



Polycom RMX™ 2000

Release Notes

Version 4.0

February 2009

DOC2222A



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Version 4.0

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PATENT PENDING

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Version 4.0 - New Features List

The following table lists the new features in Version 4.0.

Table 1 New Features List

	Category	Feature Name	Description
1.	Video	New HD Resolutions in MPM+ Mode	Version 4.0 supports HD1080p resolution in both CP and High Definition Video Switching modes in MPM+ mode.
2.	Video	Video Quality Improvements	Several Video Quality Improvements have been included in Version 4.0. These include: <ul style="list-style-type: none"> • Video Clarity™ • Improved resolution for HDX endpoints at low bit rates • RMX to send best possible resolution to endpoint
3.	Video	H.264 support in H.239 Content Sharing	H.264 is supported by H.239 <i>Content Sharing</i> in addition to H.263 protocol.
4.	Hardware	New MPM+ Card (Media Processing Module)	In version 4.0, up to two MPM+ cards can be installed in the RMX. MPM+ cards allow: <ul style="list-style-type: none"> • Video resources up to 160 CIF ports • Voice resources up to 800 ports • Bandwidth up to 4 Mbps for CP conferences and up to 6 Mbps for VSW conferences • Video resolution up to HD1080p at 30 fps.
5.	General	Reservations	Version 4.0 includes a Reservation Calendar that enables users to schedule conferences. These conferences can be launched immediately or become ongoing, at a specified time on a specified date.
6.	General	Enhanced Video/Voice Resource Capacity	In <i>MPM+ Mode</i> the <i>Video/Voice Port Configuration</i> dialog box has two <i>Resource Capacity Modes</i> and additional sliders. The user can manually allocate resources as Audio, CIF, SD and HD types or let the system allocate them automatically.
7.	General	Resource Report	The <i>Resource Report</i> in Version 4.0 includes a graphical representation of system resources. Additional information is displayed for resource usage when the system is in MPM+ mode and <i>Fixed Resource Capacity Mode</i> .

Table 1 New Features List (Continued)

	Category	Feature Name	Description
8.	General	System Information	In Version 4.0 the <i>System Information</i> properties box, includes the <i>License Information</i> and <i>System Information</i> with the following details: <ul style="list-style-type: none"> • <i>Memory Size</i> of the RMX in MB. • <i>Card Configuration Mode</i>, determined by the type of MPM cards installed.
9.	General	Conference Templates	Conference Templates enable users to create, save, schedule and activate identical conferences. The template saves each conference with all its parameters, including participants with their personal layout and video forcing settings.
10.	General	Restore Last Version	In case of a failure when installing a software version, a user with administrator permissions has the option to restore the previous software version.
11.	General	Gateway to Polycom® DMA™ 7000	Calls from PSTN and ISDN using audio only can be routed to Polycom's DMA 7000 application via the RMX.
12.	General	CDR	New events were added to the CDR: Event 15-H323 CALL SETUP and Event 31-PARTICIPANT CONNECTION RATE.

Version 4.0 - Changes to Existing Features

The following table lists the changes to existing features in Version 4.0.

Table 2 Feature Changes List

	Category	Feature Name	Description
1.	Video	H.239 Content Sharing	The <i>Content Protocol</i> , H.263 or H.264, can be chosen in the conference profile.
2.	Video	MAX_CP_RESOLUTION	The default value of this <i>System Flag</i> has been changed to HD1080.
3.	Video	New Profile – High Definition Video Switching	A drop-down menu has been added to the <i>High Definition Video Switching</i> option, enabling users to select HD720p or HD1080p resolution. See “New Profile – High Definition Video Switching” on page 66.
4.	General	Conference Profile	A conference Profile cannot be deleted if it is being used by any conferencing entities such as ongoing conferences, Meeting Rooms, Entry Queues, SIP Factories and Reservations.
5.	General	License Information	<i>License Information</i> has been moved to the <i>Administration > System Information</i> properties box.
6.	General	Reserve Resources for Audio Participants and Reserve Resources for Video Participants	These new fields have been included in the <i>New Conference</i> and <i>New Reservation - General</i> dialog boxes.
7.	General	Video/Voice Port Configuration	By default, the Resource Capacity Mode is set to Flexible Capacity Mode for both MPM and MPM+ Modes and all ports are allocated as CIF ports. Port configuration can be modified after system start-up has completed.
8.	General	Fast Configuration Wizard	The Video/Voice configuration dialog box has been removed from the Fast Configuration Wizard.
9.	General	Log Files	In MPM+ mode, the number of Log Files has been increased from 1000 to 4000.
10.	General	Maximum Conference Size	In MPM+ mode, the maximum number of participants the can connect to a conference has been increased to 200 participants. 80 can be video participants.
11.	General	Maximum Number of Conferences	In MPM+ mode, the number of conferences increases from 200 to 400.

Table 2 Feature Changes List (Continued)

	Category	Feature Name	Description
12.	General	Entry Queue	The number of Entry Queues has been increased from 20 to 40.
13.	General	Profiles	The number of Profiles has been increased from 20 to 40.
14.	General	SIP Factories	The number of SIP Factories has been increased from 20 to 40.
15.	General	CDR	In MPM+ mode, the number of CDR files has been increased to 2000.
16.	General	CDR	The <i>Reserved Start Time</i> field is now supported in the conference summary record in the formatted and unformatted CDR files.
17.	General	Default IP Network Service - QOS_IP_AUDIO and QOS_IP_VIDEO flags	The default values of the QOS_IP_AUDIO and QOS_IP_VIDEO flags have been changed to 0x88.
18.	General	System Flag	System flag, H239_FORCE_CAPABILITIES has been added. When the flag is set to NO, the RMX only verifies that the EP supports the content protocols: <i>Up to H.264 or H.263</i> . When set to YES, the RMX checks frame rate, resolution and all other parameters of the Content mode as declared by an endpoint before receiving or transmitting content. Default: NO.
19.	ISDN/PSTN	ISDN/PSTN Network Service ->Add New Service	In the past, the user could not define a new ISDN/PSTN Network Service if no RTM ISDN card was installed in the system. Now, it can be done, but only via the ISDN/PSTN Network Service ->Add New Service.
20.	RMX Web Client	Install RMX Manager link on Login screen.	A link to the <i>RMX Manager</i> application installer has been added in the top right corner of the <i>RMX Web Client – Welcome</i> screen.

Version 4.0 - Upgrade Package Contents

The Version 4.0 upgrade package must be downloaded from the *Polycom Resource Center* and includes the following items:

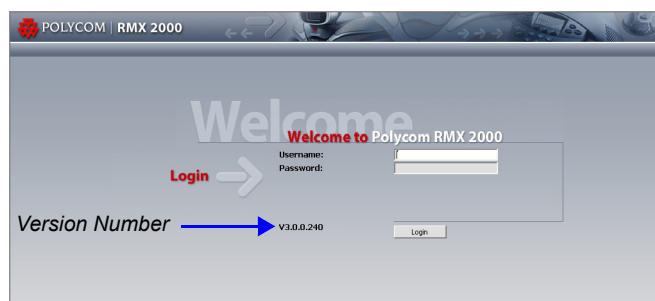
- lan.cfg file
- LanConfigUtility.exe
- RMX Documentation
 - RMX 2000 Version 4.0 Release Notes
 - RMX 2000 Getting Started Guide
 - RMX 2000 Administrator's Guide
 - RMX 2000 Hardware Guide
 - RMX 2000 Quick Installation Booklet
 - Installation Quick Start Guide for RMX 2000
 - RMX Third Party Licenses
- External DB Tools Version 4.0
 - RMX 2000 External Database API Programmer's Guide
 - Sample Scripts
- RMX XML API Kit Version 4.0
 - RMX 2000 XML API Version 4.0 Release Notes
 - RMX 2000 XML API Overview
 - RMX 2000 XML API Schema Reference Guide (version 3.0)
 - MGC to RMX XML API Conferencing Comparison
 - Polycom XML Tracer User's Guide
 - XML Schemas
 - Polycom XML Tracer application
- Translations of RMX 2000 Version 3.0 Documentation:
 - Getting Started Guide:
French, German, Japanese, Russian, Simplified Chinese, Hebrew and Portuguese
 - Hardware Guide:
French, German, Japanese, Korean, Russian, Simplified Chinese, Spanish

Version 4.0 - Upgrade Procedure

Upgrading to Version 4.0

Upgrading from Version 2.0/3.0 to Version 4.0

- 1 Download the required software Version 4.0 from the *Polycom Resource Center* web site.
- 2 Obtain the Version 4.0 *Product Activation Key* from the *Polycom Resource Center* web site. For more information, see the *RMX Getting Started Guide*, "Procedure 1: Product Registration" on page 2-7.
- 3 Backup the configuration file. For more information, see the *RMX Administrator's Guide*, "Software Management" on page 14-61.
- 4 Install MCU Software Version 4.0.
On the RMX menu, click **Administration > Software Management > Software Download**.
- 5 Browse to the *Install Path*, selecting the **Version 4.0xx.bin** file in the folder where Version 4.0 is saved and click **Install**.
At the end of the installation process the system displays an indication that the software was successfully downloaded and that a new activation key is required.
- 6 Click **Close** to close the *Install Software* dialog box.
- 7 Click **Setup > Product Activation**.
The *Product Activation* dialog box appears with the serial number filled in.
- 8 In the *Activation Key* field, enter or paste the *Product Activation Key* obtained earlier and click **OK**.
- 9 When prompted whether to reset the MCU, click **Yes** to reset the MCU.
The upgrade procedure takes approximately 30 minutes during which time an *Active Alarm - System Upgrade* is displayed.
The RMX resets itself during the upgrade process and connection to the *RMX Web Client* may be lost. If the workstation is logged in to the *RMX Web Client* during the resets, the *MCU State* indicator at the bottom right corner of the *RMX Web Client* screen indicates *STARTUP*.
- 10 After 30 minutes, close and reopen the browser and connect to the RMX.
The version number in the *Welcome* screen has changed to 4.0.



- 11 In the *RMX Web Client - Welcome* screen, enter your *Username* and *Password* and click **Login**.



If only the default POLYCOM user is defined in the RMX Web Client, an Active Alarm is created and the MCU status changes to MAJOR until the default user name and password are replaced with a new Administrator user.



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



After software installation the MCU is in the MPM mode (Card Configuration Mode). For more information on the Card Configuration Modes, see RMX 2000 Release Notes, Version 4.0, Detailed Hardware Description, MPM and MPM+ Modes.

Version 4.0 - Interoperability Tables

Devices

The following table lists the devices with which Version 4.0 was tested.

Table 3 Version 4.0 Device Interoperability Table

Device	Version
Gatekeepers/Proxies	
<i>Polycom PathNavigator</i>	7.0.0.03
<i>Cisco gatekeeper</i>	12.3
<i>Radvision ECS gatekeeper</i>	3.5.2.5
<i>Iptel proxy</i>	0.9.6
<i>ReadiManager SE200</i>	3.00.01.ER007
Recorder	
<i>Polycom RSS 2000</i>	3.0.0.000 683
MCUs and Call Managers	
<i>Polycom MGC 25/50/100 and MGC+50/100</i>	9.0.1.7
<i>Avaya CM</i>	5.0, SP1, 5.1
<i>Avaya ACM</i>	825.4-15053
<i>Avaya IP Softphone R6.0</i>	SP1
<i>Cisco Call Manager</i>	4.1
<i>Tandberg MCU</i>	D3.9
<i>Tandberg MPS</i>	J3.3
Endpoints	
<i>Polycom HDX product line</i>	301-2.0.2.2461
<i>HDX Family</i>	2.5.0.1-3332
<i>HDX7001</i>	2.0.3.2-21
<i>HDX 8006</i>	2.5.1-3416/3417
<i>Polycom VSX product line</i>	9.0.5
<i>Polycom Viewstation</i>	7.5.4
<i>Polycom PVX</i>	8.0.2.0235
<i>Polycom VS 512</i>	7.5.4
<i>Polycom VSSP 128</i>	7.5.4

Table 3 Version 4.0 Device Interoperability Table (Continued)

Device	Version
<i>Polycom VSSP 384</i>	7.5.4
<i>Polycom VS EX</i>	6.0.5
<i>Polycom VS 4000</i>	6.0.5
<i>Polycom VS FX</i>	6.0.5.21
<i>Polycom V500</i>	8.7.1
<i>Polycom iPower 9000</i>	6.2.0.1208
<i>Soundstation IP3000</i>	2.8
<i>Aethra X3</i>	10.7.32
<i>Aethra X7</i>	12.0.20
<i>Aethra VegaStar Gold</i>	6.0.49
<i>Avaya IP Softphone R6</i>	SP1, SP2, SP3
<i>Sony PCS1</i>	3.41
<i>TA MXP</i>	F6.3
<i>TA B</i>	10.3
<i>TA E</i>	5.3
<i>LifeSize</i>	LS_RMI_3.5.2
<i>LifeSize Room and Express</i>	4.0.6(7)
<i>VVX1500</i>	3.1.2.0256
<i>DST B5</i>	2.0
<i>DST K60</i>	2.0.1
<i>DST K80</i>	1.0
<i>QDX6000</i>	3.0-2141
<i>Sony PCS -XG80</i>	2.0.1
<i>Sony PCS -1</i>	3.42
<i>Sony PCS -G50</i>	2.63
<i>Sony PCS -TL50</i>	2.42
<i>Tandberg MXP Family</i>	F7.2
<i>Tandberg 150 MXP</i>	L5.1
<i>Tandberg 6000 B Series</i>	B10.3
<i>Tandberg 6000 E Series</i>	E5.3



Nortel environment is supported only with RMX 2.02 Nortel designated version. This version is only supported on RMX A/B/C- type chassis with MPM cards only and no MPM+ cards.

RMX Web Client

The following table lists the environments (Web Browsers and Operating Systems) with which the *RMX Web Client* was tested.

Table 4 *Version 4.0 Environment Interoperability Table*

Web Browser	Operating System
Internet Explorer 6	Windows XP™
Internet Explorer 7	Windows XP™
	Windows Vista™

Detailed Description - Video

New HD Resolutions in MPM+ Mode

MPM+ mode, supports the following new HD video resolutions in both *Continuous Presence* and *High Definition Video Switching* modes.

- **HD 720p30** (symmetric) – endpoints send and receive HD 720p at 30 fps.
- **HD 1080p30** (asymmetric) – endpoints send HD 720p at 30 fps and receive HD 1080 at 30 fps.
- **HD 720p60** (asymmetric) – endpoints send 4CIF at 60 fps and receive HD720 at 60 fps

These resolutions are available at line rates of 1024 to 4096 Kbps.

Depending on the line rate, the RMX sends video at the best possible resolution supported by the endpoint regardless of the resolution received from the endpoint.

Table 5 shows the relationship between line rate and video quality for both *Motion* and *Sharpness* settings in both MPM and MPM+ Card Configuration Modes.

Table 5 Video Quality vs. Line Rate

Line Rate (Kbps)	Card Configuration Mode			
	MPM+		MPM	
	Motion (60fps)	Sharpness	Motion (30 fps)	Sharpness
1024		HD 720p30‡		HD 720p30*
1472		HD 720p30‡		HD 720p30*
1536		HD 720p30‡		HD 720p30*
1920	HD 720p60*	HD 720p30‡	HD 720p30*	HD 720p30*
4096	HD 720p60*	HD 1080p30*		

* Asymmetric

‡ Symmetric

Resource Usage

The RMX uses video ports to connect HD endpoints as follows:

- 4 video (CIF) ports are used to connect each endpoint capable of receiving HD 720p30.
- 8 video (CIF) ports are used to connect each endpoint capable of receiving HD 1080p30 or HD 720p60.

System Flag

The MAX_CP_RESOLUTION flag has the following additional values to determine the system's maximum video resolution transmission for CP conferences:

- **HD1080** – HD 1080p at 30 frames per second or HD 720p at 60 frames per second, depending on whether *Motion* and *Sharpness* is selected.
- **HD720** – HD 720p at 30 frames per second.

The default setting for the **MAX_CP_RESOLUTION** flag is **HD1080**.

The flag's value can be modified via the *Setup* menu *System Configuration*.

For more information see the *RMX 2000 Administrator's Guide*, "Modifying System Flags" on page 14-10.

Video Quality Improvements

Several *Video Quality Improvements* have been included in Version 4.0.

These include:

- Video Clarity™.
- Additional Video Resolutions in *MPM+ Mode*.
- Additional Intermediate Video Resolutions.
- Improved resolution with HDX endpoints at low bit rates.
- RMX to send best possible resolution to endpoints.

Video Clarity™

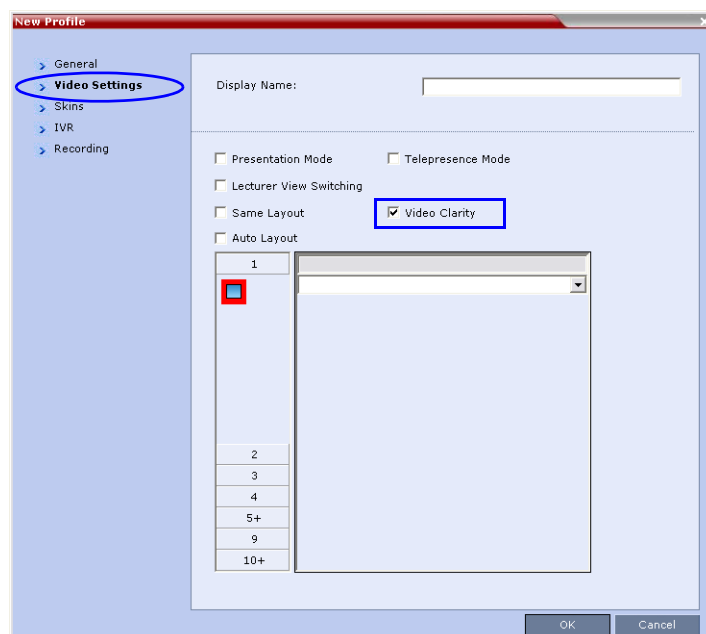
The *Video Clarity* feature applies video enhancing algorithms to incoming video streams of resolutions up to and including SD. Clearer images with sharper edges and higher contrast are sent back to all endpoints at the highest possible resolution supported by each endpoint.

All layouts, including 1x1, are supported.

Video Clarity can only be enabled for *Continuous Presence* conferences in *MPM+ Card Configuration Mode*.

To enable Video Clarity in a new Conference Profile:

- In the *New Profile – Video Settings* tab, select **Video Clarity**.



