MPM+/MPMx* card.
 - **up to seven** IP addresses for an *MCU* with up to four *MPM+/MPMx* cards.



From *Version 7.1*, *MPM* media cards are not supported.

Table 2-1 Network Equipment and Address Information

| Parameter | Factory Default | Local Network Settings |
|---|-----------------|------------------------|
| <i>Control Unit IP Address</i> | 192.168.1.254 | |
| <i>Control Unit Subnet Mask</i> | 255.255.255.0 | |
| <i>Default Router IP Address</i> | 192.168.1.1 | |
| <i>Shelf Management IP Address</i> | 192.168.1.252 | |
| <i>Signaling Host IP address</i> | — | |
| <i>Media Card 1 IP Address</i> | — | |
| <i>Media Card 2 IP Address</i> RMX 2000/4000 only | — | |
| <i>Media Card 3 IP Address</i> RMX 4000 only | — | |
| <i>Media Card 4 IP Address</i> RMX 4000 only | — | |
| <i>Gatekeeper IP address (optional)</i> | — | |
| <i>DNS IP address (optional)</i> | — | |
| <i>SIP Server IP address (optional)</i> | — | |

ISDN/PSTN Services

The ISDN/PSTN Network Service is used to define the properties of the ISDN/PSTN switch and the ISDN lines running from the ISDN/PSTN switch to the ISDN card installed in the RMX.

Before configuring the ISDN/PSTN Network Service, obtain the following information from your ISDN/PSTN Service Provider:

- Switch Type
- Line Coding and Framing
- Numbering Plan
- Numbering Type
- Dial-in number range



If the RMX is connected to the public ISDN Network, an external CSU or similar equipment is needed.

Unpacking the RMX

Unpacking the RMX 1500

To unpack and lift the RMX 1500:

- 1 When you receive the RMX 1500 packing case, inspect the equipment for damage and verify that the components match the packing slip.
- 2 Open the top cover of the packing case.
Boxes are placed on the top Stratocell® and contain the following:
 - *Installation Accessories.* This kit contains the power cables, 3 ethernet cables, USB key and documentation.
 - *Rack Installation Accessories.* This kit contains the accessories for the 19" rack. For more details, see "Telescopic Rail Runners Accessory Kit" on page [2-9](#).
 - *Optional - ISDN Package.* Contains the ISDN card and *ISDN Software License for ISDN/PSTN*.



Write down the RMX's serial number that is on a sticker on the back of the unit. It will be needed for product registration later in the process.

Make sure that boxes contain all the required parts.

Unpacking the RMX 2000

To unpack and lift the RMX 2000:

- 1 When you receive the RMX 2000 packing case, inspect the equipment for damage and verify that the components match the packing slip.
- 2 Open the top cover of the packing case.
Boxes are placed on the top Stratocell® and contain the following:
 - *Installation Accessories.* This kit contains the power cables, 1 ethernet cable, USB key and documentation.
 - *Rack Installation Accessories.* This kit contains the accessories for the 19" rack. For more details, see "Telescopic Rail Runners Accessory Kit" on page [2-9](#).

- *Optional - ISDN Package.* Contains the ISDN card and *ISDN Software License for ISDN/PSTN.*



Write down the RMX's serial number that is on a sticker on the back of the unit. It will be needed for product registration later in the process.

Make sure that boxes contain all the required parts.

Unpacking the RMX 4000

To unpack and lift the RMX 4000:

- 1 When you receive the RMX 4000 packing case, inspect the equipment for damage and verify that the components match the packing slip.
- 2 The RMX 4000 is shipped in a packing case with Stratocell® packaging, and the top cover must be unlocked and lifted.

Boxes are placed on the top Stratocell® and contain the following:

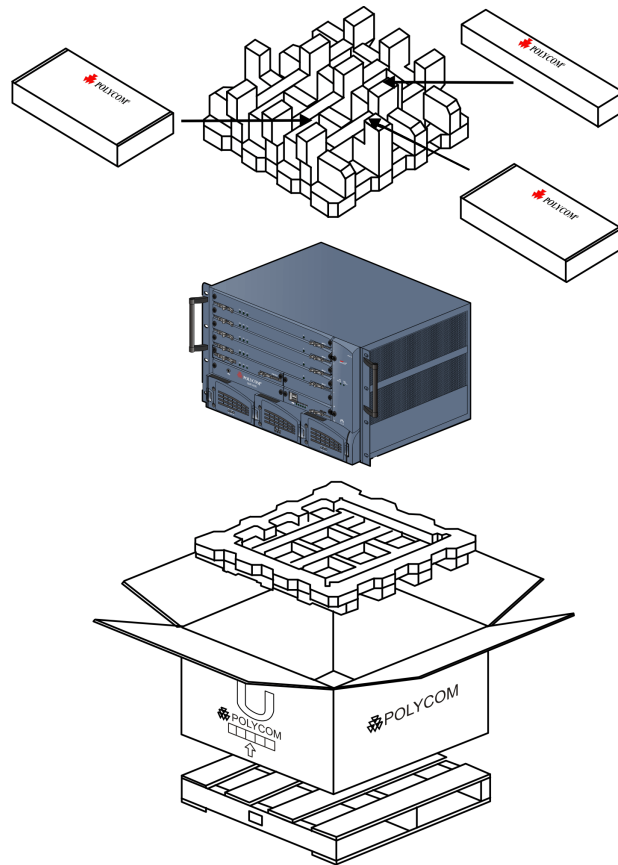
- *Installation Accessories.* This kit contains the power cables, 4 ethernet cables, USB key and documentation.
- *Rack Installation Accessories.* This kit contains the accessories for the 19" rack. For more details, see "*Telescopic Rail Runners Accessory Kit*" on page [2-9](#).
- *Optional - ISDN Package.* Contains the ISDN card and *ISDN Software License.*



Write down the RMX's serial number that is on a sticker on the back of the unit. It will be needed for product registration later in the process.

Make sure that boxes contain all the required parts.

- 3 Remove the boxes and top Stratocell® and open the anti-static plastic bag wrapping the RMX.



- 4 Holding the handle on each side, lift the RMX 4000 from the box, and place it on a flat surface or in a rack. Remove any packaging material prior to positioning the RMX 4000.



Attention:

Two people are required to lift the MCU out of the box and when installing it in a rack.



Write down the serial number of the RMX, located on a sticker on the back of the unit. It will be needed for product registration later in the process.

Modifying the Factory Default Management Network Settings on the USB Key

The *USB key* contains a text file, *lan.cfg*, which holds the factory default IP address parameters. These parameters must be modified to your local network settings using the *LAN Configuration Utility*, also on the *USB key*.

To modify the USB key settings:

- 1 Take the *USB Key* from the *Installation Accessories* kit and insert it into the PC workstation.

The *Polycom Documentation* window opens.

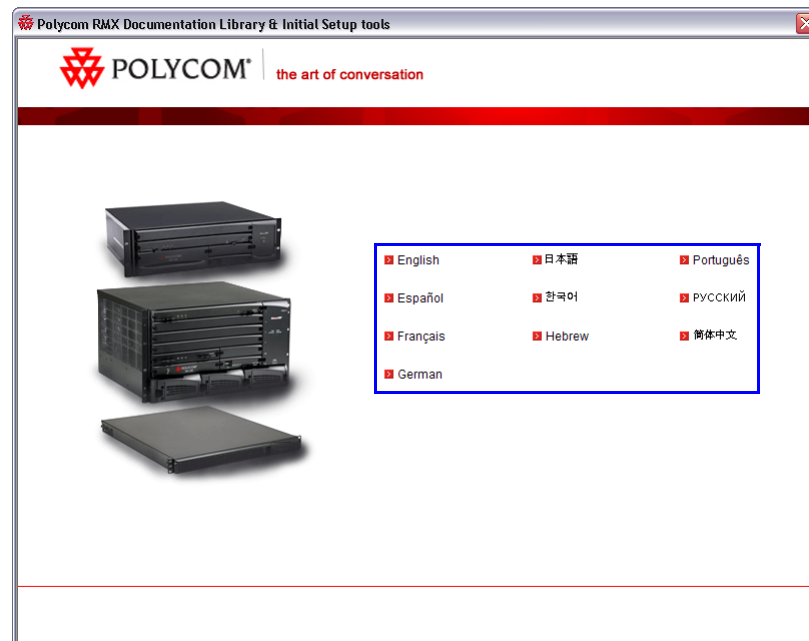
In Windows XP:

- a The **Polycom Documentation** option is automatically selected. Click **OK**.

In Windows 7:

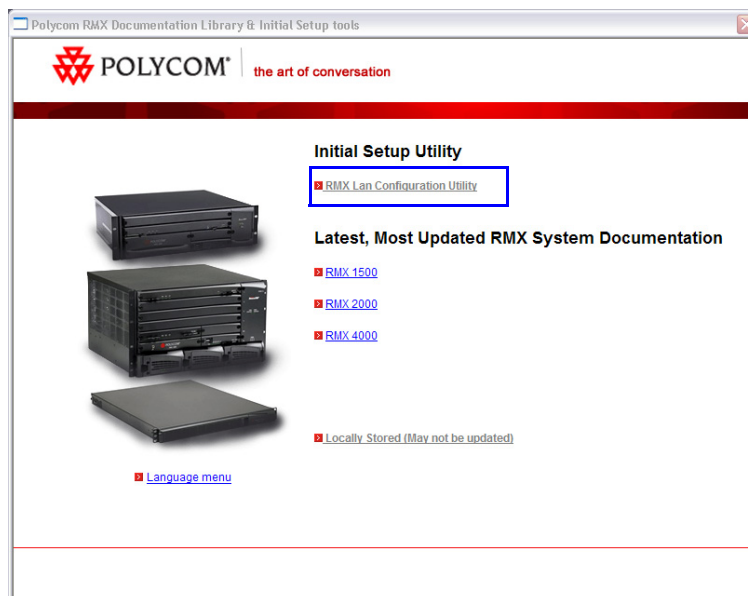
- a Select **Open Folder to view files using Windows Explorer**.
- b Double-click the **index.hta** file.

The *Language Menu* opens, offering a choice of several languages.

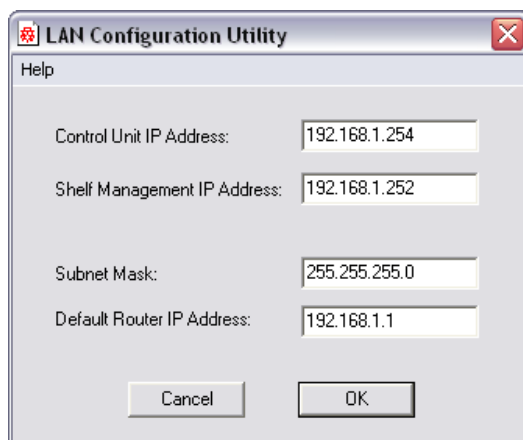


- 2 Click the documentation language of your choice.
An *End-User Licence Agreement for Polycom Software* is displayed.
- 3 Read the agreement and click the **Accept Agreement** button.

- 4 In the *Initial Setup Utility* screen, click the **RMX LAN Configuration Utility** link.



The *LAN Configuration Utility* dialog box opens.



- 5 Modify the following parameters in the utility's dialog box using the information supplied by your network administrator.
- *Control Unit IP Address*
 - *Shelf Management IP Address*
 - *Subnet Mask*
 - *Default Router IP Address*
- 6 Click **OK**.
- 7 Remove the *USB Key* from the PC workstation.
The *USB key* is required for *First Entry Power-up and Configuration* of the RMX.

Hardware Installation and Setup

In a well ventilated area, mount the RMX 1500/RMX 2000/RMX4000 unit in a 19" rack. It is important to adhere to the *Site Requirements* as described in the *RMX 1500/2000/4000 Hardware Guides*, "Site Requirements" on page 1-3.



To maximize conferencing performance, especially in high bit rate call environments, a 1Gb connection is recommended for all RMX types.

The following procedures have to be performed to install the *RMX System* in your site:

- Installing the *RMX* in a rack or as a standalone. When installing the *RMX* unit on a rack, this process is done in two stages:
 - Installing the telescopic rail runners on the rack. This stage is identical to all *RMX* system types.
 - Mounting the *RMX* on the rack using the previously installed rail runners
- Connecting the *RMX* to the power source
- Connecting the network (*LAN* and *ISDN*) cables to the *RMX*.

Installing the Telescopic Rail Runners on the Rack

Telescopic Rail Runners Accessory Kit

Before installing the telescopic rail runners in the rack, make sure that the kit has the following parts:

Table 2-2 Rail Runners Kit Contents

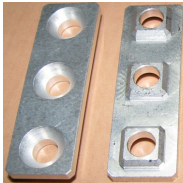






| Part/Kit no. | Item | Item no. | Item Sample | Item Quantity |
|---------------------------------|---------------------------|----------|---|---------------|
| ASY2716A-L0 | | | | |
| <i>Rail runner</i> | Left rail runner | 1 | See Figure 2-1 | 1 |
| | Right rail runner | 2 | See Figure 2-1 | 1 |
| <i>Rack spacer assembly kit</i> | Rack spacer | 3 | Front & Rear  | 4 |
| | Flat head screw - M5*10mm | 4 |  | 8 |

Table 2-2 Rail Runners Kit Contents

| Part/Kit no. | Item | Item no. | Item Sample | Item Quantity |
|---------------------------------|--------------------------|----------|--|---------------|
| <i>Rail runner assembly kit</i> | Flat head screw - M3*8mm | 5 |  | 4 |
| | Flat washer M3 | 6 |  | 4 |
| | Nut spring M3 | 7 |  | 4 |
| <i>RMX chassis assembly kit</i> | Pan head screw - M5*12mm | 8 |  | 2 |
| | Flat washer M5 | 9 |  | 2 |

Telescopic Rail Runner Assembly



Rack Rail Runners require a minimum of 48cm and a maximum of 80cm within the rack for installation

- 1 Determine the location of the RMX on the rack:
 - Allow for a 1U gap above and below the system for ventilation.

- Use the *Rack Spacer* (item no. 3) to predetermine its position on the rack post, making sure that square studs of the spacer fit into the rack post's square/rounded mounting holes. Mark the spacer's location on the rack post. Repeat this process for the 3 remaining vertical posts ensuring that the system can be horizontally seated.

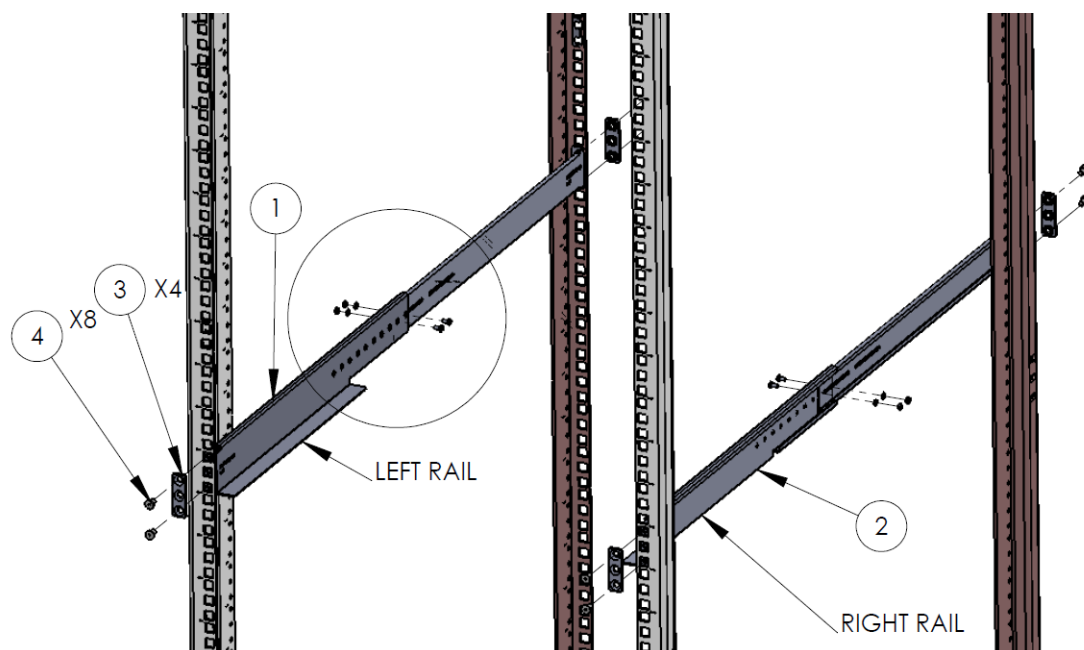


Figure 2-1 Front view of RMX Rail Runner Assembly

- 2 Position the *Rack Spacer* (item no. 3) onto the marked rack post together with left rack rail runner (item no. 1 which is labeled LEFT) and fasten the flat head screws 3*10mm



(item no. 4) as shown in Figure 2-2.

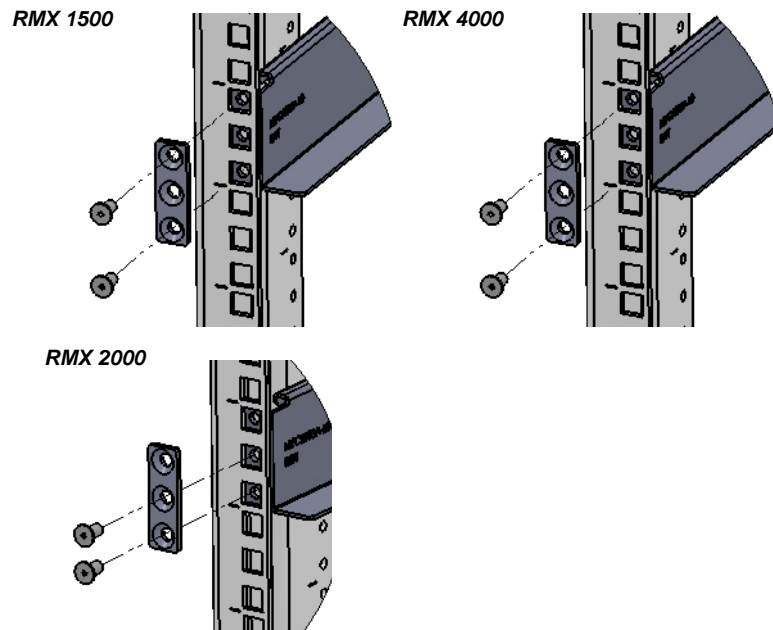


Figure 2-2 Detail of Front Rack Spacer Assembly for the RMX



- On the RMX 1500/4000 the center hole on the *Rack Spacer* must be left clear as it is required for fixing the RMX to the rack post. See Figure 2-2.
- On the RMX 2000 the top hole on the *Rack Spacer* must be left clear as it is required for fixing the RMX to the rack post. See Figure 2-2.

- 3 Adjust the telescopic rack rail runner to the rack opening and mount it onto the marked position of the rear post as described in step 2.

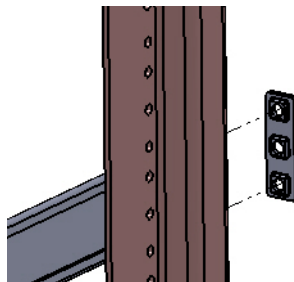





Figure 2-3 Detail of Rear RMX 1500/2000/4000 Rack Spacer Assembly

- 4 Repeat steps 2 and 3 for the right rack rail runner.
- 5 Install the flat head screw  (item 5), flat washer  (item 6) and nut spring  (item 7) in the middle of the telescopic rack rail runner for added stability as shown in Figure 2-4.

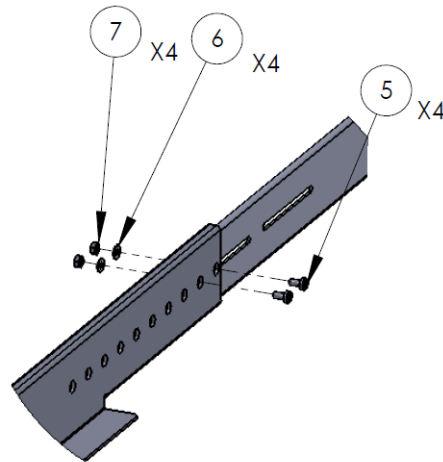


Figure 2-4 Detail of Left Rail Runner (front internal view)



The number of screws to install depends on the rack width.

- 6 Repeat step 5 for the right rack rail runner.

Installing the RMX 1500



For detailed instructions, precautions and requirements for installing the *RMX 1500* refer to the *Polycom RMX 1500 Hardware Guide*.

The following procedures have to be performed to install the *RMX 1500* in your site:

- **Optional.** Installing the RTM ISDN card on the RMX (Optional)
- Installing the RMX in a rack or as a standalone
- Connecting the RMX to the power source
- Connecting the network (*LAN*, *IP* and *ISDN*) cables to the RMX.

Optional. Installing the RTM ISDN 1500 Card on the RMX 1500

If the ISDN option was purchased with your RMX, the ISDN card is shipped separately and must be manually installed into the rear of the RMX 1500. It is recommended to install the ISDN card before the RMX 1500 is placed in a rack.

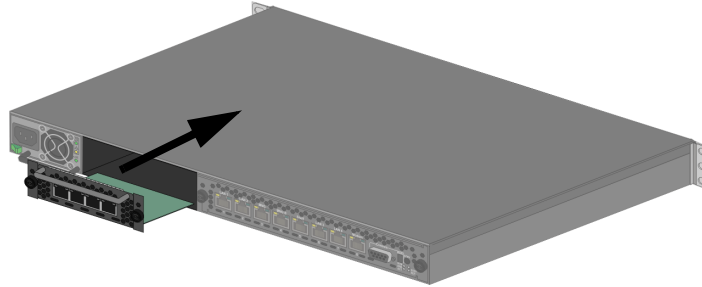
Removing the blank cover from the rear of the RMX 1500

- 1 Ensure that the power switch on the RMX is turned OFF (O).
- 2 Remove the cover by unscrewing the captive screws that fasten the card to the MCU.

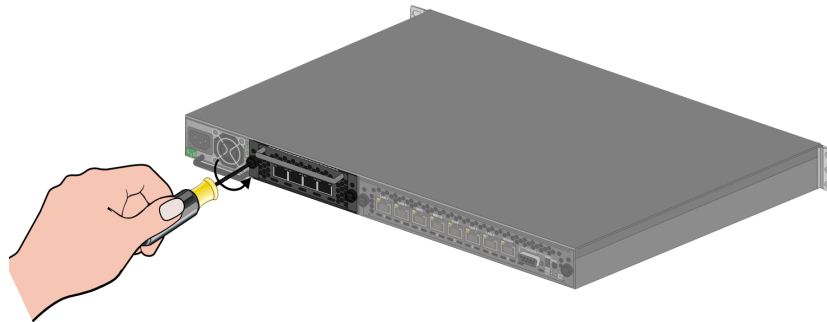
- 3 Slide out the cover.

Installing the RTM ISDN 1500 Card

- 1 Slide in the RTM ISDN 1500 card.



- 2 Insert the card into the slot and tighten the captive screws on each side of the rear panel of the card, securing the RTM ISDN card to RMX.





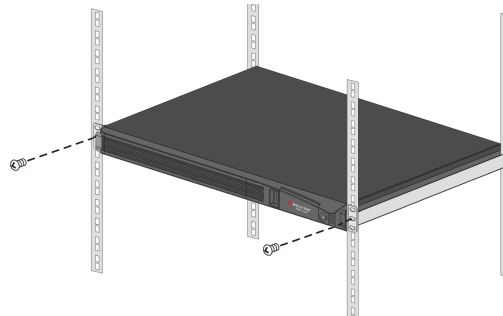
A Software License is included with the ISDN card. This license must be registered as part of the *Product Registration* and *Product Activation* process.

Mounting the RMX 1500 in a Rack

There are two methods for installing the RMX in a 19" rack:

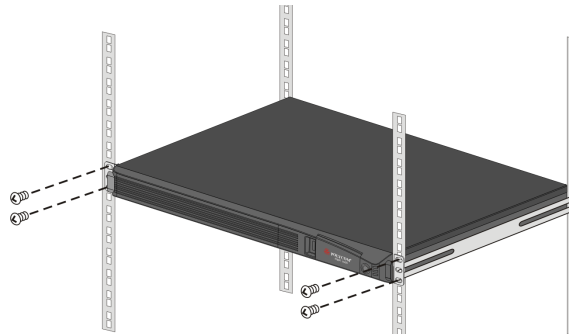
- **Using the rack rail runners on the RMX 1500**
 - Install the telescopic rail runners, as described in "*Installing the Telescopic Rail Runners on the Rack*" on page [2-9](#).
 - Mount the RMX 1500 on top of the rail runners.

- Fasten the *RMX* to the rack spacers using the flat head screw  (item 8) with flat washer  (item 9) through the two holes in the *RMX*'s front mounting brackets.



Refer to Figure 2-2, "Detail of Front Rack Spacer Assembly for the *RMX*" on page 2-12 for installation instructions.

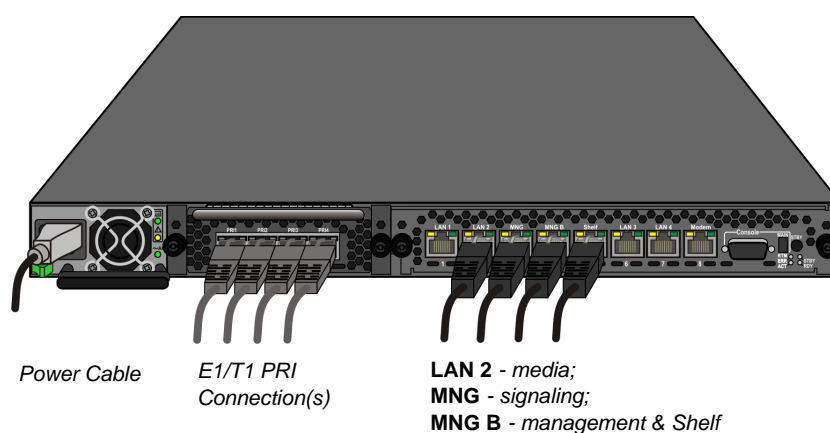
- **Using a shelf**
 - Install the shelf, supplied by the rack manufacturer, in the rack.
 - Mount the *RMX* unit on the shelf.
 - Fasten the *RMX* unit to the rack with screws through the four holes in the *RMX*'s front mounting brackets.



Connecting Cables to the RMX 1500

To connect the cables:

- Connect the Media cable to **LAN 2** port.
 - **Optional.** If LAN Redundancy or Multiple Networks options are used, connect the LAN cable to **LAN 1**. For more information, see *RMX 1500/2000/4000 Administrator's Guide*, "LAN Redundancy" on page [15-30](#).
- Connect the Network cables to:
 - the **MNG** (*Signaling*) port
 - the **MNG B** (*Management Network*) port.
- **Optional.** Connect the *Shelf Management* cable to the **Shelf** port.
- **Optional.** For ISDN/PSTN connections, connect the E1/T1 cables to their **PRI (1-4)** ports.



The LAN 1*, LAN3, LAN4 and Modem ports are not be used and the plastic caps covering those ports should not be removed.

* With Multiple network and LAN redundancy configurations, LAN 1 port is used. For more information, see the *RMX 1500/2000/4000 Administrators Guide*, *Multiple Services* and *LAN Redundancy*.

Installing the RMX 2000



For detailed instructions, precautions and requirements for installing the RMX 2000 refer to the *Polycom RMX 2000 Hardware Guide*.

The following procedures have to be performed to install the RMX 2000 in your site:

- **Optional.** Installing the RTM ISDN card on the RMX (Optional)
- Installing the RMX in a rack or as a standalone
- Connecting the RMX to the power source
- Connecting the network (LAN and ISDN) cables to the RMX

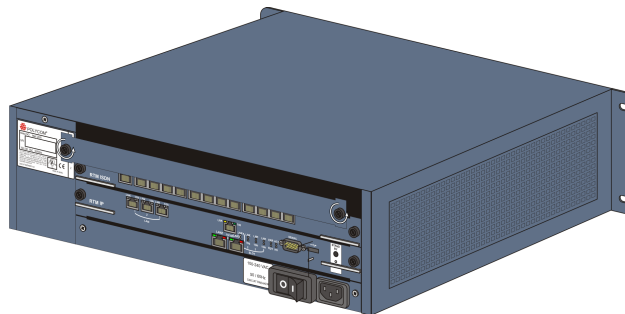
Optional. Installing the RTM ISDN Card on the RMX 2000

If the ISDN option was purchased with your RMX, the ISDN card is shipped separately and must be manually installed into the rear of the RMX 2000. It is recommended to install the ISDN card before the RMX 2000 is placed in a rack.

Removing the blank cover from the rear of the RMX 2000

Use the following procedure to remove the blank cover:

- 1 Ensure that the power switch/circuit switch on the RMX is turned OFF (O).
- 2 Unscrew the captive screws on the rear panel of the RMX that secure the blank panel.
- 3 Use the metal ejector levers to pull the blank panel.

