Dialogic® PowerMedia™ XMS Release 2.3

Release Notes

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Revision History

This section summarizes the changes made in this and, if applicable, each previously published version of the Release Notes for PowerMedia XMS Release 2.3, which is a document that is planned to be periodically updated throughout the lifetime of the release.

Revision	Release Date	Notes
05-2721-007	March 2016	Updates to support PowerMedia XMS Release 2.3 Service Update 6. Removed WebRTC support. Release Issues: • IPY00117748, IPY00117957.
05-2721-006 (update)	November 2015	Upgrading: Updated the section.
05-2721-006	September 2015	Updates to support PowerMedia XMS Release 2.3 Service Update 5. Release Issues: • Added the following Resolved Defects: IPY00116879, IPY00117218, IPY00117248, IPY00117277, IPY00117292, IPY00117294, IPY00117308, IPY00117314, IPY00117342, IPY00117371. • Added the following Known (permanent) Issue: XMS-2579.
05-2721-005	April 2015	Updates to support PowerMedia XMS Release 2.3 Service Update 4. Release Issues: • Added the following Resolved Defects: IPY00116986, IPY00117024, IPY00117064, IPY00117151, IPY00117154, IPY00117165, IPY00117184, IPY00117202.
05-2721-004	March 2015	Updates to support PowerMedia XMS Release 2.3 Service Update 3. Post-Release Developments: • Multiple URI for MSML <audio> and <video>. Release Issues: • Added the following Resolved Defects: IPY00116949, IPY00116989, IPY00117009, IPY00117092, IPY00117110, IPY00117134, IPY00117139, IPY00117147, XMS-1932.

Revision	Release Date	Notes
05-2721-003	February 2015	Updates to support PowerMedia XMS Release 2.3 Service Update 2. Release Issues: • Added the following Resolved Defects: IPY00116157, IPY00116210, IPY00116818, IPY00116898, IPY00116944, IPY00116947, IPY00116957, IPY00116960, IPY00116972, IPY00116974, IPY00116976, IPY00116977, IPY00116978, IPY00117031, IPY00117050, IPY00117051, IPY00117082.
05-2721-002 (Updated)	January 2015	Release Issues: • Added the following Known (permanent) Issue: XMS-180.
05-2721-002	November 2014	Updates to support PowerMedia XMS Release 2.3 Service Update 1. Post-Release Developments: • PowerMedia XMS Release 2.3 Service Update. • Remote NAT Traversal for SIP Terminals. • MSRP Max Sessions WebUI Setting. • RESTful Event Streaming Data Format Change. • Relative URIs for RESTful Resource Responses. Release Issues: • Added the following Resolved Defects: IPY00116584, IPY00116704, IPY00116712, IPY00116722, IPY00116849, IPY00116854, IPY00116897, IPY00116910, XMS-1315, XMS-1325, XMS-1341.
05-2721-001	October 2014	Updates to support PowerMedia XMS Release 2.3.
05-2721-001-01	June 2014	Initial release of this document.
Last modified: March 2016		

Refer to www.dialogic.com for product updates and for information about support policies, warranty information, and service offerings.

1. Welcome

This Release Notes addresses new features and issues associated with the Dialogic®
PowerMedia™ Extended Media Server (also referred to herein as "PowerMedia XMS" or
"XMS") Release 2.3. This is a document that is planned to be periodically updated
throughout the lifetime of the release.

This Release Notes is organized into the following sections (click the section name to jump
to the corresponding section):

- Overview: This section provides an overview of this release.

- Related Documentation: This section provides information about the documentation
  that supports this release.

- System Requirements: This section describes the system requirements for this
  release.

- Release Features: This section describes the new features and functionality in this
  release.

- Installation, Configuration, Licensing, and Upgrading: This section describes topics
  that are useful for getting started with this release, such as: Installation,
  Configuration, Licensing, and Upgrading.

- Post-Release Developments: This section describes significant changes to this
  release subsequent to the general availability release date.

- Release Issues: This section lists the issues that may affect this release.

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2.   Overview

PowerMedia XMS energizes application delivery by boosting performance with:

- State of the art mixing of media-rich communications
- Software providing a seamless transition to virtualization and cloud delivery
- Telco hardened scalability

PowerMedia XMS elevates what developers can create for their customers, from virtually any development environment, on virtually any network, and connecting to virtually any type of communication endpoint.

PowerMedia XMS is a powerful next-generation software media server that enables standards-based, real-time multimedia communications solutions for SIP in mobile and broadband environments. PowerMedia XMS is controlled by the business logic of applications deployed on SIP application servers and web application servers to execute high density real-time multimedia communication functions including inbound and outbound session/call control, audio/video play and record, transcoding, transrating, transizing of video streams, multimedia conference mixing, content streaming, and a wide range of advanced supporting functions for communication sessions.

PowerMedia XMS is controlled by the business logic of applications deployed on SIP application servers and web application servers. PowerMedia XMS offers multiple media control protocols that can be used in a variety of network infrastructures. For example, a SIP application server (AS) can drive PowerMedia XMS using the MSML control interface or use the PowerMedia XMS VoiceXML (VXML) browser to execute VXML scripts and invoke MRCP speech services, like ASR and TTS. For Web 2.0 and Cloud development, a web application written in an appropriate language (such as, Python or JavaScript) can control PowerMedia XMS using the HTTP RESTful interface. Similarly, the JSR 309 Connector Software for PowerMedia XMS (JSR 309 Connector) can enable Java EE developers to control real-time applications from converged application servers.

