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Dialogic® PowerMedia® XMS Release 3.4

Release Notes

Copyright and Legal Notice

Table of Contents

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

Revision	Release Date	Notes
05-2749-008 (Updated)	May 2019	Release Issues: • Added the following XMS Resolved Defects: XMS-9306, XMS-11102.
05-2749-008 (Updated)	January 2019	Release Issues: • Added the following XMS Known (permanent) Issues: XMS-10720.
05-2749-008	September 2018	Updates to support PowerMedia XMS Release 3.4 Service Update 7 (Build 20879). Release Issues: • Added the following XMS Resolved Defects: XMS-9820.
05-2749-007	July 2018	Updates to support PowerMedia XMS Release 3.4 Service Update 6 (Build 20308). Release Issues: • Added the following XMS Resolved Defects: XMS-9312.
05-2749-006	June 2018	Updates to support PowerMedia XMS Release 3.4 Service Update 5 (Build 20222). Release Issues: • Added the following XMS Resolved Defects: XMS-8159, XMS-8538, XMS-8589, XMS-8640, XMS-8654, XMS-8812, XMS-8814, XMS-8863, XMS-8981, XMS-9001, XMS-9008, XMS-9016, XMS-9072, XMS-9164, XMS-9181, XMS-9182, XMS-9231. • Added the following XMS Known Issues: XMS-9312. • Added the following XMS Known (permanent) Issues: XMS-8931.

Revision	Release Date	Notes
05-2749-005	January 2018	Updates to support PowerMedia XMS Release 3.4 Service Update 4 (Build 18929). Release Issues: • Added the following XMS Resolved Defects: XMS-7508, XMS-8262, XMS-8270, XMS-8277, XMS-8331, XMS-8371, XMS-8375, XMS-8392, XMS-8442, XMS-8450. **Note:** PowerMedia XMS Release 3.4 does not include the enhanced account management and security functionality introduced in the Service Updates for XMS 3.1 and XMS 3.2. As a result, XMS 3.4 SU4 can only be used to upgrade a previous XMS 3.4 installation. If upgrading from XMS 3.1 or XMS 3.2 system, you must upgrade to XMS 3.5 (or later) or uninstall XMS 3.1 or XMS 3.2 before installing XMS 3.4.
05-2749-004	December 2017	Updates to support PowerMedia XMS Release 3.4 Service Update 3 (Build 18388). Release Issues: • Added the following XMS Resolved Defects: XMS-7808, XMS-7859, XMS-7884, XMS-7945, XMS-7994, XMS-8015, XMS-8027, XMS-8119, XMS-8138.
05-2749-003	November 2017	Updates to support PowerMedia XMS Release 3.4 Service Update 2 (Build 18033). Release Issues: • Added the following XMS Resolved Defects: 300067, 300739, 301541, 302372, 302419, 302737, 302984, 303088, 303352, 303462, 303529, 303977, 307865, 307923, 308420, 308466, 308621, 309041, 309353, 309490, 309649, 309712, IPY00118288.

Revision	Release Date	Notes
05-2749-002	July 2017	Updates to support PowerMedia XMS Release 3.4 Service Update 1 (Build 16829). System Requirements: Added httpd requirement and note in the Operating System section. Post-Release Developments: • Added PowerMedia XMS Release 3.4 Service Update. • Added Additional Default Codec Configuration. • Added Transport Layer Security 1.2 (TLS 1.2) or Higher by Default. Release Issues: • Added the following XMS Resolved Defects: 300254, 301961, 302255, 302289, 302602, 302737.
05-2749-001	June 2017	Initial release of this document.
Last modified: May 2019		

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

1. Welcome

These release notes address new features and issues associated with the Dialogic® PowerMedia® Extended Media Server (also referred to herein as "PowerMedia XMS" or "XMS") Release 3.4. This is a document that is planned to be periodically updated throughout the lifetime of the release.

The release notes are 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.

- Controlled Introduction Features: This section describes the new controlled introduction features and functionality in this release.

- Installation: This section provides installation information that is useful for getting started with this release.

- Upgrading: This section provides upgrading information that is useful for getting started with this release.

- Configuration: This section provides configuration information that is useful getting started with this release.

- Licensing: This section provides licensing information that is useful for getting started with this release.

- Logging: This section provides logging information that is useful for getting started with this release.

- 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

Dialogic® PowerMedia® Extended Media Server (also referred to herein as "PowerMedia XMS" or "XMS") is a highly scalable, software-only media server that enables standards-based, real-time multimedia communications solutions for IMS, MRF, Enterprise, and WebRTC applications on premise or in the cloud. Built on 15+ years of software media processing experience, PowerMedia XMS is trusted by world-class service providers and large enterprises to power millions of rich media sessions.

With an extensive list of successful implementations that include MRF for VoLTE, carrier hosted contact centers, enterprise communications, voice messaging, and "mission critical" next-generation 911 services, PowerMedia XMS has proven to be a key building block to new and innovative applications. When deployed with the optional Dialogic® PowerMedia® Media Resource Broker (also referred to herein as "PowerMedia MRB" or "MRB"), PowerMedia XMS scales to meet growing service-provider and business requirements.

PowerMedia XMS

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
- Supercharged WebRTC integration

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-only media server or software Media Resource Function (MRF) IMS network element that enables standards-based, real-time multimedia communications solutions for SIP and WebRTC for mobile and broadband environments. PowerMedia XMS enables 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 VoiceXML (VXML) browser in PowerMedia XMS 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 can control PowerMedia XMS using the HTTP RESTful interface. Similarly, the JSR 309 Connector for PowerMedia XMS can enable Java EE developers to control real-time applications from converged application servers.