To enable or disable Video Clarity during ongoing conferences:

- 1 In the *Conference List* pane, double-click the name of the conference for which you want to enable or disable *Video Clarity* or right-click the conference name and then click **Conference Properties**.
- 2 Click the **Video Settings** tab.
- 3 Select or clear the *Video Clarity* check box as required.
- 4 Click **OK**.

Additional Video Resolutions in MPM+ Mode

The following higher video quality resolutions are available when the RMX is working in *MPM+ Mode*:

- CIF 352 x 288 pixels at 50 fps.
- WCIF 512 x 288 pixels at 50 fps.
- WSD 848 x 480 pixels at 50 fps.
- HD 720p 1280 x 720 pixels at 60 fps.
- HD 1080p 1920 x 1080 pixels at 30 fps.

The video resolution transmitted to any endpoint is determined by the endpoint's capabilities, the conference line rate, the *Conference Profile's Motion* and *Sharpness* settings and the RMX's *Card Configuration Mode* (MPM or MPM+).

Additional Intermediate Video Resolutions

Two higher quality, intermediate video resolutions have been added to replace the transmission of CIF (352 x 288 pixels) or SIF (352 x 240 pixels) resolutions to endpoints that have capabilities between:

- **CIF** (352 x 288 pixels) and **4CIF** (704 x 576 pixels) – the resolution transmitted to these endpoints is **432 x 336** pixels.
- **SIF** (352 x 240 pixels) and **4SIF** (704 x 480 pixels) – the resolution transmitted to these endpoints is **480 x 352** pixels.

The frame rates (depending on the endpoint's capability) for both intermediate resolutions are:

- In *MPM Mode* – 25 or 30 fps.
- In *MPM+ Mode* – 50 or 60 fps.

HDX Endpoints at Low Bit Rates

When working with RMXs at low bit rates (128, 256, or 384Kbps), HDX endpoints will transmit SD15 resolution instead of 2CIF resolution.

RMX to Send Best Possible Resolution to Endpoint

The RMX will send video at the best possible resolution supported by endpoints regardless of the resolution received from the endpoints. However, when using 1x1 conference layout, the RMX transmits the same resolution it receives from the endpoint.

When *Sharpness* is selected as the *Video Quality* setting in the conference *Profile*, the RMX will send 4CIF (H.263) at 15fps instead of CIF (H.264) at 30fps.

Sharpness is the recommended setting for most endpoints. The *Motion* setting is recommended for endpoints that support 60fps.

H.264 Support in H.239 Content Sharing

In Version 4.0, the *H.264* Content sharing algorithm is supported by the *H.239 Content Sharing* protocol. The shared Content is of higher quality and is transmitted at video resolutions up to HD.

For more information about *H.239 Content Sharing* see the *RMX 2000 Administrator's Guide*, "H.239" on page 8-12.

The algorithm that H.239 uses for Content sharing is selected in the *Conference Profile*. The administrator can select:

- **H.263** – All Content is shared during the conference using *H.263*. Endpoints that do not have *H.263* capability can connect to the conference but cannot share Content.
- **Up to H.264** – If all endpoints connected to the conference have *H.264* capability, Content is shared using *H.264*, otherwise Content is shared using *H.263*.

H.264 Guidelines

Endpoint Capabilities

- If an endpoint that supports only *H.263* for Content Sharing connects to a conference with an *Up to H.264* Content sharing Profile:
 - *H.263* is used for Content if that participant is the first to connect to the conference
 - Content sharing is stopped for all participants if the connection occurs after Content sharing has started. When Content sharing is restarted by the user, Content is shared using *H.263*.
- If an endpoint that does not support *H.264* Content sharing disconnects from a conference with an *Up to H.264* Content Sharing Profile, the Content sharing continues using *H.263*. This is true even if all the remaining connected endpoints support *H.264*. If Content sharing is stopped and restarted by the user, Content sharing is automatically upgraded to use *H.264*.

Entry Queues

- The selection of either *H.263* or *Up to H.264* in the Entry Queue Profile does not affect how Content is shared.
- When the endpoint is moved to the conference from the Entry Queue, the endpoint shares Content according to the guidelines set out under *Endpoint Capabilities* and according to the content protocol that is defined for the target conference.

Cascade Links

- Content is shared across a Cascaded Link using *H.263* irrespective of whether either or both the cascade-enabled Entry Queue and the Cascaded Link have *Up to H.264* Content sharing defined in their profiles.

Bit Rate Allocated to Content Channel

The bit rate allocated to the Content channel from the video channel is the same as for *H.263*.

For more information see the *RMX 2000 Administrator's Guide*, "H.239" on page 8-12.

Selecting H.264

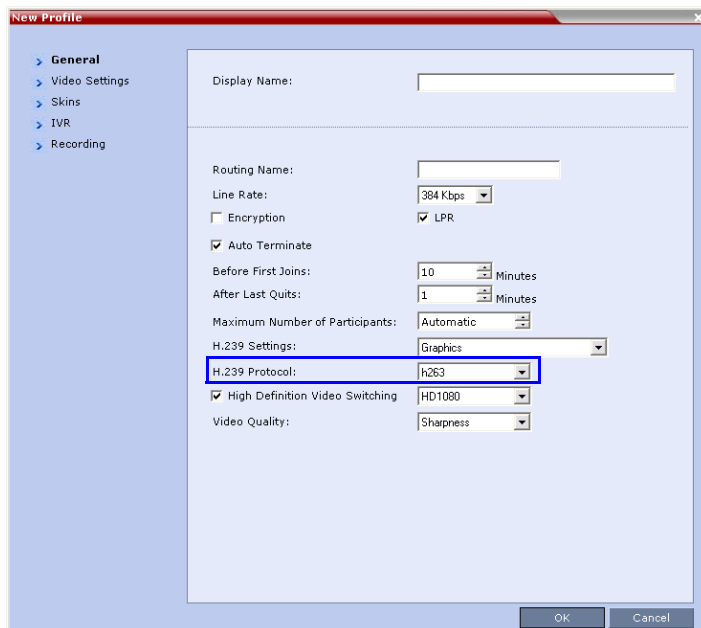
The H.264 Content sharing algorithm can be selected in the *New Profile* dialog box.

To select H.264:

- 1 In the *RMX Management* pane, click **Conference Profiles**.

- 2 In the *Conference Profiles* pane, click **New Profile**.

The *New Profile – General* dialog box opens.



- 3 Open the *H.239 Protocol* menu to display the following options:

Table 6 *H.239 Protocol Options*

Field	Description
<i>H.239 Protocol</i>	<p>H.263 – Content is shared using <i>H.263</i> even if some endpoints have <i>H.264</i> capability.</p> <p>Up to H.264 – <i>H.264</i> is the default Content sharing algorithm.</p> <p>When selected:</p> <ul style="list-style-type: none"> Content is shared using <i>H.264</i> if all endpoints have <i>H.264</i> capability. Content is shared using <i>H.263</i> if all endpoints do not have <i>H.264</i> capability. Endpoints that do not have at least <i>H.263</i> capability can connect to the conference but cannot share Content.

- 4 Select **Up to H.264**.

- 5 Click **OK**.

Detailed Description - Hardware

New MPM+ Card

RMX Version 4.0 supports the latest *MPM+* (Media Processing Module) cards which increase the RMX's capacity and capabilities. Three *MPM+* card assemblies are available, *MPM+ 80*, *MPM+ 40* and *MPM+ 20* offering various port capacities for CP conferences. (See Table 8)

In addition, when *MPM+* cards are installed, the RMX operates in *MPM+ Mode* giving the administrator enhanced control and monitoring of *Resource Capacity* and usage within the system. For more information see "Enhanced Video/Voice Resource Capacity" on page 36.

Resource Capacity

Each *MPM+* card doubles the MPM card resource capacities. *HD1080p* (asymmetric) resolution are supported.

Table 7 summarizes the increased port capacities of the various resource types in an RMX containing two *MPM+* cards.

Table 7 *MPM+ vs MPM – Video Port Capacity*

Resource Type	Maximum Possible	
	MPM	MPM+
Voice	400	800
CIF	80	160
SD30	20	60
HD720p	20	40
HD1080p	–	20



- RMX's with 500MB of memory can support a maximum of 400 simultaneous voice calls and 120 CIF calls, regardless of how system resources are allocated. This limitation applies to RMX's configured with either MPM or MPM+ cards.
RMX's with 1000MB of memory are not subject to this limitation.
- RMX memory size is listed in the *Administration > System Information* properties box.

Video Capabilities

In CP conferences:

- Frame rate has been increased – with *HD720p* now up to 60fps.
- Video resolution has been increased up to *HD1080p*.
- Bandwidth is up to 4 Mbps.

Table 8 summarizes the increased video capacities of the various *MPM+* card assemblies.

Table 8 *MPM+ Card Assemblies and Capacities for CP Conferences*

Card Type	Resources						Bandwidth
	Voice	CIF	SD @30fps	HD720p @30fps	HD720p @60fps	HD1080p @30fps	
MPM+ 80	400	80	30	20	10	10	Up to 4Mbps
MPM+ 40	200	40	15	10	5	5	
MPM+ 20	100	20	8	5	2	2	

In HD Video Switching conferences:

An RMX with two *MPM+* cards can support up to 80 participants at *HD1080p* resolution at bandwidths of up to 6 Mbps.

MPM+ Guidelines

MPM and MPM+ Modes

- *MPM+* and *MPM* cards installed in the system cannot be used simultaneously. Therefore, the RMX can operate in either *MPM* or *MPM+* mode.
- **MPM Mode** is the mode in which the RMX has operated in all previous versions. With Version 4.0 the RMX also operates in *MPM Mode* if *MPM* cards are installed and the system is restarted.
- **MPM+ Mode** is the mode in which the RMX operates to fully utilize the increased power and capacity of *MPM+* cards. It also gives the administrator enhanced *Resource Capacity* options.

Operating Mode Selection During Startup / Restart

- When started with Version 4.0 installed, the RMX enters *MPM+ Mode* by default, even if no media cards are installed.
- When upgrading a system from Version 3 (or lower) with Version 4.0 software downloaded from the *Polycom Resource Center*, the RMX enters *MPM Mode* by default.



- The RMX only switches between *MPM* and *MPM+ Card Configuration Modes* if *MPM/MPM+* cards are removed or swapped while it is running.
- The *Card Configuration Mode* switch occurs during the **next** restart.
- Installing or swapping *MPM/MPM+* cards while the system is off will not cause a mode switch when the system is restarted – it will restart in the *Card Configuration Mode* that was active previous to powering down.

Table 9 summarizes the *Operating Mode After Next Restart* resulting from adding or swapping MPM/MPM+ cards in a running system.

Table 9 Card Configuration Mode After Next Restart

Current Operating Mode	Media Cards Installed	Card(s) Supported	Card(s) Disabled	Operating Mode After Next Restart
MPM+	MPM or MPM x 2	None	All	MPM
	MPM and MPM+	MPM+ Only	MPM Only	MPM+
	MPM+ or MPM+ x 2	All	None	MPM+
MPM	MPM or MPM x 2	All	None	MPM
	MPM and MPM+	MPM Only	MPM+ Only	MPM+
	MPM+ or MPM+ x 2	None	All	MPM+

Example 1:

Current status

An RMX has two *MPM* cards installed.

The *Card Configuration Mode* is **MPM**.

Both *MPM* cards are **enabled**.

Action

1. Remove one *MPM* card.
2. Insert one *MPM+* card.

Result

The *Card Configuration Mode* remains **MPM**.

The remaining *MPM* card remains **enabled**.

The inserted *MPM+* card is **disabled**.

After Reset

The *Card Configuration Mode* is **MPM+**.

The inserted *MPM+* card is **enabled**.

The remaining *MPM* card is **disabled**.

Example 2:

Current status

An RMX has one *MPM+* card installed.

The *Card Configuration Mode* is **MPM+**.

and the *MPM+* card is **enabled**.

Action

1. Remove the *MPM+* card.
2. Insert one *MPM* card.

Result

The *Card Configuration Mode* remains **MPM+**.

The inserted *MPM* card is **disabled**.

MPM+ Hardware Monitoring

The status and properties of the MPM+ Card can be viewed and monitored in the Hardware Monitor list pane. The Hardware monitor pane displays the type(s) of MPM/MPM+ card installed on the RMX2000. For more information, see the Administrators Guide, Chapter 13, Hardware Monitoring.



Slot	Type	Status	Temperat	Voltage
0	RMX 2000	-	-	-
1	Empty	Empty	-	-
1	MPM+40	Major	Normal	Normal
2	MPM+40	Normal	Normal	Normal
2	RTM ISDN	Normal	Normal	Normal
3	CNTL	Normal	Normal	Normal
4	Empty	Empty	-	-
5	RTM IP	Normal	Normal	Normal
20	Backplane	Normal	-	-
21	FANS	Normal	Normal	Normal
22	PWR	Normal	-	Normal
31	LAN 1	Active	-	-
32	LAN 2	Active	-	-
33	LAN 3	Inactive	-	-

MPM+ Hardware Diagnostics

Diagnostics can be performed on the MPM/MPM+ cards when the MCU is in *Diagnostics* mode.

To Monitor the MPM+ Card:

- In the Hardware Monitor pane select the *MPM+/20/40/80* card and click **Diagnostics** from the drop-down menu. For more information, see the *RMX 2000 Administrator's Guide*, "Diagnostic Mode" on page 15-13.

Detailed Description - General

Reservations

The *Reservations* option enables users to schedule conferences. These conferences can be launched immediately or become ongoing, at a specified time on a specified date. Scheduling a conference reservation requires definition of conference parameters such as the date and time at which the conference is to start, the participants and the duration of the conference.

Scheduled conferences (Reservations) can occur once or repeatedly, and the recurrence pattern can vary.

Guidelines

System

- By default, the *Scheduler* is enabled by a *System Flag*. The flag prevents potential scheduling conflicts from occurring as a result of system calls from external scheduling applications such as *ReadiManager®*, *SE200 CMA™ 4000/5000* and others via the API.

If an external scheduling application is used, the flag `INTERNAL_SCHEDULER` must be manually added to the System Configuration and its value must be set to `NO`.

For more information see the *RMX 2000 Administrator's Guide*, "Modifying System Flags" on page 14-10.

Resources

- The maximum number of participants per reservation is determined by the availability of system resources:
 - MPM Configuration Mode: 80 participants.
 - MPM+ Configuration Mode: 200 participants (120 voice +80 CIF video).
- System resources are calculated according to the RMX's license. For more information see "Enhanced Video/Voice Resource Capacity" on page 36.
- System resource availability is partially checked when reservations are created:
 - If a conference duration extension request is received from an ongoing conference, the request is rejected if it would cause a resource conflict.
 - If several reservations are scheduled to be activated at the same time and there are not enough resources for all participants to be connected:
 - The conferences are activated.
 - Participants are connected to all the ongoing conferences until all system resources are used up.
- If sufficient resources are not available in the system and a scheduled *Reservation* cannot be activated, the *Reservation* is deleted from the schedule.
- Resources for *Reservations* are calculated using the *Reserve Resources for Audio/Video Participants* fields of the *New Reservation* dialog box. For more information see "New Reservation – Reserved Resources" on page 29.
- Resources are reserved for participants at the highest video resolution supported by the *Line Rate* specified in the conference *Profile* and up to the maximum system video resolution specified by the `MAX_CP_RESOLUTION` system flag.

If the RMX is in *MPM+ Mode* and *Fixed Capacity Mode* is selected, the number of resources allocated to this type of video participant (CIF, SD, HD) is also checked. If resource deficiencies are found an error message is displayed.

- When a new *Reservation* is created in the *Reservation Calendar*, the effect of the new *Reservation* (including its recurrences) on available resources is checked. If resource deficiencies are found an error message is displayed.


Defined dial-in or dial-out participants, Meeting Rooms, Entry Queues and new connections to Ongoing conferences are not included in the resources calculation.

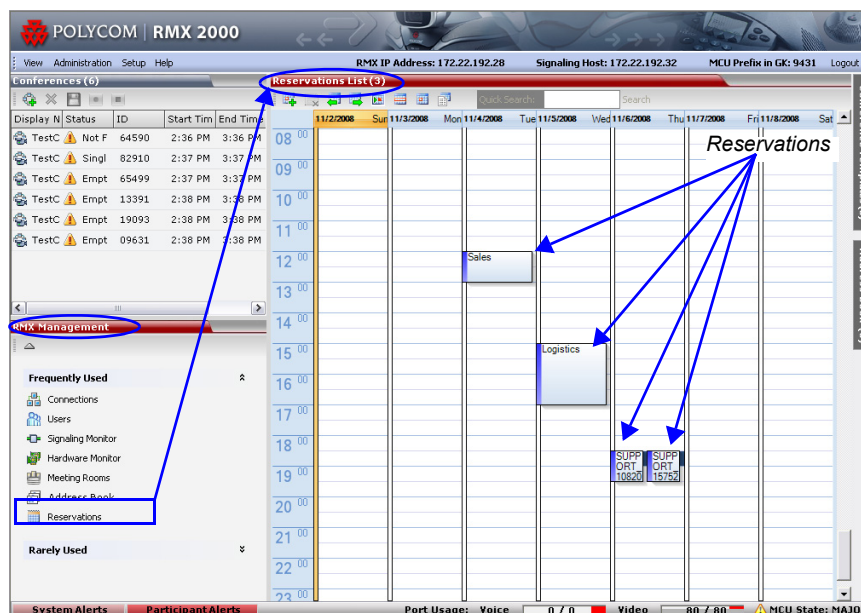
Reservations

- A *Reservation* that has been activated and becomes an ongoing conference is deleted from the *Reservation Calendar* list.
- The maximum number of reservations is 2000.
- The maximum number of concurrent reservations is 80. Reservations with durations that overlap (for any amount of time) are considered to be concurrent.
- The maximum number of participants per reservation is determined by the availability of system resources:
 - MPM Configuration Mode: 80 participants
 - MPM+ Configuration Mode: 200 (120 voice +80 CIF video) participants
- System resource availability is partially checked when reservations are created:
 - If a conference duration extension request is received from an ongoing conference, the request is rejected if it would cause a resource conflict.
 - If several reservations are scheduled to be activated at the same time and there are not enough resources for all participants to be connected:
 - The conferences are activated.
 - Participants are connected to all the ongoing conferences until all system resources are used up.
- A scheduled *Reservation* cannot be activated and is deleted from the schedule if an Ongoing conference has the same *Numeric ID*.
 - Sufficient resources are not available in the system.
- If a problem prevents a *Reservation* from being activated at its schedule time, the *Reservation* will not be activated at all. This applies even if the problem is resolved during the *Reservation's* scheduled time slot.
- A Profile that is assigned to a Reservation cannot be deleted.
- Reservations are backed up and restored during **Setup > Software Management > Backup /Restore Configuration** operations. For more information see the *RMX 2000 Administrator's Guide*, "Software Management" on page 14-61.
- All existing reservations are erased by the *Standard Restore* option of the **Administration > Tools > Restore Factory Defaults** procedure.
- *Reservations* can also be scheduled from *Conference Templates*. For more information see "Conference Templates" on page 47.

