Dialogic® PowerMedia™ XMS Release 2.4

Release Notes

July 2017 05-2743-013

www.dialogic.com

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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 2.4, which is a document that is planned to be periodically updated throughout the lifetime of the release.

Revision	Release Date	Notes
05-2743-013	July 2017	Release Issues: • Added the following Resolved Defects: 299293, 300927, IPY00118546
05-2743-012	October 2016	Updates to support PowerMedia XMS Release 2.4 Service Update 12. Post-Release Developments: • AMR File Format Playback. Release Issues: • Added the following Resolved Defects: IPY00117945, IPY00117958, IPY00117964, IPY00117967, IPY00118080, IPY00118088, IPY00118119, IPY00118131, IPY00118140, IPY00118154, IPY00118199, IPY00118266, IPY00118302.
05-2743-011 (Updated)	June 2016	Release Issues: • Added the following Known Issue regarding an HTTP Client memory leak when using the version of libcurl supplied in the CentOS 6.4 repositories: XMS-4294.
05-2743-011 (Updated)	May 2016	Release Issues: • Added a Known Issue regarding the HTTP Client cache. • Added the following Known Issue (permanent): IPY00117603.
05-2743-011	April 2016	Updates to support PowerMedia XMS Release 2.4 Service Update 10. Release Issues: • Added the following Resolved Defects: IPY00117962, IPY00117978, IPY00118032, IPY00118049.

Revision	Release Date	Notes
05-2743-010	April 2016	Updates to support PowerMedia XMS Release 2.4 Service Update 9. Removed WebRTC support. Release Issues: • Added the following Resolved Defects: IPY00117934, IPY00117938, IPY00117946, IPY00117950, IPY00117957. • Added the following Known Issue: XMS-4125.
05-2743-009	February 2016	Updates to support PowerMedia XMS Release 2.4 Service Update 8. Upgrading: Added a note about upgrading from 2.4 Service Update 7 using the WebUI. Release Issues: • Added the following Resolved Defects: IPY00117679, IPY00117685, IPY00117686, IPY00117690, IPY00117726, IPY00117731, IPY00117749, IPY00117773, IPY00117779, IPY00117784, IPY00117800, IPY00117804, IPY00117809, IPY00117817, IPY00117822, IPY00117830, IPY00117848, IPY00117873, XMS-3728. • Added a Known Issue about upgrading from 2.4 Service Update 7 using the WebUI.
05-2743-008	November 2015	Updates to support PowerMedia XMS Release 2.4 Service Update 7. Release Issues: • Added the following Resolved Defects: IPY00117279, IPY00117553, IPY0117613, IPY00117616, IPY00117631, IPY00117654, IPY00117660, IPY00117661, IPY00117673, IPY00117682, XMS-3205. • Added the following Known Issue: XMS-3251.
05-2743-007 (Updated)	November 2015	Upgrading: Updated the section. Release Issues: • Added the following Known Issue: IPY00117656.

Revision	Release Date	Notes
05-2743-007	October 2015	Updates to support PowerMedia XMS Release 2.4 Service Update 6. Release Issues: • Added the following Resolved Defects: IPY00117288, IPY00117381, IPY00117515, IPY00117528, IPY00117529, IPY00117547, IPY00117557, IPY00117558, IPY00117562, IPY00117581, IPY00117600, IPY00117602, IPY00117604. • Added the following Known Issue: XMS-3134.
05-2743-006	September 2015	Updates to support PowerMedia XMS Release 2.4 Service Update 5. Release Issues: • Added the following Resolved Defects: IPY00117396, IPY00117426, IPY00117480, IPY00117484, IPY00117490, IPY00117492, IPY00117498, IPY00117500, IPY00117526.
05-2743-005	August 2015	Updates to support PowerMedia XMS Release 2.4 Service Update 4. Release Issues: • Added the following Resolved Defects: IPY00116879, IPY00117175, IPY00117216, IPY00117217, IPY00117248, IPY00117294, IPY00117301, IPY00117320, IPY00117325, IPY00117331, IPY00117342, IPY00117355, IPY00117359, IPY00117361, IPY00117371, IPY00117375, IPY00117404, IPY00117427, IPY00117428, IPY00117432, IPY00117435, IPY00117436. • Added the following Known Issue (permanent): XMS-2579.

Revision	Release Date	Notes
05-2743-004	June 2015	Updates to support PowerMedia XMS Release 2.4 Service Update 3. Post-Release Developments: • MSML HTTP File Transfer. • RESTful Custom SIP Headers. • MSML <play> Offset Attribute Validation Change. Release Issues: • Added the following Resolved Defects: IPY00117198, IPY00117218, IPY00117250, IPY00117259, IPY00117269, IPY00117273, IPY00117277, IPY00117278, IPY00117292, IPY00117296, IPY00117297, IPY00117306, IPY00117308, IPY00117320, IPY00117322, IPY00117324, IPY00117327, IPY00117328, IPY00117329, IPY00117332, XMS-1801, XMS-1812, XMS-1863, XMS-1864, XMS-1888, XMS-1890. • Added the following Known Issue: XMS-2550.
05-2743-003	April 2015	Updates to support PowerMedia XMS Release 2.4 Service Update 2. Post-Release Developments: • SRTP Key Rotation. Release Issues: • Added the following Resolved Defects: IPY00117024, IPY00117090, IPY00117132, IPY00117189, IPY00117201.

Revision	Release Date	Notes
05-2743-002	April 2015	Updates to support PowerMedia XMS Release 2.4 Service Update 1. Post-Release Developments: • PowerMedia XMS Release 2.4 Service Update. Release Issues: • Added the following Resolved Defects: IPY00116898, IPY00117139, IPY00117147, IPY00117149, IPY00117151, IPY00117154, IPY00117158, IPY00117165, IPY00117175, IPY00117184, IPY00117197, XMS-1662, XMS-1720, XMS-1881, XMS-1901, XMS-1904, XMS-1915, XMS-1916, XMS-1951, XMS-1978.
05-2743-001	February 2015	Updates to support PowerMedia XMS Release 2.4.
05-2743-001-01	January 2015	Initial release of this document.
Last modified: October 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 2.4. 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.

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.