PowerMedia XMS supports multimedia audio and video, using a variety of codecs. It also provides support for handling RTP media, security (via DTLS/SRTP), and ICE negotiation from WebRTC media sources. Please refer to specific media control protocol documentation for the more detail Media Server feature coverage / support.

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. With the additional support for WebRTC media, PowerMedia XMS provides the power to mix diverse streams and enable connectivity between legacy networks, endpoints, and WebRTC.

The following figure illustrates an example of a video conferencing delivery platform for a PowerMedia XMS-based multimedia conferencing solution.
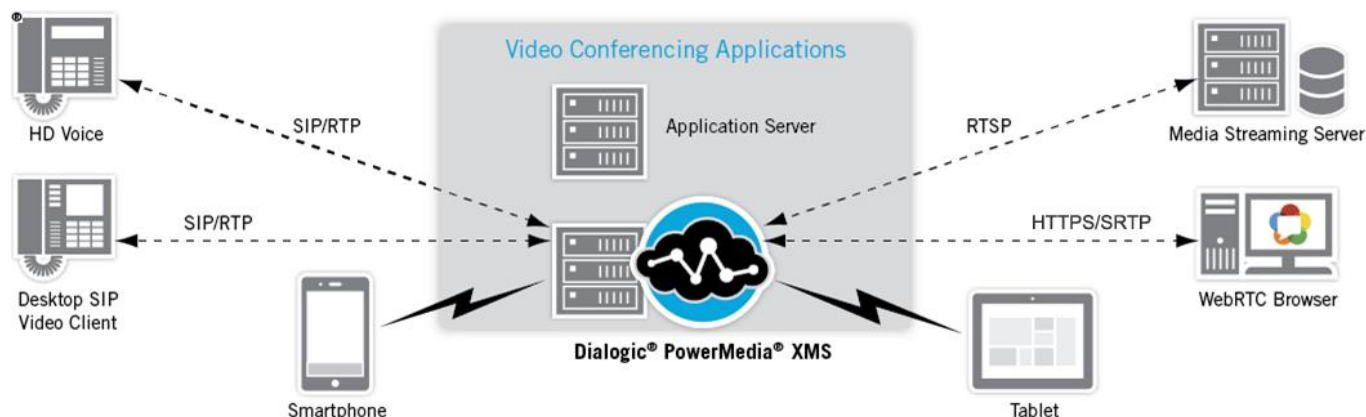
PowerMedia MRB

PowerMedia MRB is a standardized network element, defined by RFC 6917, that manages media resource availability and reliability, providing improved utilization and reliability of deployed media resources in the network. As defined in MRB specifications, the PowerMedia MRB performs critical media resource management functions, including:

- Balancing requests from multiple application servers or app server clusters
- Efficiently utilizing and allocating the Media Resource Function (MRF) and Media Server (MS) resource pools
- Providing a monitoring mechanism for media server status and capabilities
- Supporting media control payloads such as MSML, JSR 309, NETANN, and RESTful

Clustering of the PowerMedia XMS instances to support higher density and scalability requirements is supported by the PowerMedia MRB. It is designed to handle large transaction rates and can effectively and efficiently load balance the traffic among available PowerMedia XMS instances (MRFs) including those instances located in different geographic regions. The PowerMedia MRB is implemented to be a stateful load balancer and actively monitors and tracks capacity and availability of individual PowerMedia XMS instances. Since the PowerMedia MRB is stateful, it can also support real-time call preservation of conference calls and bridged calls. In case of failure, the PowerMedia MRB can dynamically restore established media sessions to an alternate PowerMedia XMS instance, providing continuity of service.

The following figure illustrates the role of the PowerMedia MRB to manage PowerMedia XMS resources among various geographic sites.
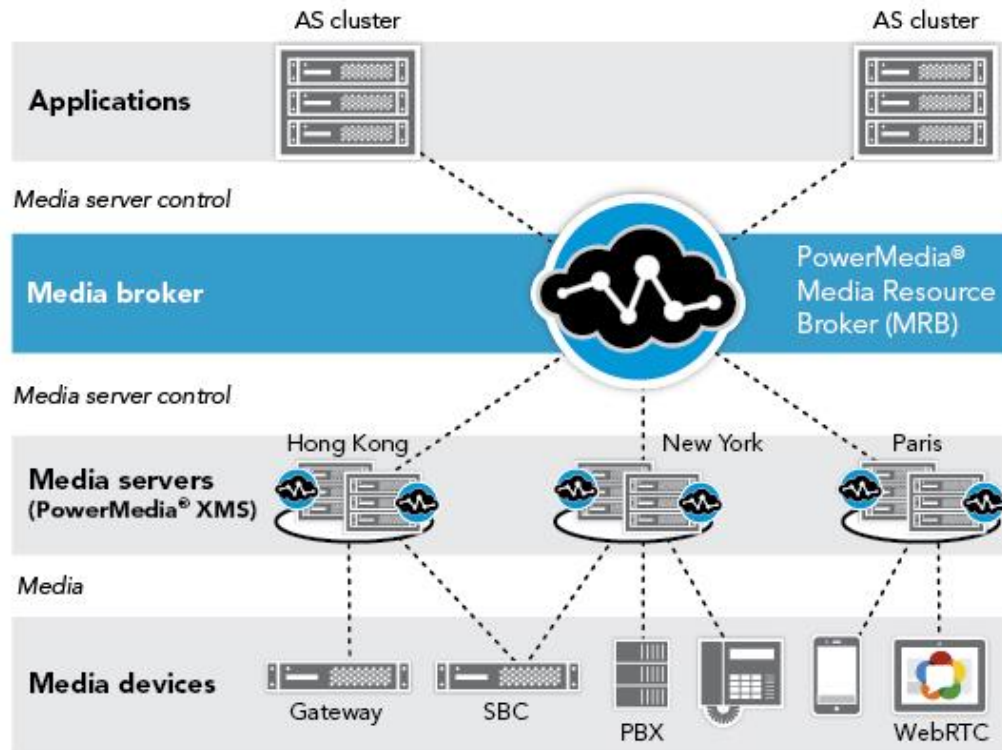
Related Information

See the following for additional information:

- PowerMedia XMS product page at http://www.dialogic.com/products/media-server-software/xms.