Using the Reservation Calendar

To open the Reservation Calendar:

- In the *RMX Management* pane, click the *Reservation Calendar* button ().



Toolbar Buttons

The toolbar buttons functions are described in Table 10.

Table 10 Reservations – Toolbar










Button	Description
 <i>New Reservation</i>	Create a new reservation. The date and time of the new reservation is set according to the highlighted blocks on the <i>Reservation Calendar</i> .
 <i>Delete Reservation</i>	Click to delete the selected reservation.
 <i>Back</i>	Click to show the previous day or week, depending on whether <i>Show Day</i> or <i>Show Week</i> is the selected.
 <i>Next</i>	Click to show the next day or week, depending on whether <i>Show Day</i> or <i>Show Week</i> is the selected.
 <i>Today</i>	Click to show the current date in the Reservation Calendar in either <i>Show Day</i> or <i>Show Week</i> view.
 <i>Show Week</i>	Change the calendar view to weekly display, showing a calendar week: Sunday through Saturday
 <i>Show Day</i>	Click this button to show the day containing the selected time slot.
 <i>Reservations List</i>	Click to change to List View and display a list of all reservations.

Table 10 Reservations – Toolbar (Continued)

Button	Description
	Used to search for reservations by <i>Display Name</i> . (Available in <i>Reservations List</i> view only).

Reservations Views

The *Reservation Calendar* has the following views available:

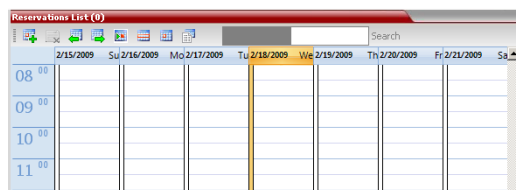
- Week
- Day
- Today
- List

In all views the *Main Window List Pane* header displays the total number of reservations in the system.

Reservations List (6) Total number of reservations

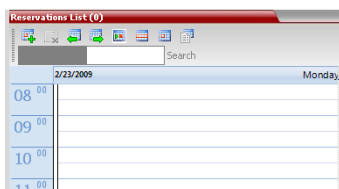
Week View

By default the *Reservation Calendar* is displayed in *Week* view with the current date highlighted in orange.



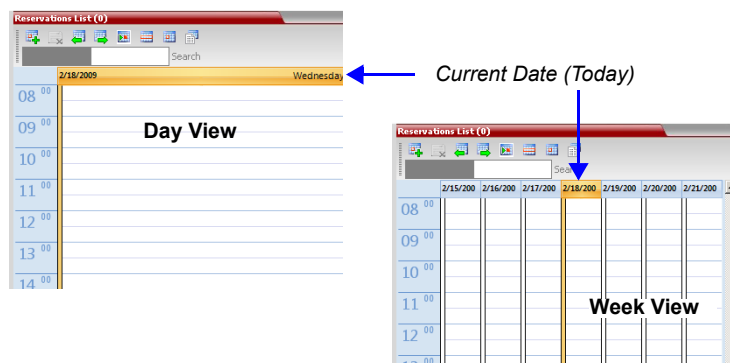
Day View

A single day is displayed.



Today View

The current date (*Today*), highlighted in orange, can be viewed in both *Week View* and *Day View*.



List View

List View does not have a calendar based format.

Reservations List (6)								
			Quick Search:		Search			
Display Name	ID	Start Time	End Time	Internal ID	Status	Conference Passw	Profile	
SUPPORT_180	17989	07/11/2008 05:00	07/11/2008 05:30	183	ok	987654	Factory_Video_Profile	
SUPPORT_157	91272	06/11/2008 18:30	06/11/2008 19:30	169	ok		Factory_Video_Profile	
SUPPORT_108	97493	06/11/2008 18:30	06/11/2008 19:30	170	ok		Factory_Video_Profile	
Logistics	00582	05/11/2008 15:00	05/11/2008 17:00	168	ok		Factory_Video_Profile	
Sales	12295	04/11/2008 12:00	04/11/2008 13:00	167	ok		Factory_Video_Profile	
deb_template1	20940	02/11/2008 23:45	03/11/2008 00:45	127	ok		Factory_Video_Profile	


All *Reservations* are listed by:

- *Display Name*
- *ID*
- *Internal ID*
- *Start Time*
- *End Time*
- *Status*
- *Conference Password*
- *Profile*


The *Reservations* can be sorted, searched and browsed by any of the listed fields.

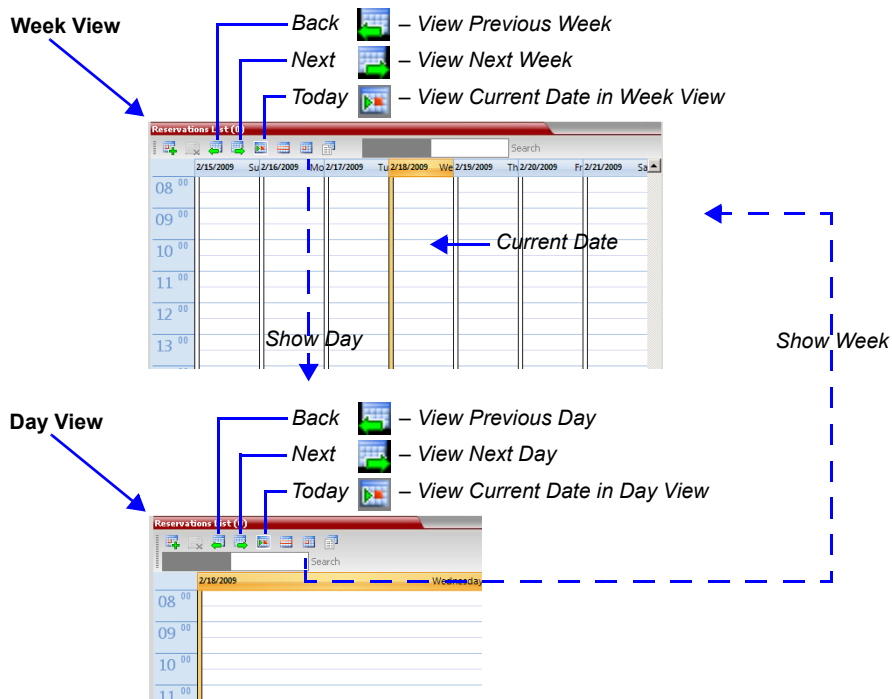
Changing the Calendar View

To change between Week and Day views:


➡ In Week View: In the *Reservation Calendar* toolbar, click **Show Day** () to change to *Day View*.

or

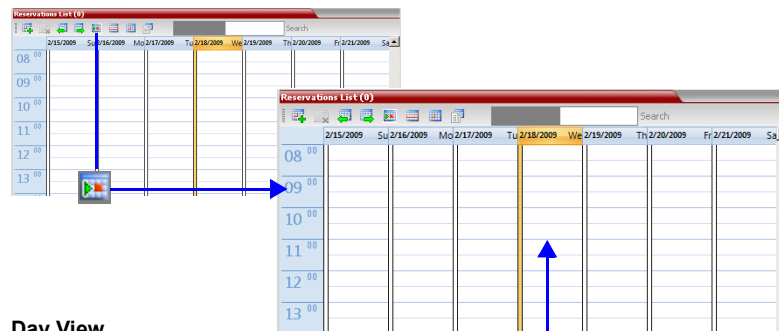
In Day View: In the *Reservation Calendar* toolbar, click **Show Week** () to change to *Week View*.



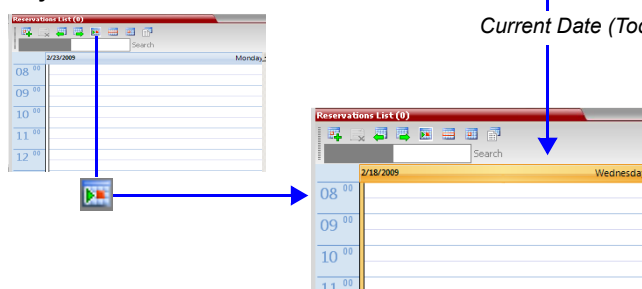
To view Today (the current date):

- In *Week View* or *Day View*, in the *Reservation Calendar* toolbar, click the **Today** () button to have the current date displayed within the selected view.

Week View




Day View



Current Date (Today)

To change to List View:

- 1 In the *Reservation Calendar* toolbar, click the **Reservations List** () button. The *Reservations List* is displayed.

Reservations List (6)								
Display Name	ID	Start Time	End Time	Internal ID	Status	Conference Passw	Profile	
SUPPORT_180	17989	07/11/2008 05:00	07/11/2008 05:30	183	ok	987654	Factory_Video_Profile	
SUPPORT_157	91272	06/11/2008 18:30	06/11/2008 19:30	169	ok		Factory_Video_Profile	
SUPPORT_108	97493	06/11/2008 18:30	06/11/2008 19:30	170	ok		Factory_Video_Profile	
Logistics	00582	05/11/2008 15:00	05/11/2008 17:00	168	ok		Factory_Video_Profile	
Sales	12295	04/11/2008 12:00	04/11/2008 13:00	167	ok		Factory_Video_Profile	
deb_template1	20940	02/11/2008 23:45	03/11/2008 00:45	127	ok		Factory_Video_Profile	

- 2 **Optional:** Sort the data by any field (column heading) by clicking on the column heading. A ▾ or ▲ symbol appears in the column heading indicating that the list is sorted by this field, as well as the sort order.
- 3 **Optional:** Click on the column heading to toggle the column's sort order.

To return to Calendar View:


- In the *Reservation Calendar* toolbar, click any of the buttons (**Show Week/Show Day/Today**) to return to the required *Reservation Calendar* view.

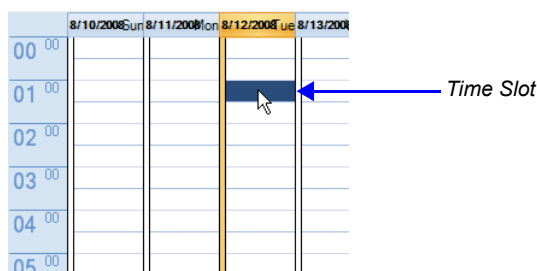
Scheduling Conferences Using the Reservation Calendar

Creating a New Reservation

There are three methods of creating a new reservation:


Each method requires the selection of a starting time slot in the *Reservation Calendar*. The default time slot is the current half-hour period of local time.

In all views, if the **New Reservation** () button is clicked without selecting a starting time slot or if a time slot is selected that is in the past, the *Reservation* becomes an Ongoing conference immediately and is not added to the *Reservations* calendar.



After selecting a starting time slot in the *Reservation Calendar* you can create a reservation with a default duration derived from the creation method used or by interactively defining the duration of the reservation.


Method I - To create a reservation with default duration of 1 hour:

- ➔ In the *Reservation Calendar* toolbar, click the **New Reservation** () button to create a reservation of 1 hour duration.

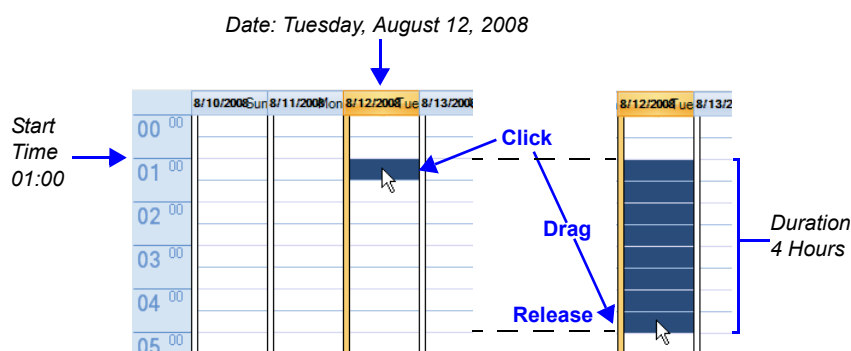
Method II - To create a reservation with default duration of ½ hour:

- ➔ Right-click and select **New Reservation** to create a reservation of ½ hour default duration.

Method III - To interactively define the duration:

- 1 In the calendar, click & drag to expand the time slot to select the required *Date*, *Start Time* and *Duration* for the reservation.
- 2 In the *Reservation Calendar* toolbar, click the **New Reservation** () button or right-click and select **New Reservation**.

Example: The following click & drag sequence would select a reservation for *Tuesday, August 12, 2008*, starting at *01:00* with a duration of *4 hours*.

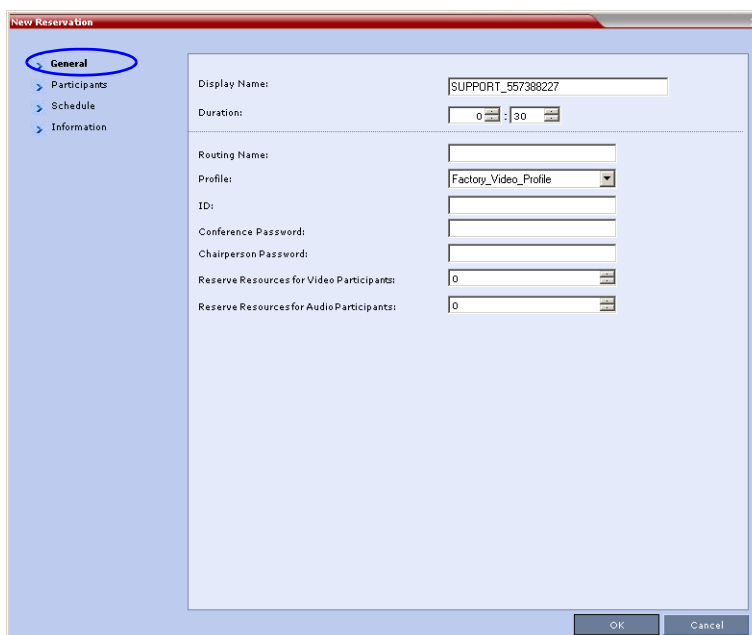


The duration of reservations created by any of the above methods can be modified in the *Scheduler* tab of the *New Reservation* dialog box.

To create a new reservation:

- 1 Open the *Reservation Calendar*.
- 2 Select a starting time slot.
- 3 Create the reservation using one of the three methods described above.

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



All the fields are the same as for the *New Conference – General* tab, described in the *RMX 2000 Getting Started Guide*, "General Tab" on page 3-16.

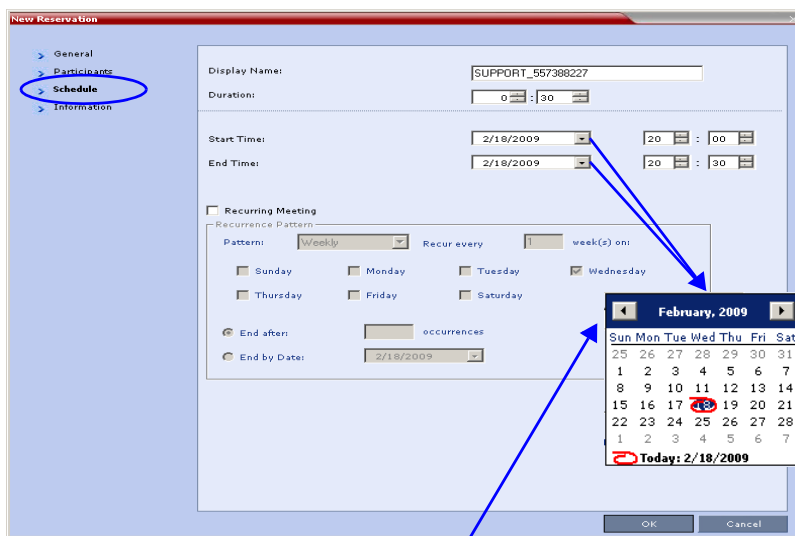
Table 11 *New Reservation – Reserved Resources*

Field	Description
<i>Reserve Resources for Video Participants</i>	Enter the number of video participants for which the system must reserve resources. Default: 0 participants. Maximum: <ul style="list-style-type: none"> MPM Mode: 80 participants. MPM+ Mode: 80 participants.
<i>Reserve Resources for Audio Participants</i>	Enter the number of audio participants for which the system must reserve resources. Default: 0 participants. Maximum: <ul style="list-style-type: none"> MPM Mode: 80 participants. MPM+ Mode: 120 participants.



When a Conference Profile is assigned to a Meeting Room or a Reservation, the Profile's parameters are not embedded in the Reservation, and are taken from the Profile when the reservation becomes an ongoing conference. Therefore, any changes to the Profile parameters between the time the Reservation or Meeting Room was created and the time that it is activated (and becomes an ongoing conference) will be applied to the conference. If the user wants to save the current parameters, a different Profile with these parameters must be assigned, or a different Profile with the new parameters must be created.

