



▶ Polycom[®] RMX[®]
1500/2000/4000
Release Notes

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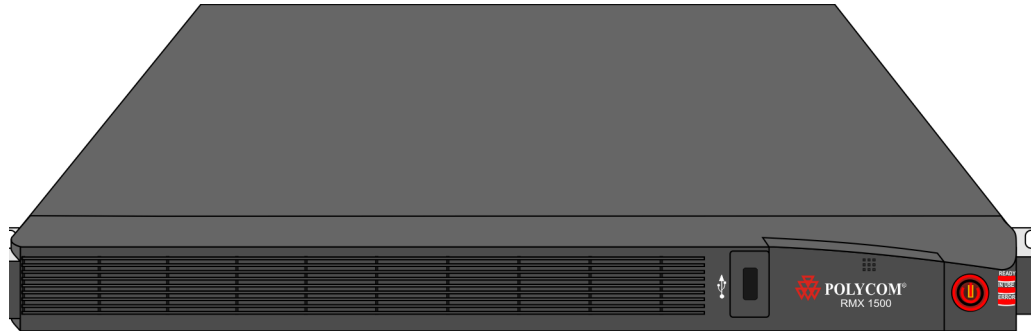
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New Hardware - RMX 1500

A new MCU is added to RMX family.



It has the key features of the RMX 2000 and RMX 4000 with the following additions/changes:

Table 1 RMX 4000 Additions and Changes

| | Feature Name | Description |
|---|---------------------|--|
| 1 | New card | New cards and modified components have been added to the Hardware. |
| 2 | System Capacity | One MPMx media card is installed on the system and this is reflected in the: <ul style="list-style-type: none"> • Network Services • Video/Voice Port Configuration • Resource Report |
| 3 | RMX Type Indication | RMX Banner and Welcome heading display the RMX Type accordingly. |
| 4 | Hardware Monitor | New and dedicated slots. New card properties. |

For detailed description of the new MCU attributes, see “Detailed Description - RMX 1500” on page 25.

New Hardware - MPMx Media Card

The new *MPMx* card (*Media Processing Module*) when installed in RMX running version 7.0 offers:

- Increased resource capacity
- New Symmetric HD Video resolutions 720p60 & HD1080p30 fps
- Support for H.264 High Profile

Two types of *MPMx* cards are available:

- *MPMx - S* (Single)
- *MPMx - D* (Double)

The following table lists the changes in Version 7.0 to support the new *MPMx* card:.

Table 2 *MPMx Card - Additions to Version 7.0*

| | Category | Feature Name | Description |
|----|----------|--------------------------------|--|
| 1. | General | Card Configuration Mode | A new <i>Card Configuration Mode - MPMx</i> has been added to support the new media card. |
| 2. | General | Hardware Monitor | The status and properties of the <i>MPMx</i> card can be viewed and monitored in the <i>Hardware Monitor</i> list pane. |
| 3. | General | Video/Voice Port Configuration | The <i>Resource</i> slider(s) in the <i>Video/Voice Port Configuration</i> dialog box reflect the <i>MPMx</i> card capacities. |
| 4. | General | Resource Report | The resource report reflects the <i>MPMx</i> card capacities. |
| 5. | General | Port Gauges | The <i>Video/Voice Port</i> gauges reflect the <i>MPMx</i> card capacities. |

Version 7.0 - New Features List

The following table lists the new features in Version 7.0.

Table 3 New Features List

| | Category | Feature Name | Card Configuration Mode | Description |
|----|------------|-----------------------------------|-------------------------|--|
| 1 | Video | H.264 High Profile | MPMx | The <i>H.264 High Profile</i> improves video quality and can reduce bandwidth requirements for video conferencing transmissions by up to 50%. |
| 2 | Video | New Symmetric HD Resolutions | MPMx | New Symmetric <i>HD</i> video resolutions <i>HD 1080p30</i> and <i>HD 720p60</i> have been added. |
| 3 | Video | Additional Call Rates | As per documented table | New <i>Call Rates</i> have been added. |
| 4 | Video | People+Content | MPM+ | <i>Polycom's</i> proprietary <i>People+Content</i> , which is the equivalent of <i>H.239</i> is supported in addition to <i>H.239</i> . |
| 5 | Audio | G. 728 | MPM+ | Industry standard <i>G.728</i> audio algorithm is supported for participants connecting with legacy or low bandwidth endpoints. |
| 6 | Conference | Permanent Conference | MPM, MPM+ and MPMx | A <i>Permanent Conference</i> is an ongoing conference with no pre-determined <i>End Time</i> continuing until it is terminated by an administrator, operator or chairperson. |
| 7 | Conference | Video Preview | MPM+ and MPMx | <i>RMX</i> users can preview the video sent from the participant to the conference (<i>MCU</i>) and the video sent from the conference to the participant. It enables the <i>RMX</i> users to monitor the quality of the video sent and received by the participant and identify possible quality degradation. |
| 8 | Conference | Personal Conference Manager (PCM) | MPM+ | The <i>Personal Conference Manager (PCM)</i> interface enables the conference chairperson to control various conference features using his/her endpoint's remote control device. |
| 9 | Conference | Message Overlay | MPM+ and MPMx | Using the <i>Message Overlay</i> option, a message can be sent to all the participants in a conference and displayed on their endpoint screens. |
| 10 | Conference | Content Broadcast Control | MPM+ and MPMx | <i>Content Broadcast Control</i> prevents the accidental interruption or termination of <i>H.239 Content</i> that is being shared in a conference by giving <i>Content Token</i> ownership to a specific endpoint via the <i>RMX Web Client</i> . |

Table 3 New Features List (Continued)

| | Category | Feature Name | Card Configuration Mode | Description |
|----|------------|---|-------------------------|---|
| 11 | Conference | Copy, Cut, Paste Participant | MPM, MPM+ and MPMx | The RMX user can Copy, Cut and Paste participants between different conferences running on the RMX. When used via the RMX Manager, the user can Copy, Cut and Paste participants between conferences running on different RMXs. |
| 12 | Conference | Copy, Paste Conference | MPM, MPM+ and MPMx | The RMX user can Copy and Paste conferences on the same RMX and, when used via the RMX Manager, between different RMXs. |
| 13 | General | Resolution Configuration | MPM, MPM+ and MPMx | The <i>Resolution Configuration</i> dialog box enables RMX administrators to override the predefined video resolution matrix. |
| 14 | General | High Resolution Slide Enhancements | MPM, MPM+ and MPMx | <i>Conference</i> and <i>Entry Queue IVR Services</i> now support customized <i>High Resolution Slides</i> in addition to the low and high resolution slides included in the default slide set. |
| 15 | General | Multiple Recording Links | MPM, MPM+ and MPMx | The <i>Multiple Recording Links</i> feature enables <i>Conference Recording Links</i> , defined on the RMX to be associated with <i>Virtual Recording Rooms (VRR)</i> , created and saved on the <i>Polycom® RSS™ 4000 Version 6.0 Recording And Streaming Server (RSS)</i> . |
| 16 | General | Auto Redial when Endpoint Drops | MPM, MPM+ and MPMx | The <i>Auto Redialing</i> option instructs the RMX to automatically redial IP and i participants that have been abnormally disconnected from the conference. |
| 17 | General | Multi-RMX Manager Export/Import RMX Configuration | MPM, MPM+ and MPMx | The RMX Manager configuration that includes the MCU list and the multilingual selection can be save to any workstation/ PC on the network and imported to any Multi-RMX Manager installed in the network. |
| 18 | SIP | SIP LPR | MPM, MPM+ and MPMx | <i>Lost Packet Recovery (LPR)</i> is supported for SIP calls. |
| 19 | SIP | SRTP | MPM+ | <i>Encryption</i> of SIP Media is supported using <i>SRTP (Secured Real-time Transport Protocol)</i> and the AES key exchange method. |
| 20 | SIP | ICE | MPM+ | <i>Interactive Connectivity Establishment (ICE)</i> provides a structure/protocol to unify the various NAT Traversal techniques that are used to cross firewalls. |

Version 7.0 - Changes to Existing Features

The following table lists the changes to existing features in Version 7.0.

Table 4 Feature Changes List

| | Category | Feature Name | Description |
|---|----------|--|--|
| 1 | Video | Limiting Maximum Resolution | The <i>Maximum Resolution</i> settings of the <i>Resolution Configuration</i> dialog box can be overridden by new fields that have been included in the <i>New Profile</i> and <i>New Participant</i> dialog boxes. |
| 2 | Video | Video Switching resolutions | The following Video Switching resolutions have been added to the <i>Video Switching Resolution</i> menu: <ul style="list-style-type: none"> • H.264 1080p30 • H.264 720p30 • H.264 SD 30 |
| 3 | Video | Auto Layout Changes | Two additional layouts are activated in Auto Layout Mode when there are: <ul style="list-style-type: none"> • 11 connected participants • 12 or more connected participants |
| 4 | Video | Auto Brightness | <i>Auto Brightness</i> detects and automatically adjusts the brightness of video windows that are dimmer than other video windows in the conference layout. |
| 5 | Audio | Audio Only Message | In this version, the administrator can enable an audio message that informs the participant of the lack of <i>Video Resources</i> in the <i>RMX</i> and that he/she is being connected as <i>Audio Only</i> . |
| 6 | Audio | <i>Audio Settings</i> tab in <i>New Profile</i> dialog box | A new tab <i>Audio Settings</i> has been added to the <i>New Profile</i> dialog box. It contains settings for: <ul style="list-style-type: none"> • Echo Suppression • Keyboard Noise Suppression • Audio Clarity |
| 7 | General | DTMF Forwarding Suppression | Forwarding of the DTMF codes from one conference to another over an ISDN cascading link can be limited to basic operations while suppressing all other operations once the connection between the cascaded conferences is established. |

Table 4 *Feature Changes List (Continued)*

| | Category | Feature Name | Description |
|---|----------|---|--|
| 8 | General | Integration with Polycom CMA™ Global Address Book | <p>The definition of the CMA IP address for the EXTERNAL_CONTENT_IP flag has changed and in version 7.0 only the IP address is entered (without http://).</p> <p>For more details, see RMX 1500/2000/4000 Administrator's Guide, "<i>Integrating the Polycom CMA™ Address Book with the RMX</i>" on page 5-23.</p> |

Version 7.0 - Interoperability Tables

Devices

The following table lists the devices with which Version 7.0 was tested.

Table 5 Version 7.0 Device Interoperability Table

| Device | Version |
|--|--|
| Gatekeepers/Proxies | |
| <i>Polycom CMA</i> | 5.0 build 41, 5.0.0.er54 / 5.3.0.er10 (beta) |
| <i>Polycom PathNavigator</i> | 7.0.12 |
| <i>Polycom SE200</i> | 3.00.07.ER001 |
| <i>Cisco gatekeeper</i> | 12.3 |
| <i>Radvision ECS gatekeeper</i> | 3.5.2.5 |
| <i>Iptel proxy</i> | 0.9.6 |
| <i>Microsoft OCS</i> | R1 / R2 3.5.6907 |
| <i>Broadsoft proxy</i> | r16 sp1 |
| Recorder | |
| <i>Polycom RSS 2000</i> | 4.0.0.001 360 |
| <i>Polycom RSS 4000</i> | 6.0.0.001 22237 |
| MCUs, Call Managers Network Devices and Add ins | |
| <i>Polycom MGC 25/50/100 and MGC+50/100</i> | 8.0.2 and 9.0.3 |
| <i>RMX 1000</i> | 2.1, 2.1.1 |
| <i>Polycom DMA 7000</i> | 2.0.0 build 11, 2.1 |
| <i>Avaya CM</i> | 5.2 |
| <i>Avaya ACM</i> | 2.1.016.4-18111, 943 |
| <i>Avaya IP Softphone</i> | R6.0 SP1 |
| <i>Cisco Call Manager</i> | 4.1, 8.0.5 |
| <i>Tandberg MCU</i> | D3.11 |
| <i>Tandberg MPS</i> | J3.3 |
| <i>Polycom VBP 5300LF-S25</i> | 9.1.5.1 |
| <i>Polycom Conferencing Add in for Microsoft Outlook</i> | 0.9.1 build 4 |
| <i>IBM Lotus Sametime</i> | 8.5.1 |
| Endpoints | |

Table 5 Version 7.0 Device Interoperability Table (Continued)

| Device | Version |
|---|-----------------------------------|
| <i>Polycom HDX Family</i> | 2.5.0.6 / 2.5.0.7 Beta |
| <i>Polycom HDX Durango</i> | 2.6.0.4659 / Cristal 2.6.1 (Beta) |
| <i>Polycom Telepresence (ITP) Systems</i> | 2.5 / 2.6 |
| <i>Polycom VSX product line</i> | 9.0.5.1 |
| <i>Polycom Viewstation</i> | 7.5.4 |
| <i>Polycom CMAD</i> | 5.0.0.0143, 5.0.0.0203 |
| <i>Polycom QDX6000</i> | 4.0 , 4.0.1 |
| <i>Polycom VVX1500</i> | 3.2.2.0191 / 3.2.2.081 |
| <i>Polycom ViaVideo PVX</i> | 8.0.4 |
| <i>Polycom VS 512</i> | 7.5.4 |
| <i>Polycom VSSP 128/384</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 |
| <i>Polycom V700 and Polycom V500</i> | 9.0.5.1 |
| <i>Polycom iPower 9000</i> | 6.2.1208 |
| <i>Soundstation IP3000</i> | 2.8 |
| <i>Aethra X3</i> | 11.3.23 |
| <i>Aethra X7</i> | 12.1.7 |
| <i>Aethra VegaStar Gold</i> | 6.0.49 |
| <i>Avaya IP Softphone</i> | R6 6.01.48 |
| <i>Avaya 1XC</i> | R1.020-SP2-1696 |
| <i>LifeSize</i> | 4.2.0.17, 4.6 |
| <i>LifeSize Room and Express</i> | 4.2.0.17, 4.6.1 (5) |
| <i>VVX1500</i> | 3.1.2.0256 |
| <i>DST B5</i> | 2.0 |
| <i>DST K60</i> | 2.0.1 |
| <i>DST K80</i> | 4.0 |
| <i>Sony PCS -XG80</i> | 2.0.4 |
| <i>Sony PCS -1</i> | 3.42 |
| <i>Sony PCS -G50</i> | 2.70 |
| <i>Sony PCS -G70</i> | 2.72 |
| <i>Sony PCS -TL50</i> | 2.42 |

Table 5 *Version 7.0 Device Interoperability Table (Continued)*

| Device | Version |
|------------------------------------|-----------------------------|
| <i>Tandberg 150 MXP</i> | F8.1 |
| <i>Tandberg MXP Product line</i> | F8.1, F9.0 (Beta) |
| <i>Tandberg Classic E-Series</i> | E5.3 PAL |
| <i>Tandberg 880 E</i> | F8.1 |
| <i>Tandberg EX90</i> | TC3.1.1.1 |
| <i>Tandberg C20</i> | 3.1 |
| <i>Tandberg E20</i> | TE3.0.0.-PreAlpha1 |
| <i>Tandberg Codec C60</i> | TC2.1.1.200802 |
| <i>Tandberg Edge95 MXP</i> | F8.2 NTSC |
| <i>RadVision E.P SCOPIA XT1000</i> | Ver 1.0.19 |
| <i>RadVision SCOPIA E.P</i> | RV-VC240-2 |
| <i>Microsoft OC client R2</i> | 3.5.6907.0, R2 3.5.6907.196 |

RMX Web Client

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

Table 6 Version 7.0 Environment Interoperability Table

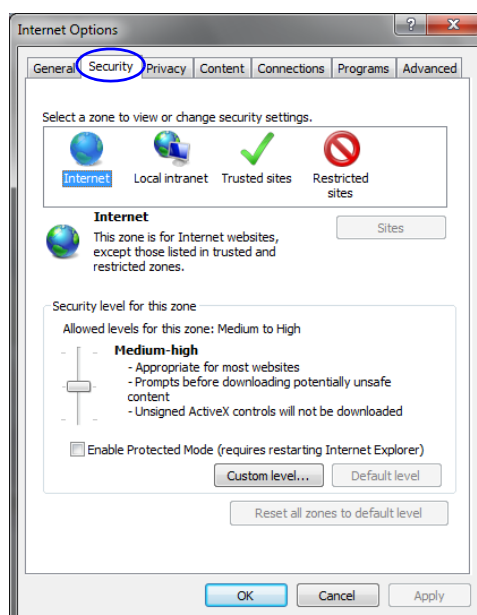
| Web Browser | Operating System |
|---------------------|------------------|
| Internet Explorer 6 | Windows XP™ |
| Internet Explorer 7 | Windows XP™ |
| | Windows Vista™ |
| | Windows 7 |
| Internet Explorer 8 | Windows 7 |

Windows 7™ Security Settings

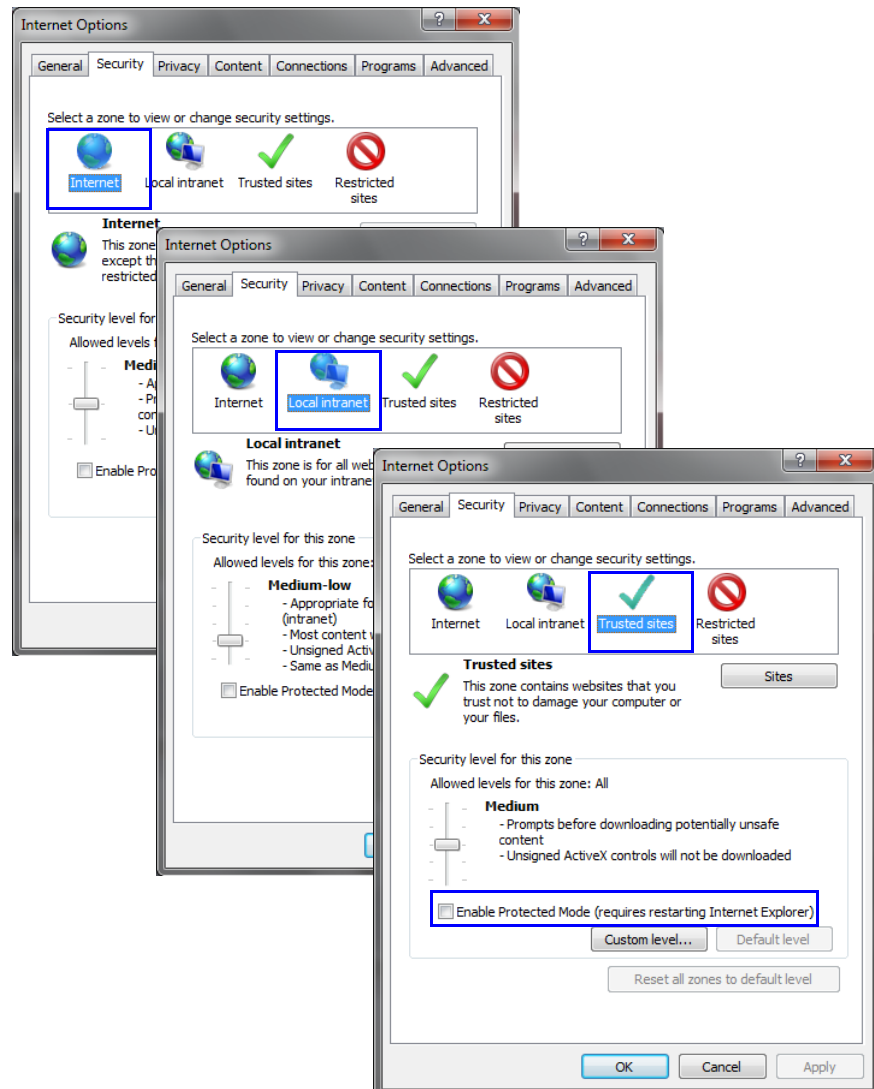
If *Windows7* is installed on the workstation, *Protected Mode* must be disabled before downloading the Version 7.0 software to the workstation.

To disable Protected Mode:

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



- 2 Clear the *Enable Protected Mode* check box for each of the following tabs:
 - *Internet*
 - *Local intranet*
 - *Trusted sites*



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

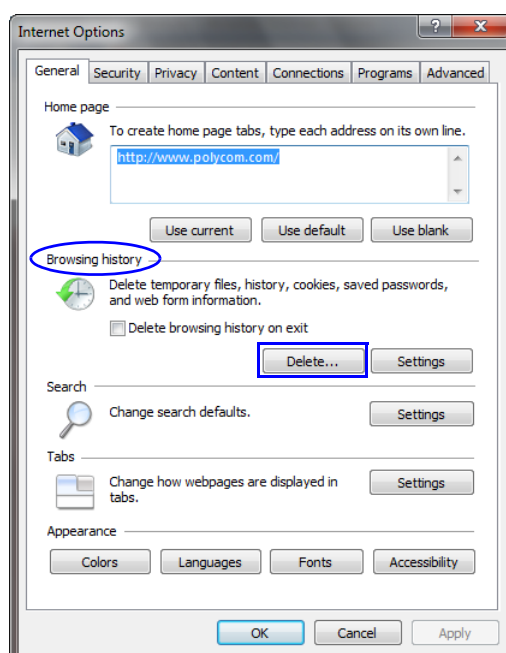
Internet Explorer 8 Configuration

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

To configure Internet Explorer 8:

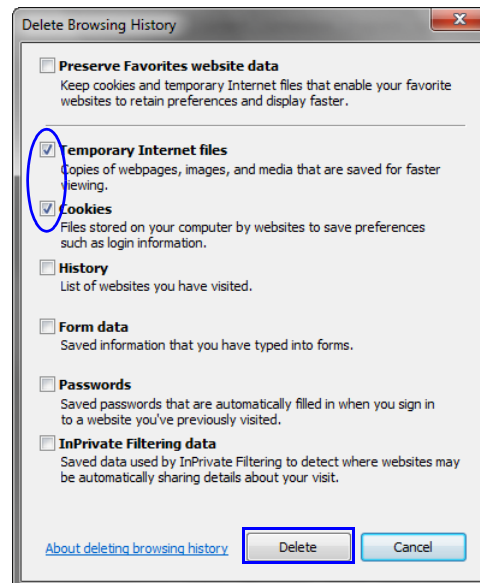
- 1 Close **all** browsers running on the workstation.
- 2 Use the *Windows Task Manager* to verify that no *iexplore.exe* processes are running on the workstation. If any processes are found, use the **End Task** button to end them.
- 3 Open *Internet Explorer* but do **not** connect to the RMX.
- 4 In the *Internet Explorer* menu bar select **Tools >> Internet Options**.

The *Internet Options* dialog box is displayed with *General* tab open.



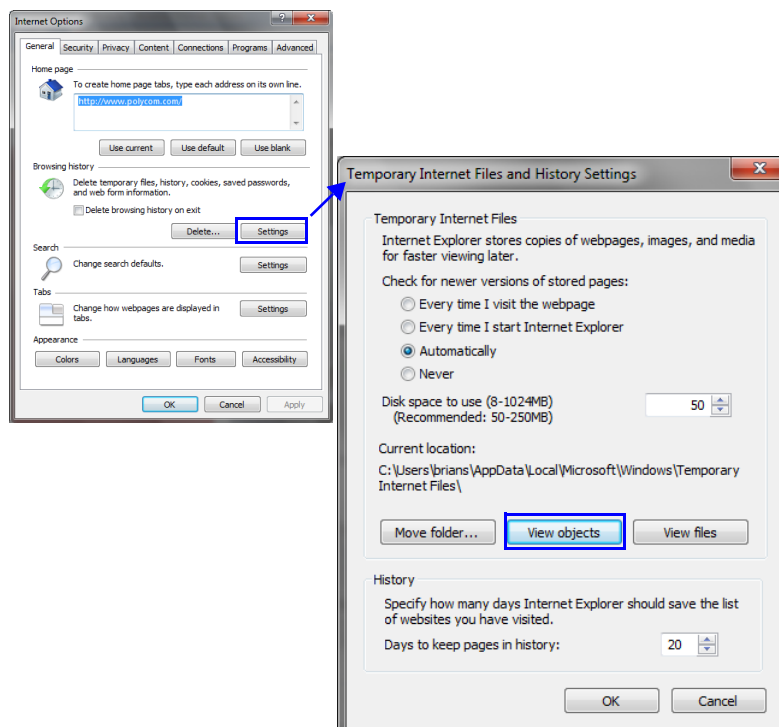
- 5 In the *Browsing history* section, click the **Delete** button.

The *Delete Browsing History* dialog box is displayed.



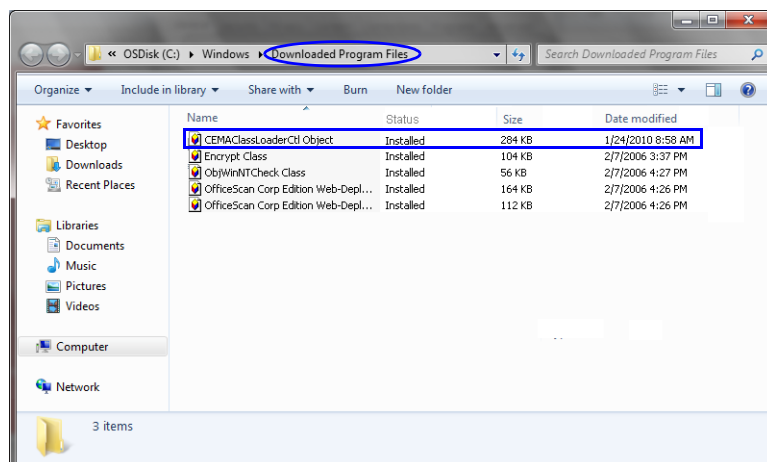
- 6 Select the **Temporary Internet files** and **Cookies** check boxes.
- 7 Click the **Delete** button.
- 8 The *Delete Browsing History* dialog box closes and the files are deleted.
- 9 In the *Internet Options* dialog box, click the **Settings** button.

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



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

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



- 11 Select the *CEMClassLoaderCtrl Object* file
- 12 Press the **Delete** key on the workstation.
- 13 Close the *Downloaded Program Files* folder and the *Temporary Internet Files and History Settings* dialog box.
- 14 In the *Internet Options* dialog box, click the **OK** button to save the changes and close the dialog box.

Polycom Solution Support

Polycom Implementation and Maintenance services provide support for Polycom solution components only. Additional services for supported third-party Unified Communications (UC) environments integrated with Polycom solutions are available from Polycom Global Services and its certified Partners. These additional services will help customers successfully design, deploy, optimize and manage Polycom visual communications within their UC environments.

Professional Services for Microsoft Integration is mandatory for Polycom Conferencing for Microsoft Outlook and Microsoft Office Communications Server integrations. For additional information and details please see http://www.polycom.com/services/professional_services/index.html or contact your local Polycom representative.

Version 7.0 - Upgrade Package Contents

The Version 7.0 upgrade package must be downloaded from the *Polycom Resource Center* and includes the following items:

- lan.cfg file
- LanConfigUtility.exe
- RMX Documentation
 - RMX 1500/2000/4000 Version 7.0 Release Notes
 - RMX 1500/2000/4000 Getting Started Guide
 - RMX 1500/2000/4000 Administrator's Guide
 - RMX 1500/2000/4000 Hardware Guide
 - RMX 1500/2000/4000 Quick Installation Booklet
 - Installation Quick Start Guide for RMX 1500/2000/4000
 - RMX Third Party Licenses
- External DB Tools Version 7.0
 - RMX 1500/2000/4000 External Database API Programmer's Guide
 - Sample Scripts
- RMX XML API Kit Version 7.0
 - RMX 1500/2000/4000 XML API Version 7.0 Release Notes
 - RMX 1500/2000/4000 XML API Overview
 - RMX 1500/2000/4000 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 1500/2000/4000 Version 7.0 Documentation:
 - Getting Started Guide:
French, German, Japanese, Russian, Simplified Chinese, Hebrew and Portuguese
 - Hardware Guide:
French, German, Japanese, Korean, Russian, Simplified Chinese, Spanish

Version 7.0 - Upgrade Procedure

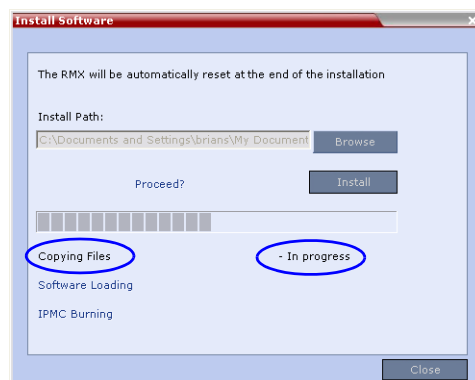


To maximize conferencing performance, especially in high bit rate call environments, a 1 Gb connection is recommended for each LAN connection.

Upgrading from Version 6.x to Version 7.0

- 1 Download the required software Version 7.0 from the *Polycom Resource Center* web site.
- 2 Obtain the Version 7.0 *Product Activation Key* from the *Polycom Resource Center* web site. For more information, see the *RMX Getting Stated Guide, "Procedure 1: First-time Power-up"* on page [2-19](#).
- 3 Backup the configuration file. For more information, see the *RMX Administrator's Guide, "Banner Display and Customization"* on page [18-88](#).
- 4 Install MCU Software Version 7.0.
On the RMX menu, click **Administration > Software Management > Software Download**.
- 5 Browse to the *Install Path*, selecting the **Version 7.0xx.bin** file in the folder where Version 7.0 is saved and click **Install**.

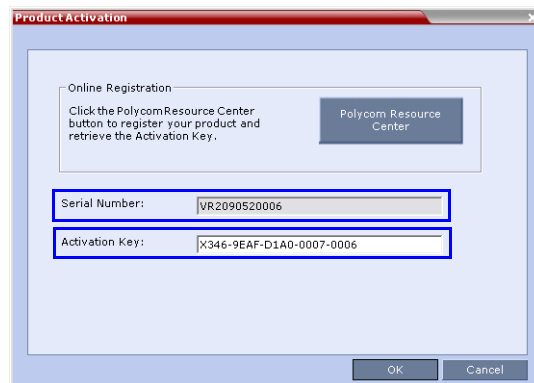
The *Install Software* information box indicates that the file copy is *In progress*.



At the end of the installation process the system displays an indication that the software copying procedure is *Completed* and that a new *Activation Key* is required.

- 6 Click the **OK** button.
- 7 On the RMX menu, click **Setup>Product Activation**.

The *Product Activation* dialog box is displayed with the serial number field completed.



- 8 In the *Activation Key* field, enter or paste the *Product Activation Key* obtained earlier and click the **OK** button.

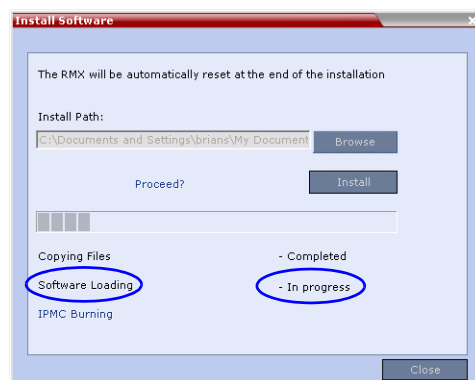
At the end of the *Product Activation* process the system displays an indication that the *Product Activation Key* was successfully installed.

- 9 Click the **OK** button.

A series of *Active Alarms* are displayed indicating the progress of the upgrade process.

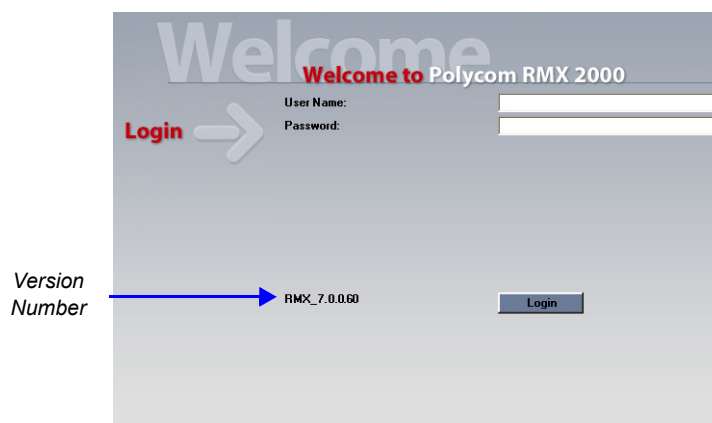
| Active Alarms (3) | | | | | | | |
|-------------------|------|----------|--------|---------|---------|--|--|
| ID | Time | Category | Level | Code | Process | Description | |
| 4 | Mon | General | System | Softwar | Cards | RTM IP software upgrade 0% board Id:5 | |
| 3 | Mon | General | System | Softwar | Cards | Media card software upgrade 25% board Id:2 | |
| 2 | Mon | General | System | Softwar | Cards | Media card software upgrade 25% board Id:1 | |

The *Install Software* information box indicates that *Software Loading* is in progress.



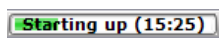
- 10 Wait two minutes and then perform *Hard Reset* on the RMX by switching it **OFF** and then **ON** again.
- 11 After about **30** minutes, **close and reopen the browser** and connect to the RMX. If the browser was not closed and reopened, the following error message is displayed: "*Browser environment error. Please reopen the browser*".

The version number in the *Welcome* screen has changed to 7.0.



- 12 In the *RMX Web Client – Welcome* screen, enter your *User Name* and *Password* and click **Login**.

In the *Main Screen* an *MCU State* indicator displays a progress indicator

 showing the time remaining until the system start-up is complete.



If the default POLYCOM user is defined in the RMX Web Client, an Active Alarm is created and the MCU status changes to MAJOR until a new Administrator user is created and the default user is deleted.

- 13 To use the IVR Services modified and new features they must be manually updated. For more details, see “*IVR Services Update*” on page 24.

Upgrading from Versions 2.x, 3.x, 4.x, 5.x to Version 7.0

The upgrade options from Versions 3.x, 4.x and 5.x to Version 7.0 are summarized in Table 7. When upgrading from Versions 2.x and 3.x, the upgrades to both the first and second intermediate versions must be performed.

Table 7 Upgrading to Version 7.0

| From Version | Activation Key Required | First Intermediate Version | Activation Key Required | Second Intermediate Version | Activation Key Required | To Version |
|--------------|-------------------------|----------------------------|-------------------------|-----------------------------|-------------------------|------------|
| 2 / 3 | Yes | 4.1.1 | Yes | 5.0.2 or 6.0 | Yes | 7 |
| 4 | Yes | 5.0.2 or 6.0 | Yes | None | | |
| 5 | No | 5.0.2 | | | | |

Upgrading from Version 5.0.2 to Version 7.0

- 1 Download the required software Version 7.0 from the *Polycom Resource Center* web site.



If *Windows 7™* is installed on the workstation, *Protected Mode* must be disabled before downloading the *Version 7.0* software to the workstation.
For more information see "*Windows 7™ Security Settings*" on page **10**.

- 2 Obtain the *Version 7.0 Product Activation Key* from the *Polycom Resource Center* web site. For more information, see the *RMX Getting Started Guide, "Procedure 1: First-time Power-up"* on page **2-19**.
- 3 Backup the configuration file. For more information, see the *RMX 2000/4000 Administrator's Guide, "Software Management"* on page **18-92**.
- 4 Install MCU Software Version 7.0.
On the *RMX* menu, click **Administration > Software Management > Software Download**.
- 5 Browse to the *Install Path*, selecting the **Version 7.0xx.bin** file in the folder where Version 7.0 is saved and click **Install**.

At the end of the installation process the *Install Software* dialog box indicates that the installed software is being checked. The system then displays an indication that the software was successfully downloaded and that a new activation key is required.
- 6 Click **OK** in the new activation key message box.
- 7 Click **Close** in the *Install Software* dialog box.
- 8 Click **Setup > Product Activation**.
The *Product Activation* dialog box is displayed with the serial number field completed.
- 9 In the *Activation Key* field, enter or paste the *Product Activation Key* obtained earlier and click **OK**.
- 10 When prompted whether to reset the *RMX*, click **Yes** to reset the *RMX*.



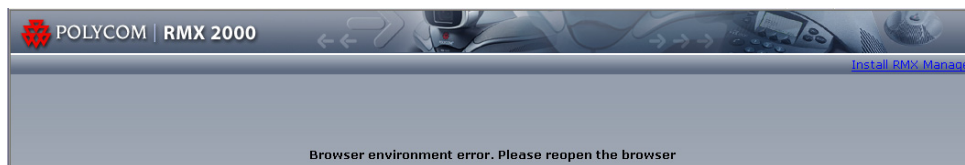
Sometimes when upgrading from version 5.0.2 to version 7.0.x the reset process fails. In such a case, you can try to connect to the MCU via the Shelf Management and reset the MCU from the Hardware Monitor or you can "hard" reset the MCU by turning the Power off and on again.

- 11 When prompted to wait while the *RMX* resets, click **OK**.
The upgrade procedure takes approximately 30 minutes.
Connection to the *RMX* is terminated and you are prompted to reopen the browser.



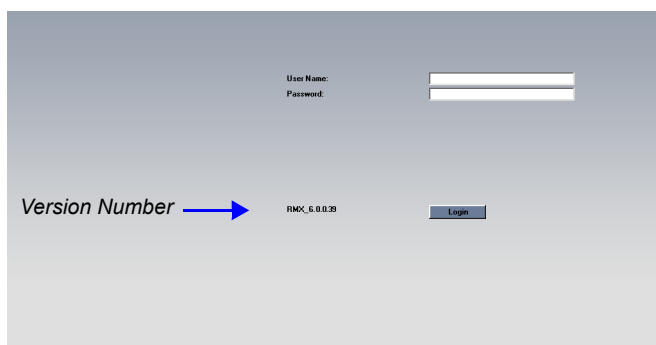
- 12 After approximately 30 minutes close and reopen the browser.
- 13 Enter the IP address of the *RMX Control Unit* in the browser's address line and press **Enter** to reconnect to *RMX*.
The browser displays a message indicating that it cannot display the requested page.
- 14 Refresh the browser periodically until connection to the *RMX* is established and the *Login* screen is displayed.

You may receive a message stating *Browser environment error. Please reopen the browser.*



- 15 **Optional.** Close and reopen the browser.
- 16 Enter the IP address of the *RMX Control Unit* in the browser's address line and press **Enter** to reconnect to RMX.

The *Login* screen is displayed. The version number has changed to 7.0.



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

In the *Main Screen* an *MCU State* indicator displays a progress indicator

Starting up (15:25) showing the time remaining until the system start-up is complete.



If the default POLYCOM user is defined in the RMX Web Client, an Active Alarm is created and the MCU status changes to MAJOR until a new Administrator user is created and the default user is deleted.



If the upgrade process fails, please contact Polycom support.

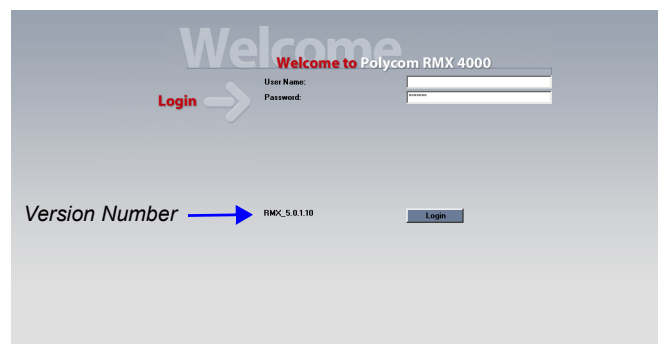
- 18 To use the IVR Services modified and new features they must be manually updated. For more details, see "*IVR Services Update*" on page 24.

Upgrading from Version 5.0/5.0.1 to Version 5.0.2

- 1 Download the required software Version 5.0.2 from the *Polycom Resource Center* web site.
- 2 Backup the configuration file. For more information, see the *RMX Administrator's Guide*, "*Banner Display and Customization*" on page 18-88.
- 3 Install MCU Software Version 5.0.2.
On the RMX menu, click **Administration > Software Management > Software Download**.
- 4 Browse to the *Install Path*, selecting the Version 5.0.2 **xx.bin** file in the folder where Version 5.0.2 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.

- 5 Click **Close** to close the *Install Software* dialog box.
- 6 When prompted whether to reset the MCU, click **Yes** to reset the MCU.
At the end of the installation process the system displays an indication that the software was successfully downloaded.
The upgrade procedure takes about **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*.
- 7 After about **30 minutes**, **close and reopen the browser** and connect to the RMX. If the browser was not closed and reopened, the following error message is displayed: "Browser environment error. Please reopen the browser".
The version number in the *Welcome* screen has changed to 5.0.2.



- 8 In the *RMX Web Client - Welcome* screen, enter your *Username* and *Password* and click **Login**.
In the *Main Screen* an *MCU State* indicator displays a progress indicator **Starting up (15:25)** showing the time remaining until the system start-up is complete.