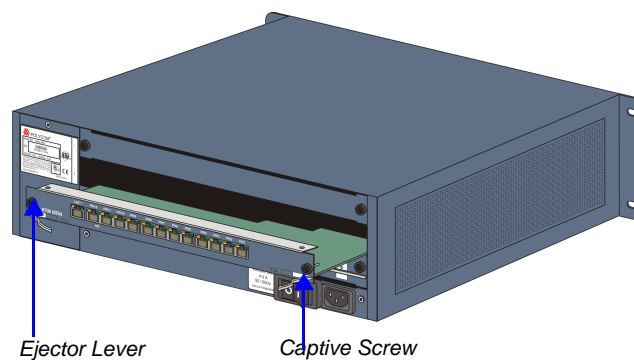


Installing the RTM ISDN 2000 Card

- 1 On the new RTM ISDN card move the ejector levers to their fully open position.
- 2 Slide in the RTM ISDN card in the RMX slot.



An RTM ISDN card must connect directly to an MPM/MPM+/MPMx card in the opposite facing front slot.





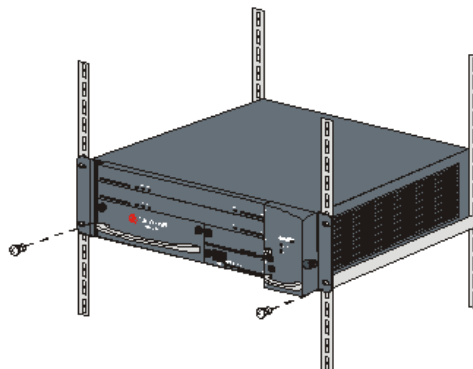
- 3 Push the card into the slot until the ejector levers touch the front edge of the card cage.
- 4 Push the ejector levers to their fully closed position.
- 5 Tighten the captive screws on each side of the rear panel of the card, securing the RTM ISDN card to RMX

A Software License is included with the ISDN card. This license must be registered as part of the *Product Registration* and *Product Activation* process.

Mounting the RMX 2000 in a Rack

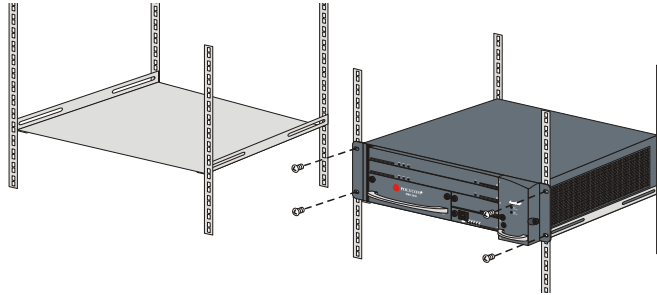
There are two methods for installing the RMX in a 19" rack:

- **Using rack rail runners on the RMX 2000:**
 - Install the telescopic rail runners, as described in "*Installing the Telescopic Rail Runners on the Rack*" on page 2-9.
 - Mount the RMX 2000 on top of the rail runners.
 - Fasten the RMX to the rack spacers using the flat head screw  (item 8) with flat washer  (item 9) through the two holes in the RMX's front mounting brackets.



Refer to Figure 2-2, "*Detail of Front Rack Spacer Assembly for the RMX*" on page 2-12 for installation instructions.

- **Using a shelf:**
 - Install the shelf, supplied by the rack manufacturer, in the rack.
 - Mount the RMX on the shelf.
 - Fasten the RMX to the rack with screws through the four holes in the RMX's front mounting brackets.



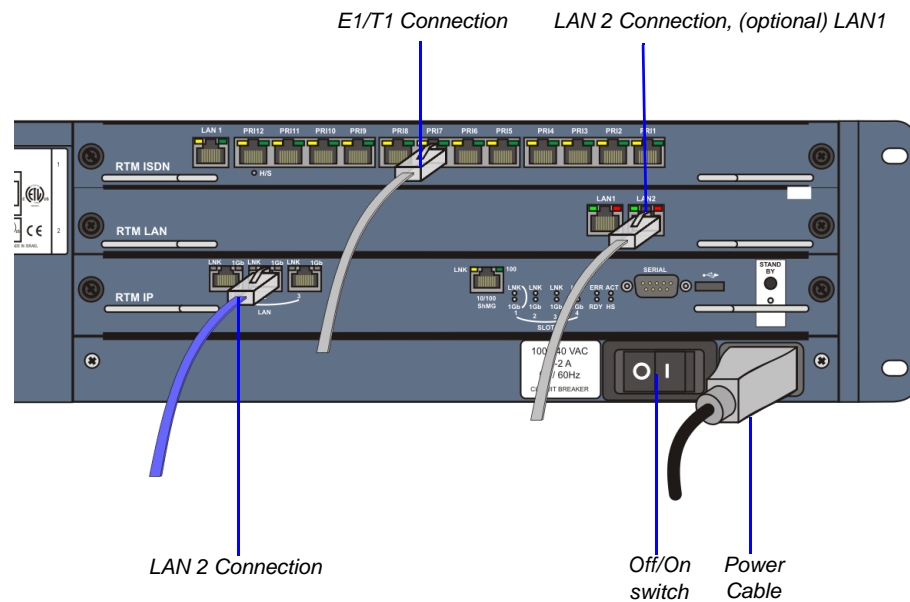
Connecting Cables to the RMX 2000



Do not remove the protective caps from LAN1, LAN3 and ShMG ports.

Connect the following cables to the back panel:

- Power cable
- On the RTM IP card connect the LAN cable to **LAN 2** Port.
- On the RTM LAN card connect the LAN cable to **LAN 2**.
 - **Optional.** Connect the LAN cable to **LAN 1**.
With *Multiple Networks* and *LAN Redundancy* configurations, **LAN 1** port is used. For more information, see the *RMX 1500/2000/4000 Administrator's Guide*, "LAN Redundancy" on page [15-30](#) and "Multiple Network Services" on page [15-45](#).
- **Optional.** On the RTM ISDN card connect the E1/T1 Cables to **PRI** Ports.



Installing the RMX 4000

The following procedures have to be performed to install the RMX 4000 at your site:

- **Optional.** Installing the RTM ISDN card on the RMX
- Mounting the RMX in a rack
- Connecting the RMX to the power source
- Connecting the network (LAN and ISDN) cables to the RMX

Optional. Installing the RTM ISDN Card on the RMX 4000

If the ISDN option was purchased with your RMX, the ISDN card is shipped separately and must be manually installed into the rear of the RMX 2000. It is recommended to install the ISDN card before the RMX 2000 is placed in a rack.

Removing the RTM LAN Card or the blank cover from the rear of the RMX 4000

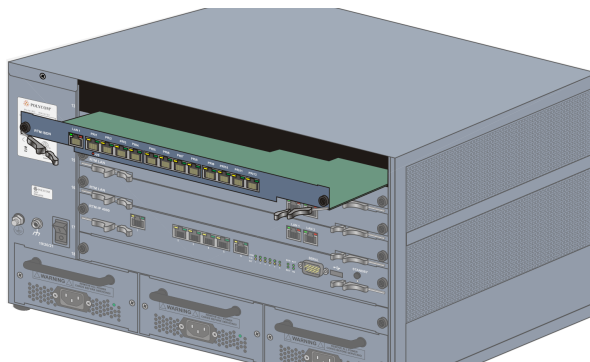
- 1 Ensure that the power switch on the RMX 2000/4000 is turned OFF (O).
- 2 Remove the RTM LAN or blank cover by unscrewing the captive screws that fasten the card or the cover to the RMX. When removing a card, use the metal ejector levers to pull the RTM LAN card out of its slot from the backplane.
- 3 Slide out the RTM LAN or RTM ISDN card.

Installing the RTM ISDN 4000 Card

- 1 On the RTM ISDN card move the ejector levers to their fully open position.
- 2 Slide the new RTM ISDN card into its slot.



An RTM ISDN card must connect directly to an MPM+/MPMx card in the opposite facing front slot.



- 3 Push the card into the slot until the ejector levers touch the front edge of the card cage. Push the ejector levers to their fully closed position.
- 4 Tighten the captive screws on each side of the rear panel of the card, securing the RTM ISDN card to RMX.

A Software License is included with the ISDN card. This license must be registered as part of the *Product Registration* and *Product Activation* process.



Mounting the RMX 4000 in a Rack

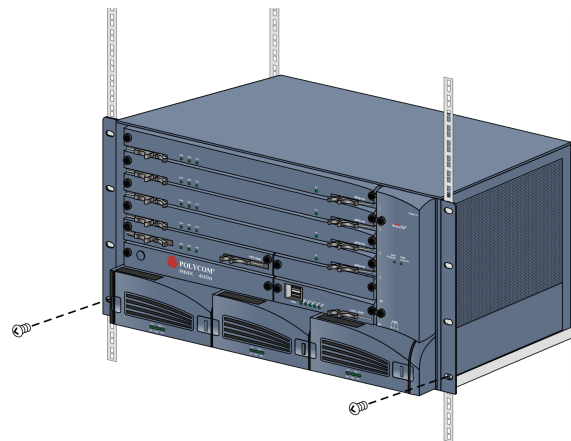
Either place the RMX 4000 on a hard, flat surface such as a desktop or mount it on a 19" rack.



For a detailed description of the safety requirements and precautions and the installation of the RMX 4000 as a standalone, or reverse mounting the RMX 4000 on a 19" rack, see the *RMX 4000 Hardware Guide*.

To install the RMX 4000 in a 19" rack:

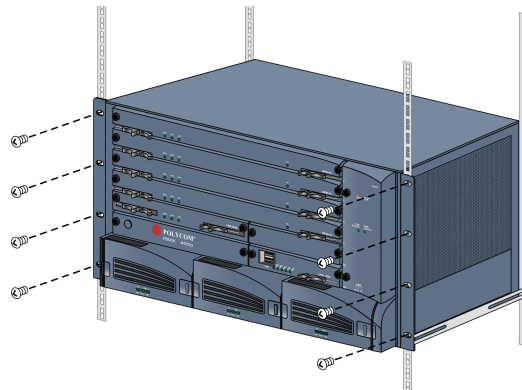
- **Using rack rail runners on the RMX 4000**
 - Install the telescopic rail runners, as described in "Installing the Telescopic Rail Runners on the Rack" on page 2-9.
 - Mount the RMX 2000 on top of the rail runners.
 - Fasten the RMX to the rack spacers using the flat head screw  (item 8) with flat washer  (item 9) through the two holes in the RMX's front mounting brackets.



Refer to Figure 2-2, "Detail of Front Rack Spacer Assembly for the RMX" on page 2-12 for installation instructions.

- **Using a shelf**
 - Install the shelf, supplied by the rack manufacturer, in the rack.
 - Mount the RMX on the shelf.

- Fasten the RMX to the rack with screws through the eight holes in the RMX's front mounting brackets.



Connecting the RMX 4000 to the Power Sources

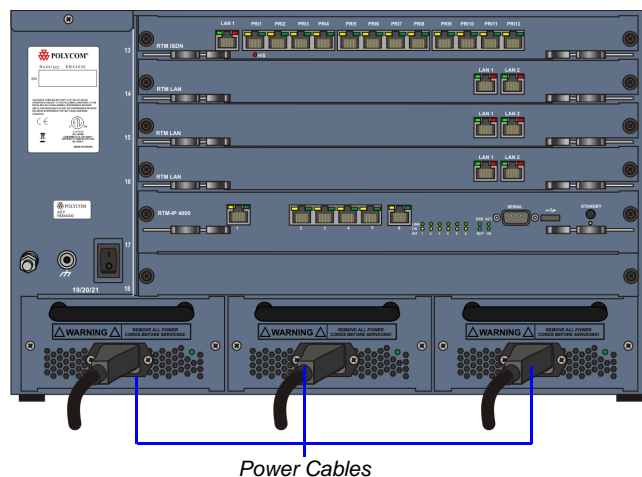


The size of the protective earthing conductor & cable should be a minimum of 10AWG.

Connect the following power cables to the RMX 4000 back panel:

AC Power Supply connections:

- 1 Insert power cables to each of the three AC Power Entry Modules (PEMs).



DC Power Supply connections:

- 1 On the DC Power Rail Modules set the two circuit breakers to OFF.



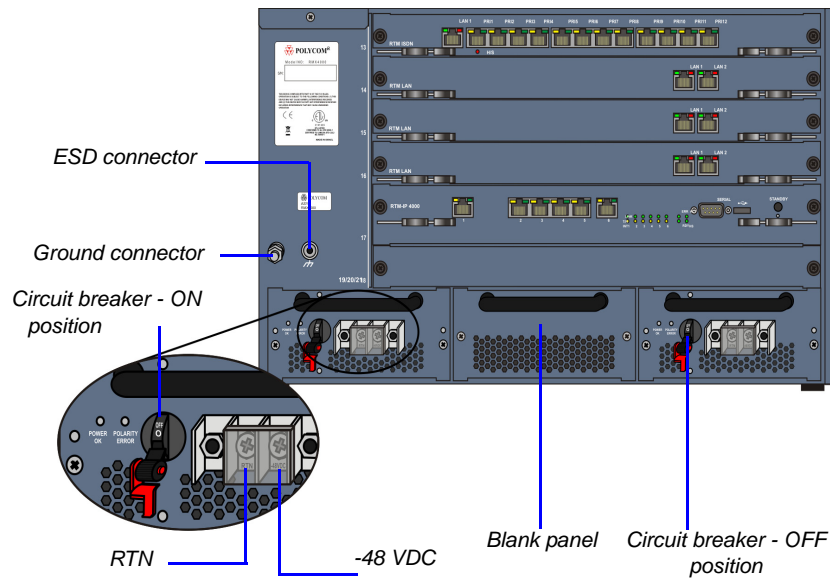
Two types of circuit breakers can be installed on the DC Power Rail Module (PRM). For more information, see the *RMX 4000 Hardware Guide*.

- 2 Ensure that the cables from the Main that supplies electricity to the DC power units are OFF or disconnected.
- 3 Remove the transparent plastic caps on the terminal block.

- 4 Using the two wires of a 10 AWG cable running from the DC power distribution unit, connect the black wire into the -48VDC terminal block and the red wire to the RTN terminal block.



- A 10 AWG cable must be used to connect the mains with the RMX 4000 DC Power Rail Model.
- The supply wires for DC version must be terminated using quick connectors.
- Extension cords may not be used.



The center PRM slot/module is fitted with a blank panel and the slot cannot be used on a system with DC Voltage.

- 5 Connect the green or green-yellow wire to the system single-point M6x15 "Ground" bolt.



The rating of the protective earthing conductor should be a minimum of 10AWG.

If the unit is rack mounted, the single-point ground on the MCU must be connected to the rack with a single conductor and fixed as to prevent loosening. When using bare conductors, they must be coated with an appropriate antioxidant compound before crimp connections are made. Tinned, solder-plated or silver plated connectors do not have to be prepared in this manner.

- 6 Replace the transparent plastic caps on the terminal block.
- 7 Turn ON the Main that supplies power to the RMX.
- 8 Turn ON the circuit breaker on each of the DC Power Rail Modules.

Connecting Cables to the RMX 4000

To connect the cables (AC and DC systems):

- **RTM-IP 4000:**
 - Connect the Management Network cable to **LAN 2**.
 - Connect the Signaling cable to **LAN 3**.
 - Connect the Shelf Management cable to **LAN 6**.
- For each installed **RTM LAN** - Connect the LAN cable to **LAN 2**.
 - **Optional.** Connect the LAN cable to **LAN 1**. With Multiple networks and LAN redundancy configurations, LAN 1 port is used. For more information, see *RMX 1500/2000/4000 Administrator's Guide*, "LAN Redundancy" on page 15-30 and "Multiple Network Services" on page 15-45.
- **Optional.** If RTM ISDN is installed, for each installed **RTM ISDN**:
 - Connect the E1/T1 cables to their **PRI** Ports.
 - Connect the LAN cable to **LAN 1**.

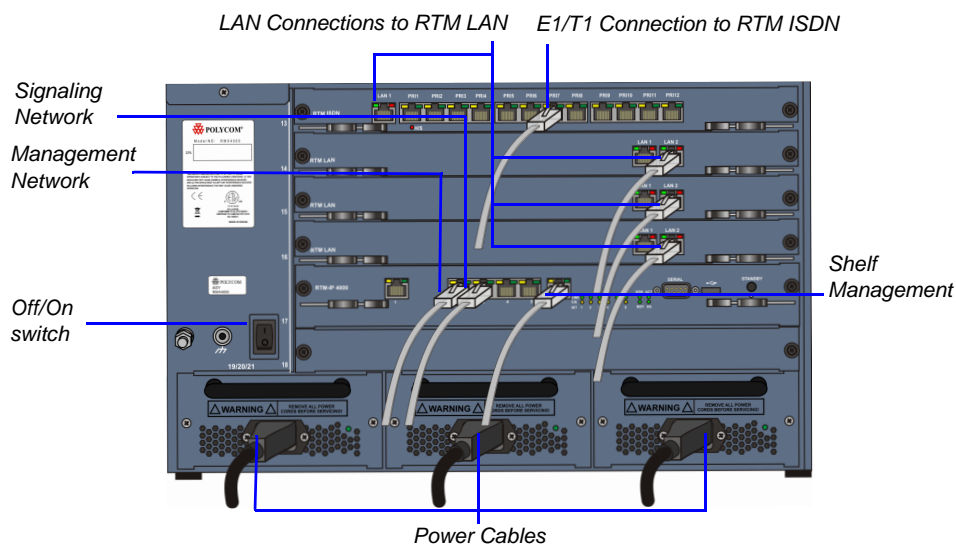
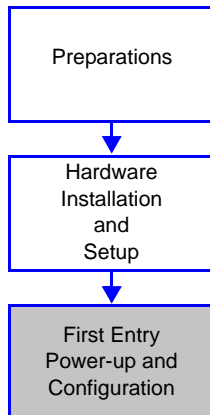


Figure 2-5 RMX 4000 Rear Panel View with AC Power and Communication Cables

First Entry Power-up and Configuration



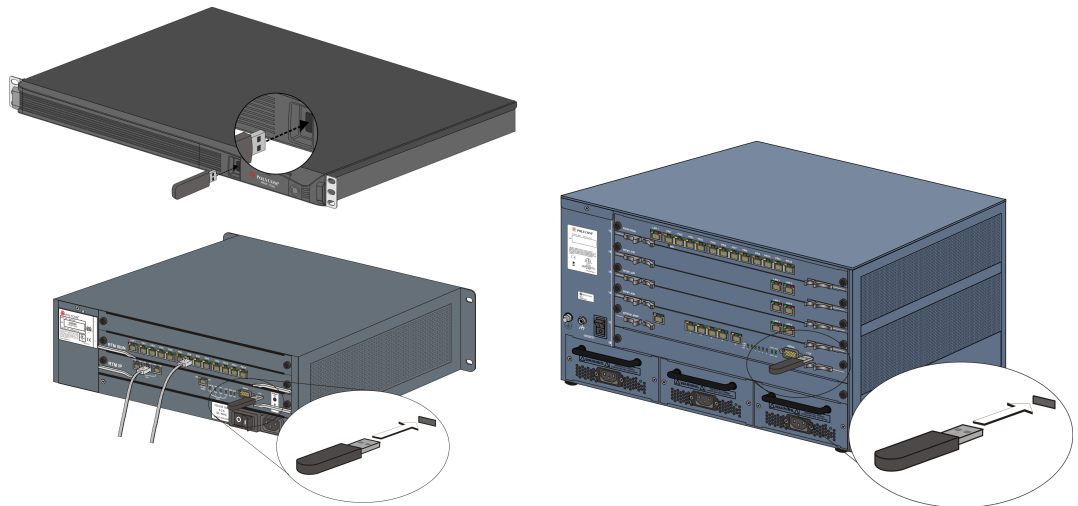
There are four procedures necessary for setup of the new RMX. It is important that they are performed in the following sequence:

- 1 First-time Power-up
- 2 Product Registration.
- 3 Connection to MCU.
- 4 Modifying the Default IP and ISDN/PSTN Service Settings (*Fast Configuration Wizard*).

Procedure 1: First-time Power-up

To power-up for the first time using the USB key:

- 1 Insert the *USB key* containing the modified IP addresses in USB port on the RMX 1500 front panel and RMX 2000/4000 back panel.



- 2 Power the RMX On.

- **AC System** - Turn ON the power by pressing on the power switch located on the rear panel of the RMX 1500/2000/4000.
 - On the RMX 1500, the ON/OFF button is lit (ON).
 - On the RMX 2000/4000, the FAN STATUS and PWR STATUS LEDs turn ON.
- **DC System (RMX 4000)** - Turn ON the Main that supplies power to the RMX and then turn ON each of the DC power rail modules.

System power-up sequence may take approximately 10 minutes.

During this time, the parameters in the **lan.cfg** file are uploaded from the USB key to the RMX's memory and applied during the power-up sequence.

Wait for the upload process to complete. Initially all the READY/IN USE/ERROR LEDs on the RMX 1500 or ERR/RDY/ACT LEDs on the RMX 2000/4000 flicker and flash. Upload is completed when all the LEDs turn off and only the red ERROR/ERR

LED (on the CTNL unit of the RMX 2000/4000) remains ON.

It remains ON until the *Default IP Network Service* is configured. For more details, see "*Fast Configuration Wizard*" on page 2-29.

Do not remove the USB key from the RMX until the connection with the RMX is established and the *Login* screen is displayed. For more details, see "*Procedure 3: Connection to MCU*" on page 2-26.

Procedure 2: Product Registration

Before the RMX can be used, it is necessary to register the product and the various software licenses and obtain an *Activation Key*.

During first-time power-up, the *Product Activation* dialog box is displayed, requesting you to enter an *Activation Key*.

Obtaining the Activation Key

- 1 Access the *Service & Support* page of the Polycom website at: <http://support.polycom.com>
- 2 Login with your *Email Address* and *Password* or register as a new user.
- 3 Select **Product Registration**.
- 4 Follow the on-screen instructions for *Product Registration* and *Product Activation*. (The RMX's serial number is on a sticker on the back of the unit). For more information, refer to the *RMX Software Licence* document you received with your shipment.



Register all *Polycom Software Licences* that you have purchased when obtaining the *Activation Key*. For example, ISDN, Encryption and Multiple Networks each have different *Polycom Software Licences*.

- 5 When the *Product Activation Key* is displayed, write it down or **copy** it for later pasting into the *Activation Key* field of the *Product Activation* dialog box.

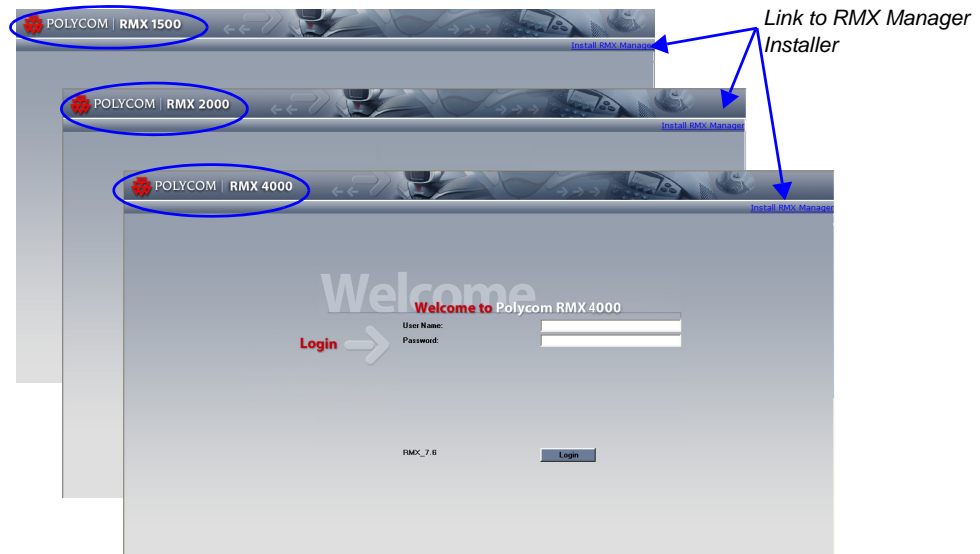
Procedure 3: Connection to MCU



If Windows 7™ is installed on the workstation, **Protected Mode** must be disabled before connecting to the MCU running Version 7.0 software. For more information see "*Windows 7™ Security Settings*" on page 1-11.

- 1 Start the *RMX Web Client* application on the workstation.
 - a In the browser's address line, enter the IP address of the *Control Unit* in the format: **http://<Control Unit IP Address>**, as defined in the USB key.
 - b Click **Enter**.

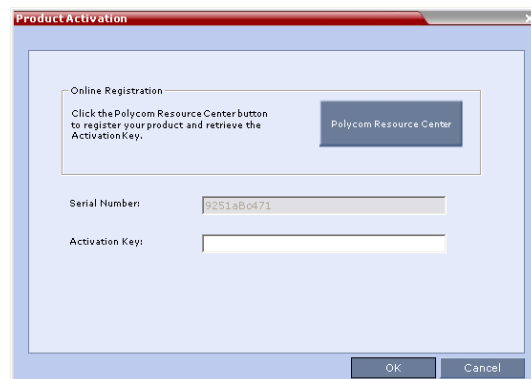
The RMX Web Client Login screen is displayed.



Once the connection with the RMX is established, you can remove the USB key from the RMX. If the error “Browser environment error. Please close all the browser sessions” appears, close all the browser sessions, and reconnect to the RMX. If the error message appears again, either run the automatic troubleshooter utility or manually perform the suggested troubleshooting procedures. For more details, see Appendix B, “Installation Troubleshooting Procedures”.

- 2 In the RMX Web Client Login screen, enter the default *Username* (**POLYCOM**) and *Password* (**POLYCOM**) and click **Login**.

The RMX Web Client opens and the *Product Activation* dialog box appears with the serial number filled in:



- 3 In the *Activation Key* field, enter or **paste** the *Product Activation Key* obtained earlier. If you do not have an *Activation Key*, click the **Polycom Resource Center** button to access the *Service & Support* page of the Polycom Support website.
- 4 Click **OK**.
A message indicating that the *Product Activation Key* was loaded successfully appears. If the *Product Activation Key* failed to load, please contact your vendor.
- 5 Click **OK**.
On the MPM+/MPMx card of the RMX 2000/4000, initially the ERR/RDY/ACT LEDs all flicker and flash, until only the RDY LED turns ON on the media card, while the ERR

LED on the CTNL unit is still ON.

As no *Default IP Network Service* is defined, the system automatically starts the *Fast Configuration Wizard*.

Procedure 4: Modifying the Default IP Service and ISDN/PSTN Network Service Settings

The *Fast Configuration Wizard* is automatically started when no *Default IP Network Service* is defined and it assists you in configuring the *Default IP Network Service*. This happens during *First Time Power-up*, before the service has been defined or if the *Signaling Service* has been deleted, followed by an RMX restart.

The *IP Management Service* tab in the *Fast Configuration Wizard* is enabled only if the factory default Management IP addresses were not modified.



On the *RMX 1500/ 2000/ 4000*, IPv4 is the default protocol for setting the Network Service in the *Fast Configuration Wizard*.

If IPv6 addressing is required, complete the *Fast Configuration Wizard* for IPv4 and then:

- 1** Modify the *Management Network* to use IPv6 addressing or IPv4 and IPv6 addressing.
- 2** Restart the RMX.
- 3** Modify the properties of the *Default IP Network Service*, which will now include IPv6 addressing or IPv4 & IPv6 addressing options to configure the Network Service.

For detailed description of the IP Network Services, see the *RMX 1500/2000/4000 Administrator's Guide*, "Network Services" on page [15-1](#).

Fast Configuration Wizard

- 1 Enter the required IP information in the dialog box.