- PowerMedia XMS datasheet at http://www.dialogic.com/~/media/products/docs/media-server-software/12888-powermedia-xms-ds.pdf.

- PowerMedia MRB datasheet at http://www.dialogic.com/~/media/products/docs/media-server-software/14160-powermediamrb-ds.pdf.

- PowerMedia XMS Developer Portal at http://developer.dialogic.com.

- PowerMedia XMS Release 3.4 documentation at http://www.dialogic.com/manuals/xms/xms3-4.

- Dialogic Service Center at http://www.dialogic.com/support.

3. Related Documentation

This section provides information about the documentation that supports the PowerMedia XMS Release 3.4.

The following documents are available for the PowerMedia XMS Release 3.4 at http://www.dialogic.com/manuals/xms/xms3-4.

Document	Description
PowerMedia XMS	
Dialogic® PowerMedia® XMS Release 3.4 Release Notes	Addresses new features and issues associated with PowerMedia XMS Release 3.4.
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 WebRTC Demo Guide	Provides instructions for running WebRTC demos with 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 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.
Dialogic® PowerMedia™ XMS WebRTC JavaScript API User's Guide	Provides information on functionality to support connecting to and performing media operations on Web Real-Time Communication (WebRTC) compliant devices or endpoints (for example, browsers) with PowerMedia XMS.
Dialogic® PowerMedia™ XMS Diagnostics Guide	Provides information on gathering diagnostics to troubleshoot PowerMedia XMS issues.
PowerMedia MRB	
Dialogic® PowerMedia™ Media Resource Broker (MRB) Quick Start Guide	Describes how to install software and configure the PowerMedia MRB to initiate a working test setup.
Dialogic® PowerMedia™ Media Resource Broker (MRB) Installation and Configuration Guide	Provides instructions for installing and configuring the PowerMedia MRB.
Dialogic® PowerMedia™ Media Resource Broker (MRB) Technology Guide	Provides an overview of the PowerMedia MRB and its capabilities.

Document	Description
JSR 309 Connector	
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 (versions 5 and 7) - TeleStax Apache-Tomcat Application Server - TeleStax JBoss Application Server - IBM Liberty 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.
Application Notes	
Dialogic® PowerMedia™ XMS Application Note: Optimizing VMware Host Hardware and Virtual Machine to Reduce Latency	Provides instructions on optimizing VMware ESXi, server settings, and Virtual Machine (VM) guest machines to reduce latency prior to installing PowerMedia XMS.
Dialogic® PowerMedia™ XMS Application Note: Running PowerMedia XMS on Amazon Web Services	Provides instructions on running PowerMedia XMS on Amazon Web Services (AWS) Elastic Compute Cloud (EC2) and Virtual Private Cloud (VPC).

4. System Requirements

This section describes the system requirements for the PowerMedia XMS Release 3.4.

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. **ISO Method Installation:** Community ENTerprise Operating System (CentOS) 7.x **RPM Method Installation:** - CentOS 7.x and 6.4 (or later) - Red Hat Enterprise Linux (RHEL) 7.x and 6.4 (or later) - Oracle Linux 6.4 - Oracle Linux 7.2 with Unbreakable Enterprise Kernel (UEK) Release 4 Before running the RPM Method installation, the following packages, available from the OS distributor, must first be installed: - perl-core - openssl version 1.0.1e or higher - httpd-2.2.15-60.el6.centos.4.x86_64 or higher **Note:** As of PowerMedia XMS Release 3.4 Service Update 1, the WebGUI requires a minimum version of TLS 1.2. If using CentOS 6.x, please ensure that the installed version of httpd is *httpd-2.2.15-60.el6.centos.4.x86_64* or higher. If the CentOS 6.x httpd package is not updated, the XMS installation logs will indicate that "httpd may fail to start" and the WebGUI will be unresponsive. The failure message will also appear in */var/log/messages* when trying to start httpd or reboot the system.
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)

Item	Requirement
Memory	**Minimum:** 12 GB RAM **Recommended:** • 16 GB RAM or higher (high density audio) • 24 GB RAM or higher (video)
Storage	**Minimum:** 60 GB HDD **Recommended:** 250 GB HDD up to 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 and ESXi 6.x
- Kernel Virtual Machine (KVM)
- Oracle VM
- XenServer VM

It is recommended to use 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 is 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.

Refer to the *Dialogic® PowerMedia™ XMS Application Note: Optimizing VMware Host Hardware and Virtual Machine to Reduce Latency* for more information.

Cloud Environments

The qualified cloud environments include the following:

- Amazon Web Services (AWS)

Note: Refer to the *Dialogic® PowerMedia™ XMS Application Note: Running PowerMedia XMS on Amazon Web Services* for more information.

Support for Rackspace is available as a controlled introduction for Proof of Concept (PoC), development activities, and trials. For more information, refer to the following white paper:

- *Dialogic® PowerMedia™ XMS and the Rackspace Managed Cloud* at http://www.dialogic.com/~/media/products/media-server-software/download/xms-demos/Rackspace-XMS-Verification.pdf.

5.   Release Features

This section describes the features and functionality supported in the PowerMedia XMS Release 3.4.

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

PowerMedia XMS Release 3.4

The key new features and functionality include:

- Early Connect
- On-the-Fly Codec Switch
- G.729 A/B Configuration
- SIP BYE Reason Codes

Early Connect

PowerMedia XMS Release 3.4 includes optimizations in the MSML API for early connection scenarios. In this release, XMS provides early join scenario through XMS for ringback and media processing before both connections have completed SIP signaling. Additionally, XMS will support early join and early cpa dialog MSML scripts within the SIP INVITE.