If the default POLYCOM user is defined in the RMX Web Client, an Active Alarm is created and the MCU status changes to MAJOR until a new Administrator user is created and the default user is deleted.

Upgrading from Version 4.1.1 to Version 5.0.2



When upgrading from Versions 2.x and 3.x it is necessary to upgrade to Version 4.1.1 before upgrading to Version 5.0.2. For more details, see "Upgrading from Versions 2.x and 3.x to Version 4.1.1" on page 23.



When upgrading from Version 4.1.1, it is necessary to upgrade directly to version 5.0.2. Do not perform any intermediate upgrades.

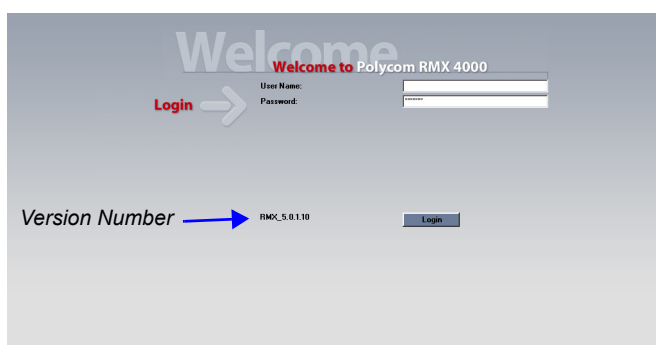
- 1 Download the required software Version 5.0.2 from the *Polycom Resource Center* web site.
- 2 Obtain the Version 5.0.2 *Product Activation Key* from the *Polycom Resource Center* web site. For more information, see the *RMX Getting Stated Guide*, "Procedure 1: First-time Power-up" on page 2-19.
- 3 Backup the configuration file. For more information, see the *RMX Administrator's Guide*, "Banner Display and Customization" on page 18-88.

- 4 Install MCU Software Version 5.0.2.
On the *RMX* menu, click **Administration> Software Management > Software Download**.
- 5 Browse to the *Install Path*, selecting the **Version 5.0.2 xx.bin** file in the folder where Version 5.0.2 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 is displayed with the serial number field completed.
- 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.
At the end of the installation process the system displays an indication that the software was successfully downloaded.
The upgrade procedure takes about **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*.



Sometimes when upgrading from version 4.x to version 5.0.x the reset process fails. In such a case, you can try to connect to the MCU via the Shelf Management and reset the MCU from the Hardware Monitor or you can “hard” reset the MCU by turning the Power off and on again.

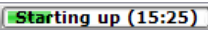
- 10 After about **30** minutes, **close and reopen the browser** and connect to the RMX. If the browser was not closed and reopened, the following error message is displayed: “Browser environment error. Please reopen the browser”.
The version number in the *Welcome* screen has changed to 5.0.2.



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



- If upgrading from version 4.x, after software installation, the MCU is in the last *Card Configuration Mode* that was set for the system before the software upgrade. For more information on the Card Configuration Modes, see the RMX 2000 Hardware Guide, “MPM/MPM+ and MPMx Configuration Modes” on page **1-22**.
- If upgrading from version 2.x or 3.x, after software installation, the MCU is in **MPM Card Configuration Mode**. For details on upgrading to MPM+, see the *RMX 2000 MPM to MPM+ Migration Procedure* document.

In the *Main Screen* an *MCU State* indicator displays a progress indicator  showing the time remaining until the system start-up is complete.



If 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 POLYCOM User is renamed or a new Administrator User is created and the default User is deleted.

Upgrading from Versions 2.x and 3.x to Version 4.1.1

- 1 Download the required software **Version 4.1.1** from the *Polycom Resource Center* web site.
- 2 Obtain the **Version 4.1.1 Product Activation Key** from the *Polycom Resource Center* web site. For more information, see the *RMX Getting Stated Guide*, "Procedure 1: First-time Power-up" on page **2-19**.
- 3 Backup the configuration file. For more information, see the *RMX Administrator's Guide*, "Banner Display and Customization" on page **18-88**.
- 4 Install MCU Software **Version 4.1.1**
On the RMX menu, click **Administration > Software Management > Software Download**.
- 5 Browse to the *Install Path*, selecting the **Version 4.1.1xx.bin** file in the folder where **Version 4.1.1** 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 is displayed with the serial number field completed.
- 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 may take up to 30 minutes during which time an *Active Alarm - System Upgrade* is displayed.

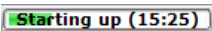
The RMX resets itself during the upgrade process and connection to the *RMX Web Client* may be lost. If the workstation is logged in to the *RMX Web Client* during the resets, the *MCU State* indicator at the bottom right corner of the *RMX Web Client* screen indicates *STARTUP*.

- 10 After 30 minutes, close and re-open the browser and connect to the RMX.

The version number in the *Welcome* screen has changed to 4.1.1



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

In the *Main Screen* an *MCU State* indicator displays a progress indicator  showing the time remaining until the system start-up is complete.

IVR Services Update

When upgrading from version 4.0 and earlier, Operator Assistance and the Gateway calls options require that the IVR Service includes specific (new) DTMF Codes and voice messages that are not automatically added to existing IVR Services in order to avoid conflicts with existing DTMF codes. Therefore, to use these options, new Conference and Entry Queue IVR Services must be created.

In Version 6.0, recording can be controlled from the HDX remote control using the designated recording buttons. This is enabled by changing the existing definitions of the DTMF codes of the Roll Call and Recording actions in the Conference IVR Services already defined in the RMX.

In Version 7.0, PCM for ISDN participants is enabled by a DTMF code. The code must be added to the *DTMF Codes* tab to enable the PCM for ISDN participants. Default value is 1.

To modify the Conference IVR Service:

- 1 In the IVR Services list, double-click the service to modify or right click the service and select Properties.
- 2 To add the gateway voice messages and dial tones, click the **General** tab and select the appropriate *.wav files.
- 3 To modify the DTMF codes, click the **DTMF Codes** tab.
- 4 Modify the DTMF codes as follows:

Table 8 DTMF Code Changes

| Action | Existing DTMF Code | New DTMF Code |
|--|--------------------|---------------|
| <i>Enable Roll Call</i> | *32 | *42 |
| <i>Disable Roll Call</i> | #32 | #42 |
| <i>Roll Call Review Names</i> | *33 | *43 |
| <i>Roll Call Stop Review</i> | #33 | #43 |
| <i>Start/Resume Recording</i> | *73 | *3 |
| <i>Stop Recording</i> | *74 | *2 |
| <i>Pause Recording</i> | *75 | *1 |
| <i>Request Private Assistance</i> | | *0 |
| <i>Request Assistance for the conference</i> | | 00 |
| <i>PCM (for ISDN participants only)</i> | | ## |

- 5 To add the Operator Assistance Options, click the **Operator Assistance** tab and select the appropriate options and messages.

For details on modifying the IVR Services, see *RMX 2000 Administrator's Guide*, "Defining a New Conference IVR Service" on page [14-9](#).

Detailed Description - RMX 1500

The RMX 1500 natively supports multiple network types - IP (H.323, SIP), PSTN, and ISDN - to extend the power of unified collaboration within the enterprise.

The Polycom RMX™ 1500 straight forward user and administrator interface is the same as for the RMX 2000/4000.

The RMX™ 1500 Real-time Media Conference Platform offers up to 90 video resources and 360 audio resources. For detailed description of the RMX 1500 hardware components, see the Polycom *RMX 1500 Hardware Guide*.

Card Configuration Mode

The RMX 1500 operates in the MPMx Card Configuration Mode.

System Capacities

The following table summarizes the different system capacities

Table 1-1 System Resource Capacities According to Video Resolution

| Video Resolution | Resources with MPMx |
|--------------------------|-------------------------|
| <i>HD Support</i> | CP / VSW |
| <i>PSTN</i> | 120 |
| <i>VOIP</i> | 360 |
| <i>ISDN</i> | 60 (128 Kbps) - 4 E1/T1 |
| <i>CIF H.263</i> | 60 |
| <i>CIF H.264</i> | 90 |
| <i>SD</i> | 60 |
| <i>4CIF</i> | 30 |
| <i>720p30</i> | 30 |
| <i>1080p30fps/720p60</i> | 15 (Symmetric) |
| <i>720p VSW 2Mb</i> | 80 |
| <i>1080p VSW 2Mb</i> | 80 |
| <i>720 VSW 4Mb</i> | 60 |
| <i>1080p VSW 4Mb</i> | 40 |
| <i>1080p VSW 6Mb</i> | 20 |

Resource Capacities

On the RMX 1500 there is no management, meaning that the services compete with each other - each time a network service receives a call if there are available resources the call is allocated available resources.

On the RMX 1500 all IP addresses have their own physical port as opposed to the RMX 2000 where all IP addresses shared an identical physical port

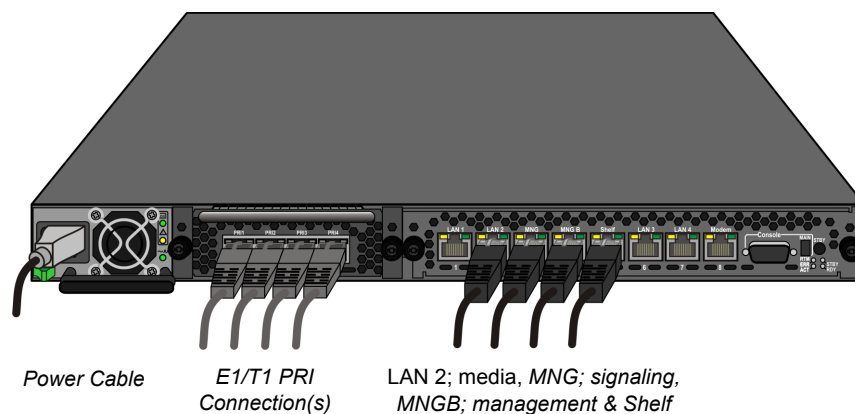
Table 1-2 System Resource Capacities According to Video Resolution

| Video Resolution | Resources with MPMx |
|-------------------|-------------------------|
| HD Support | CP / VSW |
| PSTN | 120 |
| VOIP | 360 |
| ISDN | 60 (128 Kbps) - 4 E1/T1 |
| CIF H.263 | 60 |
| CIF H.264 | 90 |
| SD | 60 |
| 4CIF | 30 |
| 720p30 | 30 |
| 1080p30fps/720p60 | 15 (Symmetric) |
| 720p VSW 2Mb | 80 |
| 1080p VSW 2Mb | 80 |
| 720 VSW 4Mb | 60 |
| 1080p VSW 4Mb | 40 |
| 1080p VSW 6Mb | 20 |

Network Connectivity

On the RMX 1500 Media and Signaling are on the same network, but have separate IP addresses. However, Management of the RMX is separate network from Media & Signaling.

All IP addresses have separate physical LAN connector.



RMX 2000 Rear Panel View with AC Power and Communication Cables

All signaling communications are processed on a single stack of the Intel Processor on the MCU.

Port Modifications

On the RMX 1500 all IP addresses have their own physical port as opposed to the RMX 2000 where all IP addresses shared a single physical port.

Hardware Monitoring

In the RMX 1500, component information can be viewed in the *Hardware Monitor* section.

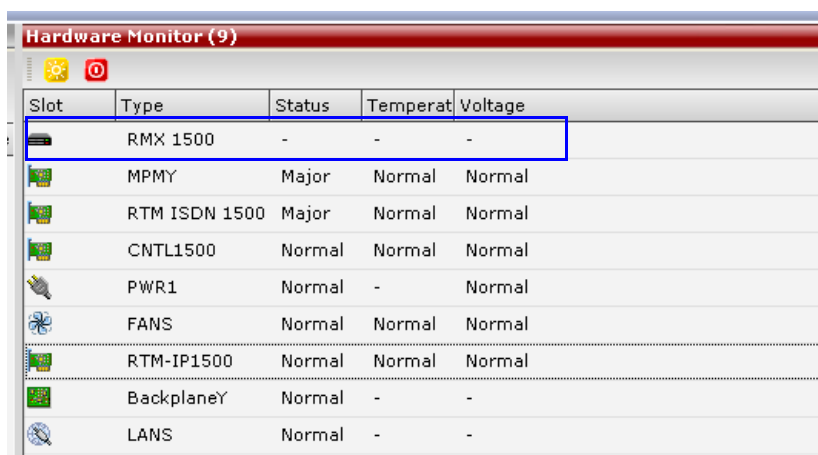
The properties displayed for the hardware components will vary according to the type of component viewed. These component properties

can be grouped as follows:

- MCU Properties (RMX 1500)
- Card Properties (RTM IP 1500, RTM ISDN)
- Supporting Hardware Components Properties (MPMx, Backplane, FANS, LAN)

Hardware Monitor - Slot Components

On the RMX 1500, each internal component can be viewed via the Hardware Monitor.



| Slot | Type | Status | Temperat | Voltage |
|------|---------------|--------|----------|---------|
| | RMX 1500 | - | - | - |
| | MPMY | Major | Normal | Normal |
| | RTM ISDN 1500 | Major | Normal | Normal |
| | CNTL1500 | Normal | Normal | Normal |
| | PWR1 | Normal | - | Normal |
| | FANS | Normal | Normal | Normal |
| | RTM-IP1500 | Normal | Normal | Normal |
| | BackplaneY | Normal | - | - |
| | LANS | Normal | - | - |

Table 2 RMX 1500 Slot Components

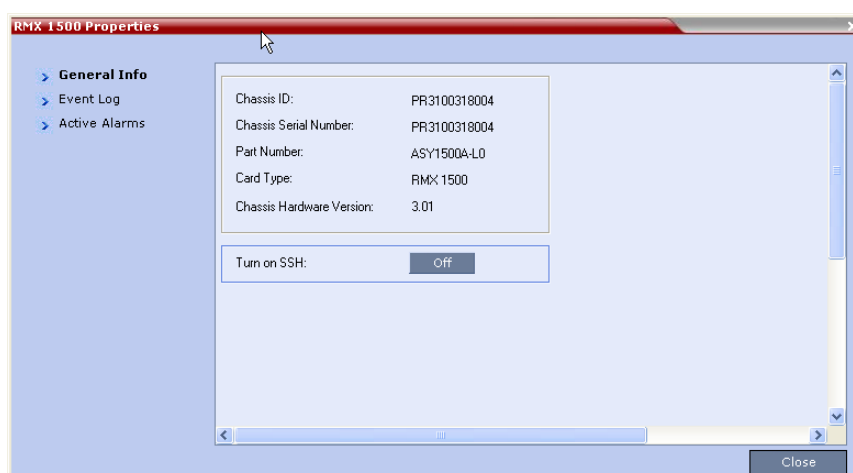
| Card/Component | Requirement |
|-----------------|---|
| MPMx Media Card | (Internal Component). Build-in MPMx card. The internal media card requires the RTM IP 1500 card. |
| RTM ISDN 1500 | (Optional) ISDN card for 4 E1/T1 connections. This card is field replaceable. |
| CNTL 1500 | (Internal Component). Internal Management of the system. |
| Power Supply | Mandatory. Supplies AC Power to the RMX. This unit is not field replaceable. |

Table 2 RMX 1500 Slot Components

| Card/Component | Requirement |
|--------------------------|---|
| Fan (Internal Component) | (Internal Component). Provides cooling for the internal RMX components. |
| RTM-IP 1500 | Mandatory. Contains an Ethernet Switch that manages the network of the system, routes data between the cards and components of the system and provides connectivity to external IP networks. This unit is not field replaceable. |
| BackplaneY | (Internal Component). Data Routing. |
| LANS | (Internal Component). Provide Network access. |

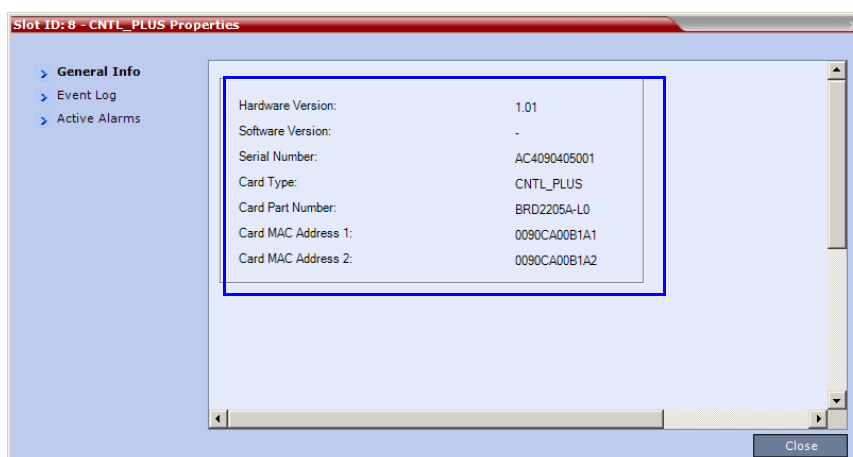
RMX 1500 Properties

The RMX 1500 Properties - General Info tab.



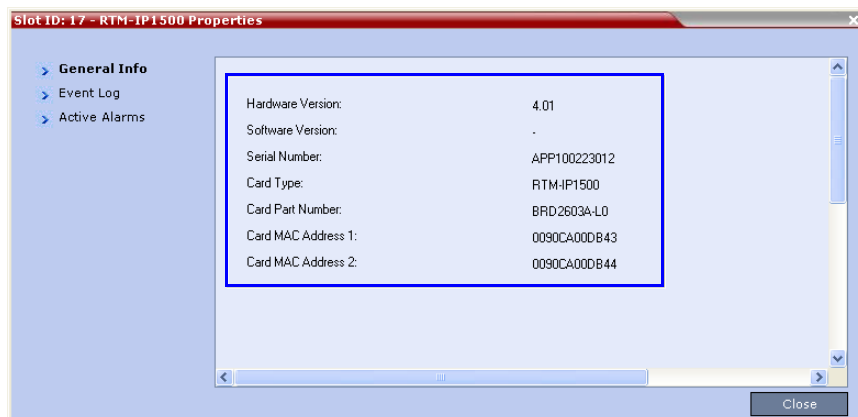
CNTL 1500 Properties

The CTRL_PLUS Properties - General Info tab.



RTM IP 1500 Properties

The *RTM IP Properties - General Info* tab.



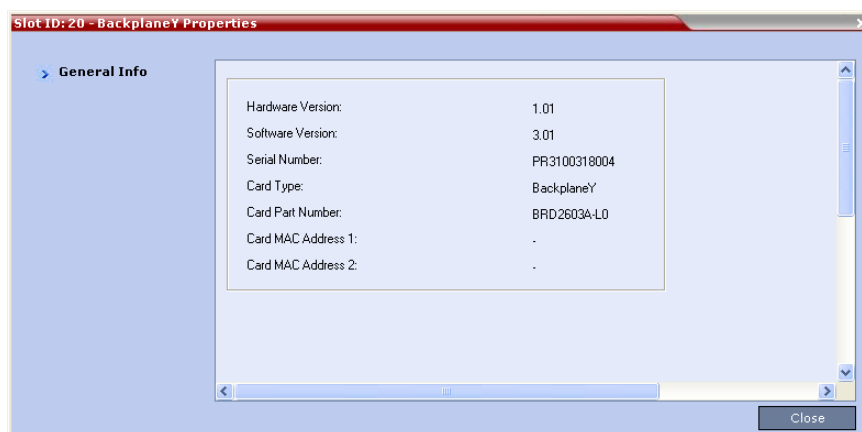
LAN Unit List Properties

The *LAN Unit List Properties*.

| Lan List (4) | | | | |
|--------------|------|--------------|----------|--|
| Slot | Port | Type | Status | |
| | | | | |
| | 2 | Management 1 | Active | |
| | 1 | Modem | Inactive | |
| | 6 | Shm | Active | |
| | 3 | Signaling 1 | Active | |

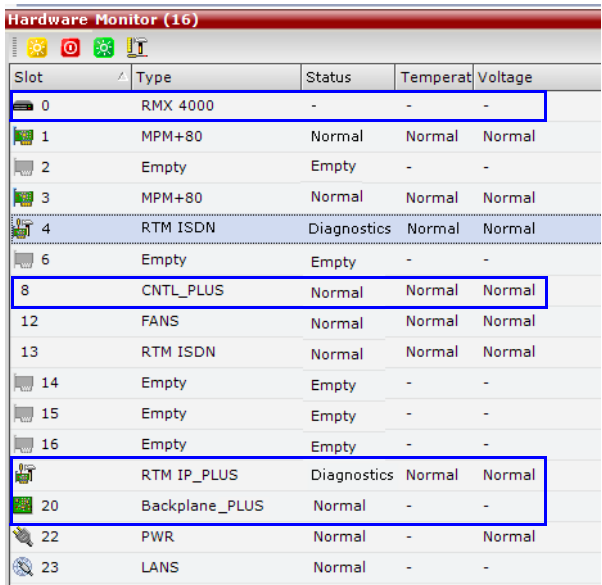
Backplane 1500 Properties

The *Backplane_PLU Properties - General Info* tab.



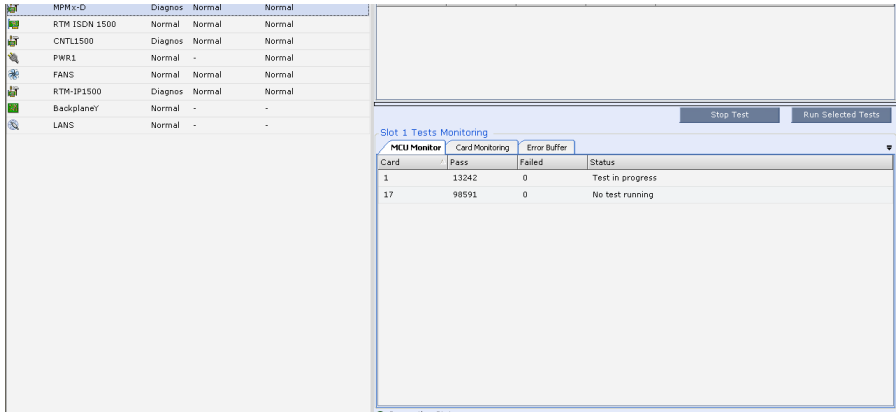
Hardware Monitor Component Diagnostics

In the *Hardware Monitor Diagnostics* pane, new components are added to the UI:



| Slot | Type | Status | Temperat | Voltage |
|------|----------------|-------------|----------|---------|
| 0 | RMX 4000 | - | - | - |
| 1 | MPM+80 | Normal | Normal | Normal |
| 2 | Empty | Empty | - | - |
| 3 | MPM+80 | Normal | Normal | Normal |
| 4 | RTM ISDN | Diagnostics | Normal | Normal |
| 6 | Empty | Empty | - | - |
| 8 | CNTL_PLUS | Normal | Normal | Normal |
| 12 | FANS | Normal | Normal | Normal |
| 13 | RTM ISDN | Normal | Normal | Normal |
| 14 | Empty | Empty | - | - |
| 15 | Empty | Empty | - | - |
| 16 | Empty | Empty | - | - |
| | RTM IP_PLUS | Diagnostics | Normal | Normal |
| 20 | Backplane_PLUS | Normal | - | - |
| 22 | PWR | Normal | - | Normal |
| 23 | LANS | Normal | - | - |

New components have been added to the *Hardware Monitor - Diagnostics Test* pane:



| MPM+80 | Diagnos | Normal | Normal |
|---------------|---------|--------|--------|
| RTM ISDN 1500 | Normal | Normal | Normal |
| CNTL1500 | Diagnos | Normal | Normal |
| PWR1 | Normal | - | Normal |
| FANS | Normal | Normal | Normal |
| RTM-IP1500 | Diagnos | Normal | Normal |
| Backplane1 | Normal | - | - |
| LANS | Normal | - | - |

Stop Test

Run Selected Tests

Slot 1 Tests Monitoring

| Card | Pass | Failed | Status |
|------|-------|--------|------------------|
| 1 | 13242 | 0 | Test in progress |
| 17 | 98591 | 0 | No test running |

Video/Voice Port Configuration and Resource Report Changes

No reset is required when changing the *Video/Voice Port Configuration* on the RMX 1500.

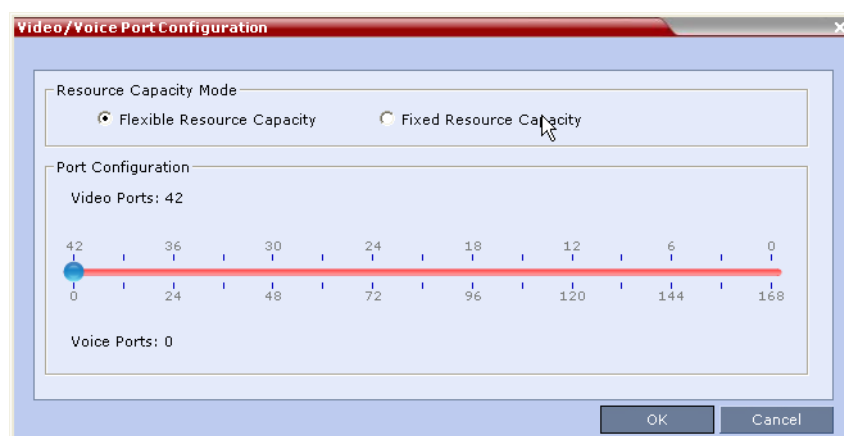
When switching between *Flexible Resource Capacity* and *Fixed Resource Capacity* modes, no reset is required. However, the Video/Voice Configuration slider cannot be changed while there are ongoing conferences on the RMX 1500.



Flexible Resource Capacity is default resource allocation mode on the RMX 1500.

The Video and Audio resource capacities on the RMX 1500 are a maximum of:

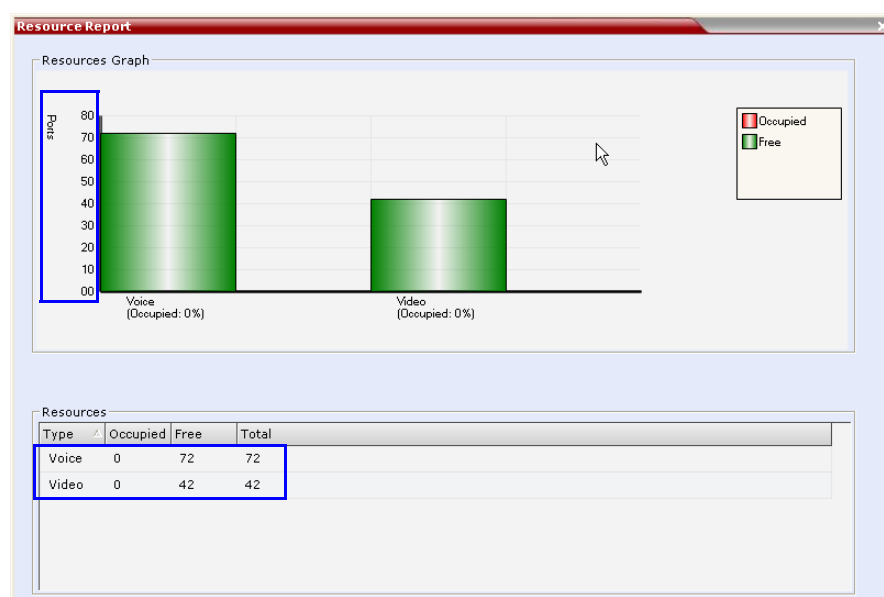
- 90 Video Ports
- 360 Audio Ports



The dialog box shows the 'Resource Capacity Mode' with 'Flexible Resource Capacity' selected. The 'Port Configuration' section shows a slider for 'Video Ports' ranging from 0 to 168, with a blue dot at 42. The 'Voice Ports' are set to 0. The 'OK' and 'Cancel' buttons are at the bottom right.

The *Resource Capacity Modes* are identical to the RMX 2000/4000.

The resource capacity of RMX 1500 can be viewed in the Resource Report pane:



RMX 1500 Banner

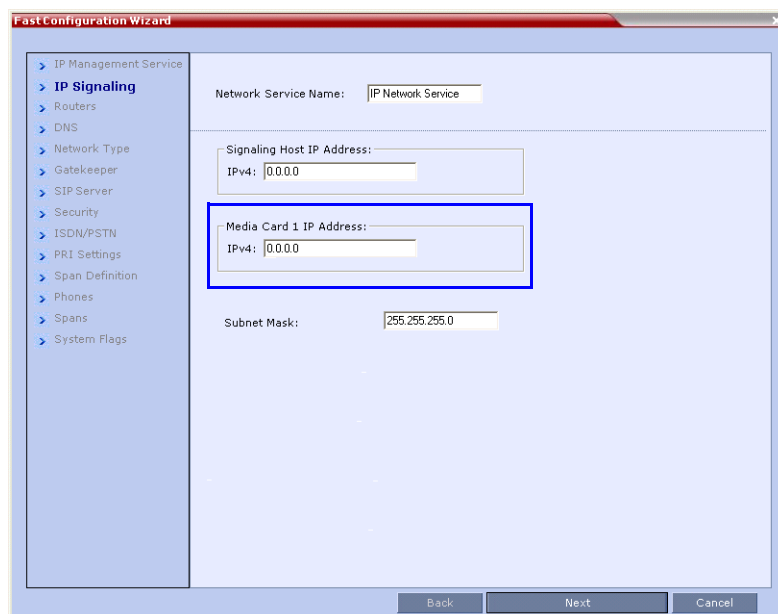
The RMX model (RMX 2000/RMX 4000/RMX 1500) is indicated in the RMX Web Client banner and in the Welcome heading.



Network Service Addition

Fast Configuration Wizard - RMX 1500

The *Fast Configuration Wizard* - *IP Signaling* tab is available on the RMX 1500. A single IP Address field for the MPMY card is added to the *IP Signaling Tab*.



Detailed Description - MPMx Media Card

RMX Version 7.0.x supports the latest *MPMx* (Media Processing Module) card which increases the RMX's capacity and capabilities.

When *MPMx* cards are installed, the RMX operates in *MPMx Mode* giving the administrator enhanced control and monitoring of *Resource Capacity* and usage within the system.



MPMx cards are supported only with **D-type** chassis and software version 7.0.

Table 3 lists the maximum capacities of *RMX 4000*, *RMX 2000* and *RMX 1500* when used with *MPMx* cards.

Table 3 *MPMx Capacities - RMX 4000/2000/1500*

| Maximum Number of: | RMX4000 | RMX2000 | RMX1500 |
|---|---------|---------|---------|
| <i>CIF Resources</i> | 360 | 180 | 90 |
| <i>H.264 SD Resources</i> | 240 | 120 | 60 |
| <i>H.263 4CIF Resources</i> | 120 | 60 | 30 |
| <i>HD 720p 30fps Resources</i> | 120 | 60 | 30 |
| <i>HD 720p 60fps Resources</i> | 60 | 30 | 15 |
| <i>HD 1080p 30 fps Resources</i> | 60 | 30 | 15 |
| <i>PSTN Audio Resources</i> | 400 | 400 | 120 |
| <i>VoIP Audio Resources</i> | 1440 | 720 | 360 |
| <i>Video Participants in a Conference</i> | 180 | 180 | 90 |
| <i>Conferences</i> | 800 | 400 | 400 |
| <i>Meeting Rooms</i> | 2000 | 1000 | 1000 |
| <i>Entry Queues</i> | 80 | 40 | 40 |
| <i>Profiles</i> | 80 | 40 | 40 |
| <i>Conference Templates</i> | 200 | 100 | 100 |
| <i>SIP Factories</i> | 80 | 40 | 40 |
| <i>IP Services</i> | 1 | 1 | 1 |
| <i>ISDN Services</i> | 2 | 2 | 2 |
| <i>IVR Services</i> | 80 | 40 | 40 |

Table 3 MPMx Capacities - RMX 4000/2000/1500 (Continued)

| Maximum Number of: | RMX4000 | RMX2000 | RMX1500 |
|---|-----------|-----------|-----------|
| Recording Links | 20 | 20 | 20 |
| IVR Video Slides | 150 | 150 | 150 |
| Reservations (Internal Scheduler) | 4000 | 2000 | 2000 |
| Log Files (1Mb max.) | 8000 | 4000 | 4000 |
| CDR Files | 4000 | 2000 | 2000 |
| Fault Files | 1000 | 1000 | 1000 |
| Number of Participant alerts | Unlimited | Unlimited | Unlimited |
| HTTP (Web) clients connected to the MCU | 20 | 20 | 20 |
| Address Book entries | 4000 | 4000 | 4000 |
| Users | 100 | 100 | 100 |

Front Panel & LEDs

In terms of Look and Feel and LED functionality, the MPMx front panel is identical to the MPM+.

Resource Capacity

Each MPMx card increases the MPMx card resource capacities. HD720p60 and HD1080p30 symmetric resolutions are now supported with MPMx.

Table 4 summarizes resource capacities of the various cards that can be installed in an RMX.

Table 4 MPMx, MPM+ and MPM – Resource Capacity per Resolution

| Resource Type | Maximum Possible Resources Per Card | | |
|-------------------------------|-------------------------------------|------|------|
| | MPM | MPM+ | MPMx |
| HD720p60/HD1080p30 Symmetric | - | - | 15 |
| HD720p60/HD1080p30 Asymmetric | - | 10 | - |
| HD720p30 | 10 | 20 | 30 |
| SD | 10 | 30 | 60 |
| CIF (H.264) | 40 | 80 | 90 |
| CIF (H.263) | 40 | 80 | 60 |

Table 4 MPMx, MPM+ and MPM – Resource Capacity per Resolution (Continued)

| Resource Type | Maximum Possible Resources Per Card | | |
|-------------------|-------------------------------------|------|------|
| | MPM | MPM+ | MPMx |
| VSW 2Mbps | 40 | 80 | 90 |
| VSW 4Mbps | 20 | 40 | 30 |
| VSW 6Mbps | - | 20 | 20 |
| Audio only (VoIP) | 200 | 400 | 360 |

Table 2 summarizes the video capacities of the two MPMx card assemblies.

Table 5 MPMx – Resource Capacity per Card

| Resource Type | MPMx - S | MPMx - D |
|------------------------|----------|---------------------|
| Voice | 180 | 360 |
| H.263 CIF | 30 | 60 |
| H.263 4CIF15 | 15 | 30 |
| H.264 CIF/VSW | 45 | 90 |
| SD | 30 | 60 |
| HD720p30 | 15 | 30 |
| HD720p60/ HD1080p30 | 8 | 15 (Symmetrical) |

Conferencing Capacities.

Table 6 RMX 2000/4000 – Conferencing Capacity per Card Type

| Resource Type | RMX 2000 | | | RMX 4000 | |
|--|----------|------|------|----------|------|
| | MPM | MPM+ | MPMx | MPM+ | MPMx |
| Maximum number of VOIP participants in a conference | 800 | 800 | 720 | 800 | 720 |
| Maximum number of video participants in a conference | 160 | 160 | 180 | 160 | 180 |
| Maximum number of conferences | 200 | 800 | 800 | 800 | 800 |

MPMx Guidelines

MPMx, MPM+ and MPM Modes

- MPMx, MPM+ and MPM cards installed in the system cannot be used simultaneously. Therefore, the RMX can operate in either *MPM*, *MPM+* or *MPMx* mode.
- **MPMx Mode** is the mode in which the RMX operates to fully utilize the increased power and capacity of *MPMx* cards.
- ISDN support is the same as for MPM+ cards.
- G.719 audio algorithm is not supported with MPMx.

Operating Mode Selection During Startup / Restart

- When started with Version 7.0 installed, the RMX enters *MPMx Mode* by default when no media cards are installed.



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

System Information Changes

The *System Information* includes *License Information*, and general system information, such as system memory size and *Media Card Configuration Mode*, which in version 7.0 includes the *MPMx Mode*.

Table 7 summarizes the *Operating Mode After Next Restart* resulting from of adding or swapping *MPM/MPM+/MPMx* cards in a running system.

Table 7 RMX Card Configuration Mode After Next Restart

| Current Operating Mode | Media Cards Installed | Card(s) Supported | Card(s) Disabled | Operating Mode After Next Restart |
|------------------------|-----------------------|-------------------|------------------|-----------------------------------|
| MPMx | MPM | None | All | MPM |
| | MPM+ | None | All | MPM+ |
| | MPM and MPMx | MPMx Only | MPM | MPMx |
| | MPM+ and MPMx | MPMx Only | MPM+ | MPMx |

Table 7 RMX 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 | None | All | MPM |
| | MPM+ | All | None | MPM+ |
| | MPM and MPM+ | MPM+ Only | MPM | MPM+ |
| | MPM+ and MPMx | MPM+ Only | MPMx | MPMx |
| MPM | MPM | All | None | MPM |
| | MPM+ | MPM Only | MPM+ | MPM+ |
| | MPM and MPM+ | MPM | MPM+ | MPM+ |
| | MPM and MPMx | MPM Only | MPMx | MPMx |

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 *MPMx* card.

Result

- The *Card Configuration Mode* remains **MPM**.
- The remaining *MPM* card remains **enabled**.
- The inserted *MPMx* card is **disabled**.

After Reset

- The *Card Configuration Mode* is **MPMx**.
- The inserted *MPMx* card is **enabled**.
- The remaining *MPM* card is **disabled**.

Example 2:
Current status

- An RMX has one *MPMx* card installed.
- The *Card Configuration Mode* is **MPMx**.
- and the *MPMx* card is **enabled**.

Action

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

Result

- The *Card Configuration Mode* remains **MPMx**.
- The inserted *MPM* card is **disabled**.

After Reset

- The *Card Configuration Mode* is **MPM**.
- The inserted *MPMx* card is **disabled**.
- The remaining *MPM* card is **enabled**.

Example 3:

Current status

An RMX has *MPM+* card installed.

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

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

Action

- Insert one *MPMx* card.

Result

- The *Card Configuration Mode* remains **MPM+**.
- *MPM+* card is **enabled**.
- The inserted *MPMx* card is **disabled**.

After Reset

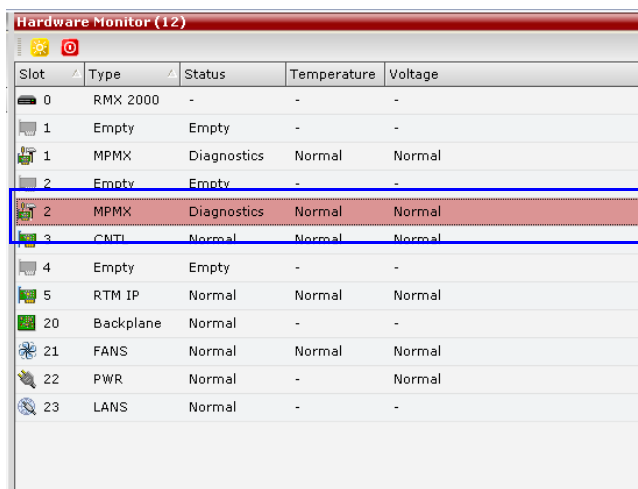
The *Card Configuration Mode* is **MPMx**.

The inserted *MPMx* card is **enabled**.

The remaining *MPM+* card (if not removed) is **disabled**.

MPMx Hardware Monitoring

The status and properties of the MPMx Card can be viewed and monitored in the Hardware Monitor list pane. The Hardware monitor pane displays the type(s) of MPM/MPM+/MPMx card installed on the RMX 1500/2000/4000. For more information, see the *RMX 1500/2000/4000 Administrator's Guide, Chapter 13, Hardware Monitoring*.



| Slot | Type | Status | Temperature | Voltage |
|------|-----------|-------------|-------------|---------|
| 0 | RMX 2000 | - | - | - |
| 1 | Empty | Empty | - | - |
| 1 | MPMX | Diagnostics | Normal | Normal |
| 2 | Empty | Empty | - | - |
| 2 | MPMX | Diagnostics | 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 |
| 23 | LANS | Normal | - | - |

MPMx Hardware Diagnostics

Diagnostics can be performed on the MPMx card(s) when the MCU is in *Diagnostics* mode.

To Monitor the MPMx Card:

- In the Hardware Monitor pane select the MPMx card and click **Diagnostics** from the drop-down menu. For more information, see the *RMX 2000/4000 Administrator's Guide*, "Diagnostic Mode (RMX 1500/2000/4000)" on page [19-31](#).

Video/Voice Port Configuration

The *System Card Configuration Mode* determines the resource allocation method used by the RMX to allocate resources to the connecting endpoints. As with *MPM+ Card Configuration Mode*, both **Flexible Resource Capacity™** and **Fixed Resource Capacity™** are available in *MPMx Card Configuration Mode*.

- 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 on an RMX containing a fully licensed card are as follows:

| Resource Type | MPM+ Card | MPMx Card (D) |
|--------------------------------------|-----------|---------------|
| Audio Only | 400 | 360 |
| H.263 CIF | 80 | 60 |
| H.263 4CIF15 | 30 | 30 |
| H.264 CIF/VSW | 80 | 90 |
| SD | 30 | 60 |
| HD720p30 | 20 | 30 |
| HD720p60/ HD1080p30 (Symmetrical) | 10 | 15 |



CIF H.263 endpoint connections require more resources than CIF H.264 - they require the same amount as SD connections. Therefore, when Fixed Mode is used for resource allocation, SD resources must be configured to ensure that H.263 endpoints can connect with video.