The MSML, JSR 309 Connector, RESTful and NETANN interfaces support multimedia, both audio and video, using a variety of codecs. VXML media options are currently audio-only

PowerMedia XMS provides powerful and user-friendly OA&M functionality, and can be managed remotely through a web-based operator console and the HTTP RESTful Management interface.

A wide variety of SIP endpoints can be handled by PowerMedia XMS, resulting in the delivery of rich full-duplex audio and video media streams to a variety of fixed and mobile devices.

The following figure illustrates an example of a video conferencing delivery platform for a PowerMedia XMS-based multimedia conferencing solution.
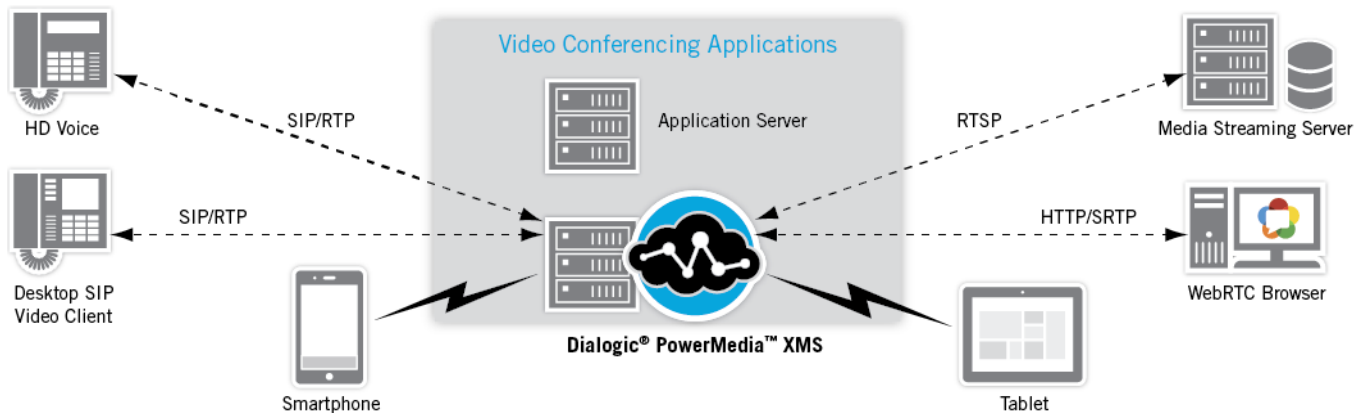
Note: WebRTC functionality is no longer supported on XMS 2.3 due to fundamental changes in the newer versions of Chrome and Firefox. For any further WebRTC work, use XMS 3.0 or later.

Related Information

See the following for additional information:

- PowerMedia XMS datasheet at http://www.dialogic.com.
- PowerMedia XMS documentation at http://www.dialogic.com/manuals.
- PowerMedia XMS technical resources at http://www.dialogic.com/products/media-server-software/download/xms-resources.
- Dialogic technical support at http://www.dialogic.com/support.

3.   Related Documentation

This section provides information about the documentation that supports the PowerMedia XMS Release 2.3.

The following documents are available for the PowerMedia XMS Release 2.3 at http://www.dialogic.com/manuals/xms/xms2.3.aspx.

Document	Description
Dialogic® PowerMedia™ XMS Release 2.3 Release Notes	Addresses new features and issues associated with PowerMedia XMS Release 2.3.
Dialogic® PowerMedia™ XMS Quick Start Guide	Describes how to install software, access the PowerMedia XMS Admin Console for configuration management, and run the verification demo.
Dialogic® PowerMedia™ XMS Installation and Configuration Guide	Provides instructions for installing, configuring, administering, and maintaining PowerMedia XMS.
Dialogic® PowerMedia™ XMS Basic Network Media Services with SIP User's Guide	Provides detailed information about configuring Basic Network Media Services with SIP, focusing on Network Announcement (NETANN).
Dialogic® PowerMedia™ XMS Message Session Relay Protocol Feature Guide	Describes the Message Session Relay Protocol (MSRP), which is a session-oriented instant messaging protocol used to provide peer-to-peer file transfer, photo sharing, or chat services.
Dialogic® PowerMedia™ XMS MSML Media Server Software User's Guide	Provides guidelines for using the Media Sessions Markup Language (MSML) software. The MSML media server software enables a remote client, also known as an Application Server (AS), to control media resources on a media server (MS). The connection between the AS and MS is established using the SIP protocol, thereafter media control commands/responses (in the form of MSML control syntax) are exchanged in SIP messages, such as the INFO message or the 200 OK response.
Dialogic® PowerMedia™ XMS RESTful API User's Guide	Provides information for application developers using RESTful API over http transport to control media and call control resources of PowerMedia XMS.

Document	Description
Dialogic® PowerMedia™ XMS RESTful Management API User's Guide	Provides an alternative method of performing PowerMedia XMS system management tasks in an automated or distributed manner.
Dialogic® PowerMedia™ XMS Variable Content Announcements Feature Guide	Describes how to use variable content announcements for multiple languages in PowerMedia XMS.
Dialogic® PowerMedia™ XMS VoiceXML Reference Guide	Contains an alphabetical reference of supported VoiceXML elements and provides information about application properties, SSML support, session variables, and application variables.
JSR 309 Connector Software	
Dialogic® PowerMedia™ XMS JSR 309 Connector Software Installation and Configuration Guide	Provides the JSR 309 Connector installation and configuration information for the supported platforms. • Oracle Communications Converged Application Server • TeleStax Apache-Tomcat Application Server • TeleStax JBoss Application Server
Dialogic® PowerMedia™ XMS JSR 309 Connector Software Developer's Guide	Describes any extensions added to the JSR 309 Connector (based on JSR 309 specification) in addition to which methods/parameters are supported.