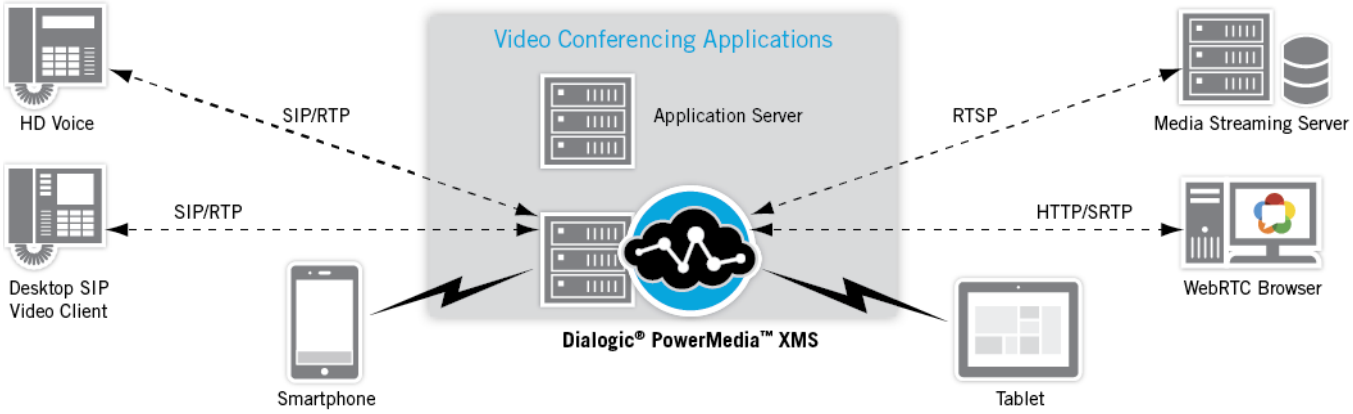
PowerMedia XMS is controlled by the business logic of applications deployed on SIP application servers and web application servers. PowerMedia XMS offers multiple media control protocols that can be used in a variety of network infrastructures. For example, a SIP application server (AS) can drive PowerMedia 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 2.4 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/products/media-server-software/xms.
- 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 2.4.

The following documents are available for the PowerMedia XMS Release 2.4 at http://www.dialogic.com/manuals/xms/xms2.4.aspx.

Document	Description
Dialogic® PowerMedia™ XMS Release 2.4 Release Notes	Addresses new features and issues associated with PowerMedia XMS Release 2.4.
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.

Document	Description
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.
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 2.4.

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 E5-1620 Quad-Core (3.60 GHz, 1600 MHz, 10 MB Cache), Intel QPI (0 GT/s) for low end solutions **Recommended:** 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
- XenServer VM

It is recommended to use only two VMs when running XMS. If more than two VMs are used, there may be performance issues.

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. It is highly recommended to limit to 1-2 VMs per physical system as there is a higher processing overhead associated with more than 2 VMs per physical server system due to hypervisor switching or packet scheduling.

Refer to *Dialogic® PowerMedia™ XMS Application Note: Optimizing VMware Host Hardware and Virtual Machine to Reduce Latency* at http://www.dialogic.com/webhelp/XMS/2.4/XMS_VMOptimizingAppNote.pdf for more information.

5. Release Features

This section describes the features and functionality supported in the PowerMedia XMS Release 2.4.

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

Note: WebRTC functionality is no longer supported on XMS 2.4 due to fundamental changes in the newer versions of Chrome and Firefox. For any further WebRTC work, use XMS 3.0 or later.

PowerMedia XMS Release 2.4

The notable new features and functionality include:

- Video over LTE and IR.94 Support
- AMR2 Codec (AMR Mode Change Restrictions) Support
- 3GP Multimedia Container Support
- Simultaneous Dual file (A+A/V) 3GP Record Mode
- SIP Preconditions Support
- SIP DNS Support
- SDES SRTP Support
- VXML Video Support
- Administration Features
    - CLI Command Scripts
    - Audit Logs
    - Console Viewer Access Level
    - Console Timeout
- Controlled Introduction Features
    - Fax Support
    - CDR Support
    - Video Encoder Sharing Support

Video over LTE and IR.94 Support

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

The GSMA specification that defines requirements for video over LTE networks is IR.94, "IMS Profile for Conversational Video Services". The IR.94 specification defines the IMS feature set and media capabilities for user endpoints and network equipment to promote high interoperability video service between real-time video endpoints. Conversational video services include calls with full duplex voice and simplex or full-duplex video media with tight synchronization between the streams. Video calling and video services include point to point calls, multimedia conference calls and interaction with multimedia services provided by media servers.

PowerMedia XMS has been updated to comply with the IR.94 specification to promote interoperability with IMS Video communication networks and endpoints. Prior to Release 2.4, PowerMedia XMS supported required video and audio codecs, such as H.264 video codec and AMR-NB/AMR-WB codecs for real-time multimedia communication in IMS networks. PowerMedia XMS video subsystem has been updated with additional enhancements, including:

- IMS SDP negotiation procedures for video communication
- RTP/AVPF profile (Audio Video Profile for RTCP Feedback) support (RFC 4585 and RFC 5506)
- Video RTCP feedback control mechanisms for bandwidth restricted networks
- Real-time video streaming improvements for error-prone IP networks
- Tighter synchronization between audio and video streams

AMR2 Codec (AMR Mode Change Restrictions) Support

PowerMedia XMS supports the AMR2 codec. The AMR2 codec is a restricted subset of AMR codec functionality provided for VoLTE compatibility with older UMTS networks. The use of AMR2 promotes Tandem Free Operation (TFO) and Transcoder Free Operation (TrFO) when a legacy network utilizes a restricted subset of AMR modes.

Support for AMR2 and AMR Mode Change Restrictions are specified as an optional, but recommended requirement by the IMS VoLTE specification IR.92, "IMS Profile for Voice and SMS". AMR2 provides compatibility with multiple AMR codec types, including, FR AMR, HR AMR, UMTS AMR, and OHR AMR.