On-the-Fly Codec Switch

PowerMedia XMS Release 3.4 adds support for on-the-fly codec switching to another offered codec prior to call completion. With this feature, media can be started with one codec and after media is streaming, XMS will automatically detect if the RTP stream switches to another offered codec type and continue processing the media stream.

G.729 A/B Configuration

PowerMedia XMS Release 3.4 provides capability to configure the G.729 codec with support for G729 Annex B through the WebGUI.

When set to G.729 Annex B, XMS will add the appropriate "annexb=yes" in the SIP SDP as well as utilize Annex B for the default Offer SDP generated by XMS.

SIP BYE Reason Codes

PowerMedia XMS Release 3.4 adds support for SIP BYE reason codes to identify the source of a media server generated SIP call termination.

The following media server initiated SIP BYE reason codes are supported:

Condition	Reason Code	Text
MSML <disconnect> element.	cause=200	Data Channel Disconnected
MSML conference control leg disconnect. Supported when conference is created with deletewhen="nocontrol" and term="true" and the control leg drops from a multi-party conference.	cause=487	Control Channel Disconnected
A call is terminated from the CDR page in the WebGUI.	cause=800	BYE
Graceful shutdown timer expires.	cause=200	Service Unavailable

Previous Releases

PowerMedia XMS Release 3.3

For notable features and functionality included in PowerMedia XMS Release 3.3, refer to the *Dialogic® PowerMedia® XMS Release 3.3 Release Notes* at:

http://www.dialogic.com/webhelp/XMS/3.3/XMS_ReleaseNotes.pdf

PowerMedia XMS Release 3.2

For notable features and functionality included in PowerMedia XMS Release 3.2, refer to the *Dialogic® PowerMedia® XMS Release 3.2 Release Notes* at:

http://www.dialogic.com/webhelp/XMS/3.2/XMS_ReleaseNotes.pdf

PowerMedia XMS Release 3.1

For notable features and functionality included in PowerMedia XMS Release 3.1, refer to the *Dialogic® PowerMedia™ XMS Release 3.1 Release Notes* at:

http://www.dialogic.com/webhelp/XMS/3.1/XMS_ReleaseNotes.pdf

PowerMedia XMS Release 3.0

For notable features and functionality included in PowerMedia XMS Release 3.0, refer to the *Dialogic® PowerMedia™ XMS Release 3.0 Release Notes* at:

http://www.dialogic.com/webhelp/XMS/3.0/XMS_ReleaseNotes.pdf

PowerMedia XMS Release 2.4

For notable features and functionality included in PowerMedia XMS Release 2.4, refer to the *Dialogic® PowerMedia™ XMS Release 2.4 Release Notes* at:

http://www.dialogic.com/webhelp/XMS/2.4/XMS_ReleaseNotes.pdf

6. Controlled Introduction Features

In addition to general availability of new features and functionality, PowerMedia XMS Release 3.4 also introduces new functionality in a controlled introduction (CI). These are features 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. CI features have not completed Dialogic's Quality Assurance ("QA") testing and are not recommended for production deployments without approval from Dialogic. 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 the PowerMedia XMS Release 3.4 controlled introduction.

- Selective Forwarding Unit (SFU)
- High Capacity Video Session Record
- Video Encoder Sharing Support
- VP9 Video Codec
- Multitrack Recording
- CDR Remote Database

Selective Forwarding Unit (SFU)

PowerMedia XMS Release 3.4 supports a Selective Forwarding Unit (SFU) video conferencing approach for certain customer Proof of Concept (PoC) scenarios. With the SFU video conference, a video stream from each participant is routed (without transcoding) to the other participants in multimedia conference.

The SFU video conference can be used with similar video endpoints, such as WebRTC browsers, to route video between endpoints rather than processing video streams independently as is the case with a traditional Multipoint Control Unit (MCU) video conferencing. This tradeoff can be helpful to reduce CPU utilization and increase capacity when it is known all video endpoints in the video conference are compatible.

In this release, XMS provides SFU video conferencing to WebRTC and SIP endpoints by supporting a single input stream per client and a VAS (Voice Activated Switching) style output, where each client sees video based on an active talker algorithm. The SFU video conference is a conference mode that can selected upon conference creation. Once selected, video streams are routed between endpoints rather than using video transcoding to process the stream into a common format. The XMS SFU video conference uses RTCP feedback messages to provide high quality video with the client and to handle packet loss in poor network environments. In the SFU video conference, audio is still mixed as it is in a traditional audio or video conference.

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

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

Google Chrome Interoperability Considerations When Using SFU

If no video is being sent into a Selective Forwarding Unit (SFU) conference and any Google Chrome clients are connected to XMS with video=recvonly, those Google Chrome clients will not render the audio that they receive. Additional information can be found at http://bugs.chromium.org/p/chromium/issues/detail?id=403710.

Primary Video Source for SFU

PowerMedia XMS Release 3.4 provides an API (dlgc:sfu_video_source for MSML and primary_video_source for RESTful) that allows setting the video to be sent to each party in a Selective Forwarding Unit (SFU) conference. This feature is available at the user level and conference level, and possible selections include "loudest speaker" (default) and all conference parties. This API is available in join and modifystream for MSML and in add_party/update_party and update_conference for RESTful.

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

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

High Capacity Video Session Record

PowerMedia XMS Release 3.4 has been optimized to provide high capacity video record of hundreds of HD720p WebRTC video callers joined through the XMS system. The capability can be used by customers looking to develop call session recording services for WebRTC media applications, especially for Call Centers and caller/agent applications that require call session recordings for archiving, monitoring or training purposes.