For more information about Video/Voice Port Configuration, see *RMX 1500/2000/4000 Administrator's Guide*, "Video/Voice Port Configuration" on page [18-48](#).

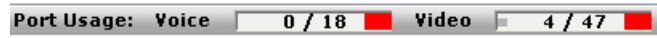
MPMx Resource Report

The *Resource Report* displays the real time resource usage according to the selected *Card Configuration Mode* and the *Resource Capacity Mode*.

For more details about Resource Report, see the *RMX 1500/2000/4000 Administrator's Guide*, "Resource Report" on page [18-56](#).

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.



For more details, see the *RMX 1500/2000/4000 Administrator's Guide*, "Port Usage Gauges" on page [18-65](#).

Detailed Description - Video

H.264 High Profile

The *H.264 High Profile* is a new addition to the *H.264* video protocol suite. It uses the most efficient video data compression algorithms to reduce bandwidth requirements for video data streams.

Video quality is maintained at bit rates that are 20% to 30% lower than previously required. For example, a 832kbps call will have the video quality of a 1Mbps HD call while a 1Mbps HD call has higher video quality at the same (1Mbps) bit rate.

Guidelines

- *H.264 High Profile* is supported with MPMx cards only.
- *H.264 High Profile* is supported in *H.323*, *SIP* and *ISDN* networking environments.
- *H.264 High Profile* is supported in *Continuous Presence* conferences at all bit rates, video resolutions and layouts.
- *H.264 High Profile* is the first protocol declared by the RMX, to ensure that endpoints that support the protocol will connect using it.
- For monitoring purposes, the RMX and endpoint *H.264 High Profile* capability is listed in the *Participant Properties* - *H.245* and *SDP* tabs for *H.323* participants and *SIP* participants respectively.

For more information see the *RMX 1500/2000/4000 Administrator's Guide*, on page "IP Participant Properties" on page [10-16](#).

- The **CFG_KEY_SUPPORT_HIGH_PROFILE_WITH_ISDN** System Flag enables ISDN support with *H.264 High Profile*.

Possible Values: YES / NO

Default: NO

This System Flag must be added to the *System Configuration* file before it can be modified.

For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "Modifying System Flags" on page [18-5](#).

- *H.264 High Profile* is not supported:
 - In MPM and MPM+ card *Configuration Modes*
 - In *Video Switched* conferences
 - For *Content Sharing*
 - As an *RSS Recording* link
 - With *Video Preview*
 - As a *Cascaded Conferencing* link

New Symmetric HD Resolutions in MPMx Mode

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

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

These resolutions are available at line rates of 128 to 8192 Kbps depending on Flag and Resolution Slider settings. For more information, see “System Flag” on page [1-43](#).

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 8 and Table 9 show the relationship between minimum line rate threshold and video quality for both *Motion* and *Sharpness* settings in both *MPM+* and *MPMx Card Configuration Modes*.

Table 8 MPMx: Video Quality vs Minimum Line Rate Threshold

| Resolution | Line Rate (kbps) | | | | | | | |
|------------|--------------------|--------|--------------------|--------|-------------------------|--------|------------------------|--------|
| | Balanced (Default) | | Resource Optimized | | Video Quality Optimized | | High Profile Optimized | |
| | Sharp-ness | Motion | Sharp-ness | Motion | Sharp-ness | Motion | Sharp-ness | Motion |
| HD1080p30 | 4096 | | 4096 | | 1560 | | 1024 | |
| HD720p30 | 1024 | | 1920 | | 768 | | 512 | |
| SD30 | 256 | | 384 | | 256 | | 128 | 128 |
| HD720p60 | | 1920 | | 1920 | | 1560 | | 832 |
| SD60 | | 1024 | | 1024 | | 768 | | 512 |
| WCIF60 | | 384 | | 384 | | 256 | | |

Table 9 MPM+: Video Quality vs Minimum Line Rate Threshold

| Resolution | Line Rate (kbps) | | | | | |
|------------|--------------------|--------|--------------------|--------|-------------------------|--------|
| | Balanced (Default) | | Resource Optimized | | Video Quality Optimized | |
| | Sharp-ness | Motion | Sharp-ness | Motion | Sharp-ness | Motion |
| HD1080p30 | 4096 | | 4096 | | 1560 | |
| HD720p30 | 1024 | | 1920 | | 768 | |
| SD30 | 256 | | 384 | | 256 | |

Table 9 MPM+: Video Quality vs Minimum Line Rate Threshold (Continued)

| Resolution | Line Rate (kbps) | | | | | |
|------------|--------------------|--------|--------------------|--------|-------------------------|--------|
| | Balanced (Default) | | Resource Optimized | | Video Quality Optimized | |
| | Sharp-ness | Motion | Sharp-ness | Motion | Sharp-ness | Motion |
| HD720p60 | | 1920 | | 1920 | | 1560 |
| SD60 | | 1024 | | 1024 | | 768 |
| WCIF60 | | 384 | | 384 | | 256 |

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 value is applied to the system during *First Time Power-on* and after a system upgrade. The default value is *HD1080*.

All subsequent changes to the maximum CP resolution of the system are made by selections in the *Resolution Configuration* dialog box.

For more information see “*Resolution Configuration*” on page [74](#).

Additional Call Rates

The line rates summarized in Table 10 have been added to give administrators more control over bandwidth utilization.

Table 10 Line Rate by Conferencing Mode / MPM Card

| Line Rate (kbps) | MPM | MPM+ | MPMx |
|------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| 192 | Continuous Presence / Video Switching | | |
| 320 | | | |
| 832 | | | |
| 1280 | | | |
| 1728 | | | |
| 2048 | | | |
| 2560 | Video Switching | Continuous Presence / Video Switching | |
| 3072 | | | |
| 3584 | | | |
| 6144 | Not Supported | | Continuous Presence / Video Switching |
| 8192 | | | |

Guidelines

- ISDN endpoints are connected at the highest bonded line rate below the selected conference line rate. For example: If the conference line rate is 1024kbps, the participant is connected at 768kbps.
- Each LAN connection to the RMX has a maximum data rate capacity of 320Mbps. The maximum LAN capacities per RMX are summarized in Table 11:

Table 11 RMX - Maximum Data Rates

| RMX Model | Number of LAN Connections | Maximum Data Rate Capacity Mbps |
|-----------------------------------|---------------------------|---------------------------------|
| RMX 2000 | 1 | 320 |
| RMX 2000 (with Multiple Networks) | 2 | 640 |
| RMX 4000 | 4 | 1280 |

H.239 / People+Content

The *H.239* protocol allows compliant endpoints to share content. All Conferences, Entry Queues, and Meeting Rooms launched on the *RMX* have *H.239* capability.

People+Content utilizes a different signaling protocol and is *Polycom's* proprietary equivalent of *H.239*.

Guidelines

- *H.323* is the only supported environment.
- *H.239* is supported in both *MIH Cascading* and *Star Topology* cascaded conferences.
- *People+Content* is supported in cascaded conferences but cannot be used as the protocol for a cascade link.
- Conferences can include a mix of endpoints that support *H.239* or *People+Content*.
- If an endpoint supports both *H.239* and *People+Content* protocols, *H.239* is selected as the preferred communications protocol.
- *People+Content* is enabled by default. It can be disabled for all conferences and endpoints by manually adding the flag `ENABLE_EPC` and changing its value to **NO** (default setting is **YES**).
- Endpoints that support *People+Content* may require a different signaling (for example, *FX* endpoints). For these endpoints, manually add the flag `CS_ENABLE_EPC` with the value **YES** (default value is **NO**) to the `CS_MODULE_PARAMETERS` tab.

Detailed Description - Audio

G.728 Audio Algorithm Support

Industry standard G.728 audio algorithm is supported for participants connecting with legacy or low bandwidth endpoints.

Guidelines

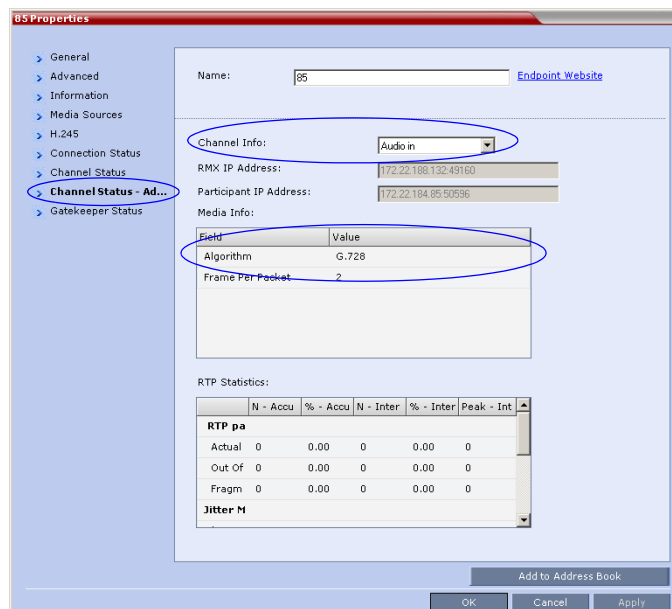
- G.728 is supported:
 - with MPM+ cards only
 - in mono
 - in H.323 and ISDN networking environments
 - at bitrates from 64kbps to 4096kbps

Monitoring Participant Audio Properties

The audio algorithm used by the participant's endpoint can be verified in the Participant Properties - Channel Status dialog box.

To view the participant's properties during a conference:

- 1 In the *Participants* list, right click the desired participant and select **Participant Properties**.
- 2 Click the **Channel Status - Advanced** tab.
The *Participant Properties - Channel Status - Advanced* dialog box is displayed.
- 3 In the *Channel Info* field, select **Audio In** or **Audio Out** to display the audio parameters.



- 4 Click the **OK** button.

Detailed Description - Conference

Permanent Conference

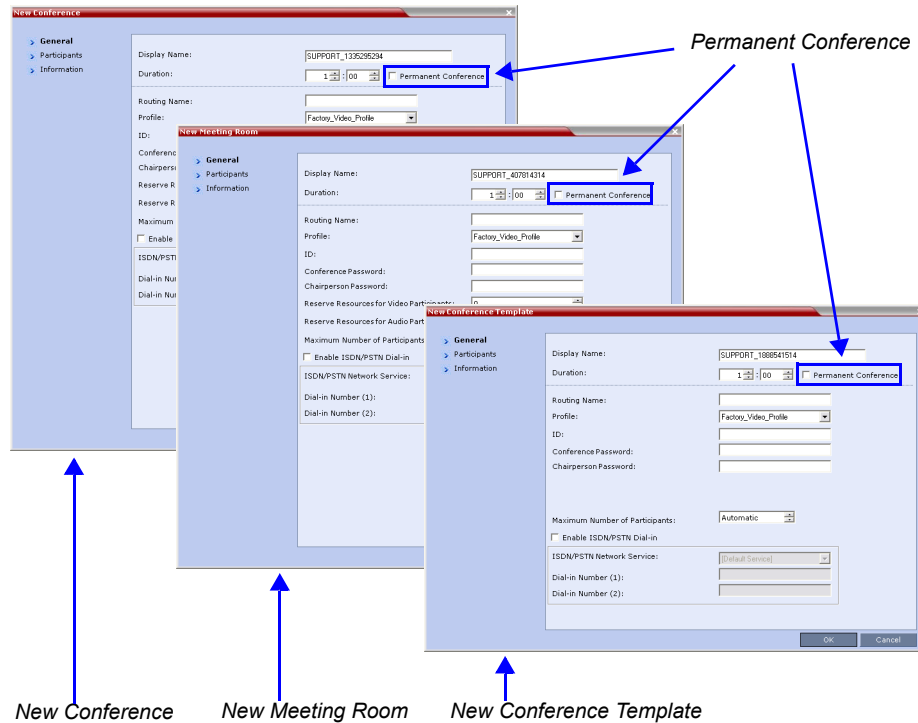
A *Permanent Conference* is an ongoing conference with no pre-determined *End Time* continuing until it is terminated by an administrator, operator or chairperson.

Guidelines

- Resources are reserved for a *Permanent Conference*, only when the conference has become ongoing.
- Resources are allocated to a *Permanent Conference* according to the *Reserve Resources for Video Participants* field. If the number of defined dial-out participants exceeds the value of this field, the RMX automatically replaces the number in the *Reserve Resources for Video Participants* field with the number of defined dial-out participants in the *Permanent Conference*.
- *Auto Terminate* is disabled in *Permanent Conferences*.
- If participants disconnect from the *Permanent Conference*, resources that were reserved for its video and audio participants are released.
- *Ad-hoc Entry Queues*, *Conference Reservations* and *SIP Factories* cannot be defined as *Permanent Conferences*.
- Additional participants can connect to the conference, or be added by the operator, if sufficient resources are available.
- The maximum size of the *Call Detail Record (CDR)* for a *Permanent Conference* is 1MB.

Enabling a Permanent Conference

The *Permanent Conference* option is selected in the *New Conference*, *New Meeting Room* or *New Conference Templates* dialog boxes.



Video Preview

RMX users can preview the video sent from the participant to the conference (MCU) and the video sent from the conference to the participant. It enables the RMX users to monitor the quality of the video sent and received by the participant and identify possible quality degradation.

The video preview is displayed in a separate window independent to the RMX Web Client. All Web Client functionality is enabled and conference and participant monitoring as well as all other user actions can be performed while the video preview window is open and active.

Live video is shown in the preview window as long as the window is open. The preview window closes automatically when the conference ends or when participant disconnects from the conference. It can also be closed manually by the RMX user.

Video Preview Guidelines

- Video preview is available in *Continuous Presence* and *Video Switching* conferences.
- Video preview window size and resolution are adjusted to the resolution of the PC that displays the preview.
- Video Preview of the video sent from the conference to the participant is shown according to the line rate and video parameters of the level threshold to which the participant is connected.
- Only users with Administrator authorization can request to view a video preview.
- Video preview is supported with MPM+ and MPMx cards.
- Only one preview window can be displayed for each RMX Web Client connection (workstation).
- Only one preview window can be displayed for a single conference and up to four preview windows can be displayed for each media card on different workstations (one per workstation and one per conference).
For example, if the RMX contains two media cards, and there are 5 conferences running on the RMX, if five conferences are running on the same media card, only four conferences can be previewed from four different workstations. If four or less conferences are running on one media card and the remaining conferences are running on the other media card, all five conferences can be previewed.
- Live video that is shown in the preview window does not include the Content when it is sent by the participant.
- Video Preview is supported in cascaded conferences.
- If the video preview window is opened when the IVR slide is displayed to the participant, it will also be displayed in the video preview window.
- Video Preview is not supported with *H.264 High Profile*.
- Video Preview is disabled in encrypted conferences.
- Video preview cannot be displayed when the participant's video is suspended.
- Participant's video preview and the CMAD window cannot be open and running simultaneously on the same PC as both require the same DirectDraw resource.

Workstation Requirements

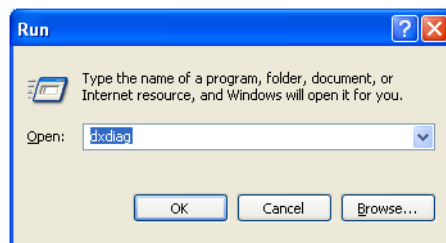
To be able to display the video preview window, the following minimum requirements must be met:

- Windows XP and later
- Internet Explorer 7
- DirectX is installed
- DirectDraw Acceleration must be enabled and no other application is using the video resource
- Hardware acceleration must be enabled

Testing your Workstation

To ensure that your workstation can display the video preview window:

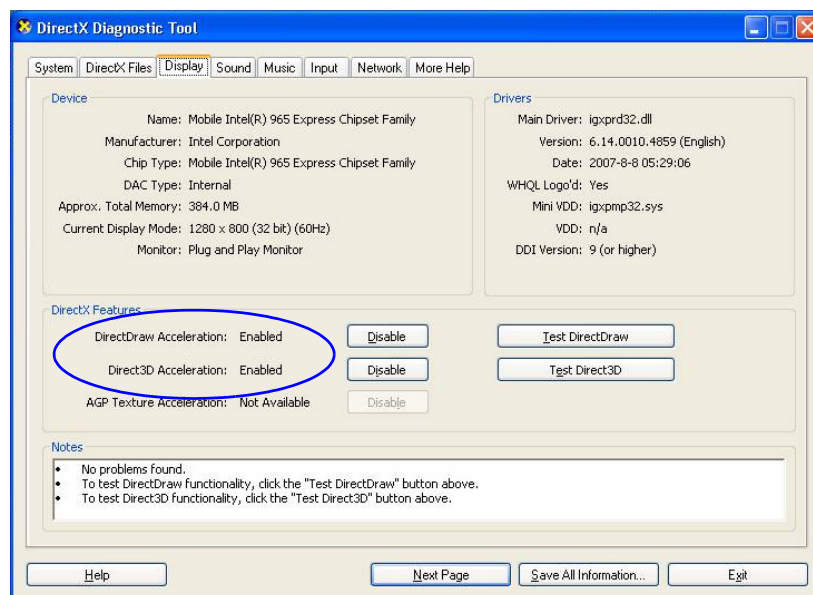
- 1 In Windows, click **Start > Run**.
The *Run* dialog box opens.
- 2 In the *Open* field, type **dxdiag** and press the **Enter** key or click **OK**.



A confirmation message is displayed.

- 3 Click **Yes** to run the diagnostics.
The *DirectX Diagnostic Tool* dialog box opens.
- 4 Click the **Display** tab.

To be able to display the video preview window, the **DirectDraw Acceleration** and **Direct3D Acceleration** options must be **Enabled**.



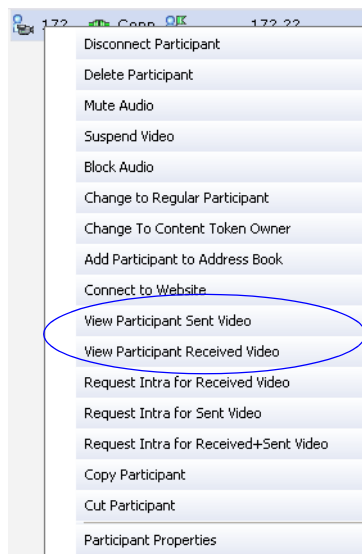
If the video card installed in the PC does not support DirectDraw Acceleration, a black window may be viewed in the Video Preview window.

- 5 Click the **Exit** button.

Previewing the Participant Video

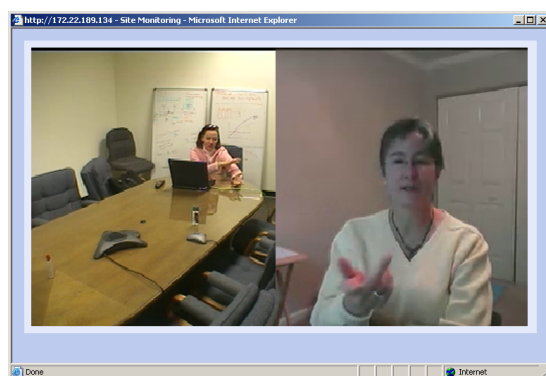
To preview the participant video:

- 1 List the conference participants in the *Participants* pane.
- 2 Right-click the participant whose video you want to preview and then click one of the following options:



- **View Participant Sent Video** - to display the video sent from the participant to the conference.
- **View Participant Received Video** - to display the video sent from the conference to the participant.

The *Video Preview* window opens.



If the video card installed in the PC does not support DirectDraw Acceleration, a black window may be viewed.

Personal Conference Manager (PCM)

The *Personal Conference Manager (PCM)* interface enables the conference chairperson to control various conference features using his/her endpoint's remote control device.

The following conference operations can be performed:

- Initiate **Polycom's Click&View™** application to change the local screen layout.
- Invite a participant to connect to the conference.
- View and control the audio and video of each connected endpoint.
- Camera Control - control the camera of a remote endpoint using (FECC).
- Control the camera of a connected endpoint.
- Video Force a specific participant to a specific window of the video layout.
- Initiate and control recording of the conference.
- Disconnect a participant.
- Terminate the conference.

Guidelines

- PCM is only supported with MPM+ cards.
- PCM is only available in CP conferences.
- Although the RMX can host up to a maximum of 800 conferences (depending on the RMX model) PCM can only be activated from 4 conferences per MPM+ card.
 - An RMX 2000 with 2 MPM+80 cards installed can host a total of 8 PCM sessions while an RMX 4000 with 4 MPM+80 cards installed can host a total of 16 PCM sessions.
 - If 4 PCM sessions are active on an MPM+ card and a chairperson of another conference, hosted on the same MPM+ card, attempts to start an additional PCM session, a message indicating insufficient resources is displayed and FECC is activated.
- When PCM is active, FECC can only be performed by the chairperson using PCM's *Camera Control* menu.
- FECC is available to all IP participants in the conference with the exception of the chairperson that has an active PCM session.
- If enabled, *Message Overlay* is not displayed while PCM is active.
- Normal conference video is resumed after 4 seconds of inactivity within the PCM menu.
- If a chairperson with active PCM session is moved to another conference, the PCM session is automatically terminated.
- The **PCM_LANGUAGE** *System Flag* determines the language of the PCM interface.

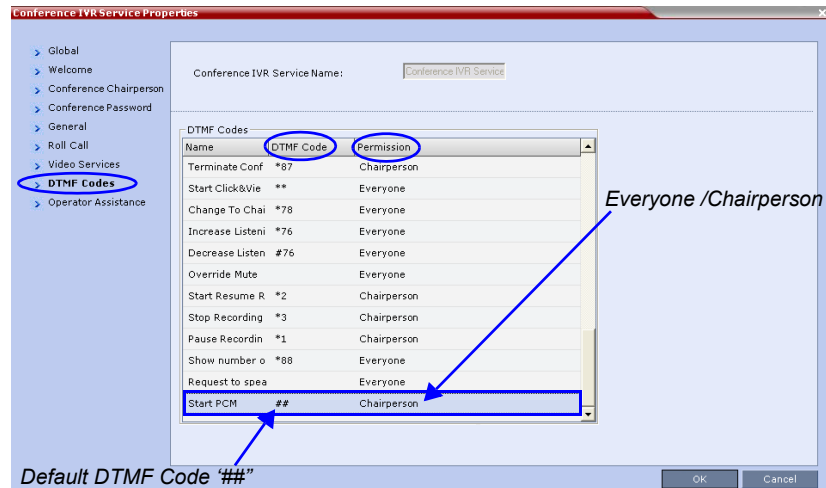
Possible Values: ENGLISH, CHINESE_SIMPLIFIED, CHINESE_TRADITIONAL, JAPANESE, GERMAN, FRENCH, SPANISH, KOREAN, PORTUGUESE, ITALIAN, RUSSIAN, NORWEGIAN

Default: Current RMX Web Client language.

This *System Flag* must be added to the *System Configuration* file before it can be modified. For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "Modifying System Flags" on page 18-5.


- The *Start PCM DTMF* code for initiating *PCM* is configured in *DTMF Codes* tab of the *New Conference IVR Service* or *Conference IVR Service Properties* dialog box. The default *DTMF Code* is **1** and can be modified if required.

The default value of the *Permission* field is **Everyone**. It can be modified to **Chairperson**.



PCM Interface

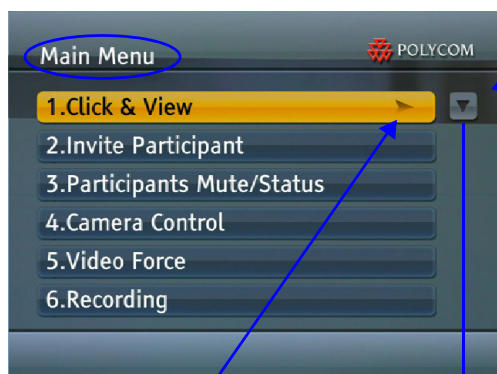
Initiating PCM

For IP endpoints: PCM is activated by pressing the *Far* key () followed by any of the *Arrow Keys* on the *Remote Control Device*.

For ISDN/PSTN endpoints: PCM is activated by pressing **##** on the *Remote Control Device*.

When PCM becomes active, the top level of the *PCM Main Menu* is displayed on the conference chairperson's endpoint:

Main Menu - Level 1

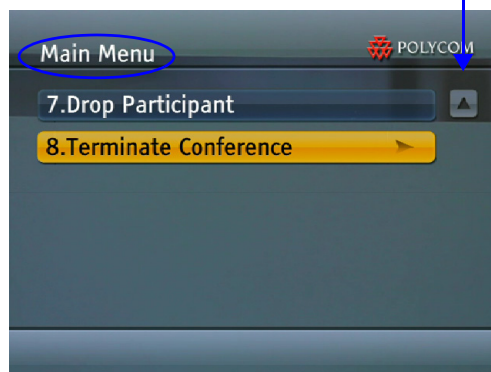


Arrow Indicator:
There are more menu options on the next page

Arrow Indicator:
There are menu options on the previous page

Right Arrow:
Corresponds to the Remote Device's Right Arrow Key
Action:
Go to Sub-Menu of Selected Option (Click&View)

Main Menu - Level 2



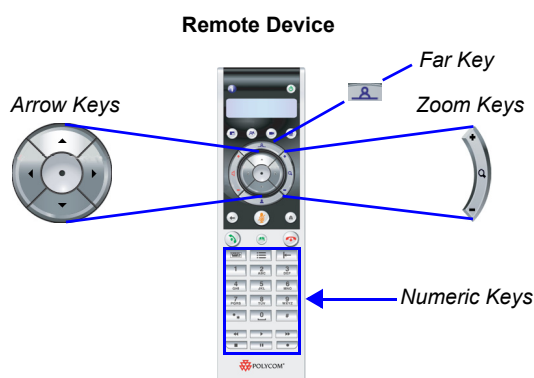
PCM Main Menu - Level 2 can only viewed and accessed by ISDN endpoints by using DTMF Codes 7 and 8.

Remote Control Device Keys

PCM facilitates user interaction with the RMX using *DTMF Codes* and the *Arrow (FECC)* keys of the endpoint's remote control device.

Menu Navigation - Arrow and Zoom Keys

The *PCM Menu* is navigated using the *Remote Device's Arrow Zoom Keys* which are defined as follows:



They are defined as follows:

Table 12 PCM - Menu Navigation

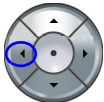
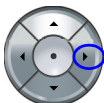
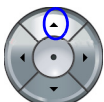
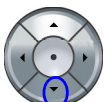


| Arrow Key | Description |
|--|---|
| <p>Left</p>  | <ul style="list-style-type: none"> Go up one menu level. Delete the character to the left of the cursor when entering data. Exit the PCM menu and return to normal conference video (from PCM the top level menu.) Select the video window to the left when navigating a video layout. Initiate PCM from a conference. |
| <p>Right</p>  | <ul style="list-style-type: none"> Go down one menu level. Confirm current selection in the PCM menu. Select the video window to the right when navigating a video layout. Initiate PCM from a conference. |
| <p>Up</p>  | <ul style="list-style-type: none"> Cycle upward through the displayed menu options. Select the video window above when navigating a video layout. Initiate PCM from a conference. |
| <p>Down</p>  | <ul style="list-style-type: none"> Cycle downward through the displayed menu options. Select the video window below when navigating a video layout. Initiate PCM from a conference. |

Table 12 PCM - Menu Navigation

| Arrow Key | Description |
|---|---|
| Zoom in (+)  | <ul style="list-style-type: none"> Confirm current selection in the PCM menu. Zoom in on the remote camera when using FECC. |
| Zoom out (-)  | <ul style="list-style-type: none"> Exit PCM Menu. Zoom out on the remote camera when using FECC. |

DTMF Codes - Numeric Keys



Before using the shortcut number keys 0-9, enable the DTMF function of the endpoint according to that endpoint's configurations.

DTMF codes are entered using the *Remote Device Numerics Keys* and are defined as follows:

Table 13 PCM - DTMF Codes

| Numeric Key | Description |
|-------------|--|
| 0 | <ul style="list-style-type: none"> Number input. Shortcut key to a numbered menu option - when conference video or the PCM menu is displayed. Return to the conference - when in FECC mode. |
| 1-9 | <ul style="list-style-type: none"> Number input. Shortcut key to a numbered menu option - when the conference video or the PCM menu is displayed. Initiate PCM session on ISDN/PSTN endpoint (1 is the default for the <i>Start PCM</i> DTMF Code). |
| * | <ul style="list-style-type: none"> Initiate DTMF mode (with Polycom endpoints) - during a conference or when the PCM menu is displayed. Enter a period "." - while entering an IP address. |
| # | Confirm selection and send information to the RMX. |

PCM Main Menu - Level 1

Click&View

With the *Click&View* application, participants can change their *Personal Layouts* using the *Arrow Keys* or *DTMF* codes entered using the *Numeric Keys* of their endpoints.

For more a full description of *Click&View*, see the *RMX 1500/2000/4000 Getting Started Guide*, "*Personal Layout Selection with Click&View*" on page [3-82](#).

Invite Participant

This function is not available to chairpersons using *PCM* with *ISDN* endpoints.

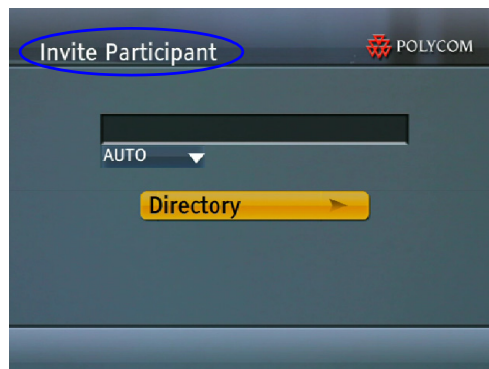
To invite a participant to connect to the conference:

- 1 Use the **Up/Down** arrow keys to select **Invite Participant** in the *Main Menu* and then press the **Right** arrow or **#** key to confirm your selection.

or

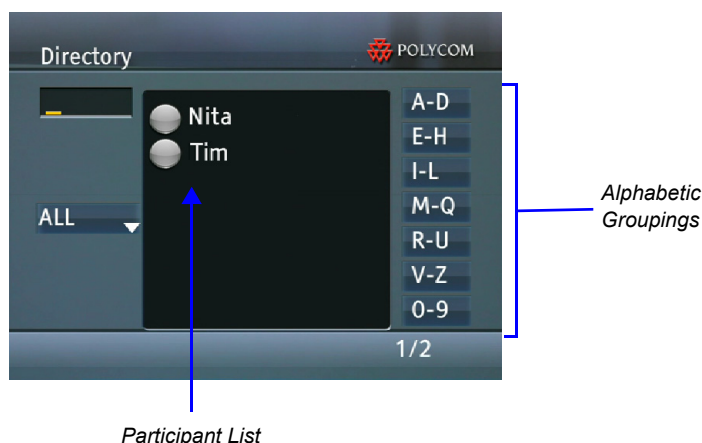
Press the **2** key on the *Remote Device*.

The *Invite Participant* sub menu is displayed.



- 2 Use the *Numeric Keys* to enter the number of the participant's endpoint.
- 3 Press the **#** key to initiate the call.
- 4 **Optional.**
 - a Use the **Down** arrow to select the **Auto** button to select from the following dialing methods:
 - H.323
 - SIP
 - VoIP
 - ISDN
 - PSTN
 - b Press the **#** key to initiate the call.
- 5 **Optional.**
 - a Use the *Arrow Keys* to select the **Directory** button to select the *Alphabetic Grouping* sub menu.

The *Local Directory* is displayed.



- b Use the *Numeric Keys* to enter the number of the participant's endpoint.
 - c Press **#** or the **Zoom In** key to initiate the call.
 - or
 - d Use the **Up/Down** arrow keys to select a **Participant** from the displayed list or use the **Up/Down** and **Left/Right** arrow keys to display other directory listings.
- A message, *Press # or Zoom In to select*, is displayed.
- e Press **#** or the **Zoom In** key to initiate the call.

Optional. To display all participants:

- a Use the **Down** arrow and the to select the **ALL** button.
- b Use the **Zoom In** key to display the global directory.
- c Use the **Up/Down** and **Left/Right** arrow keys to select a **Participant**.
- d Press **#** or the **Zoom In** key to initiate the call.

Participants Mute/Status

This function is not available to chairpersons using *PCM* with *ISDN* endpoints.

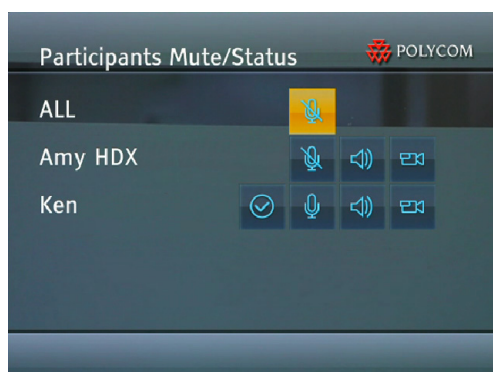
The chairperson can view and control the audio and video status of each participant's endpoint. The chairperson can:

- View the audio and video status of participants.
- Mute, block, unmute, unblock participant audio.
- Suspend or allow participant video.
- Mute all (except chairperson and lecturer).

To view and change the Participants Mute/Status:

- 1 Use the **Up/Down** arrow keys to select **Participants Mute/Status** in the *Main Menu* and then press the **Right** arrow or **#** key to confirm your selection.
- or
- Press the **3** key on the *Remote Device*.

The *Participants Mute/Status* sub menu is displayed.











The sub menu displays the *Muted*, *Blocked* and *Video Suspended* status of all participants' endpoints. **ALL** can be selected to mute and unmute all participant endpoints with the exception of the conference chairperson and lecturer.

- 2 Use the **Up/Down/Left/Right** arrow keys to select a *Mute*, *Block* or *Suspend* status icon.
- 3 Use the **Zoom In** key to toggle the state of the audio and video channels of the participants' endpoints.

The status icons are summarized in Table 14.

Table 14 *Participants Mute/Status - Icons*

| Status Icon | Description |
|---|--|
|  | Audio output from this endpoint is allowed. Other conference participants can hear the audio from this endpoint. |
|  | The endpoint is muted. Other conference participants will not hear audio from this endpoint. |
|  | The audio input to this endpoint is allowed. This endpoint can hear the conference audio. |
|  | The audio output to this endpoint is blocked. This endpoint cannot receive the conference audio. |
|  | Video output from the endpoint is allowed. Other conference participants can see video from this endpoint. |
|  | Video output from the endpoint is suspended. Other conference participants cannot see video from this endpoint. |
|  | The endpoint is neither muted nor blocked. |
|  | The endpoint is both muted and blocked. |

Camera Control

This function is not available to chairpersons using *PCM* with *ISDN* endpoints.

The endpoint to be controlled must support *Far End Camera Control* (FECC).

Using the arrow keys of the remote control device, the chairperson can control the direction, zoom and focus of a remote endpoint's camera.

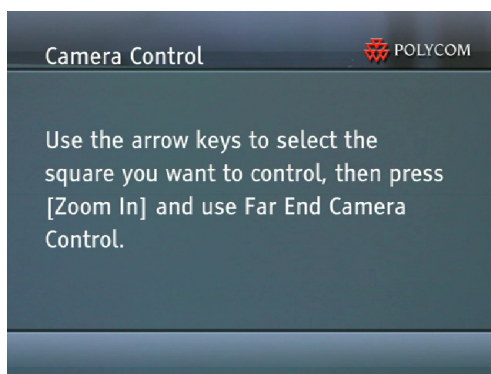
To control a far camera:

- 1 Use the **Up/Down** arrow keys to select **Camera Control** in the *Main Menu* and then press the **Right** arrow or **#** key to confirm your selection.


or

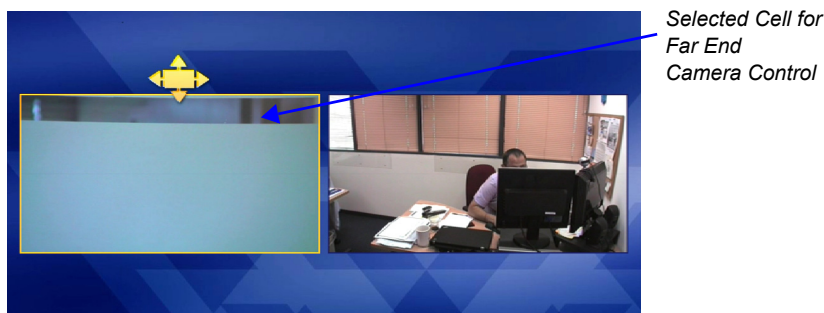
Press the **4** key on the *Remote Device*.

The *Camera Control* sub menu is displayed.



- 2 Use the **Up/Down/Left/Right** arrow keys to select the far camera to be controlled. A colored frame is displayed around the selected cell in the video layout.
- 3 Use the **Zoom In** key to activate FECC.

Following a 10 second delay, the *FECC* active icon () is displayed in the video image of the selected site.



- 4 Use the **Up/Down/Left/Right/Zoom In/Zoom Out** arrow keys to control the remote camera.
- 5 Press the **0** key on the remote control to exit FECC.
- 6 Use the **Zoom Out** key on the remote control to return to the conference video.

Video Force

This function is not available to chairpersons using *PCM* with *ISDN* endpoints.

Video Force enables the chairperson to force the video of a specific participant to a specific window of the video layout.

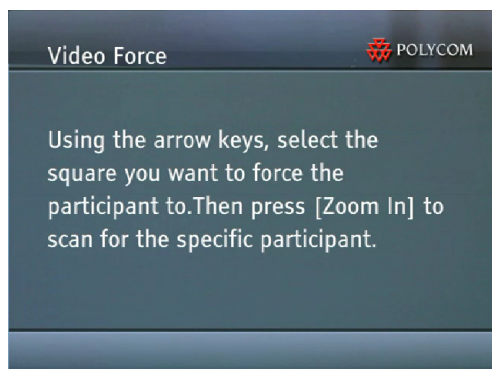
To Video Force a participant's video:

- 1 Use the **Up/Down** arrow keys to select **Video Force** in the *Main Menu* and then press the **Right** arrow or **#** key to confirm your selection.

or

Press the **5** key on the *Remote Device*.

The *Video Force* sub menu is displayed.



- 2 Use the **Up/Down/Left/Right** arrow keys to select the window of the video layout that you want the specific participant to be displayed in.
- 3 Press the **Zoom In** key to cycle the display of all participants in the selected video window until the participant you want to be displayed appears.
- 4 Press the **Right** arrow or **#** key to confirm your selection.

Recording

This function is not available to chairpersons using *PCM* with *ISDN* endpoints.

If a *Recording Link* has been set up in the *Conference Profile*, the conference chairperson can use the *PCM* interface to start, pause, resume and stop recording. If no *Recording Link* exists, this function appears grayed out and cannot be selected.

To use the recording functions:

- 1 Use the **Up/Down** arrow keys to select **Recording** in the *Main Menu* and then press the **Right** arrow or **#** key to confirm your selection.

or

Press the **6** key on the *Remote Device*.

The *Recording* sub menu is displayed.



To start recording:

>> Use the **Up/Down** arrow keys to select **Start Recording** and then press the **Right** arrow or **#** key to confirm your selection.

or

Press the **1** key on the *Remote Device*.

To pause recording:

>> While recording is in progress, use the **Up/Down** arrow keys to select **Pause** and then press the **Right** arrow or **#** key to confirm your selection.

or

Press the **2** key on the *Remote Device*.

To resume recording:

>> While recording is paused, use the **Up/Down** arrow keys to select **Resume** and then press the **Right** arrow or **#** key to confirm your selection.

or

Press the **2** key on the *Remote Device*.

To stop recording:

>> While recording is in progress, use the **Up/Down** arrow keys to select **Stop Recording** and then press the **Right** arrow or **#** key to confirm your selection.

or

Press the **3** key on the *Remote Device*.

PCM Main Menu - Level 2

Drop Participant

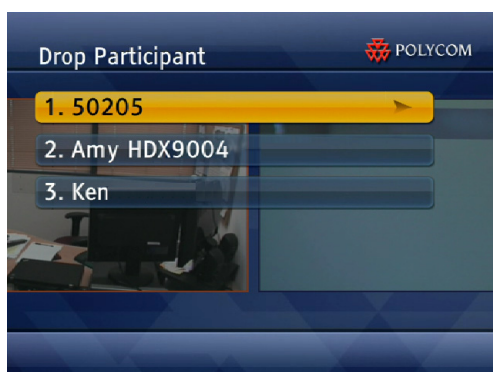
To disconnect a participant from the conference:

- 1 Use the **Up/Down** arrow keys to navigate to the second page of the *Main Menu*
- 2 Use the **Up/Down** arrow keys to select **Drop Participant** and then press the **Right** arrow or **#** key to confirm your selection.

or

Press the **7** key on the *Remote Device*.