PowerMedia XMS supports mode-set and mode-change restrictions in offer/answer SDP for both AMR-NB and AMR-WB. The supported SDP parameters include:

- mode-set
- mode-change-capability
- mode-change-neighbor
- mode-change-period

3GP Multimedia Container Support

PowerMedia XMS supports direct 3GPP file format (3GP) for both play and record operations. The 3GP file container, defined by the third generation partnership project (3GPP), is a standard format multimedia container for IMS based cellular telephony and VoIP networks as defined by 3GPP TS 26.44. The 3GP container is specified for a subset of container characteristics, including restricted audio and video codecs defined for these network use cases. 3GP is an ISO-based multimedia file format and a subset of the MP4 file container.

PowerMedia XMS has been updated to support 3GP record and playback through remote API interfaces that support video, such as MSML, RESTful, and JSR 309 Connector. Some of the highlighted functionality provided for 3GP container includes:

- Support for play and record directly to/from .3gp
- Support for audio only, video only, and multimedia (a/v) files
- Supported video codecs: H.264 (up to HD720p resolution at 2Mbps)

  Note: H.263 video codec is supported for play only; MPEG4 video codec is not supported in the initial release of this feature.

- Supported audio codecs: AMR-NB and AMR-WB

  Note: AAC codec is not supported in 3GP container.

- Supported DVR modes: skip forward, skip back, pause, resume (hint track required)
- Support for record with hint track to allow DVR modes on playback

Simultaneous Dual file (A+A/V) 3GP Record Mode

PowerMedia XMS provides the capability to simultaneously record dual .3gp files with a single record operation. This special dual file record mode allows customers to record a separate audio only or video only .3gp file while simultaneously recording a multimedia .3gp file. This feature reduces the need for the application to do offline conversion into an audio only or video only format. A typical usage of this feature would be to record a simultaneous audio only version to send to a server to provide an audio transcript of a video message.

The following limitations apply to the dual file 3GP record:

- Both files must be .3gp format
- Audio only file must use same codec as multimedia file audio track
- Video only file must use same codec as multimedia file video track

SIP Preconditions Support

PowerMedia XMS supports SIP preconditions. SIP preconditions are used as a method to reserve network resources and provide a Quality of Service (QoS) level for an end-to–end SIP session through the network. SIP preconditions are defined by RFC 3312 and updated by RFC 4032 (among others). In an IMS network, support for SIP precondition handling on SIP calls is a requirement for network elements, such as PowerMedia XMS as an IMS Media Resource Function (MRF). SIP preconditions are specified by the IMS VoLTE specification IR.92, "IMS Profile for Voice and SMS".

SIP preconditions work by providing session constraints in the initial SIP offer negotiation prior to session establishment. SIP preconditions are used to ensure network resources required for a call are available before the call is offered end-to-end. A SIP call is held off from progressing to a ringing state until the preconditions are met. This reduces the chance of session failure associated with network resource limitations such as limited bandwidth. The handling of SIP preconditions through the network ensures that session service levels can be supported end-to-end.

PowerMedia XMS has been updated to support SIP precondition handling on SIP calls in order to hold off session establishment until the SIP preconditions are met.

Note: PowerMedia XMS does not support RSVP protocol.

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

SIP DNS Support

PowerMedia XMS supports SIP Domain Name Server (DNS) lookup procedures for selecting alternate signaling paths on SIP call message failures. The SIP DNS lookup procedures are defined in RFC 3263, "SIP: Locating SIP Servers".

In SIP networks, Domain Name clusters can be set up to provide intermediate paths and for supporting redundancy, for routing of end-to-end messages through domain and proxy servers. In cases where a SIP message send failure occurs, PowerMedia XMS traverses a DNS resource record list returned from a SIP Request URI. PowerMedia XMS uses the DNS lookup (such as NAPTR, SRV, and A/AAAA) to determine the alternate address to which to send a SIP message. Due to this feature, PowerMedia XMS can operate in highly available and redundant SIP networks where SIP signaling servers may go out of service at any time.

Note: The Record-Route header in a SIP INVITE must contain the domain name of the proxy server rather than FQDN (Fully Qualified Domain Name) for PowerMedia XMS to query NAPTR and SRV DNS records.

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

SDES SRTP Support

PowerMedia XMS supports SDES SRTP to establish secure media in traditional VoIP sessions. The feature refers to the SDES key exchange mechanism used to negotiate encryption of VoIP sessions using Secure RTP (SRTP). SDES (Security Descriptions for Media Streams) is defined by RFC 4568. Secure RTP is defined by RFC 3711, "The Secure Real-time Transport Protocol (SRTP)".

In traditional VoIP networks, the key exchange occurs in the SIP signaling session. The SRTP keys are negotiated in the SDP of the offer/answer model of a SIP exchange. Using SDES, an SDP attribute called "crypto" is provided to pass the cryptographic parameters of the requested media stream that can be used to configure the SRTP media stream.

PowerMedia XMS has been updated to support exchange of SDES keys to establish SRTP media sessions. This capability allows PowerMedia XMS to establish secure RTP media sessions in traditional VoIP networks. PowerMedia XMS additionally supports interworking between secure WebRTC (using DTLS-SRTP) and VoIP (using SDES-SRTP) endpoints.

It should be noted that the use of SDES, by itself, is not a secure method to exchange encryption keys, since the crypto key is transferred in the SDP as a plain text string. It is expected that an application will use this feature on a secure internal network, where the signaling is protected, or where a SIP layer security (such as SIP TLS) between SIP client and SIP application server is utilized.

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

VXML Video Support

PowerMedia XMS VXML engine has been updated with the capability to support video playback and record. PowerMedia XMS implementation of VXML play and record video is provided in accordance with the upcoming VXML 3.0 standard. Provided the proper system configuration is in place, PowerMedia XMS can handle video calls and will execute a VXML 3.0 script requesting record of video through the <record> element to a .3gp container or Dialogic proprietary .vid/. aud format. PowerMedia XMS also supports playback of multimedia files (.3gp and .vid/.aud) through the <par> element along with support for consecutive file playback through video namelists.

For more information, refer to the *Dialogic® PowerMedia™ XMS VoiceXML Reference Guide*.