In this use case, WebRTC video call sessions are joined natively (without transcoding) or through the SFU video conference. XMS sits in the media path and handles the audio and video from each video caller while providing video feedback between endpoints to maintain good video quality connection even under low bandwidth or varying network conditions. Video recording takes advantage of the Native Record to WebM container feature, introduced in PowerMedia XMS Release 3.2, to provide a video call recording of each endpoint in a standard WebM file format. The individual WebM call recordings can be coordinated for synchronized playback of the video session at a later point.

This feature provides a significant enhancement in XMS video record capacity, offering the ability to handle hundreds of simultaneous HD720p video session records while joined through the XMS system.

Video Encoder Sharing Support

PowerMedia XMS Release 3.4 supports video encoder sharing. Video encoder sharing includes Dialogic patented video technology that provides enhanced performance for video conferencing and video mixing applications. Video encoder sharing works by reducing the CPU cycles 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 multiple users.

The video encoder sharing technology provides the capability to encode once for a number of video conference participants and perform, via Dialogic patent-pending technology, dynamic bitrate adaptation to each endpoint independently.

This feature increases the number of supported sessions while treating the network conditions to each party uniquely, which promotes better video quality at each endpoint.

This feature, combined with 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*.

VP9 Video Codec

PowerMedia XMS Release 3.4 supports VP9 video codec for WebRTC endpoints. XMS enables full decoding and encoding of VP9-based video sessions between Google Chrome and other VP9 endpoints, as well as transcoding to non-VP9 endpoints. VP9 is an open source and royalty free video codec developed by Google. VP9 offers compression enhancements over its precursor VP8. By adding support for VP9, XMS software facilitates broad interoperability between video formats and systems.

Multitrack Recording

PowerMedia XMS Release 3.4 supports audio recording to dual-track (stereo) .wav files. This multitrack record feature enables applications to record two separate audio sources into different tracks. This feature can be utilized by call centers, E911 applications, banking applications, and monitoring applications to record two audio callers, such as agent and client, as different tracks rather than recording the mixed output of an audio conference. An additional use case of this feature enables applications to capture an audio recording of the XMS system input and output of the caller (i.e., what the caller hears and what the caller says) in a single dual-track (stereo) .wav file.

The two main use cases supported by XMS for the multitrack record feature in this release are individual party multitrack transaction recording and two-party multitrack recording, which are described in the following sections.

Individual Party Multitrack Recording

The individual multitrack transaction recording use case enables applications to record the audio of the caller speaking and the audio that the caller hears in the same file as two different tracks.

This feature provides the ability to record the system output sent to a user without the need to do packet capture on the network to get the audio as it is heard by the caller. The recording of what a caller hears includes all of the different sources that occur during a call, such as audio from another caller, output of a conference, or output from a play file. This provides the ability to record the audio a caller hears without the need to put all sources through a conference mixer.

Two-Party Multitrack Recording

The two-party recording use case enables applications to record two sources, such as two call parties, as two separate tracks in a single .wav file. The resulting file has each audio source in a separate track, which can be played back together or separated by source.

Providing recordings as multitrack recordings has unique advantages over single mixed audio recordings. A dual-track (stereo) .wav file can be played back on standard players as a stereo file with synchronized audio between the two parties. Additionally, a multitrack file also allows the audio of each individual participant track to be easily separated. Separating the audio allows post processing of the individual caller's audio that may not be possible with a mixed conference output where voices cannot easily be separated.

For example, individual tracks can be sent to speech analytics software to get an accurate per participant transcript or to analyze the speech characteristics of a caller or agent.

The multitrack record feature is available through the MSML, RESTful, and JSR 309 interfaces.

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

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

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

Note: This feature is not supported by the MRB as of this release.

CDR Remote Database

In PowerMedia XMS Release 3.4, the CDR subsystem has been updated with the ability to utilize a remote database for CDR storage. This allows users to configure separate CDR storage from the default XMS local storage normally used for CDR storage. A remote database can also be beneficial for database replication, redundancy, and high data availability to provide a level of fault tolerance against the loss of a single database server.

7. 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*.

8. 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.

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 PowerMedia XMS Release 3.0 Service Update 1 or PowerMedia XMS Release 2.4 Service Update 7, you must use the command line upgrade process. There is a known defect in the XMS 3.0 SU1 and XMS 2.4 SU7 WebGUI upgrade process. If you have already attempted to upgrade using the WebGUI, 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.

9.   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*.

10. Licensing

Verification License

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:

- **Hardware-Independent Licensing:** The license is locked to a 33-byte License Node ID retrieved from the XMS system WebGUI or RESTful Management API.

- **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.

Applicable Third Party License Information

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.

11. Logging

In PowerMedia XMS, the default logging level is set to WARN. For production-level traffic or high density testing, it is recommended to set the logging level to ERROR because the ERROR setting provides the lightest logging levels. To set the logging level, go to the **System** > **Diagnostics** page in the PowerMedia XMS Admin Console.

The DEBUG setting provides the most intensive logging levels. When running PowerMedia XMS Diagnostics logging at increased logging levels (e.g., DEBUG), there is additional CPU and hard drive access loading. The loading is dependent on the channel density of the system and also the level of logging that has been enabled. If system performance issues are encountered, users may need to reduce the channel load or reduce some of the debugging prints.

12. Post-Release Developments

This section describes significant changes subsequent to the general availability release.

PowerMedia XMS Release 3.4 Service Update

This Service Update for PowerMedia XMS Release 3.4 is now available. Service 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*.

Additional Default Codec Configuration

PowerMedia XMS Release 3.4 Service Update 1 enables additional default codec configuration parameters for certain audio codecs through the WebGUI. The default codec configuration is used to guide the codec SDP characteristics that are returned by XMS in SDP responses. The default codec parameters would also be used on null Invite SDP responses that may be used as Offer SDP by B2BUA applications.