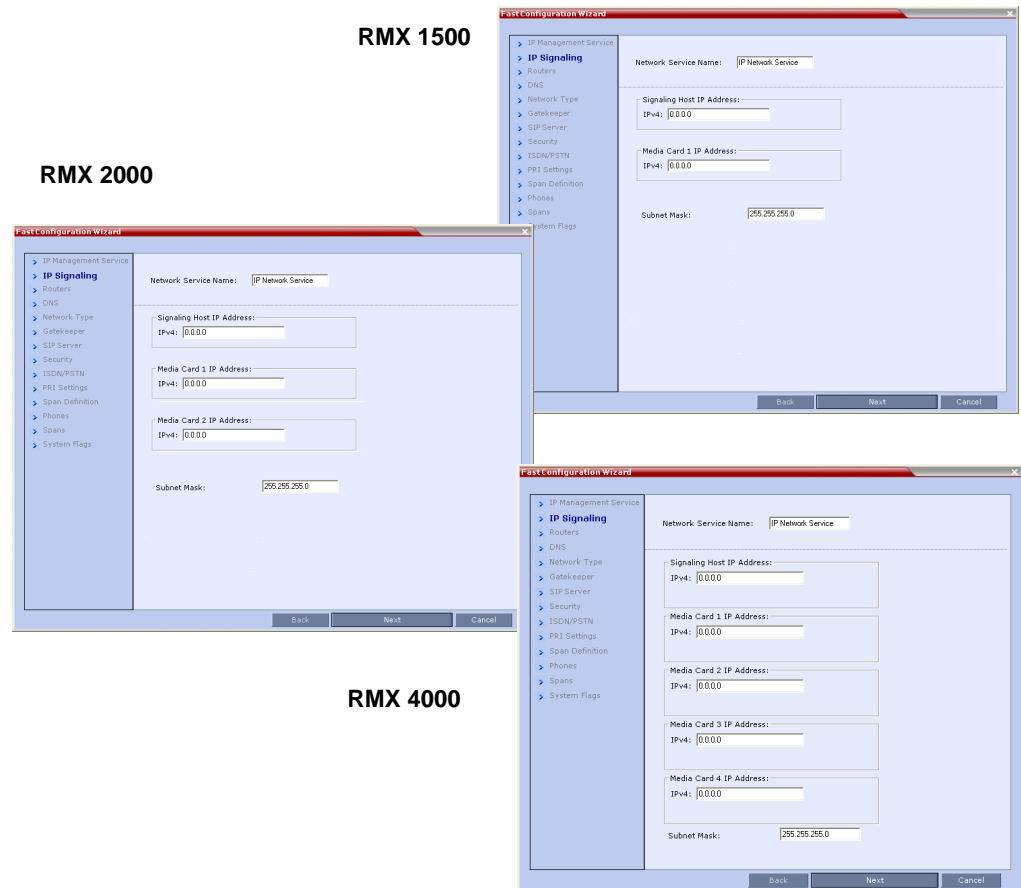


Table 2-3 Fast Configuration Wizard – IP Signaling

| Field | Description |
|------------------------------------|---|
| <i>Network Service Name</i> | The name <i>Default IP Service</i> is assigned to the IP Network Service by the Fast Configuration Wizard. This name can be changed. Note: This field is displayed in all IP Signaling dialog boxes and can contain character sets that use Unicode encoding. |
| <i>Signaling Host IP Address</i> | Enter the address to be used by IP endpoints when dialing into the MCU. Dial out calls from the RMX are initiated from this address. This address is used to register the RMX with a Gatekeeper or a SIP Proxy server. |
| <i>Media Card 1-4 IP Addresses</i> | Enter the IP address(es) of the media card (s) (MPM/MPM+/MPMx 1 and MPM/MPM+/MPMx 2-4 (if installed)) as provided by the network administrator. Endpoints connect to conferences and transmit call media (video, voice and content) via these addresses. |

Table 2-3 Fast Configuration Wizard – IP Signaling (Continued)

| Field | Description |
|--------------------|--|
| <i>Subnet Mask</i> | Enter the subnet mask of the MCU. Default value: 255.255.255.0. |



- To set the RMX to *Secured Communication*, first complete the *Fast Configuration Wizard* and reset the RMX. After Login, install the *Certificate* and then enable *Secured Communication Mode*.
- The *IP Network Service* configured using the *Fast Configuration Wizard* will be saved only if Media cards are installed in the RMX.

- 2 Click **Next**.
- 3 Enter the required **Routers** information in the dialog box.

Table 2-4 Fast Configuration Wizard – Routers

| Field | Description |
|----------------------------------|---|
| <i>Default Router IP Address</i> | Enter the IP address of the default router. |

- 4 Click **Next**.

5 Enter the required **DNS** information in the dialog box.

Fast Configuration Wizard

- > IP Management Service
- > IP Signaling
- > Routers
- > **DNS**
- > Network Type
- > Gatekeeper
- > SIP Server
- > Security
- > ISDN/PSTN
- > PRI Settings
- > Span Definition
- > Phones
- > Spans
- > System Flags

Network Service Name: Default IP Service

MCU Host Name: PolycomMCU

DNS: Off

☐ Register Host Names Automatically to DNS Server

Local Domain Name:

Primary DNS Server IP Address: 0.0.0.0

Back Next Cancel

Table 2-5 Fast Configuration Wizard – DNS

| Field | Description |
|--|---|
| <i>MCU Host Name</i> | Enter the name of the MCU on the network. Default name is RMX. |
| <i>DNS</i> | Select: <ul style="list-style-type: none"> Off – if DNS servers are not used in the network. Specify – to enter the IP addresses of the DNS servers. Note: The IP address fields are enabled only if Specify is selected. |
| <i>Register Host Names Automatically to DNS Server</i> | Select this option to automatically register the MCU Signaling Host and Shelf Management with the DNS server. |
| <i>Local Domain Name</i> | Enter the name of the domain where the MCU is installed. |
| <i>Primary DNS Server IP Address</i> | The static IP address of the primary DNS server. |

6 Click **Next**.

- 7 Select the *IP Network Type*: **H.323**, **SIP** or **H.323 & SIP**.

The screenshot shows the 'Fast Configuration Wizard' window. On the left is a tree view with the following items: IP Management Service, IP Signaling, Routers, DNS, **Network Type**, Gatekeeper, SIP Server, Security, ISDN/PSTN, PRI Settings, Span Definition, Phones, Spans, and System Flags. The 'Network Type' item is selected. The main area on the right contains the following fields: 'Network Service Name' with a text box containing 'Default IP Service', and 'IP Network Type' with a dropdown menu. The dropdown menu is open, showing three options: 'H.323 & SIP' (highlighted), 'H.323', and 'SIP'. At the bottom of the window are three buttons: 'Back', 'Next', and 'Cancel'.

- 8 Click **Next**.
- 9 If you selected **SIP** only, go to **Step 13**.
- 10 Enter the required **Gatekeeper** information in the dialog box.

The screenshot shows the 'Fast Configuration Wizard' window at the 'Gatekeeper' step. The left tree view is the same as in the previous step, but 'Gatekeeper' is now selected. The main area on the right contains the following fields: 'Network Service Name' with a text box containing 'Default IP Service', 'Gatekeeper' with a dropdown menu set to 'Off', 'Primary Gatekeeper' with a text box, 'IP Address or Name' with a text box, 'MCU Prefix in Gatekeeper' with a text box, and an 'Aliases' table. The table has two columns: 'Alias' and 'Type'. There are five rows, each with 'None' in the 'Alias' column and 'None' in the 'Type' column. At the bottom of the window are three buttons: 'Back', 'Next', and 'Cancel'.

Table 2-6 Fast Configuration Wizard – Gatekeeper

| Field | Description |
|---------------------------|---|
| <i>Gatekeeper</i> | Select Specify to enable configuration of the gatekeeper IP address. When Off is selected, all gatekeeper options are disabled. |
| Primary Gatekeeper | |
| <i>IP Address or Name</i> | Enter either the gatekeeper's host name (if a DNS Server is used) or IP address. |

Table 2-6 Fast Configuration Wizard – Gatekeeper (Continued)

| Field | Description |
|---------------------------------|--|
| <i>MCU Prefix in Gatekeeper</i> | Enter the string with which the MCU registers itself with the gatekeeper. The gatekeeper uses this string to identify the MCU when forwarding calls to it. H.323 endpoints use this number as the first part of their dial-in string when dialing the MCU. |
| Aliases | |
| <i>Alias</i> | The alias that identifies the RMX's Signaling Host within the network. Up to five aliases can be defined for each RMX. Note: When a gatekeeper is specified, at least one alias must be entered in the table. Additional aliases or prefixes may also be entered. |
| <i>Type</i> | The type defines the format in which the card's alias is sent to the gatekeeper. Each alias can be of a different type: <ul style="list-style-type: none"> • H.323 ID (alphanumeric ID) • E.164 (digits 0-9, * and #) • Email ID (email address format, e.g. abc@example.com) • Participant Number (digits 0-9, * and #) Note: Although all types are supported, the type of alias to be used depends on the gatekeeper's capabilities. |

- 11 Click **Next**.
- 12 If you selected **H.323** only, go to **Step 15**.
- 13 Enter the required **SIP Server** information in the dialog box.

Fast Configuration Wizard

> IP Management Service
 > IP Signaling
 > Routers
 > DNS
 > Network Type
 > Gatekeeper
 > **SIP Server**
 > Security
 > ISDN/PSTN
 > PRI Settings
 > Span Definition
 > Phones
 > Spans
 > System Flags

Network Service Name:

SIP Server:

Server IP Address or Name:

Server Domain Name:

Transport Type:

Table 2-7 Fast Configuration Wizard – SIP Server

| Field | Description |
|------------------------------|--|
| <i>SIP Server</i> | Select: <ul style="list-style-type: none"> • Specify – to manually configure SIP servers. • Off – if SIP servers are not present in the network. |
| <i>SIP Server IP Address</i> | Enter either the IP address of the preferred SIP server or its host name (if a DNS server is used). |
| <i>Transport Type</i> | Select the transport type and protocol that is used for signaling between the MCU and the SIP Server or the endpoints according to the protocol supported by the SIP Server: <ul style="list-style-type: none"> • UDP – Select this option to use UDP for signaling. • TCP – Select this option to use TCP for signaling. • TLS – The <i>Signaling Host</i> listens on secured port 5061 only and all outgoing connections are established on secured connections. Calls from SIP clients or servers to non secured ports are rejected. <p>The following protocols are supported:</p> <ul style="list-style-type: none"> • TLS 1.0 • SSL 2.0 • SSL 3.0. |

14 Click **Next**.

Enter the required **Security** information in the dialog box.

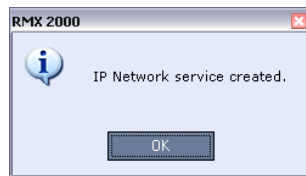
The screenshot shows the 'Fast Configuration Wizard' window. On the left is a tree view with the following items: IP Management Service, IP Signaling, Routers, DNS, Network Type, Gatekeeper, SIP Server, **Security** (highlighted), ISDN/PSTN, PRI Settings, Span Definition, Phones, Spans, and System Flags. The main area of the wizard is titled 'Network Service Name: Default IP Service'. Below this, there are two input fields: 'Authentication User Name:' and 'Authentication Password:'. At the bottom of the window are three buttons: 'Back', 'Next', and 'Cancel'.

Table 2-8 *Fast Configuration Wizard – Security*

| Field | Description |
|---------------------------------|---|
| <i>Authentication User Name</i> | Enter the conference, Entry Queue or Meeting Room name as registered with the proxy. This field can contain up to 20 ASCII characters. |
| <i>Authentication Password</i> | Enter the conference, Entry Queue or Meeting Room password as defined in the proxy. This field can contain up to 20 ASCII characters. |

15 Click Next.

The IP Network Service is created and confirmed.



The IP Network Service cannot be saved if no Media cards are installed in the RMX.

16 Click OK.

During the initial RMX setup, if the system detects the presence of the RTM ISDN card, the ISDN/PSTN Network Service definition screens of the *Fast Configuration Wizard* are enabled.

If there is no RTM ISDN card in the RMX or if you do not want to define an ISDN/PSTN Network Service, go to Step 33.



A new ISDN/PSTN Network Service can be defined even if no RTM ISDN card is installed in the system **but** only via the *ISDN/PSTN Network Service ->Add New Service* dialog box.

The *Fast Configuration Wizard's* ISDN/PSTN configuration sequence begins with the *ISDN/PSTN* dialog box:

Fast Configuration Wizard

- > IP Management Service
- > IP Signaling
- > Routers
- > DNS
- > Network Type
- > Gatekeeper
- > SIP Server
- > Security
- > **ISDN/PSTN**
- > PRI Settings
- > Span Definition
- > Phones
- > Spans
- > System Flags

Network Service Name:

Do you want to create an ISDN/PSTN service?

Span Type:

Service Type:

17 Define the following parameters:

Table 2-9 *Fast Configuration Wizard – ISDN Service Settings*

| Field | Description |
|-----------------------------|---|
| <i>Network Service Name</i> | Specify the service provider's (carrier) name or any other name you choose, using up to 20 characters. The Network Service Name identifies the ISDN/PSTN Service to the system. Default name: ISDN/PSTN Service Note: This field is displayed in all ISDN/PSTN Network Properties tabs and can contain character sets that use Unicode encoding. |
| <i>Span Type</i> | Select the type of spans (ISDN/PSTN) lines, supplied by the service provider, that are connected to the RMX. Each span can be defined as a separate Network Service, or all the spans from the same carrier can be defined as part of the same Network Service. Select either: <ul style="list-style-type: none"> T1 (U.S. – 23 B channels + 1 D channel) E1 (Europe – 30 B channels + 1 D channel) Default: T1 Note: Only one <i>Span Type</i> (E1 or T1) is supported on the RMX. If you define the first span as type E1 all other spans that you may later define must also be of type E1. |
| <i>Service Type</i> | PRI is the only supported service type. It is automatically selected. |

18 Click **Next**.

The *PRI Settings* dialog box opens.

19 Define the following parameters:

Table 2-10 Fast Configuration Wizard – PRI Settings

| Field | Description |
|-------------------------|---|
| <i>Default Num Type</i> | <p>Select the Default Num Type from the list.</p> <p>The Num Type defines how the system handles the dialing digits. For example, if you type eight dialing digits, the Num Type defines whether this number is national or international.</p> <p>If the PRI lines are connected to the RMX via a network switch, the selection of the Num Type is used to route the call to a specific PRI line. If you want the network to interpret the dialing digits for routing the call, select Unknown.</p> <p>Default: Unknown</p> <p>Note: For E1 spans, this parameter is set by the system.</p> |
| <i>Num Plan</i> | <p>Select the type of signaling (Number Plan) from the list according to information given by the service provider.</p> <p>Default: ISDN</p> <p>Note: For E1 spans, this parameter is set by the system.</p> |
| <i>Net Specific</i> | <p>Select the appropriate service program if one is used by your service provider (carrier).</p> <p>Some service providers may have several service programs that can be used.</p> <p>Default: None</p> |
| <i>Dial-out Prefix</i> | <p>Enter the prefix that the PBX requires to dial out. Leave this field blank if a dial-out prefix is not required.</p> <p>The field can contain be empty (blank) or a numeric value between 0 and 9999.</p> <p>Default: Blank</p> |

20 Click Next.

The *Span Definition* dialog box opens.

Fast Configuration Wizard

- > IP Management Service
- > IP Signaling
- > Routers
- > DNS
- > Network Type
- > Gatekeeper
- > SIP Server
- > Security
- > ISDN/PSTN
- > PRI Settings
- > **Span Definition**
- > Phones
- > Spans
- > System Flags

Network Service Name:

Framing:

Side:

Line Coding:

Switch Type:

Back Next Cancel

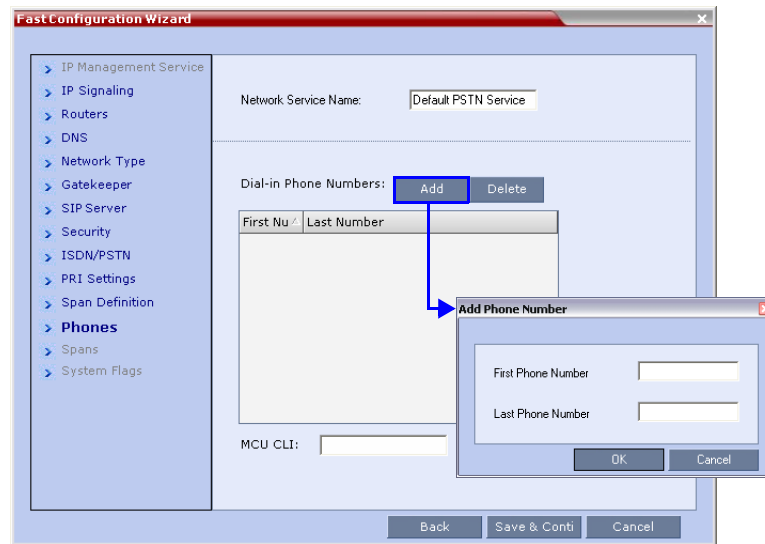
21 Define the following parameters:

Table 2-11 *Fast Configuration Wizard – Spans Definition*

| Field | Description |
|--------------------|--|
| <i>Framing</i> | <p>Select the Framing format used by the carrier for the network interface from the list.</p> <ul style="list-style-type: none"> For T1 spans, default is SFSE. For E1 spans, default is FEBE. |
| <i>Side</i> | <p>Select one of the following options:</p> <ul style="list-style-type: none"> User side (default) Network side Symmetric side <p>Note: If the PBX is configured on the network side, then the RMX unit must be configured as the user side, and vice versa, or both must be configured symmetrically.</p> |
| <i>Line Coding</i> | <p>Select the PRI line coding method from the list.</p> <ul style="list-style-type: none"> For T1 spans, default is B8ZS. For E1 spans, default is HDB3. |
| <i>Switch Type</i> | <p>Select the brand and revision level of switch equipment installed in the service provider's central office.</p> <ul style="list-style-type: none"> For T1 spans, default is AT&T 4ESS. For E1 spans, default is EURO ISDN. |

22 Click Next.

The *Phones* dialog box opens.



23 Click **Add** to define dial-in number ranges.

The *Add Phone Number* dialog box opens.

24 Define the following parameters:

Table 2-12 Fast Configuration Wizard – Add Phone Numbers

| Field | Description |
|---------------------|---|
| <i>First Number</i> | The first number in the phone number range. |
| <i>Last Number</i> | The last number in the phone number range. |



- A range must include at least two dial-in numbers.
- A range cannot exceed 1000 numbers.

25 Click **OK**.

The new range is added to the *Dial-in Phone Numbers* table.

26 Optional. Repeat steps **23** to **24** to define additional dial-in ranges.

27 In the *Phones* tab enter the *MCU CLI* (Calling Line Identification).

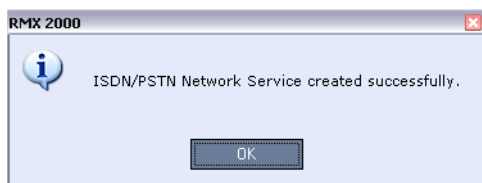
With dial-in connections, the *MCU CLI* indicates the MCU's number dialed by the participant. In a dial-out connection, indicates the MCU (CLI) number as seen by the participant.

28 Click **Save & Continue**.

After clicking **Save & Continue**, you cannot use the **Back** button to return to previous configuration dialog boxes.

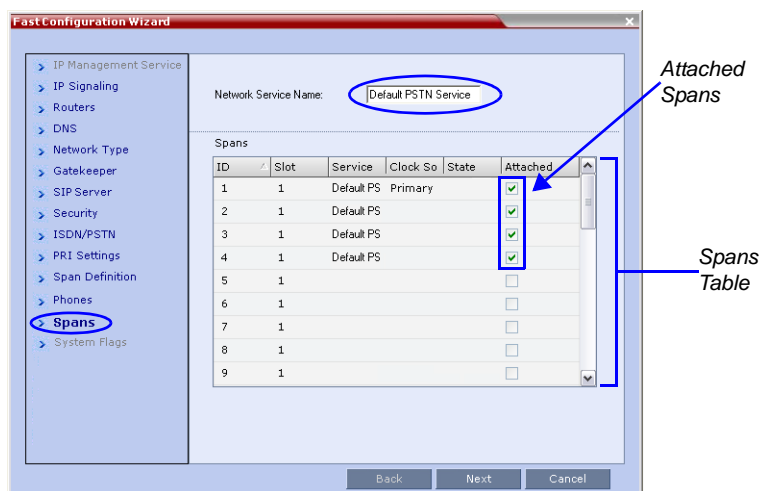
The *ISDN/PSTN Network Service* is created and is added to the ISDN/PSTN Network Services list.

If the system cannot create the *ISDN/PSTN Network Service*, an error message is displayed indicating the cause and allowing you access the appropriate dialog box in the *Fast Configuration Wizard* for corrective action.



29 Click **OK** to continue the configuration.

The *Spans* dialog box opens displaying the following read-only fields:



- **ID** – the connector on the RTM ISDN card (PRI1 to PRI12).
- **Slot** – the MPM/MPM+/MPMx card that the RTM ISDN / RTM ISDN 1500 card is connected to (RMX 2000: MPM 1/ MPM2 RMX 4000: MPM1/MPM2/MPM3/ MPM4).



On the RMX 1500, the *Slot* field does not appear.

- **Service** – the *ISDN/PSTN Network Service* to which the span is assigned.
- **Clock Source** – indicates if *ISDN* signaling synchronization is being supplied by the *Primary* or *Secondary* clock source. The first span to synchronize becomes the *Primary* clock source.
- **State** – the *System Alert* level of the span (*Major*, *Minor*). If there are no span related alerts, this column contains no entries.

30 Click the check boxes in the *Attached* field to attach spans (E1 or T1 PRI lines) to the network service named in the *Network Service Name* field.

The *Spans Table* displays the configuration of all spans and all *ISDN* network services in the system.

When using the *Fast Configuration Wizard* during *First Entry Configuration*, you are defining the first *ISDN/PSTN Network Service* in the system. Spans can only be attached to this service.

Additional *ISDN/PSTN Network Services* can be defined by using the **ISDN/PSTN Network Services > New PSTN Service** button in the *RMX Web Client*.

Spans can be attached to, or moved between ISDN network services by using the **ISDN/PSTN Network Services > ISDN Properties > Spans** tab in the *RMX Web Client*.

Each ISDN RTM card can support either 7 E1 or 9 T1 PRI lines (E1 and T1 connections cannot be used simultaneously).

31 Click Next.

The *System Flags* dialog box is displayed.

32 Enter the required System Flags information in the dialog box.

Table 2-13 Fast Configuration Wizard – System Flags

| Field | Description / Default | |
|--|---|--|
| <i>Conference ID Length (MCU)</i> | The number of digits of the Conference ID to be assigned by the MCU. Range: 2-16 (Default: 5) | Note: Selecting 2 digits limits the number of simultaneous ongoing conferences to 99. |
| <i>Minimum Conference ID Length (User)</i> | The minimum number of digits that the user must enter when manually assigning a numeric ID to a conference. Range: 2-16 (Default: 4) | |
| <i>Maximum Conference ID Length (User)</i> | The maximum number of digits that the user can enter when manually assigning a Numeric ID to a conference. Range: 2-16 (Default: 8) | |
| <i>MCU Display Name</i> | The MCU name is displayed on the endpoint's screen. Default name: <i>Polycom RMX 1500/2000/4000</i> | |

Table 2-13 Fast Configuration Wizard – System Flags (Continued)

| Field | Description / Default |
|--|---|
| <i>Terminate Conference when Chairperson Exits</i> | When Yes is selected (default), the conference ends when the chairperson exits even if there are other participants connected. When No is selected, the conference automatically ends at the predefined end time, or when all the participants have disconnected from the conference. |
| <i>Auto Extend Conferences</i> | When Yes is selected (default), allows conferences running on the RMX to be automatically extended as long as there are participants connected and there are available resources. The maximum extension time allowed by the MCU is 30 minutes. |

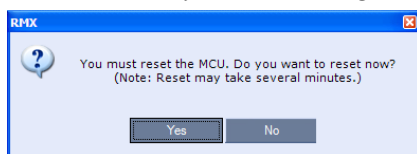
These flags can be modified later, if required, by selecting the *System Configuration* option from the *Setup* menu. For more information, see the *RMX 1500/2000/4000 Administrator's Guide*, "Modifying System Flags" on page [21-1](#).

33 Click **Save & Close**.

The RMX confirms successful configuration.

34 In the *Success Message* box, click **OK**.

35 In the *Reset Confirmation* dialog box, click **Yes**.



36 In the *Please wait for system reset* message box, click **OK**.



System restart may take approximately ten minutes.

37 Refresh the browser periodically until the *Login* screen is displayed.

38 When the *Login* screen is displayed, enter your *Username* and *Password* and click **Login**.

On first entry, the default *Username* and *Password* are both **POLYCOM**.

In the *RMX Web Client's Main Screen* an *MCU State* indicator displays a progress indicator **Starting up (15:25)** showing the time remaining until the system start-up is complete.

After system startup, the *MCU State* is in *Major* and two *Active Alarms* appear in the *Systems Alerts* list:

| ID | Time | GMT Tim | Category | Level | Code | Description |
|----|------|---------|----------|-------|----------|--|
| 2 | Wed | Wednes | General | Major | Polycom | Polycom default User exists. For security reasons, it is recommended to delete this User and create your own User. |
| 1 | Wed | Wednes | General | Major | Error re | Failed to read MCU time configuration file (File does not exist) |

System Alerts Participant Alerts Port Usage: Voice 0 / 0 Video 0 / 90 MCU State: MAJOR

- "Polycom default User exists" - The default RMX user (POLYCOM) with which the RMX system is shipped is still defined in the system. Once you have defined one or more new authorized administrator users, delete the default User to prevent unauthorized users from logging into the system.

- "Failed to read MCU time configuration file" - The RMX time was not set to the local time.
- 39** Create a new *User* with *Administrator* permissions. For more information see the RMX 1500/2000/4000 Administrator's Guide, "Adding a New User" on page [14-4](#).
- 40** Set the RMX time (**Setup > RMX Time**) and click **OK**. For more information, see the RMX 1500/2000/4000 Administrator's Guide, "RMX Time" on page [20-4](#).
- 41** Logout from the RMX Manager/RMX Web Client and log in using the *User Name* and *Password* defined earlier (do not use the default user login).
- 42** Delete the default User (POLYCOM) and click **OK** to confirm. For more information, see the RMX 1500/2000/4000 Administrator's Guide "Deleting a User" on page [14-5](#).



If the default User (POLYCOM) remains or the RMX time was not set, the active alarm is not deleted and the system status remains in *Major*.
For system security reasons the system is not fully configured until the default user is deleted.

- 43** The system is now fully configured and if there are no other *System Errors*, the green READY/RDY LED (on the 2000/4000 the LEDs are on the CNTL module) turns ON and the ERROR/ERR LED is OFF.



The *Fast Configuration Wizard* configures the *Default IP Network Service* with common parameters. Specific or additional settings (e.g. for ICE, or Secured Mode) should be performed once the initial configuration is complete. For detailed description of the IP Network Services, see the RMX 1500/2000/4000 Administrator's Guide, *Network Services*.

Selecting the RMX Web Client Languages

By default, the RMX Web Client interface is displayed only in English. However, the system administrator can choose the languages available for selection on the *Login* screen. These languages are represented by flags.

To choose the languages for selection in the *Login* screen:

- 1** On the RMX menu, click **Setup > Multilingual Setting**.
- 2** Click the check boxes of the languages to appear in the Login screen of the RMX Web Client. For more information see the RMX 1500/2000/4000 Administrator's Guide "Multilingual Setting" on page [20-42](#).

If the selected language is not supported by the browser or the workstation's Operating System, the RMX Web Client is displayed in English.

- 3** Click **OK**.
- 4** Log out and reconnect to the RMX.
The *Login* screen will display the flags of the selected languages.

RMX's Default Conferencing Settings

The RMX is shipped with default pre-configured conferencing entities, which allow RMX users and participants to start ongoing conferences without further configuration.