4. System Requirements

This section describes the system requirements for the PowerMedia XMS Release 2.3.

The **minimum** and **recommended** system requirements are as follows:

Item	Requirement
Hardware	Intel Architecture-based server
Operating System	**Note:** 32-bit operating systems are not supported. Community ENTerprise Operating System (CentOS) 6.4 (provided with the ISO Method installation) Red Hat Enterprise Linux (RHEL) 6.4 Oracle Enterprise Linux (OEL) 6.4 **Note:** The *perl-core-5.10.1-xxxxx.x86_64.rpm* is required if using the RPM Method installation.
Processor	**Minimum:** Intel Xeon E5420 Quad-Core (2.50 GHz, 1333 MHz FSB, 80W) for low density systems running less than 500 channels **Recommended:** Intel Xeon X5650 Dual Hex-Core (2.66 GHz, 1333 MHz FSB) or better for performance systems or Intel Xeon E5-2665 Dual Octal-Core (2.40 GHz, 1333 MHz, 20 MB Cache), 2 Intel QPI (8 GT/s) or better for performance systems
Ethernet	Single or Dual NIC 1000Base-TX (RJ-45)
Memory	**Minimum:** 8 GB RAM **Recommended:** 16 GB RAM or higher
Storage	**Minimum:** 250 GB HDD **Recommended:** 2 TB HDD for advanced logging
Note: The recommended server configuration is applicable for higher density audio solutions of 1500 or greater sessions, video transcoding solutions, or solutions utilizing virtualization.	

Supported Virtual Machines

The supported virtual machines (VM) are as follows:

- VMWare ESXi 5.x
- Kernel Virtual Machine (KVM)
- Oracle VM
- XEN VM

Note: Virtualization systems chosen for PowerMedia XMS should be configured for enterprise or private virtual environments that permit customization of virtual machine (VM) settings and hypervisor performance tuning. Virtual environments running PowerMedia XMS must also restrict the number of VMs hosted on a single platform to facilitate the real-time low-latency scheduling demands required for high quality media processing. Density capacity in virtual environments may vary and are generally a factor of the host platform capacity and the number of VMs running PowerMedia XMS. Generally, the aggregate density of all VMs running PowerMedia XMS will be less than the bare metal capacity of the platform. Testing has shown hypervisor overhead to reduce density by 15-20 percent. Additionally, running more VMs requires extra overhead for hypervisor scheduling of resources between real-time systems.

5. Release Features

This section describes the features and functionality supported in the PowerMedia XMS.

For more information, refer to the documents listed in the Related Documentation section.

Note: WebRTC functionality is no longer supported on XMS 2.3 due to fundamental changes in the newer versions of Chrome and Firefox. For any further WebRTC work, use XMS 3.0 or later.

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The key new features and functionality include:

- Voice over LTE (VoLTE) and IR.92 Support
- IPv6 Support
- MSRP Messaging Support
- Trickle ICE Support
- AMR File Support
- MPEG4 VGA Support
- Enhanced SNMP Support
- Historical Data Reporting Support
- JSR 309 Connector Enhancements

Voice over LTE (VoLTE) and IR.92 Support

PowerMedia XMS has been updated to support the IP Multimedia Subsystem (IMS) profiles for Voice Services defined by the GSMA for Long Term Evolution (LTE) networks.

Voice over LTE (VoLTE) is the term used to describe telephony voice services over all-IP mobile LTE networks. The GSMA document that guides a minimum set of requirements to support high quality IMS-based telephony services over LTE is IR.92, "IMS Profile for Voice and SMS". The IR.92 specification provides definitions to promote high interoperability among user endpoints and network equipment providing VoLTE telephony services.

In the IMS network, PowerMedia XMS functions as the Media Resource Function (MRF). This includes interaction between user equipment (UE), and application servers (AS) that require MRF capabilities for real-time voice services. The MRF processes SIP signaling and media control over the Mr, Mr'or Cr reference interfaces as specified in TS.23.228 IMS Core network architecture and related 3GPP technical specifications (TS.23.218, TS.23.333, etc).

PowerMedia XMS has been updated to comply with the IR.92 specification to promote interoperability with IMS VoLTE networks and endpoints. Enhancements to PowerMedia XMS round out capabilities to provide overall VoLTE support for:

- IMS SDP negotiation procedures
- Bandwidth control and RTCP feedback mechanisms
- LTE specified voice codecs, such as AMR-NB and AMR-WB
- RTP profiles and Jitter buffer management
- IPv6 support

The following areas represent exceptions to the IR.92 specifications that are not covered in this PowerMedia XMS release:

- SIP Preconditions
- Add Hoc Conferencing
- Communication Diversion (CDIV)
- RTCP bandwidth modifiers
- RTCP enhanced reports
- AMR Mode Change restrictions

IPv6 Support

PowerMedia XMS now supports Internet Protocol version 6 (IPv6). IPv6 was introduced by the IETF as an addressing scheme to deal with the possibility of IPv4 address exhaustion. Support for IPv6 is specified by many network architectures to provide future-proof interoperability. IPv6 provides support for direct addressing and a larger number of addresses than IPv4. It is expected to work in parallel with IPv4 as network infrastructure evolves. PowerMedia XMS has been updated to support pure IPv4, IPv6, or mixed mode (both IPv4 and IPv6 addressing) network environments.