4 Click the **Schedule** tab.



Calendar

5 Adjust the new reservation's schedule by modifying the fields as described in Table 12.

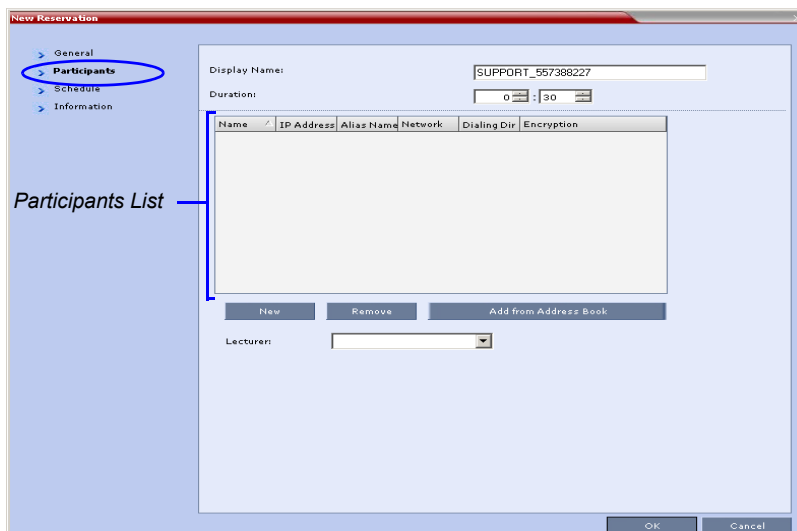
Table 12 New Reservation – Schedule Tab

Field	Description	
<i>Start Time</i>	Select the Start Time of the Reservation.	<p>The Start/End Times of the Reservation are initially taken from the time slot selected in the Reservation Calendar.</p> <p>The Start/End Times can be adjusted by typing in the hours and minutes fields or by clicking the arrow buttons.</p> <p>The Start/End dates can be adjusted by typing in the date field or by clicking the arrow buttons or using the calendar.</p>
<i>End Time</i>	Select the End Time of the Reservation.	<p>End Time settings are initially calculated as Start Time + Duration. End Time settings are recalculated if Start Time settings are changed.</p> <p>Changes to End Time settings do not affect Start Time settings. However, the Duration of the Reservation is recalculated.</p>
<i>Recurring Meeting</i>	<p>Select this option to set up a Recurring Reservation - a series of Reservations to be repeated on a regular basis. To create a recurring reservation, you must define a time period and a recurrence pattern of how often the Reservation should occur: <i>Daily</i>, <i>Weekly</i> or <i>Monthly</i>.</p>	

Table 12 *New Reservation – Schedule Tab (Continued)*

Field	Description	
<i>Recurrence Pattern</i>	Daily	If <i>Daily</i> is selected, the system automatically selects all the days of the week. To de-select days (for example, weekends) clear their check boxes.
	Weekly	<p>If <i>Weekly</i> is selected, the system automatically selects the day of the week for the Reservation from the day selected in the Reservation Calendar.</p> <p>You can also define the recurrence interval in weeks. For example, if you want the reservation to occur every second week, enter 2 in the <i>Recur every _ week(s)</i> field.</p> <p>To define a twice-weekly recurring Reservation, select the check box of the additional day of the week on which the Reservation is to be scheduled and set the recurrence interval to 1.</p>
	Monthly	<p>If <i>Monthly</i> is selected, the system automatically selects the day of the month as selected in the Reservation Calendar. You are required to choose a recurrence pattern:</p> <ul style="list-style-type: none"> • Day (1-31) of every (1-12) month(s) - Repeats a conference on a specified day of the month at a specified monthly interval. For example, if the first Reservation is scheduled for the 6th day of the current month and the monthly interval is set to 1, the monthly Reservation will occur on the 6th day of each of the following months. • The (first, second,...,last) (Sun-Sat) of x month(s) - Repeats a Reservation in a particular week, on a specified day of the week at the specified monthly interval. For example, a recurrent meeting on the third Monday every second month.
A series of Reservations can be set to end after a specified number of occurrences or by a specific date. Select one of the following methods of terminating the series of Reservations:		
End After	End After: x Occurrences - Ends a recurring series of Reservations after a specific number (x) of occurrences. Default: 1 (Leaving the field blank defaults to 1 occurrence.)	
End by Date	End By Date: mm/dd/yyyy - Specifies a date for the last occurrence of the recurring series of Reservations. The End By Date value can be adjusted by typing in the date field or by clicking the arrow button and using the calendar utility. Default: Current date.	

6 Click the **Participants** tab.



The fields are the same as for the *New Conference – Participants* tab, described in the *RMX 2000 Getting Started Guide*, "Participants Tab" on page 3-19.



Participant properties are embedded in the conferencing entity and therefore, if the participant properties are modified in the *Address Book* (or *Meeting Rooms*) after the Reservation has been created they are not applied to the participant when the Reservation is activated.

7 **Optional:** Add participants from the *Participants Address Book*.

For more information see the *RMX 2000 Getting Started Guide*, "To add participants from the Address Book:" on page 3-22 and the *RMX 2000 Administrator's Guide*, "Meeting Rooms" on page 2-1.

8 **Optional:** Add information to the reservation.

Information entered in the *Information* tab is written to the *Call Detail Record (CDR)* when the reservation is activated. Changes made to this information before it becomes an ongoing conference will be saved to the CDR.

For more information see the *RMX 2000 Getting Started Guide*, "Information Tab" on page 3-23.

9 Click **OK**.

The *New Reservation* is created and is displayed in the *Reservation Calendar*.

Managing Reservations

Reservations can be accessed and managed via all the views of the *Reservations List*.

Guidelines

- The *Recurrence Pattern* fields in the *Schedule* tab that are used to create multiple occurrences of a *Reservation* are only displayed when the *Reservation* and its multiple occurrences are initially created.
- As with single occurrence *Reservations*, only the *Duration*, *Start Time* and *End Time* parameters of multiple occurrence reservations can be modified after the *Reservation* has been created.
- A single occurrence *Reservation* cannot be modified to become a multiple occurrence reservation.
- *Reservations* can only be modified one at a time and not as a group.

- If *Reservations* were created as a recurring series, the system gives the option to delete them individually, or all as series.

Viewing and Modifying Reservations

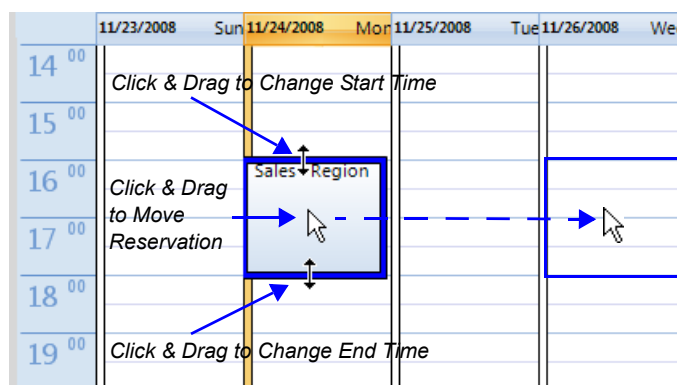
Reservations can be viewed and modified by using the *Week* and *Day* views of the *Reservations Calendar* or by using the *Reservation Properties* dialog box.

Using the Week and Day views of the Reservations Calendar:

In the *Week* and *Day* views each *Reservation* is represented by a shaded square on the *Reservation Calendar*. Clicking on a *Reservation* selects the *Reservation*. A dark blue border is displayed around the edges of the *Reservation* indicating that it has been selected.

The *Start Time* of the *Reservation* is represented by the top edge of the square while the *End Time* is represented by the bottom edge.

The cursor changes to a vertical double arrow (↑↓) when it is moved over the top and bottom sides of the square.



To move the Reservation to another time slot:

- 1 Select the *Reservation*.
- 2 Hold the mouse button down and drag the *Reservation* to the desired time slot.
- 3 Release the mouse button.

To change the Reservation's Start time:

- 1 Select the *Reservation*.
- 2 Move the mouse over the top edge of the *Reservation's* square.
- 3 When the cursor changes to a vertical double arrow (↑↓) hold the mouse button down and drag the edge to the desired *Start Time*.
- 4 Release the mouse button.

To change the Reservation's End time:

- 1 Select the *Reservation*.
- 2 Move the mouse over the bottom edge of the *Reservation's* square.
- 3 When the cursor changes to a vertical double arrow (↑↓) hold the mouse button down and drag the edge to the desired *End Time*.
- 4 Release the mouse button.

To View or Modify Reservations using the Reservation Properties dialog box:

- 1 In the *Reservations List*, navigate to the reservation (or its recurrences) you want to view, using the **Show Day**, **Show Week**, **Today**, **Back**, **Next** or **List** buttons.

- 2 Double-click, or right-click and select **Reservation Properties**, to select the reservation to be viewed or modified.

The *Reservation Properties – General* dialog box opens.

- 3 Select the tab(s) of the properties you want to view or modify.

- 4 **Optional:** Modify the *Reservation Properties*.

- 5 Click **OK**.

The dialog box closes and modifications (if any) are saved.

Deleting Reservations

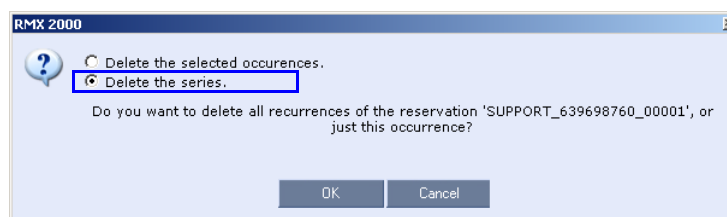
To delete a single reservation:

- 1 In the *Reservations List*, navigate to the reservation you want to delete, using the **Show Day, Show Week, Today, Back, Next** or **List** buttons.
- 2 Click to select the reservation to be deleted.
- 3 Click the **Delete Reservation** (✖) button.
or
Place the mouse pointer within the *Reservation* block, right-click and select **Delete Reservation**.
- 4 Click **OK** in the confirmation dialog box.
The *Reservation* is deleted.

To delete all recurrences of a reservation:

- 1 In the *Reservations List*, navigate to the *Reservation* or any of its recurrences, using the **Show Day, Show Week, Today, Back, Next** or **List** buttons.
- 2 Click the **Delete Reservation** (✖) button.
or
Place the mouse pointer within the *Reservation* or any of its recurrences, right-click and select **Delete Reservation**.

A confirmation dialog box is displayed.



- 3 Select **Delete the series**.

- 4 Click **OK**.

All occurrences of the *Reservation* are deleted.

Searching for Reservations using Quick Search

Quick Search is available only in *List View*. It enables you to search for *Reservations* by *Display Name*.

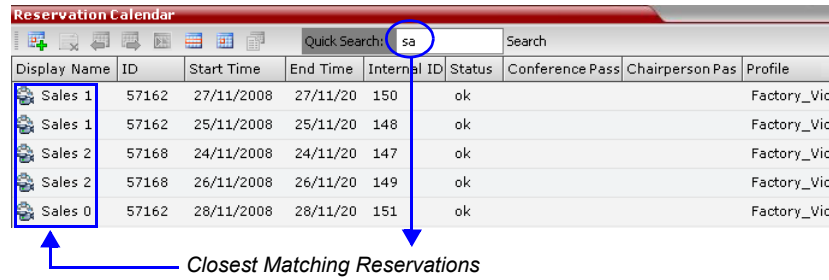
To search for reservations:

- 1 In the *Reservation Calendar* toolbar, click in the *Quick Search* field.
The field clears and a cursor appears indicating that the field is active.



- 2 Type all or part of the reservation's *Display Name* into the field and click **Search**.

The closest matching *Reservation* entries are displayed.



Display Name	ID	Start Time	End Time	Internal ID	Status	Conference Pass	Chairperson Pas	Profile
Sales 1	57162	27/11/2008	27/11/20	150	ok			Factory_Vid
Sales 1	57162	25/11/2008	25/11/20	148	ok			Factory_Vid
Sales 2	57168	24/11/2008	24/11/20	147	ok			Factory_Vid
Sales 2	57168	26/11/2008	26/11/20	149	ok			Factory_Vid
Sales 0	57162	28/11/2008	28/11/20	151	ok			Factory_Vid

Closest Matching Reservations

- 3 Optional:** Double-click the *Reservation's* entry in the list to open the *Reservations Properties* dialog box to view or modify the *Reservation*.

or

Right-click the *Reservation's* entry in the list and select a menu option to view, modify or delete the *Reservation*.

To clear the search and display all reservations:

- 1** Clear the *Quick Search* field.
- 2** Click **Search**.

All *Reservations* are displayed.

Enhanced Video/Voice Resource Capacity

In Version 4.0 there are two *Media Configuration Modes*: *MPM* and *MPM+*.

The *System Card Configuration Mode* determines the resource allocation method used by the RMX to allocate resources to the connecting endpoints.

Two *Resource Capacity* modes are available:

- **Flexible Resource Capacity™** – This is the same as the allocation mode used in all previous versions. The system allocates the resources according to the connecting endpoints. This mode offers flexibility in resource allocation and is available in both *MPM* and *MPM+* *Card Configuration Modes*.

In *Flexible Resource Capacity* mode, in both *MPM* and *MPM+* *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 80 video resources, but only one *MPM* card is currently installed in the RMX, the system lets you allocate 80 ports although only 40 video resources are available for 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 type in advance. This mode is available only in *MPM+* *Card Configuration Mode*.

In *Fixed Resource Capacity* mode, the maximum number of resources is based on the system license and the hardware configuration of the RMX. By default, these resources are allocated as HD720p30 resources, the first time *Fixed Resource Capacity* mode is activated.

Example: If two *MPM+* cards are installed in the RMX, providing 160 video resources, and the license was not upgraded accordingly, although the system capacity is higher, resource availability for allocation does not change and remains according to the license (80). Conversely, if two *MPM+* cards are installed in the RMX, providing 160 video resources, and the license is for 160 video resources, and one of the *MPM+* cards is removed, the resource availability for allocation is changed to 80.

For more information about *MPM* and *MPM+* resource capacities see “Resource Capacity” on page 17.

Resource Allocation in MPM Mode

Flexible Resource Capacity mode is the default, and the only, allocation method in *MPM* *System Card Configuration Mode*.

Using Flexible Resource Capacity Mode

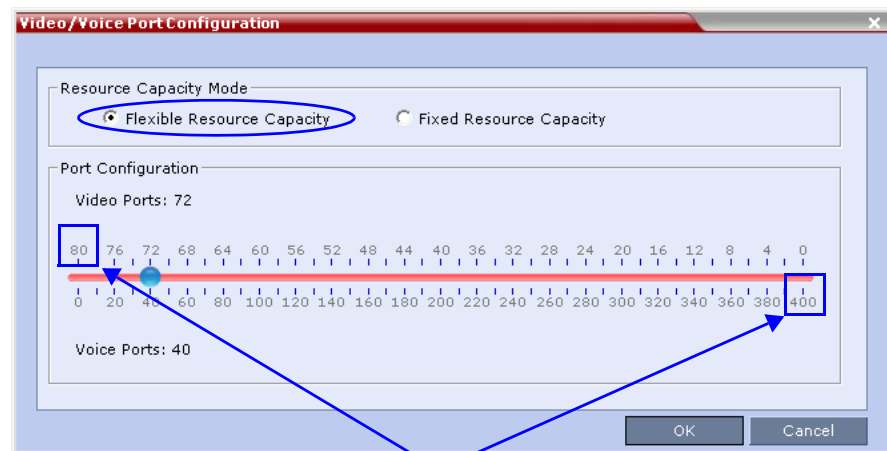
All resources are initially allocated as CIF video ports as it is a resolution commonly supported by all endpoints.

The administrator can allocate some or all of these resources as *Voice* resources and let the system allocate the remaining *Video* resources automatically as participants connect to conferences. The system automatically allocates resources according to the connecting participant’s endpoint type, capabilities and line rate.

To allocate Audio Only ports:

- 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. 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**.
- 4 Reset the MCU.



In *Flexible Resource Capacity*, any change in resource allocation requires a reset of the RMX for changes to take effect.

Resource Allocation in MPM+ Mode

There are two resource allocation modes in *MPM+ Mode*:

- **Flexible Resource Capacity**
- **Fixed Resource Capacity**

The resource allocation mode is saved by the RMX and is activated when the RMX is restarted.

Flexible Resource Capacity

Flexible Resource Capacity is the default resource allocation mode in *MPM+ Mode* and is functionally identical to the *MPM Flexible Resource Capacity* described above.

To allocate Audio Only ports in MPM+ mode:

- 1 **Optional** (otherwise skip to step 2): If the RMX is in *Fixed Resource Capacity* mode:
 - a In the RMX menu, click **Setup > Video/Voice Port Configuration**.
The *Video/Voice Port Configuration* dialog box opens.
 - b In the *Resource Capacity Mode* box, select **Flexible Resource Capacity**.
 - c Click **OK**.
 - d Restart the RMX from the *Hardware Monitor* pane.

- 2** In the RMX menu, click **Setup > Video/Voice Port Configuration**.
The *Video/Voice Port Configuration* dialog box opens.
If switching from *Fixed Resource Capacity* mode, all video resources are allocated as CIF video ports.
- 3** Continue with **Step 2** of the *MPM Mode Flexible Resource Allocation* procedure described above.

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. In *Fixed Resource Capacity* mode, the system is always in a known state, and when used in conjunction with the *Resource Report*, it gives the administrator precise control over resource allocation and optimization. For more information, see “*Resource Report*” on page 42.

If all resources allocated to a specific endpoint type are in use and an endpoint of that specific type tries to connect to the RMX, the RMX first attempts to connect the endpoint at the next highest resolution. If not resources are available at that level the RMX begins search for connection resolutions at progressively decreasing resolutions.

Example: In a system that has 10 SD ports allocated and in use:

If another SD endpoint (11th) attempts to connect, the system first tries to allocate resources to the SD endpoint first from HD720 and then from HD1080 resources.

If HD resources are allocated to an SD endpoint, HD endpoints may experience a resource deficiency when trying to connect and may not be connected at HD resolution.

If there are no available HD resources the system tries to allocate resources to the SD endpoint from any available CIF resources.

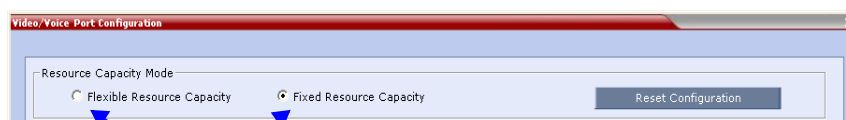
If there are no available CIF resources the system tries to allocate resources to the SD endpoint from any available *Audio Only* resources. If *Audio Only* resources are allocated the HD endpoint, it is connected as an *Audio Only* participant.

To allocate resources in Fixed Resource Capacity mode:



Resource re-configuration (if the system is already set to Fixed Resource Capacity mode) should only be performed when no conferences are running on the RMX.

- 1** **Optional** (*otherwise skip to step 2*): If the RMX is not in *Fixed Allocation Mode*
 - a** In the RMX menu, click **Setup > Video/Voice Port Configuration**.
The *Video/Voice Port Configuration* dialog box opens.
 - b** In the *Resource Capacity Mode* box, click **Fixed Resource Capacity**.



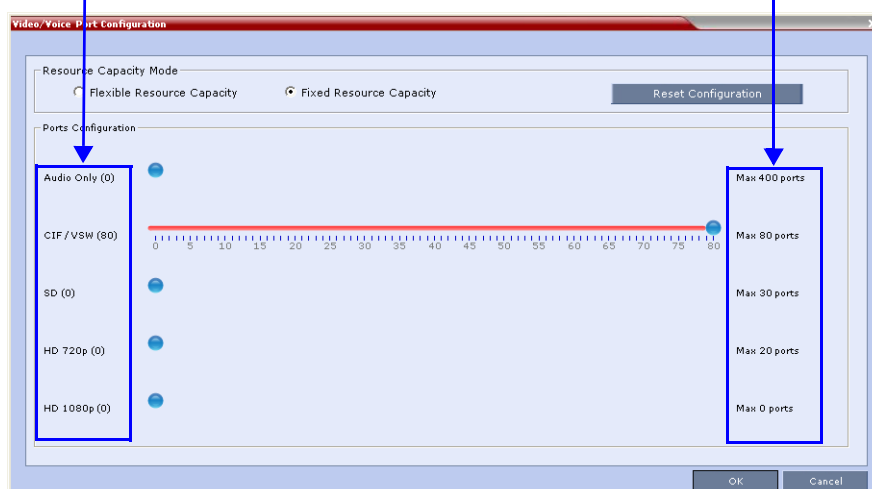
Resource Capacity Mode options

- c** Click **OK**.
 - d** Restart the RMX.
- 2** In the RMX menu, click **Setup > Video/Voice Port Configuration**.