The default conferencing entities are:

Table 2-14 Conferencing Entities

| Entity | Description | | | | | | | | | | |
|-------------------------------|--|------|----|-------------------|-------------|-----------------|-------------|---------------------|-------------|-----------------|-------------|
| <i>Meeting Rooms</i> | <p>Conferences saved on the MCU without using resources. They are activated when the first participant dials in.</p> <p>There are four Meeting Rooms ready for use:</p> <table> <tr> <th>Name</th><th>ID</th></tr> <tr> <td><i>Maple_Room</i></td><td><i>1001</i></td></tr> <tr> <td><i>Oak_Room</i></td><td><i>1002</i></td></tr> <tr> <td><i>Juniper_Room</i></td><td><i>1003</i></td></tr> <tr> <td><i>Fig_Room</i></td><td><i>1004</i></td></tr> </table> <p>Each Meeting Room uses the default <i>Conference Profile</i> called <i>Factory Video Profile</i> running at 384Kbps and has a default duration of one hour.</p> | Name | ID | <i>Maple_Room</i> | <i>1001</i> | <i>Oak_Room</i> | <i>1002</i> | <i>Juniper_Room</i> | <i>1003</i> | <i>Fig_Room</i> | <i>1004</i> |
| Name | ID | | | | | | | | | | |
| <i>Maple_Room</i> | <i>1001</i> | | | | | | | | | | |
| <i>Oak_Room</i> | <i>1002</i> | | | | | | | | | | |
| <i>Juniper_Room</i> | <i>1003</i> | | | | | | | | | | |
| <i>Fig_Room</i> | <i>1004</i> | | | | | | | | | | |
| <i>Conference Profile</i> | <p>Name: <i>Factory Video Profile</i></p> <p>A Conference Profile is assigned to a Meeting Room to define its conferencing parameters, such as line rate and video resolution.</p> <p><i>Factory Video Profile</i> contains the video conference parameters with a bit rate of 384Kbps, <i>Auto Layout</i> and <i>Polycom Skin</i>. The Profile uses an IVR Service called <i>Conference IVR Service</i>.</p> | | | | | | | | | | |
| <i>Conference IVR Service</i> | <p>Name: <i>Conference IVR Service</i></p> <p>The <i>Conference IVR Service</i> includes an optional video slide and all the voice messages played during the participant's connection process and during the conference.</p> <p>The <i>Conference IVR Service</i> contains a set of voice prompts in English and an optional video slide.</p> <p>It automates the participant's connection to a conference.</p> | | | | | | | | | | |

Table 2-14 Conferencing Entities (Continued)

| Entity | Description |
|--------------------------------|--|
| <i>Entry Queue</i> | <p>Name ID <i>DefaultEQ</i> 1000</p> <p>Using an Entry Queue enables one dial-in number to be used for all conferences. In the Entry Queue, participants are prompted for information to enable routing to their destination conferences. A default Entry Queue called <i>DefaultEQ</i> is provided.</p> <p>The default Entry Queue is also set to Ad Hoc conferencing which allows participants to start new conferences without prior definition by entering a Conference or Meeting Room ID that is not used by any ongoing conference currently running on the MCU. It uses an Entry Queue IVR Service called <i>Entry Queue IVR Service</i>.</p> <p>The default <i>Welcome Slide</i> displayed at the participants endpoint upon connection to the Entry Queue and lists the default Meeting Rooms. The participant can select one of these Meeting Rooms or enter another ID to start a new conference.</p> <p>If no <i>Transit Entry Queue</i> is defined, <i>DefaultEQ</i> is the default <i>Transit Entry Queue</i>. For more information see the <i>RMX 1500/2000/4000 Administrator's Guide</i>, "Transit Entry Queue" on page 6-6.</p> <p>Note: An ISDN/PSTN dial-in number is not assigned to the <i>Entry Queue</i> as the number depends on the dial-in numbers range defined in the <i>Network Service</i>. It must be manually assigned to enable ISDN or PSTN participant connections to this <i>Entry Queue</i>. For more information, see the <i>RMX 1500/2000/4000 Administrator's Guide</i>, "ISDN/PSTN Network Services" on page 15-35.</p> |
| <i>Entry Queue IVR Service</i> | <p>Name: <i>Entry Queue IVR Service</i></p> <p>Includes all the voice messages and video slides used to guide participants through their connection process to the MCU and route them to their destination conference.</p> <p><i>Entry Queue IVR Service</i> is the default Entry Queue IVR Service provided for the default Entry Queue.</p> |

Customizing the RMX's Default Conferencing Settings

You can customize the conferencing entities to your organization's requirements:

- **To customize the Voice Prompts and Video Slides** to different organizations, users, languages etc. – first record the required messages and create the video slides and then create the appropriate conference IVR Service or Entry Queue IVR Service. These services must be assigned to the appropriate conference profile or Entry Queue. For more information, see the *RMX 1500/2000/4000 Administrator's Guide, "IVR Services"* on page **16-1**.
- **To modify the conference properties**, such as the conference line rate, specific video layout for the conference or the background that is used for the video display (skin), create a new *Conference Profile*. This Profile can be used for defining new ongoing conferences, Meeting Rooms and Single-dial Entry Queues. For more information, see the *RMX 1500/2000/4000 Administrator's Guide, "Defining Profiles"* on page **1-10**.
- **To allow ISDN participants to connect to a single dial Entry Queue** a dial in number must be assigned to the pre-configured Entry Queue.
To allow participants to connect to a single dial Entry Queue at a line rate other than 384 Kbps (as in the default Entry Queue) or play voice messages in different languages – create a new Entry Queue. For more information, see the *RMX 1500/2000/4000 Administrator's Guide, "Defining a New Conference IVR Service"* on page **16-7**.
- **You can personalize Meeting Rooms** for people in your organization with predefined conference and chairperson passwords (for added security) and allow only authorized people to start on going conferences. For more information, see the *RMX 1500/2000/4000 Administrator's Guide, "Meeting Rooms"* on page **5-1**.
- **To allow ISDN participants to connect directly to Meeting Rooms** a dial in number must be assigned to the pre-configured Meeting Room.
- The conferencing entities are designed mainly for dial in participants without prior definition of participants. **You can create your own Address Book** containing a list of participants to be dialed by the MCU. Once defined, these participants can be added to ongoing conferences saving the need to define them again. For more information, see the *RMX 1500/2000/4000 Administrator's Guide, "Address Book"* on page **7-1**.
- You can schedule conferences to start in the future. For more details, see the *RMX 1500/2000/4000 Administrator's Guide, "Reservations"* on page **8-1**.

Audio Only Basic Configuration and Operation

The RMX unit can be used to run conferences that include only voice (Audio Only) participants.

The RMX system includes special features such as the Interactive Voice Response (IVR) functionality, blast dial-out to multiple pre-defined participants, chairperson and participant control of conferences using DTMF codes, Ad Hoc conferencing and more.

The RMX system uses voice prompts to guide participants to their appropriate conferences. These prompts can be customized to enable multilingual support.

The Polycom RMX conferencing system provides a way to hold meetings with participants at multiple remote sites. It enables end-users to conduct all types of meetings from the office or from the road using a telephone, whether they require a high-level, scheduled, operator-assisted conference or the convenience of on-demand or reservationless meeting.

Participants can connect to conferences using different network connections: PSTN/ISDN lines, cellular phones, or VoIP (H.323 or SIP).

This chapter includes information required to configure the system resources, set up, start and monitor conferences and reservations that include Audio Only participants and configure the IVR modules.

Starting the RMX Web Client

Before you begin you need to get the following information from your system administrator:

- User name
- Password
- MCU Control Unit IP Address

To start the RMX 2000 Web Client:

- 1 In your browser address line, enter **http://<Control Unit IP Address>** and press the **Enter** key.

The *Login* screen is displayed.



- 2 Enter your *Username* and *Password* and click the **Login** button.

On first entry, the default *Username* and *Password* are both **POLYCOM**.

The RMX 2000 Web Client main screen is displayed.



The Login screen contains a link to the *RMX Manager* installer.

Using the RMX Manager application, a single user can control a single or multiple RMX units as well as conferences from multiple RMXs. RMX 4000 and RMX 2000 can be managed and controlled by the RMX Manager application.

For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "RMX Manager Application" on page 19-1.

RMX 2000 Web Client and RMX Manager

The most common operations performed via the *RMX Web Client* and RMX Manager are:

- Configuration (available only to users with *Administrator Authorization Level*) and MCU status monitoring (available only to users with *Administrator* and *Operator Authorization Levels*)
- Starting, monitoring and managing conferences
- Monitoring and managing **participants** and **endpoints** as individuals or **groups**.
 - **Participant** – A person using an endpoint to connect to a conference. When using a *Room System*, several participants use a single endpoint.
 - **Endpoint** – A hardware device, or set of devices, that can call, and be called by an MCU or another endpoint. For example, an endpoint can be a phone, a camera and microphone connected to a PC or an integrated *Room System* (conferencing system).
 - **Group** – A group of participants or endpoints with a common name.

The RMX Web Client enables users to control and monitor a single RMX unit while the RMX Manager enables users to control and monitor multiple RMX units from a single interface. Both applications use a similar working mode. This chapter describes the RMX Web Client. For more information about the RMX Manager, see the *RMX 1500/2000/4000 Administrator's Guide*.

RMX 2000 Web Client Screen Components

The *RMX 2000 Web Client's* main screen consists of five panes:

- *Conference List*
- *List Pane*
- *RMX Management*
- *Status Bar*
- *Address Book*
- *Conference Templates*

You can login as a user with *Chairperson*, *Operator* or *Administrator* authorization. Your *Authorization Level* determines your viewing and system functions.

For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "Users, Connections and Notes" on page 14-1.

The *Administrator's* view is shown below:

The screenshot displays the RMX 2000 Web Client interface. The interface is divided into several panes and components, which are labeled on the left side of the image:

- Conferences List:** Points to the top-left pane showing a list of conferences.
- List:** Points to the top-middle pane showing a list of participants.
- RMX Management:** Points to the left sidebar menu.
- Address Book:** Points to the right sidebar menu.
- Conference Templates Tab:** Points to the bottom-right pane showing conference templates.
- Status Bar:** Points to the bottom status bar.

The interface includes a top navigation bar with links like View, Administration, Setup, and Help. The main content area is divided into three sections: Conferences (2), Participants (4), and Address Book (997). The Participants section shows a table with columns for Name, Status, Role, IP Address, Alias, Network, Dialing, Audio, and Video. The Address Book section shows a list of contacts with columns for Name, Status, and Dialing. The bottom status bar displays System Alerts, Participant Alerts, Port Usage (Voice: 0 / 40, Video: 12 / 72), and MCU State: MAJOR.

The main screen can be customized. For more information, see "Customizing the Main Screen" on page 3-10.

Viewing and System Functionality Permissions

The RMX 2000 Web Client user's viewing and system functionality depend on the authorization level assigned to each user as summarized in Table 3-1:

Table 3-1 Viewing and System Permissions

| | Authorization Level | | |
|--------------------------|----------------------|----------|---------------|
| | Chairperson | Operator | Administrator |
| | Viewing Permissions | | |
| Conference List | ✓ | ✓ | ✓ |
| List Pane | ✓ | ✓ | ✓ |
| Address Book | ✓ | ✓ | ✓ |
| Conference Templates | | ✓ | ✓ |
| Status Bar | | ✓ | ✓ |
| RMX Management | | ✓ | ✓ |
| Conference Alarms | | ✓ | ✓ |
| Conference Status | | ✓ | ✓ |
| Configurations | | ✓ | ✓ |
| | System Functionality | | |
| Start Conferences | ✓ | ✓ | ✓ |
| Monitor Conferences | ✓ | ✓ | ✓ |
| Monitor Participants | ✓ | ✓ | ✓ |
| Solve Basic Problems | | ✓ | ✓ |
| Modify MCU Configuration | | | ✓ |

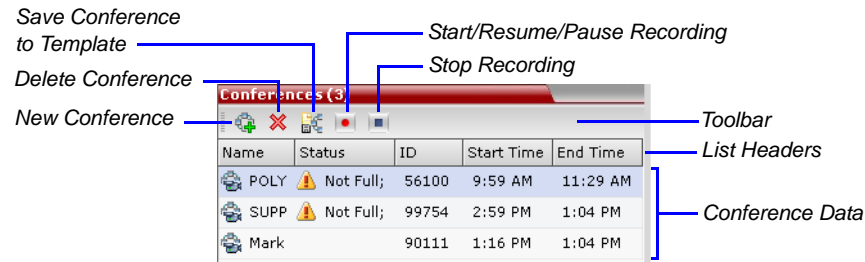


In addition to Chairpersons, Operators and Administrators, an Auditor is a user type that can view Auditor Files and audit the system. For more information see the *RMX 1500/2000/4000 Administrator's Guide "Auditor"* on page [20-58](#).

Conferences List

If you are logged in as a user with *Operator* or *Administrator* permissions:

The *Conferences* pane lists all the conferences currently running on the MCU along with their *Status*, *Conference ID*, *Start Time* and *End Time* data. The number of ongoing conferences is displayed in the pane's title.



The *Conferences* list toolbar contains the following buttons:

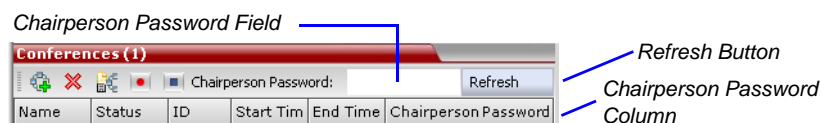
- **New Conference** – to start a new ongoing conference.
- **Delete Conference** – delete the selected conference(s).

If *Conference Recording* is enabled the following are displayed in color:

- **Start/Resume Recording** – start/resume recording.
- **Stop Recording** – stop recording.
- **Pause** – toggles with the *Start/Resume* button.

If you are logged in as a user with *Chairperson* permissions:

- You can list and monitor conferences you have started or for which you have entered the password or that don't have a *Chairperson Password* assigned.
- A *Chairperson Password* field and a **Refresh** button are displayed. The **Refresh** button does not change the *Chairperson Password*; it refreshes the *Conferences* list to display all ongoing conferences with the requested password. For more information see “Using the *Chairperson Password* for Filtering” on page 3-38.
- A *Chairperson Password* column is included in the conference data.



List Pane

The *List* pane displays details of the item selected in the *Conferences* pane or *RMX Management* pane. The title of the pane changes according to the selected item.

Example: When an ongoing conference is selected in the *Conferences* pane, the list and parameters of the connected participants is displayed.



Selecting an item in the *RMX Management* pane, lists the items currently defined. For example, selecting *Users* in the *RMX Management* pane displays the list of RMX Users defined for the selected RMX.

RMX Management

| Viewing Permissions | | |
|---------------------|----------|---------------|
| Chairperson | Operator | Administrator |
| | ✓ | ✓ |

The *RMX Management* pane lists the entities that need to be configured to enable the RMX to run conferences. Only users with Administrators permission can modify these parameters.

The *RMX Management* pane is divided into two sections:

- **Frequently Used** – parameters often configured monitored or modified.
- **Rarely Used** – parameters configured during initial system set-up and rarely modified afterward.

Items can be moved between these two sections to customize the management tasks per RMX User. For more details, see "Customizing the RMX Management Pane" on page 3-11.

Status Bar

The Status Bar at the bottom of the RMX Web Client contains *System* and *Participant Alerts* tabs as well as *Port Usage Gauges* and an *MCU State* indicator.



If the *Video/Voice Port Configuration* is set to Voice ports, the Video Port Usage gauge is displayed, showing 0 ports.

| Viewing Permissions | | |
|---------------------|----------|---------------|
| Chairperson | Operator | Administrator |
| | ✓ | ✓ |

System Alerts

This is a list of system problems. The alert indicator flashes red when at least one system alert is active. The flashing continues until a user with Operator or Administrator permission reviews the list.

The *System Alerts* pane is opened and closed by clicking the **System Alerts** button in the left corner of the *Status Bar*.

Active Alarms

Faults List

| System Alerts (6) | | | | | | |
|-------------------|----------|-------|-------------------------|--------------|--|--|
| Time | Category | Level | Code | Process Name | Description | |
| 9/25/2006 | general | major | IP_SERVICE_CHANGED | CSMgr | ip service was changed, reset the RMX (Task status: Normal) | |
| 9/13/2006 | card | major | NO_CONNECTION_WITH_CARD | Cards | Board ID:0, Card Type:switch, Description: No connection with Switch (Task status: Normal) | |
| 9/13/2006 | general | major | INTERNAL_MCU_RESET | McmsDaemo | No connection with Switch (Task status: Normal) | |
| 9/13/2006 | general | major | INSUFFICIENT_RESOURCES | Resource | Insufficient resources (Task status: Normal) | |
| 9/13/2006 | card | major | CARD_STARTUP_FAILURE | Cards | Board ID:0, Card Type:illegal, Description: MFA sl | |
| 9/13/2006 | general | major | CFG_CHANGED | McuMgr | SYSTEM CFG was changed, reset the RMX (Task s | |

For more information about **Active Alarms** and **Faults List**, see the *RMX 1500/2000/4000 Administrator's Guide*, "System and Participant Alerts" on page 20-1.

| Viewing Permissions | | |
|---------------------|----------|---------------|
| Chairperson | Operator | Administrator |
| ✓ | ✓ | ✓ |

Participant Alerts

This is a list of participants that are experiencing connection problems. It is sorted by conference.

The *Participant Alerts* pane is opened and closed by clicking the **Participant Alerts** button in the left corner of the *Status Bar*.

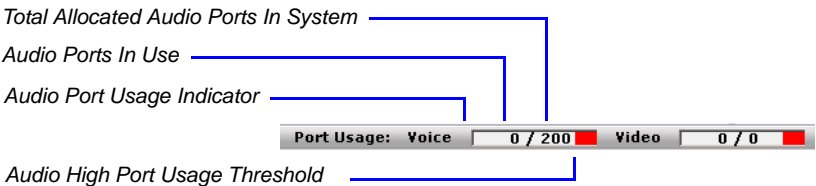
| Participant Alerts (2) | | | | | | | | | | |
|------------------------|------|--------|--------------------|------|------------|-------|---------|-------------------|-------|-------|
| Conference | Name | Status | Disconnection Time | Role | IP Address | Alias | Network | Dialing Direction | Audio | Video |
| Marketing | V69 | discon | 9/21/2006 2:18 PM | | 172.22.189 | H.323 | | Dial out | | |
| Marketing | V96 | discon | 9/21/2006 2:18 PM | | 172.22.186 | H.323 | | Dial out | | |

| Viewing Permissions | | |
|---------------------|----------|---------------|
| Chairperson | Operator | Administrator |
| | ✓ | ✓ |

Port Usage Gauges

The *Port Usage* gauges indicate:

- The total number of *Video* or *Voice* ports in the system according to the *Video/Voice Port Configuration*.
- The number of *Video* and *Voice* ports in use.
- The *High Port Usage* threshold.



The *High Port Usage* threshold represents a percentage of the total number of video or voice ports available. It is set to indicate when resource usage is approaching its maximum, resulting in no free resources to run additional conferences. When all the system resources are allocated as Audio ports, the Video port gauge will always show 0 in the various counters. For more details, see "*Video/Voice Port Configuration*" on page 3-13.

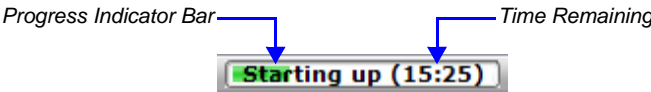
When port usage reaches or exceeds the threshold, the red area of the gauge flashes. The default port usage threshold is 80% and it can be modified by the system administrator. For more information, see the *RMX 1500/2000/4000 Administrator's Guide*, "*Port Usage Threshold*" on page 20-20.

| Viewing Permissions | | |
|---------------------|----------|---------------|
| Chairperson | Operator | Administrator |
| ✓ | ✓ | ✓ |

MCU State

The *MCU State* indicator displays one of the following:

- **Starting up (15:25)** – The MCU is starting up. The time remaining until the system start-up is complete is displayed between brackets while a green progress indicator bar indicates the start-up progress.



- **MCU State: NORMAL** – The MCU is functioning normally.
- **MCU State: MAJOR** – The MCU has a major problem. MCU behavior could be affected and attention is required.

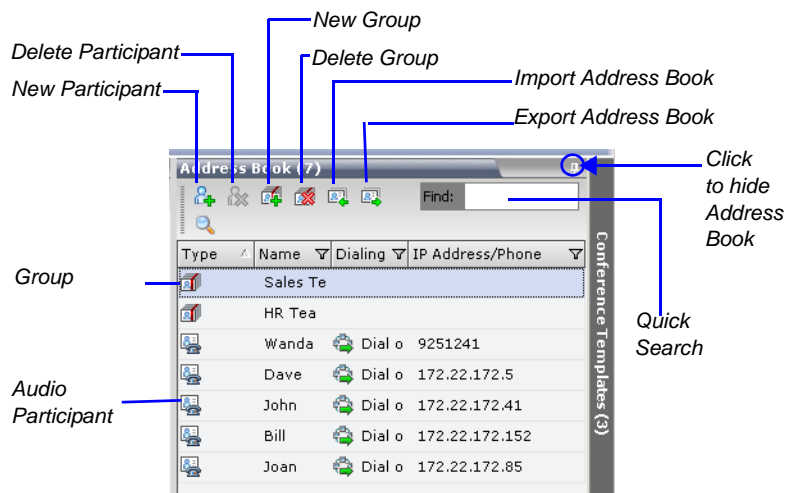
Address Book

| Viewing Permissions | | |
|---------------------|----------|---------------|
| Chairperson | Operator | Administrator |
| ✓ | ✓ | ✓ |

The *Address Book* is a list of *Participants* and *Groups* that have been defined on the RMX. The information in the *Address Book* can be modified only by an administrator. All RMX users can, however, view and use the *Address Book* to assign participants to conferences.

The *Address Book* toolbar contains a *Quick Search* field and the following six buttons:

- *New Participant*
- *Delete Participant*
- *Import Address Book*
- *New Group*
- *Delete Group*
- *Export Address Book*



Address Book entries are listed according to:

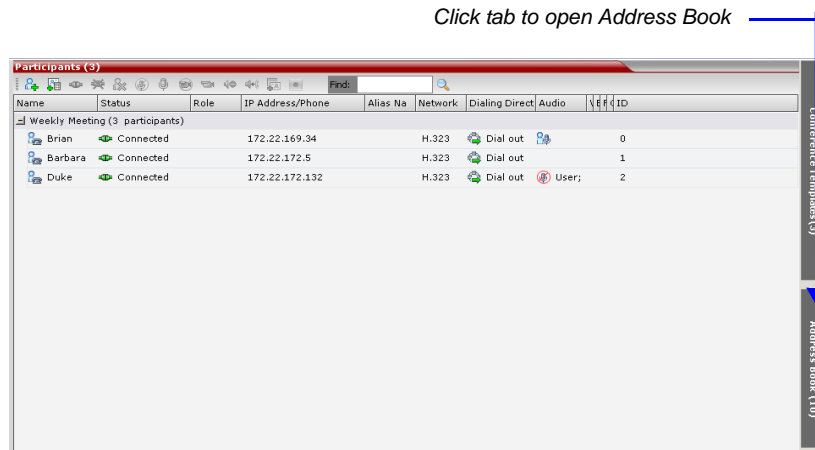
- **Type** - whether an individual *Participant* or a *Group* of participants
- **Name** - of the participant or group
- **Dialing Direction** - Dial-in or Dial-out
- **IP Address/Phone** - of the participant

Displaying and Hiding the Address Book

The first time you access the *RMX Web Client*, the *Address Book* pane is displayed. You can hide it by clicking the anchor pin (📌) button.

The *Address Book* pane closes and a tab appears at the right edge of the screen.

Click the tab to re-open the *Address Book*.



Conference Templates

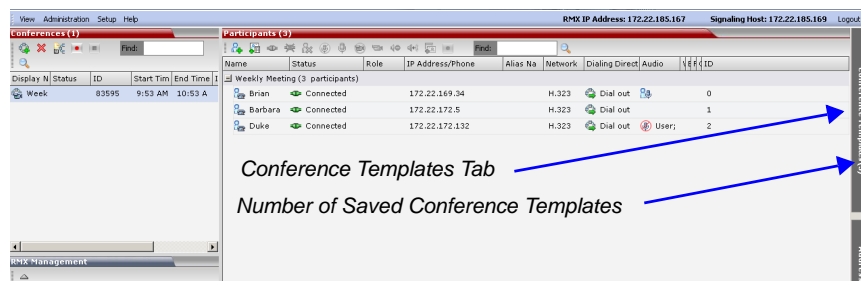
Conference Templates enable administrators and operators to create, save, schedule and activate identical conferences.

A *Conference Template*:

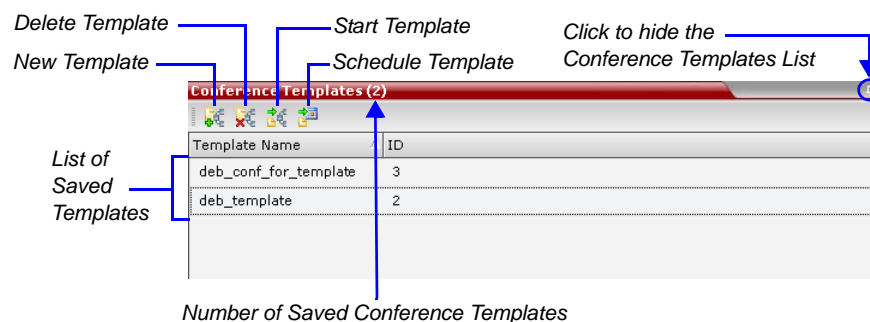
- Saves the conference Profile.
- Saves all participant parameters including their *Personal Layout* and *Video Forcing* settings.
- Simplifies the setting up *Telepresence* conferences where precise participant layout and video forcing settings are crucial.

Displaying and Hiding Conference Templates

The *Conference Templates* list pane is initially displayed as a closed tab in the *RMX Web Client* main window. The number of saved *Conference Templates* is indicated on the tab.



Clicking the tab opens the *Conference Templates* list pane.



Hide the *Conference Templates* list pane by clicking the anchor pin (📌) button in the top right corner of the pane.

The *Conference Templates* list pane closes and a tab appears in the top right corner of the screen.

Customizing the Main Screen


You can customize the main screen according to your preferences, and hide all the video columns that are not used to monitor conferences and participant connections. Pane sizes can be changed, column widths can be adjusted and data lists can be sorted.



Customization settings are automatically saved for each logged-in user.


The next time the *RMX Web Client* is opened, the main screen settings appear as they were when the user exited the application.

To re-size a pane:

>> Move the pointer over the pane border and when the pointer becomes a  click and drag the pane border to the required size and release the mouse button.

To adjust column width:

Use this method to enlarge the size of columns or to reduce it to a minimum so it is hidden, for example, Video related columns.

- 1 In the column header row, place the pointer on the vertical field- separator bar of the column.
- 2 When the pointer becomes a , click and drag the field separator bar to the required column size and release the mouse button.

To sort the data by any field (column heading):

- 1 In the *Conference* list or *List* view pane, click on the column heading of the field to be used for sorting.
A ▾ or ▲ symbol appears in the column heading indicating that the list is sorted by this field, as well as the sort order.
- 2 Click on the column heading to toggle the column's sort order.

To change the order of columns in a pane:

>> Click the column heading to be moved and drag it to its new position. When a set of red arrows appears indicating the column's new position, release the mouse button.

To restore the RMX 2000 display window to its default configuration:

>> On the *RMX 2000* menu, click **View > Restore RMX Display Defaults**.



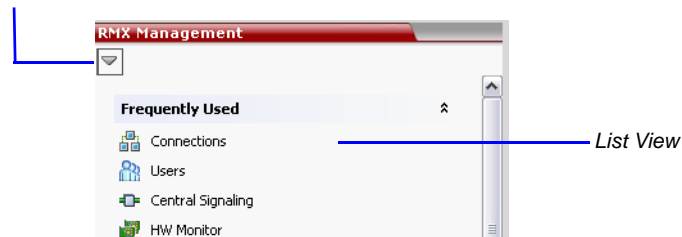
Customizing the *RMX Management* Pane

The *RMX Management* pane can be viewed either as a list or as a toolbar.

To switch between **Toolbar and List Views**:

- 1 In the *RMX Management* pane, click the *Toolbar View* button to switch to Toolbar view.
- 2 In the *RMX Management* pane, click the *Toolbar View* button to switch to Toolbar view. In Toolbar view, click the *List View* button to switch back to List view.

Toolbar View Button





List View Button




You can move items between the *Frequently Used* and *Rarely Used* sections depending on the operations you most commonly perform and the way you prefer to work with the *RXM Web Client*.

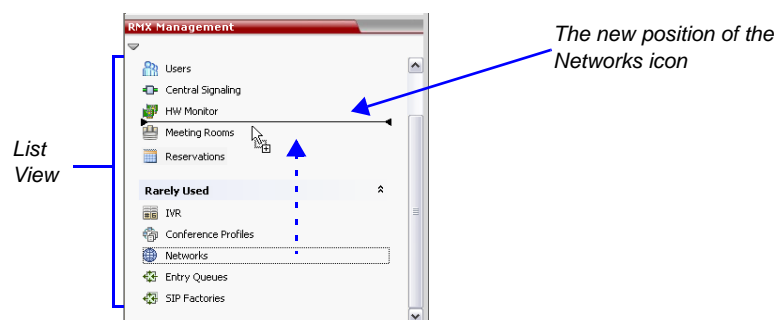
This only works in *List* view because in *Toolbar* view, all items are represented by icons.



To expand or Collapse the **Frequently Used** and **Rarely Used** sections:

The *Frequently Used* and *Rarely Used* sections can be expanded or collapsed by clicking the  and  buttons.

To move items within and between the **Frequently Used** and **Rarely Used** sections:

- 1 In the *RMX Management* pane click and drag the icon of the item that you wish to move. An indicator line () appears indicating the new position of the icon.
- 2 Release the mouse button when the icon is in the desired position.



The *Frequently Used* and *Rarely Used* sections can be expanded or collapsed by clicking the  and  buttons.

Resource Management

RMX units that are used mainly for voice (Audio Only) conferencing can maximize the resources utilization by designating all or almost all system resources as voice (audio) resources.

Up to 400 (RMX 1500)/ 800 (RMX 2000 with two MPM+) or 720 (RMX 2000 with two MPMx)/1600 (RMX 4000 with four MPM+/MPMx-D) voice participants can connect to the RMX, of which up to 400 participants can connect using PSTN/ISDN connection.

Resource Capacity

The RMX 1500 supports only *MPMx* cards.

The RMX 2000 can support three card types: *MPM*, *MPM+* and *MPMx*.

The RMX 4000 can support two card types: *MPM+* and *MPMx*.

MPM+ cards offer higher capacity. Three *MPM+* card assemblies are available, *MPM+ 80*, *MPM+ 40* and *MPM+ 20*, offering various port capacities.

MPMx cards offer a high capacity similar to *MPM+*.

Table 3-2 summarizes the resource capacities of an RMX with the various card types.

Table 3-2 Resource Capacities per Card and for Full Capacity RMX

| Resource Type | Maximum Possible | | | | | |
|-----------------------------|-----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| | RMX 1500 MPMx Full Capacity | RMX 2000 MPM Full Capacity | RMX 2000 MPM+ Full Capacity | RMX 2000 MPMx Full Capacity | RMX 4000 MPM+ Full Capacity | RMX 4000 MPMx Full Capacity |
| Voice (total or IP only) | 360 | 400 | 800 | 720 | 1600 | 1440 |
| Voice (PSTN only) | 120 | 400 | 400 | 400 | 400 | 400 |



- The maximum number of PSTN participants is limited by the maximum number of E1 or T1 PRI lines that can be connected to the RMX.
- RMX's with 500MB of memory can support a maximum of 400 simultaneous participant calls, regardless of how system resources are allocated. This limitation applies to RMXs configured with either MPM or MPM+ cards.
RMXs with 1000MB of memory are not subject to this limitation.
- RMX memory size is listed in the *Administration > System Information* properties box. For more information see *RMX 2000/4000 Administrator's Guide*, "System Information" on page [20-23](#).