The *Drop Participant* sub menu is displayed.



- 3 Using the **Up/Down** arrow keys, select the participant to be disconnected and then press the **Right** arrow or **#** key to confirm your selection.

or

Press the *Numeric Key* on the *Remote Device* corresponding to the participant entry.

Terminate Conference



Although this function can be accessed and viewed by chairpersons using *PCM* with *ISDN* endpoints, conference termination cannot be executed.

Although this function can be accessed and viewed by chairpersons using *PCM* with *ISDN* endpoints, conference termination cannot be executed.

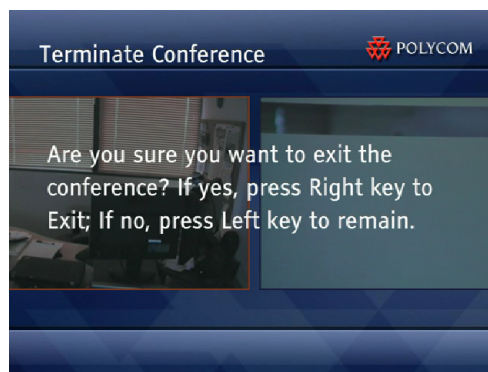
To terminate a conference:

- 1 Use the **Up/Down** arrow keys to navigate to the second page of the *Main Menu*
- 2 Use the **Up/Down** arrow keys to select **Terminate Conference** and then press the **Right** arrow or # key to confirm your selection.

or

Press the **8** key on the *Remote Device*.

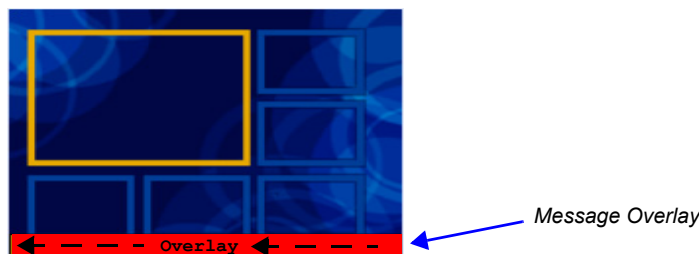
The *Terminate Conference* sub menu is displayed.



- 3 Press the **Right** arrow key to confirm termination of the conference.
- or**
- Press the **Left** arrow key to cancel termination of the conference.

Message Overlay

Message Overlay allows messages to be sent to all participants in an ongoing conference. A maximum of 24 Unicode characters can be sent as a *Message Overlay*.



Guidelines

- *Message Overlay* is supported in:
 - continuous Presence (CP) conferences
 - in *Same Layout* mode
 - in encrypted conferences
- *Message Overlay* is not supported in *Lecture* mode.
- Participants that have their video suspended do not receive *Message Overlays*.
- *Message Overlays* cannot be sent via the *Content* channel.
- *Message Overlay* is not displayed when the *PCM* menu is active.
- If a *Repeating Message Overlay* is modified before it has completed all its repetitions, it is changed immediately without completing all of its repetitions. The modified *Repeating Message Overlay* is displayed starting with repetition one.
- *Message Overlay* can be enabled, modified and disabled during an ongoing conference using the *Conference Properties – Message Overlay* dialog box.

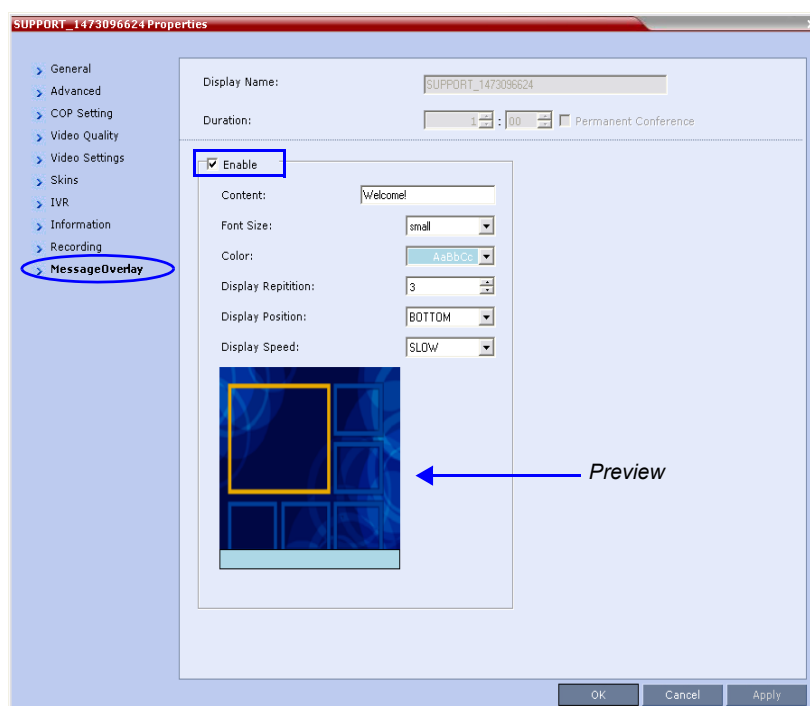
Enabling Message Overlay

Message Overlays are created and enabled in the *Conference Properties – Message Overlay* dialog box.

To enable Message Overlay:

- 1 In the *Conferences List* pane, double click the name of the conference to have *Message Overlay* enabled or right-click the conference name and then click **Conference Properties**.
The *General* tab is displayed.
- 2 Click the **Message Overlay** tab.

The **Message Overlay** tab is displayed.



3 Select the **Enable** check box.

4 Modify the following fields as set out in Table 18.

As the fields are modified the *Preview* changes to show the effect of the changes.

For example:

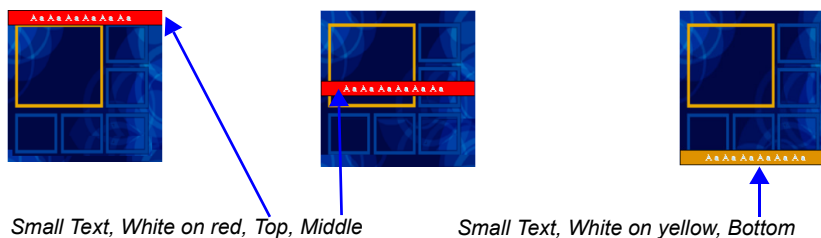
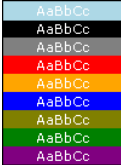


Table 15 Conference Properties - Message Overlay

| Field | Description |
|------------------|---|
| <i>Content</i> | Enter a message of up to 24 Unicode characters. |
| <i>Font Size</i> | Select the size of the Message Overlay text from the drop-down menu options: <ul style="list-style-type: none"> • Small • Medium • Large Default: Small |

Table 15 Conference Properties - Message Overlay (Continued)

| Field | Description |
|---------------------------|--|
| <i>Color</i> | <p>Select the color of the text and background of the Message Overlay from the following drop-down menu options:</p>  <p>Default: White text on pale blue background</p> |
| <i>Display Repetition</i> | <p>Click the arrows (↔) to increase or decrease the number of times that the Message Overlay is to be repeated.</p> <p>Default: 3</p> |
| <i>Display Position</i> | <p>Select the position for the display of the Message Overlay on the endpoint screen:</p> <ul style="list-style-type: none"> • Top • Middle • Bottom <p>Default: Bottom</p> |
| <i>Display Speed</i> | <p>Select whether the Message Overlay is static or repeating:</p> <ul style="list-style-type: none"> • Static • Slow • Fast <p>Default: Slow</p> |

5 Click the **OK** button.

Content Broadcast Control prevents the accidental interruption or termination of H.239 Content that is being shared in a conference.

Content Broadcast Control

Content Broadcast Control prevents the accidental interruption or termination of *H.239 Content* that is being shared in a conference.

Content Broadcast Control achieves this by giving *Content Token* ownership to a specific endpoint via the *RMX Web Client*. Other endpoints are not able to send content until *Content Token* ownership has been transferred to another endpoint via the *RMX Web Client*.

Guidelines

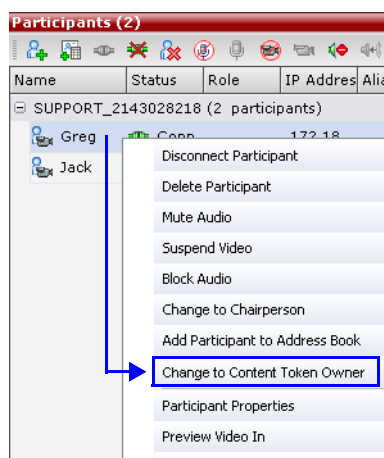
- *Content Broadcast Control* is supported in *MPM+* and *MPMx* card configuration modes.
- *Content Broadcast Control* is supported in *CP* and *Video Switching* conferences.
- *Content Broadcast Control* is supported in *H.323* environments.
- Only the selected *Content Token* owner may send content and *Content Token* requests from other endpoints are rejected.
- *Content Token* ownership is valid until:
 - It is canceled by an administrator, operator or chairperson using the *RMX Web Client*.
 - The owner releases it.
 - The endpoint of the *Content Token* owner disconnects from the conference.
- An administrator, operator or chairperson can cancel *Content Token* ownership.
- In cascaded conferences, a participant functioning as the cascade link cannot be given token ownership.

Giving and Cancelling Token Ownership

Giving Token Ownership

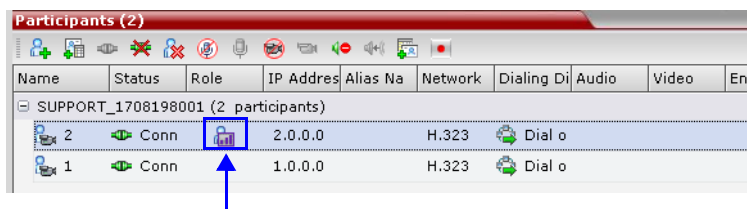
To give token ownership:

- 1 In the *Participants* list, right click the endpoint that is to receive *Content Token* ownership.



- 2 Select **Change To Content Token Owner** in the drop-down menu.

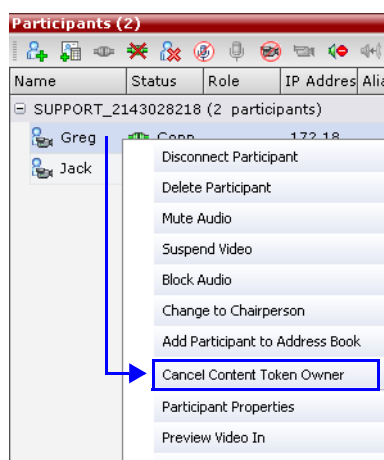
The endpoint receives ownership of the *Content Token* and an indication icon is displayed in the Role column of the participant's entry in the Participants list.



Cancelling Token Ownership

To cancel token ownership:

- 1 In the *Participants* list, right click the endpoint that currently has *Content Token* ownership.



- 2 Select **Cancel Content Token Owner** in the drop-down menu.
Content Token ownership is cancelled for the endpoint.

Copy Cut and Paste Participant

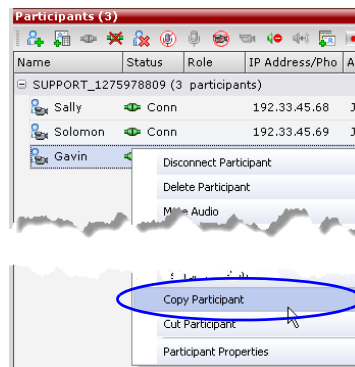
The RMX user can **Copy**, **Cut** and **Paste** participants between different conferences running on the RMX, including his/her current conference. These functions, when used via the *RMX Manager*, with its ability to manage multiple RMXs, participants, allows the RMX user to **Copy**, **Cut** and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

Copy Participant

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

To copy a participant:

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

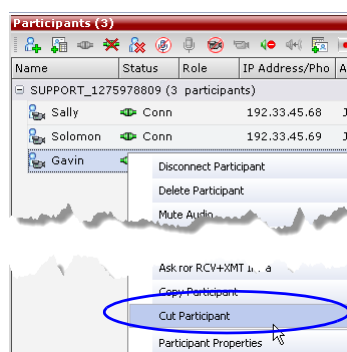


Cut Participant

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

To cut a participant:

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



Paste Participant

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

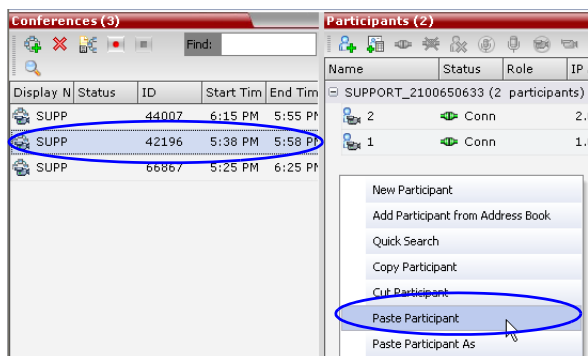
To paste a participant:

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

or

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

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



The participant is connected to the conference.

Paste Participant As

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

To paste a participant as a new participant:

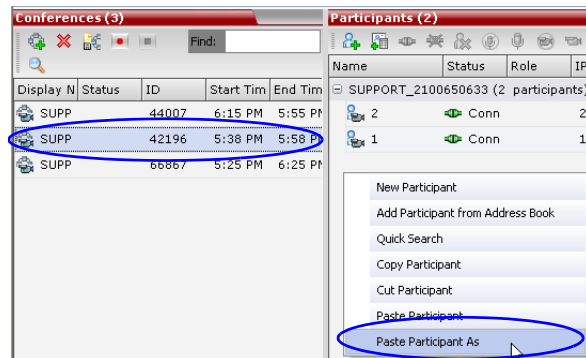
- 1 In the *Conferences List* pane, click the conference you want to paste the copied/cut participant into.
- Right-click in the *Participants List* pane of the selected conference and in the drop-down menu select **Paste Participant As**.

or

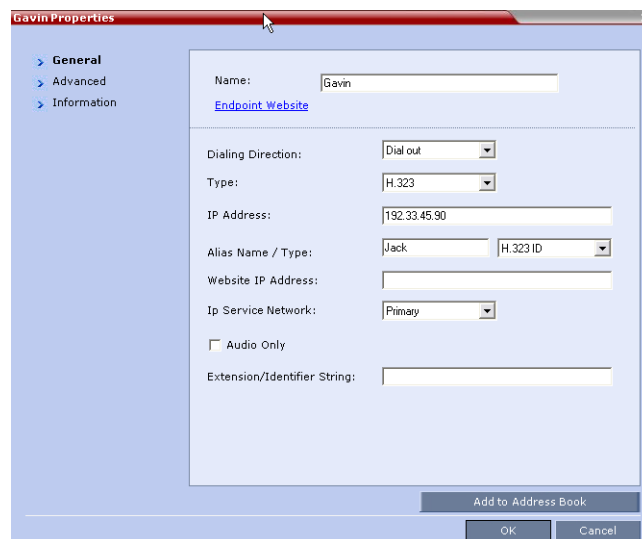
If you are using the *RMX Manager* and you want to paste the participant to a conference on another RMX:

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

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



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



- 2 Modify the participant information as required. For more information see the *RMX 1500/2000/4000 Administrator's Guide* "Modifying Participants in the Address Book" on page 5-14.

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

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

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

Copy and Paste Conference

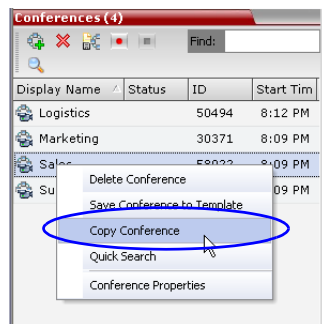
The RMX user can **Copy**, and **Paste** conferences. When using the *RMX Web Client*, conferences can be copied and pasted on the same RMX, however when using the *RMX Manager*, with its ability to manage multiple RMXs, conferences can be copied and pasted between different RMXs.

Copy Conference

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

To copy a conference:

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



Paste Conference

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

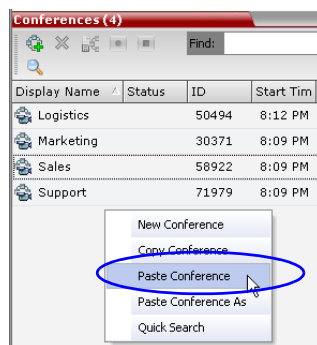
To paste a conference:

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

or

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

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



The conference is pasted to the RMX.

Paste Conference As

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

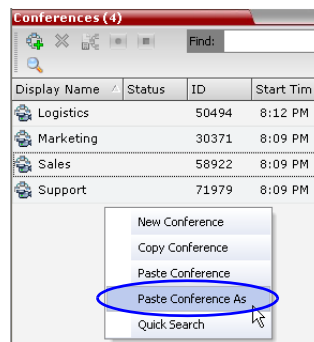
To paste a conference as a new conference:

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

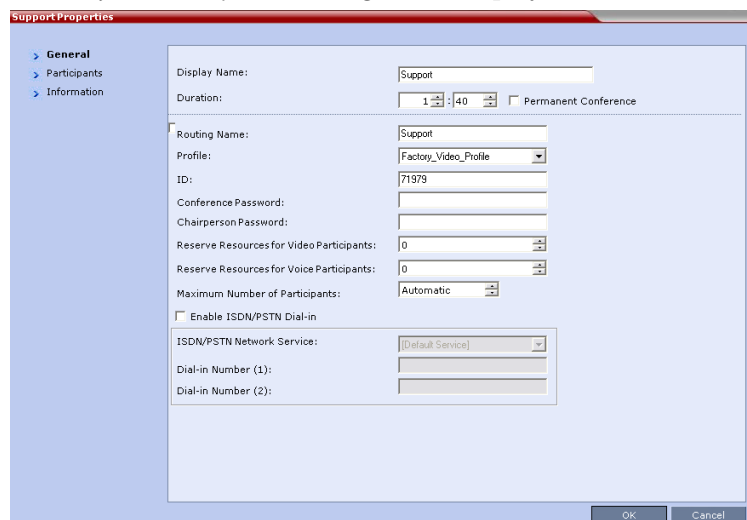
or

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

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



The *Conference Properties* dialog box is displayed.



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

Detailed Description - General

Resolution Configuration

In previous versions, video resolutions for participants were determined according to a predefined video resolution decision matrix. The decision matrix matched video resolutions to connection line rates, with the aim of providing the best balance between resource usage and video quality at any given line rate.

The *Resolution Configuration* dialog box enables the RMX administrator to override the default video resolution decision matrix, effectively creating his/her own decision matrix. The minimum threshold line rates at which endpoints are connected at the various video resolutions can be optimized by adjusting the resolution sliders.

System resource usage is also affected by the *Resolution Configuration* settings.

Example

As shown in following diagram:

- Moving the *HD720p30* resolution slider from 1024kbps to 1920kbps increases the minimum connection threshold line rate for that resolution. Endpoints connecting at line rates between 1024kbps and 1920kbps that would have connected at *HD 720p30* resolution will instead connect at *SD 30* resolution. Each of the affected endpoints will use 1.5 system resources instead of 3 system resources.
- Moving the *HD1080p30* resolution slider from 4096kbps to 2560kbps decreases the minimum connection threshold line rate for that resolution. Endpoints connecting at line rates between 2560kbps and 4096kbps that would have connected at *HD 720p30* resolution will instead connect at *HD 1080p30* resolution. Each of the affected endpoints will use 6 system resources instead of 3 system resources.



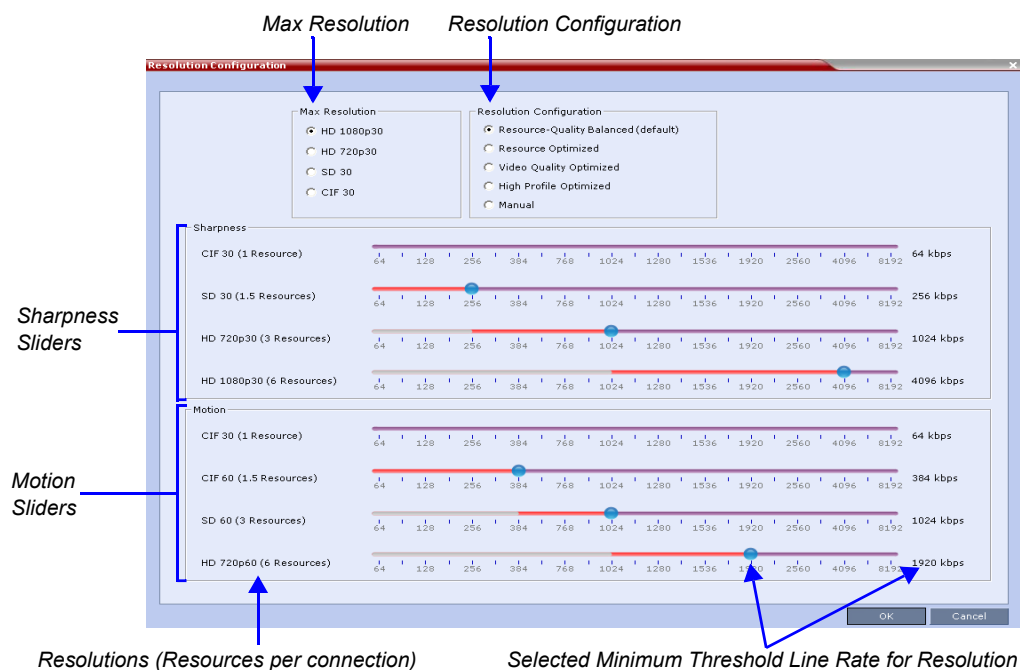
Guidelines

- The *Resolution Slider* dialog box is supported with *MPM*, *MPM+* and *MPMx* cards.
- *Resolution Slider* settings affect all *Continuous Presence (CP)* conferences running on the RMX. *Video Switched* conferences are not affected.
- A system restart is not needed after changing the *Resolution Slider* settings.
- *Resolution Slider* settings cannot be changed if there are ongoing conferences running on the RMX.
- The displayed sliders and the resolutions change according the *Card Configuration Mode*.

Modifying the Resolution Configuration

The *Resolution Configuration* dialog box is accessed by clicking **Setup > Resolution Configuration** in the *RMX Setup* menu.

The dialog box opens:



The *Resolution Configuration* dialog box contains the following elements:

- *Max Resolution Pane*
- *Resolution Configuration Pane*
- *Sharpness Resolution Sliders*
- *Motion Resolution Sliders*

Max Resolution Pane

Depending on the type of *MPM* cards installed, the *Maximum CP Resolution* of the *RMX* can be set to one of the following resolutions:

| MPM Cards | MPM+ / MPMx Cards |
|-----------|-------------------|
| HD 720p30 | HD 1080p30 |
| SD 30 | HD 720p30 |
| SD 15 | SD 30 |
| CIF 30 | CIF 30 |

Before a selection is made in this pane, the *Maximum CP Resolution* of the system is determined by the **MAX_CP_RESOLUTION** System Flag.

The **MAX_CP_RESOLUTION** flag value is applied to the system during *First Time Power-on* and after a system upgrade. The default value is *HD1080*.

All subsequent changes to the *Maximum CP Resolution* of the system are made by selections in this pane.

Limiting Maximum Resolution

Maximum Resolution can be limited per **conference** or per **participant endpoint**.

The *Maximum Conference Resolution*, can be limited via the *Profile - Video Quality* dialog box. For more information see the *RMX 2000/4000 Administrator's Guide "Defining Profiles"* on page 1-9.

The *Maximum Resolution* can further be limited per participant endpoint via the *Participant - Properties* dialog box. For more information see the *RMX 2000/4000 Administrator's Guide "Adding a Participant to the Address Book"* on page 5-4.

Resolution Configuration Pane

The user can select from 4 pre-defined *Resolution Configurations* or select a manual *Resolution Slider* adjustment mode. The pre-defined settings can be accepted without modification or be used as the basis for manual fine tuning of resolution settings by the administrator.

The *Manual* radio button is automatically selected, if any changes are made to the *Resolution Sliders*.

The *Resolution Configurations* are:

- **Resource-Quality Balanced (default)**

A balance between the optimized video quality and optimized resource usage. This is the only available resolution configuration in version 6.0.x and earlier.



Use this option:

- When the priority is to maintain a balance between resource usage and video quality.
- When it is necessary to maintain backward compatibility with previous versions.
- When working with CMA.

The *Balanced* settings are as described for *Video Resolutions in CP "Continuous Presence (CP) Conferencing"* on page 2-4.

- **Resource Optimized**

System resource usage is optimized by allowing high resolution connections only at high line rates and may result in lower video resolutions (in comparison to other resolution configurations) for some line rates.



Use this option when the priority is to save MCU resources and increase the number of participant connections.

- **Video Quality Optimized**

Video is optimized through higher resolution connections at lower line rates increasing the resource usage at lower line rates. This may decrease the number of participant connections.



Use this option when the priority is to use higher video resolutions while decreasing the number of participant connections.

- **High Profile Optimized (MPMx cards only)**

Video resolutions are optimized for use with H.264 High Profile. This option is available only in *MPMx Card Configuration Mode*. For more information see "H.264 High Profile" on page 2-8.



Use this option when all or most endpoints support H.264 High-Profile.

- **Manual**

The administrator adjusts the sliders to accommodate local conferencing requirements.

Sharpness / Motion Resolution Slider Panes

Sharpness and *Motion* are *Video Quality* settings that are selected per conference and are defined in the conference *Profile*.

The *Sharpness* and *Motion* slider settings in the *Resolution Configuration* dialog box are system settings and are applied to all conferences on the RMX. A conference that has *Sharpness* selected in its *Profile* uses the *Sharpness* settings of the *Resolution Configuration* and likewise a conference that has *Motion* selected in its *Profile* uses the *Motion* settings of the *Resolution Configuration* dialog box.

The following Table summarizes the *Default Minimum Threshold Line Rates* and *Video Resource* usage for each of the pre-defined optimization settings for *Sharpness* and *Motion* for MPMx, MPM+ and MPM cards.

| | | | Resource-Quality Balanced (Default) | | | | | | Resource Optimized | | | | | | Video Quality Optimized | | | | | | High Profile | |
|--|-----------|-----------|-------------------------------------|------|------|--------|------|------|--------------------|------|------|--------|------|------|-------------------------|------|------|--------|------|------|--------------|--------|
| | | | Sharpness | | | Motion | | | Sharpness | | | Motion | | | Sharpness | | | Motion | | | Sharp | Motion |
| | | | MPM | MPM+ | MPMx | MPM | MPM+ | MPMx | MPM | MPM+ | MPMx | MPM | MPM+ | MPMx | MPM | MPM+ | MPMx | MPM | MPM+ | MPMx | MPMx | |
| | | | | | | | | | | | | | | | | | | | | | | |
| Resolution - Default Minimum Threshold / Resources | HD1080p30 | Default | | 4096 | 4096 | | | | | 4096 | 4096 | | | | | 1536 | 1536 | | | | 1024 | |
| | | Resources | | 8 | 6 | | | | | 8 | 6 | | | | | 8 | 6 | | | | 6 | |
| | HD720p60 | Default | | | | | 1920 | 1920 | | | | | 1920 | 1920 | | | | | 1536 | 1536 | | 832 |
| | | Resources | | | | | 8 | 6 | | | | | 8 | 6 | | | | | 8 | 6 | | 6 |
| | HD720p30 | Default | 1024 | 1024 | 1024 | 1920 | | | 1920 | 1920 | 1920 | 1920 | | | 1024 | 768 | 768 | 1536 | | | 512 | |
| | | Resources | 4 | 4 | 3 | 4 | | | 4 | 4 | 3 | 4 | | | 4 | 4 | 3 | 4 | | | 3 | |
| | SD60 | Default | | | | | 1024 | 1024 | | | | | 1024 | 1024 | | | | | 768 | | | 512 |
| | | Resources | | | | | 4 | 3 | | | | | 4 | 3 | | | | | 4 | | | 3 |
| | SD30 | Default | 512 | 256 | 256 | 1024 | | | 768 | 384 | 384 | 1024 | | | 384 | 256 | 256 | 768 | | | 128 | |
| | | Resources | 4 | 2.66 | 1.5 | 4 | | | 4 | 2.66 | 1.5 | 4 | | | 4 | 2.66 | 1.5 | 4 | | | 1.5 | |
| | SD15 | Default | 256 | | | | | | 384 | | | | | | 256 | | | | | | | |
| | | Resources | 2 | | | | | | 2 | | | | | | 2 | | | | | | | |
| | CIF60 | Default | | | | | 384 | 384 | | | | | 384 | 384 | | | | | 256 | 768 | | 128 |
| | | Resources | | | | | 2.66 | 1.5 | | | | | 2.66 | 1.5 | | | | | 2.66 | 1.5 | | 1.5 |
| | WCIF30 | Default | | | | 256 | | | | | | 384 | | | | | | 256 | | | | |
| | | Resources | | | | 2 | | | | | | 2 | | | | | | 2 | | | | |
| | CIF30 | Default | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| | | Resources | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

For more information see the *RMX 1500/2000/4000 Administrator's Guide*:

"Standard Conferencing" on page 1-3.

"Defining Profiles" on page 1-9.

"Resolution Configuration" on page 2-9.

"Resolution Configuration Pane" on page 2-12.

High Resolution Slide Enhancements

Conference and *Entry Queue IVR Services* now support customized high resolution slides in addition to the low and high resolution slides included in the default slide set.

Slides can be selected and previewed via the *New Conference* and *New Entry Queue IVR Service* dialog boxes.

Guidelines

- Two customized slides can be loaded per *IVR Service*:
 - A low resolution slide, to be used with low resolution endpoints.
 - A high resolution slide, to be used with high resolution endpoints.
 Table 16 summarizes the recommended input slide formats and the resulting slides that are generated:

Table 16 *IVR Slide - Input / Output Formats*

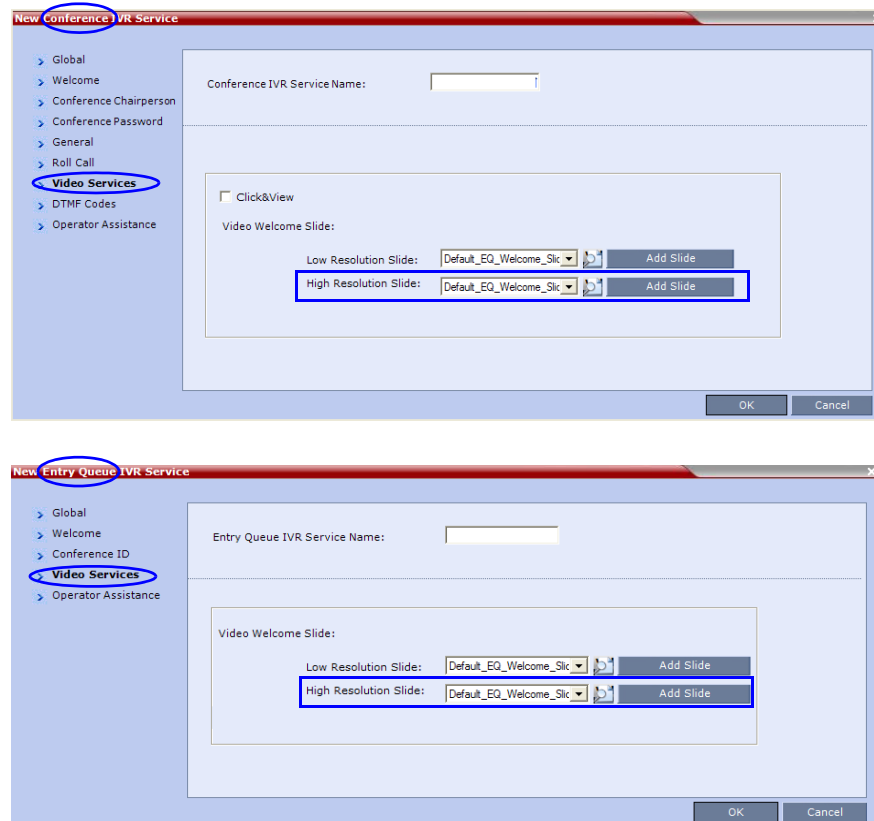
| Slide Resolution | Format | |
|------------------|---------------------------------------|--------------------|
| | Input Slides | Generated Slides |
| <i>High</i> | HD1080p (16:9) or HD720p (16:9) | HD1080p HD720p |
| <i>Low</i> | 4CIF (4:3) or CIF (4:3) | 4SIF SIF CIF |

- The source images for the high resolution slides must be in *.bmp or *.jpg format.
- If the uploaded slides are not of the exact *SD* or *HD* resolution, an error message is displayed and the slides are automatically cropped.
- If a slide is that is selected in an *IVR Service* is deleted, a warning is displayed listing the *IVR Services* in which it is selected. If deleted, it will be replaced with a default RMX slide.
- The generated slides are not deleted if the system is downgraded to a lower software version.
- The first custom source file uploaded, whatever its format, is used to generate both high and low resolution custom slides. High resolution source files uploaded after the first upload will be used to generate and replace high resolution custom slides. Likewise, low resolution source files uploaded after the first upload will be used to generate and replace low resolution custom slides.
- If there are two custom source files are in the folder, one high resolution, one low resolution, and a new high resolution custom source file is uploaded, new high resolution custom slides are created. The existing low resolution custom slides are not deleted.
- If there are two custom source files are in the folder, one high resolution, one low resolution, and a new low resolution custom source file is uploaded, new low resolution custom slides are created. The existing high resolution custom slides are not deleted.

Managing Custom Slides

Custom Slides are managed via the *Video Services* tab of the *New Conference Queue IVR Service* and *New Entry Queue IVR Service* dialog boxes.

High Resolution Slide fields have been added to the dialog boxes facilitate management of Customized *High Resolution* slides.



Adding, Previewing and Selecting Custom Slides

High Resolution Slides are added, previewed and selected in the same manner as *Low Resolution Slides*.

For more information about *Adding, Previewing and Selecting Custom Slides* see the *RMX 2000/4000 Administrator's Guide*, "Defining a New Conference IVR Service" on page 14-9 and "Defining a New Entry Queue IVR Service" on page 14-29.

Multiple Recording Links

The *Multiple Recording Links* feature enables *Conference Recording Links*, defined on the RMX to be associated with *Virtual Recording Rooms (VRR)*, created and saved on the *Polycom® RSS™ 4000 Version 6.0 Recording and Streaming Server (RSS)*.

Each *Recording Link* defined on the RMX can be given a descriptive name and can be associated with one *VRR* saved on the *Polycom RSS 4000*.

Guidelines

- Up to 100 *Recording Links* can be listed for selection in the *Conference Profile*.
- *Multiple Recording Links* are supported in *Continuous Presence* and *Video Switched* conferences.
- A *Recording Link* that is being used by an ongoing conference cannot be deleted.
- A *Recording Link* that is assigned to a *Profile* cannot be deleted.
- While a *Profile* is being used in an ongoing conference, it cannot have a different *Recording Link* assigned to it.
- The number of *Recording Links* available for selection is determined by the value of the **MAXIMUM_RECORDING_LINKS** System Flag in *system.cfg*.

Range: 20 - 100

Default: 20

The flag value can be modified by selecting the *System Configuration* option from the *Setup* menu. For more information, see the *RMX 1500/2000/4000 Administrator's Guide*, "Modifying System Flags" on page [18-5](#).



Creating Multiple Recording Links

To define (multiple) New Recording Links:

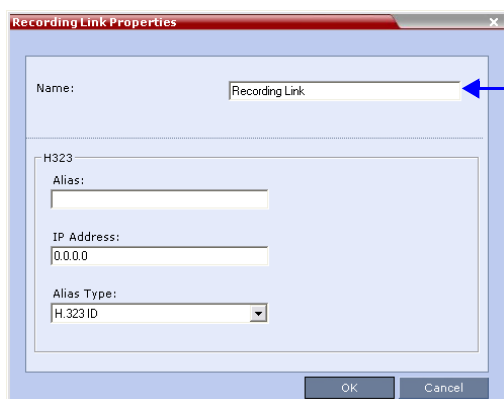
On the RSS:

- 1 Modify the parameters of a recording *Template* to meet the recording requirements.
- 2 Assign the modified recording *Template* to a *VRR*. The recording and streaming server will assign a number to the *VRR*.
- 3 Repeat Step 1 and Step 2 for each *VRR* to created additional *VRRs*.
For more information see the *RSS 4000 User Guide*.

On the RMX:

- 4 In the *RMX Management* pane, click **Recording Links** (.
- 5 In the *Recording Links* list, click the **New Recording Link** () button.

The *New Recording Link* dialog box is displayed.



The image shows the 'Recording Link Properties' dialog box. It has a title bar with a close button. Inside, there's a 'Name:' label followed by a text box containing 'Recording Link'. A blue arrow points from the text 'Descriptive Name' to this text box. Below this, there's a section for 'H323' parameters: 'Alias:' with an empty text box, 'IP Address:' with a text box containing '0.0.0.0', and 'Alias Type:' with a dropdown menu showing 'H.323 ID'. At the bottom are 'OK' and 'Cancel' buttons.

- 6 Define the following parameters:

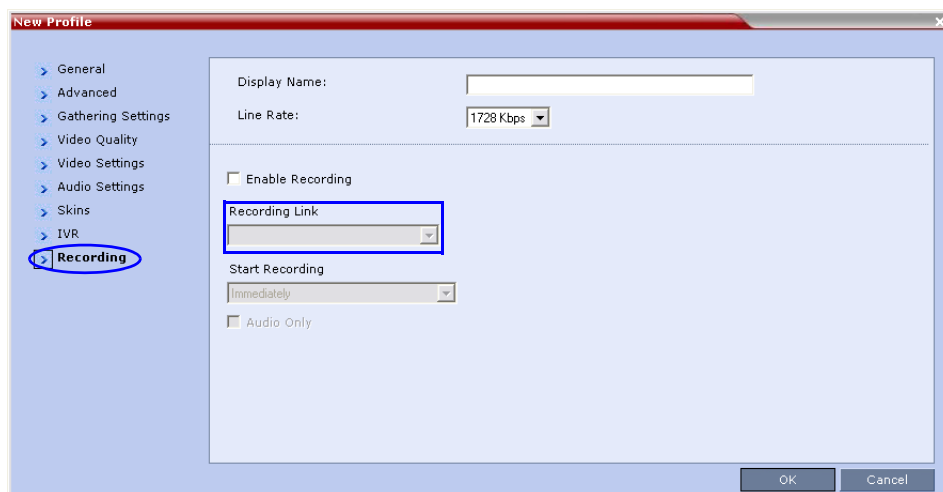
Table 17 *Recording Link Parameters*

| Parameter | Description |
|---------------------|--|
| <i>Name</i> | Enter a descriptive name to be assigned to the <i>Recording Link</i> . Default: <i>Recording Link</i> |
| <i>IP Address</i> | <ul style="list-style-type: none"> If no gatekeeper is configured, the IP Address has the following format: <code><RSS_IP_address>##<VRR number></code> Example: If the RSS IP address is 173.26.120.2 and the VRR number is 4000, the IP Address is 173.26.120.2##4000. If a gatekeeper is configured, the IP Address has the following format: <code><RSS_E.164_suffix><VRR number></code> Example: If the RSS E.164 is 3535 and the VRR number is 4000, the IP Address is 35354000. |
| <i>Alias / Type</i> | If you are using the endpoint's alias and not the IP address, first select the type of alias and then enter the endpoint's alias: (H.323 ID, E.164, E-mail ID, Participant Number). |

- 7 Click **OK**.
The *New Recording Link* is added to the list of *Recording Links*.
- 8 Repeat Step 4 to Step 7 for each *New Recording Link* that is to be created.

Selecting a Recording Link

In the *New Profile* and *Profile Properties* dialog boxes, the *Recording* tab has been modified to include a drop-down menu of *Recording Links* that have been defined and are available for selection.



To select a recording link:

- 1 In the *New Profile* or *Profile Properties* dialog box, click the *Recording* tab.
- 2 Select the *Enable Recording* check box.
The *Recording Links* drop-down menu is enabled.
- 3 Select a *Recording Link*.
- 4 Modify the remaining fields of the dialog box as described in the *RMX 2000/4000 Administrator's Guide* "Enabling the Recording in the Conference Profile" on page [11-5](#).

Auto Redial when Endpoint Drops

The *Auto Redialing* option instructs the RMX to automatically redial IP and SIP participants that have been abnormally disconnected from the conference.

Guidelines

- The *Auto Redialing* option is disabled by default.
- *Auto Redialing* can be enabled or disabled during an ongoing conference using the *Conference Properties – Advanced* dialog box.
- The RMX will not redial an endpoint that has been disconnected from the conference by the participant.
- The RMX will not redial an endpoint that has been disconnected or deleted from the conference by an operator or administrator.

Enabling Auto Redialing

Auto Redialing is enabled in the *New Profile – Advanced* or, during an ongoing conference, in the *Profile Properties – Advanced* dialog box.