The *Video/Voice Port Configuration* dialog box opens.

Number of Resources allocated to each type

Maximum Number of Resources from License and Hardware



Fixed Resource Capacity mode displays five sliders, one for each resource type: *Audio Only*, *CIF*, *SD*, *HD 720p 30fps*, *HD 1080p / HD 720p 60fps* (*HD 1080p / HD 720p 60fps* resources are represented on the same slider) where each type requires different number of video resources (in *CIF* ports) for connecting endpoints.

- The first time the *Fixed Resource Capacity* is selected, all resources are allocated to *HD720p30* by default.
- If the *Resource Capacity Mode* was previously *Fixed* or if it was *Flexible* but *Fixed* had been selected in the past, the previous resource allocations in the mode are displayed.

The maximum number of allocatable of resources of each type for an RMX containing two fully licensed *MPM+* cards are as follows:

Port Type	Maximum
Audio Only	800
CIF/VSW	160
SD	60
HD720p	40
HD1080p	20

The *MAX_CP_RESOLUTION* flag setting does not affect resource allocation.

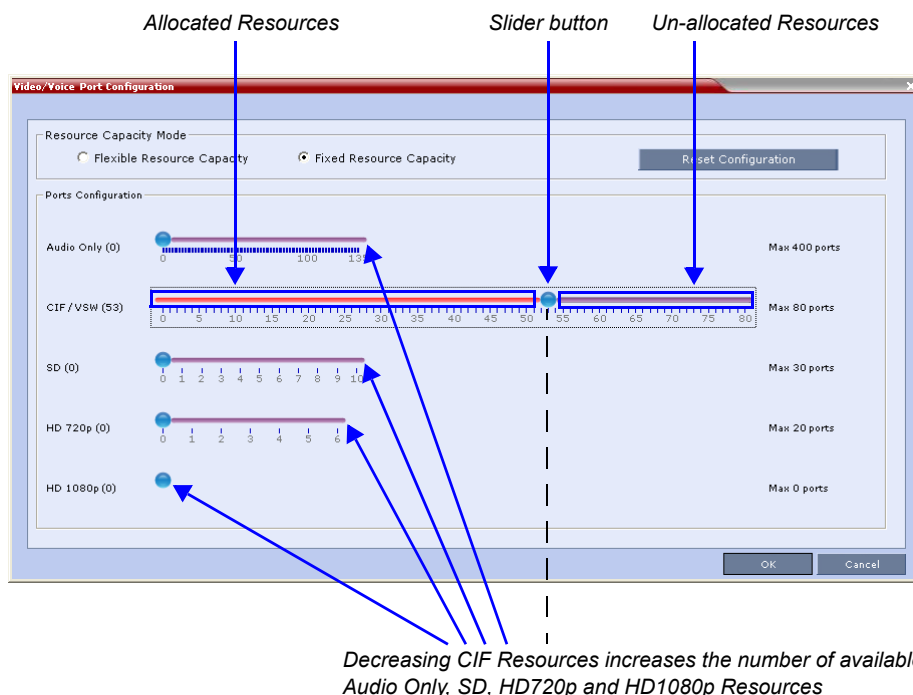
Example: If it is set to *SD30*, the *HD 1080p* slider is still displayed and *HD 1080* resources can be allocated. However, *HD 1080* participants will connect at *SD30* resolution.

Using the sliders, the administrator can manually allocate resources to the various types of video resolutions and *Audio Only* connections that can be used by connecting endpoints.

3 Move the blue slider buttons to allocate resources.

As all the resources are allocated when the dialog box opens, you must first free resources of one type by moving the blue slider button to the left, and then move blue slider button of the required resource type to the number of resources to be allocated.

On the slider bars, red areas to the left of the blue slider buttons indicate allocated resources and purple areas to the right of the blue slider buttons indicate unallocated resources in the system.



When the position of a slider is changed the system calculates the effect on the remaining system resources and adjusts the slider scales accordingly.

For example: Decreasing the allocated CIF ports from 80 to 53, free ports for allocation that can be used to allocate up to 135 voice ports or 10 SD ports or 6 HD 720p ports, or any combination of the resource types.

Allocating five *Audio Only* ports decreases the number of *CIF* ports while allocating one *SD* port decreases the number of *CIF* ports.

- 4 Click **OK** to activate the new *Resource Capacity Mode*.



In *Fixed Allocation Mode* system restart is not required for the re-configuration of the allocation to take effect.

If after resources are recalculated there are purple areas to the right of the blue slider buttons indicating unallocated resources in the system, the system issues a warning stating that there are un-allocated resources in the system.

- 5 **Optional:** Repeat this procedure from **Step 2** to further optimize the resource allocation.

Un-allocated resources cannot be used by any participants.

If after resources are recalculated the system determines that there are insufficient resources to support the configuration indicated by the sliders:

- A major *System Alert* is raised with *Insufficient resources* in its *Description* field.
- The *Fixed Resource Capacity* blue slider buttons are disabled.
- The following warning message is displayed:

The current slider settings require more system resources than are currently available.

Please select one of the following options:

Click the **Reset Configuration** button to set all sliders to zero and reconfigure the resources

Click the **Cancel** button to accept the current resource configuration

- 6** Click the **OK** button to close the warning message box.

7 Optional:

- a** Click the **Reset Configuration** button to set all the blue slider buttons to zero.
- b** Reconfigure the resource allocation.
- c** Click **OK** to activate the new resource allocation.

- 8 Optional:** Click the **Cancel** button to accept the resource allocation.

The *System Alert* remains active.

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* and *MPM+ Modes*
- *Fixed Resource Capacity Mode* available only in *MPM+ Mode*

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

When the RMX is working in *MPM+ Mode*, with *Fixed Resource Capacity Mode™* selected, additional system resources information is displayed.

Displaying the Resource Report

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

The *Resource Report* dialog box appears, displaying the resource usage according to the *Resource Capacity Mode*. For each resource type, the *Resource Report* includes the following columns:

Table 13 *Resource Report Fields Parameters*

Column	Description
<i>Type</i>	The type of audio/video resources available.
<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 <i>Resource Report</i> .
<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.

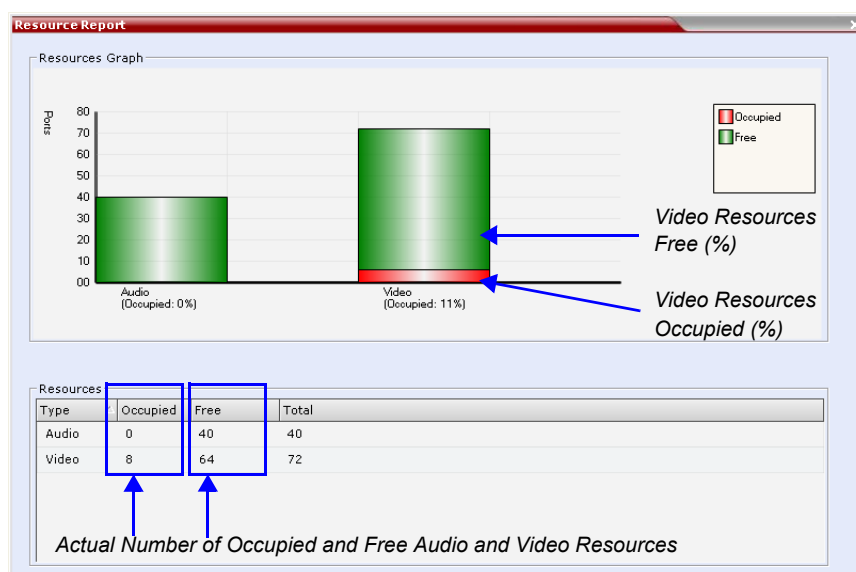
Resource Report Display in Flexible Resource Capacity Mode™

The *Resource Report* details the current availability and usage of the system resources displaying the number of free and occupied audio and video ports. A *Resources Graph* is displayed in addition to the *Resources* table.

Example: An RMX 2000 in *Flexible Resource Capacity Mode* has:

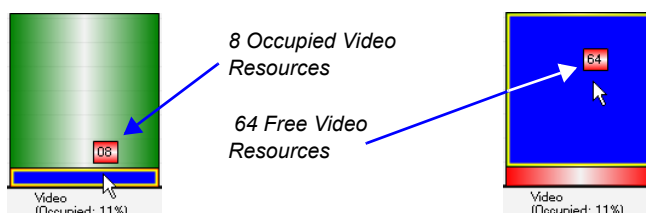
- 80 licenced *CIF* resources.
- 8 of its 80 *CIF* resources allocated as *Audio* = 40 *Audio* resources (8x5).
- All 40 *Audio* resources free (green).
- The remaining 72 *CIF* resources allocated as *Video* resources.
- 8 of the 72 *CIF* resources are occupied (red) while the remaining 64 are free.

The *Resource Report* is displayed as follows:



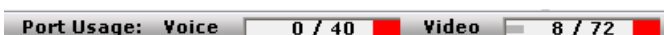
In *Flexible Resource Capacity Mode*, resource usage is displayed for *Audio* and *CIF* video resources only. They are displayed as percentages of the total resource type.

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 40 *Audio (Voice)* resources as occupied and 8 of the 72 *CIF (Video)* resources as occupied.



Resource Report in Fixed Resource Capacity Mode™

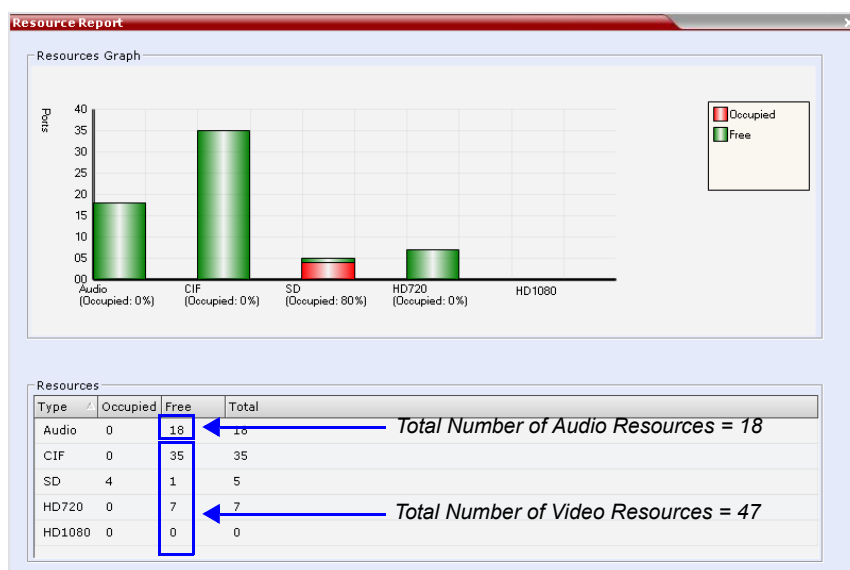
In *Fixed Resource Capacity Mode*, each resource type (*Audio*, *CIF*, *SD* and *HD*) is displayed as a bar of the graph, indicating the percentage of occupied and free resources for each resource type.

The data is also displayed as a *Resources* table indicating the actual number of resources occupied and free for each resource type along with a total number of each resource type.

Example: An RMX 2000 in *Fixed Resource Capacity Mode* has:

- 80 licensed *CIF* resources.
- 18 *Audio* resources allocated, all free (green).
- 35 *CIF* resources allocated, all free.
- 5 *SD* resources allocated, 4 occupied (red), 1 free.
- 7 *HD* 720 resources allocated, all free.
- 0 *HD* 1080 resources allocated.

The *Resource Report* is displayed as follows:

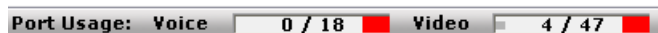


The actual number of occupied or free resources can also be displayed by moving the cursor over the columns of the bar graph (as explained above for *Flexible Resource Capacity*).

Port Gauges

Audio (Voice) resources are as displayed as in previous versions while all *Video* resource types are shown as a single group of *Video* resources.

The gauges show 0 of the 18 *Audio (Voice)* resources as occupied. The 4 occupied *SD* resources are shown as 4 occupied resources out of the total of 47 *Video* resources.



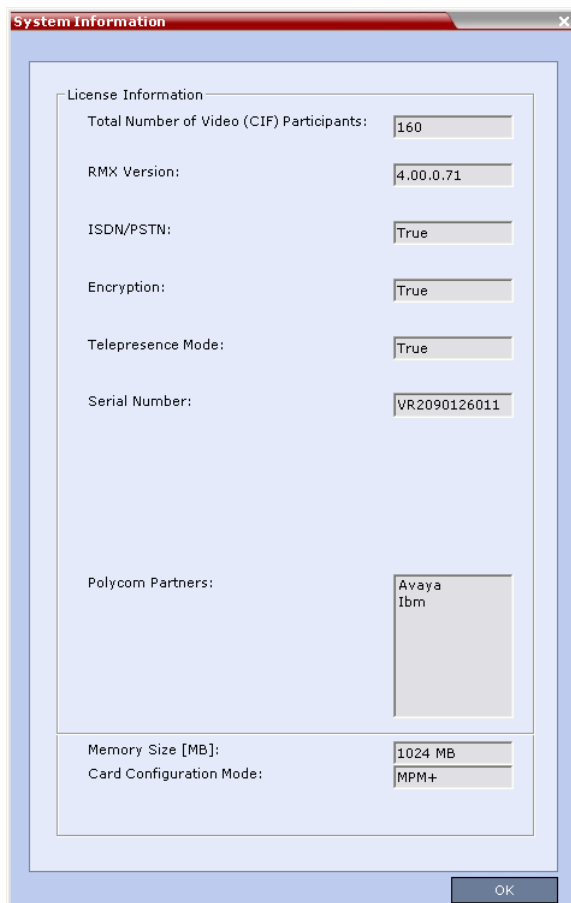
System Information

System Information includes *License Information*, and general system information, such as system memory size and *Media Card Configuration Mode*.

To view the **System Information properties box**:

- 1 On the RMX menu, click **Administration > System Information**.

The *System Information* properties box is displayed.



It contains the *License Information* properties box of previous versions.

The *System Information* fields display the following information:

Table 14 System Information

Field	Description
<i>Total Number of Video (CIF) Participants</i>	Displays the number of CIF video participants licensed for the system.
<i>RMX Version</i>	Displays the <i>System Software Version</i> of the RMX.
<i>ISDN/PSTN</i>	The field value indicates whether RTM ISDN/ PSTN hardware has been detected in the system. Range: True / False

Table 14 System Information (Continued)

Field	Description
<i>Encryption</i>	The field value indicates whether <i>Encryption</i> is included in the MCU license. Encryption is not available in all countries. Range: True / False
<i>Telepresence Mode</i>	The field value indicates whether the system is licensed to work with <i>RPX</i> and <i>TPX Telepresence</i> room systems. Range: True / False
<i>Serial Number</i>	Displays the <i>Serial Number</i> of the RMX.
<i>Polycom Partners</i>	The field value indicates that the <i>System Software</i> contains features for the support of specific <i>Polycom Partner</i> environments.
<i>Memory Size [MB]</i>	This field indicates the RMX system memory size in MBytes. Possible values: <ul style="list-style-type: none"> 1000 MB – The RMX can support a maximum of 800 simultaneous participant calls (if configured with two MPM+ cards). 500 MB – The RMX can support a maximum of 400 simultaneous voice calls and 120 CIF video calls. This limitation applies to RMX's configured with either MPM or MPM+ cards.
<i>Card Configuration Mode</i>	Indicates the MCU configuration as derived from the installed media cards: <ul style="list-style-type: none"> MPM: Only MPM cards are supported. MPM+ cards in the system are disabled. It is the mode used in previous RMX versions. MPM+: Only MPM+ cards are supported. MPM cards in the system are disabled. Note: When started with Version 4.0 installed, the RMX enters MPM+ mode by default, even if no media cards are installed: <ul style="list-style-type: none"> The RMX only switches between MPM and MPM+ <i>Card Configuration Modes</i> if MPM/MPM+ cards are removed or swapped while it is powered on. The <i>Card Configuration Mode</i> switch occurs during the next restart. Installing or swapping MPM/MPM+ cards while the system is off will not cause a mode switch when the system is restarted - it will restart in the <i>Card Configuration Mode</i> that was active previous to powering down.

Conference Templates

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

A *Conference Template*:

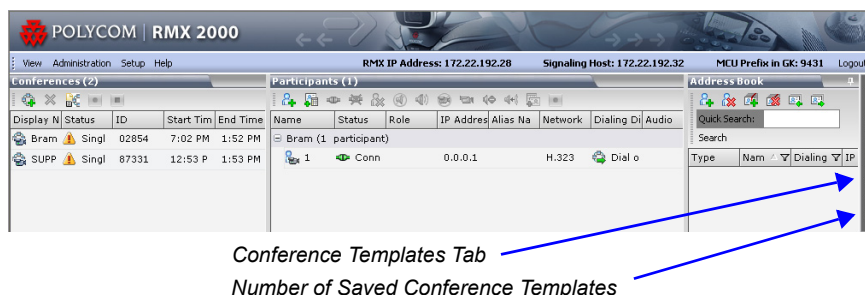
- Saves the conference Profile.
- Saves all participant parameters including their *Personal Layout* and *Video Forcing* settings.
- Simplifies the setting up *Telepresence* conferences where precise participant layout and video forcing settings are crucial.