Administration Features

PowerMedia XMS Release 2.4 introduces support for the following new administration features:

- CLI Command Scripts
- Audit Logs
- Console Viewer Access Level
- Console Timeout

CLI Command Scripts

PowerMedia XMS has been updated with a set of scripts to provide access to management commands through the Command Line Interface (CLI). PowerMedia XMS CLI scripts use the RESTful Management API to provide repeatable management functionality through CLI that can be used by remote script processes for PowerMedia XMS management purposes. The set of CLI scripts provide an example that can be expanded by system administrators to cover a variety of PowerMedia XMS management functions.

Some of the CLI scripts provided include:

- System Start/Stop
- System Status Check
- Check/Install License
- Add Custom Tones
- View/Manage Codec Lists

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

Audit Logs

PowerMedia XMS supports audit logs to capture the Console and RESTful Management changes performed by users. PowerMedia XMS management requests are stored in an internal database and made available through the Console or via retrieval commands for viewing or filtering. The audit logs will store timestamp, IP address, username, request method, request path, and request content for management configuration functions so that administrators can audit the system configuration.

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

Console Viewer Access Level

A new user access level "viewer" has been added for the PowerMedia XMS Console with read only access to system monitoring. The Console "viewer" user will see parameter values but will not be able to make any modifications. This user mode can be configured and assigned by administrators to provide access to monitoring functions without providing higher level configuration and administration rights.

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

Console Timeout

A configuration option has been added to control the Console session timeout. The Console timeout represents the time before the Console times out and the user must re-enter login information to re-establish a Console connection.

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

Controlled Introduction Features

In addition to General Availability of new features and functionality described above, PowerMedia XMS Release 2.4 also introduces new functionality in a controlled introduction. The Controlled Introduction features are those that are under development or have a limited scope before being made generally available. These features are available for customers that are looking to perform Proof of Concept (PoC) with the listed functionality. Customers interested in these features should contact their Dialogic Sales Representative or Technical Support Service Engineer for further information on usage.

The following features are offered in Controlled Introduction:

- Fax Support
- CDR Support
- Video Encoder Sharing Support

Fax Support

As a Controlled Introduction feature, PowerMedia XMS introduces support for Fax Send and Fax Receive capability. PowerMedia XMS supports v.17 ITU modem standard for both T.38 and G.711 fax transmission. PowerMedia XMS supports the MSML (RFC 5707) Fax Send/Receive Package, along with a majority of the attributes and parameters defined by the specification for fax transmission. The PowerMedia XMS software also supports RFC 6913, "Indicating Fax over IP Capability in SIP" to indicate that a fax resource is requested, simplifying the fax call flow.

PowerMedia XMS has been integrated with renowned Fax over IP (FoIP) technology for improved performance given typical IP network impairments. Using G.711 as the transport method for FoIP is an extension of traditional PSTN audio-based faxing. T.38 fax is an ITU-T recommendation that allows fax data to be carried over IP networks. It supports data transmission of fax and controls redundancy to mitigate the effect of packet loss. The PowerMedia XMS software can support both T.38 fax over IP transmission and provide fall-back to G.711 fax transmission for remote endpoints that do not support T.38 fax in order to promote the greatest interoperability with fax devices. The PowerMedia XMS fax software provides many features, including multiple page faxes, header and footer insertion, and support for multiple fax resolutions, page sizes, baud rates, and encoding formats.

CDR Support

As a Controlled Introduction feature, PowerMedia XMS introduces support for Call Detail Record (CDR) generation. A CDR stores information about the details of a call. On PowerMedia XMS, a CDR is a stored data set record for each signaling and/or media transaction on the system. The CDR files are updated at multiple stages of the call and provide an administrator insight into the specific call handling. The CDR provides details such as session type, duration, timestamps, ports used, codecs negotiated, and call success or failure. The CDR files are collected in a PowerMedia XMS database and exported to flat text files for user consumption. The PowerMedia XMS CDR files can be used by system administrators for debugging, historical reporting, and tracing system usage.

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

Video Encoder Sharing Support

As a Controlled Introduction feature, PowerMedia XMS introduces support for Video Encoder Sharing. Video Encoder Sharing includes Dialogic patent-pending video technology that provides enhanced performance for video conferencing and video mixing applications. Video Encoder Sharing works by reducing the CPU required to perform the most CPU intensive video function, video encoding. In video conferencing applications, such as for WebRTC video conferencing between browsers, the video conference output can be encoded once and shared among various multiple users.

The Video Encoder Sharing technology provides the capability to encode once for a number of video conference participants and perform dynamic bitrate adaptation to each endpoint independently. This feature increases the number of supported sessions while treating the network conditions to each party uniquely, promoting better video quality at each endpoint. This feature, combined with the centralized video mixing also provides reduced bandwidth over point-to-point video sharing between WebRTC browsers.

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

PowerMedia XMS Release 2.3

For notable features and functionality included in PowerMedia XMS Release 2.3, refer to the *Dialogic® PowerMedia™ XMS Release 2.3 Release Notes* at:

http://www.dialogic.com/webhelp/XMS/2.3/XMS_ReleaseNotes.pdf

PowerMedia XMS Release 2.2

For notable 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 notable 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 notable 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

Applicable Third Party License Information

FFmpeg

This software uses libraries from the FFmpeg project licensed under the LGPLv2.1, and source code for these libraries can be downloaded from the distributable image for PowerMedia XMS.

6. Installation, Configuration, Licensing, and Upgrading

This section describes topics that are useful for getting started with the PowerMedia XMS Release 2.4, 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 upgrading from 2.4 Service Update 7, you must use the command line upgrade process. There is a known defect in the 2.4 SU 7 WebUI upgrade process. If you have already attempted to upgrade using the WebUI, you can remove and reinstall XMS using the command line installation. Refer to "RPM Installation and Script Options" in the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for information on how to upgrade your system using the command line upgrade script.

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 2.4 subsequent to the general availability release.

PowerMedia XMS Release 2.4 Service Update

This Service Update for PowerMedia XMS Release 2.4 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*.

MSML HTTP File Transfer

As a Controlled Introduction feature, Service Update 3 introduces additional capabilities to transfer files to and from an HTTP server as part of the MSML <transfer> functionality. This feature provides bi-directional HTTP transfer for HTTP-to-local and local-to-HTTP use cases. It also provides an application with granular control of retrieving and forwarding files between different network entities using different transfer mechanisms but similar transfer methods, while maintaining application call flow.