Resource Capacity Modes

The installed media card type (*MPM*, *MPM+* or *MPMx*) determines the *Card Configuration Mode*, which in turn determines the resource allocation method that can be selected for the RMX. It determines how the system resources are allocated to the connecting endpoints.

The *System Card Configuration Mode* determines the resource allocation method used by the RMX to allocate resources to the connecting endpoints. The method in which the system allocates the resources is defined in the *Video/Voice Port Configuration*. Two allocation methods are available:

- **Flexible Resource Capacity™** – This is the default mode and the only mode that should be selected in MCUs used for Audio only conferencing. The system allocates the resources according to the connecting endpoints. This mode offers flexibility in resource allocation and is available in *MPM*, *MPM+* and *MPMx Card Configuration Modes*.

In *Flexible Resource Capacity* mode, in all *Card Configuration Modes*, the maximum number of resources is based on the system license, regardless of the hardware configuration of the RMX. These resources are allocated as CIF resources by default.

Example: If the RMX is licensed for 160 video resources, but only one *MPM+* card is currently installed in the RMX, the system lets you convert 160 video resources to *Audio Only* resources although only 80 video resources are available for conversion and participant connection. (However, an active alarm will be added to the *Active Alarms* list indicating a resource deficiency).

- **Fixed Resource Capacity™** – This mode offers precise usage of resources, allowing the administrator to set the number of resources guaranteed to each *Audio Only* and video connection according to the video resolution in advance. This mode is available only in *MPM+* and *MPMx Card Configuration Modes* and is not relevant to MCUs used for Audio Only conferencing with no video connections.

Resource Usage - Voice Resources

One *Audio Only* resource is used to connect a single voice participants once CIF resources have been converted to *Audio Only*. However, if no CIF resources were converted, *Audio Only* endpoints use one CIF video resource per connection.

Video/Voice Port Configuration

The *Video/Voice Port Configuration* enables you to configure the RMX Resource Capacity and if in *MPM+* *System Card Configuration Mode*, to select the capacity method.

Flexible Resource Capacity Mode

All resources are initially allocated as CIF video ports as it is a resolution commonly supported by all endpoints.

The administrator can allocate some or all of these resources as *Voice* resources.

Flexible Resource Capacity mode is available and is the default selection in both *MPM*, *MPM+* or *MPMx System Card Configuration Modes*. It is the only allocation method in *MPM System Card Configuration Mode*.

Fixed Resource Capacity

Fixed Resource Capacity enables the administrator to allocate the number of resources available to each video connection type and *Audio Only* connections in advance. *Fixed Resource Capacity* mode is available only in MPM+ and MPMx *System Card Configuration Modes* and should not be selected when the RMX is used only for *Audio Only* conferencing.

If there are no available CIF resources the system tries to allocate resources to the SD endpoint from any available *Audio Only* resources. If *Audio Only* resources are allocated the HD endpoint, it is connected as an *Audio Only* participant.

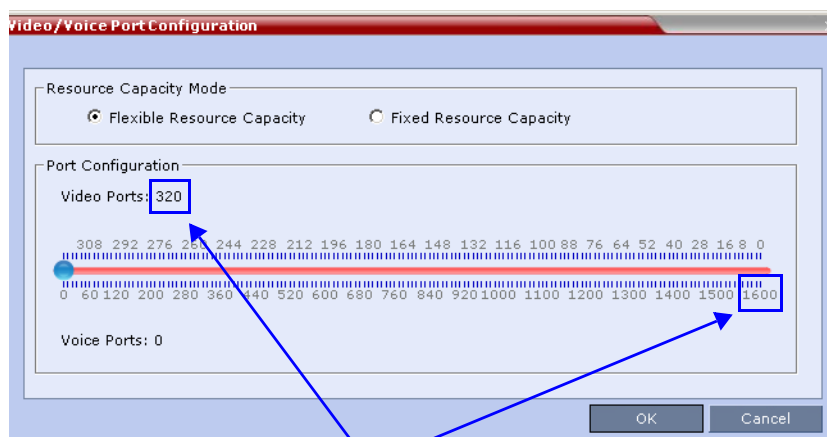
Configuring the Video/Voice Resources in MPM, MPM+ and MPMx Modes - Flexible Resource Capacity



Resource re-configuration should only be performed when no conferences are running on the RMX.

To allocate *Audio Only* resources:

- 1 In the RMX menu, click **Setup > Video/Voice Port Configuration**. The *Video/Voice Port Configuration* dialog box opens.



Resource Maximum from License

A single slider is displayed, calibrated according to licensed video resources indicated in CIF ports in the RMX.

- 2 Move the slider to the number of *Audio Only* ports to be allocated.
The slider moves in multiples of two, converting CIF video ports to voice ports in groups of two, with each CIF video port converting to five voice ports per video port). The minimum number of voice ports that can be allocated is 10 (2 video ports x 5 voice ports per video port).
- 3 Click **OK**.

Resource Report

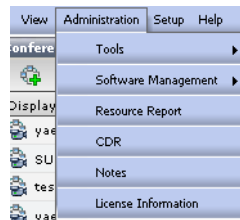
The *Resource Report* displays the real time resource usage according to the selected *Resource Capacity Mode*:

- *Flexible Resource Capacity Mode* available in both *MPM*, *MPM+* and *MPMx Modes*.
- *Fixed Resource Capacity Mode* available only in *MPM+* and *MPMx Modes*.

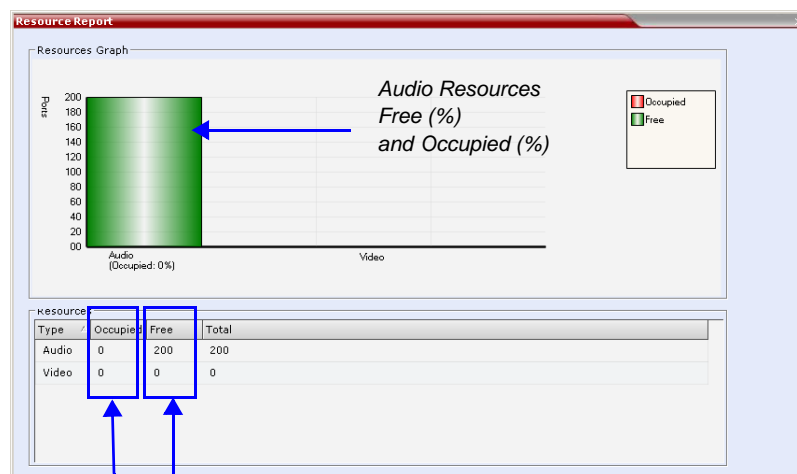
The *Resource Report* also includes a graphic representation of the resource usage.

Displaying the Resource Report

- 1 In the main toolbar, click **Administration > Resource Report**.



The *Resource Report* dialog box appears, displaying the resource usage according to the *Resource Capacity Mode*.



*Actual Number of Occupied and Free Audio and Video Resources
(that will always be 0 if all resources are set to Voice)*

In *Flexible Resource Capacity Mode*, resource usage is displayed for *Audio* and *CIF* video resources only. They are displayed as percentages of the total resource type. If all video resources are converted to Voice Ports, Video Resources will always show 0.

A *Resources Graph* is displayed in addition to the *Resources* table.

For each resource type, the Resource table includes the following columns:

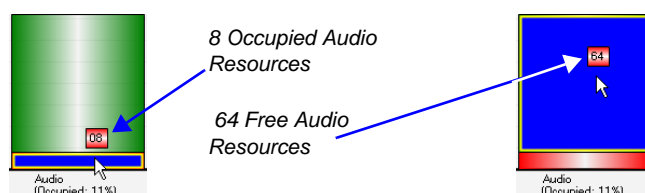
Table 3-3 Resource Report Fields Parameters

| Column | Description |
|--------|--|
| Type | The type of audio/video resources available. |

Table 3-3 Resource Report Fields Parameters (Continued)

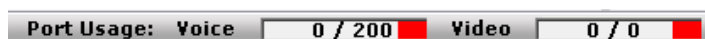
| Column | Description |
|-----------------|---|
| <i>Total</i> | The <i>Total</i> column displays the total number of resources of that type as configured in the system (<i>Occupied</i> and <i>Free</i>). This number reflects the current audio/video port configuration. Any changes to the resource allocation will affect the resource usage displayed in the Resource Report. |
| <i>Occupied</i> | The number of RMX resources that are used by connected participants or reserved for defined participants. |
| <i>Free</i> | The number of RMX resources available for connecting endpoints. |

In the *Resources Graph*, the actual number of occupied or free resources can also be displayed by moving the cursor over the columns of the bar graph. Moving the cursor over the *Video* bar displays the following:



Port Gauges

In *Flexible Resource Capacity* mode, the *Port Gauges* in the *Status Bar* show 0 of the 200 *Voice* resources as occupied and 0 of the 0 *Video* resources as occupied. If all video resources are converted to Voice resources, the Video gauge will always show 0/0.



Using the Default Profile, Entry Queue and Meeting Rooms

The Conferencing entities, such as Entry Queues, Meeting Rooms, ongoing Conferences and Reservations enable both audio and video connections. The same conferencing entity can be used to connect only voice participants, video participants or a combination of both audio and video participants. The participant connection type determines the resource type that is used by the system.

If all RMX resources are configured as Voice resources, only voice participants can connect to the RMX even if the *Conference Profile* include video parameters. Video participants will connect to such MCU using only their audio channel (without video) and will use one voice resource as any other voice endpoint.

The default Entry Queue and Meeting Rooms shipped with the system can be used to run conference without additional definitions. However, if required, you can define additional conference Profiles, Entry Queues and Meeting Rooms. For more information, see the *RMX 1500/2000/4000 Administrator's Guide*.

Starting a Conference

There are several ways to start a conference:

- Clicking the *New Conference* button in the *Conferences* pane. For more information, see *"Starting a Conference from the Conferences Pane"* on page [3-18](#).
- Dialing in to a Meeting Room.
 - A Meeting Room is a conference that is saved on the MCU. It remains in passive mode until it is activated by the first participant, or the meeting organizer, dialing in.

For more information about Meeting Rooms, see the *RMX 1500/2000/4000 Administrator's Guide*, *"Meeting Rooms"* on page [5-1](#).

- Dialing in to an Ad Hoc Entry Queue which is used as the access point to the MCU.

For a detailed description of Ad Hoc Entry Queues, see the *RMX 1500/2000/4000 Administrator's Guide*, *"Entry Queues"* on page [6-1](#).

- Start a *Reservation*:
 - If the *Start Time* of the *Reservation* is past due the conference becomes ongoing immediately.
 - If the *Start Time* of the *Reservation* is in the future the conference becomes ongoing, at the specified time on the specified date.

For more information, see *"Starting a Reservation"* on page [3-29](#).

- Start any *Conference Template* saved in the *Conference Templates* list.

For more information, see *"Starting an Ongoing Conference From a Template"* on page [3-30](#).

- Clicking on the link included in a *Microsoft Outlook Polycom Meeting Invitation* or by manually dialing the numbers displayed in the invitation using the endpoint's numeric input device.
- Attendees that have received an invitation to a *Polycom Meeting* via the *Polycom Conferencing Add-in for Microsoft Outlook* can start a conference by being the first invited attendee to click on a link in the *Meeting Invitation* displayed on his/her workstation or calendaring enabled endpoint, or manually dial in to the meeting using the *Polycom Conference* information included in the *Meeting Invitation*.

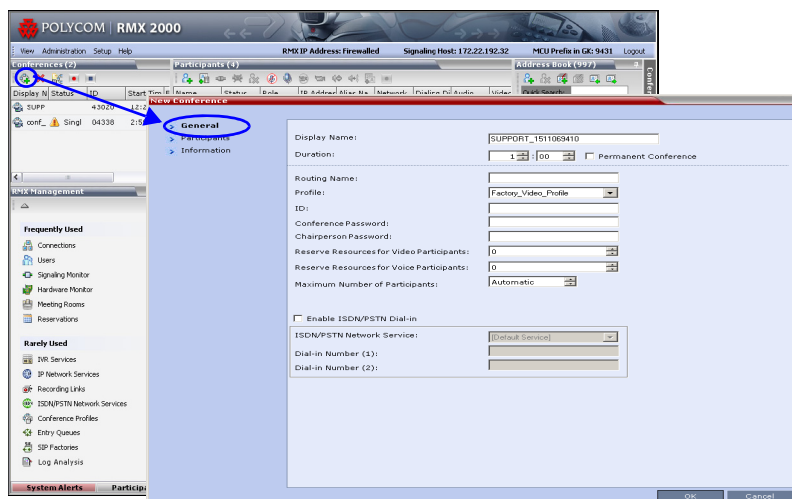
For more information see the *RMX 1500/2000/4000 Administrator's Guide*, *"Polycom Conferencing for Microsoft Outlook®"* on page [11-1](#).

Starting a Conference from the Conferences Pane

To start a conference from the Conference pane:

- 1 In the *Conferences* pane, click the **New Conference** (📞) button.

The *New Conference - General* dialog box opens.



The system displays the conference's default *Name*, *Duration* and the default *Profile*, which contains the conference parameters and media settings.

The RMX automatically allocates the conference *ID*, when the conference starts.

In most cases, the default conference *ID* can be used and you can just click **OK** to launch the conference. If required, you can enter a conference *ID* before clicking **OK** to launch the conference.

If you are the meeting chairperson or organizer using the *RMX Web Client* to start your own meeting, you need to communicate the default conference ID (or the one you created) to the other conference participants so they can dial in.

You can use the *New Conference - General* dialog box to modify the conference parameters. If no defined participants are to be added to the conference, or you do not want to add additional information, click **OK**.

General Tab

2 Define the following parameters:

Table 3-4 *New Conference – General Options*

| Field | Description |
|-----------------------------|--|
| <i>Display Name</i> | <p>The Display Name is the conferencing entity name in native language character sets to be displayed in the RMX Web Client.</p> <p>In conferences, Meeting Rooms, Entry Queues and SIP factories the system automatically generates an ASCII name for the <i>Display Name</i> field that can be modified using Unicode encoding.</p> <ul style="list-style-type: none"> English text uses ASCII encoding and can contain the most characters (length varies according to the field). European and Latin text length is approximately half the length of the maximum. Asian text length is approximately one third of the length of the maximum. <p>The maximum length of text fields also varies according to the mixture of character sets (Unicode and ASCII). Maximum field length in ASCII is 80 characters. If the same name is already used by another conference, Meeting Room or Entry Queue, the RMX displays an error message requesting you to enter a different name.</p> <p>Note: This field is displayed in all tabs.</p> |
| <i>Duration</i> | <p>Define the duration of the conference in hours using the format HH:MM (default 01:00).</p> <p>Default minimum duration is 11 minutes for RMX1500 and 20 minutes for RMX 2000/4000 when the Automatic Extension of conference duration mechanism is enabled. To define a shorter duration, the Automatic Extension of conference duration mechanism is disabled, by setting the system flag ENABLE_AUTO_EXTENSION to NO. For more information about system flags, see the <i>RMX 1500/2000/4000 Administrator's Guide</i>, "Modifying System Flags" on page 21-1.</p> <p>Note: This field is displayed in all tabs.</p> |
| <i>Permanent Conference</i> | <p>Check this box to make this conference a <i>Permanent Conference</i>: an ongoing conference with no pre-determined <i>End Time</i> continuing until it is terminated by an administrator, operator or chairperson. For more information see the <i>RMX 1500/2000/4000 Administrator's Guide</i> "Lecture Mode" on page 3-53.</p> <p>Note: This field is displayed in all tabs.</p> |

Table 3-4 New Conference – General Options (Continued)

| Field | Description |
|---|---|
| <i>Routing Name</i> | <p><i>Routing Name</i> is the name with which ongoing conferences, Meeting Rooms, Entry Queues and SIP Factories register with various devices on the network such as gatekeepers and SIP servers. This name must be defined using ASCII characters.</p> <p>Comma, colon and semicolon characters cannot be used in the <i>Routing Name</i>.</p> <p>The <i>Routing Name</i> can be defined by the user or automatically generated by the system if no <i>Routing Name</i> is entered as follows:</p> <ul style="list-style-type: none"> If ASCII characters are entered as the <i>Display Name</i>, it is used also as the <i>Routing Name</i> If a combination of Unicode and ASCII characters (or full Unicode text) is entered as the <i>Display Name</i>, the <i>ID</i> (such as Conference ID) is used as the <i>Routing Name</i>. <p>If the same name is already used by another conference, Meeting Room or Entry Queue, the RMX displays an error message and requests that you to enter a different name.</p> |
| <i>Profile</i> | <p>The system displays the name of the default Conference Profile. Select the required Profile from the list.</p> <p>The Conference Profile includes the Conference line rate, media settings and general settings.</p> <p>For a detailed description of Conference Profiles, see the <i>RMX 1500/2000/4000 Administrator's Guide</i>, "Conference Profiles" on page 1-1.</p> |
| <i>ID</i> | <p>Enter the unique-per-MCU conference ID. If left blank, the MCU automatically assigns a number once the conference is launched.</p> <p>This ID must be communicated to conference participants to enable them to dial in to the conference.</p> |
| <i>Conference Password</i> | <p>Enter a password to be used by participants to access the conference. If left blank, no password is assigned to the conference.</p> <p>This password is valid only in conferences that are configured to prompt for a conference password.</p> |
| <i>Chairperson Password</i> | <p>Enter a password to be used by the RMX to identify the <i>Chairperson</i> and grant him/her additional privileges. If left blank, no chairperson password is assigned to the conference.</p> <p>This password is valid only in conferences that are configured to prompt for a chairperson password.</p> |
| <i>Reserve Resources for Video Participants</i> | <ul style="list-style-type: none"> In RMXs configured for Voice conferencing, leave this field set to 0. |

Table 3-4 *New Conference – General Options (Continued)*

| Field | Description |
|---|---|
| <i>Reserve Resources for Audio Participants</i> | <p>Enter the number of voice participants for which the system must reserve resources.</p> <p>Default: 0 participants.</p> <p>Maximum number of participants in a conference:</p> <ul style="list-style-type: none"> • RMX 1500: 360 VOIP and 120 PSTN participants. • RMX 2000 MPM Mode: 400 VOIP participants. • RMX 2000 MPM+ Mode: 800 VOIP participants (if all ports are set to Audio Only). • RMX 2000 MPMx Mode: 720 VOIP participants (if all ports are set to Audio Only). • RMX 4000 (MPM+/MPMx): 800 participants (if all ports are set to Audio Only) |
| <i>Maximum Number of Participants</i> | <p>Indicate the total number of participants that can be connected to the conference if you want to limit the number of participants that can connect to the conference.</p> <p>The automatic setting (default) indicates that the maximum number of participants that can be connected to the MCU is determined according to resource availability.</p> <p>Note: This number must be equal or higher than the number defined in the <i>Reserve Resources for Audio Participants</i> field.</p> |
| <i>Enable ISDN/PSTN Dial-in</i> | Select this check box if you want ISDN and PSTN participants to be able to connect directly to the conference. |
| <i>ISDN/PSTN Network Service</i> | The default Network Service is automatically selected. A different ISDN/PSTN Network Service can be selected from the Network Services list. |
| <i>Dial-in Number (1)</i> | Leave this field blank to let the system automatically assign a number from the dial-in range defined for the selected ISDN/PSTN Network Service. To manually define a dial-in number, enter a unique number from the dial-in number range defined for the selected Network Service. This number cannot be assigned to another Conference/Reservation/Meeting Room/Gateway Profile |
| <i>Dial-in Number (2)</i> | By default, the second dial-in number is not defined. To define a second-dial-in number, enter a required number from the dial-in number range defined for the selected Network Service. |

- 3 If all participants are undefined, dial-in and no additional information is required for the new conference, click **OK**.
- 4 To add participants from the *Participants Address Book* or to define participants (mainly dial-out participants) click the *Participants* tab.

Participants Tab

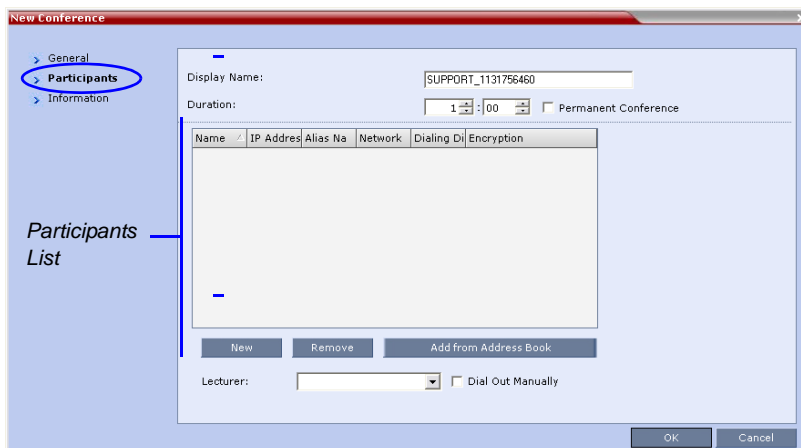


This procedure is optional.

The *Participants* tab is used to add participants to the conference from the *Address Book*. It is also used to add defined dial-out participants to the conference. Defined dial-out participants are connected to the conference automatically when the conference is launched, unless the *Dial Out Manually* option is selected.

5 Click the **Participants** tab.

The *Participants* tab opens.



When defining a new conference, the *Participants List* is empty.

The following table describes the information displayed in the *Participants List* and the operations that can be performed.

Table 3-5 *New Conference – Participants Tab*

| Column / Button | Description |
|---|---|
| Participants List | |
| <i>Name</i> | A Unicode field that displays the participant's name and an icon representing the endpoint type: <i>Audio Only</i> or <i>Video</i> . |
| <i>IP Address/Phone</i> | Indicates the IP address or phone number of the participant's endpoint. <ul style="list-style-type: none"> For dial-out connection, displays the IP address or phone number of the endpoint called by the Polycom RMX 1500/2000/4000. For dial-in connection, displays the participant's IP address or phone number used to identify and route the participant to the appropriate conference. |
| <i>Alias Name/SIP Address (IP Only)</i> | Displays the alias name of an H.323 endpoint or the SIP URL. |
| <i>Network</i> | The network communication protocol used by the endpoint to connect to the conference: <i>H.323</i> , <i>SIP</i> or <i>ISDN/PSTN</i> . |

Table 3-5 New Conference – Participants Tab (Continued)

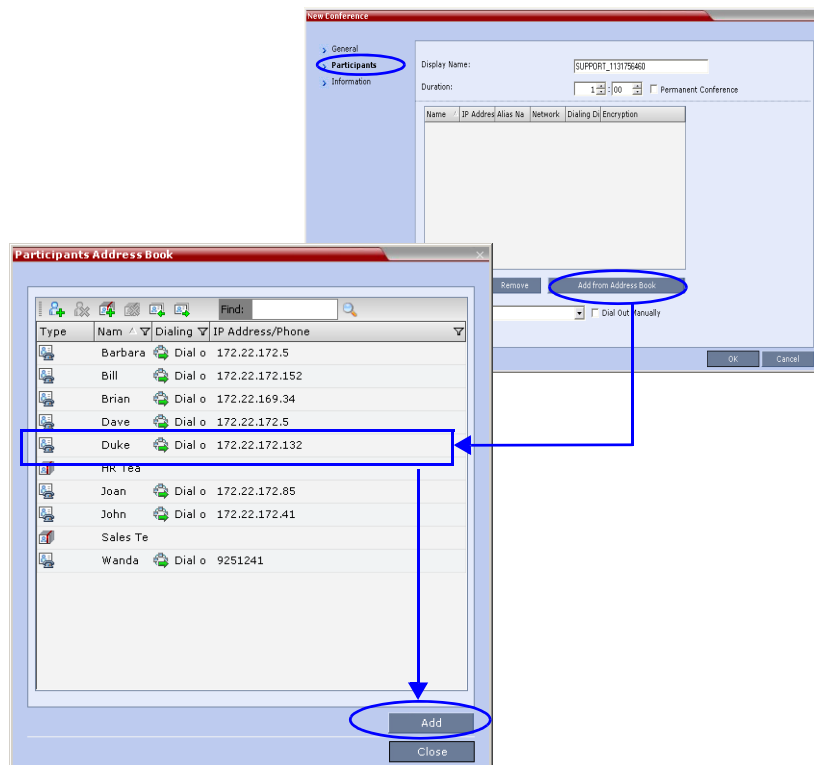
| Column / Button | Description |
|--------------------------|--|
| <i>Dialing Direction</i> | Dial-in – The participant dials in to the conference Dial-out – The RMX dials out to the participant |
| <i>Encryption</i> | Displays whether the endpoint uses encryption for its media. The default setting is <i>Auto</i> , indicating that the endpoint must connect according to the conference's encryption setting. Note: The H.320 protocol (ISDN/PSTN) does not support encryption. |
| Buttons | |
| New | Click to define a new participant. For more information, see the <i>RMX 1500/2000/4000 Administrator's Guide</i> , "Adding a new participant to the Address Book Directly" on page 7-3. |
| Remove | Click to remove the selected participant from the conference. |
| Add from Address Book | Click to add a participant from the <i>Address Book</i> to the conference. |
| Lecturer | |
| <i>Lecturer</i> | This option is used to activate the <i>Lecture Mode</i> . Select the participant you want to designate as <i>Lecturer</i> from the list of conference participants. The Lecturer can be selected once the conference is running and participants are connected. |
| <i>Dial Out Manually</i> | Select this option to designate an RMX User-controlled dial-out conference connection. When checked, the user must connect each of the dial-out participants who remain on standby until they are connected to the conference. |

Participants can be added to the conference in the following methods:

- Defining a new participant during the definition of the conference (clicking the **New** button).
- Adding pre-defined participants from the *Address Book* by either selecting the participants from the list or dragging and dropping the participants from the *Address Book* to the Participants list.
- Dial-in participants can connect to the conference after it was started (without using the *New Conference - Participants* dialog box).
- Once the conference has started, participants can be added to a conference directly from the Participants *Address Book* without having to use the *New Conference - Participants* tab. For more details, see "Adding Participants from the Address Book" on page 3-45.

To add participants from the Address Book:

- 6 In the *Participants List*, click the **Add from Address Book** button to open the *Participants Address Book*.

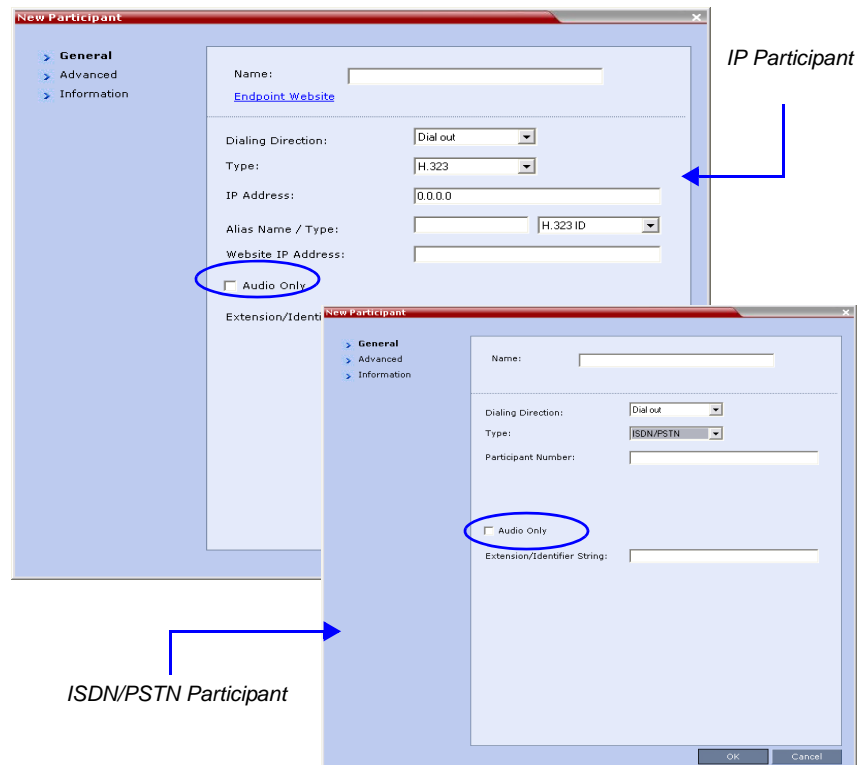


- 7 In the *Participants Address Book*, select the participants that you want to add to the conference and click the **Add** button.
Standard Windows multiple selection techniques can be used in this procedure.
- 8 The selected participants are assigned to the conference and appear in the *Participant List*.
- 9 Select additional Participants or click the **Close** button to return to the *Participants* tab.

To add a new participant to the conference:

- 1 In the *Participants* tab, click the **New** button.

The *New Participant - General* dialog box opens.