Codec configuration exposed through the WebGUI in this XMS 3.4 SU1 includes:

- **AMR-NB**: Configurable payload type, mode set, and octet align parameters.
- **AMR-WB**: Configurable payload type, mode set, and octet align parameters.
- **Telephone Event**: Configurable payload type parameter.

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

Transport Layer Security 1.2 (TLS 1.2) or Higher by Default

PowerMedia XMS Release 3.4 Service Update 1 enables TLS 1.2 or higher by default for the WebGUI. TLS 1.0 and TLS 1.1 have been disabled for greater security as recommended for Payment Card Industry (PCI) Data Security Standard (DSS) compliance.

Note: As of PowerMedia XMS Release 3.4 Service Update 1, the WebGUI requires a minimum version of TLS 1.2. If using CentOS 6.x, please ensure that the installed version of httpd is *httpd-2.2.15-60.el6.centos.4.x86_64* or higher. If the CentOS 6.x httpd package is not updated, the XMS installation logs will indicate that "httpd may fail to start" and the WebGUI will be unresponsive. The failure message will also appear in */var/log/messages* when trying to start httpd or reboot the system.

13. Release Issues

This section lists the issues that may affect the PowerMedia XMS Release 3.4.

PowerMedia XMS Release 3.4 includes all of the applicable resolved issues from the following releases:

- PowerMedia XMS Release 3.3 Service Update 1 (Release Notes)
- PowerMedia XMS Release 3.2 Service Update 9 (Release Notes)
- PowerMedia XMS Release 3.1 Service Update 10 (Release Notes)
- PowerMedia XMS Release 3.0 Service Update 8 (Release Notes)
- PowerMedia XMS Release 2.4 Service Update 12 (Release Notes)

Limitations

PowerMedia XMS Release 3.4 has the following limitations:

- 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.

- When using JSR 309 and recording a party that is joined to a conference, the video freezes. JSR 309 has DEFAULT_BEEP enabled by default, which causes this PowerMedia XMS behavior. To overcome this limitation, set DEFAULT_BEEP to FALSE before starting the recording.

- The PowerMedia MRB does not support MRCP in RESTful.

Selective Forward Unit (SFU)

When using SFU, all of the clients connected to SFU conference must:

- Support GNACK and PLI (e.g., WebRTC clients such as Google Chrome and Mozilla Firefox).
- Support VP8 and negotiate the VP8 codec.
- Use the same video codec (currently restricted to VP8).
- Use the same video resolution.

The following precautions should be taken:

- Avoid setting layout options as any video layout options are not supported as of this release. When using MSML, the layout must be specified as "auto".

- Video transcoding is not supported while using SFU. Features requiring video transcoding may have undesirable effects. These features include but are not limited to:

  - Conference background image and color, and borders.

  - Text and image overlay.

  - Video layouts and root sizes.

  - SIP re-INVITEs which change the video coder.

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 in this section list issues that affect the PowerMedia XMS. The issues are sorted by issue type. 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 issue relates; for example, an API.

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

Note: The [CI] superscript represents a controlled introduction (CI) feature or functionality.

PowerMedia XMS

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-11102	7	JSR 309	The JSR 309 Connector is returning "NullPointerException - Failed to dispatch Sip message to servlet".
Resolved	XMS-9306	7	JSR 309	The JSR 309 Connector throws NullPointerException during initialization.
Resolved	XMS-9820	7	XMS	Interoperability issue with endpoints that send IN-BAND DTMF even though RFC2833 was negotiated in SDP.
Known (permanent)	XMS-10720	7	XMS	If dhclient versions earlier than *dhclient-4.2.5-60* are installed, XMS may fail to start certain RTP sessions. When this failure occurs, an error that contains "ssp_x86Linux_boot: rtpSocketGet: bind returned an error" will appear in */var/log/messages*. This is due to an issue in dhclient that is resolved in *dhclient 4.2.5-60* or higher. To resolve the issue, open a terminal session on the XMS system and update dhclient: `yum update dhclient`
Resolved	XMS-9312	6	XMS	When a BYE is received during a join operation, there is a small window in which a signaling session may become stuck in use.
Resolved	XMS-9072	5	CDR	After a long period of time, calls on the media server eventually disappear from the CDR active list on the WebGUI.
Resolved	XMS-8654	5	CDR	CDR for end of the call is not generated for long calls (i.e., over 1 hour).