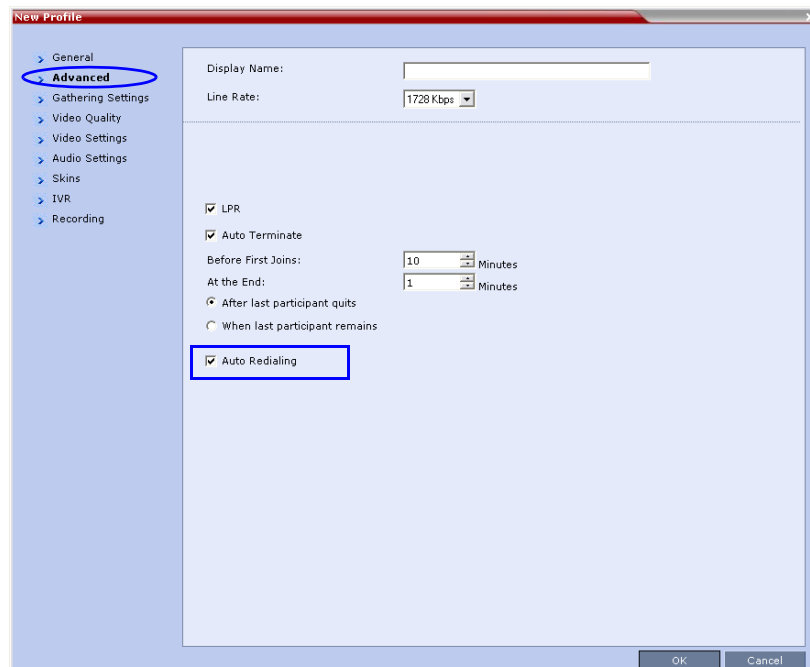
To enable Auto Redialing:

- 1 Display the *Conference Profiles* list, and select either the **New Profile** button to create a new Profile or display the **Profile Properties**.

The *New Profile* or *Profile Properties* dialog box is displayed.

- 2 Click the **Advance** tab.

The *Advanced* tab is displayed.



The screenshot shows the 'New Profile' dialog box with the 'Advanced' tab selected. The 'Auto Redialing' checkbox is checked and highlighted with a blue box. Other settings include 'Display Name', 'Line Rate' (1728 Kbps), 'LPR' (checked), 'Auto Terminate' (checked), 'Before First Joins' (10 Minutes), 'At the End' (1 Minute), and 'After last participant quits' (selected).

- 3 Select the **Auto Redialing** check box.
- 4 Click the **OK** button.

System Flags

The **ENABLE_IP_REDIAL** System Flag is overridden by the *Auto Redialing* setting in the *Conference Profile*.

Auto Redialing is controlled by the two System Flags described in Table 18.

If a flag is not listed in the System Flags list it must be added to the *system.cfg* file before it can be modified.

To list, modify or add flags to the system.cfg file:

- 1 In the *RMX Web Client* menu, click **Setup>System Configuration**.

The *System Flags* list is displayed.

- 2 For each of the flags:

If the flag is listed:

- a In the *System Flags* dialog box, click the **Edit Flag** button.
- b Enter the *New Value* for the flag.
- c Click the **OK** button.

If the flag is not listed:

- a In the *System Flags* dialog box, click the **New Flag** button.
- b Add the *New Flag* and *Value* as set out in Table 18.
- c Click the **OK** button.

Table 18 System Flags – Auto Redialing

| New Flag | Description |
|-----------------------------------|---|
| <i>REDIAL_INTERVAL_IN_SECONDS</i> | Enter the number of seconds that the RMX should wait before successive redialing attempts. Range: 0-30 (Default: 10) |
| <i>NUMBER_OF_REDIAL</i> | Enter the number redialing attempts required. Dialing may continue until the conference is terminated. Default: 3 |

- 3 Click the **OK** button.

Multi-RMX Manager - Import/Export RMX Manager Configuration

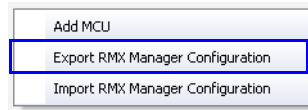
The RMX Manager configuration that includes the MCU list and the multilingual selection can be save to any workstation/PC on the network and imported to any Multi-RMX Manager installed in the network. This enables the creation of the MCUs list once and distributing it to all RMX Manager installations on the network.

In addition, when upgrading to a previous version, the MCU list is deleted, and can be imported after upgrade.

The exported file is save in XML format and can be edited in any text editor that can open XML files.

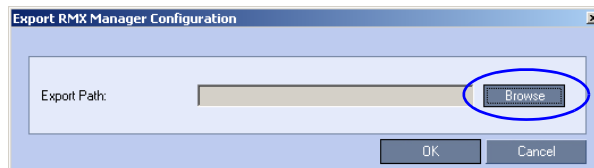
To Export the RMX Manager Configuration:

- 1 In the Multi-RMX Manager, click the **Export RMX Manager Configuration** button in the toolbar, or right-click anywhere in the MCUs pane and then click **Export RMX Manager Configuration**.



The *Export RMX Manager Configuration* dialog box opens.

- 2 Click the **Browse** button to select the location of the save file, or enter the required path in the *Export Path* box.

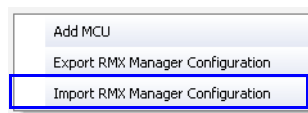


The selected file path is displayed in the *Export Path* box.

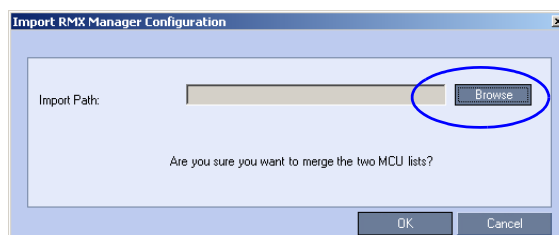
- 3 Click **OK** to export the RMX Manager configuration.

To Import the RMX Manager Configuration:

- 1 In the Multi-RMX Manager, click the **Import RMX Manager Configuration** button in the toolbar, or right-click anywhere in the MCUs pane and then click **Import RMX Manager Configuration**.

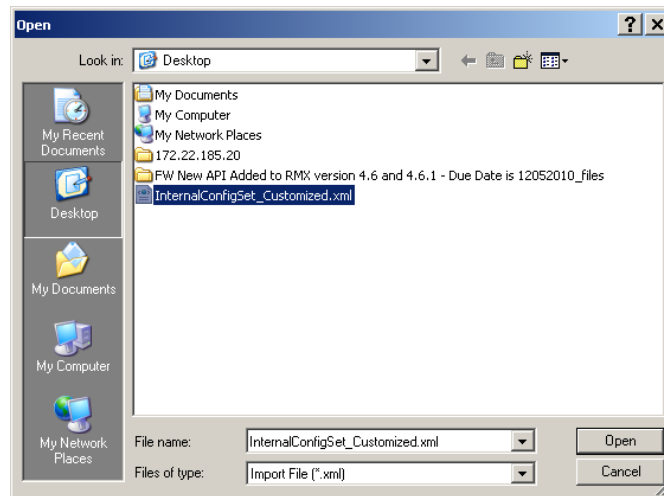


The *Import RMX Manager Configuration* dialog box opens.



- 2 Click the **Browse** button to select the saved file, or enter the required path in the *Export Path* box.

The *Open* dialog box is displayed.



- 3 Select the XML file previously save, and click the Open button.
The selected file path is displayed in the *Import Path* box.
- 4 Click **OK** to import the file.

Detailed Description - SIP

SIP LPR

Lost Packet Recovery (LPR) and *Dynamic Bandwidth Allocation (DBA)* are supported. *LPR* and *DBA* help minimize media quality degradation that can result from packet loss in the network.

Packet Loss

Packet Loss refers to the failure of data packets, transmitted over an IP network, to arrive at their destination. *Packet Loss* is described as a percentage of the total packets transmitted.

Causes of Packet Loss

Network congestion within a LAN or WAN, faulty or incorrectly configured network equipment or faulty cabling are among the many causes of Packet Loss.

Effects of Packet Loss on Conferences

Packet Loss affects the quality of:

- **Video** – frozen images, decreased frame rate, flickering, tiling, distortion, smearing, loss of lip sync
- **Audio** – drop-outs, chirping, audio distortion
- **Content** – frozen images, blurring, distortion, slow screen refresh rate

Lost Packet Recovery

The *Lost Packet Recovery (LPR)* algorithm uses *Forward Error Correction (FEC)* to create additional packets that contain recovery information. These additional packets are used to reconstruct packets that are lost, for whatever reason, during transmission. *Dynamic Bandwidth Allocation (DBA)* is used to allocate the bandwidth needed to transmit the additional packets.

Lost Packet Recovery Guidelines

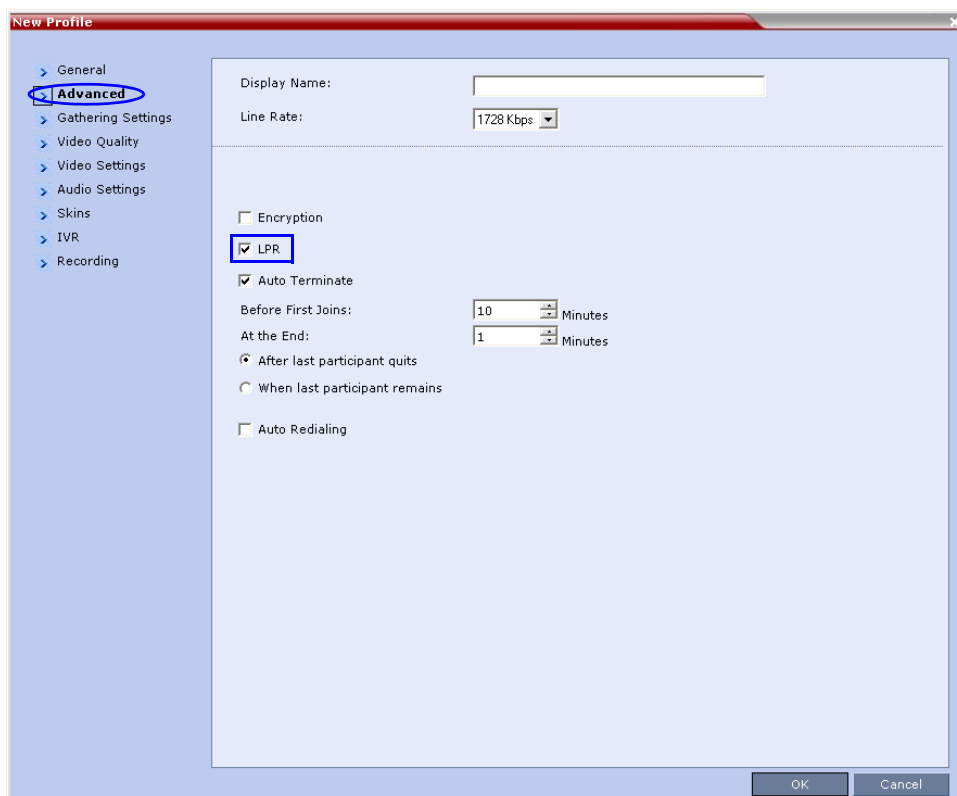
- *LPR* is supported in H.323 and SIP networking environments.
- In *LPR*-enabled *CP Mode* conferences:
 - Both *LPR*-enabled and non *LPR*-enabled endpoints are supported.
 - The *LPR* process is not applied to packet transmissions from non *LPR*-enabled H.323, SIP and H.320 endpoints.
- In *LPR*-enabled *Video Switched* conferences:
 - SIP and H.320 endpoints are not supported.
 - Cascaded links to MGC are not supported.
 - Non H.323 participants cannot be created, added or moved to *LPR*-enabled *Video Switched* conferences.
- When connecting via an *Entry Queue*:

- A participant using an *LPR*-enabled endpoint cannot be moved to a non *LPR*-enabled conference.
- SIP and H.320 participants cannot be moved to *LPR*-enabled *Video Switched* conferences.
- If packet loss is detected in the packet transmissions of either the video or Content streams:
 - *LPR* is applied to both the video and Content streams.
 - *DBA* allocates bandwidth from the video stream for the insertion of additional packets containing recovery information.

Enabling Lost Packet Recovery

LPR is enabled or disabled in the *Conference Profile* dialog box.

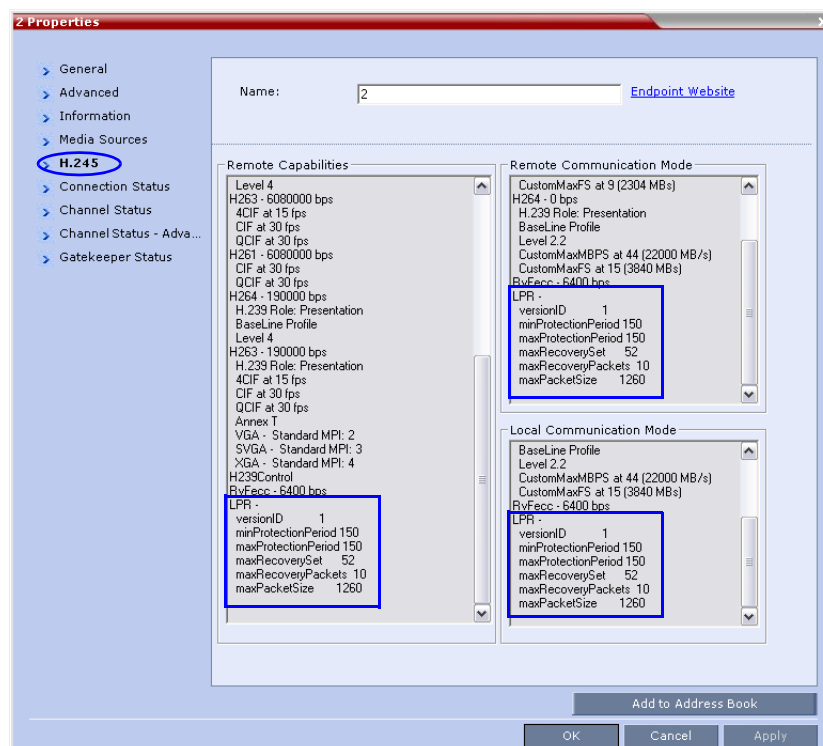
- **CP Mode Conferences** – *LPR* is enabled by default in the *New Profile – Advanced* dialog box.
- **VSW Mode Conferences** – If *High Definition Video Switching* is selected, the *LPR* check box is automatically cleared. *LPR* can be enabled for *VSW* conferences but SIP participants will not be able to connect.



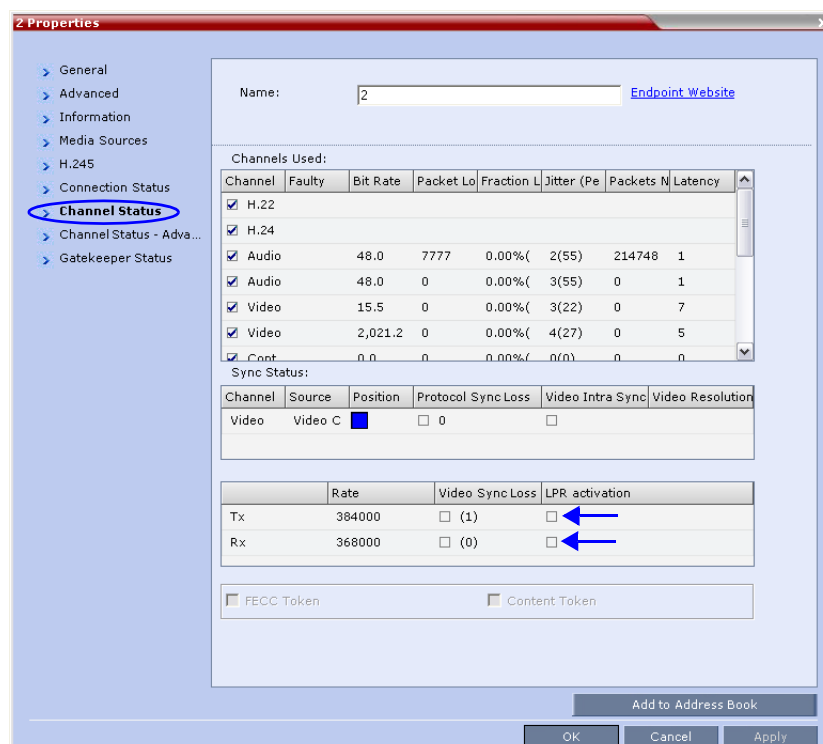
The screenshot shows the 'New Profile' dialog box with the 'Advanced' tab selected. The 'LPR' checkbox is checked. The 'Auto Terminate' checkbox is also checked. The 'Before First Joins' spinner is set to 10 minutes, and the 'At the End' spinner is set to 1 minute. The 'After last participant quits' radio button is selected. The 'Encryption' and 'Auto Redialing' checkboxes are unchecked.

Monitoring Lost Packet Recovery

In the *Participant Properties – H.245* tab, LPR activity is displayed in all three panes.



In the *Participant Properties – Channel Status* tab, check box indicators show LPR activation in the local and remote (transmit and receive) channels.



SRTP

Encryption of SIP Media is supported using SRTP (Secured Real-time Transport Protocol) and the AES key exchange method.

SRTP Guidelines

- Encryption of SIP Media requires the encryption of SIP signaling - TLS Transport Layer must be used.
- Encryption of SIP Media is supported in CP and VSW conferences.
- All media channels are encrypted: video, audio and FECC.
- Encryption of SIP Media is available only in MPM+ Card Configuration Mode.
- RMX SRTP implementation complies with Microsoft SRTP implementation.
- LPR is not supported with SRTP.
- Mixing encrypted and non-encrypted endpoints in one conference is possible, based on system flag settings:
ALLOW_NON_ENCRYPT_PARTY_IN_ENCRYPT_CONF.
The behavior is the same as for H.323 participants, as shown in Table 19 and Table 20.

For more information, see *RMX 2000/4000 Administrator's Guide*, "Media Encryption" on page [2-35](#).

Conference Access:

Table 19 Defined SIP/H.323 Participant Connection to the Conference Based on the Encryption Settings

| ALLOW_NON_ENCRYPT_PARTY_IN_ENCRYPT_CONF | Conference Encryption Setting | Participant Encryption Setting | Participant Connection Permitted |
|---|-------------------------------|--------------------------------|----------------------------------|
| NO | Yes | Auto | Yes (encrypted) |
| NO | Yes | No | No |
| NO | Yes | Yes | Yes (encrypted) |
| NO | No | Auto | Yes (non-encrypted) |
| NO | No | No | Yes (non-encrypted) |
| NO | No | Yes | No |
| YES | Yes | Auto | Yes (encrypted) |
| YES | Yes | No | Yes (non-encrypted) |
| YES | Yes | Yes | Yes (encrypted) |
| YES | No | Auto | Yes (non-encrypted) |
| YES | No | No | Yes (non-encrypted) |
| YES | No | Yes | No |

Entry Queue Access:

Table 20 *Encryption: Flag vs. Conference and Entry Queue Settings When SIP/H.323 Participant Encryption is set to Auto*

| ALLOW_NON_ENCRYPT_PARTY_IN_ENCRYPT_CONF | Entry Queue Encryption Setting | Destination Conference Encryption Setting | Enable Participant Move from EQ to Conference |
|---|--------------------------------|---|---|
| NO | Yes | No | No |
| NO | Yes | Yes | Yes |
| NO | No | No | Yes |
| NO | No | Yes | No |
| YES | Yes | No | No |
| YES | Yes | Yes | Yes |
| YES | No | No | Yes |
| YES | No | Yes | Yes |

Enabling Encryption

In the Profile

Encryption for the conference is in the Profile and cannot be changed once the conference is running. For more details, see *RMX 2000/4000 Administrator's Guide*, "Enabling Encryption in the Profile" on page 2-58.

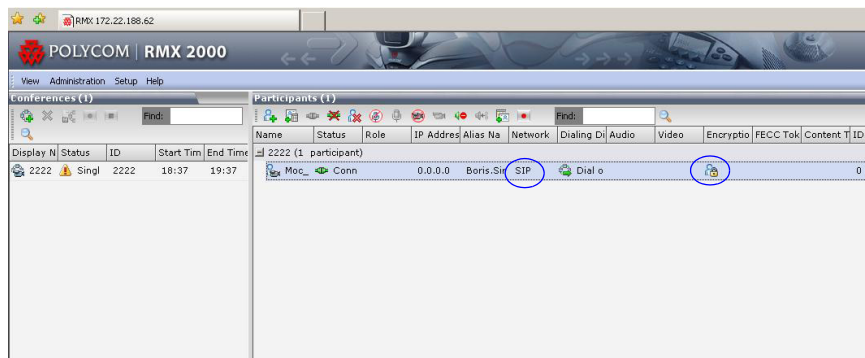
At the Participant Level

You can select the encryption mode for each of the defined participants as for H.323 participants. Encryption options are affected by the settings of the flag in the system configuration. Undefined participants are connected with the Participant *Encryption* option set to **Auto**, inheriting the conference/Entry Queue encryption setting. For more details, see *RMX 2000/4000 Administrator's Guide*, "Enabling Encryption at the Participant Level" on page 2-58.

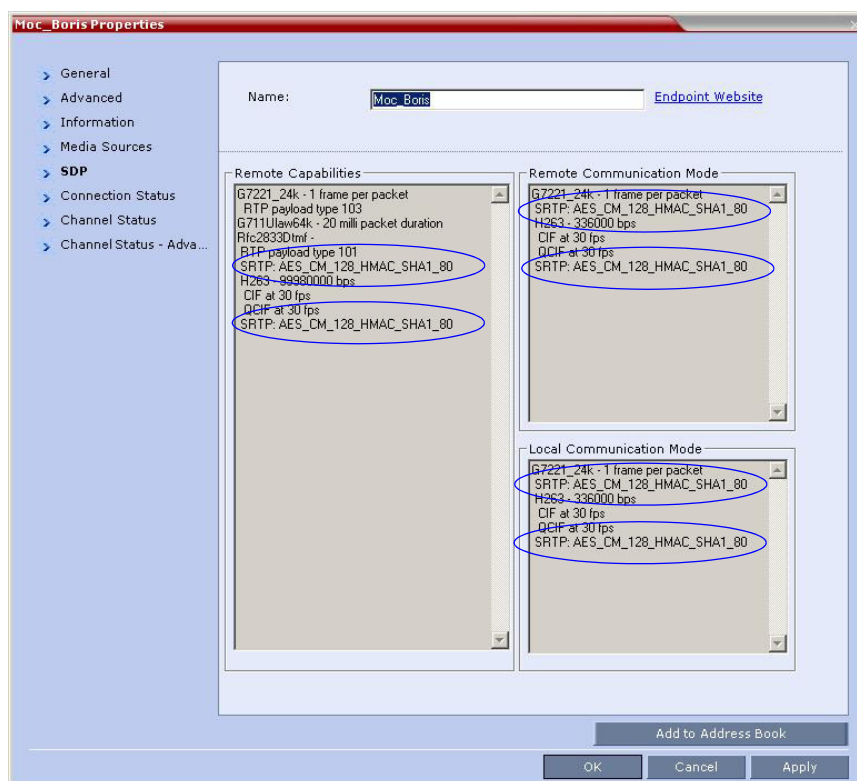
Monitoring the Encryption Status

The conference encryption status is indicated in the *Conference Properties - General* dialog box.

The participant encryption status is indicated by a check mark in the *Encryption* column in the *Participants* list pane.



The participant encryption status is also indicated in the *Participant Properties - SDP* tab, where SRTP indication is listed for each encrypted channel (for example, audio and video).



An encrypted participant who is unable to join a conference is disconnected from the conference. The disconnection cause is displayed in the *Participant Properties - Connection Status* tab, *Security Failure* indication, and the *Cause* box identifies the encryption related situation.

For more information about monitoring, see the *RMX 2000/4000 Administrator's Guide "Conference and Participant Monitoring"* on page 10-1.

ICE Environment Integration

Interactive Connectivity Establishment (ICE) provides a structure/protocol to unify the various NAT Traversal techniques that are used to cross firewalls.

It enables SIP based endpoints to connect while traversing a variety of firewalls that may exist between the calling endpoint (local) and the MCU or called endpoint (remote).

ICE Guidelines

- ICE is available only in *MPM+ Card Configuration Mode*.
- RMX ICE implementation complies with Microsoft ICE implementation.
- ICE is available only in IPv4 environment.
- ICE can be implemented in an environment that includes a STUN server and a Relay server (for example, Microsoft AV Edge server).
- The firewall must be UDP enabled.
- The RMX must have a unique account in the Active Directory and must be registered with the OCS server.

Connecting to the RMX in ICE Environment

The dialing methods that can be used by an endpoint to connect to another endpoint depends on the ICE environment: Local, Remote or Federation.

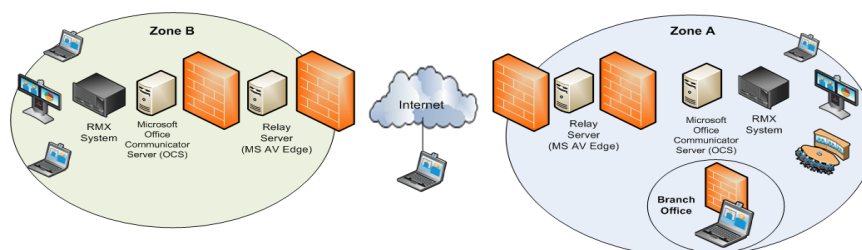


Figure 1 ICE Environment

Local connection - a connection between the RMX and endpoints that reside within the same organization. For example, an endpoint in Zone A calls the RMX in Zone A.

Branch Office - a connection between an endpoint that is behind a firewall and the RMX that reside in the same zone. The user in the Branch Office can also place and receive calls from other enterprises and remote users. For example, Enterprise A also contains a branch office, which in this example is a Polycom HDX user who is behind more than one firewall.

Remote - a connection between RMX that resides within the organization and an endpoint that resides outside of the organization (on a WAN). For example, an endpoint on the internet that calls the RMX in Zone A. In such a case, the call has to traverse at least one firewall.

Federation - a connection between RMX that resides within one organization and an endpoint that resides within another organization. For example, an endpoint in Zone A calls the RMX in Zone B. The call has to traverse two or more firewalls.

Dialing Methods

The ICE protocol enables remote and federation connections using the registered user name for dialing. The endpoint connects to the RMX by entering the RMX registered user name in the following format:

[RMX registered user name]@[OCS domain name]

For example: **rmx1234567890@ilsnd.vsg.local**

The call reaches the Transit Entry Queue of the RMX and via IVR is routed to the destination conference.

This method is added to the two dialing methods available in Microsoft Office Communication environment for local connections:

- *Matched URI Routing* – in which the user enters the destination endpoint's URI
- *Numerical Dialing* – in which the RMX is configured as voice gateway and the user can enter the number of the destination endpoint in the same way as for H.323 endpoint.

The following table summarizes the dialing methods and its availability in the various configurations.

Table 1-1 Available dialing methods per Connection Type

| | Matched URI Routing | Numerical Dialing | Registered User Name |
|----------------------|---------------------|-------------------|----------------------|
| <i>Local</i> | √ | √ | √ |
| <i>Branch office</i> | √* | X | √ |
| <i>Remote</i> | √* | X | √ |
| <i>Federation</i> | √* | X | √ |

* To enable the Matched URI dialing in the federated environment to be able to connect to the RMX SIP signaling domain, you must also configure the Office Communications Server. When federating an Office Communications Server edge server with another Office Communications Server environment, you need to include the FQDN of the Office Communications Server edge server as well as the SIP signaling domain for federated environment. The SIP signaling domain is the FQDN of the Polycom DMA system or a Polycom RMX system (when your deployment does not include a DMA system).

For example, if company B wants to set up federation with company A and receive and send SIP calls that will be handled by the Polycom SIP signaling domain in company A, you need to add the FQDN of the company A Office Communications Server domain as well as the SIP signaling domain of company a to the list of Internal SIP Server domains supported by the company B Office Communications Server environment.

For more information, see the Microsoft documentation and the Visual Communications Deployment Administration Guide.

Deployment Process for the RMX Systems

To enable the remote and Federation connections the following operations must be performed:

- Create an Active Directory account for the RMX that will be used for registering and operating in the MS ICE environment
- Enable the RMX User Account for Office Communication Server
- Configure the RMX for ICE dialing

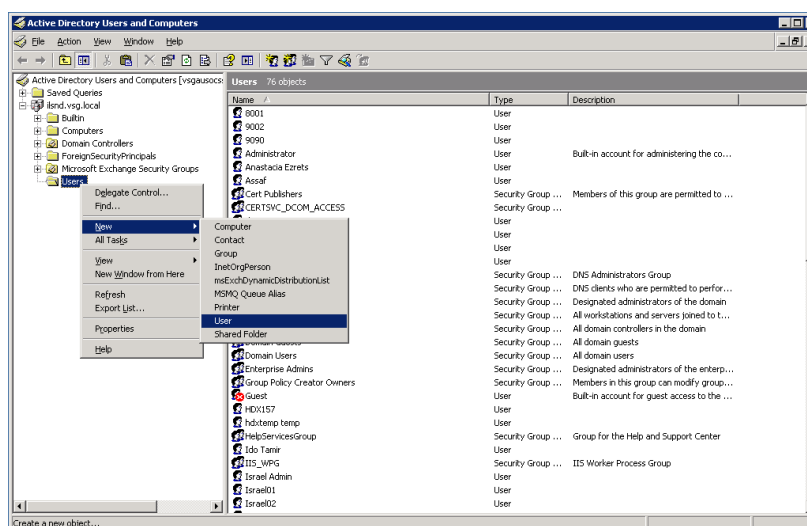
The RMX can also be set for Matched URI Routing and/or Numerical Dialing to Meeting Rooms. For more details, see *RMX Administrator's Guide, Appendix H*.

Creating an Active Directory Account for the RMX

The User account created for the RMX is used for registration in the Office Communication Server and to automatically synchronize with the STUN and relay (Edge) servers.

To add the RMX user to the Active Directory:

- 1 Go to **Start > Run** and enter **dsa.msc** to open the *Active Directory Users and Computers* console
- 2 In the console tree, select **Users > New > User**.



- 3 In the *New User* wizard, define the following parameters:

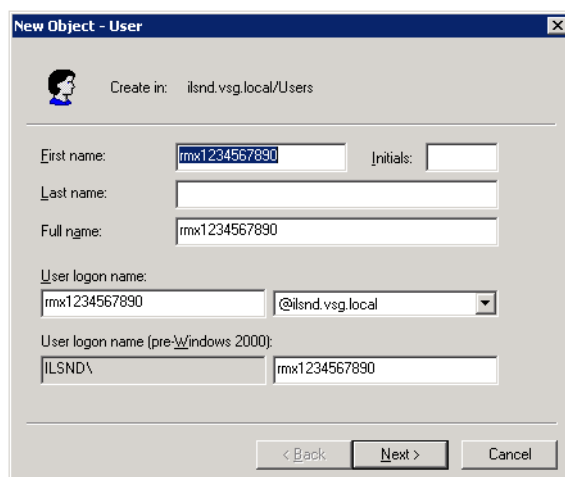
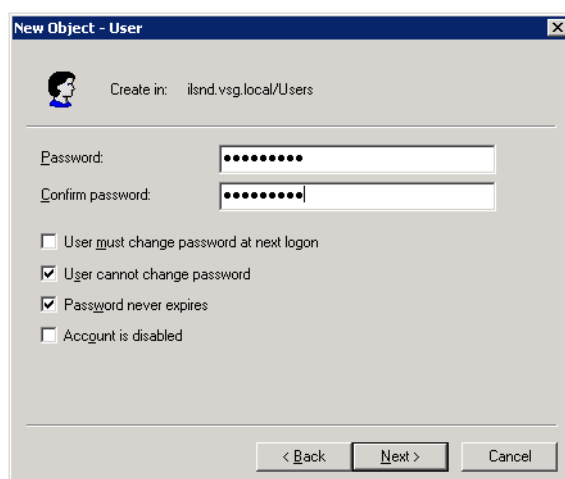


Table 2 Active Directory - New User Parameters for the RMX

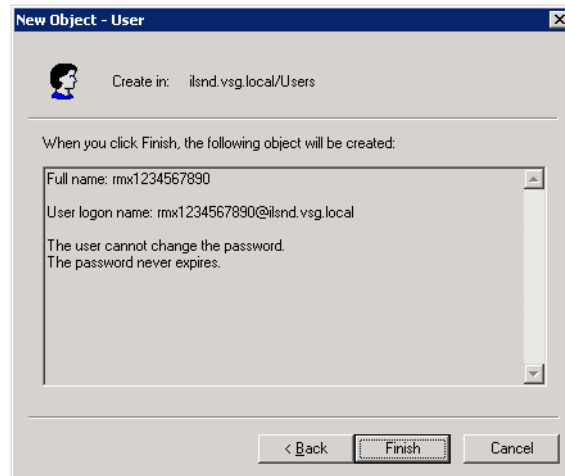
| Field | Description |
|------------------------|--|
| <i>First Name</i> | Enter the name for the RMX user. This name will be used in the configuration of the ICE environment in the RMX. |
| <i>Full Name</i> | Enter the same name as entered in the <i>First Name</i> field. |
| <i>User Login Name</i> | Enter the same name as entered in the <i>First Name</i> field and select from the drop down list the domain name for this user. It is the domain name defined for the Office Communication Server. |

- 4 Click **Next**.
- 5 Enter the password that complies with the Active Directory conventions and confirm the password.



- 6 Select the options: **User cannot change password** and **Password never expires**. Clear the other options.

- 7 Click **Next**.
The system displays summary information.



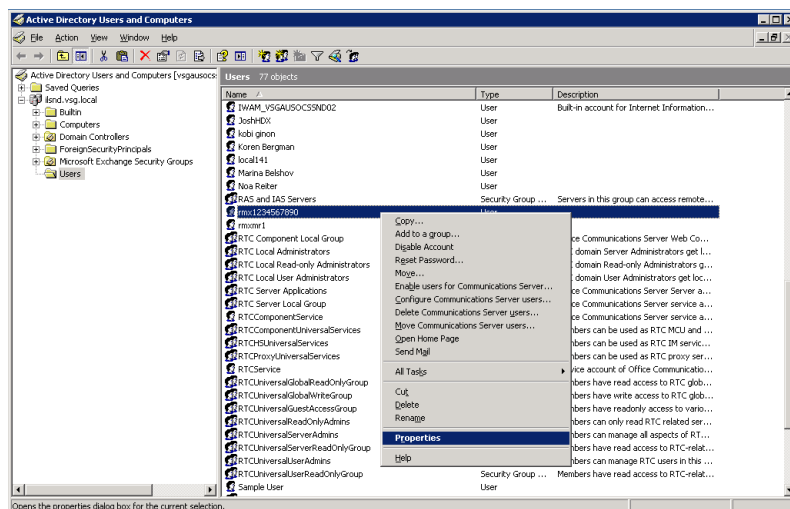
- 8 Click **Finish**.
The new User is added to the Active Directory *Users* list.

Enabling the RMX User Account for Office Communication Server

The new RMX user must be enabled for registration with the Office Communications Server.

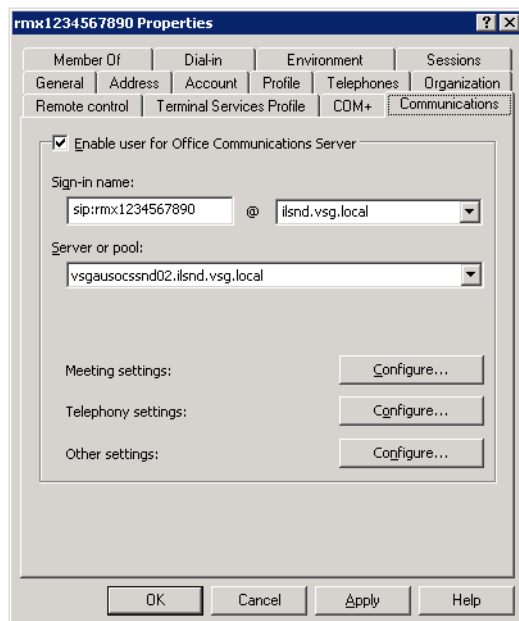
To enable the RMX User Account for Office Communication Server:

- 1 In the *Active Directory Users and Computers* window, right-click the RMX user and then click **Properties**.



- 2 In the *Properties* dialog box, click the **Communications** tab.

- 3 In the *Sign in name* field, enter the RMX user name in the format SIP:rmx user name (for example sip:rmx1234567890) and select the domain name (for example ilsnd.vsg.local) as entered in the *New User* dialog box.



- 4 Select the *Server or Pool* from the list.
- 5 Click **Apply** and then **OK**.





Configuring the RMX for ICE Dialing

To enable ICE dialing, the Default IP Network Service must be configured to work with the Office Communication Server as the SIP Server and the RMX user defined in the Active Directory must also be defined in the RMX ICE environment parameters.



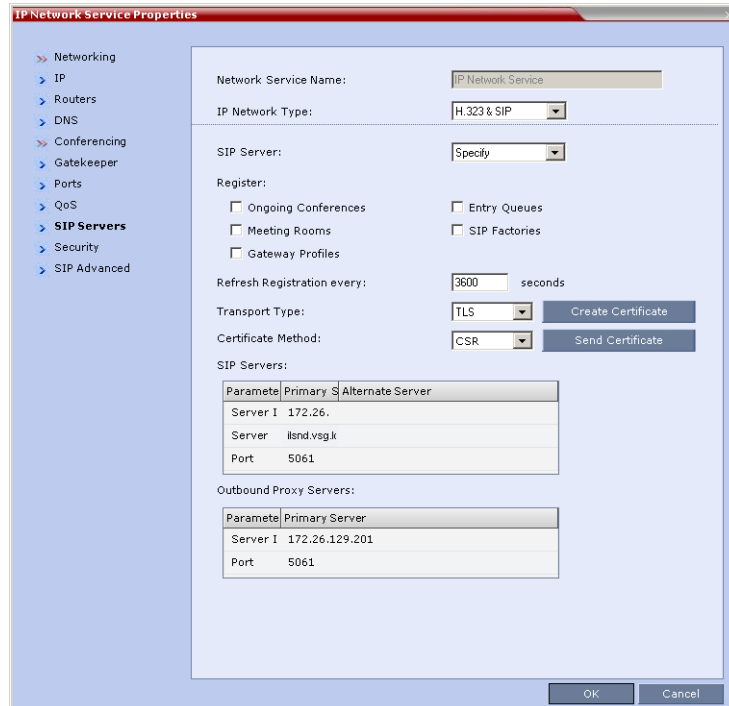
The procedure described here assumes that the RMX is configured to work in Microsoft environment; the MS_ENVIRONMENT flag is set to YES, the IP Network Service is set to work with Office Communications Server as the SIP Server and the TLS certificate is installed. For a detailed description of these settings, see the *RMX 1500/2000/4000 Administrator's Guide, Appendix H*.

To configure the RMX for ICE Dialing:

- 1 In the RMX Web browser, in the *RMX Management* pane, expand the **Rarely Used** list and click **IP Network Services** (.
- 2 In the *IP Network Services* pane, double-click the **Default IP Service** (, , or ) entry.

The *Default IP Service - Networking IP* dialog box opens.

- 3 Click the **SIP Servers** tab.



The screenshot shows the 'IP Network Service Properties' dialog box with the 'SIP Servers' tab selected. The left sidebar lists various configuration categories, with 'SIP Servers' highlighted. The main area contains the following fields and options:

- Network Service Name:** IP Network Service
- IP Network Type:** H.323 & SIP
- SIP Server:** Specify
- Register:**
 - ☐ Ongoing Conferences
 - ☐ Meeting Rooms
 - ☐ Gateway Profiles
 - ☐ Entry Queues
 - ☐ SIP Factories
- Refresh Registration every:** 3600 seconds
- Transport Type:** TLS (with 'Create Certificate' button)
- Certificate Method:** CSR (with 'Send Certificate' button)
- SIP Servers:**

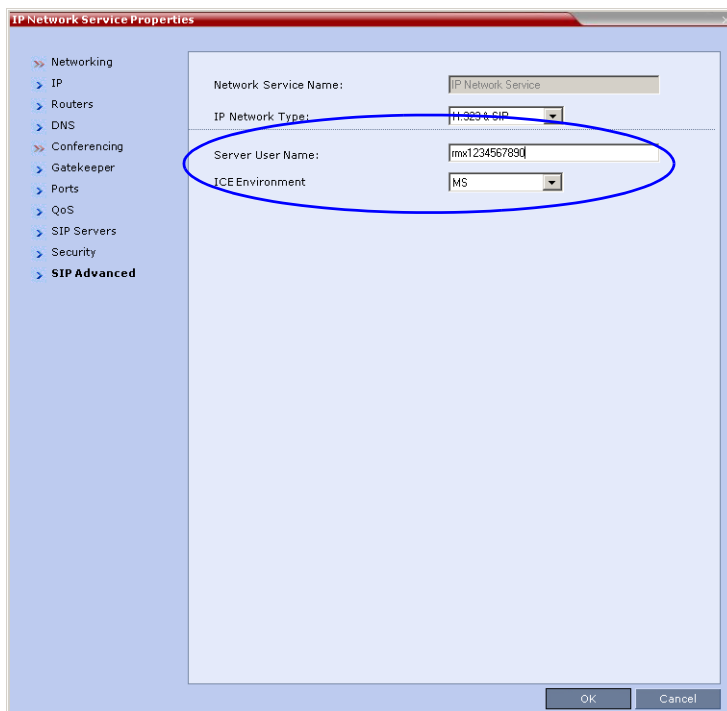
| Parameter | Primary Server | Alternate Server |
|-----------|----------------|------------------|
| Server I | 172.26. | |
| Server | ilsnd.vsg.k | |
| Port | 5061 | |
- Outbound Proxy Servers:**

| Parameter | Primary Server |
|-----------|----------------|
| Server I | 172.26.129.201 |
| Port | 5061 |

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

- 4 Make sure that the *Registration* options (*Ongoing Conferences*, *Meeting Rooms*, *Gateway Profiles*, *Entry Queues* and *SIP factories*) are not selected (check boxes are cleared).
- 5 Make sure that the IP address of the Office Communications Server 2007 is specified and the *Server Domain Name* is the same as defined in the OCS and in the *Management Network* for the DNS.