The key features of IPv6 are:

- Simplified header format
- Expanded addressing capabilities (128 bits long, compared to 32 bits in IPv4)
- Stateless and stateful address configuration
- Built-in security support
- Improved support for Quality of Service (QoS)
- New protocol for neighboring node interaction
- Improved support for extensions and options

PowerMedia XMS network interfaces can be configured to run IPv4, IPv6, or mixed mode (IPv4/IPv6) addressing through the Web User Interface (WebUI) or RESTful Management API. The addition of IPv6 addressing makes it possible to provide PowerMedia XMS services support for DNS, SIP Signaling, RTP Media, Media Control (MSML, VXML, RESTful, etc), http file transfer, MSRP messaging, WebRTC and SNMP through any of these addressing schemes.

Note: Due to third-party speech server support limitations, PowerMedia XMS speech server support for ASR/TTS via the MRCP protocol interface is currently limited to IPv4 only.

For more information, refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

MSRP Messaging Support

PowerMedia XMS now supports Message Session Relay Protocol (MSRP). MSRP is a session-oriented instant messaging protocol used to provide peer-to-peer file transfer, photo sharing, or chat services. MSRP has been specified as a messaging protocol in Short Message Services (SMS) for Rich Communication Suite (RCS), defined by GSMA, and for Next Generation Emergency 911 (NGN E911) text services. MSRP can also be used as a peer-to-peer text or file transfer protocol. MSRP is defined by the IETF specification RFC 4975.

PowerMedia XMS supports creation of MSRP message sessions, which are TCP connections between peers. MSRP sessions can be negotiated with an offer or answer model using the Session Description Protocol (SDP). The exchange is carried over SIP signaling protocol (RFC 3261). This feature allows PowerMedia XMS to offer a messaging session as one of the possible media-types in a session dialog, similar to the establishment of RTP media sessions for voice or video.

MSRP Protocol is a text-based protocol to deliver binary MIME content payloads, so it can handle content of various types including, plain text, images, video clips, and binary file transfers. MSRP protocol works by partitioning messages or files into chunks and sequencing the end to end transfer. MSRP has mechanisms to handle chunk by chunk acknowledgements and retransmissions to assure that data is transferred successfully.

MSRP messaging capability is provided through PowerMedia XMS as a separately licensable feature which can be added existing license capabilities. PowerMedia XMS supports establishment of MSRP peer-to-peer instant messaging sessions with the RESTful Media API. Session file transfer of recorded audio, video, or binary files using MSRP is supported by both the MSML API and the RESTful Media API.

For more information, refer to the *Dialogic® PowerMedia™ XMS Message Session Relay Protocol Feature Guide*.

Trickle ICE Support

PowerMedia XMS now supports Trickle ICE for WebRTC media using RESTful Media API. The Trickle ICE method is an extension to the ICE protocol that offers a much faster WebRTC connection setup time by allowing the incremental gathering of connections between peers. The PowerMedia XMS RESTful API now supports a method to add ice candidates from a WebRTC browser, after the original Offer SDP, as they "trickle" in. This results in a speed-up for connection time for WebRTC sessions, which makes connection less noticeable to users. Trickle ICE extension to the ICE protocol is described by the IETF draft, draft-ietf-mmusic-trickle-ice-01.

AMR File Support

PowerMedia XMS now supports new file container formats for playback and recording. This release introduces direct file support for the AMR file format container for AMR-NB (.amr) and AMR-WB (.awb) audio stream storage and messaging operations. The AMR file storage format is defined by IETF specification RFC 4867.

The AMR file format is specified to support storage of AMR-NB and AMR-WB speech frames in an optimized content packaging. AMR file format preserves interoperability with already deployed implementations without transcoding when AMR-NB or AMR-WB is used as the network transport protocol.

PowerMedia XMS supports AMR file format for file Play and Record operations. Recorded files can be stored locally or transferred to remote storage using http or MSRP transfer. Advanced audio Play functions such as Seek, Pause and Resume are also supported by PowerMedia XMS when using this format.

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MPEG4 VGA Support

PowerMedia XMS now supports MPEG4 video up to VGA (640x480) resolution. This release adds the capability to establish connection with RTP video endpoints that support MPEG4 VGA (640x480) resolution up to simple profile level 4a as defined by RFC3016. PowerMedia XMS supports transcoding, transrating and transizing from MPEG4 VGA to any other supported video codecs (such as H.263, H.264 and VP8), provided the appropriate PowerMedia XMS license, to support use cases such as SIP (MPEG4) to WebRTC (VP8) interworking. Support for MPEG4 VGA transcoding is included with the PowerMedia XMS High Resolution Video License.

Enhanced SNMP Support

PowerMedia XMS Simple Network Management Protocol (SNMP) for remote element monitoring and management has been updated to support standard system MIBs and license resource traps.

SNMP is a standard-based IP network management mechanism for exchanging information between SNMP agents that typically reside on a managed device and SNMP management systems.

PowerMedia XMS allows system monitoring by standard-based SNMP network management systems. The PowerMedia XMS implementation supports SNMP v2c and SNMP v3. The PowerMedia XMS SNMP interface can be used for monitoring system performance and for configuring system alarms in the form of SNMP Traps. The SNMP interface exposes public (standard) MIBs for generic network element management, as well as private (enterprise) MIBs for monitoring, and for alarms based on media server resource usage. SNMP Traps can be configured to identify when system usage thresholds have been exceeded so that appropriate actions can be taken.

For more information, refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

The following table lists the supported standard system MIBs:

MIB	Description
EtherLike-MIB	Defines generic objects for Ethernet like network interfaces (RFC 3635)
HOST-RESOURCES-MIB	For managing host systems (RFC - many)
IF-MIB	Defines generic objects for network interface sub-layers (RFC 2863)
IP-MIB	Management of IP and ICMP implementation (RFC 4293)
IPV6-MIB	Management of IPv6 implementation
TCP-MIB	Management of TCP implementation (RFC 4022)
UDP-MIB	Management of UDP implementation (RFC 4113)
RFC1213-MIB	Defines MIB-II (RFC 1213)

Historical Data Reporting Support

PowerMedia XMS now supports Historical Data Reporting through the Web User Interface (WebUI).