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-8538	5	CDR	In the CSV file that is generated, the fields related to QoS are duplicated 32 times causing a significant amount of redundant data and increasing the file size.
Resolved	XMS-9182	5	Fax	The faxservice crashes by SIGSEGV.
Resolved	XMS-9016	5	HMP	Temporary slowdown when processing events after 51 days of continuous operation.
Resolved	XMS-8814	5	HMP	Due to trap divide error in ssp.mlm, HMP goes into a failed state.
Resolved	XMS-9181	5	JSR 309	In some cases, DTMF digit collection is not returning a dialogend event.
Resolved	XMS-8159	5	MRB	The *nst-ms-adaptor-config.xml* points to the incorrect interface resulting in XMS being unavailable.
Resolved	XMS-8863	5	MSML	When using the composite mechanism for play/record, the record does not terminate if the play is barged via the termkey.
Resolved	XMS-8640	5	MSML	Basic Audio license leak observed as RTP session is not stopped by XMS.
Resolved	XMS-9001	5	RESTful	Only 5 files are kept specifically for xmsrest logging.
Resolved	XMS-8812	5	SNMP	The SNMP community public is enabled and has full access to all OIDs.
Resolved	XMS-8589	5	WebGUI	The Window Logger Manager Tool (*RemoteRtfToolInstaller.msi*) fails to download on Microsoft Internet Explorer 11 and displays as HTML.
Resolved	XMS-9231	5	XMS	When making calls, some Samsung devices fail to decode AMR-WB SID packets.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-9164	5	XMS	XMS stops answering inbound calls with 408 SIP responses.
Resolved	XMS-9008	5	XMS	When making unidirectional video media stream to bidirectional, the call fails.
Resolved	XMS-8981	5	XMS	When the SIP session closes, RTP sessions remain active in XMS.
Known (permanent)	XMS-8931	5	MSML	Due to limitations in the CentOS 6 regular expression processing library, the MSML <pattern> element does not support regex patterns on CentOS 6.
Resolved	XMS-8450	4	XMS	Some of the files and directories under */usr/dialogic* are set as "512" ownership.
Resolved	XMS-8442	4	XMS	XMS hangs after the 100 Trying to re-INVITE with incorrect precondition attributes in the re-INVITE SDP.
Resolved	XMS-8392	4	MSML	The unjoin on other dialog fails with no SIP responses from XMS.
Resolved	XMS-8375	4	MSML	XMS always returns a record.len of "0" for remote record.
Resolved	XMS-8371	4	Nodecontroller	The setting for disabling CVO parameter is cleared after applying a license and issuing XMS restart.
Resolved	XMS-8331	4	HMP	When an inbound UPDATE request is handled before the call, the receiving fax request fails with "IPERR_TXRXRESOURCESINSUFF" error.
Resolved	XMS-8277	4	XMS	XMS rejects incoming calls with "503 Service Unavailable" even when enough licenses/resources are available.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-8270	4	VXML	The SIP Header "P-Asserted-Identity" returns an array even when a comma exists in the value.
Resolved	XMS-8262	4	RESTful	The xmsrest process goes into a failed state without any indication.
Resolved	XMS-7508	4	XMS	The **Protocol** > **SIP** page of the WebGUI is blank.
Resolved	XMS-7994	3	HMP	When receiving invalid Opus audio data, there is intermittent XMS crash.
Resolved	XMS-7884	3	HMP	When using RESTful and WebRTC, there is intermittent XMS crash.
Resolved	XMS-8015	3	MRB	The drop-down list for user selection is blank and unable to assign role to new user.
Resolved	XMS-8119	3	Video	When using Safari on iPhone during video conference, the video orientation is upside down in portrait mode.
Resolved	XMS-8138	3	XMS	When receiving re-INVITE to change media direction to sendonly, XMS gets stuck in TRYING.
Resolved	XMS-8027	3	XMS	gc_AcceptModifyCall() fails with the reason that no answer SDP is attached.
Resolved	XMS-7945	3	XMS	XMS is not decoding RTP packets into the conference. Other participants in the conference cannot hear the 3rd participant.
Resolved	XMS-7859	3	XMS	When performing Early Media call scenario, XMS does not include the same answer SDP that is in the unreliable failure provisional response (183 Session Progress).