Guidelines

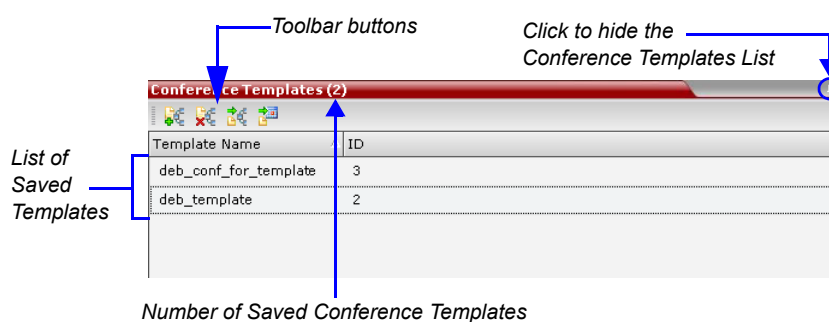
- A maximum of 100 *Conference Templates* can be saved.
- A maximum of 200 participants can be saved in a *Conference Template* when the RMX is in MPM+ mode. When the RMX is in MPM mode, the maximum is 80 participants.
- If the RMX is switched to from MPM+ mode to MPM mode, conference templates may include more participants than the allowed maximum in MPM mode.
Trying to start a *Conference Template* that exceeds the allowed maximum number of participants will result in participants being disconnected due to resource deficiency.
- If the Profile assigned to a conference is deleted while the conference is ongoing the conference cannot be saved as a template.
- A Profile assigned to a *Conference Template* cannot be deleted. The system does not permit such a deletion.
- Profile parameters are not embedded in the *Conference Template*, and are taken from the Profile when the *Conference Template* becomes an ongoing conference. Therefore, any changes to the Profile parameters between the time the *Conference Template* was created and the time that it is activated (and becomes an ongoing conference) will be applied to the conference.
- Only defined participants can be saved to the *Conference Template*. Before saving a conference to a template ensure that all undefined participants have disconnected.
- Undefined participants are not saved in *Conference Templates*.
- Participant properties are embedded in the *Conference Template* and therefore, if the participant properties are modified in the Address Book after the *Conference Template* has been created they are not applied to the participant whether the *Template* becomes an ongoing conference or not.
- The *Conference Template* display name, routing name or ID can be the same as an Ongoing Conference, reservation, Meeting Room or Entry Queue as it is not active. However, an ongoing conference cannot be launched from the *Conference Template* if an ongoing conference, Meeting Room or Entry Queue already has the same name or ID. Therefore, it is recommended to modify the template ID, display name, routing name to be unique.
- A *Reservation* that has become an ongoing conference can be saved as *Conference Template*.
- SIP Factories and Entry Queues cannot be saved as *Conference Templates*.

Using Conference Templates

The *Conference Templates* list 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.



The *Conference Templates* are listed by *Conference Template Display Name* and *ID* and can be sorted by either field. The list can be customized by re-sizing the pane, adjusting the column widths or changing the order of the column headings.

For more information see *RMX 2000 Getting Started Guide*, "Customizing the Main Screen" on page 3-11.

Clicking the anchor pin (📌) button hides the *Conference Templates* list as a closed tab.

Toolbar Buttons

The *Conference Template* toolbar includes the following buttons:

Table 15 *Conference Templates – Toolbar Buttons*






Button	Description
 New Conference Template	Creates a new Conference Template.
 Delete Conference Template	Deletes the Conference Template(s) that are selected in the list.
 Start Conference from Template	Starts an ongoing conference from the <i>Conference Template</i> that has an identical name, ID parameters and participants as the template.

Table 15 Conference Templates – Toolbar Buttons (Continued)

Button	Description
 Schedule Reservation from Template	<p>Creates a conference Reservation from the Conference Template with the same name, ID, parameters and participants as the Template.</p> <p>Opens the <i>Scheduler</i> dialog box enabling you to modify the fields required to create a single or recurring <i>Reservation</i> based on the template. For more information see “Reservations” on page 21.</p>

The *Conferences List* toolbar includes the following button:

Table 16 Conferences List – Toolbar Button

Button	Description
 Save Conference to Template	<p>Saves the selected ongoing conference as a Conference Template.</p>


Creating a New Conference Template

There are two methods to create a *Conference Template*:

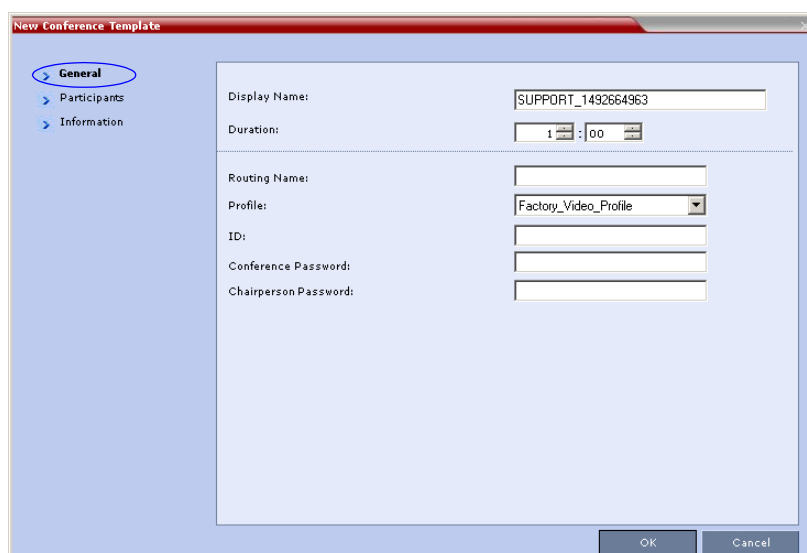
- From scratch - defining the conference parameters and participants
- Saving an ongoing conference as Template

Creating a new Conference Template from Scratch

To create a new *Conference Template*:

- 1 In the *RMX Web Client*, click the **Conference Templates** tab.
- 2 Click the **New Conference Template**  button.

The *New Conference Template - General* dialog box opens.



The dialog box titled "New Conference Template" has a sidebar with three tabs: "General" (selected), "Participants", and "Information". The "General" tab contains the following fields:

- Display Name:** Text field containing "SUPPORT_1492664963".
- Duration:** Spin box set to "1" hour and "00" minutes.
- Routing Name:** Empty text field.
- Profile:** Dropdown menu showing "Factory_Video_Profile".
- ID:** Empty text field.
- Conference Password:** Empty text field.
- Chairperson Password:** Empty text field.

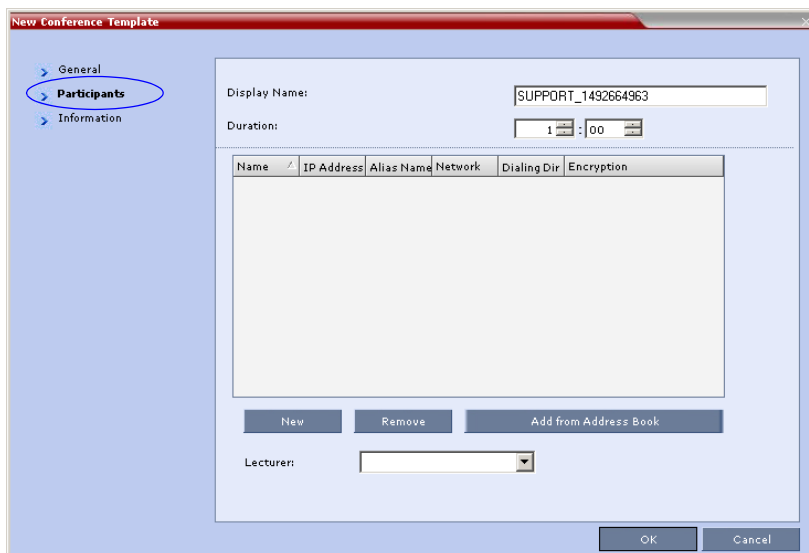
At the bottom right are "OK" and "Cancel" buttons.

The fields of the *New Template – General* dialog box are identical to those of the *New Conference – General* dialog box. For a full description of the fields see the *RMX 2000 Getting Started Guide, "General Tab"* on page 3-16.

3 Modify the fields of the *General* tab.

4 Click the **Participants** tab.

The *New Template – Participants* dialog box opens.



The screenshot shows the 'New Conference Template' dialog box with the 'Participants' tab selected. The 'Display Name' field contains 'SUPPORT_1492664963'. The 'Duration' is set to 1 hour and 00 minutes. Below these fields is a table with columns: Name, IP Address, Alias Name, Network, Dialing Dir, and Encryption. The table is currently empty. At the bottom of the table are three buttons: 'New', 'Remove', and 'Add from Address Book'. Below the buttons is a 'Lecturer' dropdown menu. At the bottom right of the dialog are 'OK' and 'Cancel' buttons.

The fields of the *New Template – Participants* dialog box are the same as those of the *New Conference – Participant* dialog box.

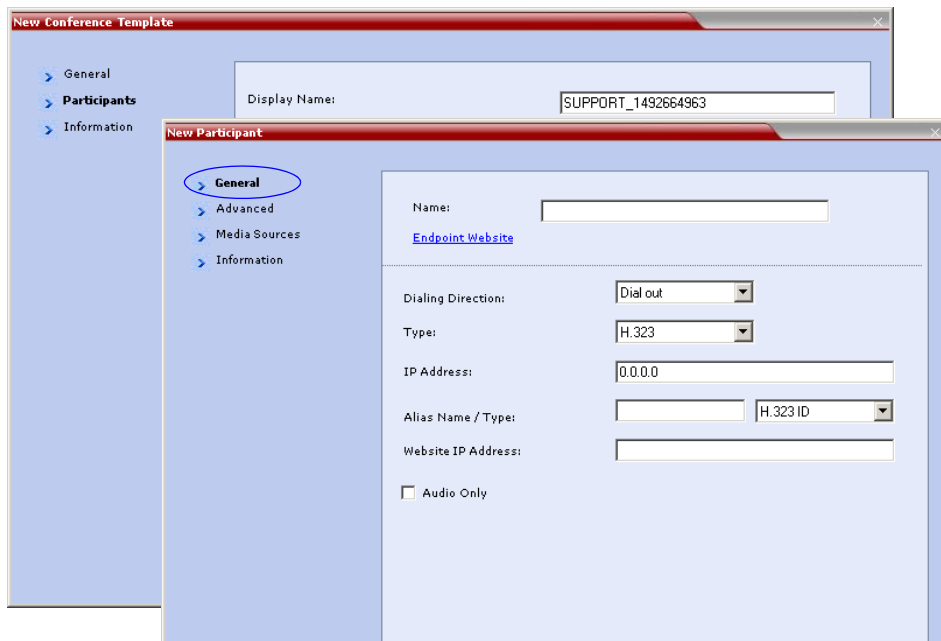
For a full description of these fields see the *RMX 2000 Getting Started Guide, "Participants Tab"* on page 3-19.

5 **Optional:** Add participants to the template from the *Address Book*.

6 Click the **New** button.

The *New Participant – General* tab opens.

The *New Template – Participant* dialog box remains open in the background.



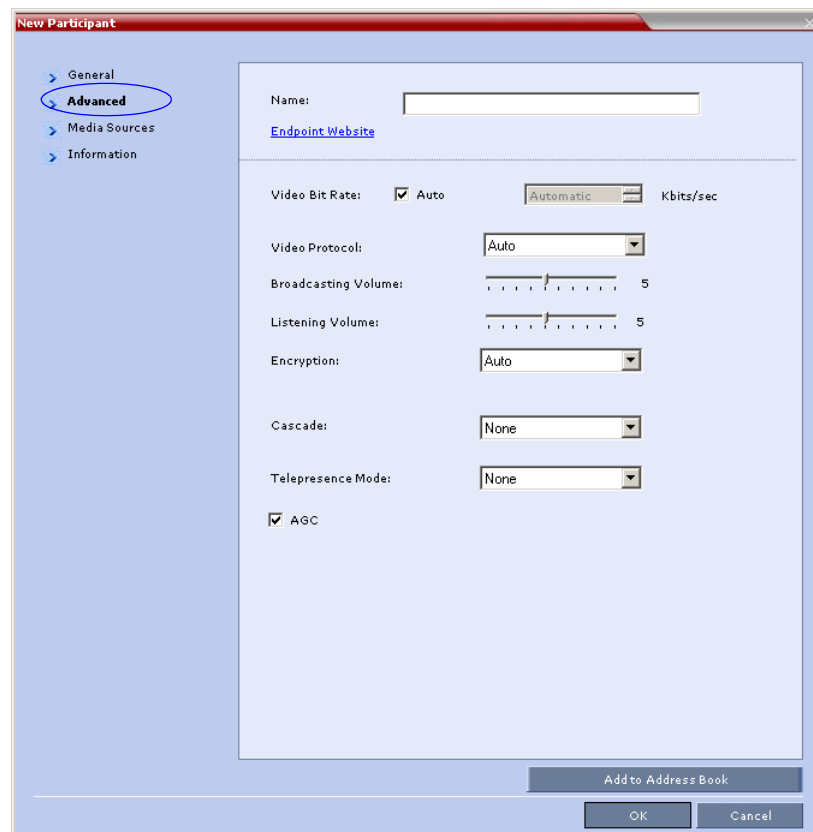
The screenshot shows the 'New Participant' dialog box with the 'General' tab selected. The 'Name' field is empty. Below it is a link for 'Endpoint Website'. The 'Dialing Direction' is set to 'Dial out'. The 'Type' is set to 'H.323'. The 'IP Address' is set to '0.0.0.0'. The 'Alias Name / Type' field has a dropdown menu set to 'H.323 ID'. The 'Website IP Address' field is empty. At the bottom left is a checkbox for 'Audio Only'. In the background, the 'New Conference Template' dialog box is visible with the 'Participants' tab selected.

For a full description of the *General* tab fields see the *RMX 2000 Administrator's Guide*, "Adding a new participant to the Address Book Directly" on page 4-4.

7 Modify the fields of the *General* tab.

8 Click the **Advanced** tab.

The *New Participant – Advanced* tab opens.



New Participant

- > General
- > **Advanced**
- > Media Sources
- > Information

Name:

[Endpoint Website](#)

Video Bit Rate: ☒ Auto Kbits/sec

Video Protocol:

Broadcasting Volume:

Listening Volume:

Encryption:

Cascade:

Telepresence Mode:

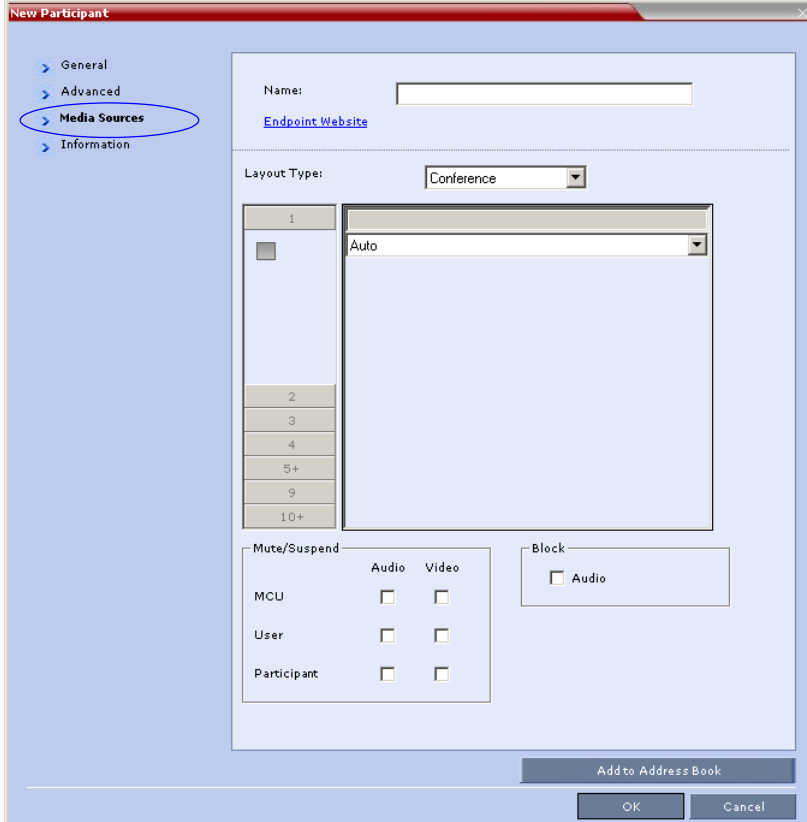
☒ AGC

For a full description of the *Advanced* tab fields see the *RMX 2000 Administrator's Guide*, "New Participant – Advanced Properties" on page 4-8.

9 Modify the fields of the *Advanced* tab.

10 Click the **Media Sources** tab.

The *Media Sources* tab opens.



New Participant

> General
> Advanced
> Media Sources
> Information

Name:

[Endpoint Website](#)

Layout Type:

1 ☐ Auto

2

3

4

5+

9

10+

Mute/Suspend

	Audio	Video
MCU	<input type="checkbox"/>	<input type="checkbox"/>
User	<input type="checkbox"/>	<input type="checkbox"/>
Participant	<input type="checkbox"/>	<input type="checkbox"/>

Block

☐ Audio

Add to Address Book

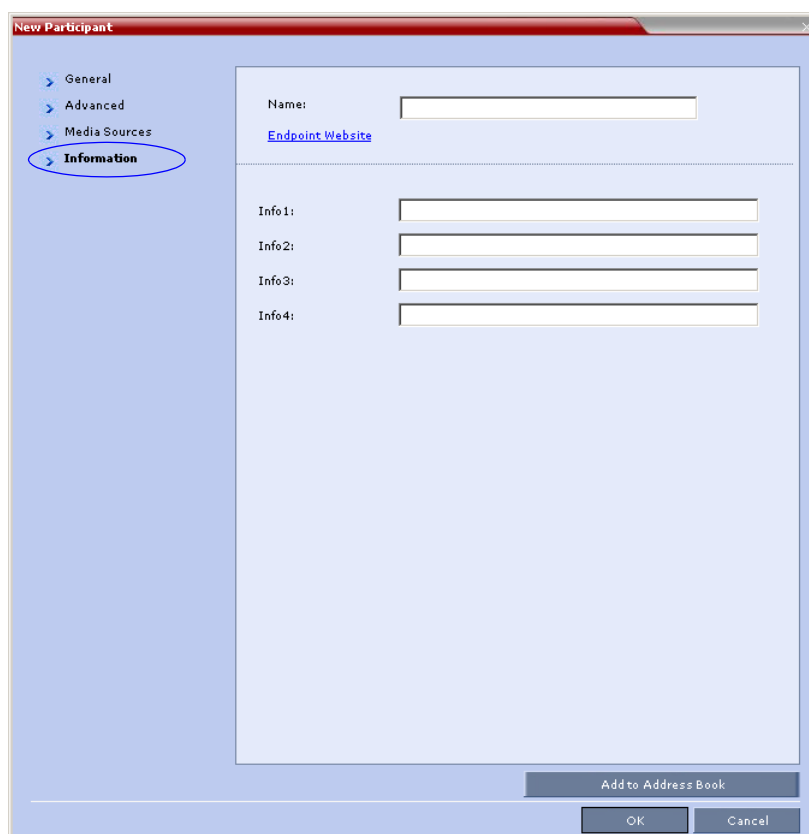
OK Cancel

The *Media Sources* tab enables you to set up and save *Personal Layout* and *Video Forcing* settings for each participant. This is especially important when setting up *Telepresence* conferences.