A graphical representation of system metrics is available through the PowerMedia XMS WebUI. The historical data graphs will display license usage meters, over a configurable period of time. The interactive historical meters graphs can be configured to display license usage in resolutions ranging from 2sec to 60min.

For more information, refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

JSR 309 Connector Enhancements

Corresponding with this PowerMedia XMS release is an update to the Dialogic® PowerMedia™ XMS JSR 309 Connector Software (also referred to herein as "JSR 309 Connector"). The JSR 309 Connector version 4.0 is available which extends Java EE Application Server capabilities by providing standards based audio and video Media Server functionality, such as IVR, conferencing, and transcoding for VoIP and WebRTC endpoints.

The JSR 309 Connector version 4.0 enhances or adds functionality such as:

- Support for Video Conferencing and Video layouts (SMIL similar)
- Support for WebRTC Media
- Support for Active Talker (ASN)
- Support for per call URI routing and connection re-INVITE
- Support for Mixer Control Leg
- Enhanced Signal Detector
- Enhanced Media Server Redundancy functionality
- Enhanced exception handling, logging and WebRTC demo examples

The following J2EE Application Server platforms have been integrated with JSR 309 Connector version 4.0:

- Oracle Communications Converged Application Server (OCCAS) version 5.1.0+
- TeleStax (TelScale/Mobicents) Apache-Tomcat Application Server
- TeleStax (TelScale/Mobicents) JBoss Application Server

For more information, refer to the *Dialogic® PowerMedia™ XMS JSR 309 Connector Software Developer's Guide* and *Dialogic® PowerMedia™ XMS JSR 309 Connector Software Installation and Configuration Guide*.

PowerMedia XMS Release 2.2

For key features and functionality included in PowerMedia XMS Release 2.2, refer to the *Dialogic® PowerMedia™ XMS Release 2.2 Release Notes* at:

http://www.dialogic.com/webhelp/XMS/2.2/XMS_ReleaseNotes.pdf

PowerMedia XMS Release 2.1

For key features and functionality included in PowerMedia XMS Release 2.1, refer to the *Dialogic® PowerMedia™ XMS Release 2.1 Release Notes* at:

http://www.dialogic.com/webhelp/XMS/2.1/XMS_ReleaseNotes.pdf

PowerMedia XMS Release 2.0

For key features and functionality included in PowerMedia XMS Release 2.0, refer to the *Dialogic® PowerMedia™ XMS Release 2.0 Release Notes* at:

http://www.dialogic.com/webhelp/XMS/2.0/XMS_ReleaseNotes.pdf

6. Installation, Configuration, Licensing, and Upgrading

This section describes topics that are useful for getting started with the PowerMedia XMS Release 2.3, such as: Installation, Configuration, Licensing, and Upgrading.

For more details describing how to install software, access the PowerMedia XMS Admin Console for configuration management, and run the verification demo, refer to the *Dialogic® PowerMedia™ XMS Quick Start Guide*.

For more details providing instructions for installing, configuring, administering, maintaining, and upgrading PowerMedia XMS, refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

For more details providing instructions for installing and configuring the JSR 309 Connector, refer to the *Dialogic® PowerMedia™ XMS JSR 309 Connector Software Installation and Configuration Guide*.

Note: For limitations or issues related to installing or upgrading PowerMedia XMS, refer to the Release Issues section beforehand for more information.

Installation

There are two installation methods available:

- ISO Method
- RPM Method (used for a CentOS or RHEL installation)

ISO Method

The ISO installation method is a complete system installation that includes the CentOS, OS optimizations, and PowerMedia XMS software. The ISO can be installed from a DVD drive to a physical or virtual machine.

For more information, refer to the *Dialogic® PowerMedia™ XMS Quick Start Guide* and *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

RPM Method

The stand-alone RPM installation method is used for installation on top of a pre-existing CentOS or RHEL installation. The RPM installation will install the PowerMedia XMS software and prerequisite packages required to run PowerMedia XMS. The RPM installation will also make OS adjustments for real-time audio and video processing required for optimal performance.

For more information, refer to the *Dialogic® PowerMedia™ XMS Quick Start Guide* and *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

Configuration

There are two configuration methods available:

- PowerMedia XMS Admin Console
- RESTful Management API

PowerMedia XMS Admin Console

The PowerMedia XMS Admin Console ("Console") is a secure web-based GUI used to manage PowerMedia XMS. The Console can be reached using a web browser and the PowerMedia XMS IP address.

For more information, refer to the *Dialogic® PowerMedia™ XMS Quick Start Guide* and *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

RESTful Management API

The RESTful Management API is an alternate way of configuring and performing system management tasks for PowerMedia XMS. The RESTful Management API is a remote API carried over HTTP transport that allows the option to incorporate configuration elements into an application or web interface in a more automated or distributed manner.

For more information, refer to the *Dialogic® PowerMedia™ XMS RESTful Management API User's Guide*.

Licensing

PowerMedia XMS comes with a 4-port verification license to get started. The name of the license file is *verification.lic*.

PowerMedia XMS evaluation software can be requested by filling out a form through the Dialogic website at http://www.dialogic.com/products/media-server-software/xms/xms-download.aspx.

PowerMedia XMS production licenses or trial licenses for larger session installations can be obtained through your authorized Dialogic distributor or by contacting Dialogic Inside Sales (insidesales@dialogic.com).