RESTful Custom SIP Headers

With Service Update 3, PowerMedia XMS now supports adding custom SIP headers to an outgoing call through the RESTful dial method. The custom SIP headers are provided as a block of data delimited by <CR><LF> and will be included on the outbound SIP INVITE message.

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

SRTP Key Rotation

With Service Update 2, PowerMedia XMS now supports multiple crypto key rotation per session using Master Key Identifier (MKI). The number of keys to use in the rotation can be configured through the PowerMedia XMS Admin Console under **RTP** page of the **Protocol** menu.

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

MSML <play> Offset Attribute Validation Change

With Service Update 1, there is a validation change for the MSML <play> offset attribute. When executing an MSML <play> with an offset attribute set to a value that is larger than the file to be played, an error will be generated with the following description:

```
[play]: 13 Seek failed: error
```

AMR File Format Playback

With Service Update 12, XMS default behavior has changed to report a play complete with a zero duration when an AMR file that only contains a header is played. Prior to Service Update 12, a dialog.exit.status=410 error message was returned. Depending on the desired business logic, application server changes may be needed to handle this new default behavior when playing an AMR file that only contains a header.

To revert to the default behavior prior to Service Update 12, edit the */etc/xms/hmp/hmp.conf* file so that amr_file_validation=0, as shown below:

```
[mmrsc]
amr_file_validation=0
```

Note: The values of amr_file_validation are as follows:

- amr_file_validation=1 enables AMR file validation checking and return success.
- amr_file_validation=0 disables AMR file validation checking and returns an error if the AMR file is empty.

Note: Restart services after changing the default behavior.

8. Release Issues

This section lists the issues that may affect the PowerMedia XMS Release 2.4.

PowerMedia XMS Release 2.4 also includes all the issues that were resolved (usually either fixed or documented) in the following releases:

- PowerMedia XMS Release 2.3 Service Update 6 (Release Notes)
- PowerMedia XMS Release 2.2 Service Update 11 (Release Notes)
- PowerMedia XMS Release 2.1 Service Update 2 (Release Notes)

Limitations

PowerMedia XMS Release 2.4 has the following limitations:

- WebRTC functionality is no longer supported on XMS 2.4 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 2.4. 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.

SU No.

For defects that were resolved in a Service Update, the Service Update number is shown.