For a full description of *Personal Layout* and *Video Forcing* settings see the RMX 2000 *Getting Started Guide*, "Changing the Video Layout of a Conference" on page 3-48 and "Video Forcing" on page 3-50.

- 11** Modify the *Personal Layout* and *Video Forcing* settings for the participant.
- 12 Optional:** Click the **Information** tab.

The *New Participant – Information* tab opens.



The screenshot shows the 'New Participant' dialog box with the 'Information' tab selected. The left sidebar contains a tree view with 'General', 'Advanced', 'Media Sources', and 'Information' (highlighted with a blue oval). The main area contains the following fields:

- Name:
- Endpoint Website: [Endpoint Website](#)
- Info 1:
- Info 2:
- Info 3:
- Info 4:

At the bottom right, there are three buttons: 'Add to Address Book', 'OK', and 'Cancel'.

For a full description of the *Information* fields see the *RMX 2000 Getting Started Guide*, "Information Tab" on page **3-23**.

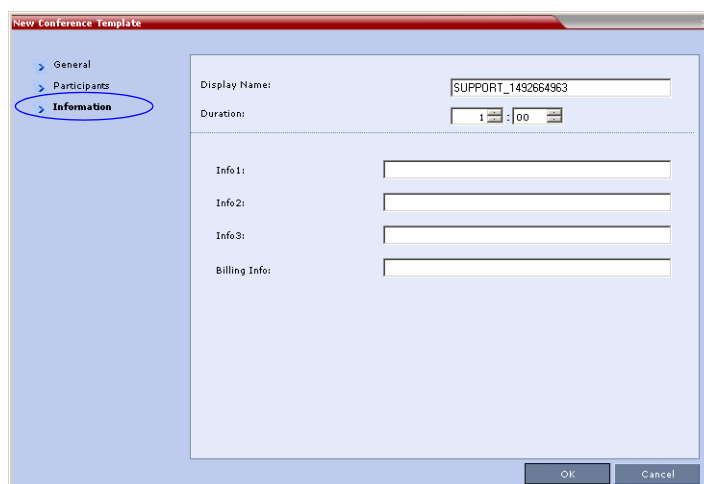
- 13** Click the **OK** button.

The participant you have defined is added to the *Participants List*.

The *New Participant* dialog box closes and you are returned to the *New Template – Participant* dialog box (which has remained open since Step 6).

- 14 Optional:** In the *New Conference Template* dialog box, click the **Information** tab.

The *New Conference Template – Information* tab opens.



The screenshot shows the 'New Conference Template' dialog box with the 'Information' tab selected. The left sidebar contains a tree view with 'General', 'Participants', and 'Information' (highlighted with a blue oval). The main area contains the following fields:

- Display Name:
- Duration: :
- Info 1:
- Info 2:
- Info 3:
- Billing Info:

At the bottom right, there are two buttons: 'OK' and 'Cancel'.

For a full description of the *Information* fields see the *RMX 2000 Getting Started Guide*, "Information Tab" on page **3-23**.


- 15 Click the **OK** button.

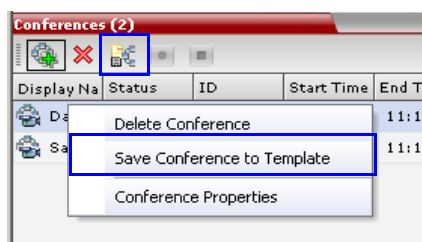
The *New Conference Template* is created and its name is added to the *Conference Templates* list.

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 to Template** () button.
or
Right-click and select **Save Conference to Template**.




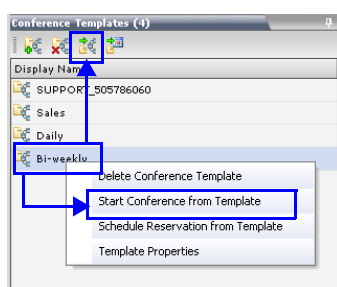
The conference is saved to a template whose name is taken from the ongoing conference *Display Name*.

Starting an Ongoing Conference From a Template

An ongoing conference can be started from any 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.

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.




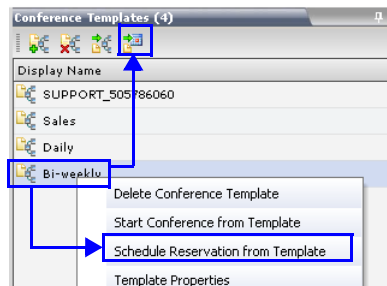
If an ongoing conference, Meeting Room or Entry Queue with the same *Display Name*, *Routing Name* or *ID* already exist in the system, the conference will not be started.

Scheduling a Reservation From a Conference Template

A *Conference Template* can be used to schedule a single or recurring *Reservation*.

To schedule a Reservation from a Conference Template:

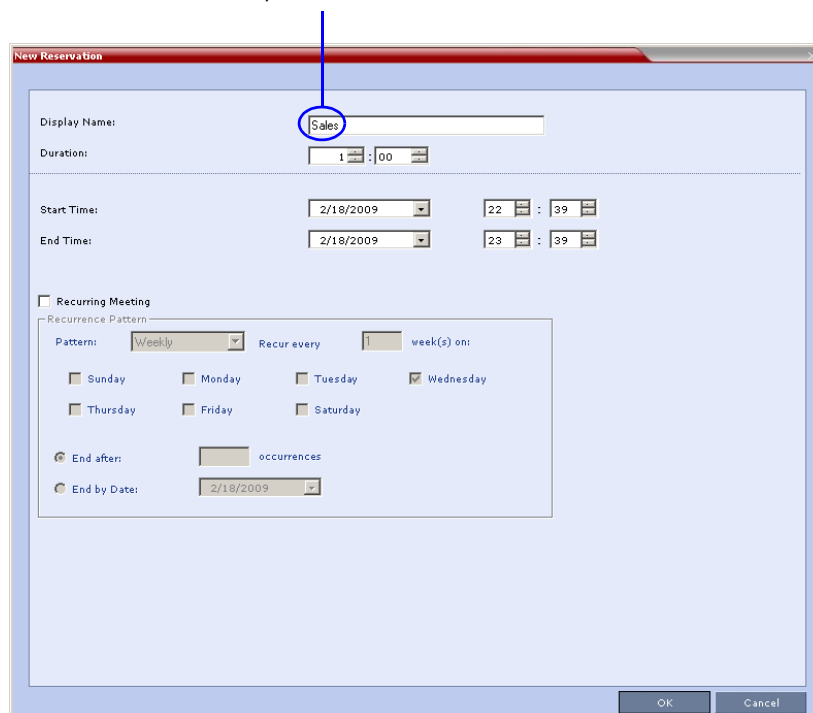
- 1** In the *Conference Templates* list, select the Conference Template you want to schedule as a Reservation.
- 2** Click the **Schedule Reservation from Template** () button.
or
Right-click and select **Schedule Reservation from Template**.



The *Reservation Properties* dialog box is displayed.

The *Display Name* of the *Reservation* is taken from the Conference Template *Display Name*.

Conference Template and Reservation Name



For a full description of the *Reservation Properties* fields see “New Reservation – Schedule Tab” on page 30.

- 3** Modify the fields of the *Reservation Properties*.
- 4** Click the **OK** button.

A *Reservation* is created based on the *Conference Template*. The *Reservation* can be viewed and modified along with all other *Reservations* using the *Reservations - Calendar View* and *Reservations List*.

If you create a recurring reservation all occurrences have the same ID.
The series number (_0000n) of each reservation is appended to its *Display Name*.

Example:

*Conference Template name:*Sales

Display Name for single scheduled occurrence: Sales

If 3 recurrences of the reservation are created:

Display Name for occurrence 1: Sales_00001


Display Name for occurrence 2: Sales_00002

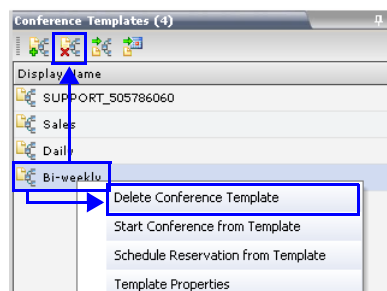
Display Name for occurrence 3: Sales_00003

Deleting a Conference Template

One or several *Conference Templates* can be deleted at a time.

To delete Conference Templates:

- 1** In the *Conference Templates* list, select the *Template(s)* you want to delete.
- 2** Click the **Delete Conference Template** () button.
or
Right-click and select **Delete Conference Template**.



A confirmation dialog box is displayed.

- 3** Click the **OK** button to delete the *Conference Template(s)*.

Restore Last Version

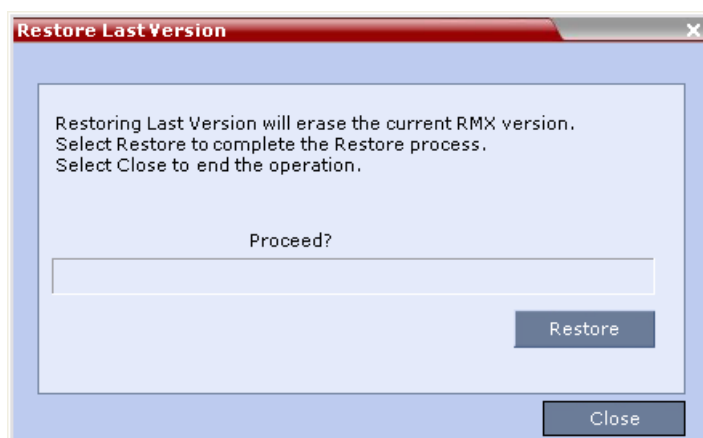
In case of a failure when installing a software version, a user with administrator permissions has the option to restore the previous software version. If the *Restore Last Version* installation fails, the system can install an earlier version. If no earlier version is available for restore, *Default Factory Settings* are loaded.

For more information see the *RMX 2000 Getting Started Guide*, "Gather Network Equipment and Address Information" on page 2-4 and "RMX's Default Conferencing Settings" on page 2-30.

To restore the last version software:

- 1 On the *RMX* menu, click **Administration > Tools > Restore Last Version**.

The *Restore Last Version* dialog box opens.



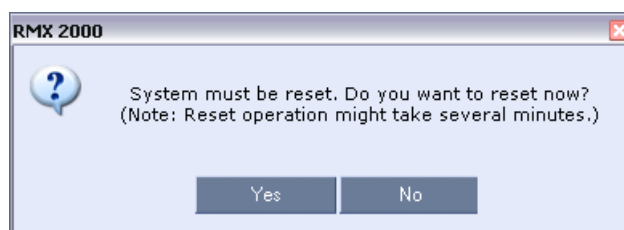
- 2 Click the **Restore** button to install the previous version software.

The system tries to install the previous version. This is the same as installing a new version on the MCU.



If the installation fails due to a checksum error there is no change to the system and the version remains the same as it was before the attempted *Restore Last Version* action.

When the software version restore is complete, the *Reset* dialog box is displayed.



- 3 Click the **Yes** button, to reset the MCU.



If a fault occurs during the system startup (MCU state is Minor/Major):

- An active alarm is raised.
- The system automatically attempts to load the previous version.
- If the previous version cannot be loaded, factory default settings are loaded.

When this process completes, correcting the fault on the MCU requires that the user install a new RMX 2000 software version.

Gateway to Polycom® Distributed Media Application™ (DMA™) 7000

Audio PSTN/ISDN calls can be routed to Polycom DMA 7000 via the RMX. ISDN Video endpoints connect using their audio channel (but take video resources). Each RMX conference acting as a gateway session includes one connection to the endpoint and another connection to the DMA. The DMA 7000 enables load balancing and the distribution of multipoint calls on up to 10 Polycom RMX media servers.

As part of this solution, the RMX acts as a gateway for the DMA that supports H.323 calls. The PSTN or ISDN endpoint dials the virtual Meeting Room on the DMA via a special Entry Queue on the RMX.

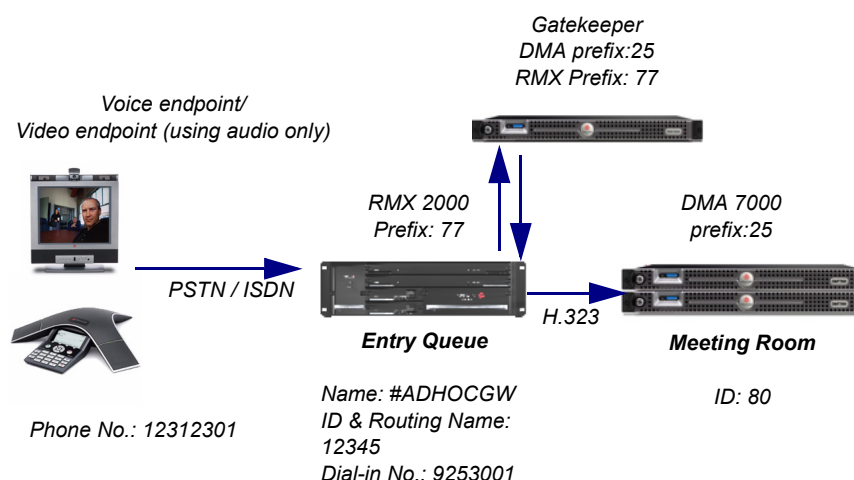


Figure 1 Gateway to DMA Solution

To enable this solution a special Ad Hoc-enabled Entry Queue is defined on the RMX. To function as a gateway to the DMA, the Entry Queue Display Name must include the string **#ADHOCGW**, for example, **#ADHOCGW1** or **EQ#ADHOCGW2**.

An ISDN Network Service with the dial-in numbers range must be defined on the RMX.

In addition, the dialing string of the destination conference must be communicated to the dialing endpoint and used during the connection to the Entry Queue on the RMX. To enable the RMX to accept this dialing string as the ID of the conference, the flag defining the ID length (number of digits composing the ID string) must be set accordingly. For more details on flag definition, see the *RMX Administrator's Guide*, "System Configuration" on page **14-10**.

Both the RMX and the DMA must be registered with the same gatekeeper.

Call Flow

The participant dials the Ad Hoc Entry Queue on the RMX using the appropriate dialing string:

- PSTN/ISDN participant: Entry Queue dial-in number (9253001), including the country and area code (if needed).

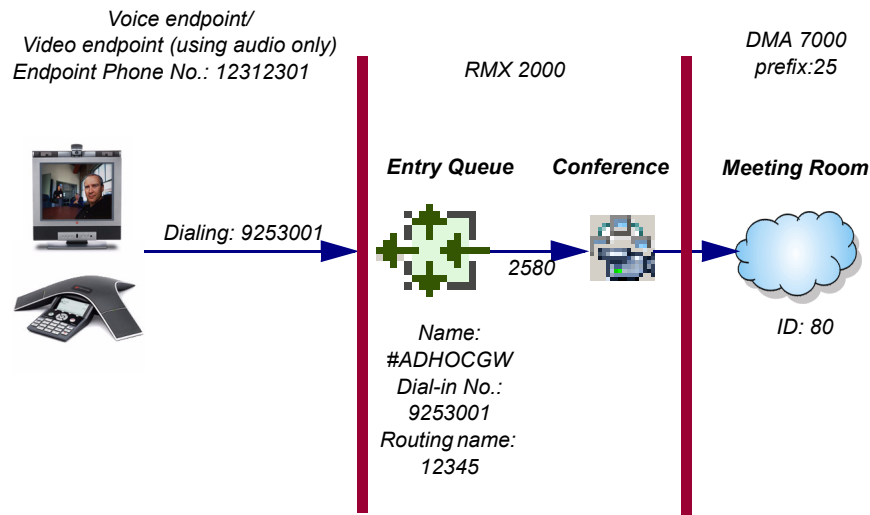


Figure 2 Call Flow from PSTN/ISDN Endpoint to DMA via RMX

Upon connection to the Ad Hoc Entry Queue, when the participant is prompted for the target conference ID, he or she enters the string of the target meeting room on the DMA followed by a # key. This string is composed of the DMA prefix as registered in the gatekeeper and the ID of the virtual meeting room running on the DMA. For example, if the DMA prefix is 25 and the target meeting room ID is 80 the participant enters 2580 followed by the # key.

New Conference (Gateway Session) Created

The RMX creates a new conference with its unique ID.

Conference Display Name:

The display name of the new conference that acts as the gateway session is composed of the following components:

- The prefix **GW_**
- The endpoint visual name (if one exists)_. For example, Main1_
If a visual name is not defined for the endpoint, the participant phone number will be used. For example, (12312301)_
- (number) where the number is a gateway conference counter.

For example: if the endpoint visual name is Main1, the conference name will be GW_Main1_(001).

If no visual name can be retrieved, the conference name when the PSTN endpoint connects is GW_(12312301)_(001)

Conference Routing Name:

The conference routing name includes the following components:

- The prefix **GW_**
- (number) where the number is a gateway conference counter.

For example: GW_(001).

Conference ID:

The ID of the new conference is assigned randomly by the MCU.

The Connected Participants

Once this conference is created, the calling participant is connected to it and a new dial-out H.323 participant is automatically created and added to this audio only gateway session.

The connecting participant name is derived from the Entry Queue display name and it includes the Entry Queue name, an activation identification number (appears between brackets), underscore and a random number (appears between brackets), for example, #ADHOCGW(12)_(001).

The dial out participant name is derived from the conference name and the suffix **_323Out**. For example, GW_Main1_(001)_323Out or GW_(001)_323Out.

The RMX uses the conference ID entered by the calling participant as the E.164 format dialing string to connect the participant to the DMA. for example, 2580.