The following licensing capabilities are supported in this release:

- **Host-based Licensing**
  The license is associated with a particular machine based on the machine's MAC address (Host ID).

- **Additive Licensing**
  To increase licensed resources or scale system capability, you can augment an existing license with multiple licenses. The licenses must be production (non-trial or non-verification) licenses.

Upgrading

As part of the PowerMedia XMS Admin Console, the **Upgrade** page of the **System** menu provides the option to upgrade the system by uploading a system upgrade package.

System Upgrade

Perform the following steps to upgrade the system:

1. Select the **System** menu.

2. Click the **Upgrade** tab.

3. Click **Browse** from the **Upload System Upgrade Package** section to access a system upgrade package file (.tgz) that has been downloaded.

4. Once you select the system upgrade package file, click **Upload**. After the upload completes, the system upgrade package file will be listed in the **System Upgrade Package** section.

5. Locate the appropriate system upgrade package file and click **Upgrade**.

Note: If there is already a system upgrade package file listed in the **System Upgrade Package** section, you can click **Upgrade** on the appropriate system upgrade package file.

Note: XMS configuration settings are preserved when upgrading the XMS system. Direct user modifications to XMS files may be overwritten with upgraded versions.

7. Post-Release Developments

This section describes significant changes to the PowerMedia XMS Release 2.3 subsequent to the general availability release.

- PowerMedia XMS Release 2.3 Service Update
- Multiple URI for MSML <audio> and <video>
- Remote NAT Traversal for SIP Terminals
- MSRP Max Sessions WebUI Setting
- RESTful Event Streaming Data Format Change
- Relative URIs for RESTful Resource Responses

PowerMedia XMS Release 2.3 Service Update

This Service Update for PowerMedia XMS Release 2.3 is now available. This updates provide fixes to known problems, and may also introduce new functionality. It is intended that new versions of the Service Update will be released periodically.

For information about installing this release, refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

Multiple URI for MSML <audio> and <video>

With Service Update 3, the uri attribute for MSML <audio> and <video> elements can be used with multiple uri separated by space in order to minimize delays between multiple <audio> or <video> prompts. The uri attribute identifies the location of the audio or video file.

For more information, refer to the *Dialogic® PowerMedia™ XMS MSML Media Server Software User's Guide*.

Remote NAT Traversal for SIP Terminals

With Service Update 1, remote NAT traversal for SIP terminals is supported. When the feature is enabled through the WebUI, PowerMedia XMS will automatically detect if a client SIP end point is behind a NAT and update the IP address audio and video RTP data is streamed to. This is done by comparing the negotiated remote IP address with the actual remote IP address RTP packets are received from. If the call contains video, PowerMedia XMS will take precautions to get valid media as soon as possible. The feature is required for SIP end points that do not support STUN/ICE negotiations.

MSRP Max Sessions WebUI Setting

In PowerMedia XMS Release 2.3, the user had to manually configure the setting in the WebUI. With Service Update 1, it is now automatically configured based on the license.

RESTful Event Streaming Data Format Change

With Service Update 1, the RESTful event format has been updated to be compliant with HTTP chunked data formatting (RFC 7230, Section 4.1). The extra carriage return / line feed (CRLF) in previous PowerMedia XMS versions has been removed from the beginning of each chunk. Each chunk returned begins with the size of the XML payload in hex format.

Example:

```
44
<web service version="1.0">
<event type="keepalive"/></web_service>
```

Note: Existing RESTful applications that make use of event handlers will require updating.

Relative URIs for RESTful Resource Responses

The RESTful resource responses have been updated to include relative URIs. In previous PowerMedia XMS releases, the RESTful resource responses contained absolute URIs. The updated RESTful resource responses are reflected in the *Dialogic® PowerMedia™ XMS RESTful API User's Guide*.

8. Release Issues

This section lists the issues that may affect the PowerMedia XMS Release 2.3.

Limitations

PowerMedia XMS Release 2.3 has the following limitations:

- WebRTC functionality is no longer supported on XMS 2.3 due to fundamental changes in the newer versions of Chrome and Firefox. For any further WebRTC work, use XMS 3.0 or later.

- The RPM installation method can automatically install prerequisite operating system packages. If installing PowerMedia XMS on an existing system, it is recommended to have the yum package manager configured to use the online repository or a repository consisting of a locally mounted DVD or ISO of the operating system version being installed on.

- When upgrading a previous PowerMedia XMS installation and using the RESTful programming interface, verify the route entries in the **Routes** page of the PowerMedia XMS Admin Console after the upgrade completes.

- When using the web upgrade method for PowerMedia XMS, ensure your system has net-snmp (x86_64), net-snmp-libs (x86_64), and net-snmp-libs (i686) installed before the upgrade or have yum enabled with the standard repository that matches your OS (the prerequisite packages will be installed automatically).

  Note: When using the command line upgrade method for PowerMedia XMS, appropriate messages will be displayed instructing the user to install those packages if yum is not configured.

Considerations

GNU Bourne Again Shell (Bash) Vulnerability

A vulnerability "Shellshock" has been reported in the GNU Bourne Again Shell (Bash), the common command-line shell used in most Linux/UNIX operating systems (OS). The flaw could allow an attacker to remotely execute shell commands by attaching malicious code in environment variables used by the OS. Patches have been released to fix this vulnerability for affected OS versions. Note that the current solution does not completely resolve the vulnerability. We recommend that the user install existing patches and pay attention for updated patches.