2 Define the following fields:

Table 3-6 *New Participant – General Properties*

| Field | Description |
|-----------------------------------|---|
| <i>Name</i> | <p>Enter the name of the participant or the endpoint as it will be displayed in the RMX Web Client. The <i>Name</i> field can be composed using Unicode encoding:</p> <ul style="list-style-type: none"> English text uses ASCII encoding and can contain the most characters (length varies according to the field). European and Latin text length is approximately half the length of the maximum. Asian text length is approximately one third of the length of the maximum. <p>Maximum field length in ASCII is 80 characters. The maximum length of text fields varies according to the mixture of character sets used (Unicode and ASCII).</p> <p>Note: This field is displayed in all tabs.</p> |
| <i>Endpoint Website (IP only)</i> | <p>Click the Endpoint Website hyperlink to connect to the internal website of the participant's endpoint. It enables you to perform administrative, configuration and troubleshooting activities on the endpoint.</p> <p>The connection is available only if the IP address of the endpoint's internal site is defined in the <i>Website IP Address</i> field.</p> |

Table 3-6 New Participant – General Properties (Continued)

| Field | Description |
|--|---|
| <i>Dialing Direction</i> | <p>Select the dialing direction:</p> <ul style="list-style-type: none"> • Dial-in – The participant dials in to the conference. • Dial-out – The MCU dials out to the participant. <p>Notes:</p> <ul style="list-style-type: none"> • This field applies to IP participants only. • Dial-out is forced when defining an ISDN/PSTN participant. |
| <i>Type</i> | <p>The network communication protocol used by the endpoint to connect to the conference: <i>H.323</i>, <i>SIP</i> or <i>ISDN/PSTN</i>.</p> <p>The fields in the dialog box change according to the selected network type.</p> |
| <i>IP Address</i> (H.323 and SIP Only) | <p>Enter the IP address of the participant's endpoint.</p> <ul style="list-style-type: none"> • For H.323 participant define either the endpoint IP address or alias. • For SIP participant define either the endpoint IP address or the SIP address. <p>Note: This field is hidden when the ISDN/PSTN protocol is selected.</p> |
| <i>Phone Number</i> (ISDN/PSTN Only) | <p>Enter the phone number of the ISDN/PSTN participant.</p> <p>Note: This field is only displayed when the ISDN/PSTN protocol is selected.</p> |
| <i>Alias Name/Type</i> (H.323 Only) | <p>If you are using the endpoint's alias and not the IP address, first select the type of alias and then enter the endpoint's alias:</p> <ul style="list-style-type: none"> • H.323 ID (alphanumeric ID) • E.164 (digits 0-9, * and #) • Email ID (email address format, e.g. abc@example.com) • Participant Number (digits 0-9, * and #) <p>Note:</p> <ul style="list-style-type: none"> • Although all types are supported, the type of alias is dependent on the gatekeeper's capabilities. The most commonly supported alias types are H.323 ID and E.164. • This field is used to enter the Entry Queue ID, target Conference ID and Conference Password when defining a cascaded link. • This field is removed from the dialog box when the ISDN/PSTN protocol is selected. |

Table 3-6 New Participant – General Properties (Continued)

| Field | Description |
|--|--|
| <i>Extension/Identifier String</i> | <p>Dial-out participants that connect to an external device such as Cascaded Links or Recording Links may be required to enter a conference password or an identifying string to connect. Enter the required string as follows:</p> <p>[p]...[p][string]</p> <p>For example: pp4566#</p> <p><i>p</i> - optional - indicates a pause of one second before sending the DTMF string. Enter several concatenated [p]s to increase the delay before sending the string. The required delay depends on the configuration of the external device or conference IVR system.</p> <p><i>String</i> - enter the required string using the digits 0-9 and the characters * and #. The maximum number of characters that can be entered is identical to the H.323 alias length.</p> <p>If the information required to access the device/conference is composed of several strings, for example, the conference ID and the conference password, this information can be entered as one string, where pauses [p] are added between the strings for the required delays, as follows:</p> <p>[p]...[p][string][p]...[p] [string]...</p> <p>For example: p23pp*34p4566#</p> <p>The RMX automatically sends this information upon connection to the destination device/conference. The information is sent by the RMX as DTMF code to the destination device/conference, simulating the standard IVR procedure.</p> |
| <i>SIP Address/Type (SIP Only)</i> | <p>Select the format in which the SIP address is written:</p> <ul style="list-style-type: none"> • SIP URI - Uses the format of an E-mail address, typically containing a user name and a host name: <i>sip:[user]@[host]</i>. For example, sip:dan@polycom.com. • TEL URI - Used when the endpoint does not specify the domain that should interpret a telephone number that has been input by the user. Rather, each domain through which the request passes would be given that opportunity. As an example, a user in an airport might log in and send requests through an outbound proxy in the airport. If the users enters "411" (this is the phone number for local directory assistance in the United States), this number needs to be interpreted and processed by the outbound proxy in the airport, and not by the user's home domain. In this case, tel: 411 is the correct choice. <p>Note: This field is removed from the dialog box when the ISDN/PSTN protocol is selected.</p> |
| <i>Endpoint Website IP Address (IP only)</i> | <p>Enter the IP address of the endpoint's internal site to enable connection to it for management and configuration purposes. This field is automatically completed the first time that the endpoint connects to the RMX. If the field is blank it can be manually completed by the system administrator. The field can be modified while the endpoint is connected</p> |

Table 3-6 New Participant – General Properties (Continued)

| Field | Description |
|-------------------|---|
| <i>Audio Only</i> | Select this check box to define the participant as a voice participant, with no video capabilities. |

- 3 Click **OK**.
The new participant is added to the *Participants* list.
You can save the participant properties to the *Address Book* so you can easily invite the participant to future conferences.

Information Tab

In the *Info* fields, you can add general information about the conference, such as contact person name, company name, billing code, etc.

This information is written to the *Call Detail Record (CDR)* when the conference is launched. Changes made to this information once the conference is running are **not** saved to the *CDR*.



This procedure is optional.
The information entered into these fields does not affect the conference.

To add information to the conference:

- 4 Click the **Information** tab.

The *Information* tab opens.

The screenshot shows the 'New Conference' dialog box with the 'Information' tab selected. The 'Display Name' field contains 'SUPPORT_472738258'. The 'Duration' field is set to '1:00' and the 'Permanent Conference' checkbox is unchecked. There are four empty text input fields labeled 'Info1:', 'Info2:', 'Info3:', and 'Billing Info:'.

- 5 Enter the following information:

Table 3-7 New Conference – Info Options

| Field | Description |
|--------------------|---|
| <i>Info1, 2, 3</i> | There are three information fields that allow you to enter general information for the conference such as company name, contact person etc. Unicode can be used in these fields. The maximum length of each field is 80 characters. |
| <i>Billing</i> | Enter the conference billing code if applicable. |

- 6 Click **OK**.

An entry for the new conference appears in the *Conferences* pane.

If no participants were defined for the conference or as long as no participants are connected, the indication *Empty* and a warning icon (⚠) appear in the *Status* column in the *Conferences* pane.

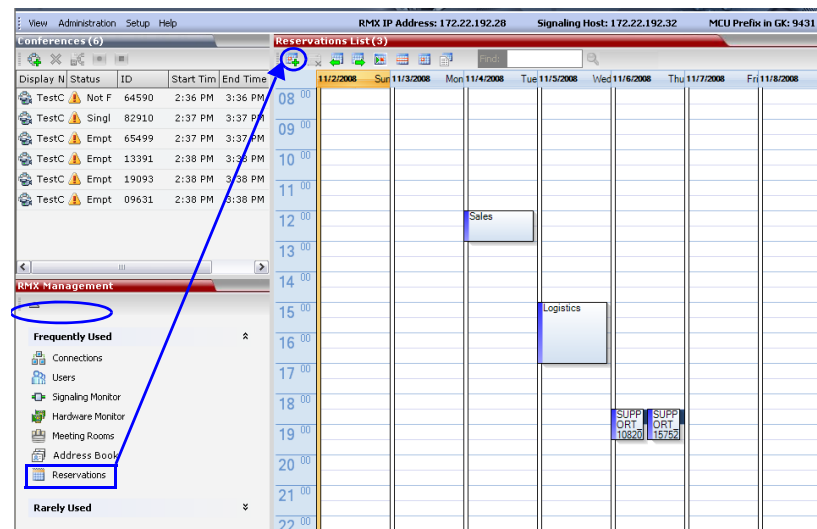
The status changes when participants connect to the conference.

If no participant connects within the time specified in the *Conference Profiles > Auto Terminate > Before First Joins* field, the conference is automatically terminated by the system.

Starting a Reservation

To start a conference from the Reservation Calendar:

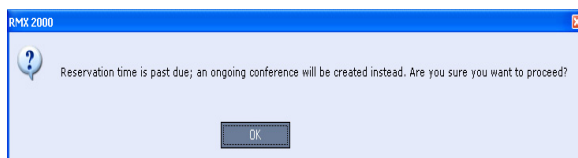
- 1 In the *RMX Management* pane, click the **Reservations** entry (📅).
The *Reservation Calendar* is displayed.
- 2 Click the **New Reservation** (+) button.



The *New Reservation – General* tab dialog box opens.

- 3 **Optional.** Select the **Enable ISDN/PSTN Dial-in** check box if you want ISDN and PSTN participants to be able to connect directly to the conference.
- 4 If *Enable ISDN/PSTN Dial-in* option is selected, either enter a dial-in number, or leave the *Dial-in Number* field blank to let the system automatically assign a number from the dial-in range defined for the selected ISDN/PSTN Network Service.
- 5 Click the **OK** button.

A confirmation box is displayed stating that the *Reservation* time is past due and that the conference will become ongoing.



- 6 Click **OK**.

The conference is started. If an ISDN/PSTN dial-in number was assigned to the conference either automatically or manually, this number can be viewed in the *Conferences* pane.

For more information about *Reservations*, see the *RMX 2000/4000 Administrator's Guide*, "Reservations" on page 8-1.

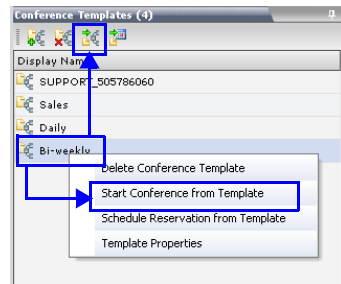
Starting an Ongoing Conference From a Template

An ongoing conference can be started from any Conference Template saved in the *Conference Templates* list.

To start an ongoing conference from a Template:

- 1 In the *Conference Templates* list, select the Template you want to start as an ongoing conference.

- 2 Click the **Start Conference from Template** (🔗) button.
or
Right-click and select **Start Conference from Template**.



The conference is started.



If a Conference Template is assigned a dial-in number that is already assigned to an ongoing conference, Meeting Room, Entry Queue or Gateway Profile, when the template is used to start an ongoing conference or schedule a reservation it will not start. However, the same number can be assigned to several conference templates provided they are not used to start an ongoing conference at the same time. If a dial in number conflict occurs prior to the conference's start time, an alert appears: "ISDN dial-in number is already assigned to another conferencing entity" and the conference cannot start.

The name of the ongoing conference in the *Conferences* list is taken from the Conference Template *Display Name*.

Participants that are connected to other ongoing conferences when the template becomes an ongoing conference are not connected.



If an ongoing conference, Meeting Room or Entry Queue with the same *Display Name*, *Routing Name* or *ID* already exist in the system, the conference will not be started.

For detailed description of Conference Templates, see *RMX 1500/2000/4000 Administrator's Guide*, "Conference Templates" on page 10-1.

Starting an Audio Meeting from a Microsoft Outlook

Using the Polycom Conferencing Add-in to Microsoft Outlook, a meeting can be created as any other Outlook meeting. For more details, see *Polycom Unified Conferencing Deployment Guide for Microsoft Environments*.

Click to Conference

Microsoft Lync and *OCS* clients can be configured to start multipoint audio conferences directly from the *OCS* or *Lync Client* window that will run on the *RMX MCU* in the same way point-to-point calls are started.

In this mode, several contacts can be selected before starting an audio or video conference. The ad-hoc conference is started on the *RMX* instead of the *Microsoft A/V MCU*, offering better, higher quality video.

For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "Click-to-Conference" on page H-82.

Connecting to a Conference

Direct Dial-in

Direct dial-in connection to conferences and Meeting Rooms is available to all endpoints. Participants must be provided with a dialing string which can vary according to the network type, conference password and chairperson password.

Participants dial the conference dial-in string and are connected to the conference IVR Service. Once the correct information, such as the conference password and chairperson password are entered, the participants are connected to the conference.

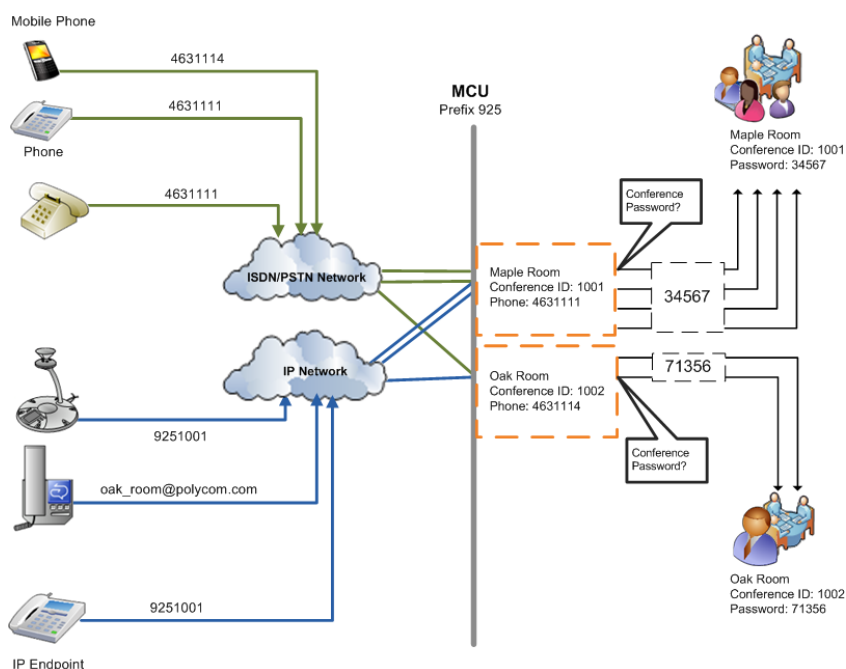


Figure 3-1 Dial-in Connection via IVR System

The MCU can be configured to enable the chairperson to use the chairperson password as the conference password without the need to enter the conference password.

H.323 Participants

For H.323 participants, the dialing string is composed of the MCU prefix in the Gatekeeper and the conference ID.

Example:

| | |
|--------------------------|--------------------------|
| Prefix in gatekeeper | 925 |
| Conference ID | 1001 |
| Conference Name | Maple_Room |
| >> The participant dials | 9251001 or 925Maple_room |

If there is no gatekeeper defined for the network, H.323 participants dial the MCU's signaling host IP address and the conference ID, separated by ##.

Example:

| | |
|---------------------------------|--------------------|
| MCU (Signaling Host) IP address | 172.22.30.40 |
| Conference ID | 1001 |
| >> The participant dials | 172.22.30.40##1001 |

SIP Participants

For SIP participants the dialing string is composed of the conference routing name and domain name in the following format:

conference_routing_name@domain_name

Example:

| | |
|--------------------------|------------------|
| Conference routing name | 1001 |
| >> The participant dials | 1001@polycom.com |

ISDN/PSTN Participants

Dial-in ISDN and PSTN participants dial one of the dial-in numbers assigned to the conference/Meeting Room/Reservation/Conference Template, including the country and area code (if needed). They are routed to their conference according to the dial-in number.

Example:

| | |
|-------------------------|---------|
| Assigned dial-in number | 4631111 |
| The participant dials | 4631111 |

Entry Queue Access

Access via an Entry Queue allows all participants to dial the same entry point that acts as a routing lobby. Once in the Entry Queue, participants are guided to the conference according to the conference ID they enter.

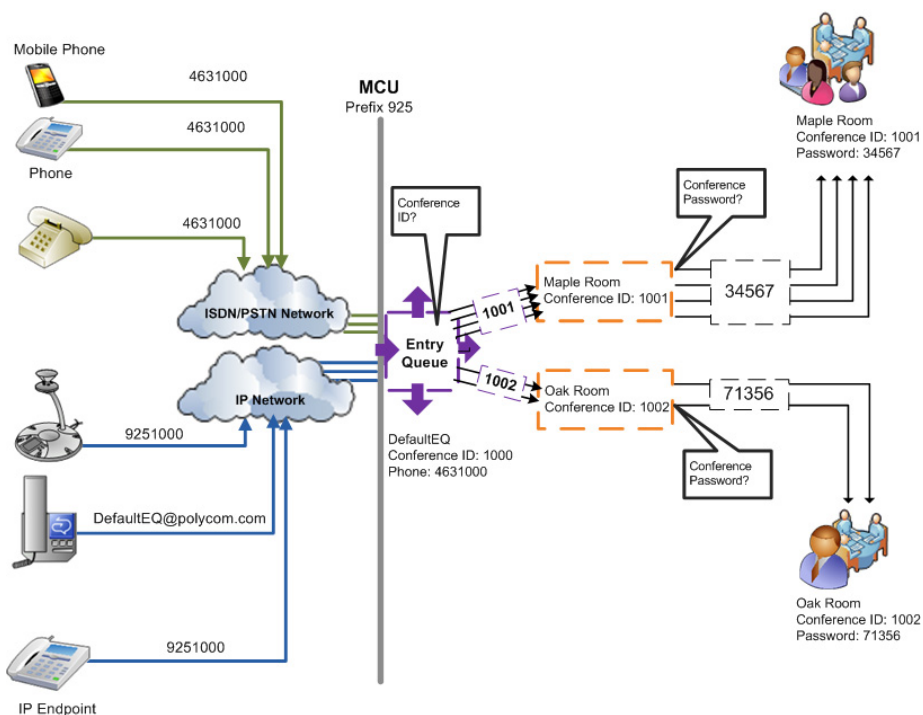


Figure 3-2 Dial-in Connection via Entry Queue

H.323 Participants

Dialing is executed in the same way as for conferences, where the Entry Queue ID/Name replaces the Conference ID/Name.

H.323 participants dial [Gatekeeper Prefix][Entry Queue ID/Name].

Example:

| | |
|--------------------------|---------|
| Prefix in gatekeeper | 925 |
| Entry Queue ID | 1000 |
| >> The participant dials | 9251000 |

H.323 participants can bypass the Entry Queue IVR voice messages by adding the correct Conference ID of destination conference to the initial dial string:

[Gatekeeper Prefix][EQ ID][##Destination Conference ID]

Example:

| | |
|----------------------------|---------------|
| Conference ID | 1001 |
| >> H.323 participants dial | 9251000##1001 |

H.323 participants can also bypass the conference IVR voice messages by adding the Conference Password to the initial dial string:

[Gatekeeper Prefix][EQ ID][##Destination Conference ID][##Password]

Example:

| | |
|----------------------------|----------------------|
| Conference ID | 1001 |
| Conference Password | 34567 |
| >> H.323 participants dial | 9251000##1001##34567 |

SIP Participants

Using an Entry Queue minimizes the number of conferences that require registration with the SIP server and enables using one URI address for all dial-in connections, using the format:

<Entry Queue routing name>@<domain name>

Example:

| | |
|--------------------------|-----------------------|
| Entry Queue Routing Name | DefaultEQ |
| Domain Name | polycom.com |
| >> SIP participants dial | DefaultEQ@polycom.com |

ISDN and PSTN Participants

Up to two dial-in numbers can be allocated to an Entry Queue for use by ISDN and PSTN participants.

Calls to numbers within the ISDN and PSTN *Dial-in Range* that are not allocated to an Entry Queue are routed to the *Transit Entry Queue*.

Dial-in ISDN and PSTN participants dial one of the dial-in numbers assigned to the Entry Queue, including the country and area code (if needed).

They are routed to their conference according to the conference ID.

Example:

| | |
|--------------------------------|---------|
| Entry Queue ID | 1000 |
| Assigned Dial-in number | 4631000 |
| >> ISDN/PSTN participants dial | 4631000 |

Connecting to a Polycom Conference from an Outlook Meeting Invitation

Attendees that have received a *Meeting Invitation* via *Outlook* using the *Polycom Conferencing Add-in for Microsoft Outlook*, connect by clicking on the link included in the invitation or by manually dialing the numbers displayed using the endpoint's numeric input device.

The screenshot shows an Outlook meeting invitation from Maria Bell. It includes a header with the sender's name and contact info, a subject line, and a body with instructions and meeting details. Blue arrows point to specific elements with labels:

- Two arrows point to the links "Join the meeting using Polycom CMA Desktop" and "Join the meeting using Microsoft Office Communicator" with the label "Click Link to Connect".
- One arrow points to the "Video Number: 7218817" under the "MEETING DETAILS" section with the label "Dial Manually to Connect".

The invitation text includes:

Meeting
 Bell, Maria
 Sent: 18:56 11/03/2010
 To: O'Brien, Sean

You have been invited to join a meeting using the Polycom® conferencing service

[Join the meeting using Polycom CMA Desktop](#)
[Join the meeting using Microsoft Office Communicator](#)

MEETING DETAILS
 Video Number: 7218817
 Meeting Password: 12
[View the meeting stream or recording](#)

TECHNICAL SUPPORT
 If you need help, contact technical support at
 • 1.800.555.2222
 • help@example.com
 • <http://help.example.com/video-calendaring>

NOTICE
 Polycom® conferencing service can be used to record meetings. By participating in this meeting, you agree that your communications may be monitored or recorded at any time during the meeting.

DO NOT EDIT BELOW THIS LINE
 --BEGIN POLYCOM VMR ENCODED TOKEN--
 UESMWUNPTS1BVURJT05VTUJFUJ9ICBPTFD00tQVWESU9OVU1CRVixPQpQT0xZQ09NLVNUUKVBTU1FRVRJTKc9dHJ1ZQpPTFD00tQ0hBSVJQVNTV09SRFJFUVVJUKVEPWZhbHNICBPTFD00tU0HTkFMSU5HUE9TVEZJWD1Ac2lwLmV4YW1wbGU RD0xMgpQT0xZQ09NLVZFUIJNT049MQo=
 --END POLYCOM VMR ENCODED TOKEN--

Maria Bell
 Engineer
 Polycom

For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "Polycom Conferencing for Microsoft Outlook®" on page **11-1**.

Dial-out Participants

Automatic Dial Out

Dial-out participants are defined with their dial-out number. Once they are added to the ongoing conference, the MCU automatically calls them at a rate of 1 dial-out per second, using the default H.323, SIP or ISDN/PSTN Network Service defined for them.

Manual Dial Out

In the manual mode, the RMX user or meeting organizer instructs the conferencing system to call the participant. Dial-out participants must be defined (mainly their name and telephone number) and added to the conference. This mode can only be selected at the conference definition stage and cannot be changed once the conference is running.

Monitoring Ongoing Conferences

Conference monitoring enables you to keep track of conferences and their participants: if all its participants are correctly connected and whether errors or faults have occurred.

Maximum number of voice participants in a conference:

RMX 1500 MPMx Mode: 360.

RMX 2000 MPM Mode: 400.

RMX 2000 MPM+ Mode: 800.

RMX 2000 MPMx Mode: 720.

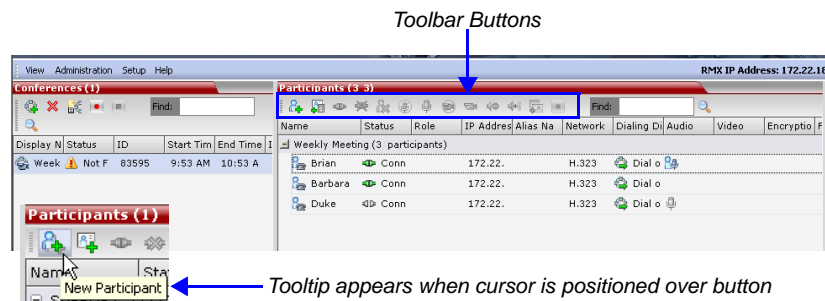
RMX 4000 MPM+ Mode: 1600.

RMX 4000 MPMx Mode: 1440.

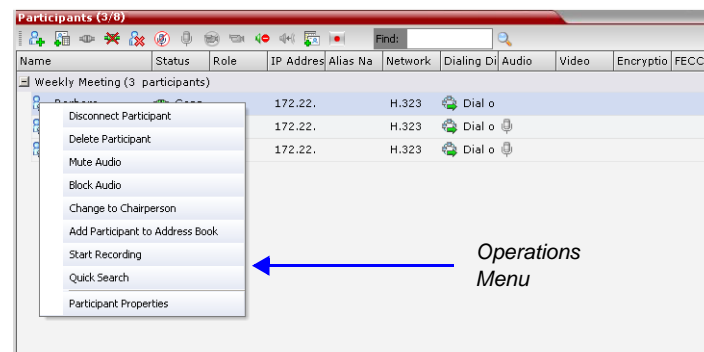
General Monitoring

All monitoring and operations procedures performed during ongoing conferences can be performed by either of two methods:

- **Using the buttons** in the toolbars.





- **Right-clicking** anywhere in the *Conferences* or *Participants* pane and selecting an operation from the menu.

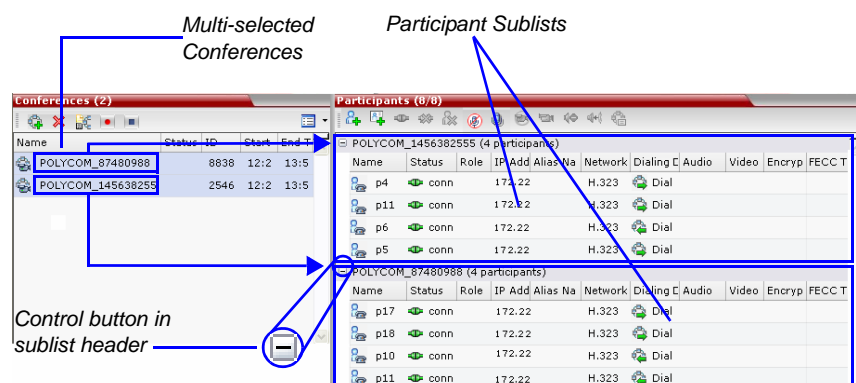


Multi Selection

Using multiple selection, you can monitor and perform simultaneous operations on multiple participants in multiple conferences.

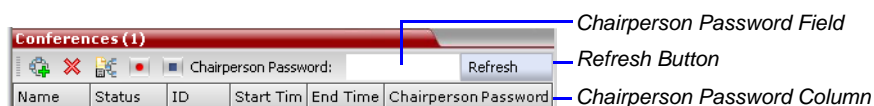
The selected conferences are displayed as sub-lists in the *Participants* list pane.

The sub-lists can be expanded and collapsed by clicking the  and  sublist control buttons that appear next to the conference name in the sublist headings.



Using the Chairperson Password for Filtering

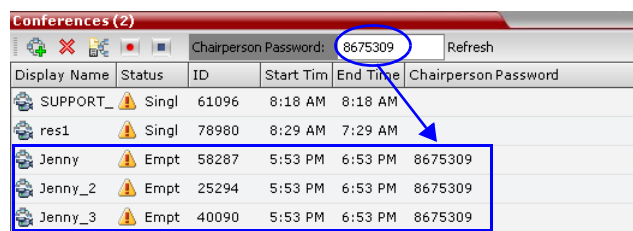
If you are logged in as a chairperson, the *Chairperson Password* field is displayed. It enables you to search for, and display a list of, ongoing conferences for which you have the password.



To search for an ongoing conference by Chairperson Password:

- 1 Click in the *Chairperson Password* field.
- 2 Enter the password to be searched for.
- 3 Click the **Refresh** button.

The *Conferences* list is refreshed and ongoing conferences with the requested password are displayed.



Conference Level Monitoring

Conference level monitoring is available to the administrator, operator and chairperson. The *Conference List* pane displays information about ongoing conferences.

| Name | Status | ID | Start Time | End Time |
|-----------|----------------------|-------|------------|----------|
| POLYCOM_2 | | 27753 | 2:25 PM | 3:25 PM |
| POLYCOM_1 | ⚠ Not Full; | 47239 | 12:40 PM | 2:40 PM |
| POLYCOM_4 | ⚠ Single Participant | 11945 | 2:25 PM | 3:25 PM |

One or more of the status indicators listed in Table 3-8 may appear in the *Status* column. No status indicator display in the *Status* column means that the conference is running without problems.

One or more of the status indicators listed in Table 3-8 may appear in the *Status* column.