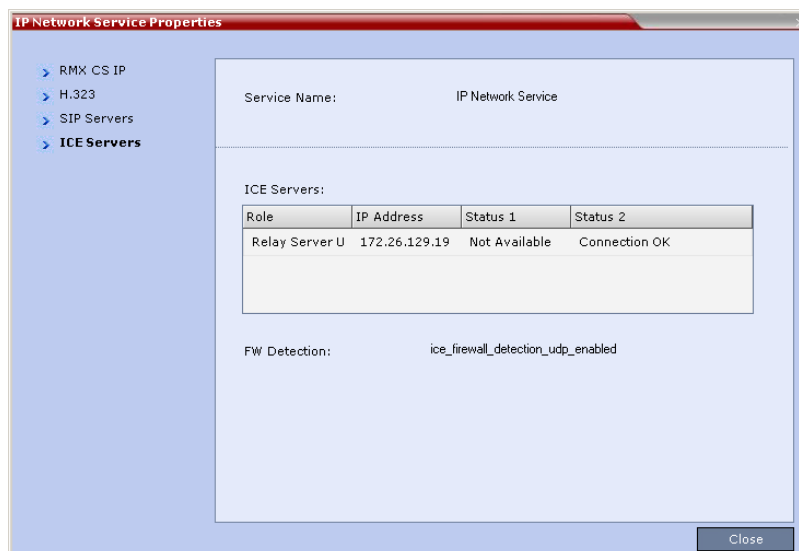
6 Click the **SIP Advanced** tab.



- 7 In the *ICE Environment* field, select **MS** (for Microsoft ICE implementation) to enable the ICE integration.
This field is disabled if the RMX is **not** running in *MPM+ Card Configuration Mode*.
- 8 In the *Server User Name* field, enter the RMX User name as defined in the Active Directory. For example, enter **rmx1234567890**.
This field is disabled if the *ICE Environment* field is set to **None**.
- 9 Click **OK**.
The RMX will register with the OCS enabling automatic retrieval of the STUN server and Relay server parameters for ICE dialing.
These parameters can be viewed in the *Signaling Monitor - ICE Servers* dialog box.

Monitoring the connection to the STUN and Relay Servers in the ICE Environment

- 1 In the RMX Web browser, in the *RMX Management* pane, click **Signaling Monitor**.
- 2 In the *Signaling Monitor* pane, click the **IP Network Service** entry.
- 3 Click the **ICE Servers** tab.



The system lists the ICE servers to which it is connected and the status of the connection of each of the RMX media cards (status 1, status 2, etc) to ICE servers. (Two statuses are displayed for RMX 2000 and four statuses are displayed for RMX 4000).

In addition, the system indicates the status of the firewall detection in the RMX.

Monitoring the Participant Connection in ICE Environment

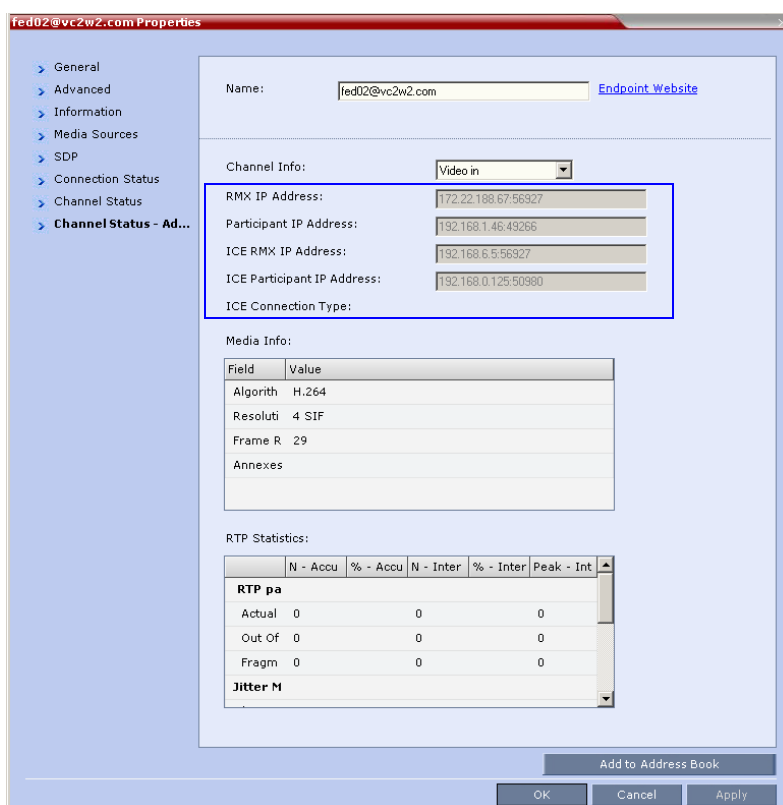
For each participant in the conference running in ICE environment, you can view the local and the external IP addresses and the type of connection between the RMX and the participant (remote).

The ICE information is displayed only for the media channels and not the signaling channel.

To view the channel properties of the participant:

- 1 In the participants pane, double-click the participant entry or right-click the participant entry and then click **Properties**.

2 Click the **Channel Status - Advanced** tab.



The screenshot shows the 'fed02@vc2w2.com Properties' dialog box. The 'Channel Status - Advanced' tab is selected. The 'Channel Info' section is highlighted with a blue box. It contains the following fields:

- Name: fed02@vc2w2.com (with a link to Endpoint Website)
- Channel Info: Video in (dropdown)
- RMX IP Address: 172.22.188.67:56927
- Participant IP Address: 192.168.1.46:49266
- ICE RMX IP Address: 192.168.6.5:56927
- ICE Participant IP Address: 192.168.0.125:50980
- ICE Connection Type: (dropdown)

The 'Media Info' section shows a table with the following data:

| Field | Value |
|-----------|-------|
| Algorithm | H.264 |
| Resoluti | 4 SIF |
| Frame R | 29 |
| Annexes | |

The 'RTP Statistics' section shows a table with the following data:

| | N - Accu | % - Accu | N - Inter | % - Inter | Peak - Int |
|-----------------|----------|----------|-----------|-----------|------------|
| RTP pa | | | | | |
| Actual | 0 | | 0 | | 0 |
| Out Of | 0 | | 0 | | 0 |
| Fragm | 0 | | 0 | | 0 |
| Jitter M | | | | | |

Buttons at the bottom: Add to Address Book, OK, Cancel, Apply.

The following connection information is displayed:

Table 3 Participant Properties - ICE Connection Parameters

| Field | Description |
|-------------------------------|---|
| <i>RMX IP Address</i> | The local IP address and port (in the format IP address:Port) of the RMX. |
| <i>Participant IP Address</i> | The local IP address and port (in the format IP address:Port) of the endpoint. |
| <i>ICE RMX IP Address</i> | <p>The IP address and the Port number of the RMX used to pass through the media. This information changes according to the <i>ICE connection type</i>:</p> <ul style="list-style-type: none"> When <i>ICE connection type</i> is local, it is identical to the IP address:Port displayed in the <i>RMX IP Address</i>. When <i>ICE connection type</i> is relay, the system displays the IP address and port number of the relay server used to pass the media from the RMX to the participant. When <i>ICE connection type</i> is firewall, the system displays the public IP address and port of the RMX as seen outside the private network. |

Table 3 Participant Properties - ICE Connection Parameters

| Field | Description |
|-----------------------------------|---|
| <i>ICE Participant IP Address</i> | <p>The IP address and the Port number of the endpoint used to pass through the media. This information changes according to the <i>ICE connection type</i>:</p> <ul style="list-style-type: none"> When <i>ICE connection type</i> is local, it is identical to the IP address:Port displayed in the <i>Participant IP Address</i>. When <i>ICE connection type</i> is relay, the system displays the IP address and port number of the relay server used to pass the media from the participant to the RMX. When <i>ICE connection type</i> is firewall, the system displays the public IP address and port of the endpoint as seen outside the private network. |
| <i>ICE Connection Type</i> | <p>Indicates the type of connection between the RMX and the participant in the ICE environment:</p> <ul style="list-style-type: none"> Local (or Host) - The endpoint (Remote) is on the same network as the RMX and the media connection is direct, using local addresses. Relay - Media between the RMX and the participant passes through a media relay server. Firewall - Media connection between the RMX and the participant is done using their external IP addresses (the IP addresses as seen outside of the local network). |

ICE Active Alarms

When ICE environment is enabled in the RMX, failure to communicate with a required component triggers the display of an Active Alarm in the System Alerts pane.

The following table lists these active alarms:

Table 4 ICE Environment - RMX Active Alarms

| Active Alarm | Phase | Alarm Displayed When | Troubleshooting |
|---|--------------|--|---|
| ICE failure: Failed to register with OCS. Check the RMX Server Name. | Registration | The RMX did not receive a confirmation response from the OCS to the Registration request. | <ul style="list-style-type: none"> Check that the RMX Server Name in IP Network Service - SIP Advanced is identical to the User name defined for the RMX in the OCS Active Directory. Make sure that the RMX user is defined in the OCS Active Directory. |
| ICE failure: Failed to subscribe with the OCS, therefore the A/V Edge Server URI was not received. | Subscribe | The RMX did not receive a confirmation response from the OCS to the Subscription request. The Subscription is required for obtaining the A/V Edge Server URI which is followed by the notify message containing the credentials). | |
| ICE failure: The Notify message containing the A/V Edge Server URI was not received | Notify | The Notify message containing the A/V Edge Server URI was not received by the RMX. | |
| ICE failure: Received Notification does not contain URI. | Notify | The notify message that was sent from the A/V Edge Server does not contain the A/V Edge server URI. | Verify the A/V Edge server is configured in the OCS. |

Table 4 ICE Environment - RMX Active Alarms

| Active Alarm | Phase | Alarm Displayed When | Troubleshooting |
|---|---------|--|-----------------|
| ICE failure: No response from the A/V Edge Server to the RMX Service Request | Service | The RMX did not receive a confirmation response from the A/V Edge Server to the Service request. | |
| ICE failure: Received Service message does not contain the Credentials. | Service | The Service message response does not contain the Credentials. | |
| ICE failure: A/V Edge server URI cannot be resolved | Service | The RMX failed to resolve The remote address of the Edge server URI. | |
| ICE failure: Service credential denied. A/V Edge server credentials rejected by the OCS. | Service | This alarm indicates that the OCS does not configure with the. Generated by the ICE stack. | |

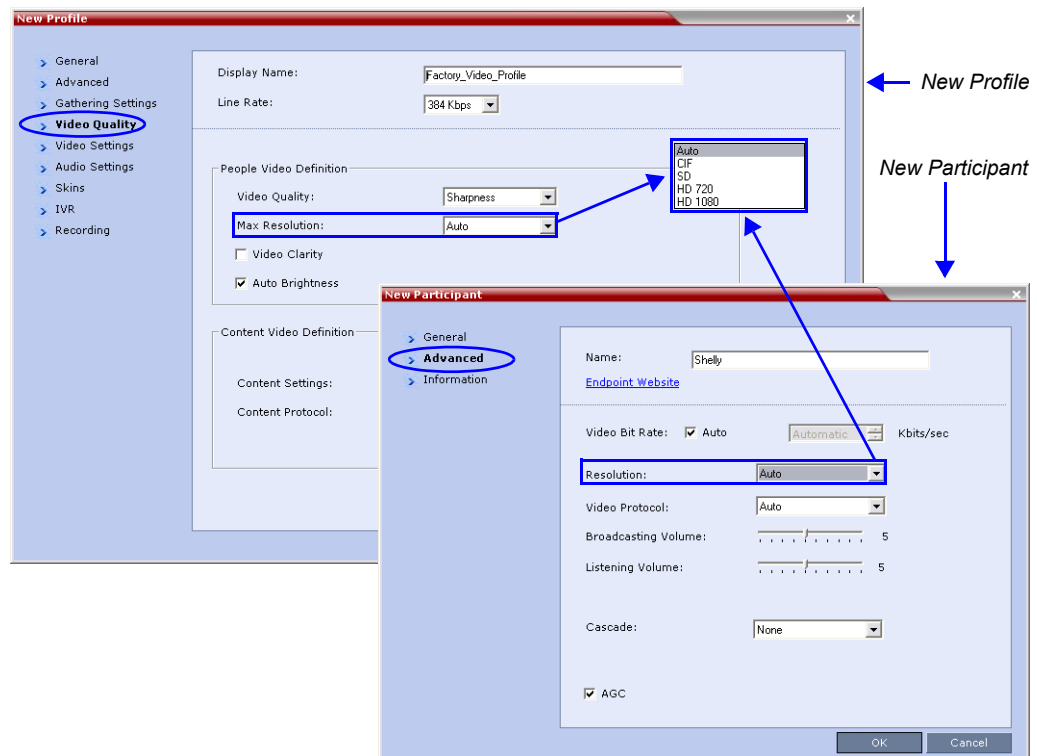
Detailed Description - Feature Changes

Limiting Maximum Resolution

The *Maximum Resolution* settings of the *Resolution Configuration* dialog box can be overridden by new fields that have been included in the *New Profile* and *New Participant* dialog boxes.

The *Maximum Resolution* field in the *New Profile - Video Quality* dialog box allows *Maximum Resolution* to be limited per conference.

The *Resolution* field in the *New Participant - Advanced* dialog box allows *Maximum Resolution* to be **further limited** per participant endpoint.



The drop-down menu in both the dialog boxes allow the administrator to select from the following *Maximum Resolution* options:


- *Auto* (default) - The *Maximum Resolution* remains as selected in the *Resolution Configuration* dialog box.
- *CIF*
- *SD*
- *HD720*
- *HD1080*

The *Maximum Resolution* settings can be monitored in the *Profile Properties - Video Quality* and *Participant Properties - Advanced* dialog boxes.

The *Maximum Resolution* settings for conferences and participants cannot be changed during an ongoing conference.








For more information see "*Max Resolution Pane*" on page [46](#).

Auto Layout Changes

In previous versions, In *Auto Layout* mode, the same video layout (1+7 ) was displayed when the number of participants was 8 or more.

In Version 7.0, two additional layouts are activated in *Auto Layout* mode when 11 and 12+ participants are connected to the conference. The following table summarizes the default layout selection according to the number of participants connected to the conference:

Table 5 *Auto Layout – Default Layouts*

| Number of Video Participants | Auto Layout Default Settings |
|------------------------------|---|
| 0-2 |  |
| 3 |  |
| 4-5 |  |
| 6-7 |  |
| 8-10 |  |
| 11 |  |
| 12+ |  |

In layout 2+8, the two central windows display the last two speakers in the conference: the current speaker and the “previous” speaker. To minimize the changes in the layout, when a new speaker is identified the “previous” speaker is replaced by the new speaker while the current speaker remains in his/her window.

Click&View Changes

The video layout options available for 9+ participants has changed.

The following table summarizes the Video Layout options available via *Click&View*.

Table 6 *Video Layout Options*























| DTMF Code | Layout Options | | | | |
|-----------|---|---|---|---|--|
| 1 |  | | | | |
| 2 |  |  |  |  | |
| 3 |  |  |  | | |
| 4 |  |  |  |  | |

Table 6 Video Layout Options (Continued)

| DTMF Code | Layout Options | | | | |
|-----------|---|---|---|---|---|
| 5 |  |  |  | | |
| 6 |  | | | | |
| 8 |  | | | | |
| 9 |  |  |  |  |  |

System Configuration - Auto Layout Flags

Two new flags were added to the system configuration file, enabling the configuration of the video layout that will be automatically displayed in Auto Layout mode:

- **PREDEFINED_AUTO_LAYOUT_11,**

default value: CP_LAYOUT_2P8 ()

- **PREDEFINED_AUTO_LAYOUT_12,**

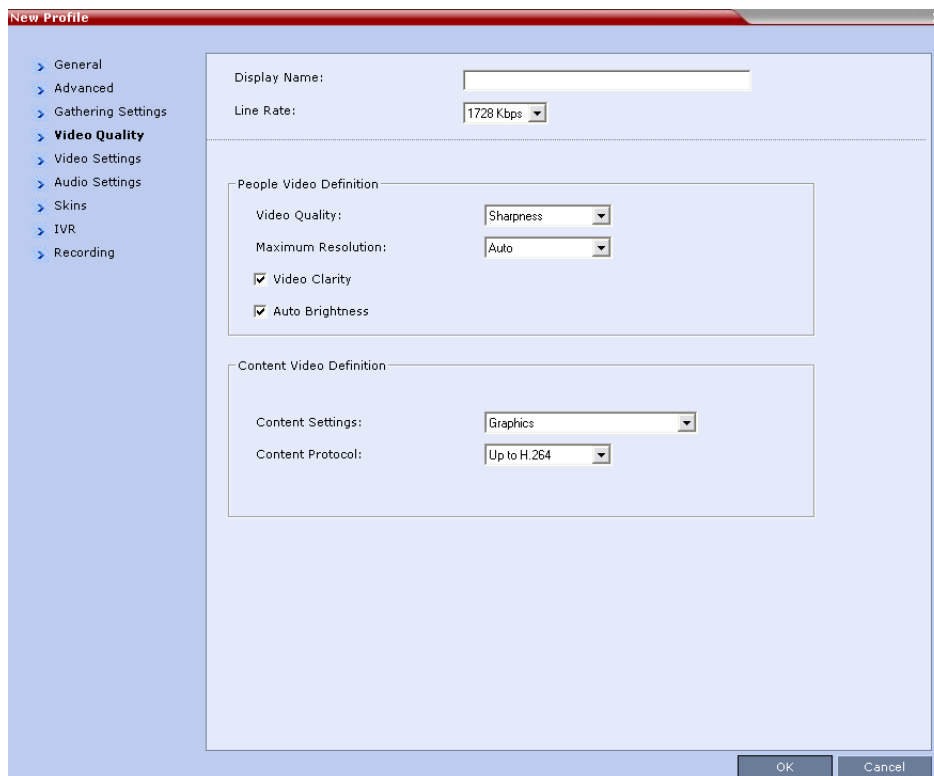
default value: CP_LAYOUT_1P12 ()

For more details on Auto Layout flag configuration, see *RMX 1500/2000/4000 Administrator's Guide*, "Auto Layout Configuration" on page [18-35](#).

Auto Brightness

A new check box, *Auto Brightness*, has been added to the *New Profile - Video Quality* dialog box.

Auto Brightness detects and automatically adjusts the brightness of video windows that are dimmer than other video windows in the conference layout.



Guidelines

- *Auto Brightness* is supported with MPM+ and MPMx cards only.
- *Auto Brightness* only increases brightness and does not darken video windows.
- *Auto Brightness* is selected by default.
- *Auto Brightness* cannot be selected and deselected during an ongoing conference.
- The check box overrides the **SET_AUTO_BRIGHTNESS** System Flag in *system.cfg*. For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "Defining Profiles" on page 1-9 and "Modifying System Flags" on page 18-5.

Audio Only Message

In previous versions, participants that were connected as *Secondary (Audio Only)* because of lack of video resources would not receive any indication stating the reason why his/her video had not connected.

In this version, the administrator can enable an audio message that informs the participant of the lack of *Video Resources* in the RMX and that he/she is being connected as *Audio Only*. The message states: *All video resources are currently in use. Connecting using audio only.*

Guidelines

- The IVR message applies to video participants only. *Audio Only* participants will not receive the message.
- Only *H.323* and *SIP* participants receive the audio message.
- Downgrade to *Audio Only* is not supported for undefined *ISDN* dial in participants. These participants are disconnected if there is a lack of *Video Resources*.
- The audio message is the first message after the call is connected, preceding all other *IVR* messages.
- The message is called *No Video Resources-Audio Only* and the message file (.wav) is called *No video resources audio only.wav*.
- The audio message must be added to the *Conference* and *Entry Queue IVR Services* separately.
- The IVR message can be enabled/disabled by the administrator using the **ENABLE_NO_VIDEO_RESOURCES_AUDIO_ONLY_MESSAGE** *System Flag* in *system.cfg*.

— Possible values: **YES / NO**

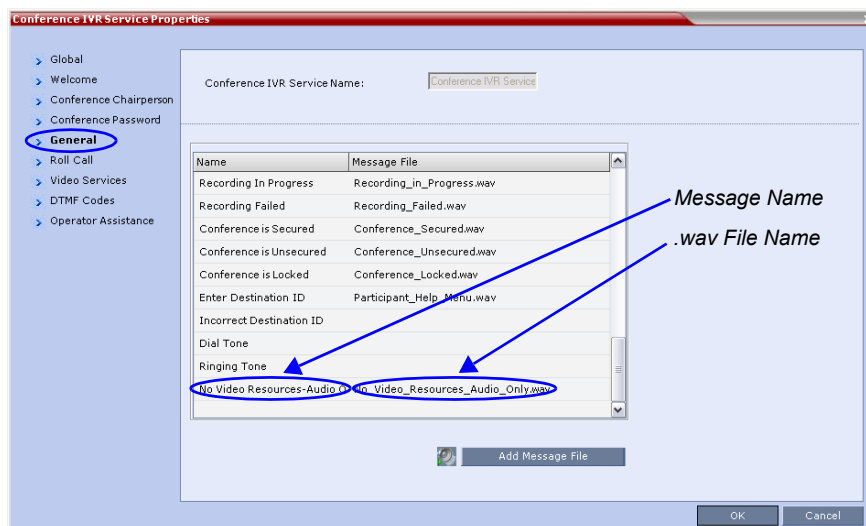
— Default: **YES**

If you wish to modify the flag value, the flag must be added to the *System Configuration* file. For more information see the *RMX 2000/4000 Administrator's Guide*, "Modifying System Flags" on page **18-5**.

Enabling the Audio Only Message

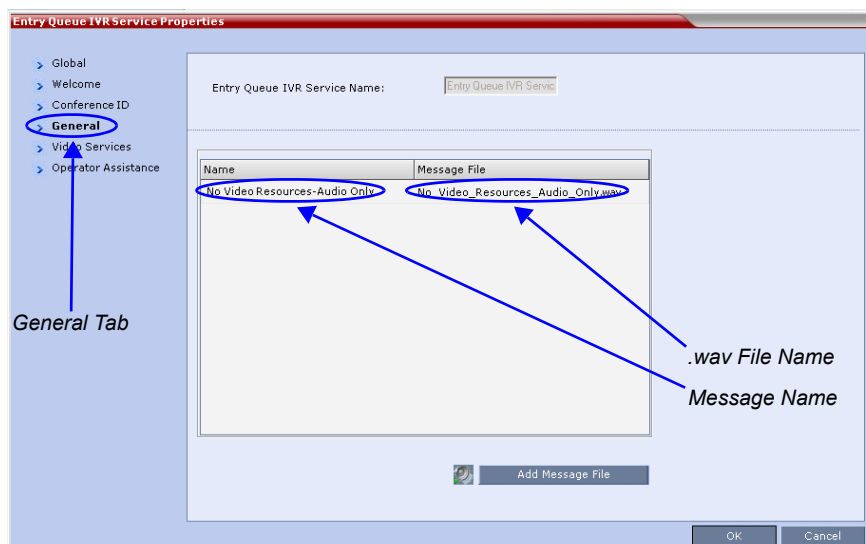
Conference IVR Service

The message file is added to the *Conference IVR Service* according to the procedure described in the *RMX 2000/4000 Administrator's Guide*, "Defining a New Conference IVR Service" on page 14-9.



Entry Queue IVR Service

A new dialog box tab, *General*, has been added to the *Entry Queue IVR Service* dialog box. The message name and .wav file name are added to the *Entry Queue IVR Service* in this dialog box. The message file is added to the *Entry Queue Service* in the same manner as described for the *Conference IVR Service* in the *RMX 2000/4000 Administrator's Guide* "Defining a New Conference IVR Service" on page 14-9.



Audio Settings Tab

A new tab, *Audio Settings*, has been added to the *New Profile* dialog box. It contains settings for:

- *Echo Suppression* - moved from the *New Profile - Advanced* tab.
- *Keyboard Noise Suppression* - moved from the *New Profile - Advanced* tab.
- *Audio Clarity*:

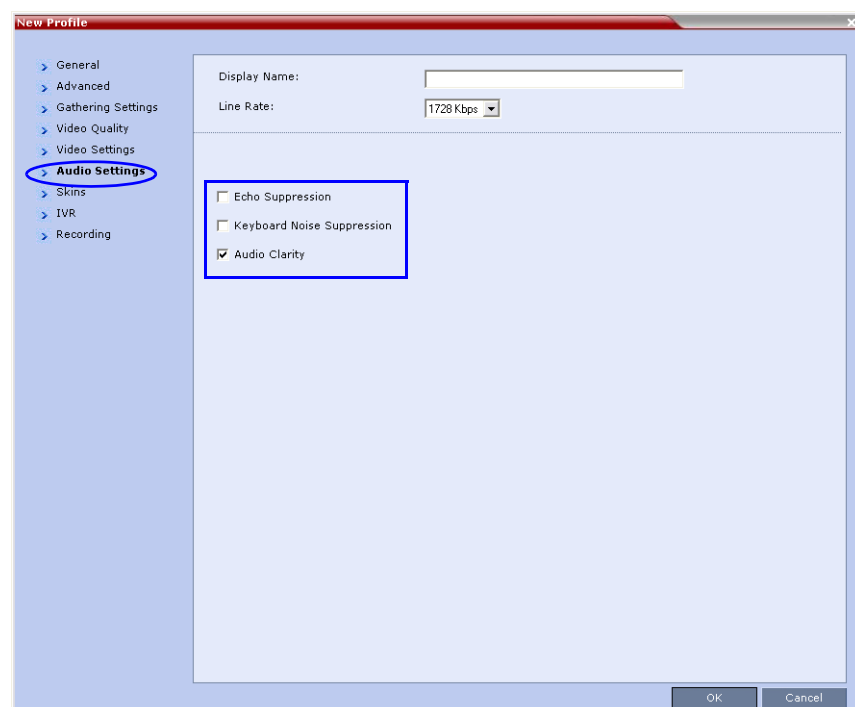
Audio Clarity improves received audio from participants connected via low audio bandwidth connections, by stretching the fidelity of the narrowband telephone connection to improve call clarity.

The enhancement is applied to the following low bandwidth (4kHz) audio algorithms:

- G.729a
- G.711

Audio Clarity Guidelines


- *Audio Clarity* is supported with MPM+ and MPMx cards only.
- *Audio Clarity* is selected by default.
- *Audio Clarity* cannot be selected and deselected during an ongoing conference.
- The check box overrides the **SET_AUDIO_CLARITY** System Flag in *system.cfg*. For more information see the *RMX 1500/2000/4000 Administrator's Guide*, "Defining Profiles" on page 1-9 and "Modifying System Flags" on page 18-5.



DTMF Forwarding Suppression

Forwarding of the DTMF codes from one conference to another over an ISDN cascading link can be limited to basic operations while suppressing all other operations once the connection between the cascaded conferences is established.

Guidelines

- The forwarding of most of the DTMF codes from one conference to another is available only in simple cascading between two MCUs.
- It is available also when cascading between RMX and MGC.
- RMX can be used as gateway, forwarding the call to the second MCU.
- The following operations are available throughout the conference and the forwarding of their DTM codes is not suppressed (i.e. they will apply to both conferences):
 - Terminate conference.
 - Mute all but me.
 - Unmute all but me.
 - Secure conference.
 - Unsecure conference.
- The called RMX (RMX B) automatically identifies the calling participant as an MCU and the connection is identified as a cascading link.
- The link (participant) is identified by the same cascading link icon () as H.323 link.

Call Flow and Configuration

ISDN connection can be used to link between two MCUs and create a cascading conference.

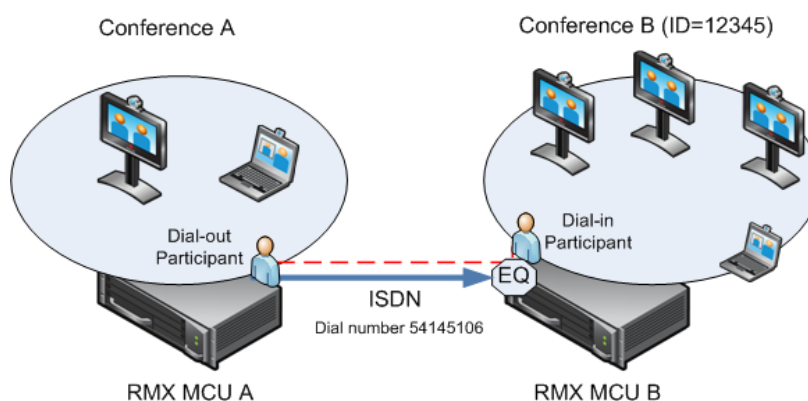
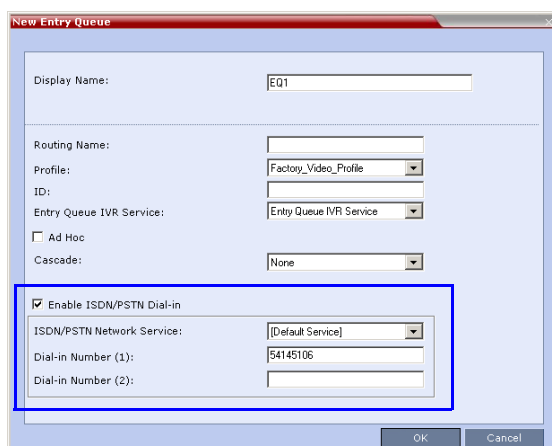
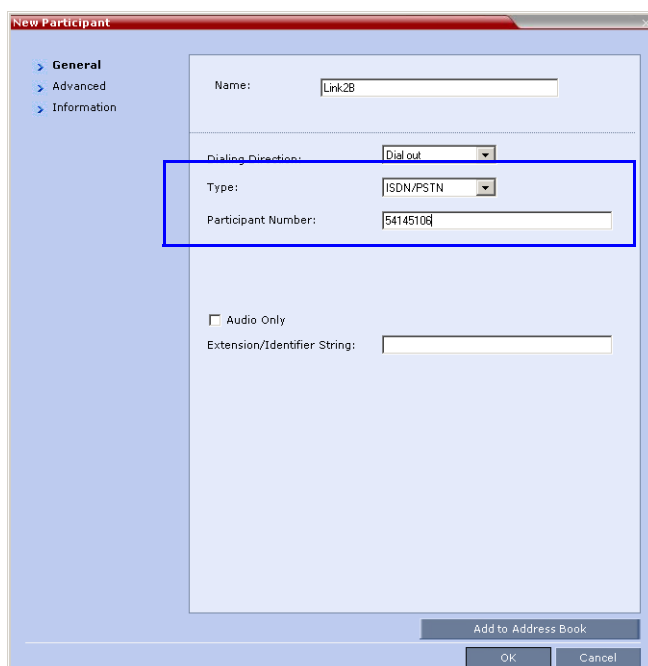


Figure 2 Simple Cascading Between Two MCUs Using an ISDN Link

ISDN Network Service is configured in both MCUs. The Entry Queue or conference (for direct dial-in) is enabled for ISDN connection and a dial-in number is assigned (for example 54145106).



A dial out ISDN participant is defined (added) to conference A. The participants's dial out number is the dial-in number of the Entry Queue or conference running on MCU B (for example 54145106).



MCU A dials out to an Entry Queue or conference B running on MCU B using the Entry Queue number (for example 54145106) or the conference number.

When the participant, who is a dial-in participant in conference B, connects to the Entry Queue, the system plays to all the participants in Conference A the IVR message requesting the participant to enter the destination conference ID (or if connecting to a conference directly, the participant is requested to enter the conference password).

At this point the Conference A organizer or any other participant in the conference can enter the required information for the IVR session using DTMF codes. For example, the meeting organizer enters the destination conference ID - 12345.

Any DTMF input from conference A is forwarded to the Entry Queue on MCU B to complete the IVR session and enable the move of the participant to the destination conference B.

Once the DTMF codes are entered and the IVR session is completed, the participant is connected to the conference and the connection between the conferences is established. The system automatically identifies the calling participant as an MCU and the connection is identified as a cascading link and the cascading link icon is displayed for

the participant. ()

The time period (in seconds) that MCU A will forward DTMF input from conference participants to the second MCU is defined by the system flag

DTMF_FORWARD_ANY_DIGIT_TIMER_SECONDS.

Once the timer expires, most of the DTMF codes (excluding five operations) entered in conference A will not be forwarded to conference B. This is done to prevent an operation requested by a participant individually (for example, mute my line) to be applied to all the participants in conference B.

System Flags

The **DTMF_FORWARD_ANY_DIGIT_TIMER_SECONDS** *System Flag* determines the number of seconds the system waits for DTMF input from the conference participants and forwards them to the second MCU before it will switch to forwarding suppression mode.

Flag range: **0 - 360000**

This flag is defined on MCU A (the calling MCU).

If a flag is not listed in the *System Flags* list it must be added to the *system.cfg* file before it can be modified.

To list, modify or add flags to the system.cfg file:

- 1 In the *RMX Web Client* menu, click **Setup>System Configuration**.

The *System Flags* list is displayed.

- 2 For each of the flags:

If the flag is listed:

- a In the *System Flags* dialog box, click the **Edit Flag** button.
- b Enter the *New Value* for the flag.
- c Click the **OK** button.

If the flag is not listed:

- a In the *System Flags* dialog box, click the **New Flag** button.
- b Add the *New Flag* name and *Value*.
- c Click the **OK** button.

- 3 Click the **OK** button.