Setting up the RMX as an Audio Gateway to the DMA

To enable the RMX to function as an audio gateway to the DMA the following entities must be configured on the RMX:

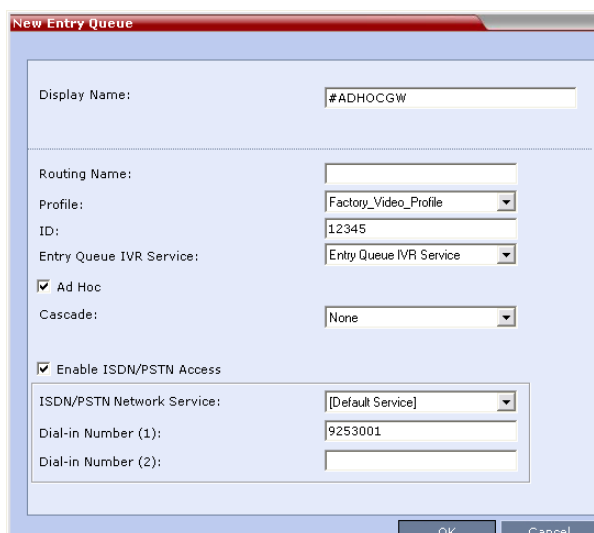
- ISDN Network Service with defined dial-in numbers range. For more details on how to configure the ISDN Network Service and the dial-in numbers range, see the *RMX Administrator's Guide, "Adding/Modifying ISDN/PSTN Network Services"* on page [11-28](#).
- Both RMX and DMA must be registered to the same gatekeeper. The gatekeeper is configured in the Default IP Network Service. For more details, see the *RMX Administrator's Guide, "Modifying the Default IP Network Service"* on page [11-8](#).
- Video resources must be converted to audio resources in the Video/Voice Port Configuration. For details, see the *RMX Administrator's Guide, "Video/Voice Port Configuration"* on page [14-30](#).
- Optional. A Profile in which the *Maximum Number of Participants* field is set to 2. This Profile will be assigned to the GW-to-DMA Entry Queue. For more details about Profile definition, see the *RMX Administrator's Guide, "Defining Profiles"* on page [1-8](#).
- GW-to-DMA Entry Queue

Entry Queue Definition

To define the GW-to-DMA Entry Queue:

- 1** In the *RMX Management* pane, click the **Entry Queues** icon .
- 2** In the *Entry Queues* list pane, click the **New Entry Queue** toolbar button.

3 The *New Entry Queue* dialog box opens.



4 Define the following parameters:

Table 1-1: Entry Queue Definitions Parameters

Option	Description
<i>Display Name</i>	Enter a name that includes the string #ADHOCGW , for example, #ADHOCGW1 or EQ#ADHOCGW2 .
<i>Routing Name</i>	Enter a <i>Routing Name</i> using ASCII text or leave this field blank to use the Entry Queue <i>ID</i> as the <i>Routing Name</i> .
<i>Profile</i>	<p>Select the Profile to be used by the Entry Queue and that will be used to define the properties of the new conference created by the Ad Hoc Entry Queue. This Profile determines the properties with which participants connect to the Entry Queue and destination conference. The default Profile is selected by default.</p> <p>Note: It is recommended that a new Profile is created and assigned to Entry Queues used as Gateway-to-DMA. In this Profile the <i>Maximum Number of Participants</i> field should be set to 2. For more details about Profile definition, see the <i>RMX Administrator's Guide</i>, "Defining Profiles" on page 1-8.</p>
<i>ID</i>	<p>Enter a unique number identifying the Entry Queue for dial in. Default string length is 4 digits. If you do not manually assign the Entry Queue ID, the MCU assigns one after the completion of the definition. The ID String Length is defined by the flag NUMERIC_CONF_ID_LEN in the System Configuration. For more details, see the <i>RMX Administrator's Guide</i>, Chapter 14, "System Flags – MCMS_PARAMETERS" on page 14-11.</p>

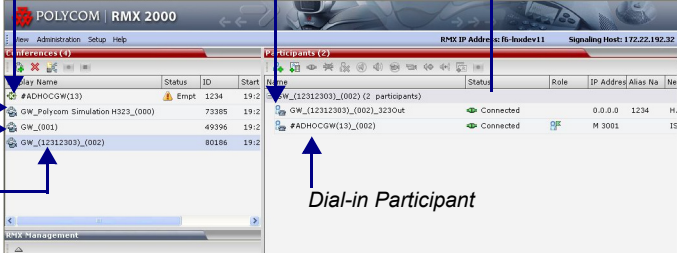
Table 1-1: Entry Queue Definitions Parameters (Continued)

Option	Description
<i>Entry Queue IVR Service</i>	The default Entry Queue IVR Service is selected. If required, select an alternate Entry Queue IVR Service, which includes the required voice prompts, to guide participants during their connection to the Entry Queue.
<i>Ad Hoc</i>	Select this check box to enable the Ad Hoc option for this Entry Queue.
<i>Cascade</i>	Select None for this Entry Queue.
<i>Enable ISDN/PSTN Access</i>	Select this check box to allocate dial-in numbers for ISDN/PSTN connections. To define the first dial-in number using the default ISDN/PSTN Network Service, leave the default selection. When the Entry Queue is saved on the MCU, the dial-in number will be automatically assigned to the Entry Queue. This number is taken from the dial-in numbers range in the default ISDN/PSTN Network Service.
<i>ISDN/PSTN Network Service</i>	The default Network Service is automatically selected. To select a different ISDN/PSTN Network Service in the service list, select the name of the Network Service.
<i>Dial-in Number (1)</i>	Leave this field blank to let the system automatically assign a number from the selected ISDN/PSTN Network Service. To manually define a dial-in number, enter the required number from the dial-in number range defined for the selected Network Service.
<i>Dial-in Number (2)</i>	By default, the second dial-in number is not defined. To define a second-dial-in number, enter the required number from the dial-in number range defined for the selected Network Service.

- 5** Click the **OK** button.
The new Entry Queue is added to the *Entry Queues* list.

Monitoring a Gateway-to-DMA Session

When a participant connects to the GW Entry Queue, the activated Entry Queue is listed in the ongoing conferences list. In addition, the new conference acting as a gateway session is created using the naming convention GW_(endpoint name)_(counter).



The screenshot displays the RMX 2000 interface with two main panels: **Gateway Entry Queue** and **Gateway Conference Participants**.

Gateway Entry Queue: This panel shows a list of conferences. Annotations indicate that the name includes the endpoint name and the CLI number. For example, the conference name is GW_(12312303)_(002).

Gateway Conference Participants: This panel shows a list of participants. Annotations indicate that the name includes the endpoint name and the CLI number. For example, the participant name is GW_(12312303)_(002).

The interface also shows a **Dial-out Participant** and a **Dial-in Participant** in the Participants list.

The dial-in participant and the dial-out H.323 participant automatically created by the RMX are listed in the Participants list for the gateway-to-DMA conference.

ISDN video participants that connect with their audio channel only take video resources as if they were connected using video.

The gateway-to-DMA conference is automatically terminated when the end time is reached or if it does not include two participants for at least one minute. Possible causes are:

- The dial-out participant did not connect to the DMA due to:
 - Wrong or invalid ID of the target conference
 - Gatekeeper problem
 - No RMX resources
 - DMA problem
- The dial-in or dial-out participant disconnected from the conference.

In addition, the RMX user can terminate the conference as any other ongoing conference or by disconnecting any of the connected participants.

CDR

New events were added to the CDR: Event 15-H323 CALL SETUP and Event 31-PARTICIPANT CONNECTION RATE.

New CDR Events

Event 15 - H323 CALL SETUP

Includes the parameters of call setup of an H.323 participant.

In the unformatted file this event contains the following fields (in addition to the standard event fields):

Table 2 Event fields for Event 15 - H323 CALL SETUP

Field	Description
<i>Participant Name</i>	The name of the participant.
<i>Participant ID</i>	The identification number assigned to the participant by the MCU.
<i>Connect Initiator</i>	Indicates who initiated the connection, as follows: 0 - MCU 1 - Remote participant Any other number - Unknown
<i>Min Rate</i>	The minimum line rate used by the participant. The data in this field should be ignored. For accurate rate information, see CDR event 31.
<i>Max Rate</i>	The maximum line rate achieved by the participant. The data in this field should be ignored. For accurate rate information, see CDR event 31.
<i>Source Party Address</i>	The IP address of the calling participant. A string of up to 255 characters.
<i>Destination Party Address</i>	The IP address of the called participant. A string of up to 255 characters.
<i>Endpoint Type</i>	The endpoint type, as follows: 0 - Terminal 1 - Gateway 2 - MCU 3 - Gatekeeper 4 - Undefined

Event 31 - PARTICIPANT CONNECTION RATE

This event includes the information of the connection line rate for ISDN and H.323 participants (not for SIP participants). This event is added to the CDR file each time the endpoint changes its connection bit rate.

In the unformatted file this event contains the following fields (in addition to the standard event fields):

Table 3 *Event fields for Event 31 - PARTICIPANT CONNECTION RATE*

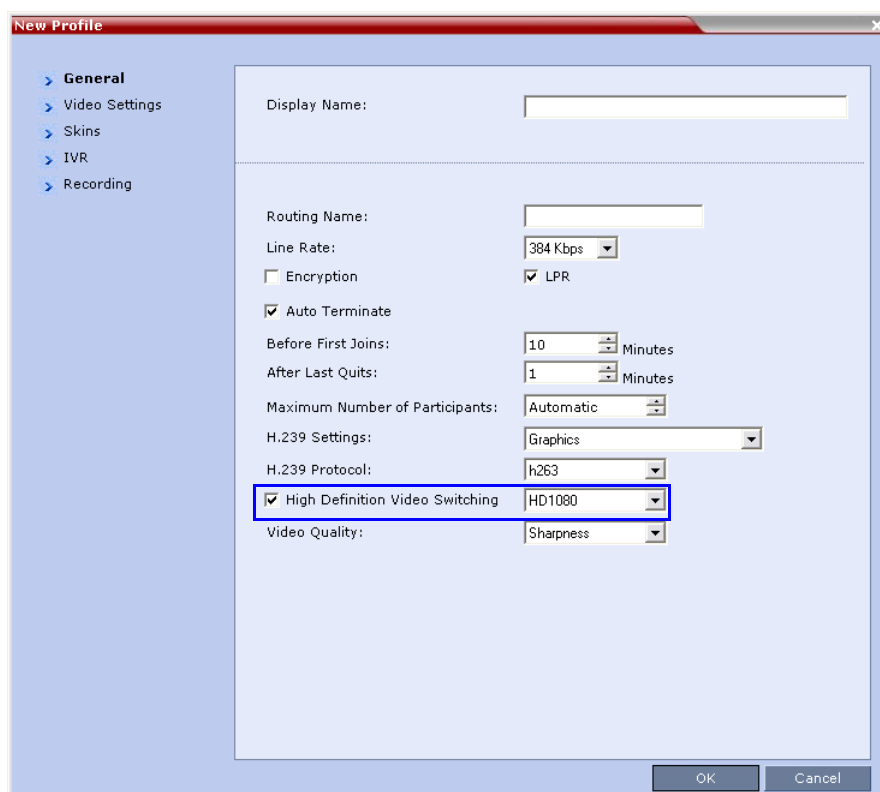
Field	Description
<i>Participant Name</i>	The participant name.
<i>Participant ID</i>	The identification number assigned to the participant by the MCU.
<i>Participant Current Rate</i>	The participant line rate in Kbps.

Detailed Description - Feature Changes

New Profile – High Definition Video Switching

Version 4.0, when working in *MPM+ Mode*, supports *HD 1080p* resolution in addition to *HD 720p* resolution, in both *CP* and *High Definition Video Switching* conferencing modes.

In *MPM+ Mode*, a drop-down menu has been added to the *New Profile – High Definition Video Switching* option enabling the user to select either HD resolution for *Video Switching* conferences.



The screenshot shows the 'New Profile' dialog box with the following settings:

- Display Name:** (Empty text field)
- Routing Name:** (Empty text field)
- Line Rate:** 384 Kbps (Dropdown menu)
- Encryption:** (Unchecked checkbox)
- LPR:** (Checked checkbox)
- Auto Terminate:** (Checked checkbox)
- Before First Joins:** 10 Minutes (Spinner)
- After Last Quits:** 1 Minutes (Spinner)
- Maximum Number of Participants:** Automatic (Spinner)
- H.239 Settings:** Graphics (Dropdown menu)
- H.239 Protocol:** h263 (Dropdown menu)
- High Definition Video Switching:** (Checked checkbox)
- HD Resolution:** HD1080 (Dropdown menu, highlighted with a blue box)
- Video Quality:** Sharpness (Dropdown menu)

Buttons at the bottom: OK, Cancel.

If *HD 1080p* is selected, endpoints that do not support *HD 1080p* resolution will connect as *Secondary (Audio Only)* participants.

Corrections and Known Limitations

Corrections Between Version 3.0 and Version 4.0

Table 4 Version 4.0 Corrections

No.	Category	Description	ID - VNGR#
1.	General	CPU usage alert occurs when the system is heavily loaded.	7796
2.	General	Rarely, ISDN participant calls disconnect.	8335
3.	General	Wrong secondary cause is displayed for H.323 participants.	8423
4.	General	Content may be delayed by 15-25 seconds when ISDN participants are connected to a system that is heavily loaded.	8454
5.	General	In the RMX Time dialog box, the status of the second active NTP server is always displayed as "Fail".	8471
6.	Interoperability	Tiling occurs in video on VCON HD3000 endpoint when connected to RMX.	7106
7.	Multilingual	In the Italian CDR, "Encryption" and "Taken from Service" are not translated.	7639
8.	NTP	RMX Time dialog box: While operating the external NTP (enable/ disable) the clock is updated after 2 minutes. When updating the time manually, the clock is updated after 10 seconds.	3629

Version 4.0 System Limitations

Table 5 Version 4.0 System Limitations

No.	Category	Description	ID - VNGR#	Workaround/ Remarks
1.	CDR	When the conference termination time is changed, the CDR is not updated.	1569	
2.	CDR	When a conference was terminated by an MCU reset, an incorrect status "Ongoing Conference" will be displayed in the CDR List pane.	9340	
3.	CDR	The Encryption field is missing from the CDR section.	3011	
4.	Gateway	All endpoints that dial-in to a conference using a Gateway receive identical names in the Participants pane.	1011	
5.	General	The <i>Click & View</i> menu doesn't appear in 64 Kbps calls.	3824	Use <i>RMX Web Client</i> .
6.	General	When moving from MPM+ to MPM mode (with only MPM cards installed in the MCU), the <i>Card Configuration Mode</i> , indicated in the <i>System Information</i> dialog box, remains in MPM+ Mode.	9729	Logout and then login to the RMX Web Client.
7.	Hardware	In D-type chassis, when hot-swapping an MPM card, unit failure may occur.	9571	Reset the MCU. Will be resolved in next version.
8.	HD	In HD Video Switching conferences, Tandberg endpoints may connect as Secondary when HD frame rate capabilities are less than 7.5 frames per second.	3089	Use HDCP.
9.	Interoperability	Faulty connection status is indicated when the RSS 2000 recording link is the only participant in a conference and its video stream is not synchronized.	3977	The video stream is synchronized when the first participant connects to the conference.
10.	Interoperability	HDX/VSX endpoints cannot connect directly to conferences while registered with Cisco Gatekeeper using the IP##NID string.	4652	Connect directly using the MCU IP Address via the Transit Entry Queue.

Table 5 *Version 4.0 System Limitations (Continued)*

No.	Category	Description	ID - VNGR#	Workaround/ Remarks
11.	Interoperability	Sony PCS G70 (v2.61) and Sony PCS-1(v3.41) endpoints cannot connect to conferences using SIP connections.	6902	Force the endpoints to connect using H.323 connection.
12.	Interoperability	The video of Sony G70 endpoint that is connected to a conference over ISDN at line rate of 128Kbps freezes when receiving Content from an HDX endpoint.	8605	
13.	Interoperability	Radvision ECS Gatekeeper set to Routed Mode is not forwarding the LPR parameters as required, causing HDX calls with LPR enabled to connect with no video.	9015	
14.	Interoperability	When switching Content sending from an HDX9004 to Aethra X7 and back, Content is not received by Aethra X7.	9677	
15.	Interoperability	PictureTel Concorde 4500 ZX endpoint connects to a conference as Secondary (no video) when using ISDN and H.261 capabilities.	9721	
16.	Interoperability	When dialing out to VSX6000A SIP endpoint from a CP conference at line rate of 1920Kbps, it connects as Secondary.	9816	
17.	Interoperability	HDX endpoints may experience packet loss when the HDX endpoint's LAN Speed is configured to 100MB.	9830	Set the endpoint <i>LAN Speed</i> and <i>Duplex Mode</i> to Auto.
18.	Interoperability	When the HDX endpoint connects in a SIP 4Mb CP call, the endpoint is connected at 1968Kb.	9839	
19.	Interoperability	Tandberg MXP SIP endpoints connect as "audio only" to a Video Switching HD conference.	9873	
20.	Interoperability	Rarely, when HDX 8004, HDX 8006 and Tandberg C90 endpoints capable of 1080p 30fps connect at line rate of 4 Mbps and resolution of 720p 30 fps, video sync loss may occur.	9611 9695 9871	Connect the endpoint at 1080p 30fps. Will be resolved in next version.

Table 5 Version 4.0 System Limitations (Continued)

No.	Category	Description	ID - VNGR#	Workaround/ Remarks
21.	Interoperability	H.323 link is connected as secondary when cascading with Tandberg MPS at 768Kbps, in both Video Switching and CP conferences.	7597/ 7598	
22.	IP	Static Routes table in IP Network Service does not function.	7734	
23.	ISDN/PSTN	When a busy signal is returned by a PSTN dial-out participant, the RMX does not redial, it disconnects the participant with "party hung-up-0" status.	4405	
24.	IVR	The volume of IVR Messages may be suppressed by the endpoints when played after DTMF codes have been used by the participants.	9191 9809 9834	
25.	Multilingual	The Display Name of undefined dial-in participant using HDX and VSX 7000 endpoints is displayed in English in the <i>RMX Web Client</i> .	5151	
26.	Multilingual	Multilingual Settings are not reflected on the Shelf Management login page and the multilingual flags appear in the Shelf Manager window even when they have not been selected in the Multilingual Settings pane.	5310 7577	
27.	RMX Web Client	When connecting directly to the Shelf Manager and selecting Diagnostic Mode the CNTL module does not enter the diagnostic mode and stays "Normal".	7557	Reset the MCU and then switch to Diagnostic Mode
28.	Security	If an RMX, operating in Secure Communication Mode, is downgraded to a version that does not support Secure Communication Mode (V2.0, V1.1), all connectivity to the RMX is lost.	8259	Cancel the Secure Mode before downgrading
29.	SIP	SIP participants cannot connect to a conference when the conference name contains blank spaces.	3276	
30.	Software Version	When downgrading from version 4.0 to version 3.0 the MPM card does revert to normal.	9565	Reset the MCU
31.	Web Client	When installing the <i>RMX Web Client</i> , Windows Explorer >Internet Options> Security Settings must be set to <i>Medium</i> or less.	2473	

Table 5 *Version 4.0 System Limitations (Continued)*

No.	Category	Description	ID - VNGR#	Workaround/Remarks
32.	Web Client	System Shut Down is not performed from the Hardware Monitor pane, although the button is clicked and the operation is confirmed.	9643	
33.	Web Client	Occasionally, during an ongoing conference, when selecting the Hardware Monitor menu the message “No connection with Switch” appears.	9829	