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-7808	3	XMS	If XMS is configured for "IN-BAND" for **DTMF Detection Mode** on the **MSML Advanced Configuration** page and XMS is offered RFC2833 during call establishment, XMS will answer SDP indicating support for RFC2833.
Resolved	309490	2	HMP	XMS incorrectly sets the RTP extension bit set while CVO is not negotiated.
Resolved	309353	2	HMP	During join operation, there is poor initial video quality between Chrome and native Android app.
Resolved	308621	2	HMP	SSP crash is seen when SDP comes in through IPv4 call that contains IPv6 destination.
Resolved	307923	2	HMP	XMS fails with SSP crash.
Resolved	307865	2	HMP	XMS will fail to start due to a xmserver crash after upgrading openssl to openssl-1.0.2.k-8.0.1.el7.x86_64. Do not update openssl until this issue is fixed in a future release of XMS. **Note:** Installing XMS software on a new installation of CentOS/RHEL 7.x (or later) that does not have the redhat-lsb package installed or upgrading the redhat-lsb package on existing systems will encounter this issue because the latest redhat-lsb package automatically pulls down the latest version of openssl. There is no simple way to revert back to the 1.0.1e version. For new systems, installing XMS using the ISO method may be used as a workaround as the ISO image contains compatible redhat-lsb and openssl packages.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	302984	2	HMP	When mobile device orientation is rotated while recording, the video is distorted.
Resolved	300739	2	HMP	Coordination of Video Orientation (CVO) details are not present in answer SDP sent from XMS even when CVO is offered.
Resolved	IPY00118288	2	HMP	XMS ignores Record-Route header value and does not send route information with PRACK.
Resolved	302419	2	MRB	The X-Call-Group header in MRB is not passed to XMS.
Resolved	302372	2	MRB	MRB resets the stream sequence numbers to 0 after several seconds into streaming out to the client.
Resolved	309712	2	MSML	When performing MSML audit request, the XML returned is malformed.
Resolved	303088	2	MSML	The stream gain is applied to the outbound (from XMS perspective) side of the stream instead of the inbound side as per RFC 5707.
Resolved	300067	2	MSML	XMS leaves SIP and RTP even after MSML <destroyconference> is set with term="true".
Resolved	303529	2	SNMP	When issuing "service nodecontroller stop", no V3 traps are generated.
Resolved	303352	2	VXML	During active MRCP sessions, VXML crashes followed by MRCP crash.
Resolved	303462	2	WebGUI	The call session cannot be terminated through the CDR terminate function within WebGUI using Internet Explorer.
Resolved	309649	2	XMS	XMS does not handle precondition call offered with pre-reserved QOS.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	309041	2	XMS	XMS answers a call even if the codec license is not available or activated.
Resolved	308466	2	XMS	During re-INVITE processing, streams are getting stuck.
Resolved	308420	2	XMS	MSML does not process INFO Request that immediately follows the ACK when 180 is suppressed (Late Media call).
Resolved	303977	2	XMS	An inbound MSRP call is consuming one MSRP license and one voice license.
Resolved	302737	2	XMS	Multiple TCP connection failures (RST) are seen in a second.
Resolved	301541	2	XMS	XMS ignores Record-Route header value and sends PRACK to IP address specified in the Contact header.
Resolved	301961	1	HMP	When recording, the video is not properly matching the inbound stream resolution.
Resolved	300254	1	HMP	A crash has been observed on the HMP service when receiving portrait 720p video.
Resolved	302289	1	JSR 309	The SIP_REQ_URI_USERNAME header does not work on the control leg.
Resolved	302255	1	SNMP	SNMP queries against XMS MIBs are resulting in a general failure.
Resolved	302737	1	XMS	The XMS perfmanager attempts to connect to a service even when it is disabled.
Resolved	302602	1	XMS	XMS intermittently fails to send video to WebRTC user after switch from video prompt to conference.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	XMS-7062		CDR	CDR does not show any RTP information, start time, or end time for outbound calls.
Known	XMS-6920		CDR	QOS is only reported for a CDR record after the call has cleared.
Known	XMS-6906		CDR	CDR only shows the SDP from the initial INVITE transaction even if a re-INVITE was issued that altered the SDP later in the call.
Known	XMS-6904		CDR	The CDR uses the Session ID instead of the GUSID for tracking calls. In addition, the GUSID is not shown as a valid field in the CDR query views.
Known	XMS-7041		HMP	Certain video recording scenarios using the 3GP container may result in a memory leak. A leak of approximately 1 MB per hour was observed when stress testing this functionality.
Known	XMS-6921		HMP	A rare crash has been observed in the RtfServer component during XMS service start.
Known	XMS-7044		JSR 309	The JSR 309 Connector does not maintain the GUSID for SIP response messages sent to the XMS.
Known	XMS-7051		Nodecontroller	The RESTful Management API is not properly encoding special characters in REST responses with XML payloads. There is no issue when using JSON.
Known	XMS-7123		Video	Issues have been observed in a constrained bitrate environment when XMS is attempting to throttle the ingress video coming from the browser. This issue may result in frozen video because the browser may send data at a higher bandwidth than is available.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	XMS-7134		WebGUI	Even with **HMP Bulk Delay Settings** applied on the **Codec > Audio** page, it has no effect.
Known	XMS-6981		WebGUI	If an error occurs that results in a popup while attempting to modify a CDR query, the error cannot be cleared and the query cannot be modified. Retrying will sometimes work but in some cases a new query must be created.
Known	XMS-6958		WebGUI	No error is thrown when trying to enable a backup Speech Server when no primary Speech Server is configured.
Known	XMS-6916		WebGUI	An error is reported if the **CDR Filter Type** is selected to be changed, but the parameter value is left unchanged.
Known	XMS-6912		WebGUI	When selecting **Disable Polling** checkbox on the **Web Console Options** page then leave the page and go back, the **Disable Polling** reports that it is enabled even though it is disabled.
Known	XMS-6910		WebGUI	Even with **Enable Auto Refresh** disabled, the WebGUI pages scroll the view to the top 3 seconds after mouse is idle.
Known	XMS-7057		XMS	No error is generated when XMS is requested to play a prompt during a delayed OFFER scenario when early media is set. Instead, XMS will play the prompt.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known (permanent)	XMS-2863		HTTP	When using both HTTPS and lighttpd under high stress, XMS performance is negatively impacted. The factors that cause this are as follows: • Lighttpd can cause performance issues when handling HTTPS transactions. • XMS uses libcurl, which has code that blocks during HTTPS transactions. The performance penalty of using both HTTPS and lighttpd grows under the constant load. This causes the XMS to perform negatively in various ways. For example, delays in fetching prompts and lost media transactions have been observed. During Dialogic testing, these issues were not observed when using Apache, so consider using alternative HTTP servers for high volume deployments.
Known (permanent)	XMS-3028		Install (ISO)	In some cases, text and image overlays for conferencing captions are not visible in video conferences after installing XMS on CentOS 7. To resolve the issue, open a terminal session on the XMS system, update the following packages, and restart the system: • yum update glib2 • yum update gdk-pixbuf2
Known (permanent)	XMS-2830		Install (ISO)	Newer servers require OS install boot media to be UEFI bootable.
Known (permanent)	MRB-378		MRB	If a MSML join command is sent to a media server prior to receiving an ACK and P-MRB headers are not used, the MSML join command does not function properly in non-proxy mode.

Issue Type	Defect No.	SU No.	Product or Component	Description
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-2579		MSML	MSML legacy does not accept session IDs and session versions longer than 9223372036854775807, which causes re-INVITEs to be ignored.
Known (permanent)	XMS-2999		SR140 Software	When using driver modules that are not supplied by Red Hat, the following message is found after rebooting XMS: kernel: boston: module verification failed: signature and/or required key missing - tainting kernel. However, the message is not an indication of an issue.
Known (permanent)	XMS-2885		WebGUI	Changing user settings (user passwords, polling times in options menu) can make user credentials temporarily invalid. Refreshing the page in the browser resolves the issue.
Known (permanent)	IPY00117889		XMS	When the creation of a call fails because the destination URI is invalid, the call failure response is not reported and the resources remain in the USE state. If a resource leak is discovered, verify that the destination URI is correct.
Known (permanent)	XMS-6660		XMS	Media files cannot have spaces.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known (permanent)	XMS-3232		XMS	The API supports both 8 kHz and 16 kHz for the sampling rate of Opus recordings, but XMS internally uses the sampling rate of 16 kHz for generating Opus audio streams.