Corrections and Known Limitations

Corrections Between Version 6.0 and Version 7.0

Table 7 Corrections Between Version 6.0 and Version 7.0

| # | Category | Key | Description | Detected in Version | Workaround |
|---|-----------|------------|--|---------------------|------------|
| 1 | Audio | VNGR-16038 | On an RMX with two MPMx cards, when connecting two dial-out PSTN participants, there is no audio between them. | V7.0 | |
| 2 | Cascading | VNGR-15023 | Content cannot be sent via cascade link. Video Disconnection Cause of the link participant is displayed as: "Content media was not established because the remote endpoint does not support the conference content protocol." | V6.0 | |
| 3 | Content | VNGR-16734 | On an RMX 1500 running an 768Kbps conference with LPR, Gathering, Sharpness, Auto Layout, Echo Suppression, Audio Clarity and Send Content to Legacy Endpoints enabled, when sending content from the Sony XG80 endpoint, HDX7600 endpoints do not view content. | V7.0 | |
| 4 | General | VNGR-11703 | Sometimes participants do not connect when the RMX is running under load. The disconnection cause is stated as "MCU internal problem 32121". | V4.5 | |
| 5 | General | VNGR-14276 | When the MCU is in start up mode, the upgrade status bar does not appear. | V6.0 | |
| 6 | General | VNGR-15374 | On an RMX with MPMx cards, when a number of endpoints with different line rates dial-out, some endpoints do not connect. | V7.0 | |

Table 7 Corrections Between Version 6.0 and Version 7.0

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|---|---------------------|------------|
| 7 | General | VNGR-15506 | In the RMX Web Client, login as Administrator and create a new user "KANSA" with Auditor permissions. Logout and login using the new Auditor user, an error message appears. | V7.0 | |
| 8 | General | VNGR-15629 | When you start a conference from an existing conference template, a popup message appears: "The conference ID already in use". Conference does not start. | V7.0 | |
| 9 | General | VNGR-15648 | In a conference started from the default "Factory_Video_Profile" and with "Send Contents to Legacy Endpoint" enabled, Legacy & ViewStation Endpoints cannot view content. | V7.0 | |
| 10 | General | VNGR-15723 | When a conference is created with the same name as another conference already running, an incorrect error message appears: "Failed to add conference: 2501". | V7.0 | |
| 11 | General | VNGR-15726 | The "Display repetition" option should be disabled when in Static Mode. | V7.0 | |
| 12 | General | VNGR-15728 | When Auto Layout is enabled in a conference, the Auto Layout function does not select the appropriate layout for number of participants present in the conference. | V7.0 | |
| 13 | General | VNGR-15740 | After updating the Exchange Integration Configuration window and clicking OK, a Message alert "31006" does not provide you with any information as to the cause of the error. | V7.0 | |

Table 7 Corrections Between Version 6.0 and Version 7.0

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|---|---------------------|------------|
| 14 | General | VNGR-15741 | When modifying the Port Gauge usage percentage from the default value ("80%") to a lower value ("40%" or "60%"), an error message is displayed. The error message is not translated into the UI language. | V7.0 | |
| 15 | General | VNGR-15743 | In the Ping Dialog box, when clicking Ping an error message appears instead of receiving an IP address. | V7.0 | |
| 16 | General | VNGR-15744 | In the Ping Dialog box, when clicking Ping an error message appears instead of receiving an IP address. | V7.0 | |
| 17 | General | VNGR-15745 | When you try to add the flag: "REDIAL_INTERVAL_IN_SECONDS" in the System Configuration an error code appears: 30432. | V7.0 | |
| 18 | General | VNGR-15808 | After modifying settings in the IP Network Services, the "Reset MCU" message did not appear, nor was the IP Network Service updated. | V7.0 | |
| 19 | General | VNGR-15932 | In the Web Client set to Japanese, when selecting Software download, click "Browse" you cannot view the binary download file. | V7.0 | |
| 20 | General | VNGR-15933 | When accessing the English version of the RMX Web Client, when viewing properties of the conference profile, some of the fields are in Japanese. | V7.0 | |
| 21 | General | VNGR-15934 | In the RMX Web Client, when creating a new gateway profile and clicking OK, a wrong message appears: "Conference name already exists". The message should be: "Failed to add Gateway Profile: Display name already exists". | V7.0 | |

Table 7 Corrections Between Version 6.0 and Version 7.0

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|--|---------------------|------------|
| 22 | General | VNGR-15949 | After upgrading the RMX to version 7.0, RMX IP address is not displayed. | V7.0 | |
| 23 | General | VNGR-15950 | In the Management Network Properties - IP tab, when selecting ON [Secured Communication] and clicking OK, the popup message states RMS instead of RMX. | V7.0 | |
| 24 | General | VNGR-15951 | When Dialing in from a PSTN participant to an EQ when entering the DTMF the participant cannot connect. | V7.0 | |
| 25 | General | VNGR-15952 | When viewing the properties of the Entry Queue when selecting "IVR service provider only" and clicking [OK], when re-opening the Entry Queue properties, the "IVR service provider only" is not selected. | V7.0 | |
| 26 | General | VNGR-16075 | On an RMX 2000 with a 384Kbps conference started from a Profile with three endpoints connected, when the last endpoints disconnects an assert appears: 32112. | V7.0 | |
| 27 | General | VNGR-16266 | In RMX Web Client, when viewing the Restore Factory Defaults window the "Select the Backup & Continue button to save the current configuration and restore factory defaults" field is not translated properly in Japanese. | V7.0 | |
| 28 | General | VNGR-16293 | On an RMX 4000 with the MPM+ card, a "CureDump ConfParty" file is created and saved on file. | V7.0 | |

Table 7 Corrections Between Version 6.0 and Version 7.0

| # | Category | Key | Description | Detected in Version | Workaround |
|----|------------------|------------|---|---------------------|--|
| 29 | General | VNGR-16348 | On an RMX with the MPM card and version 7.0, when a conference is started from a Template with ViewStation 512/EX endpoints, the system restarts unexpectedly. | V7.0 | |
| 30 | General | VNGR-16397 | On the RMX 1500, in the IP Network Service > Management Network > the Lan Ports tab appears. It should be the IP tab. | V7.0 | |
| 31 | General | VNGR-16400 | When a conference is active on the RMX 1500, in the Hardware Monitor - LAN Properties there is an "Status" indication that the LAN Media is "Inactive". It should state "active". | V7.0 | |
| 32 | General | VNGR-16421 | When a HDX (A) endpoint dials the following string: "Prefix_ID of the Gateway Profile *ISDN", to the number of the second HDX using an IP to ISDN call and starts a 384Kbps conference with IVR enabled, if HDX A sends content to HDX B, the HDX views a black screen. | V7.0 | Connect both HDXs directly to a regular conference that is using the same profile as the GW profile. |
| 33 | Hardware | VNGR-15801 | After upgrading RMX4000, an error message appears: "No RTM-LAN or RTM-ISDN installed" on slots13, 14, 15". In fact no RTM-ISDN card is installed in slot 13. | V7.0 | |
| 34 | Interoperability | VNGR-15936 | When using Japanese characters in the display name of VVX1500-175/ VVX1500-176 endpoints, the endpoints display only a number. | V7.0 | |
| 35 | Interoperability | VNGR-16398 | In a 1920Kbps conference with LPR enabled, when connecting 3 HDX endpoints bad video appears. | V7.0 | |

Table 7 Corrections Between Version 6.0 and Version 7.0

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------------------|------------|--|---------------------|------------|
| 36 | ISDN | VNGR-16642 | On RMX 1500 running a conference started from a conference profile, when a Viewstation MP512 ISDN endpoint connects, an error message appears: "Connected With Problem". | V7.0 | |
| 37 | ISDN | VNGR-16855 | Video freezes on ISDN endpoints in a fully loaded RMX 1500 when connecting, disconnecting and reconnecting all the endpoints. | V7.0 | |
| 38 | IVR | VNGR-15663 | An IVR slide with 1080p resolution was uploaded successfully to the RMX but cannot be viewed with the preview button nor could be seen in the IVR welcome slide. | V7.0 | |
| 39 | IVR-RMX 4000 | VNGR-16548 | On the RMX 4000 & MPMx card, when running an 4MB CP conference, the Welcome slide does not appear. | V7.0 | |
| 40 | Partners - Microsoft | VNGR-16804 | On RMX with MPMx, Microsoft Office Communicator Client connected at 384kbps doesn't recover and disconnects after Packet Loss after dial-in MOC Client changes LAN configuration to 100 Half Duplex during ongoing conference. | V7.0 | |
| 41 | PCM | VNGR-16913 | On RMX 4000 with MPM+, PCM on certain H.323 endpoints does not respond to arrow keys. | V7.0 | |
| 42 | SIP | VNGR-12136 | No video or low quality video is seen by a SIP HDX endpoint that connects to a conference set to 384 Kbps at much higher line rate, such as 4Mb. | V4.6 | |

Table 7 Corrections Between Version 6.0 and Version 7.0

| # | Category | Key | Description | Detected in Version | Workaround |
|----|------------------|------------|---|---------------------|------------|
| 43 | SIP | VNGR-15954 | After creating a new SIP Factory and then deleting it, you cannot create another new SIP factory. A message alert appears: "fail to add SIP factory." | V7.0 | |
| 44 | Software Version | VNGR-16803 | On RMX 1500 with MPMx High System CPU Usage fault occurs. | V7.0 | |
| 45 | Software Version | VNGR-16818 | On RMX 2000 with MPM, after upgrading the RMX restarted with "no utilizable unit for audio controller" requiring hard reset (switch off and then on). | V7.0 | |
| 46 | Software Version | VNGR-16845 | When using RMX with MPMx, MplApiSocket disconnects for 10 seconds resulting in disconnection of all participants. | V7.0 | |
| 47 | Software Version | VNGR-16915 | On RMX 1500, Encryption Key Server can cause the MCU to display High CPU Usage alert after restart. | V7.0 | |
| 48 | Upgrade Process | VNGR-14844 | The Faults List is empty when upgrading the RMX 2000 from V5.01 build 24 to v6.0 build 86. | V6.0 | |
| 49 | Upgrade Process | VNGR-16828 | When upgrading RMX4000 7.0.0.136 with MPM+ to Version 7.0.0.142 or 7.0.0.145, MPL Failure was indicated and the RTM-IP still shows "in upgrade" while the RMX exits the "startup" indication. | V7.0 | |
| 50 | Video | VNGR-14673 | In a 4MB Immersive Telepresence conference with Sharpness enabled, cracking and popping sounds are heard. | V6.0 | |

Table 7 Corrections Between Version 6.0 and Version 7.0

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|---|---------------------|------------|
| 51 | Video | VNGR-14837 | Gathering slide info is cut off for dial-out VSX and CMAD MAC endpoints that receive video at a resolution of 480x352. The gathering screen displays correctly on the HDX endpoints | V6.0 | |
| 52 | Video | VNGR-15626 | During a video conference audible clicks & popping sounds are heard during when the following endpoints are connected: CMAD, VSX3000, HDX6000 and HDX7000. | V7.0 | |
| 53 | Video | VNGR-15717 | In a 1MB conference with 2 HDX endpoints one with High Profile and the other without High Profile, corrupted video is viewed in the High Profile HDX endpoint. | V7.0 | |
| 54 | Video | VNGR-15727 | A 1024Kbps conference with maximum resolution forced to H720p, when connecting HDX endpoint with a resolution set to CIF, the endpoint connects with 4CIF thereby using more resources. | V7.0 | |
| 55 | Video | VNGR-16289 | On the RMX2000 running a conference based on the default Profile, when the RMX dials-out in SIP to the LifeSize endpoint, the call connects but the LifeSize endpoint does not view video. | V7.0 | |
| 56 | Video | VNGR-16743 | On an RMX 1500 running a 2048Kbps conference with LPR, Gathering, Sharpness, Send Content to Legacy Endpoints, Auto Layout, Echo Suppression and Audio Clarity enabled, when connecting all the endpoints together, after the gathering slide closes all HDX endpoints display low quality video. | V7.0 | |

Table 7 *Corrections Between Version 6.0 and Version 7.0*

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|---|---------------------|------------|
| 57 | Video | VNGR-16917 | On an RMX2000 with MPMX cards, when connecting HDX8000 endpoints with 720p and 1080p resolutions using a 1+7 layout, green artifacts and stripes appear in the video. | V7.0 | |