PowerMedia XMS makes use of the bash shell in several components. For ISO installations, we recommend that the user log into the PowerMedia XMS command line and update the bash package with the following command line:

```
# yum update bash
```

For PowerMedia XMS RPM installations, the user should check the version of bash package installed and apply any patches if required.

Additional information about Shellshock can be found at http://www.us-cert.gov/ncas/alerts/TA14-268A.

Issues Table

The table below lists issues that affect the PowerMedia XMS Release 2.3. The following information is provided for each issue:

Issue Type

This classifies the type of release issue based on its effect on users and its disposition:

- Known – A minor issue. This category includes interoperability issues and compatibility issues. Known issues are still open but may or may not be fixed in the future.

- Known (permanent) – A known issue or limitation that is not intended to be fixed in the future.

- Resolved – An issue that was resolved (usually either fixed or documented) in this release.

Defect No.

A unique identification number that is used to track each issue reported.

Product or Component

The product or component to which the problem relates; for example, an API.

Description

A summary description of the issue. For non-resolved issues, a workaround is included when available.

Issues Sorted by Type, PowerMedia XMS Release 2.3

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117957	6	RESTful	There is a javax error when the xmsrest schema has a value of "none" for media_type.
Resolved	IPY00117748	6	VXML	Call licenses/resources get blocked by XMS.
Resolved	IPY00117342	5	HTTP	PUT requests fail when they do not receive a 100 Continue message.
Resolved	IPY00117277	5	MSML	MSML INFO messages are occasionally ignored by XMS.
Resolved	IPY00117248	5	MSML	When the connection ID in the "To:" header of an INFO response exceeds 126 characters, XMS sends an "Object does not exist" message.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116879	5	MSML	XMS selects the "To:" header instead of the "Request_URI" field in a call instance, which results in an "Object does not exist" message.
Resolved	IPY00117294	5	MSRP	XMS does not send a CANCEL request for its INVITE request in certain instances of dropped calls.
Resolved	IPY00117308	5	VXML	Nuance Speech Server responds with a 403 error message because XMS is sending MRCP V2 parameters instead of MRCP V1 parameters.
Resolved	IPY00117371	5	XMS	When trying to redirect a failed interface to a running one, the XMS is not sending a new SDP in a subsequent message after the re-INVITE without SDP.
Resolved	IPY00117314	5	XMS	When performing a stress test on the XMS system, some calls are returning a 410 No Media error message.
Resolved	IPY00117292	5	XMS	When performing Call Progress Analysis (CPA) with VXML, CPA results are not returned.
Resolved	IPY00117218	5	XMS	When resource/licenses are queried through the RESTful interface and an error occurs, XMS returns negative values for the license counts.
Known (permanent)	XMS-2579	5	MSML	MSML legacy does not accept session IDs and session versions longer than 9223372036854775807, which causes re-INVITEs to be ignored.
Resolved	IPY00117202	4	HMP	A play or record request would fail to return a completion event under certain conditions.
Resolved	IPY00117064	4	HMP	XMS does not send JOIN_COMPLETED as an acceptance of the Join action from RESTful 3PCC application.
Resolved	IPY00116986	4	HMP	XMS does not send stream event to RESTful application.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117184	4	MRCP	When using ASR failover tolerance, the MRCP Client service goes into failed state.
Resolved	IPY00117165	4	MSML	When using <audio> xml:lang attribute, MSML cannot find the file which causes an error.
Resolved	IPY00117154	4	MSML	The termkey digit is left in the digit buffer after <record> terminates.
Resolved	IPY00117024	4	RESTful	XMS reports an error when hangup action is selected from the RESTful application.
Resolved	IPY00117151	4	VXML	The builtin interpreter is processing <say-as> regardless of the property being set or not.
Resolved	IPY00117139	3	MSML	The rtk option is now available for regular digit patterns. When using a rtk digit with the edt timer and a digit pattern, if the digit pattern is matched and the rtk digit is entered within edt, both will be returned in dtmf.digits shadow variable and will no longer be considered for future matches. If the pattern is matched and edt expires before the rtk digit is entered, only the matched pattern digits will be returned in dtmf.digits. Any other digits typed after edt expiry will be considered for future matches (unless cleared by cleardb=true).
Resolved	XMS-1932	3	MSML	It is observed that cleardb (set via WebUI) is not always clearing the digit buffer prior to starting the play, which causes the play to terminate immediately.
Resolved	IPY00117147	3	VXML	When using <record> dlgc:dest or dlgc:destexpr attributes in VXML, the documentation is not clear. The VXML documentation has been updated with appropriate details.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116989	3	WebRTC	When sending infoAck message through WebRTC client, XMS reports error and does not send infoAck message.
Resolved	IPY00117134	3	WebUI	When upgrading from one SU build to another, the user configured settings are deleted.
Resolved	IPY00117110	3	WebUI	The WebUI does not respond to SNMP requests and no information is displayed on the Monitor page.
Resolved	IPY00117009	3	WebUI	When upgrading from one SU build to another, the routing table is not preserving existing routing rules.
Resolved	IPY00117092	3	XMS	The terminating DTMF tone is being appended at the end of the recorded file due to the DTMF tone not being clamped.
Resolved	IPY00116949	3	XMS	XMS is not able to handle SDP sizes greater than 6k.
Resolved	IPY00116947	2	HMP	When exiting video conference on mobile phone, the input video stream was changing dimensions causing a segmentation fault due to buffer overruns.
Resolved	IPY00116210	2	HTTP Client	Resolved issue where HTTP file caching resulted in delays in retrieving prompts.
Resolved	IPY00116978	2	MRCP	When using RESTful interface, there is no response to the MRCP delete request.