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 2.4

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	299293	13	MSML	XMS deletes a recorded message if it was terminated via dialogend due to “no input” from the user. MSML now returns zero in the record.len shadow variable when a recorded file is deleted due to “no input”.
Resolved	IPY00118546	13	MSML	XMS uses the received INVITE request URI in the OK response contact header when it should use its own URI. XMS now uses the local address when building the SIP Contact header.
Resolved	300927	13	SNMP	User constantly receives SNMP alarms due to unexpected SNMP High Threshold values configured in the XMS. SNMP threshold handling of the configured SNMP alarm threshold has been corrected to avoid potential false alarms
Resolved	IPY00118199	12	Appmanager	XMS does not respond to an incoming SIP BYE message because the mrcpclient is trying to connect on a speak request, but TTS is not configured.
Resolved	IPY00118154	12	HMP	The maximum jitter buffer size is hard-coded to be double the nominal value.
Resolved	IPY00118131	12	HMP	XMS MSML returns a "dialog.exit.status=410" error message when XMS plays an AMR file without a payload (AMR header only). Refer to AMR File Format Playback for details.
Resolved	IPY00118080	12	HMP	Partial AMR-SID payload is sent out from XMS when using bandwidth-efficient mode.
Resolved	IPY00118266	12	MRCP	MRCP create session fails with a "5 Configuration Error" message.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00118119	12	MRCP	MRCP ports intermittently get stuck.
Resolved	IPY00117964	12	MRCP	Event data in end-recognize request is malformed for mrcp-recognize request.
Resolved	IPY00117958	12	MRCP	After a few calls, there is no response for a set-asr-param request.
Resolved	IPY00118140	12	Nodecontroller	The nodecontroller crashes when downloading a newly generated backup file from the WebUI.
Resolved	IPY00118088	12	SNMP	SNMP queries fail occasionally with a "Failed to open performance meter file" error message.
Resolved	IPY00118302	12	XMS	Audio encoder thread becomes stuck which causes license usage to reach 100% and remains until service restart.
Resolved	IPY00117967	12	XMS	Conference streams in XMS transmit silence intermittently.
Resolved	IPY00117945	12	XMS	Occasionally, XMS stops sending responses to REST requests coming from the application.
Resolved	IPY00118032	10	HMP	HMP stops generating completion events during media operations with AMR codecs.
Resolved	IPY00118049	10	MSML	When a recording terminates with <dialogend>, XMS sends a <record.len> value of zero regardless of the actual length of the recorded file.
Resolved	IPY00117978	10	VXML	A core dump is generated by vxmlinterpreter.
Resolved	IPY00117962	10	XMS	XMS applies DTLS on a call even when the offer does not indicate to apply DTLS on the call.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	N/A	10	HTTP Client	If the majority of media files being stored on an external HTTP server have unique file names (e.g., voicemail recordings for individual accounts), the HTTP Client cache may grow considerably as each uniquely named file is stored in the cache. **Workaround:** If the uniquely named files are rarely accessed, performance may be improved by disabling **HTTP Cache** on the **HTTP Client Configuration** page of the XMS WebUI. If the uniquely named files are frequently accessed (e.g., standard greetings and prompts), **HTTP Cache** should remain enabled. **HTTP Cache** is enabled by default.
Known	XMS-4294	10	HTTP Client	An apparent memory leak in HTTP Client has been observed when running HTTP load tests. The memory leak occurs in an operating system supplied library (libcurl) used by HTTP Client. **Workaround:** If a memory leak is observed, upgrade libcurl to a version greater than the one supplied in the official CentOS 6.4 repositories.
Known (permanent)	IPY00117603	10	Install (RPM)	When upgrading to XMS 2.4 SU7 or lower, SNMP configuration is overwritten and replaced with the default configuration. **Workaround:** To restore the configuration, rename */etc/snmp/snmpd.local.conf.bak_xms* to */etc/snmp/snmpd.local.conf*.
Resolved	IPY00117938	9	MRCP	When TTS service on TTS server1 is stopped, XMS fails to complete the working TTS session on TTS server2.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117934	9	MSML	XMS uses V.34 for outbound calls, but V.34 is not a supported protocol.
Resolved	IPY00117946	9	MSRP	All MSRP transfer request dialogs exit with "[message]: 2 Not Found: error."
Resolved	IPY00117957	9	RESTful	There is a javax error when the xmsrest schema has a value of "none" for media_type.
Resolved	IPY00117950	9	XMS	XMS does not include the precondition option tag in the "Require" header in accordance with TS24.229.
Known	XMS-4125	9	XMS	When updating preconditions via PRACK, XMS reports "preconditions required" when building the 200 OK SDP response to the PRACK.
Resolved	IPY00117830	8	FAX	Sending a fax fails when the source URI is HTTP, the file-type is PDF, and "Allow Absolute Paths" is set to "NO."
Resolved	XMS-3728	8	HMP	The HMP multimedia API stops sending events when playing an AMR audio file that contains a truncated last frame.
Resolved	IPY00117679	8	HTTP Client	XMS occasionally fails to play prompts and an HTTP 522 error is reported.
Resolved	IPY00117800	8	Install (RPM)	The upgrade process does not preserve all of the user-configured settings.
Resolved	IPY00117822	8	MSML	An incoming INVITE is rejected with a "408 Request Timeout" message.
Resolved	IPY00117809	8	MSML	MSML service segfaults while unmuting a conference.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117779	8	MSML	The MSML <play> iterate value of -1 does not cause the <play> to repeat indefinitely.
Resolved	IPY00117726	8	MSML	The "msml.dialog.exit" event is not sent out to the application server after the play transaction is complete.
Resolved	IPY00117817	8	WebUI	If any parameter is changed on the WebUI and the services are rebooted, then the flag sdpless_reinvite resets to "no."
Resolved	IPY00117804	8	WebUI	The HTTP cache in xmserver.conf is changed from default to disabled.
Resolved	IPY00117873	8	VXML	Bargein of prompts does not work after five or more subdialogs.
Resolved	IPY00117848	8	VXML	The rerecord of a voicemail is not getting posted/saved.
Resolved	IPY00117749	8	VXML	When the logging level is set to WARNING or ERROR from the **System > Diagnostics** page of the WebUI, the vxmlinterpreter and libssml log files exceed the number entered for the **Rotate Log Files** parameter.
Resolved	IPY00117685	8	VXML, XMS	XMS rejects all inbound calls with a 503 Service Unavailable message.
Resolved	IPY00117784	8	XMS	When XMS is behind NAT and receives a re-INVITE, XMS sends the media server IP address instead of the NAT IP address in the SDP of the 200 OK.
Resolved	IPY00117773	8	XMS	XMS does not support sending more than one file per MSRP session extension.
Resolved	IPY00117731	8	XMS	In 4- or 6-party video conferences, the video of the participants displayed in video conference regions 2 and higher is missing.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117690	8	XMS	The NETANN SIP Contact header includes URI parameters.
Resolved	IPY00117686	8	XMS	Intermittent RTP session failures when handling mixed IPv4 and IPv6 calls.
Known	N/A	8	WebUI	If upgrading from 2.4 Service Update 7, you must use the command line upgrade process. There is a known defect in the 2.4 SU 7 WebUI upgrade process. If you have already attempted to upgrade using the WebUI, you can remove and reinstall XMS using the command line installation. Refer to "RPM Installation and Script Options" in the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for information on how to upgrade your system using the command line upgrade script.
Resolved	IPY00117660	7	CDR	In the cdrserver log, XMS reports the warning message "Component type other than signaling or stream."
Resolved	IPY00117631	7	HMP	The HMP CLIAGENT service segfaults.