Table 3-8 Conferences – Monitoring Information

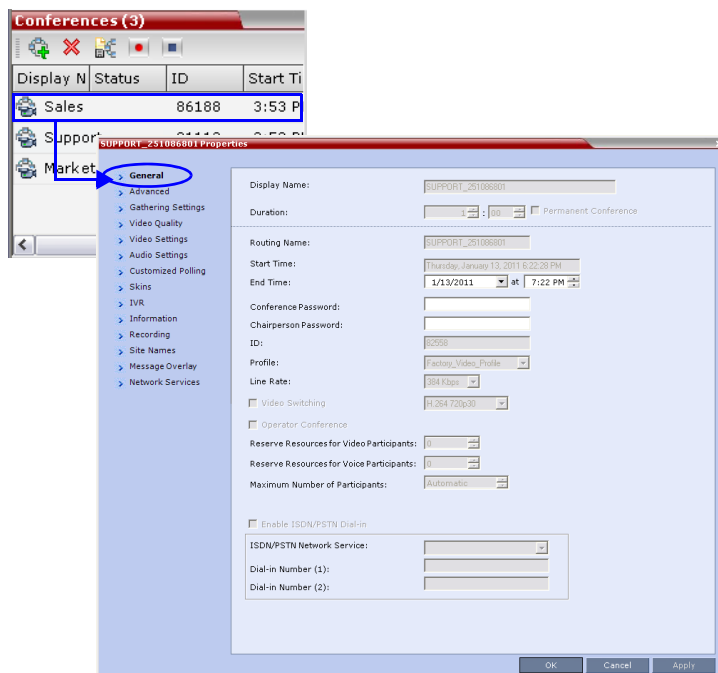
| Field | Description |
|--------------------------|--|
| <i>Name</i> | Displays conference name and type of conference: <ul style="list-style-type: none"> – Video and Voice Conference. This icon is also used for conferences that include only Voice participants. – The conference has been secured using the *71 DTMF code. For details, see "Secured Conference Monitoring" on page 3-41. – Operator Conference. |
| <i>Status</i> | Displays the status of the ongoing conference. If there is no problem with the participant's connection no indication is displayed. If one of the following statuses occur, the appropriate indication is displayed, preceded by a warning icon (⚠). <ul style="list-style-type: none"> Audio – There is a problem with the participant's audio. Empty – No participants are connected. Faulty Connection – Participants are connected, but the connection is problematic. Not Full – Not all the defined participants are connected. Partially Connected – The connection process is not yet complete; the video channel has not been connected. Single Participant – Only one participant is connected. Awaiting Operator – A participant has requested operator assistance. |
| <i>ID</i> | The Conference ID assigned to the conference. |
| <i>Start Time</i> | Conference start time. |
| <i>End Time</i> | The time the conference is expected to end. |
| <i>Dial in Number(1)</i> | The Conference dial in number for ISDN/PSTN participants. |

Additional information about the conference can be viewed when accessing the conference properties.

To monitor a conference:

- >> In the *Conference List* pane, double click the name of the conference you wish to monitor, or right-click the conference and then click **Conference Properties**.

The *Conference Properties - General* dialog box opens.



You can view all the conference's properties but those that appear with a gray background cannot be modified.

For more information, see the *RMX 1500/2000/4000 Administrator's Guide*, "Conference Level Monitoring" on page 12-3.

Roll Call/Audible Tones During an Ongoing Conference

If *Roll Call* is enabled, when a participant joins or leaves a conference, the system plays a voice message to all participants. The audio message consists of the joining or leaving participant's *Roll Call* name followed by either "has joined the conference" or "has left the conference".

These voice messages can be replaced with audio tones. The use of tones requires that the appropriate tone files in *.wav format be uploaded and configured to replace the *Roll Call Joined* and *Roll Call Left* message files.

This feature is enabled or disabled by value of the **IVR_ROLL_CALL_USE_TONES_INSTEAD_OF_VOICE** System Flag in *system.cfg*:


- When set to **NO** (default), voice messages are played.
- When set to **YES**, the uploaded tones replace the voice messages.

For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "Modifying System Flags" on page 21-1 and "Defining a New Conference IVR Service" on page 16-7

Secured Conference Monitoring

When *Secured Conference Mode* is enabled on the RMX, it locks the conference and prevents participants and RMX Users from joining the conference. A *Secured* conference cannot be monitored or controlled in any way. While a conference is in the *Secure mode*, the RMX User with Administrator authorization cannot view the participants list or any other conference properties, but can manually terminate it.

The conference chairperson can enable or disable the *Secure* mode from the DTMF input device (touch-tone telephone or the endpoint's remote control), using the appropriate DTMF code (the default code is *71). During the secure conference, the chairperson and participants can perform various operations, such as muting, via their DTMF input device using the appropriate DTMF codes. However, because *Secure* conferences cannot be monitored, these operations or status changes are not displayed in the *Conferences* or *Participants* panes.

A special icon  is used to indicate that the conference is in *Secure* mode.

Monitoring Ongoing Gateway Sessions

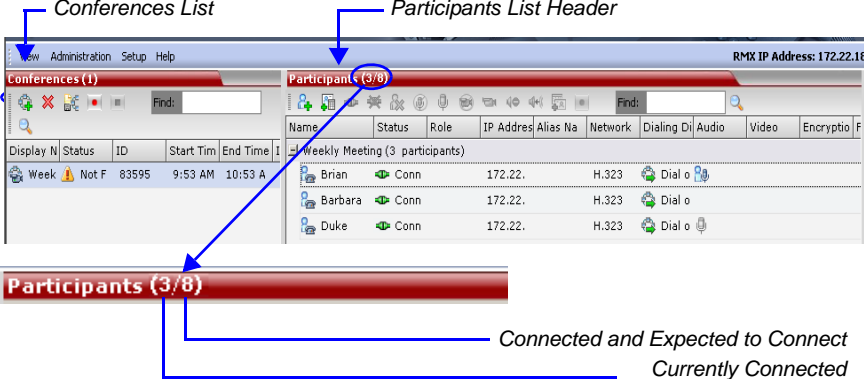
Ongoing Gateway Sessions that are created when calling the Gateway Profile, are listed in the ongoing *Conferences* list pane and are monitored in the same way as the conferences.

For more details, see the *RMX 1500/2000/4000 Administrator's Guide*, "Conference Level Monitoring" on page 12-3.

Participant Level Monitoring

Participant Connection Monitoring

When a conference is selected in the *Conference* list, the *Participants* list header displays a summary of participant connection status.



Conferences List

Participants List Header

RMX IP Address: 172.22.18

| Name | Status | Role | IP Address | Alias Na | Network | Dialing Di | Audio | Video | Encryption |
|---------------------------------|--------|------|------------|----------|---------|------------|-------|-------|------------|
| Weekly Meeting (3 participants) | | | | | | | | | |
| Brian | Conn | | 172.22. | | H.323 | Dial o | | | |
| Barbara | Conn | | 172.22. | | H.323 | Dial o | | | |
| Duke | Conn | | 172.22. | | H.323 | Dial o | | | |

Participants (3/8)

Connected and Expected to Connect

Currently Connected

These numbers include:

- **Currently Connected** participants - both defined and undefined participants currently connected to the conference.
- **Connected and Expected to Connect** - all participants currently connected. Defined participants that are expected to connect to the conference are included in this number.

In the diagram above, **Participants (3/ 8)** indicates that 3 of the 8 expected participants have connected and that 5 defined participants have not yet connected.

The *Participant* list displays the following participant indicators and properties:

Table 3-9 Participant Monitoring – Indicators and Properties






















| Column | Icon/Description | |
|----------------------|---|--|
| Name | Displays the name and type (icon) of the participant: | |
| |  | Audio Participant – Connected via IP phone or ISDN/PSTN. |
| Status | Displays the connection status (text and icon) of the participant. If there is no problem with the participant's connection no indication is displayed. | |
| |  | Connected – The participant is successfully connected to the conference. |
| |  | Disconnected – The participant is disconnected from the conference. This status applies only to defined participants. |
| |  | Waiting for Dial-in – The system is waiting for the defined participant to dial into the conference. |
| |  | Partially Connected – The connection process is not yet complete; the video channel has not been connected. |
| |  | Faulty Connection – The participant is connected, but problems occurred in the connection, such as synchronization loss. |
| |  | Awaiting Individual Assistance – The participant has requested the user's (operator's) assistance. |
| |  | Awaiting Conference Assistance – The participant has requested the operator's assistance for the conference. This usually means that the user (operator) has been requested to join the conference. |
| Role | Displays the participant's role or function in the conference: | |
| |  | Chairperson – The participant is defined as the conference chairperson. The chairperson can manage the conference using touch-tone signals (DTMF codes). |
| |  | Lecturer – The participant is defined as the conference Lecturer. |
| |  | Lecturer and Chairperson – The participant is defined as both the conference Lecturer and Chairperson. |
| |  | Cascade Enabled Dial-out Participant – A special participant functioning as a link in a cascaded conference. |
| |  | Recording – A special participant functioning as a Recording Link. |
| Role (continued) |  | Request to speak - Participants that were muted by the conference organizer/system operator can indicate that they want to be unmuted by entering the appropriate DTMF code (default 99). The icon is displayed for 30 seconds. |
| IP Address/ Phone | The IP participant's IP address or the ISDN/PSTN participant's phone number. | |

Table 3-9 Participant Monitoring – Indicators and Properties (Continued)

| Column | Icon/Description | |
|------------------------------------|--|--|
| <i>Alias Name/ SIP Address</i> | The participant's Alias Name or SIP URI. The alias of an <i>RSS 2000 Recording System</i> if the participant is functioning as a recording link. | |
| <i>Network</i> | The participant's network connection type – H.323, SIP or ISDN/PSTN. | |
| <i>Dialing Direction</i> |  | Dial-in – The participant dialed the conference. |
| |  | Dial-out – The MCU dialed the participant. |
| <i>Audio</i> | Displays the status of the participant's audio channel. If the participant's audio is connected and the channel is neither muted nor blocked, no indication is displayed. | |
| |  | Disconnected – Participant's audio channel is disconnected. This is a defined participant who is waiting to be connected to the conference. |
| |  | Muted – Participant's audio channel is muted. The participant can still hear the conference. |
| |  | Blocked – Transmission of audio from the conference to the participant is blocked. |
| |  | Muted and Blocked - Audio channel is muted and blocked. |
| <i>Encryption</i> |  | Indicates that the endpoint is using encryption for its connection to the conference. |

For more information, see the *RMX 1500/2000/4000 Administrator's Guide*, "Participant Level Monitoring" on page [12-14](#).

Operations Performed During On Going Conferences

Conference Level operations

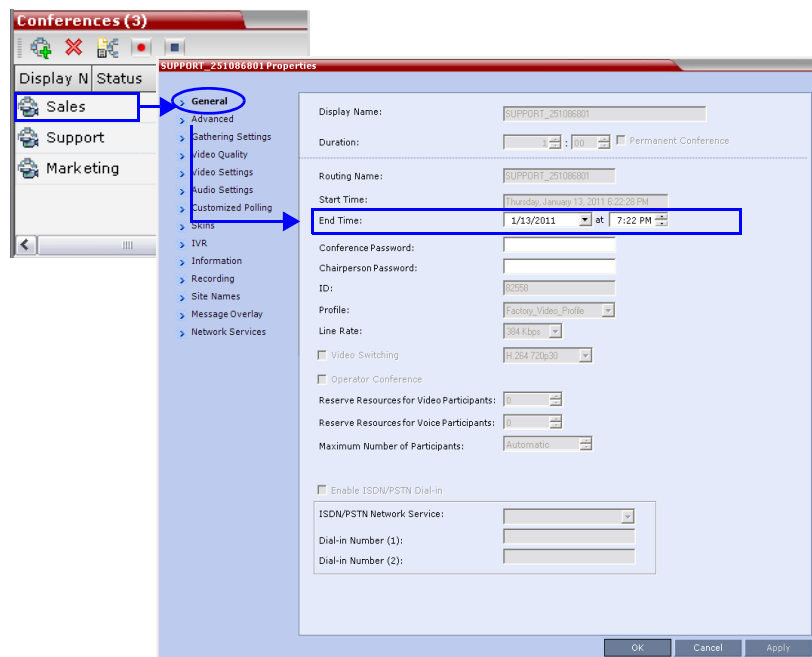
Changing the Duration of a Conference

The duration of each conference is set when the new conference is created. The default duration of a conference is 1 hour. All conferences running on the RMX are automatically extended as long as there are participants connected to the conference.

A conference's *Duration* can be extended or shortened while it is running, by modifying its scheduled *End Time*.

To extend or shorten a conference manually:

- 1 In the *Conference List* pane, double-click the conference **Name**.
- 2 In the *General* tab, modify the *End Time* fields and click **OK**.

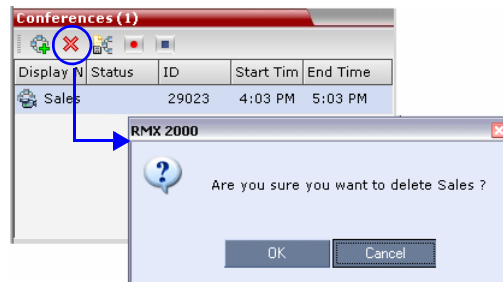


The *End Time* is changed and the *Duration* field is updated.

To terminate a conference manually:

- 1 In the *Conferences* list, select the conference you wish to delete and click the **Delete Conference (X)** button.

You are prompted for confirmation.



- 2 Click **OK** to terminate the conference.

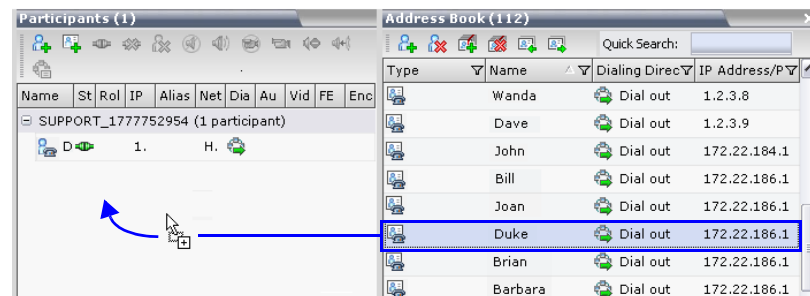
Adding Participants from the Address Book

Once the conference has started, you can add participants to a conference directly from the *Participants Address Book* without having to use the *New Conference – Participants* tab.

To drag & drop participants into the Participants List:

- 1 Open the *Address Book*.
- 2 Select, drag and drop the participant that you wish to add to the conference directly from the *Participant Address Book* into the *Participant List*.

Standard Windows multiple selection techniques can be used in this procedure.

**Moving Participants**

RMX users can assist participants by performing the following operations:

- Move a participant to an *Operator conference* (Attend a participant).
- Move a participant to the *Home* (destination) conference.
- Move participant from one ongoing conference to another

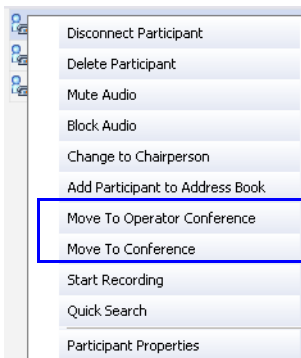
A move can be performed using the following methods:

- Using the participant right-click menu
- Using drag and drop

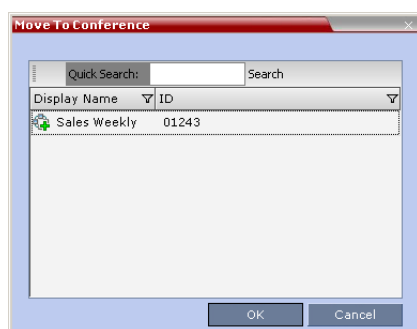
To move a participant from the ongoing conference using the right-click menu options:

- 1 In the *Conferences* list, click the conference where there are participants waiting for *Operator's Assistance* to display the list of participants.

- 2 In the *Participants* list, right-click the icon of the participant to move and select one of the following options:



- **Move to Operator Conference** - to move the participant to the Operator conference. This option is displayed when an Operator conference is running. For more details, see the *RMX 1500/2000/4000 Administrator's Guide, "Operator Assistance & Participant Move"* on page 9-1.
- **Move to Conference** - to move the participant to any ongoing conference. When selected, the *Move to Conference* dialog box opens, letting you select the name of the destination conference.



- **Back to Home Conference** - if the participant was moved to another conference or to the *Operator conference*, this options moves the participant back to his/her source conference. This option is not available if the participant was moved from the Entry Queue to the *Operator conference* or the destination conference.

Moving a Participant Interactively

You can drag and drop a participant from the Entry Queue or ongoing conference to the Operator or destination (Home) conference:

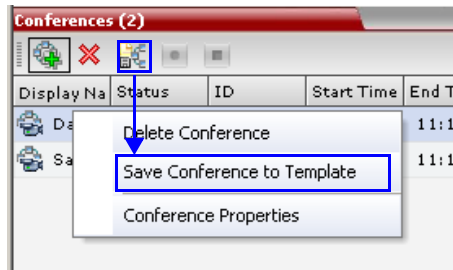
- 1 Display the participants list of the Entry Queue or the source conference by clicking its entry in the *Conferences* list.
- 2 In the *Participants* list, drag the icon of the participant to the *Conferences List* pane and drop it on the *Operator Conference* icon or another ongoing conference.

Saving an Ongoing Conference as a Template

Any conference that is ongoing can be saved as a template.

To save an ongoing conference as a template:

- 1 In the *Conferences List*, select the conference you want to save as a Template.
- 2 Click the **Save Conference** (📄) button.
or
Right-click and select **Save Conference**.



The conference is saved to a template whose name is taken from the ongoing conference *Display Name*.

Copy and Paste Conference

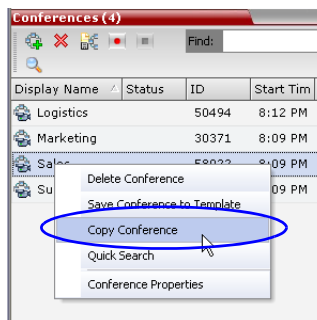
The *RMX* user can **Copy**, and **Paste** conferences. When using the *RMX Web Client*, conferences can be copied and pasted on the same *RMX*, however when using the *RMX Manager*, with its ability to manage multiple *RMX*s, conferences can be copied and pasted between different *RMX*s.

Copy Conference

The **Copy** command copies all the conference's properties including connected participants and makes these properties available for pasting, starting a new conference. The copied conference remains active until it terminates or is deleted.

To copy a conference:

- 1 In the *Conferences List* pane, right-click the conference you want to copy.
- 2 In the drop-down menu select **Copy Conference**.



Paste Conference

The **Paste Conference** command starts the new conference on the same *RMX* or on a different *RMX*.

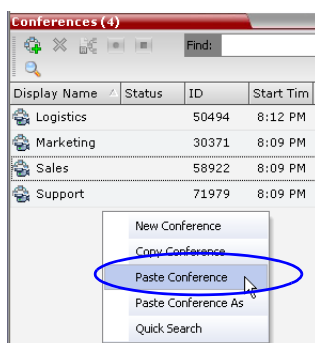
To paste a conference:

>> Right-click in the *Conferences List* pane and in the drop-down menu select **Paste Conference**.

or

If you are using the *RMX Manager* and you want to paste the conference to a different *RMX*:

- a In the *MCUs* list pane, click the *RMX* that is to receive the conference.
- b In the *Conferences* list pane, right-click, and in the drop-down menu select **Paste Conference**.



The conference is pasted to the *RMX* with a *Display Name* is assigned by the system.

Paste Conference As

The **Paste Conference As** command allows the *RMX* user to create a new conference using the copied conference's properties as a template. It automatically opens the *Conference Properties* dialog box allowing the *RMX* user to modify the *General*, *Participants* and *Information* tabs to create the new conference. When the **OK** button in the *Conference Properties* dialog box is clicked the new conference is started.

To paste a conference as a new conference:

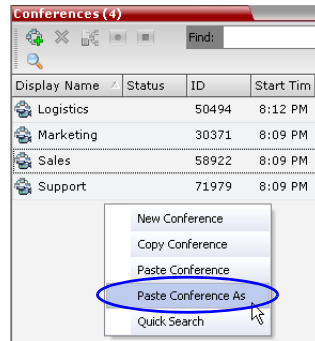
1 Right-click in the *Conferences List* pane and in the drop-down menu select **Paste Conference As**.

or

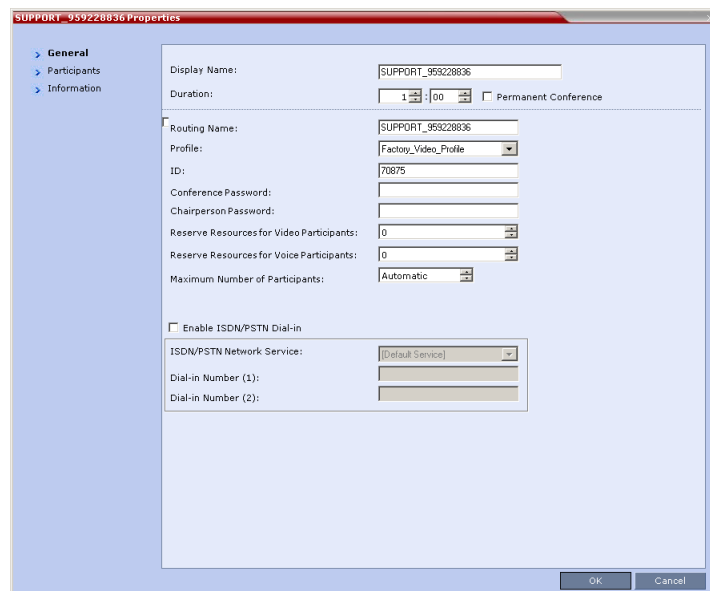
If you are using the *RMX Manager* and you want to paste the conference to a different *RMX*:

- a In the *MCUs* list pane, click the *RMX* that is to receive the conference.

- b** In the *Conferences* list pane, right-click, and in the drop-down menu select **Paste Conference As**.



The *Conference Properties* dialog box is displayed.



- 2** Modify the conference information as required.
- 3** Click the **OK** button to paste and start the new conference.

Participant Level Operations

Participant Level Operations enable you to modify and control the connections and statuses of participants in ongoing conferences, as described in Table 3-10.

Table 3-10 Participant Level Operations










| Menu Option | Button | Description |
|--|---|--|
| <i>New Participant</i> |  | Define a new participant. For more information about the <i>New Participant</i> dialog box tab, see Table 3-5 on page 3-22. |
| <i>Add Participant From Address Book</i> |  | Open the <i>Address Book</i> to select the participant for the conference. For more information about the <i>Address Book</i> , see the <i>RMX 1500/2000/4000 Administrator's Guide</i> , "Address Book" on page 7-1. |
| <i>Connect Participant</i> |  | Connect a disconnected defined dial-out participant to the conference. |
| <i>Disconnect Participant</i> |  | Disconnect the participant from the conference. |
| <i>Delete Participant</i> |  | Delete the selected participants from the conference. |
| <i>Mute Audio</i> |  | Mute the audio transmission from the participant to the conference. The <i>Audio Muted</i> indicator appears in the <i>Participants List</i> and the <i>Unmute Audio</i> button () becomes active. |
| <i>Unmute Audio</i> |  | Resume the participant's audio transmission to the conference. The <i>Mute Audio</i> button () becomes active. |
| <i>Block Audio</i> |  | To block the audio transmission from the conference to the participant. When blocked, the participant can still be heard by the conference. The <i>Audio Blocked</i> indicator appears in the <i>Participants List</i> and the <i>Unblock Audio</i> button () becomes active. |
| <i>Unblock Audio</i> |  | Resume the audio transmission from the conference to the participant. The <i>Block Audio</i> button () becomes active. |
| <i>Add Participant to Address Book</i> |  | Add selected participant's details to the <i>Participant Address Book</i> . |
| <i>Change to Chair-person</i> | | Define the selected participant as the conference leader/chairperson. |
| <i>Change to Regular Participant</i> | | Define the chairperson as a regular participant without chairperson privileges. |
| <i>Connect to Website</i> | | Connect directly to the internal website of the participant's endpoint to perform administrative, configuration and troubleshooting activities. |

Table 3-10 Participant Level Operations (Continued)

| Menu Option | Button | Description |
|-----------------------------|--------|---|
| AGC (Audio Gain Control) | | Enable AGC for the participant with weak audio signal during ongoing conferences. Note: Enabling AGC may result in amplification of background noise. |
| Copy Participant | | Copy the all participant's parameters in preparation for Pasting into another conference or back into the current conference.. |
| Cut Participant | | Copy the all participant's parameters and delete the participant from the current conference. The participant can be Pasted into another conference or back into the current conference. |
| Paste Participant As | | Paste the participant into the selected conference as a new participant with parameters modified via the Address Book Participant - Properties dialog box. |
| Participant Properties | | To view all <i>Participant Properties</i> . For more information, see the <i>RMX 1500/2000/4000 Administrator's Guide</i> , "Participant Level Monitoring" on page 12-14 . |

Copy Cut and Paste Participant

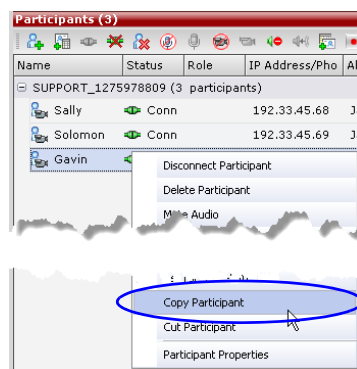
The **RMX** user can **Copy**, **Cut** and **Paste** participants between different conferences running on the **RMX**, including his/her current conference. These functions, when used via the **RMX Manager**, with its ability to manage multiple **RMXs**, participants, allows the **RMX** user to **Copy**, **Cut** and **Paste** participants between conferences running on different **RMXs**.

Copy Participant

The **Copy** command copies all the participant's properties and makes them available for pasting. The participant remains connected to his/her current conference.

To copy a participant:

- 1 In the *Participants List* pane, right-click the participant you want to copy.
- 2 In the drop-down menu select **Copy Participant**.

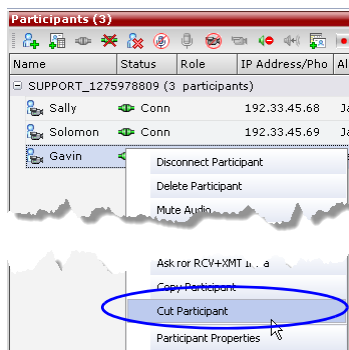


Cut Participant

The **Cut** command copies all the participant's properties and makes them available for pasting. The participant is deleted from his/her current conference.

To cut a participant:

- 1 In the *Participants List* pane, right-click the participant you want to cut.
- 2 In the drop-down menu select **Cut Participant**.

**Paste Participant**

The **Paste** command connects the *copied* or *cut* participant to the selected conference. If the participant was *copied*, he/she should be deleted from the conference he/she was *copied* from, unless it is required that the participant is connected to two (or more) conferences. (There are endpoints that permit a participant to be connected to multiple conferences).

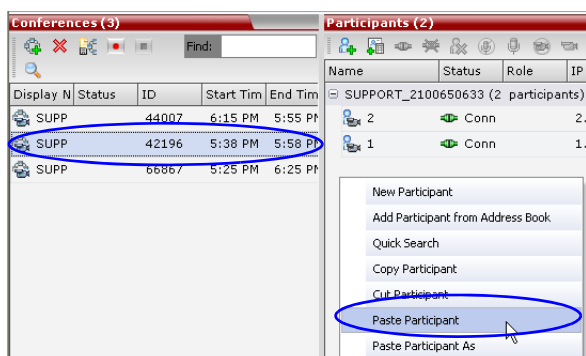
To paste a participant:

- 1 In the *Conferences List* pane, click the conference you want to paste the copied/cut participant into.
- 2 Right-click in the *Participants List* pane of the selected conference and in the drop-down menu select **Paste Participant**.

or

If you are using the *RMX Manager* and you want to paste the participant to a conference to different *RMX*:

- a In the *MCUs* list pane, click the *RMX* that is hosting the conference that is to receive the participant.
- b In the *Conferences* list pane, click the conference you want to paste the copied/cut participant into.
- c Right-click, and in the drop-down menu select **Paste Participant**.



The participant is connected to the conference.

Paste Participant As

The **Paste Participant As** command allows the RMX user to create a new participant using the copied participant's properties as a template. It automatically opens the *Address Book - Participant Properties* dialog box allowing the RMX user to modify the participant's properties effectively creating a new participant. When the **OK** button in the *Participant Properties* dialog box is clicked the new participant is connected to the selected conference.

To paste a participant as a new participant:

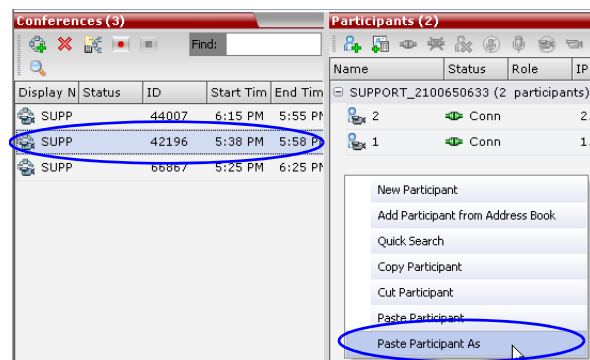
- 1 In the *Conferences List* pane, click the conference you want to paste the copied/cut participant into.

Right-click in the *Participants List* pane of the selected conference and in the drop-down menu select **Paste Participant As**.

or

If you are using the *RMX Manager* and you want to paste the participant to a conference on another RMX:

- a In the *MCUs* list pane, click the RMX that is hosting the conference that is to receive the participant.
- b In the *Conferences* list pane, click the conference you want to paste the copied/cut participant into.
- c Right-click, and in the drop-down menu select **Paste Participant As**.



The *Address Book - Participant Properties* dialog box is displayed.

- 2 Modify the participant information as required. For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "Modifying Participants in the Address Book" on page 5-11.

Optional. If not already in the *Address Book*, the copied/cut participant can be added to the *Address Book*.