Resolved	IPY00117082	2	MSML	The DTMF digit that is barged and collected in previous dialog barges plays again in a subsequent dialog.
Resolved	IPY00116976	2	MSML	When introducing a syntax error during MSRP transfer request, it is observed that the session hangs without retrying or returning a termination notification.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116972	2	MSML	Special characters within the SIP URI were not handled properly.
Resolved	IPY00117031	2	MSRP	The MSRP service was optimized to reduce CPU resource usage under load.
Resolved	IPY00116977	2	RESTful	When using RESTful interface and trying to include both grammar and set-asr-param in the recognize request, the recognition is failing.
Resolved	IPY00116974	2	RESTful	The events are missing when eventhandler sub-resource closes.
Resolved	IPY00116960	2	RESTful	The xmsrest service goes into failed state when trying to perform load testing.
Resolved	IPY00116957	2	RESTful	It is observed that call resources are not cleared from the system when a call is remotely disconnected.
Resolved	IPY00117051	2	VXML	The document and dialog catch block is not being executed for error events. Instead, the default catch block (error.semantic) is being executed.
Resolved	IPY00117050	2	VXML	There is a VXML crash observed when an HTTP fetch returned 200 OK with no content.
Resolved	IPY00116944	2	XMS	If there is no SIP response from specified call destination in outbound SIP call scenario, internal resources will not be de-allocated properly even when the application explicitly deletes the call resources. As a result, repeating the same outbound call failures can completely disable both inbound/outbound calls.
Resolved	IPY00116898	2	XMS	When doing a PUT on a call resource to update the SDP offer, the new SDP answer has new ice-ufrag values which is forbidden, causing WebRTC renegotiation failure.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116818	2	XMS	There is a difference in behavior when PRACK is requested based on whether or not there is an SDP in the initial INVITE and if the call is accepted or not with early media enabled.
Resolved	IPY00116157	2	XMS	When receiving calls with Clearmode/8000 SDP while trying to play some MSML announcements, the play is failed with inappropriate error code.
Resolved	IPY00116584	1	MRCP	The keep alive functionality does not behave as expected, where the MRCP Client does not detect that the speech server is down.
Resolved	IPY00116722	1	MSML	There is a memory leak due to the transaction processing being left in RUNNING state.
Resolved	IPY00116854	1	RESTful	The events are missing when eventhandler sub-resource closes.
Resolved	IPY00116849	1	RESTful	The terminate_digits mask does not behave as expected when using record request in RESTful.
Resolved	IPY00116704	1	RESTful	There is an extra new line in the beginning of chunk data which should not be there.
Resolved	IPY00116712	1	VXML	The recordings are failing due to missing directory on the Media Server.
Resolved	XMS-1315	1	WebUI	On the Dashboard page, the "Used" column for Advanced Video increases by two whenever a high resolution call is made. It should only increase by one.
Resolved	IPY00116910	1	XMS	After sending an HTTP GET request, XMS waits indefinitely for a reply.
Resolved	IPY00116897	1	XMS	The xmserver is unable to create conference regions.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-1341	1	XMS	An appmanager crash is experienced when a transfer is used to copy a file locally but interrupted by a terminate. While this use case is not supported, XMS should handle this failure case gracefully.
Resolved	XMS-1325	1	XMS	It has been observed that XMS may be delayed in sending DTMF events when under high traffic load. While the XMS will detect the digit press, it may take a few seconds before the event is generated and sent to the application server. This occurs when a DTMF press occurs that invokes a seek in conjunction with the play (that the seek is operating on) is terminating at the same time.
Known	XMS-751		MSML	The terminate.finalsilence event will be accepted and terminate the recording, however the final silence is not removed.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	XMS-1248		VMware VMXNET3	The VMware VMXNET3 NIC driver that is included in the CentOS/RHEL 6.x distribution has a known defect that may cause a kernel panic when the Linux ethtool command is used to set TX and RX ring buffer sizes. When installing PowerMedia XMS on a guest VMware virtual machine (ESXi 5.x or later) running RHEL 6.x / CentOS 6.x or later, it is highly recommended that the latest version of the VMware VMXNET3 driver is installed prior to installing PowerMedia XMS.
				The latest version of the VMware VMXNET3 driver can be found in the most recent version of the VMware Tools package. It should be noted when installing VMware Tools, you must set the "clobber-kernel-modules" option to override the version of the VMXNET3 driver that is included as part of standard Linux distributions. An example is as follows:
				``` ./vmware-install.pl --clobber-kernel-modules=vmxnet3 ```
				Failure to update the VMware VMXNET3 driver prior to attempting installation of PowerMedia XMS may result in a fatal kernel panic.
				For product documentation to install VMware Tools, refer to the following link:
				http://www.vmware.com/support/pubs
				For guidelines on VMware Tools installation and configuration, refer to the following link:
				http://www.vmware.com/pdf/vmware-tools-installation-configuration.pdf
Known	XMS-1287		XMS	A memory leak on the SSP has been observed at about 300MB every 24 hours during some scenarios when running WebRTC.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	XMS-1250		XMS	A memory leak on the xmserver has been observed at about 4MB every 24 hours during some scenarios.
Known (permanent)	IPY00102868		MSML	Simultaneous play and record with record beep is not possible because both play and record cannot transmit to the same connection.
Known (permanent)	IPY00102674		MSML	When playing audio and video, both files must reside on either local (file://) or server (http://).
Known (permanent)	IPY00102025		MSML	MSML returns error when using the var element with "duration" type and "yrs" subtype.
Known (permanent)	XMS-180		MSML	For legacy MSML, the value for <var> silence should be in 1 ms units. The MSML documentation states 100 ms units.