Resolved	IPY00117553	7	HMP	During a video layout change, ssp_x86Linux_boot crashes.
Resolved	IPY00117661	7	VXML	The libssml log file exceeds the **Rotate Log Files** configuration on the **System** > **Diagnostics** page of the WebUI.
Resolved	IPY00117654	7	VXML	VXML calls use the default VXML URI instead of the configured VXML URI.
Resolved	IPY00117279	7	WebRTC	With a specific URL format, there is a segfault generated in the XMS rtcweb component.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117682	7	XMS	After receiving a re-INVITE without SDP, XMS replies with 200 OK with SDP, but the SDP is inactive so there is no audio when the call is resumed after being held.
Resolved	IPY00117673	7	XMS	Play announcement fails with "Already Playing" error when a caller is in a conference and requests multiple audio URIs to play in a single dialog request.
Resolved	IPY00117616	7	XMS	The MRF chooses different codecs for voice and DTMF in the 200 OK.
Resolved	IPY00117613	7	XMS	There is a missing conference party video after the layout regions of a conference are modified using <ModifyConference>.
Resolved	XMS-3205	7	XMS	When using early media, the same SDP is being sent in the 200 OK and the 183 responses. **Note:** As of the resolution of this issue, SDP is only sent in the 183 response.
Known	XMS-3251	7	XMS	When using the fast forward and rewind functionality, internal transactions may not be acknowledged, resulting in the loss of a device. This may eventually lead to new INVITE requests being rejected with a 408 error message.
Resolved	IPY00117604	6	FAX	Faxserver segfaults if there is no extension provided in the filename with the fax receive request.
Resolved	IPY00117547	6	FAX	Fax send and receive when the URI length is more than 221 characters long.
Resolved	IPY00117562	6	HMP	HMP service crashes when performing .3gpp recordings.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117558	6	MSML	The value of fax.totalpages shadow variable returns 0 with the <faxopcomplete> event even when fax send and receive is successful.
Resolved	IPY00117602	6	VXML	VXML connection protocol sub-objects for media information return incorrect information, no information, warnings, and errors for certain media items.
Resolved	IPY00117557	6	VXML	When running a VXML script that detects DTMF, it does not recognize * and #.
Resolved	IPY00117529	6	VXML	When a VXML record terminates via hangup and no audio is present, the XMS returns the file/namelist var file as if there is data despite having none.
Resolved	IPY00117381	6	WebUI	When using Firefox 38.0.5 to open the WebUI, the Transport drop-down menu on the Protocol tab does not open.
Resolved	IPY00117600	6	XMS	In a conference, playing media with an invalid URI on a call leg breaks the existing conference.
Resolved	IPY00117581	6	XMS	When CPA is enabled, unattended transfer fails.
Resolved	IPY00117528	6	XMS	VXML <record> does not work if the current xml:lang is not in a default locale.
Resolved	IPY00117515	6	XMS	The DTLS handshake does not work with Chrome v46+ and Firefox v41+.
Resolved	IPY00117288	6	XMS	The H.264 fails to negotiate, which causes poor video quality because the session to negotiates down to QCIF.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	IPY00117656	6	FAX	HMP and xmserver services fail when using additive licensing that contains fax. **Workaround:** Create a single license that has the original number of resources plus the additional fax resources. **Note:** This issue has been resolved in PowerMedia XMS Release 3.0.
Known	XMS-3134	6	VXML	Vxmlinterpreter crashes during a services stop.
Resolved	IPY00117426	5	HTTP Client	There is a recording delay, which results in a record.failed.prespeech because the initial play finishes before it can be recorded.
Resolved	IPY00117396	5	HTTP Client	The HTTP Client reports a 522 status and fails to play prompts from the cache.
Resolved	IPY00117498	5	MSML	When a fax session ends for any reason other than completing a successful fax session, the fax.opcomplete event is not being reported to the application server.
Resolved	IPY00117492	5	MSRP	MSRP service may core dump when run under load.
Resolved	IPY00117526	5	NETANN	The media resource and its license are not released immediately after the SIP CANCEL is received.
Resolved	IPY00117484	5	VXML	XMS log files exceed the configured amount because log files prior to restarting XMS services are not purged.
Resolved	IPY00117480	5	VXML	VXML core dumps after segfault in libc-2.12.so. After the crash, calls are rejected with a 408 Request Timeout.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117500	5	XMS	XMS does not open its MSRP listening port when the SDP offer does not contain a=setup:active.
Resolved	IPY00117490	5	XMS	XMS takes 3 seconds to respond to an incoming BYE request when Fax over IP support is indicated in the SIP INVITE request and the call is terminated before the fax operation is completed.
Resolved	IPY00117432	4	Fax	When HTTP GET and HTTP PUT are unsuccessful for any reason, no error code or description is provided with the dialog.exit.
Resolved	IPY00117428	4	Fax	When a PDF fax is sent from an HTTP URI, it fails with an error message stating that the image type is not supported.
Resolved	IPY00117427	4	Fax	When a TIFF or PDF fax is received at an HTTP URI, it fails.
Resolved	IPY00117361	4	HMP	SSP is crashing on startup in the cloud configuration.
Resolved	IPY00117359	4	HMP	The output bitrate of H.264 is lower than expected.
Resolved	IPY00117320	4	HMP	After a video-only .3gp file is played, the completion of audio is never indicated so subsequent plays fail on the multimedia device.
Resolved	IPY00117217	4	HMP	A WebRTC video conference has garbled video and intermittently displays video from other conferences.
Resolved	IPY00117342	4	HTTP	PUT requests fail when they do not receive a 100 Continue message.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117375	4	HTTP Client	Because the XMS is not honoring the no-cache cache-control header received in the HTTP OK, the XMS server is saving audio files, which is causing the hard drive to become full.
Resolved	IPY00117404	4	MSML	XMS is sending an INFO message with the same set of digits for each pattern.
Resolved	IPY00117248	4	MSML	When the connection ID in the "To:" header of an INFO response exceeds 126 characters, XMS sends an "Object does not exist" message.
Resolved	IPY00116879	4	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	4	MSRP	XMS does not send a CANCEL request for its INVITE request in certain instances of dropped calls.
Resolved	IPY00117325	4	RESTful	The destination_uri and source_uri are not in the GET after an incoming event or after an accept but they are in the GET after an answer.
Resolved	IPY00117216	4	Video	Audio and video quality issues occur when more than 40 Chrome instances are joined in a video conference.
Resolved	IPY00117436	4	VXML	When using Dialogic extensions for the <audio> element and the type attribute for a prompt play operation, there are inconsistent results.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117435	4	VXML	When an audio recording is played and the type attribute is not specified, the audio type will be derived from the file extension and can result in an error message.
Resolved	IPY00117175	4	WebRTC	ssp_x86linux_boot crashes during WebRTC video conference.
Resolved	IPY00117371	4	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	IPY00117355	4	XMS	Appmanager crashes when accessing a deleted session object.
Resolved	IPY00117331	4	XMS	XMS rejects calls with a "408 Request Timeout" message when an INVITE arrives without SDP and Enable SIP Precondition is selected in the Protocol > SIP page of the WebUI.
Resolved	IPY00117301	4	XMS	XMS is not sending CPA results/events to the application server.
Known (permanent)	XMS-2579	4	MSML	MSML legacy does not accept session IDs and session versions longer than 9223372036854775807, which causes re-INVITEs to be ignored.