Optional. The new participant can be added to the *Address Book*.

- 3 Click the **OK** button to connect the new participant to the selected conference.

Conference Control Using DTMF Codes

Participants and chairpersons can manage their connection to ongoing conferences from their endpoints, using touch-tone signals (DTMF codes) from their endpoints. Table 3-9 lists the DTMF Codes that can be used.

Chairpersons can also control an ongoing conference using DTMF codes.

Permissions for DTMF actions to be performed by all conference participants or by chairperson only are configured in the *Conference IVR Service* assigned to the conference.

For more information, see the *RMX 1500/2000/4000 Administrator's Guide*, "Defining a New Conference IVR Service" on page 16-7.

To use the DTMF codes to control the conference, the DTMF input must be first enabled on the endpoint remote control (for example, entering #).

Table 3-11 Default DTMF Codes to Manage Conferences and Participants

| Operation | DTMF String | Permission |
|-----------------|-------------|-------------|
| Individual help | *0 | Everyone |
| Conference help | 00 | Chairperson |
| Mute My Line | *6 | Everyone |
| Unmute My Line | #6 | Everyone |

Table 3-11 Default DTMF Codes to Manage Conferences and Participants



| Operation | DTMF String | Permission |
|------------------------------|--------------|-------------|
| Increase Broadcast Volume | *9 | Everyone |
| Decrease Broadcast Volume | #9 | Everyone |
| Mute All Except Me | *5 | Chairperson |
| Cancel Mute All Except Me | #5 | Chairperson |
| Change Password | *77 | Chairperson |
| Mute Incoming Participants | *86 | Chairperson |
| Unmute Incoming Participants | #86 | Chairperson |
| Play Help Menu | *83 | Everyone |
| Enable Roll Call | *42 | Chairperson |
| Disable Roll Call | #42 | Chairperson |
| Roll Call Review Names | *43 | Chairperson |
| Roll Call Stop Review Names | #43 | Chairperson |
| Terminate Conference | *87 | Chairperson |
| Start Click&View | ** | Everyone |
| Invite Participant | *72 | Everyone |
| Change To Chairperson | *78 | Everyone |
| Increase Listening Volume | *76 | Everyone |
| Decrease Listening Volume | #76 | Everyone |
| Override Mute All | Configurable | Everyone |
| Start Recording | *3 | Chairperson |
| Stop Recording | *2 | Chairperson |
| Pause Recording | *1 | Chairperson |
| Secure Conference | *71 | Chairperson |
| Unsecure Conference | #71 | Chairperson |
| Show Participants | *88 | Everyone |
| Request to Speak | 99 | Everyone |

Requesting Help

A participant can request help using the appropriate DTMF code from his/her touch tone telephone or the endpoint's DTMF input device. The participant can request Individual Assistance (default DTMF code *0) or Conference Assistance (default DTMF code 00).

Participants in Entry Queues who failed to enter the correct destination conference ID or the conference password will wait for operator assistance (provided that an Operator conference is active).

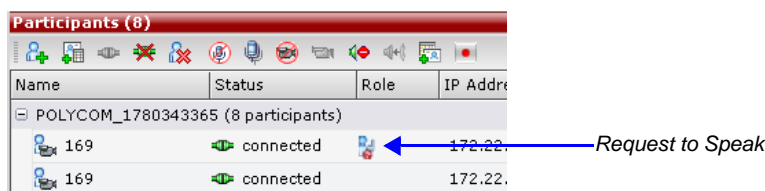
Participant who is waiting for User (Operator) Assistance is displayed with the following icons in the Status column of the Participants pane.

| | |
|---|---|
|  | Awaiting Individual Assistance – The participant has requested the user's (operator's) assistance. |
|  | Awaiting Conference Assistance – The participant has requested the user's (operator's) assistance for the conference. This usually means that the RMX user (operator) has been requested to join the conference. |

Request to Speak

Participants that were muted by the conference organizer/system operator can indicate that they want to be unmuted by entering the appropriate DTMF code.

An icon is displayed in the *Role* column of the *Participants* list for 30 seconds.



Request to Speak is:

- Activated when the participant enters the appropriate DTMF code (default: **99**).
The DTMF code can be modified in the conference *IVR Service Properties - DTMF Codes* dialog box.
- Available for dial-in and dial-out participants.
- A participant can request to speak more than once during the conference.
- Supported in *all* conference types.
- Supported in H.323 and SIP environments.
- The duration of the icon display cannot be modified.

Invite Participant

A participant in a video or audio conference can invite another participant to the conference using the touch-tone DTMF numeric keypad on the participant's endpoint. You can invite a participant using various communication devices, such as a mobile phone, an IP phone, PSTN phones, laptops, or connect to another conference running on another PBX or MCU.

Invite Call Flow

The following flow describes how a participant is invited to the conference using the DTMF codes:

- During the conference, the participant enters the DTMF code (default is ***72**) on the numeric keypad to invite another participant.

- 2 The participant is prompted to enter the invited participant's destination number (a number or IP address) including the prefix (if required) and the DTMF delimiter digit ('*' or '#') at the end. The asterisk (*) is used to denote the dot in the IP address.

For example: To enter an IP address such as 10.245.22.19, on the DTMF keypad press 10*245*22*19 and then the DTMF delimiter.



Digits that are entered after the DTMF delimiter and before the participant is connected are ignored.

- 3 The system automatically dials to the destination according to the protocol order as defined in the *IVR Services Properties - Video Services* tab.

When the call cannot be completed by the current protocol, the system attempts to connect to the destination using the next protocol according to the protocol order.

The RMX connects the participant when the call is answered.

Entering Additional DTMF Codes

In some environments, the call is answered by an IVR system (for example when connecting to another conference or PBX), requesting a password or a destination number to complete the connection process. In such a case, additional DTMF digits must be entered before the **DTMF forward duration** time has expired and are forwarded to the invited destination. When the additional DTMF codes are entered, they are heard by all the conference participants.

If the DTMF code is not entered on time or if the wrong DTMF code is entered, the participant is prompted for a new input. After the defined number of retries have elapsed, the call is ended.

Error Handling

- If the destination endpoint is busy or the participant did not answer, the system ends the call.
- When an incorrect number is entered, the call fails and an error message is displayed.
- If the destination number is not entered in a specific amount of time (defined in **Timeout for user input** in the *IVR Services - Global* tab), the participant is prompted to enter a destination number again. Depending on the **Number of user input retries** as defined in the *IVR Services - Global* tab, the system will attempt to receive the required input. When all the retries have failed, the call to the invited participant is cancelled.

Guidelines

- In CP conferences, the participant initiating the invitation to another participant is able to view the dialing information and connection status. During the dialing process, the dialing string is displayed as the participant name which is replaced by the site name when connected to the conference.
- By default, all participants (Everyone) are granted permission to invite a participant to join a conference. To change the permission to the Chairperson, modify the *Permission* column in the *IVR Service - DTMF Codes* tab.

For details on enabling the Invite Participants feature, see "Enabling the Participants using DTMF Option" on page [16-38](#).

Appendix A

Glossary

This appendix lists the terms and abbreviations that are related to the Polycom RMX 1500/2000/4000, and are commonly used in the RMX documentation.

| Abbreviation/ Term | Explanation |
|------------------------|---|
| <i>AGC</i> | Auto Gain Control. A mechanism that regulates noise and audio volume by keeping the received signal of all participants balanced. |
| <i>Bandwidth</i> | Defines the information carrying capacity of a channel. In analog systems, it is the difference between the highest frequency that a channel can carry and the lowest, measured in hertz. In digital systems, bandwidth is measured in bits per second. The larger a connection's bandwidth, the more data can be transmitted in a given amount of time, allowing for greater video resolution and more sites in a conference. For more information, see Line Rate. |
| <i>Bonding</i> | Bandwidth ON Demand Interpolarity Group. A transmission protocol that aggregates two 64 Kbps B channels to function as one 128 Kbps channel. When using several BRI channels, Bonding means that only one D-channel serves all BRI channels, while the remaining D-channels are used for data transfer. See also: BRI. |
| <i>Bps, Kbps</i> | Bits and kilobits per second; a unit of bandwidth, which is the amount of data that can flow during one second over a communications line (using a transmission medium). 1 Kbps = 1000 Bps |
| <i>BRI</i> | Basic Rate Interface. A type of ISDN connection for transiting data, consisting of 3 channels: two B-channels (each of 64 Kbps) and one D-channel (16 Kbps). |
| <i>Carrier</i> | A telephone or other company that provides telecommunication transmission services. |
| <i>CIF, 4CIF, QCIF</i> | Common Intermediate Format, an optional part of the ITU-T's H.261 and H.263 standards. CIF specifies 288 non-interlaced luminance lines, that contain 176 pixels. CIF can be sent at frame rates of 7.5, 10, 15, or 30 per second. When operating with CIF, the amount of data to transmit cannot exceed 256 K bits (where K equals 1024). The CIF video format has the capacity to transmit video images of 352x288 pixels at 36.45 Mbps and 30 frames per second. A 4CIF format has four times the capacity of CIF; QCIF has quarter the capacity of CIF. |
| <i>Codec</i> | <u>Coder-decoder</u> . A device that converts voice and video into digital code, and vice versa. Refers to the endpoint video camera and video board that are used for videoconferencing. |

| Abbreviation/ Term | Explanation |
|-----------------------|---|
| <i>Conference</i> | Connection between two or more endpoints exchanging video and audio information. If only two endpoints are involved, a conference is called <i>point-to-point</i> and no MCU is required. If more than two endpoints are involved, it is called a <i>multipoint</i> conference, and an MCU (Multipoint Control Unit) is required as the management system. For more information, see MCU. |
| <i>CSU</i> | Channel Service Unit. Customer-provided equipment that is used as an interface between a communication network and the data terminal. |
| <i>DBA</i> | Dynamic Bandwidth Allocation. Used to allocate the bandwidth needed to transmit the additional packets. for LPR. |
| <i>DTMF</i> | Dual Tone Multi Frequency. A system of coded signals used by touch-tone telephones in which a specific sound, frequency or tone is assigned to each key so that the signal can be easily recognized by a computer. The codes enable data input and control of voice-processing systems. DTMF signals can pass through the entire connection to the destination device and therefore are used for remote control after the connection with the MCU is established. |
| <i>E1 Line</i> | A 2Mb digital switched line used in Europe. |
| <i>Endpoint</i> | A hardware device, or set of devices, that can call, and be called by an MCU or another endpoint. For example, an endpoint can be a phone, a camera and microphone connected to a PC or an integrated Room System (conferencing system). |
| <i>FECC</i> | Far End Camera Control. In certain video cameras, the accompanying software that enables a participant to control a remote camera. Used in Continuous Presence video conferences in conjunction with the LSD option. For more information, see LSD. |
| <i>Frame</i> | A group of bits that make up an elementary block of video data for transmission by certain protocols. |
| <i>Frame Rate</i> | The number of video frames displayed on-screen during one second, measured in fps (frames per second). |
| <i>G.711</i> | ITU-T audio algorithm, 64Kbps, 3.4 kHz. |
| <i>G.722</i> | ITU-T audio algorithm, 64Kbps, 7 kHz. |
| <i>G.728</i> | ITU-T audio algorithm, 16Kbps, 3.4 kHz. |
| <i>Gatekeeper</i> | A type of server that performs two main functions: translates LAN alias addresses of terminals and gateways to IP addresses and provides bandwidth management. |
| <i>H.221</i> | ITU-T standard that defines how to multiplex video, audio, control, and user data into one serial bit stream. |
| <i>H.230</i> | ITU-T standard that defines simple multipoint control systems procedures and describes network maintenance functions. |
| <i>H.231</i> | ITU-T standard that defines a set of MCU functions and operational requirements. |

| Abbreviation/ Term | Explanation |
|-------------------------|---|
| <i>H.242</i> | ITU-T standard that defines initiation of communications between systems and capabilities negotiation procedures. |
| <i>H.243</i> | ITU-T standard that defines initiation of communications between systems and capabilities negotiation procedures in multipoint conferences. |
| <i>H.261</i> | ITU-T standard that defines the Px64 video coding algorithm. |
| <i>H.263</i> | ITU-T standard that provides improved compression and quality of video images at a line rate lower than 384 Kbps. This standard is not supported by all codecs. |
| <i>H.264*</i> | A proprietary Polycom Video compression standard. |
| <i>H.264</i> | ITU-T standard that provides improved compression and quality of video images in lower line rate connections and is part of the Highest Common mechanism in Video Switching conferences. |
| <i>H.320</i> | ITU-T standard that defines how the H-series video conferencing recommendations work together. |
| <i>H.323</i> | ITU-T standard for audio, video and data communications across IP-based (LAN) networks, including the Internet. |
| <i>ICE</i> | Interactive Connectivity Establishment (ICE) provides a structure/protocol to unify the various NAT Traversal techniques that are used to cross firewalls. It enables SIP based endpoints to connect while traversing a variety of firewalls that may exist between the calling endpoint (local) and the MCU or called endpoint (remote). |
| <i>IP</i> | Internet Protocol. The working protocol that forms the basis of the internet. |
| <i>ISDN</i> | Integrated Services Digital Network. A set of protocol and interface standards (voice, video and data) that comprise a telephone network. There are two types of ISDN lines: BRI and PRI. |
| <i>ITU-T Standard</i> | International Telecommunications Union, Telecommunication Standardization Sector (formerly CCITT). An international group that produces official standards for telecommunications. |
| <i>LAN</i> | Local Area Network. A group of computers and other devices linked via a network's operating system. |
| <i>LDAP</i> | Lightweight Directory Access Protocol. |
| <i>Line Rate</i> | The amount of bandwidth used by a communication device, measured in Kbps (kilobits per second). |
| <i>LPR</i> | Lost Packet Recovery. An algorithm that creates additional packets that contain recovery information necessary to reconstruct lost packets. |
| <i>MCU</i> | Multipoint Control Unit. Device which allows more than two sites to be connected in a video conference. |
| <i>Null modem cable</i> | A serial cable designed to eliminate the need for communication equipment when two digital devices are directly connected to each other. |

| Abbreviation/ Term | Explanation |
|-------------------------------|---|
| <i>Participant</i> | A person using an endpoint to connect to a conference. When using a Room System, several participants use a single endpoint. |
| <i>PRI</i> | Priority Rate Interface. An ISDN interface designed for high volume data communication. Consists of 23 B channels of 64 Kbps each and one D channel of 64 Kbps. In Europe, the PRI line provides 30 B channels + one D channel. |
| <i>PSTN</i> | Public Switched Telephone Network. |
| <i>QCIF</i> | Quarter CIF. A video format with image size of 176x144 pixels that transmits 9.115 Mbps at 30 frames per second (a quarter of the capacity of CIF). For more information, see CIF. |
| <i>QoS</i> | Quality of Service. QoS defines the performance of a network service, such as the average delay between packets. |
| <i>RS-232</i> | A standard for serial interface connection. |
| <i>RTV</i> | Real Time Video protocol provides high quality video conferencing capability to Microsoft OCS (Office Communicator Server) endpoints. |
| <i>SIP</i> | Session Initiation Protocol. An application-layer protocol designed to work over IP networks. A SIP service defines the properties and the IP addresses of the SIP network components. |
| <i>Span</i> | An ISDN line or leased line. A span may be of either T1 (United States) or E1 (Europe) type. Also called a circuit. |
| <i>SRTP</i> | Encryption of SIP Media is supported using SRTP (Secured Real-time Transport Protocol) and the AES key exchange method. |
| <i>T1 Line</i> | A 1.5Mb digital switched line used in the United States. |
| <i>ToS</i> | Type of Service. ToS defines optimization tagging for routing audio and video packets. |
| <i>WAN</i> | Wide Area Network. A communications network that services a geographical area larger than the LAN. |
| <i>Whiteboard</i> | An on-screen shared notebook for placement of shared documents. |

Appendix B

Troubleshooting

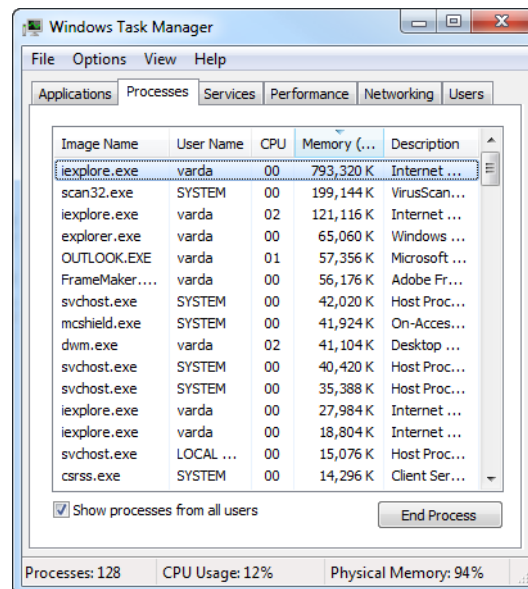
RMX Web Client Installation - Troubleshooting Instructions

Close all the Internet Explorer sessions and perform the following procedure.

Procedure 1: Ending all Internet Explorer Sessions

In some cases, although all the Internet Explorer sessions were closed, the system did not end one or several IE processes. These processes must be ended manually.

- 1 Start the **Task Manager** and click the **Processes** tab.
- 2 Select an **iexplore** process and click the **End Process** button.



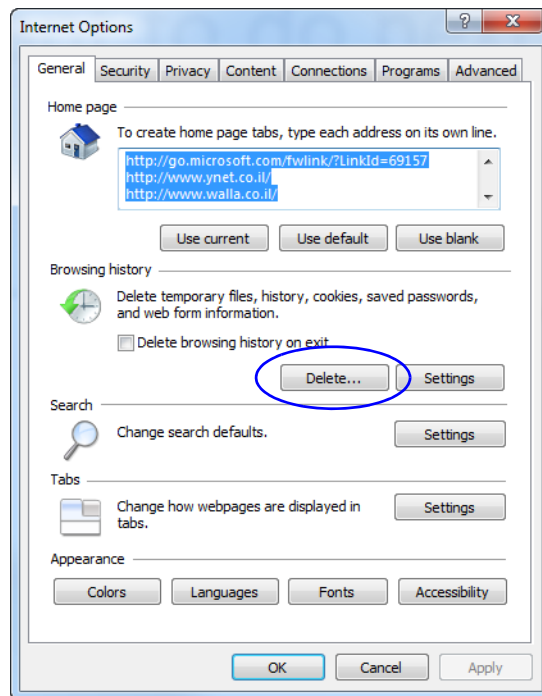
- 3 Repeat this process for all **iexplore** processes that are currently active.
- 4 Close the *Windows Task Manager* dialog box.
- 5 Open the Internet Explorer and connect to the RMX.

If the problem persists, continue with the next step.

Procedure 2: Deleting the Temporary Internet Files, RMX Cookie and RMX Object

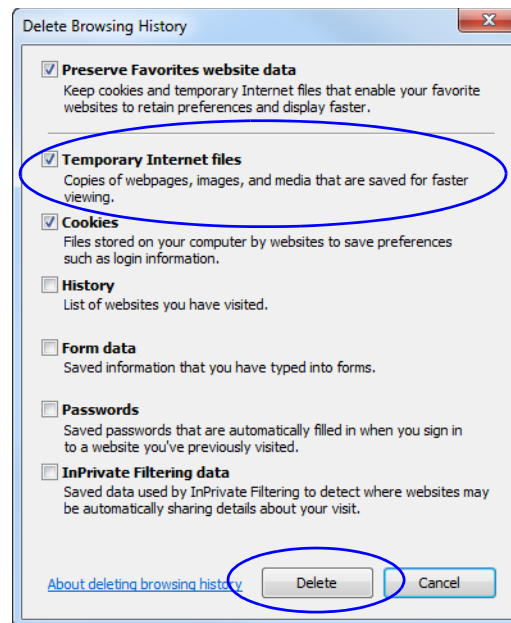
To delete the Temporary files:

- 1 In the *Internet Explorer*, click **Tools > Internet Options**.
The *Internet Options* dialog box opens.
- 2 In the *Browsing history* pane, click the **Delete** button.

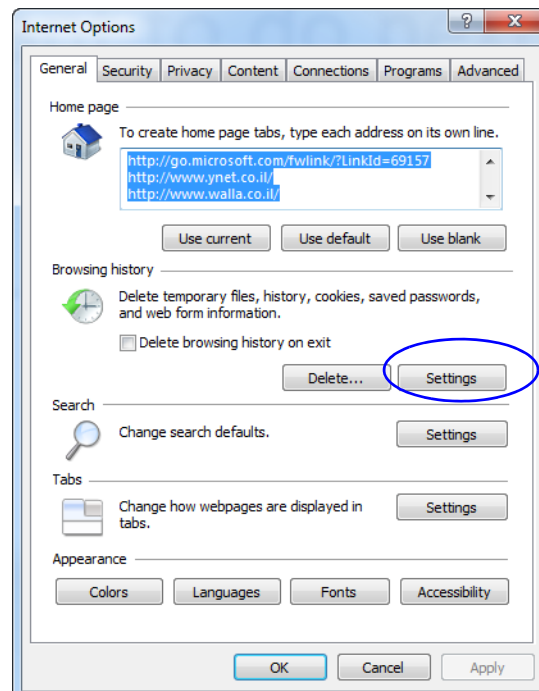


The *Delete Browsing History* dialog box opens.

- 3 It is recommended to delete only the **Temporary Internet files**. By default, the **Cookies** option is also selected. Clear it if you do not want to clear the cookies from your computer.

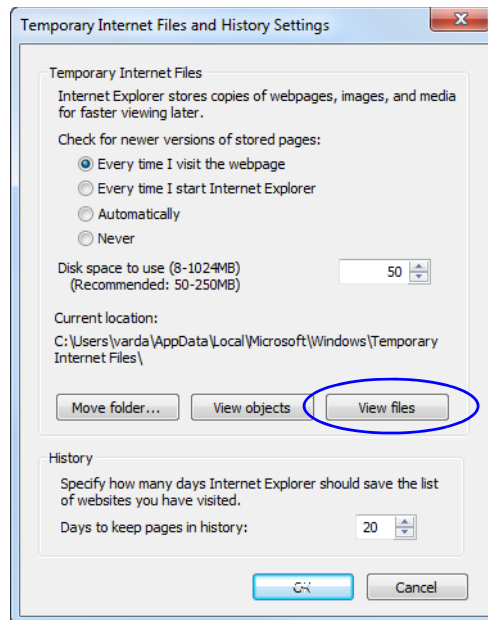


- 4 Click the **Delete** button.
- 5 When the process is complete, the system return to the *Internet Options* dialog box.
- To delete the RMX Cookie:
- 6 In the *Internet Options* dialog box - *Browsing History* pane, click the **Settings** button.



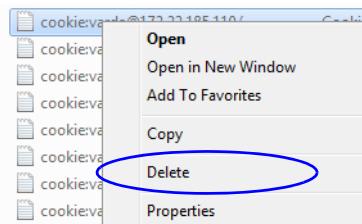
The *Temporary Internet Files and History Settings* dialog box opens.

- 7 Click the **View files** button.



The Windows Explorer screen opens, listing Windows *Temporary Internet Files*.

- 8 Browse to the RMX cookie.
The cookie is listed in the format: **cookie:user name@RMX IP address**. For example: **cookie:valerie@172.22.189.110**.
- 9 Right-click the RMX cookie and click **Delete**.

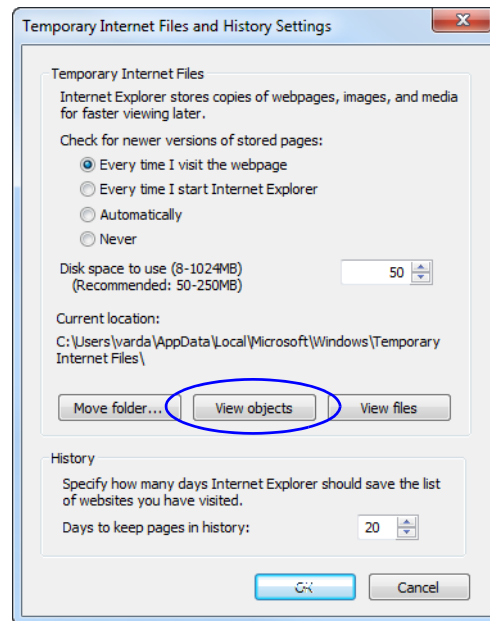


The system prompts for confirmation.

- 10 Click **Yes**.
The cookie is deleted.
- 11 Close the Windows Explorer screen.

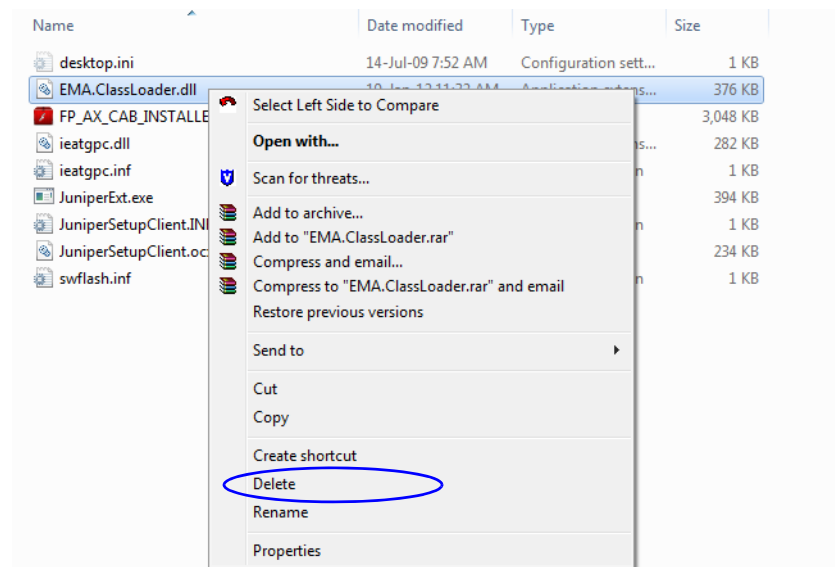
To delete the RMX ActiveX Object:

- 12** In the *Temporary Internet Files and History Settings* dialog box, click the **View objects** button.



The Windows Explorer screen opens, listing the Windows *Downloaded Program Files*.

- 13** Right-click the **EMA.ClassLoader.dll** and then click **Delete**.



The system prompts for confirmation.

- 14** Click **Yes**.
The RMX object is deleted.
- 15** Close the Windows Explorer screen.
- 16** In the *Temporary Internet Files and History Settings* dialog box, click **OK**.
- 17** In the *Internet Options* dialog box, click **OK** to close it.

18 Close the Internet Explorer session and reopen it.

19 Connect to the RMX system.

If the problem persists, continue with the next step.

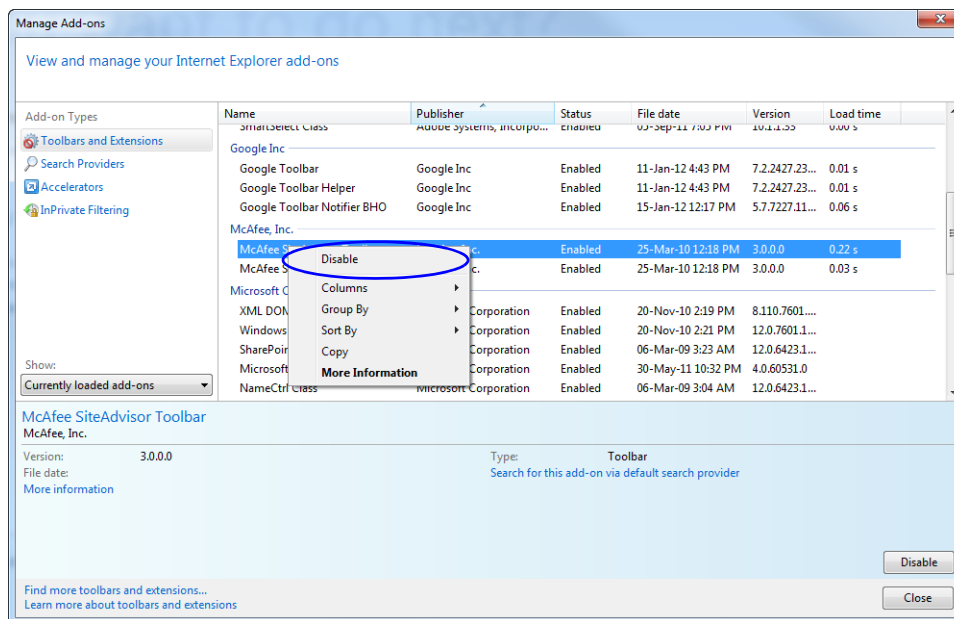
Procedure 3: Managing Add-ons Collisions

In some cases, a previously installed add-ons, such as anti virus programs can prevent the installation of a new add on. In some cases, disabling these add-ons is required in order to install the RMX Web Client.

To disable an add-on:

- 1** In the *Internet Explorer*, click **Tools > Manage Add-ons**.
The *Manage Add-ons - Toolbars and Extensions* dialog box opens.
- 2** Scroll to the add-on to disable (for example, the anti virus add-on), right-click it and then click **Disable**.

Alternatively, select the add-on and click the **Disable** button.



- 3** Click the **Close** button to close this dialog box.

- 4** Connect to the RMX system.