Version 7.0 System Limitations

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|---|----------|------------|--|---------------------|------------|
| 1 | Audio | VNGR-14578 | On an RMX with a license for 800 audio only participants, a disconnection cause always occurs after connecting the 767th participant. | V6.0 | |
| 2 | Audio | VNGR-14687 | When connecting 800 VOIP using 4 Entry Queues and 396 Ad Hoc conferences, when adding Dial out participants to the conferences they could connect. An MCU error message appears: MCU INTERNAL PROBLEM - 65012. | V6.0 | |
| 3 | Audio | VNGR-15938 | RMX 4000 using HDX endpoints in 2048Kpbs HD Video Switching conference using Siren22Stereo exceeds conference bit rate by sending data to endpoints at 2112kbps. | V7.0 | |
| 4 | Audio | VNGR-16272 | RMX 4000 using HDX endpoints in 2048Kpbs HD Video Switching conference using Siren22Stereo exceeds conference bit rate by sending data to endpoints at 2112kbps. | V7.0 | |
| 5 | Audio | VNGR-16794 | On RMX 4000 with MPM+, G.728 endpoint isn't declared 1st endpoint in conference at 96kbps. | V7.0 | |
| 6 | Audio | VNGR-16798 | Medium volume horn-like sound heard for several minutes on HDX4000 endpoint connected to RMX 4000 with MPM+ via DMA Meeting Room. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|-------------|------------|---|---------------------|------------|
| 7 | Audio | VNGR-16919 | On RMX with MPMx using H.323 with HDX endpoint, sites do receive Siren14 instead of Siren22 Stereo audio algorithm 6Mbps VSW conferences. | V7.0 | |
| 8 | Audio | VNGR-16935 | On RMX 1500, running 384kbps conference, an endpoint connected with <code>##FORCE_MEDIA_ASIRE N14_24K</code> or <code>##FORCE_MEDIA_ASIRE N14_32K</code> connects with a SIREN14_48K audio algorithm. An endpoint connected without force connects using G.711 audio algorithm. | V7.0 | |
| 9 | Audio | VNGR-16981 | Received audio volume of audio-only participants is approximately three times lower than that received by video participants. | V7.0 | |
| 10 | Calendaring | VNGR-13686 | On the RMX 4000 in a 1080p H.323 Video Switching conference with a line rate of 6Mb, the IVR welcome screen can freeze on the HDX8006 and HDX 9006 endpoints. | V6.0, V5.0.0 | |
| 11 | Calendaring | VNGR-13810 | In version 6.0, in the Conference Profiles list, the default Event Mode (COP) profile is not used, and should not be listed. | V6.0 | |
| 12 | Cascading | VNGR-11953 | When connecting to a cascaded CP conference with a 768Kbps line rate and the video quality set to Sharpness, HDX endpoints experience bad video quality. | V5.0.0 | |
| 13 | Cascading | VNGR-16239 | Create two 384Kbps cascaded conferences with LPR enabled, when creating the dial-out Master link to the second conference is only partially connected. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|--|---------------------|------------|
| 14 | CDR | VNGR-11746 | GMT Time Offset is written to the unformatted CDR as 0. | V4.1 | |
| 15 | CDR | VNGR-1569 | When the conference termination time is changed, the CDR is not updated. | V1.0.0 | |
| 16 | CDR | VNGR-3011 | The Encryption field is missing from the CDR file. | V1.1.0 | |
| 17 | CDR | VNGR-9340 | When a conference was terminated by an MCU reset, an incorrect status "Ongoing Conference" will be displayed in the CDR List pane. | V4.0.0 | |
| 18 | CMA | VNGR-11543 | When creating a conference using the CMA, the Conference Management UI displays the participants as disconnected, even though they are connected. | V4.1 | |
| 19 | Content | VNGR-11491 | In a conference with a line rate of 384Kbps, when H.323 participant connect to the conference using FECC, incorrect data is displayed in the Participant Properties - FECC and Content channels of the RMX Web Client. The information is updated correctly once the participant is fully connected. | V4.1 | |
| 20 | Content | VNGR-16203 | In a 768 Kbps Meeting Room with LPR, Echo Suppression, Auto layout and Motion enabled when the first to join the Meeting room sends content, the second participant to join views a black screen. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|--|---------------------|------------|
| 21 | Content | VNGR-16281 | Content sent from HDX (in H.264) is automatically stopped when a second participant that does not support H.264 Content (for example, CMAD that only supports H.263) joins the conference. When the content is sent again, the Content protocol is H.263+ to enable all conference participants to receive content. | V7.0 | |
| 22 | Content | VNGR-16502 | In a 1920Kbps conference with H.264 content, after HDXs view and receive content, then when an VSX3000 endpoint connects the content halts and an error message appears: "0x80c7a4cCMfaTask::OnBadSpontIndFromMFA reason: 1, description: Decoder resource allocation error! Closing decoder port! " | V7.0 | |
| 23 | Content | VNGR-16661 | On an RMX 1500 running an 1024Kbps HD720p conference with Video Clarity, Auto Terminate, Sharpness, Encryption, LPR, Echo Suppression and Auto Layout enabled, when sending content some dial-out HDX9004 endpoints had bad video. | V7.0 | |
| 24 | Content | VNGR-16732 | When sending content, the line rate of the sender endpoint decreases and when content is stopped, the line rate increases, above the conference line rate. For example, if the conference line rate is set to 512Kbps, it decreases to 300Kbps when sending content and it increases to 700Kbps when the content is stopped. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|-------------|------------|--|---------------------|------------|
| 25 | Content | VNGR-16807 | Bad audio quality experienced on PVX endpoint while it sends content when connected to RMX 1500. | V7.0 | |
| 26 | Content | VNGR-16830 | In a mixed H.323 & SIP 1152Kbps conference with Video Clarity, Auto Terminate, Sharpness, Echo Suppression, Auto Layout, Gathering and Send content to Legacy endpoints enabled, HDX endpoint's content is fragmented. | V7.0 | |
| 27 | Diagnostics | VNGR-16142 | On the RMX1500/2000 when running the "Diagnostic - RTM ISDN", test ID 717 RTM TDM FALC1 Diag, the test fails. Reason for the test failure: "RTM Timeout - RTM didn't send Test Completed". | V7.0 | |
| 28 | Diagnostics | VNGR-16633 | On an RMX 2000/4000 when accessing the Diagnostic mode and clicking the "run all tests" option, the confirmation window only appears minimized in the Windows Toolbar at the bottom of the screen. | V7.0 | |
| 29 | Diagnostics | VNGR-16742 | On an RMX2000 with MPMx_D cards when performing an Power ON Self Test (POST), the MPMx card runs the card monitoring test in an endless loop. | V7.0 | |
| 30 | Diagnostics | VNGR-16754 | On an RMX 4000 in the Diagnostic mode when pressing the menu reset button the following message appears: "connection with shelf management is lost, please log in again". You can only exit the Diagnostic mode after physically turning the RMX Off and On. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|--------------------|------------|---|---------------------|------------|
| 31 | <i>Diagnostics</i> | VNGR-16893 | On an RMX2000 with MPM cards, when implementing the Diagnostic mode the MPM card status remains in a "startup" phase. | V7.0 | |
| 32 | <i>Encryption</i> | VNGR-11401 | In an encrypted conference, Tandberg MXP endpoints encounter audio problems. | V4.1 | |
| 33 | <i>Encryption</i> | VNGR-12202 | Rarely, in an encrypted conference, H.323 encrypted dial-in and dial-out participants cannot connect and an assert appears (File:EncryptionKeyServer Manager.cpp). | V5.0.0 | |
| 34 | <i>Encryption</i> | VNGR-14840 | No video is seen and the Aethra VegaStar Gold endpoint remains connected with a problem when connecting over H320 to an encrypted conference at a line rate of 384Kbps. | V6.0 | |
| 35 | <i>Encryption</i> | VNGR-15256 | In a conference with an IVR Service with endpoints, when using DTMF (*71/#71/*88) codes to secure/unsecure the conference there is no text/ icon indication. | V7.0 | |
| 36 | <i>FECC</i> | VNGR-16523 | On the RMX 1500 running a mixed H.323 & SIP 384Kbps conference, when connecting an Tandberg SIP endpoint, FECC does not work. | V7.0 | |
| 37 | <i>Gateway</i> | VNGR-15935 | In the RMX Web Client, when creating a new gateway profile and setting the Gateway ID to "#1234" then click OK, no confirmation message appears. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|--|---------------------|------------|
| 38 | Gateway | VNGR-16533 | Intermittent blurred video or green blocks displayed on HDX H.320 call connected via 1024kbps Gateway call via RMX 2000 with MPMx. | V7.0 | |
| 39 | Gateway | VNGR-16562 | Gateway sessions are always running in CP mode. If Video Switching is selected in the Profile, the system will change it to CP mode, using the closest possible video settings. However, 60fps may not be supported in CP mode for the selected line rate. | V7.0 | |
| 40 | Gateway | VNGR-16603 | When the endpoint that initiates a Gateway call disconnects, the Gateway session is not terminated while others are still in the conference. The Gateway session should terminate. | V7.0 | |
| 41 | Gateway | VNGR-16604 | In a Gateway call started from a video endpoint (CMAD or HDX) when other endpoints connect, the endpoint that initiates the call initially views the Gathering slide but then it disappears. | V7.0 | |
| 42 | Gateway | VNGR-16607 | When a Gateway call is started from a video endpoint (CMAD or HDX) and endpoints connect to the conference, SIP endpoints view a blurry gathering slide with artifacts. | V7.0 | |
| 43 | General | VNGR-10922 | Dial out to participants assigned to a Meeting Room will only start when the dial-in participant who has activated it has completed the connection process and the Meeting Room has become an ongoing conference. | V4.1 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|---|---------------------|--|
| 44 | General | VNGR-11324 | When moving many participants simultaneously from one conference to the other (both with a line rate of 1920 Kbps), a number of HDX8000 endpoints connect secondary. When trying to disconnect and reconnect the participants connected as Secondary, an MCU Internal error 32122 is displayed. | V4.1 | |
| 45 | General | VNGR-11383 | When updating the Profile assigned to a Conference Template, changes are not applied when the conference becomes ongoing. | V4.1 | |
| 46 | General | VNGR-11422 | When the RMX is set to Flexible Allocation Mode and more than 14 endpoints are connected to a single MPM+80 card in line rates above 2Mbps, video artifacts may appear. | V4.1 | Change the resource Allocation Mode to Fixed Mode. |
| 47 | General | VNGR-11701 | Sometimes a system error "SOFTWARE_ASSERT_FAILURE" appears when the RMX is running under load (repetitive connecting and disconnecting participants). | V4.5 | |
| 48 | General | VNGR-11883 | After software upgrade, it is necessary to close and reopen Internet explorer. | V5.0.0 | |
| 49 | General | VNGR-11987 | When upgrading from V4.0.3 to V5.0, after inserting the activation key an invalid key message appears. | V5.0.0 | Logout and login to the web browser or reopen the Internet Explorer. |
| 50 | General | VNGR-12033 | Rarely a system error (BridgePartyVideoOut.cpp, Line:1458, Code:1701.; DEBUG-ASSERT;) is written to the log file if a change is made to the conference layout while participants are disconnecting. | V5.0.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|--|---------------------|---|
| 51 | General | VNGR-12100 | Occasionally, after upgrading to version 5.0 (from 4.0.3, 4.1.0, 4.1.1), the soft reset fails. | V5.0.0 | First try to reset from the SHM if possible. Otherwise hard reset the system. |
| 52 | General | VNGR-12181 | Sometimes an assert may appear when terminating a conference while running 10 conferences at a line rate of 768Kbps and changing the layout for H.323 & SIP participants. | V4.6 | |
| 53 | General | VNGR-12240 | Endpoints are disconnected after extended time period (8 hrs +) when all MPM+ resources are used. Error message is displayed: "Unit not responding". | V5.0.0 | |
| 54 | General | VNGR-14062 | On a fully loaded RMX 4000, endpoint may disconnects with Call Disconnection Cause stated as "MCU internal problem - 11122". | V6.0 | |
| 55 | General | VNGR-14151 | A Shelf Voltage problem is always displayed in the System Alerts pane regardless of the actual status. | V6.0 | |
| 56 | General | VNGR-14159 | Operator assistance function is blocked when the TelePresence mode is enabled. | V6.0 | |
| 57 | General | VNGR-14624 | After changing the conference profile assigned to a conference template that includes participants, some of these participant are randomly deleted from the conference template. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|---|---------------------|------------|
| 58 | General | VNGR-14667 | When defining a New Profile in the Video Settings tab and selecting a Layout, in the Conference Profiles list there is no indication of the selected layout and the layout icon is missing. | V6.0 | |
| 59 | General | VNGR-14688 | When a conference is deleted in the RMX Manager, conference participants are not deleted in the participants list. | V6.0 | |
| 60 | General | VNGR-14767 | H.323 party disconnect due to MCU Internal Problem 32212. | V6.0 | |
| 61 | General | VNGR-15320 | Saving to a Conference Template a conference in which the Message Overlay is enabled, automatically enables the message overlay option in the conference that is started from this template. | V7.0 | |
| 62 | General | VNGR-15324 | o When monitoring a CP conference with 5 or more endpoints from 5 Web Client sessions on separate workstations, Video Previews can be opened from 4 workstations. Attempting to open a fifth Video Preview causes an error "Failed to Preview Video: Failure Status" instead of "The Preview cannot be displayed. The maximum number of previews per MCU has been reached." | V7.0 | |
| 63 | General | VNGR-15366 | Sometimes when Restore Factory Defaults is performed, the active alarm "CPU slot ID not identified- McuMgrCPU board id was not received from ShelfManager" is displayed. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|--|---------------------|------------|
| 64 | General | VNGR-15523 | Primary and Secondary dial in numbers entered in the Polycom Conferencing Add-in to Microsoft Outlook are always displayed on the Gathering slide (during the gathering phase) for reference, even if the participant connected using the invitation link. | V6.0 | |
| 65 | General | VNGR-15553 | On an RMX 2000 with MPMx cards, during startup a list of error appears. | V7.0 | |
| 66 | General | VNGR-15554 | Numerous missing Japanese translations in the RMX Web Client. | V7.0 | |
| 67 | General | VNGR-15637 | After creating a conference template with 6 participants, when adding and removing participants to a conference the template does not update. | V7.0 | |
| 68 | General | VNGR-15718 | Incorrect disconnection cause after pulling LAN cable from RMX. The endpoints reports that the "call close normal". | V7.0 | |
| 69 | General | VNGR-15737 | In the Resolution Configuration Slider, the CIF30 slider is absent from the UI. | V7.0 | |
| 70 | General | VNGR-15746 | When downloading and installing version 7.0, the Download window lists version 6.0. | V7.0 | |
| 71 | General | VNGR-15750 | In a conference set to 512kbps with Auto Layout enabled, when starting PCM from several endpoints, - you will receive an Message Overlay: "no available PCM resources". The message overlay cannot be closed. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|--|---------------------|------------|
| 72 | General | VNGR-15755 | During an active Telepresence conference, click the Video Settings tab, the "Telepresence Mode enabled" check box appears when it should not. | V7.0 | |
| 73 | General | VNGR-15837 | In 768Kbps conference set to AES, CP, Full Layout and two HDXs Chairperson, when the SIP HDX invokes PCM Camera Control only segmented video can be seen. | V7.0 | |
| 74 | General | VNGR-15953 | When copying and pasting conferences based on a Profile, the pasted conference is added to conference templates. | V7.0 | |
| 75 | General | VNGR-16044 | After downloading and opening an auditor file of the MPMx, the MPMx name appears as MPM_PLUS. | V7.0 | |
| 76 | General | VNGR-16103 | After running diagnostics on the RMX, LED functionality is not documented. | V7.0 | |
| 77 | General | VNGR-16120 | Saving to a Conference Template a conference in which the Message Overlay is enabled, automatically enables the message overlay option in the conference that is started from this template. | V7.0 | |
| 78 | General | VNGR-16170 | On an RMX 4000, endpoints using the layout 1+7, endpoints are not in the proper location. | V7.0 | |
| 79 | General | VNGR-16230 | In a Meeting Room with five participants all endpoints receive periods of frozen audio and video. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|--|---------------------|------------|
| 80 | General | VNGR-16237 | Connect to an RMX as Operator using the RMX Manager. Then connect an Administrator to same RMX the following message appears: "cannot login to MCU x.x.x.x with the user name and password entered". | V7.0 | |
| 81 | General | VNGR-16283 | In a conference with a few participants, when opening the video preview pane and previewing the next participant without closing the pane, the pane becomes minimized, and does not show video of the next participant. | V7.0 | |
| 82 | General | VNGR-16296 | The Host name is not defined in the Fast Configuration Wizard during the initial system configuration. Therefore when trying to configure either the "Control" or the "Shelf" IP address (or both), the error message "Invalid Host Name" is displayed when clicking OK. | V7.0 | |
| 83 | General | VNGR-16338 | In a 4MB HD CP conference set to 720p with 3 participants, 1 endpoint disconnected due to the following message: "MCU internal problem". | V7.0 | |
| 84 | General | VNGR-16377 | On an RMX with MPM+ card, when starting a VSW conference from the Profile, you can select 6144 Kbps as the line rate. | V7.0 | |
| 85 | General | VNGR-16427 | On RMX 1500 with two conferences running and Legacy Content enabled, line artifacts are displayed in the middle of the CMAD screen after it is disconnected from the first and reconnected to the second conference. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|--|---------------------|------------|
| 86 | General | VNGR-16457 | Critical fan alert is displayed in the RMX Hardware Monitor in Event Log properties box while in the Hardware Monitor pane the system status is displayed correctly as Normal. | V7.0 | |
| 87 | General | VNGR-16466 | On RMX 2000 with MPM, "MCU Internal Problem - 32112" occurs during mini-load smoke on MPM when 20 video participants are connected at 384kbps. | V7.0 | |
| 88 | General | VNGR-16471 | Extraneous MCMS version number is displayed in the detailed faults list. | V7.0 | |
| 89 | General | VNGR-16529 | After Restoring Factory Defaults on the RMX and defining the IP Network Service, after RMX restart the MCU Host Name parameter appears empty in the "Management Network - DNS" tab. | V7.0 | |
| 90 | General | VNGR-16560 | After log-in to the RMX 1500 Web Client, a Microsoft .NET Framework error message appears. | V7.0 | |
| 91 | General | VNGR-16581 | On an RMX 2000 & MPM+ cards, running an 384Kbps CIF conference, with Auto Terminate, Encryption, LPR, Echo Suppression, Sharpness and Same Layout enabled, when sending content from an HDX to 160 other endpoints, an "Software assert failure" appeared. | V7.0 | |
| 92 | General | VNGR-16582 | On an RMX 2000 & MPM+ cards, running an 384Kbps CIF conference, with Auto Terminate, Encryption, LPR, Echo Suppression, Sharpness and Same Layout enabled, when sending content from an HDX to 160 other endpoints, an "Software assert failure" appeared. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|----|----------|------------|---|------------------------------------|------------|
| 93 | General | VNGR-16600 | On an RMX2000 & MPMx card running a mixed H.323 & SIP 1920Kbps conference with AES, Sharpness and Gathering enabled, when the RMX dials-out to 10 endpoints, the border layouts are "speckled" and miss their edges. | V7.0 | |
| 94 | General | VNGR-16610 | The Column width displayed in Web Client and in the RMX Manager UI need to be made broader. | V5.0.1, V5.0.0, V4.6.1, V6.0, V7.0 | |
| 95 | General | VNGR-16621 | Run two conferences that support Content for Legacy Endpoints, connect all types of endpoints to each conference and then send content from a non Legacy endpoint to each conference. The conference layout on the Legacy endpoint is changed to the flag's CP_LAYOUT_1P4VER configuration, the default layout. Move one legacy EP to the second conference - the layout of it changes to conference layout | V7.0 | |
| 96 | General | VNGR-16624 | In the RMX Manager, when attempting to upgrade two RMX simultaneously, the Install Software window only appears for one RMX, when you should view both. | V7.0 | |
| 97 | General | VNGR-16625 | Sometimes when upgrading to version 7.0 and resetting the RMX 2000, an active alarm "CPU slot ID not identified - McuMgrCPU board id was not received from ShelfManager" is displayed. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|---|---------------------|------------|
| 98 | General | VNGR-16691 | In ICE environment, when a local endpoint connects to the conference, the connection type in the Participant Properties should be Local instead of Host. | V7.0 | |
| 99 | General | VNGR-16745 | In the RMX manager 7.0, the "new conference" icon suddenly appears in the conferences properties window. | V7.0 | |
| 100 | General | VNGR-16751 | When creating a second conference with a display name that is already used by another conferencing entity, the conference properties dialog box re-opens with a redundant check box next to the routing name field. | V7.0 | |
| 101 | General | VNGR-16793 | On an RMX 2000 with MPM+, start an 4096Kbps 1x1 Layout conference from a template with Encryption, LPR, Auto Termination, Sharpness, Same Layout, Audio Clarity enabled, an "mcu internal problem: 32212" message appears in conference properties - connection status tab. | V7.0 | |
| 102 | General | VNGR-16861 | On an RMX 2000 with 2 MPM+80 and 2 RTM ISDN Cards (5 T1/PRI connecting to each RTM ISDN card), only 70 CIF dial-out endpoints can connect to the 128 Kbps conference. | V7.0 | |
| 103 | General | VNGR-16865 | MCU INTERNAL fault received on RMX 1500: "UnitId 20 (board 1) didn't return ACK for H323 RTP_UPDATE_PORT_OPEN_CHANNEL_REQUEST." | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|---|---------------------|--|
| 104 | General | VNGR-16871 | In 384kbps conference on RMX with MPMx, HDX endpoint's "Used Call Rate" is approximately 100kbps lower than expected. | V7.0 | |
| 105 | General | VNGR-16890 | Log Analyzer output from RMX 1500/2000 with MPMx contains numerous CRT ART errors. | V7.0 | |
| 106 | General | VNGR-16931 | RMX 2000 with MPM+ displays empty video window in layout in ISDN + IP mixed conference during load test. | V7.0 | |
| 107 | General | VNGR-16934 | When a H.323 call is released without lobby conn_id parameter, call memory is possibly not released. | V7.0 | |
| 108 | General | VNGR-3824 | The Click & View menu doesn't appear in 64 Kbps calls. | V1.1.0 | Use the RMX Web Client. |
| 109 | General | VNGR-9729 | When moving from MPM+ to MPM mode (with only MPM cards installed in the MCU), the Card Configuration Mode, indicated in the System Information dialog box, remains in MPM+ Mode. | V4.0.0 | Logout and then login to the RMX Web Client. |
| 110 | General | VNGR-9803 | When using the restore to factory defaults, after inserting the Activation key, the system requires a reset when the reset is not required. | V4.0.0 | |
| 111 | H.323 | VNGR-11810 | The following assert may appear when H.323 participant connects to a 2 Mb Continuous Presence conference: File:AuditorApi.cpp, Line:112, Code:1.; ASSERT:Audit_free_Data_is_too_long_20882_max_i s_20480data_size_is_:20882 | V5.0.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|--|---------------------|------------|
| 112 | Hardware | VNGR-14550 | On the MPM+, experience problems with DSP#1 during load testing. | V7.0 | |
| 113 | Hardware | VNGR-16058 | After upgrading RMX4000, an error message appears: "No RTM-LAN or RTM-ISDN installed" on slots 13, 14, 15". In fact no RTM-ISDN card is installed in slot 13. | V7.0 | |
| 114 | Hardware | VNGR-16166 | On an RMX 2000 with two MPM+ cards, after several minutes participants could not connect due to MCU Internal Problem 32112. | V7.0 | |
| 115 | Hardware | VNGR-16474 | On RMX 1500 with MPMx-S, MCU internal problem 32112 occurs repeatedly in 2Mbps VSW or CP conference using HDX 8000 endpoint. Problem did not occur after reset. | V7.0 | |
| 116 | Hardware | VNGR-16537 | On the RMX 1500 when the RMX is in a "Diagnostic Mode" the listed slot numbers of the modules are incorrect. | V7.0 | |
| 117 | Hardware | VNGR-16785 | Run 8 512Kbps conferences and connect to each conference 2 H.323, 2 SIP, 1 ISDN, 1 PSTN & 1 VOIP endpoints, change the conference layout on each, when terminating the conferences an "MCU Internal Problem 50020" occurred on the MPMx cards. | V7.0 | |
| 118 | Hardware | VNGR-16882 | On an RMX 1500 in the Diagnostic mode, when viewing the MCU Monitor section, the card slot numbering is incorrect. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|--|---------------------|--|
| 119 | Hardware | VNGR-16898 | On an RMX 4000 with MPMx_D cards in the Diagnostic mode, when running card monitoring tests on the RTM_ISDN card the tests fail. | V7.0 | |
| 120 | Hardware | VNGR-16936 | On an RMX 4000 when viewing the Signaling Monitor window, the Active Alarms pane shows no link between Fabric Switch Module and MPMx card in slot 1. | V7.0 | |
| 121 | Hardware | VNGR-16945 | On the RMX2000 and RMX4000, when performing diagnostics using the Power on Self Tests (POST) you cannot access the Shelf Manager. | V7.0 | |
| 122 | Hardware | VNGR-9571 | In D-type chassis, when hot-swapping an MPM card, unit failure may occur. | V4.0.0 | Reset the MCU |
| 123 | HD | VNGR-16780 | During VSW conference at 720p60p resolution using direct connections or via DMA, endpoints display only their own video. | V7.0 | |
| 124 | HD | VNGR-3089 | In HD Video Switching conferences, Tandberg endpoints may connect as Secondary when HD frame rate capabilities are less than 7.5 frames per second. | V1.1.0 | Create a CP conference |
| 125 | Interoperability | VNGR-10849 | A black screen may appear in the following instances: * On HDX8000 HD Hardware version B endpoints when the conference line rate is set in the range of 256-768 Kbps. (The Hardware version can be found on the HDX endpoint's System Information page.) * On HDX SD endpoints using the PAL mode when the conference line rate is set above 128 Kbps. | V4.1 | (1) Upgrade to HDX software version 2.5.0.5 (2) Use conference line rates below 256 or above 768 Kbps. (3) Disable the IVR Welcome slide and avoid using a 1x1 Video Layout. |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|------------|
| 126 | Interoperability | VNGR-10989 | In a ISDN dial-in conference with a line rate of 384 Kbps, Tandberg MXP ISDN endpoints cannot view content. | V4.1 | |
| 127 | Interoperability | VNGR-11341 | During H.320 calls, Lip Sync issues occur when content is being sent. | V4.1 | |
| 128 | Interoperability | VNGR-11489 | In a conference running at a line rate of 384 Kbps, when HDX 8006 endpoint that sends Content is moved to another conference, Content is still viewed for a number of seconds on the HDX. | V4.1 | |
| 129 | Interoperability | VNGR-11563 | Legacy endpoints occasionally cannot switch to Content when Content switched from H,264 to H.263. | V4.1 | |
| 130 | Interoperability | VNGR-11767 | In a 6 Mb, Video Switched conference, HDX endpoints that declare 2 Mb capability may only connect at a line rate of 896 Kbps after 30 seconds. | V4.1.1 | |
| 131 | Interoperability | VNGR-11798 | When Tandberg C20 endpoint sends Content, the far end indicates that Content is being received but received Content is black. | V5.0.0 | |
| 132 | Interoperability | VNGR-11830 | Sony XG80 endpoint cannot send Content in H.323 384 Kbps call. | V6.0 | |
| 133 | Interoperability | VNGR-11920 | In a 4 Mb RPX conference with LPR enabled, video-out bit rate decreases to 128 Kbps due to packet loss and does not increase. | V5.0.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|--|---------------------|---|
| 134 | Interoperability | VNGR-11963 | In a conference running at a line rate of 384Kbps with AES, LPR and Video Clarity enabled, HDX ISDN participants connect with SIF resolution while HDX IP endpoints connect using a 4SIF resolution. | V5.0.0 | |
| 135 | Interoperability | VNGR-12177 | In a conference with AES, LPR and Video Clarity enabled, H.320 Tandberg MXP endpoints connect with resolution of 960x720, while identical H.323 MXP endpoints connect with resolution of 720p. | V5.0.0 | |
| 136 | Interoperability | VNGR-12178 | In a conference with AES, LPR and Video Clarity enabled, H.320 HDX8006/ HDX9004 endpoints send Content in H.263 only. | V5.0.0 | |
| 137 | Interoperability | VNGR-12266 | Tandberg MXP endpoint receives ghosted video from HDX9004 endpoint during H.323 conference. | V5.0.0 | |
| 138 | Interoperability | VNGR-12355 | DST K60 endpoint receives tiled video from HDX9004 endpoint during H.323 conference. | V5.0.0 | Set the system flag SEND_WIDE_RES_TO_IP to NO to force the system to send 4CIF. |
| 139 | Interoperability | VNGR-12369 | Tandberg C20 endpoint periodically displays fast updates in HD1080p conferences. | V5.0.0 | |
| 140 | Interoperability | VNGR-12372 | Tandberg 6000 E and B series, H.320 endpoints do not connect to conferences when encryption is enabled. | V5.0.0 | |
| 141 | Interoperability | VNGR-12373 | HDX endpoint connected via H.320 does not receive Content from Tandberg MXP endpoint connected via H.323. | V5.0.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|------------|
| 142 | Interoperability | VNGR-12415 | In a conference running at a line rate of 1728 Kbps set to Same Layout, when PVX/VSX7000 participants connect in CIF264/263, an error message appears. | V4.6 | |
| 143 | Interoperability | VNGR-14047 | Artifacts appear on LifeSize_RM1_4.5.1(15) endpoint connected via SIP or H.323 to a 2Mbps conference with Video Quality set to "Sharpness" running on the RMX 2000 in MPM mode. The LifeSize endpoint is using 4SIF 30 resolution while Polycom endpoints are using 720*400 resolution. | V6.0 | |
| 144 | Interoperability | VNGR-14780 | RMX4000 using 4Mb, Same Layout, Sharpness, Video Clarity in profile and Entry Queue becomes inaccessible when called via an Entry Queue from H.323 LifeSize endpoint. | V6.0 | |
| 145 | Interoperability | VNGR-15096 | In a 384Kbps conference with no LPR, when connecting HDX 8000, PVX endpoints the lower segment of the welcome's slide is missing/smudged. | V7.0 | |
| 146 | Interoperability | VNGR-15129 | In a conference set to a line rate of 4096kbps with Sharpness, 1+5 layout, with a number of endpoints present, when a H.323 HD720p30 Tandberg 1700MXP endpoint dial-outs, Video In & Out freeze. | V7.0 | |
| 147 | Interoperability | VNGR-15281 | Aethra VegaStar Gold endpoint, when connecting via ISDN to 384kbps conference creates CDR Event - Participant status "Connected with problem". | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|------------|
| 148 | Interoperability | VNGR-15649 | In a continuously running conference, after disconnected two HDX7000 and VSX7000 endpoints, the HDX4000 endpoint's video freezes. | V7.0 | |
| 149 | Interoperability | VNGR-15789 | RMX4000 using 4Mb, Same Layout, Sharpness, Video Clarity in profile and Entry Queue becomes inaccessible when called via an Entry Queue from H.323 LifeSize endpoint. | V6.0 | |
| 150 | Interoperability | VNGR-15906 | In a 384Kbps conference with no IVR and resources set to a Fixed Mode when connecting SIP/H.323 HDX & PV dial-in and dial-out endpoints, the SIP receives bad video. | V7.0 | |
| 151 | Interoperability | VNGR-15937 | In a conference with HDX8006A, HDX8006B, HDX9000, VSX7000 and ViewStation512 endpoints, the site names of the ViewStation endpoints are switched. | V7.0 | |
| 152 | Interoperability | VNGR-15939 | In a "Fixed resource Capacity" mode, Legacy endpoints can still receive content when they should not. | V7.0 | |
| 153 | Interoperability | VNGR-16192 | In 2MB Conference with Sharpness enabled when connecting RPX 400, TPX 306 and RPX 200 endpoints not all endpoints can connect. | V7.0 | |
| 154 | Interoperability | VNGR-16194 | On an RMX4000 version 7.0, with four VVX 1500s and an 1 HDX 9000 endpoints connected on multiple occasions loss of video and audio for several seconds. | V7.0 | |
| 155 | Interoperability | VNGR-16297 | CMAD receives distorted video while calling to RMX. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|------------|
| 156 | Interoperability | VNGR-16322 | On an RMX 2000 running a 1920 Kbps Telepresence conference, endpoints have the top part of their video screen cropped off. | V7.0 | |
| 157 | Interoperability | VNGR-16363 | On the RMX2000 with an MPMx card, when starting a new a 2MB conference, lpower endpoints take a long time to connect. | V7.0 | |
| 158 | Interoperability | VNGR-16378 | In a SD conference (1024 resolution) with motion, auto layout enabled, when connecting HDX and dial in from Life Size endpoint, the endpoints do not connect in SD with 60 FPS as required. | V7.0 | |
| 159 | Interoperability | VNGR-16383 | On the RMX2000 with an MPMx card in a 512Kbps conference with High Profile, Gathering, IVR, Echo Suppression enabled and resources set to a Flexible Mode, when dialing-out using H.261, connection problems are encountered in VSX endpoints after about 10 seconds. | V7.0 | |
| 160 | Interoperability | VNGR-16387 | On an RMX2000 with the MPM+ card, when connecting with an HDX9000 endpoint to the Entry Queue using a line rate of 384Kbps, the IVR slide blinks. | V7.0 | |
| 161 | Interoperability | VNGR-16390 | In a 768Kbps Telepresence conference when connecting to a TPX using a 1x7 layout, the HDX8000 video looks elongated in the large cell. | V7.0 | |
| 162 | Interoperability | VNGR-16408 | In a 4096Kbps conference with Auto Layout enabled, when dialing out to 3 HDX and 3 VSX endpoints, video freezing occurs. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|--|---------------------|------------|
| 163 | Interoperability | VNGR-16506 | Lip sync is noticeable on HDX 7000 rev. B that dials into a conference running at a line rate of 1Mbps. | V7.0 | |
| 164 | Interoperability | VNGR-16519 | In an 512Kbps CP conference with AES and Sharpness enabled, when Dial-in endpoints view the Gathering slide the CMAD video freezes. | V7.0 | |
| 165 | Interoperability | VNGR-16595 | On an RMX 4000 & MPM+ cards, running an 1920Kbps conference with Video Clarity, Auto Terminate, Video Quality, Sharpness, Encryption, LPR, Echo Suppression, Auto Layout, Gathering and Content for Legacy Endpoints enabled, when connecting 20 HDX, Tandberg 17000 and edge95 MXP & 3 Tandberg C series endpoints the MFA card error occurs. | V7.0 | |
| 166 | Interoperability | VNGR-16599 | On an RMX 2000 in a H.261 video conference, when a Tandberg MXP6000 connects using H.261 there is no video. | V7.0 | |
| 167 | Interoperability | VNGR-16616 | CMAD negotiates G.711u instead of G.719 when connecting to a conference running at a line rate of 64Kbps, video quality is set to sharpness, and auto layout is enabled. | V7.0 | |
| 168 | Interoperability | VNGR-16643 | A conference started from the default video conference, an H.320 Sony PCS-G50 endpoint transits the Entry Queue and when accessing the conference it connects with no video. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|------------|
| 169 | Interoperability | VNGR-16644 | In a conference started from the default conference profile, when the RMX dials-out to the H.323 iPower 9000 endpoint, it views the IVR welcome screen for about 40 seconds before viewing conference video. | V7.0 | |
| 170 | Interoperability | VNGR-16646 | In a conference started from the default Profile, when the RMX dials-out to an H.320 iPower 9000 endpoint, the endpoint's video layout is shifted to the bottom right of the monitor with black borders on the left and top of the screen. | V7.0 | |
| 171 | Interoperability | VNGR-16647 | On an RMX 2000 in a 384Kbps H.323 CP conference with Sharpness and LPR enabled, when the RMX dials-out to an Tandberg 6000E, an empty video frame appears. | V7.0 | |
| 172 | Interoperability | VNGR-16650 | In a 384Kbps SIP conference with Auto Layout, Sharpness, Video Clarity, Gathering and Send Content to Legacy Endpoints enabled, when the RMX blast dial-out all types of endpoints, the VSX7000 and VSX8000 sites display video stills throughout the conference. | V7.0 | |
| 173 | Interoperability | VNGR-16707 | An RMX 2000 running an 1920Kbps CP conference with LPR, Gathering and Sharpness enabled, when the RMX dials-out to an H.323 HDX endpoint, the HDX displays blue patchy video. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|--|---------------------|------------|
| 174 | Interoperability | VNGR-16723 | On an RMX 1500 running an mixed (H.323, SIP & ISDN) 1024Kbps conference, after connecting the ISDN endpoint and changing the layout, after a few minutes the ISDN endpoint views a black screen and the video frame rate is 0. | V7.0 | |
| 175 | Interoperability | VNGR-16735 | LifeSize endpoints transmits CIF instead of HD 720p resolution in a SIP1920Kbps conference call located on an MPMx card. | V7.0 | |
| 176 | Interoperability | VNGR-16737 | On an RMX 4000 with an MPM+ card, LifeSize does not transmitting or receiving video during a SIP 1920Kbps conference call. | V7.0 | |
| 177 | Interoperability | VNGR-16776 | Undefined HDX endpoint cannot be added to the Address Book on RMX with Avaya Call Manager. Second attempt yields message that participant name already exists in Address Book. | V7.0 | |
| 178 | Interoperability | VNGR-16791 | In a 1024Kbps conference with Auto layout, Sharpness, AES, H.239 Content to Legacy Endpoints and LPR enabled, Lifesize endpoints encounter poor video. | V7.0 | |
| 179 | Interoperability | VNGR-16797 | In H.323 and SIP calls to RMX with MPMx, Aethra X7 endpoint displays blurred, tiled video. | V7.0 | |
| 180 | Interoperability | VNGR-16806 | On RMX 1500, a macro block is displayed in the large video window of the video layout when PVX endpoint is the speaker. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|--|---------------------|------------|
| 181 | Interoperability | VNGR-16810 | On an RMX 1500 set to the Flexible mode and running an HD720p 2Mb conference with IVR, Gathering, High Profile, and Audio Clarity enabled, 15 PVX, HDX, VSX 300, 7000 CMAD endpoints cannot change layouts when DTMF codes are used. | V7.0 | |
| 182 | Interoperability | VNGR-16820 | VSX8000 endpoint connected to RMX 1500 with MPMx in 1920kbps conference, transmits green video to all endpoints but correctly displays all connected participants' video. | V7.0 | |
| 183 | Interoperability | VNGR-16825 | Using RMX 2000 with MPMx, H.320 call to VSX8000 endpoint fails with Call Disconnection Cause listed as "No net connection - 0". | V7.0 | |
| 184 | Interoperability | VNGR-16829 | Blurred and highly color saturated video, followed by a black screen is displayed on HDX ISDN endpoint connected to RMX 2000 with MPMx at 1152kbps. | V7.0 | |
| 185 | Interoperability | VNGR-16841 | Connect to the network using VPN and then start a conference with LPR enabled, connect endpoints using CMAD, the video of the endpoints was very fragmented. | V7.0 | |
| 186 | Interoperability | VNGR-16856 | Artifacts displayed on ISDN endpoints connected to RMX 1500 when content is started or stopped. | V7.0 | |
| 187 | Interoperability | VNGR-16868 | On RMX 1500 audio interruptions are experienced by CMAD endpoints. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|------------|
| 188 | Interoperability | VNGR-16877 | Avaya 1XC Softphone endpoints connected to conference on RMX do not receive content, while HDX endpoints do. | V7.0 | |
| 189 | Interoperability | VNGR-16889 | On RMX 1500 Video Preview - View Participant Received Video of VSX3000 endpoint is displayed as a green screen. Problem occurs at 384kbps, feature works correctly at higher call rates. | V7.0 | |
| 190 | Interoperability | VNGR-16894 | When the privacy shutter of a VVX1500 endpoint is closed, a mosaic is displayed instead of a black screen. | V7.0 | |
| 191 | Interoperability | VNGR-16902 | RMX with MPMx connected via H.320 to Tandberg 6000 B endpoint is listed with "Connected With Problem" status. | V7.0 | |
| 192 | Interoperability | VNGR-16903 | RMX 2000 with MPMx stops receiving calls from DMA. Subsequent calls disconnect with disconnection cause cited as Resources Deficiency. | V7.0 | |
| 193 | Interoperability | VNGR-16921 | On an RMX with version 7.0, when an Avaya 1XC Softphone dials Avaya 1XC Softphone when pressing the "Conference" button on the Avaya 1XC Softphone the Ad hoc conference on the RMX does not start. | V7.0 | |
| 194 | Interoperability | VNGR-16924 | In DMA, when a SIP endpoint is connected to a certain MCU, and the user chooses to stop using it, the call is routed to a different MCU while the call rate is reduced by 64k. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|------------|
| 195 | Interoperability | VNGR-16925 | Avaya 1XC Softphone intermittently partially connects to conference RMX when connecting as 2nd or subsequent participant. | V7.0 | |
| 196 | Interoperability | VNGR-16938 | Using Tandberg MXP endpoints, artifacts and choppy occur in video for 10 seconds after 1mbps H.323 or SIP connection to RMX 1500. | V7.0 | |
| 197 | Interoperability | VNGR-16943 | The Gathering slide turns green after changing layout on ViewStations when ViewStation SP Release 7.5.4.16 SP and ViewStation 512k Release 7.5.4.17 are connected to a conference running on RMX2000 with MPM+ at a Line Rate of 384Kbps, LPR, Same Layout and Auto Layout are enabled. | V7.0 | |
| 198 | Interoperability | VNGR-16950 | When RMX dials out from an encrypted conference running at 768Kbps, video quality set to Sharpness and with LPR enabled to H.323 HDX-A, the call connects OK. Then, H.323 HDX-B dials into HDX-A and the call connects OK. When HDX-B disconnects from HDX-A, the video freezes on HDX-A and RMX shows HDX-A as connected with problem. | V7.0 | |
| 199 | Interoperability | VNGR-16955 | iPower 9000 endpoint in H.323 call with RMX with MPM+ or MPMx does not transmit audio in encrypted calls. | V7.0 | |
| 200 | Interoperability | VNGR-16959 | On RMX running H.323, 384kbps conference with MPM+ or MPMx with Send Content to Legacy Endpoints enabled. When HDX9004 sends content iPower9000 endpoint receives content while FX endpoint does not. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|--|---------------------|---|
| 201 | Interoperability | VNGR-16960 | Call on RMX 2000 with MPMx using HDX endpoint connects at 128Kbps with resolution HD720p even if RMX call rate is set for 8Mb. | V7.0 | |
| 202 | Interoperability | VNGR-3977 | 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. | V1.1.0 | The video stream is synchronized when the first participant connects to the conference. |
| 203 | Interoperability | VNGR-4652 | HDX/VSX endpoints cannot connect directly to conferences while registered with Cisco Gatekeeper using the IP##NID string. | V1.1.0 | Connect directly using the MCU IP Address via the Transit Entry Queue. |
| 204 | Interoperability | VNGR-6902 | Sony PCS G70 (v2.61) and Sony PCS-1(v3.41) endpoints cannot connect to conferences using SIP connections. | V5.1 | Force the endpoints to connect using H.323 connection. |
| 205 | Interoperability | VNGR-7597 | H.323 link is connected as secondary when cascading with Tandberg MPS at 768Kbps, in both Video Switching and CP conferences. | V3.0.0 | |
| 206 | Interoperability | VNGR-7598 | H.323 link is connected as secondary when cascading with Tandberg MPS at 768Kbps, in both Video Switching and CP conferences. | V3.0.0 | |
| 207 | Interoperability | VNGR-8605 | 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. | V3.0.0 | |
| 208 | Interoperability | VNGR-9015 | 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. | V3.0.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|---|
| 209 | Interoperability | VNGR-9677 | When switching Content sending from an HDX9004 to Aethra X7 and back, Content is not received by Aethra X7. | V4.0.0 | |
| 210 | Interoperability | VNGR-9830 | HDX endpoints may experience packet loss when the HDX endpoint's LAN Speed is configured to 100MB. | V4.0.0 | Set the endpoint LAN Speed and Duplex Mode to Auto. |
| 211 | Interoperability | VNGR-9909 | When dialing out to a Tandberg MXP ISDN endpoint, the IVR slide is not displayed, although the IVR message is played. | V4.0.0 | |
| 212 | IP | VNGR-16617 | When CMAD endpoint running on Lenovo R61 connects to a Meeting Room whose Line rate is 1024 Kbps, Video quality is set to Motion, Content is set to HiRes Graphics and LPR, Same Layout and Echo Suppression options are enabled, after few minutes in the conference the CMAD observes packet loss in the People Rx although QoS is enabled. | V7.0 | |
| 213 | IP | VNGR-7734 | Static Routes table in IP Network Service does not function. | V3.0.0 | |
| 214 | ISDN | VNGR-12007 | Occasionally, when ISDN participants connect to a conference with line rate 384kbs, multiple asserts appear in the log file. | V5.0.0 | |
| 215 | ISDN | VNGR-12011 | Occasionally, an ISDN participant fails to connect to the conference due to the following error - "MCU internal problem - 50020". | V5.0.0 | |
| 216 | ISDN | VNGR-12034 | In a conference running at a line rate of 384 Kbps, H.320 encrypted participant cannot connect and an assert appears. | V5.0.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|---|---------------------|------------|
| 217 | ISDN | VNGR-15707 | An RMX 4000 with a 384K H.320 conference with Motion and AES enabled, when a Tandberg 6000 MXP connects, the endpoint encounters video freezes. | V7.0 | |
| 218 | ISDN | VNGR-16264 | During a conference the ISDN line is functional but the line has no clock source. | V7.0 | |
| 219 | ISDN | VNGR-16301 | After starting a VSW conference with LPR enabled, when dialing out using ISDN a message appears: "SIP cannot connect to VSW with LPR enabled" | V7.0 | |
| 220 | ISDN | VNGR-16726 | On an RMX2000 with MPMx cards running an 383 Kbps ISDN conference when connecting 10 endpoints by blast dial-out the endpoints video showed black screens. | V7.0 | |
| 221 | ISDN | VNGR-16863 | On RMX 1500, ISDN endpoint is listed with "Connected With Problem" status. | V7.0 | |
| 222 | ISDN | VNGR-16879 | In a 384Kbps H.320 conference with Video Clarity, Auto Terminate, Sharpness, Echo Suppression, Auto Layout, Gathering, and Send Content to Legacy Endpoints enabled, when the RMX dials-out to VS4000, FX, EX, VSX7000A and HDX9004 endpoints, flickering and video artifacts are seen. | V7.0 | |
| 223 | ISDN | VNGR-16928 | On RMX 1500, dial out from 256kbps conference to ISDN endpoint forced to 1920 kbps displays green screen and disconnects with "Internal MCU Problem". | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|---|---------------------|------------|
| 224 | ISDN | VNGR-16946 | Video freezes on ISDN endpoints in a fully loaded RMX 2000 with MPMx when connecting, disconnecting and reconnecting all the endpoints at a line rate of 256Kbps. | V7.0 | |
| 225 | ISDN | VNGR-4405 | When a busy signal is returned by a PSTN dial-out participant, the RMX does not redial but disconnects the participant with "party hung-up-0" status. | V2.0.0 | |
| 226 | IVR | VNGR-10054 | Customized CIF slide is not displayed on the HDX screen when connecting to a 1080p High Definition Video Switching conference. | V4.0.1 | |
| 227 | IVR | VNGR-11531 | After upgrading the RMX to a software version that includes the gateway and the maximum number of IVR services reached 40 in RMX 2000 and 80 in RMX 4000, the default Gateway IVR Service is not created. | V4.1 | |
| 228 | IVR | VNGR-12031 | A conference running at a line rate of 1920Kbps and IVR Service that includes a Welcome Slide, both the Welcome Slide and Video are partially blacked out. | V5.0.0 | |
| 229 | IVR | VNGR-12116 | When a single participant enters a conference that is running at a line rate of 2Mb, the participant does not hear music. | V5.0.0 | |
| 230 | IVR | VNGR-15101 | In a Video Switched 4Mbps conference, only the last part of DTMFs *6 (mute) and #6 (unmute) messages are heard. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|--|---------------------|------------|
| 231 | IVR | VNGR-15131 | In a conference started from a Profile, when an ISDN call is forced to Audio algorithm G722_1_C_24k a buzzing noise can be heard before the IVR starts. | V7.0 | |
| 232 | IVR | VNGR-15831 | When uploading a number of high and low resolution slides to an IVR service, there is only option to choose one slide. | V7.0 | |
| 233 | IVR | VNGR-16313 | On an RMX2000 with an MPMx card running a 512Kbps conference with Gathering, IVR, Echo Suppression enabled and resources set to a Flexible Mode, when dialing out using H.261 the IVR slide flashes. | V7.0 | |
| 234 | IVR | VNGR-16460 | On RMX 2000 with MPMx, H.261 endpoint that displays the default slide does not access nor displays a new slide that is added to the IVR Service. | V7.0 | |
| 235 | IVR | VNGR-16539 | In a mixed H.323 & SIP 128Kbps conference with Video Clarity, Sharpness, IVR Service and Welcome Slide settings set to "High profile optimized", when connecting HDX 8000 endpoints, the H.323 HDX endpoint does not view the IVR slide but a black screen for 15 seconds. | V7.0 | |
| 236 | IVR | VNGR-16556 | In a mixed H.323 & SIP 128Kbps conference with Gathering, Sharpness and the Welcome Slide defined as "High Profile optimized", when connecting HDX8000 endpoints, the H.323 HDX video has artifacts on the Gathering slide. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|--------------|------------|---|---------------------|------------|
| 237 | IVR | VNGR-9834 | When DTMF codes have been entered by the participants, the volume of the IVR Message may be suppressed or the message may be cut. | V4.0.0 | |
| 238 | LPR | VNGR-10104 | When an H.323 HDX endpoint sends Content, the endpoint disables the LPR. | V4.0.1 | |
| 239 | Multilingual | VNGR-14332 | The stop monitoring option (in right click on MCU) in the RMX manager is not translated to Japanese. VNGBE-851 | V6.0 | |
| 240 | Multilingual | VNGR-14333 | Translation of the Exchange Integration Configuration dialog box is missing. | V6.0 | |
| 241 | Multilingual | VNGR-14335 | Several fields in the Conference Profile dialog box have not been translated. | V6.0 | |
| 242 | Multilingual | VNGR-14336 | Translations of some of the fields in the New Conference dialog box are missing. | V6.0 | |
| 243 | Multilingual | VNGR-14338 | Translation of the entries Copy Conference and past Conference in the Conference right-click menu is missing. | V6.0 | |
| 244 | Multilingual | VNGR-14567 | Translation of some of the fields in the Upgrade windows and dialog box are missing. | V6.0 | |
| 245 | Multilingual | VNGR-14800 | The translation of the Create Certificate button in the IP Network Service - SIP Server tab is missing. | V6.0 | |
| 246 | Multilingual | VNGR-15812 | Japanese translation is missing in some of the IVR Service dialog boxes. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|-----------------------------|------------|---|---------------------|------------|
| 247 | <i>Multilingual</i> | VNGR-16429 | On RMX with Operator Conference selected in profile, when trying to delete a running conference, the popup message is displayed in mixed English and Japanese. | V7.0 | |
| 248 | <i>Multilingual</i> | VNGR-5151 | The Display Name of undefined dial-in participant using HDX and VSX 7000 endpoints is displayed in English in the RMX Web Client. | V2.0.0 | |
| 249 | <i>Multilingual</i> | VNGR-5310 | 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. | V2.0.0 | |
| 250 | <i>Partners - Microsoft</i> | VNGR-13314 | When resetting the RMX after loading the certificate and registering the RMX with the OCS, two active alarms appear: "SIP registration transport error" and "No response from Registration server". | V6.0 | |
| 251 | <i>Partners - Microsoft</i> | VNGR-15798 | In ICE environment, a green overlay is displayed on top of one of the video layout in the Gathering slide when a dial out MOC or HDX endpoint connect to the conference. | V7.0 | |
| 252 | <i>Partners - Microsoft</i> | VNGR-16833 | When using RMX with MPM+ with ICE enabled in a Federation dialing configuration, the Microsoft Office Communicator Client is disconnected. Call Disconnection Cause is listed as "sip hw internal MCU problem - 0". | V7.0 | |
| 253 | <i>PCM</i> | VNGR-15700 | When PCM is initiated, site names are displayed over the PCM menu. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|------------|
| 254 | PCM | VNGR-15757 | Initiating PCM when there is only one endpoint connected to a conference that is receiving music results in the music being interrupted. | V7.0 | |
| 255 | PCM | VNGR-15822 | When PCM is activated in a Gathering-enabled conference, the PCM menu is displayed on top of the gathering slide instead of the display of the Gathering Slide being terminated before the PCM menu is displayed. | V7.0 | |
| 256 | PCM | VNGR-16849 | When H.263 participant uses PCM on RMX 2000 with MPM+, additional Video Windows appear in the Video Layout and the PCM menu appears with large letters on a blurred, colored display. | V7.0 | |
| 257 | PCM | VNGR-16968 | PCM is not supported with MPMx Cards. | V7.0 | |
| 258 | Recording | VNGR-16947 | In a conference running at 384Kbps and Gathering is enabled, recording is set to "Upon request" the recording is started once the gathering phase ends, resulting in the display of the Gathering slide and layout without text details and after 15 seconds the Gathering slide and layout remain and appear in the recording. | V7.0 | |
| 259 | RMX 1500 Audio | VNGR-16857 | On RMX 1500 metallic audio is heard periodically on PVX endpoint. | V7.0 | |
| 260 | RMX 1500 General | VNGR-16423 | On RMX 1500, changing the port speed setting from Auto to 100F is ignored with Auto remaining selected after reset. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|-------------------------|------------|---|---------------------|------------|
| 261 | <i>RMX 1500 general</i> | VNGR-16809 | DTMF Code *71 (Secure Conference) sent to RMX 1500 displays Gathering Slide Text instead of "Secured" indicator text. | V7.0 | |
| 262 | <i>RMX 1500 General</i> | VNGR-16848 | On RMX 1500, Media port is listed in the Ethernet Settings dialog box but not in the LAN List pane of the Hardware Monitor. | V7.0 | |
| 263 | <i>RMX 1500 General</i> | VNGR-16866 | On RMX 1500 Message Overlay is blurred on SIP and H.323 endpoints. | V7.0 | |
| 264 | <i>RMX 1500 general</i> | VNGR-16957 | On RMX 1500 with MPMx High System CPU Usage fault occurs. | V7.0 | |
| 265 | <i>RMX 1500 Video</i> | VNGR-16766 | On RMX 1500 with MPMx, strobe effect appears in video during H.323 call to HDX endpoints at 1080p at 4Mbps. | V7.0 | |
| 266 | <i>RMX 1500 video</i> | VNGR-16859 | On RMX 1500 some endpoints display green flickering screen on layout change from 4x4 to 1x1. | V7.0 | |
| 267 | <i>RMX 1500 video</i> | VNGR-16867 | On RMX 1500 with MPMx, when the endpoint displayed in the large video window in 2+8 layout disconnects, the large video window is not re-allocated to another endpoint. | V7.0 | |
| 268 | <i>RMX 1500 Video</i> | VNGR-16901 | On RMX 1500 Video Preview is preceded by a green screen momentarily before Video Preview starts. | V7.0 | |
| 269 | <i>RMX 4000</i> | VNGR-14386 | Display information for Slot 5, FSM (Fabric Switch Module), in the RMX 4000 Hardware Monitor is incomplete. | V5.1 | |
| 270 | <i>RMX 4000</i> | VNGR-16892 | On an RMX4000 with MPMx_D cards in the Hardware Monitor the RTM_LAN card is not listed. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|-----------------------|------------|--|---------------------|---|
| 271 | <i>RMX Manager</i> | VNGR-14175 | When using the RMX Manager, a Message Alert "500" is displayed when an RMX running Version 4.6 is selected in the MCU's list. | V6.0 | |
| 272 | <i>RMX Manager</i> | VNGR-16677 | Progress bar missing in RMX manager during upgrade. | V7.0 | |
| 273 | <i>RMX Web Client</i> | VNGR-12172 | In the RMX Web Client, the main window opens up as full screen and cannot be resized. | V5.0.0 | |
| 274 | <i>RMX Web Client</i> | VNGR-12257 | When upgrading the RMX Web Client with software changes, Internet Explorer needs to be closed and opened before the upgrade can take place. | V5.0.0 | |
| 275 | <i>RMX Web Client</i> | VNGR-14778 | ISDN/PSTN fields are disabled (grayed out) although Enable ISDN/PSTN Dial-in check box is selected in RMX Management > Entry Queues > Default EQ. | V6.0 | |
| 276 | <i>RMX Web Client</i> | VNGR-16210 | On an RMX 1500 with a conference and connected participants, when multiple web clients are opened on different PC's and Video Preview is activated, when opening another browsing session and viewing Video Preview, all the browsers close though some view a "failure status" message. | V7.0 | |
| 277 | <i>RMX Web Client</i> | VNGR-2473 | Sometimes when installing the RMX Web Client, Windows Explorer >Internet Options> Security Settings must be set to Medium or less. | V1.1.0 | |
| 278 | <i>RMX Web Client</i> | VNGR-7557 | When connecting directly to the Shelf Manager and selecting Diagnostic Mode the CNTL module does not enter the diagnostic mode and stays "Normal". | V3.0.0 | Reset the MCU and then switch to Diagnostic Mode. |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|-----------------------|------------|---|---------------------|---|
| 279 | <i>RMX Web Client</i> | VNGR-9829 | Occasionally, during an ongoing conference, when selecting the Hardware Monitor menu the message "No connection with Switch" appears. | V4.0.0 | |
| 280 | <i>SIP</i> | VNGR-11949 | The maximum number of Meeting Rooms, Entry Queues, SIP Factories and ongoing conferences that can be registered to the Proxy, is limited to 100. | V5.0.0 | |
| 281 | <i>SIP</i> | VNGR-12006 | With SIP defined and undefined dial-in participants you cannot change the layout type from "conference layout" to "personal layout". | V5.0.0 | |
| 282 | <i>SIP</i> | VNGR-16535 | SIP HDX sites (Version 2.6.1 and 2.6.0) receive video in resolution of 432x240 instead of 720p when connecting to a CP conference running on RMX 4000 at a line rate of 1920Kbps with 10+ layout selected and LPR is enabled. | V7.0 | |
| 283 | <i>SIP</i> | VNGR-16663 | In ICE environment, when connecting endpoints from all NAT environments (corporate/branch / enterprise) to an encrypted, 720p VSW conference, running at a line rate of 2M bps with video quality set to sharpness and video clarity and auto layout enabled, endpoints fail to connect to the conference with a disconnection cause "SIP request timed out". | V7.0 | To overcome the problem do one of the following: * Connect the endpoints one by one. * Run a non encrypted 2M VSW conference * Run the conference at a lower line rate (768Kbps) |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------|------------|---|---------------------|---|
| 284 | SIP | VNGR-16674 | In ICE environment, when connecting endpoints from all NAT environments (corporate/branch/federated) to an encrypted CP conference running at a line rate of 2Mbps, video quality set to sharpness, and video clarity and auto layout are enabled, some of the endpoints fail to connect due to TB_MSG_OPEN_PORT MCU internal problem or SIP HW MCU internal problem. | V7.0 | |
| 285 | SIP | VNGR-16839 | On RMX with MPMx in High-Profile Motion conference at 512kbps, HDX endpoints connected via SIP only transmit H.264 HP / 4SIF at 15 frames per second. | V7.0 | |
| 286 | SIP | VNGR-3276 | SIP participants cannot connect to a conference when the conference name contains blank spaces. | V1.1.0 | |
| 287 | Software Version | VNGR-8259 | 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. | V3.0.0 | Cancel the Secure Mode before downgrading |
| 288 | Software Version | VNGR-9228 | When trying to restore last version, after upgrading from version 3 to version 4, the RMX prompts for an activation key. | V4.0.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|---------------------------------------|------------|---|---------------------|------------|
| 289 | <i>Unified Communication Solution</i> | VNGR-13729 | When connecting from a MOC endpoint using the link sent in the meeting invitation to an ongoing conference that was scheduled via the Polycom add-in for Microsoft Outlook on the RMX 4000 (standalone) with Gathering and Recording enabled, the conference is not started and an error message (assert) is displayed in the RMX Management application. | V6.0 | |
| 290 | <i>Upgrade Process</i> | VNGR-12732 | After upgrading the system from version 5.0 to version 4.6, the Users list is deleted and the default POLYCOM User is created. For security reasons, it is recommended to delete this User and create your own User. | V4.6 | |
| 291 | <i>Upgrade Process</i> | VNGR-14720 | After software Upgrade is completed, an Active Alarm "Connection to Exchange Server failed" appears in the Alarms List on the RMX4000. | V6.0 | |
| 292 | <i>Upgrade Process</i> | VNGR-15904 | When upgrading RMX4000 MPM+ from version 6.0.0.105 to version 7.0.0.91, the fault "Card voltage problem" is displayed for all installed cards. | V7.0 | |
| 293 | <i>Upgrade Process</i> | VNGR-15907 | When upgrading RMX4000 MPM+ from version 6.0.0.105 to version 7.0.0.91, the Fabric Switch name is missing from the Hardware Monitor. | V7.0 | |
| 294 | <i>Upgrade Process</i> | VNGR-15909 | When upgrading RMX4000 MPM+ from version 6.0.0.105 to version 7.0.0.91, the RMX Type (RMX4000) does not appear in the Hardware Monitor window. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|-----------------|------------|--|---------------------|---|
| 295 | Upgrade Process | VNGR-16258 | Minor changes in the documentation to the upgrade process. | V7.0 | |
| 296 | Upgrade process | VNGR-16422 | RMX 2000 logs off during upgrade procedure when network is under stress. | V7.0 | When the network is busy, use the RMX Manager application instead of the RMX Web Client to control the MCU. |
| 297 | Upgrade process | VNGR-16430 | On RMX 2000, MPL failure occurs after upgrading Version 7.0. | V7.0 | |
| 298 | Upgrade Process | VNGR-16462 | When downgrading to software V6.0.0.105 and performing "Comprehensive restore" to Factory default, followed by upgrade to version V7.0.0.115 the upgrade procedure is stuck in "Software Loading" phase. System Reset (hard or soft) is required to resolve the problem. | V7.0 | |
| 299 | Upgrade Process | VNGR-16565 | After upgrading to the RMX1500 to Ver 7.0.0.123 the following error message appears: "CardsComponent Type:switch, Description: Temperature problem - Major". | V7.0 | |
| 300 | Upgrade Process | VNGR-16752 | On the RMX 2000/4000 with an ISDN card installed, after configuring the IP Fast Configuration Wizard, the system requests a reset and not to configure the ISDN Service. | V7.0 | |
| 301 | Upgrade Process | VNGR-16817 | After upgrading to version 7.0.0.135 the RMX Web Client shows that RMX is no longer in the "Startup" phase even though Faults list states: "Configuring". | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|------------------------|------------|--|---------------------|---|
| 302 | Upgrade Process | VNGR-16884 | On an RMX2000/4000 when upgrading to version 7.0 build 139, the MPMx card on Hardware Monitor appears normal, but the MPMx card blinking LEDs indicate the card is still "startup" mode. | V7.0 | |
| 303 | Upgrade Process | VNGR-16886 | On an RMX 1500/2000/4000 with MPMx cards, when upgrading to version 7.0 to build 139 and implementing the Diagnostic mode the MPMx card status remains in a "startup" phase. | V7.0 | |
| 304 | Upgrade Process | VNGR-16954 | On an RMX4000 after upgrading to version 7.0, build 148, the RMX "Could not complete MPM Card startup procedure". | V7.0 | |
| 305 | Upgrade Process | VNGR-9565 | When downgrading from version 4.0 to version 3.0, the MPM card does revert to normal. | V4.0.0 | |
| 306 | Upgrade Process | VNGR-9740 | When upgrading from version 2.0.2 to version 4.1, and then Restoring the Factory Defaults, during system restart sometimes MPL failure is encountered. | V4.0.0 | Turn the MCU off and then turn it on ("hardware" reset)." |
| 307 | Upgrade Process, Video | VNGR-16215 | Create conference set to High Profile and connect Durango endpoints, the Durango and HDX8000 Video preview is in a green color. | V7.0 | |
| 308 | Video | VNGR-10239 | In a 4Mb conference set to Sharpness and the IVR Welcome Message enable video appears in a 4x3 format. Disable IVR Welcome message and the video appears in 6x9 format. | V4.0.1 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|--|---------------------|------------|
| 309 | Video | VNGR-11351 | When the video from an endpoint is blocked, inconsistent video resolution settings are implemented. | V4.1 | |
| 310 | Video | VNGR-11382 | Legacy endpoints receive Content in 1+7 layout with black stripes on the sides (for aspect ratio fitting), selecting a different layout using Click&View (**) causes the black stripes to disappear. | V4.1 | |
| 311 | Video | VNGR-11843 | In a 2 Mb Video Switched conference with 10 or more H.323 endpoints connected, random video refreshes may occur. | V5.0.0 | |
| 312 | Video | VNGR-11965 | In a conference running at a line rate of 384 Kbps, with AES and LPR enabled, calls connect using the H.263 instead of the H.264 video protocol. | V5.0.0 | |
| 313 | Video | VNGR-13001 | Video display freezes momentarily with every speaker or layout change in a conference with HDX and SVX endpoints. | V4.6 | |
| 314 | Video | VNGR-13152 | Message overlay is limited to 32 Chinese characters OR 96 ASCII characters. | V4.6 | |
| 315 | Video | VNGR-14124 | On rare occasions in 2Mbps ISDN calls, ISDN participants connected without their endpoints sending video for a few seconds. | V6.0 | |
| 316 | Video | VNGR-15155 | In a conference with a line rate of 4096kbps, set to Sharpness, 1+5 layout, after connecting a few endpoints, when an endpoint dials out, video In & Out freeze. | V7.0 | |
| 317 | Video | VNGR-15495 | Connect to a conference with HDX 8000 & 9000 endpoints, FECC on some of the endpoints starts only after 10 seconds. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|--|---------------------|------------|
| 318 | Video | VNGR-15541 | Create a conference on the RMX using the default factory video profile, connect a Sony PCS-G50 endpoint, and then try to control the XG80's camera. There is no response. | V7.0 | |
| 319 | Video | VNGR-15543 | On an RMX 4000 with a CP conference with Auto Layout and Sharpness enabled, Sony PCS-1 endpoints do not transmit video in H.320 calls. | V7.0 | |
| 320 | Video | VNGR-15557 | On the RMX 4000 with a VSW conference set to 1080p30, when the RMX dials out to 3 HDX and 2 LifeSize endpoints, the HDX endpoints remain stuck in their splash screen. | V7.0 | |
| 321 | Video | VNGR-15709 | In a 2MB CP conference with LPR, Gathering, Sharpness, Video Clarity and Auto Brightness enabled, when connecting SIP & H.323 PVX/HDX endpoints, when starting PCM and selecting 1*1 Layout, the conference video has video artifacts. | V7.0 | |
| 322 | Video | VNGR-15722 | On an RMX 4000 with MPM+ cards, when trying to view the Video Preview window, video is occasionally absent. | V7.0 | |
| 323 | Video | VNGR-15724 | On RMX with MPMx, when a skin without background is selected, the Polycom skin background is displayed. When a skin with a background is selected, the speaker notation color is incorrect. | V7.0 | |
| 324 | Video | VNGR-15738 | When monitoring a conference and right-clicking a participant, the participant's video and audio freezes. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|--|---------------------|------------|
| 325 | Video | VNGR-15763 | A conference started from a Profile set to "Motion" and Video Resolution "HD 1080" after connecting HDX endpoints, resources used are incorrect. | V7.0 | |
| 326 | Video | VNGR-16050 | When using the MPMx card to run a conference with Auto Brightness enabled, no difference can be seen in the video between a light and darkened room. | V7.0 | |
| 327 | Video | VNGR-16245 | The resolution 1080p60fps is not available on the RMX 1500/2000/4000 | V7.0 | |
| 328 | Video | VNGR-16337 | On an RMX 4000 in a 4096Kbps conference with Auto Terminate, Sharpness, Encryption, LPR, Echo Suppression, Auto Layout enabled, when dialing out to 40 HDX endpoints video corruption occurred. | V7.0 | |
| 329 | Video | VNGR-16382 | During a video conference on the RMX2000 with an MPMx card, bitrate overflow occurs when there's a lot of motion in the video. | V7.0 | |
| 330 | Video | VNGR-16384 | On an RMX 2000 with the MPMx card with a conference running, when HDX endpoints connect, sometimes in some of the video cells the Aspect ratio is incorrect when the source is 4:3 - and destination is 16:9. | V7.0 | |
| 331 | Video | VNGR-16618 | On an RMX with MPM+ cards, when configuring the resolution of Configuration Slider to HD 1080p60/ HD 720p60 - in the participant properties you should not be able to select HD1080/HD 720p as the Maximum Resolution (People Video Definition). | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|---|---------------------|------------|
| 332 | Video | VNGR-16657 | In a 4MB HD1080p conference with Content, Video Clarity, Auto Termination, Encryption, LPR, Echo Suppression and Auto Layout enabled, when dialing out to six HDX8006 endpoints and changing the speaker, all endpoints had bad video. | V7.0 | |
| 333 | Video | VNGR-16684 | On an RMX 2000 with MPM+ cards running a 1920 Kbps conference using the following settings LPR, Sharpness and Video Clarity, when connecting ISDN endpoints metallic background noises can be heard. Connect an H.323 endpoint, then ISDN endpoints view their own video. | V7.0 | |
| 334 | Video | VNGR-16695 | Using MPMx, frame rate in motion conference is less than 60fps on HDX endpoints that connect at HD resolution at 1920kbps and are not allocated on the Turbo DSP. | V7.0 | |
| 335 | Video | VNGR-16708 | The displayed resolution of the gathering slide differs between H.323 participant (432x240) and H.320 participant (480x352) when both endpoints are connected to a CP conference running at a line rate of 384Kbps with video quality set to Motion and LPR is enabled. Once the Gathering phase ends, all participants connect with 2SIF resolution. | V7.0 | |
| 336 | Video | VNGR-16711 | On an RMX 2000 with MPMx cards, when dialing in at 384Kbps using VSX endpoints to a Meeting Room, the video transfer rate was 800Kbps instead of 384Kbps. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|---|---------------------|------------|
| 337 | Video | VNGR-16722 | On RMX 2000 with one MPM-H, small artifacts are displayed in the Gathering Slide when the configuration is changed to Presentation Mode during the Gathering Phase. | V7.0 | |
| 338 | Video | VNGR-16724 | On RMX 1500, video display freezes momentarily during Video Layout changes before the new Video Layout is displayed. | V7.0 | |
| 339 | Video | VNGR-16725 | Blinking video occurs during ISDN blast dial-out at 384kbps on RMX 2000 with MPMx. | V7.0 | |
| 340 | Video | VNGR-16760 | On an RMX1500, when connecting seven HDX8006 endpoints to a 4096 Kbps & HD 1080p conference with Video Clarity, Sharpness, Echo Suppression and Auto Layout enabled, stripes appeared in the endpoints video. | V7.0 | |
| 341 | Video | VNGR-16782 | On an RMX 1500, when adding 45 VSX and V500 endpoints to a 348 Kbps CIF CP conference, with Motion, Echo Suppression and Auto Layout enabled, VSX8000 endpoints connect using incorrect resolutions and video stills are encountered. | V7.0 | |
| 342 | Video | VNGR-16789 | Connecting three HDX8006, six HDX9004 and nine V500 endpoints to a 1024 Kbps, HD 1080p conference running on an RMX1500, with Video Clarity, Echo Suppression and Auto Layout enabled, poor video motion was observed. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|--|---------------------|------------|
| 343 | Video | VNGR-16796 | On RMX with MPMx, Intra request from endpoint connected via H.264 CIF stream can sometimes take almost 1 second to be answered. | V7.0 | |
| 344 | Video | VNGR-16811 | On RMX 1500 MPMx - S, when the HDX8006 endpoint at 720p resolution using High-Profile at 512kbps connect to the conference the participant experiences welcome slide flash in video or endpoint freezes with welcome slide displayed. | V7.0 | |
| 345 | Video | VNGR-16812 | When connecting 15 PVX, HDX, VSX 3000/ 7000 CMAD endpoints to a 2Mb HD720p conference with IVR, Gathering, High Profiles and Audio Clarity enabled, running on an RMX 1500, changing the conference layout from 1x1 to 4x4 (10+) results in brief video freezes. | V7.0 | |
| 346 | Video | VNGR-16858 | When connecting to 10 HDXs to a 4096Kbps conference with Encryption, LPR, Auto Termination, Sharpness, Auto Brightness, Audio Clarity and a 1x1 conference Layout enabled, running on an RMX2000 with MPM+ cards, the Welcome screen on one of the endpoints is partially fuzzy. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|---|---------------------|------------|
| 347 | Video | VNGR-16880 | When connecting HDX & VSX endpoints to a mixed ISDN & IP 4096Kbps conference with Auto Terminate, Encryption, LPR, Sharpness, Auto Layout, Same Layout and Video Clarity enabled, running on an RMX 2000 with MPM+ cards, and muting and unmuting them, HDX endpoints encounter flickering video. | V7.0 | |
| 348 | Video | VNGR-16888 | When starting a conference from the default profile with 20-30 endpoints connected on an RMX 4000 with MPMx cards, changing the conference layout causes video freezes and empty layout cells appear. | V7.0 | |
| 349 | Video | VNGR-16910 | On RMX with MPMx, High-Profile endpoints (HDX 8006) display green flash in video window of layout. Attempts to send content result in "MFA error" followed by shaking video on HDX 9004 endpoints. | V7.0 | |
| 350 | Video | VNGR-16930 | When connecting 15 HDX8006 endpoints to a 1024Kbps & HD 720p conference with Video Clarity, Sharpness, Echo Suppression and Auto Layout enabled, running on an RMX1500, the endpoints had low frame rates, frozen video, packet loss and incorrect video resolutions. | V7.0 | |
| 351 | Video | VNGR-16944 | Conferences running at a line rate of 768 and 1024Kbps with Gathering enabled may display distorted font and discolored background at 432x240, 512x288, 848x480 and 720x400 resolutions. | V7.0 | |

Table 8 Version 7.0 System Limitations

| # | Category | Key | Description | Detected in Version | Workaround |
|-----|----------|------------|---|---------------------|------------|
| 352 | Video | VNGR-16952 | During a 1472Kbps conference with LPR, AES, Gathering, Send Content to Legacy Endpoint and Auto Layout enabled, the video of VSX7000 and HDX8006 endpoints does not appear in the conference layout. | V7.0 | |
| 353 | Video | VNGR-16958 | During a 128Kbps conference with AES, Gathering, Motion, Send Content to Legacy Endpoints and Auto Layout enabled, empty layout cells, poor video and video stills occur in HDX, VSX, Lifesize endpoints. | V7.0 | |
| 354 | Video | VNGR-15386 | Artifacts present in the Gathering Slide in 2560kbps, CP conference with Motion selected. | V7.0 | |