Resolved	IPY00117320	3	HMP	If an application requests to play audio and video but the .3gp file being used contains only video, the subsequent play on the multimedia device fails.
Resolved	IPY00117332	3	Install	The XMS upgrade process does not preserve user-specified settings in the "On Start Enabled" field located on the System > Services page.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117322	3	MSML	The Content-Type header field that contains the media type is not present within the PUT message.
Resolved	IPY00117277	3	MSML	MSML INFO messages are occasionally ignored by XMS.
Resolved	XMS-1864	3	MSML	If a local file <transfer> is terminated via a terminate event, the terminate will fail (and cannot be stopped) and the file transfer will complete normally. The MSML documentation states that the <transfer> would be terminated and the target file would be deleted.
Resolved	XMS-1812	3	MSML	The append attribute for the <record> element is not supported for .vid and .3gp file containers. In these instances, the recorded file will be overwritten instead of appended.
Resolved	IPY00117273	3	SNMP	An incorrect OID is being sent with the SNMP trap notification for a WebUI user profile change.
Resolved	IPY00117269	3	SNMP	XMS installed on a bare-metal system does not generate a trap notification when NIC Copper Link is down or comes back up.
Resolved	IPY00117324	3	VXML	XMS is sending 2 MRCPv2.0 headers (Recognition-Mode and Recognition-Timeout) for an MRCPv1 recognition request.
Resolved	IPY00117308	3	VXML	Nuance Speech Server responds with a 403 error message because XMS is setting incorrect parameter values.
Resolved	IPY00117306	3	VXML	XMS does not transfer the SSML namespace to Nuance Speech Server.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117278	3	VXML	VXML interpreter crashes during a stress test.
Resolved	IPY00117329	3	WebUI	XMS WebUI displays a 503 error message when the browser is left open for an extended amount of time.
Resolved	IPY00117297	3	WebUI	When the WebUI is opened and left idle in Monitor > Dashboard view, a 404 error occurs.
Resolved	XMS-1890	3	WebUI	Setting the WebUI session timeout to 0 using the Internet Explorer 10 browser can cause the WebUI to stop responding, requiring a reinstall of XMS.
Resolved	IPY00117328	3	XMS	XMS does not send the 200 OK response to a received re-INVITE when the initial INVITE does not have SDP and the re-INVITE and ACK for the initial INVITE are received less than 100 ms apart.
Resolved	IPY00117327	3	XMS	MRF is unable to play certain .wav files.
Resolved	IPY00117296	3	XMS	SIP calls fail when they have preconditions.
Resolved	IPY00117292	3	XMS	When CPA is set in xms_answer, it does not work.
Resolved	IPY00117259	3	XMS	When attempting to add a call to multiple conferences, XMS fails.
Resolved	IPY00117250	3	XMS	RTP is not sent out in some re-INVITE scenarios.
Resolved	IPY00117218	3	XMS	When XMS is queried for the total available ports using localhost, XMS provides negative values.
Resolved	IPY00117198	3	XMS	XMS cannot properly handle an incoming call that has an optional SIP precondition.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-1888	3	XMS	When absolute paths are enabled, loadPlaylist does not default to */var/lib/xms/media/en-US*.
Resolved	XMS-1863	3	XMS	When a call is established using preconditions in the delayed offer case, XMS never meets the desired condition.
Resolved	XMS-1801	3	XMS	The xmserver does not support SDES SRTP key refresh (re-keying).
Known	XMS-2550	3	XMS	The server provides 200 OK and 180 responses without SDP after receiving PRACK with SDP preconditions.
Resolved	IPY00117189	2	HMP	XMS does not transcode H.263 to H.264.
Resolved	IPY00117201	2	RESTful	The default attributes for clamp_dtmf, auto_gain_control, and echo_cancellation set at conference creation time are not being used.
Resolved	IPY00117132	2	RESTful	When running xsd.exe application to parse the xmsrest.xsd file, there is a warning error generated.
Resolved	IPY00117024	2	RESTful	XMS reports an error when hangup action is selected from the RESTful application.
Resolved	IPY00117090	2	XMS	The RESTful conference reserve parameter does not correspond with the licensed capacity.
Resolved	IPY00117158	1	HMP	When a party's video stream direction is being requested to change, there is a service failure.
Resolved	XMS-1915	1	HMP	Audio only .3gp recordings will not play back in most external players but can still play back via HMP.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-1720	1	HMP	When playing audio+video .3gp file, the app must only set the elements that match the tracks in the file.
Resolved	IPY00117184	1	MRCP	When using ASR failover tolerance, the mrcpclient service goes into failed state.
Resolved	IPY00117165	1	MSML	When using <audio> xml:lang attribute, MSML cannot find the file which causes an error.
Resolved	IPY00117154	1	MSML	The termkey digit is left in the digit buffer after <record> terminates.
Resolved	IPY00117139	1	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-1901	1	MSML	Sending two consecutive joins in different directions should be successful but may result in failure.
Resolved	XMS-1881	1	MSML	When recording MSML audio only using .3gp, the recording may fail with "500 error, record operation failed" error resulting in an empty file.
Resolved	IPY00117197	1	VXML	A simple VXML script that tries to do audio+video playback actually plays back the audio only.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117151	1	VXML	The builtin interpreter is processing <say-as> regardless of the property being set or not.
Resolved	IPY00117147	1	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.
Resolved	IPY00117175	1	XMS	When running WebRTC conference, the ssp_x86Linux_boot crashes.
Resolved	IPY00117149	1	XMS	The RESTful interface can stop responding when sending multiple http requests simultaneously.
Resolved	IPY00116898	1	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.
Resolved	XMS-1978	1	XMS	The Video Encoder Sharing mode is overwritten as the default (Disabled) after upgrade.
Resolved	XMS-1951	1	XMS	When the RESTful app sends conference region_overlays with multiple region and difference text string, the displayed overlay has same text.
Resolved	XMS-1916	1	XMS	When in an SDES SRTP call, XMS may stop transmitting media following a re-INVITE.
Resolved	XMS-1904	1	XMS	The delay offer case for SDES SRTP is not supported.
Resolved	XMS-1662	1	XMS	A TMMBN message should be scheduled for transmission after the reception of a TMMBR message with an entry identifying the media sender but no TMMBN message is generated.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	XMS-1880		MSML	When sending a forward event to a play operation, the stream may rewind to the nearest I-frame instead of fast forwarding.
Known	XMS-1795		MSML	The append attribute for the <transfer> and <fileop> elements is not supported for video (.vid or .3gp) or for audio (.3gp).
Known	XMS-751		MSML	The terminate.finalsilence event will be accepted and terminate the recording; however, the final silence is not removed.
Known	XMS-1883		MSRP	When a call is disconnected while an MSRP <transfer> is active, the transfer may fail with connection error.
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`

Issue Type	Defect No.	SU No.	Product or Component	Description
				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-1866		XMS	Sending preconditions in a SIP re-INVITE is not supported.
Known	XMS-1783		XMS	When the Video Encoder Sharing option is set as static, TMMBR may have undesirable effects including low quality video.
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.
Known	XMS-1250		XMS	A memory leak on the xmserver has been observed at about 4MB every 24 hours during some scenarios.
Known	XMS-830		XMS	The xmserver does not respond with proper b=AS when receiving SDP offer with the attribute in session level.
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.

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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.