Dialogic® PowerMedia® XMS Release 3.2

Release Notes

January 2019 05-2746-010

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

Revision	Release Date	Notes
05-2746-010 (Updated)	January 2019	Release Issues: • Added the following XMS Known (permanent) Issues: XMS-10720.
05-2746-010	August 2018	Updates to support PowerMedia XMS Release 3.2 Service Update 9 (Build 20676). Release Issues: • Added the following XMS Resolved Defects: XMS-9231, XMS-9274, XMS-9766.
05-2746-009 (Updated)	August 2018	Release Issues: • Added the following XMS Resolved Defects: XMS-5745.
05-2746-009	May 2018	Updates to support PowerMedia XMS Release 3.2 Service Update 8 (Build 19997). Release Issues: • Added the following XMS Resolved Defects: XMS-8159, XMS-8538, XMS-8640, XMS-8732, XMS-8889, XMS-9016, XMS-9164, XMS-9182. • Added the following XMS Known (permanent) Issues: XMS-8931.
05-2746-008	February 2018	Updates to support PowerMedia XMS Release 3.2 Service Update 7 (Build 19061). Release Issues: • Added the following XMS Resolved Defects: XMS-7107, XMS-7859, XMS-8027, XMS-8129, XMS-8270, XMS-8277, XMS-8297, XMS-8371. • Added the following XMS Known Issues: XMS-8658. • Added the following XMS Known (permanent) Issues: XMS-8048.
05-2746-007	November 2017	Updates to support PowerMedia XMS Release 3.2 Service Update 6 (Build 18136).

Revision	Release Date	Notes
		Release Issues: • Added the following XMS Resolved Defects: 307865, 309649, 310287.
05-2746-006	October 2017	Updates to support PowerMedia XMS Release 3.2 Service Update 5 (Build 17948). Release Issues: • Added the following XMS Resolved Defects: 302279, 303088, 303529, 303977, 308466, 309046, 309310, 309340. • Added the following XMS Known Issues: 307865.
05-2746-005	September 2017	Updates to support PowerMedia XMS Release 3.2 Service Update 4 (Build 17220). Upgrading: • Updated with a note about the new password policy feature. Post-Release Developments: • Added Configurable Password Policy. Release Issues: • Added the following XMS Resolved Defects: 300029, 300711, 300886, 301285, 301343, 301467, 301553, 301833, 302157, 302255, 302440, 303352, 303462, 303529, 304270, XMS-4983, XMS-5033. **Note:** PowerMedia XMS Release 3.2 Service Update 4 introduces enhanced account management and security functionality of the WebGUI. Once XMS 3.2 SU4 or later SU is installed, the system will be converted to use the new password policy feature, and users **must** upgrade only to other release lines that include this feature. If the system is being upgraded to a release that does not have the new configurable password feature, then it is required to uninstall and reinstall the XMS software, as well as record any configuration changes they may have made to XMS prior to uninstalling, so that configuration can be re-applied to the new update. The new configurable password feature will be added to future release lines, so check the Release Notes to see if the feature is present before upgrading.
05-2746-004	May 2017	Updates to support PowerMedia XMS Release 3.2

Revision	Release Date	Notes
		Service Update 3 (Build 16215). Release Issues: • Added the following XMS Resolved Defects: 299267, 299293, 299623, 299960, 299984, 299997, 300370, IPY00118303, IPY00118539, IPY00118574, IPY00118575, IPY00118580, IPY00118581, IPY00118600, IPY00118601, IPY00118604. • Added the following XMS Known Issues: XMS-6783.
05-2746-003	March 2017	Updates to support PowerMedia XMS Release 3.2 Service Update 2 (Build 15675). Post-Release Developments: • Added Ability to Access User-to-User SIP Header. Release Issues: • Added the following XMS Resolved Defects: IPY00118421, IPY00118475, IPY00118531, IPY00118544, IPY00118546, IPY00118551, IPY00118572, XMS-6039, XMS-6066. • Added the following XMS Known Issues: Known Issue regarding SFU video freezes, XMS-6407.
05-2746-002	March 2017	Updates to support PowerMedia XMS Release 3.2 Service Update 1 (Build 15331). Controlled Introduction Features: • Updated and reorganized the section. • Added Primary Video Source for SFU. • Added Dynamic Frame Size Adaptation. • Added Maintain Video Aspect Ratio in Join and Play. Post-Release Developments: • Added PowerMedia XMS Release 3.2 Service Update. Release Issues: • Added the following XMS Resolved Defects: IPY00118273, IPY00118280, IPY00118311, IPY00118358, IPY00118369, IPY00118374, IPY00118383, IPY00118391, IPY00118399, IPY00118408, IPY00118410, IPY00118427, IPY00118432, IPY00118449, IPY00118468,

Revision	Release Date	Notes
		IPY00118477, IPY00118505. • Added the following XMS Known Issues: XMS-5626, XMS-5875, XMS-6026, XMS-6028, XMS-6036, XMS-6039, XMS-6049, XMS-6050, XMS-6061, XMS-6066, XMS-6075, XMS-6076. • Added the following XMS Known (permanent) Issues: IPY00117920.
05-2746-001 (Updated)	December 2016	Release Features: Updated the MRB Adaptor Service Startup Control section with more details.
05-2746-001	November 2016	Initial release of this document.
Last modified: January 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 3.2. 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's PowerMedia 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 (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.

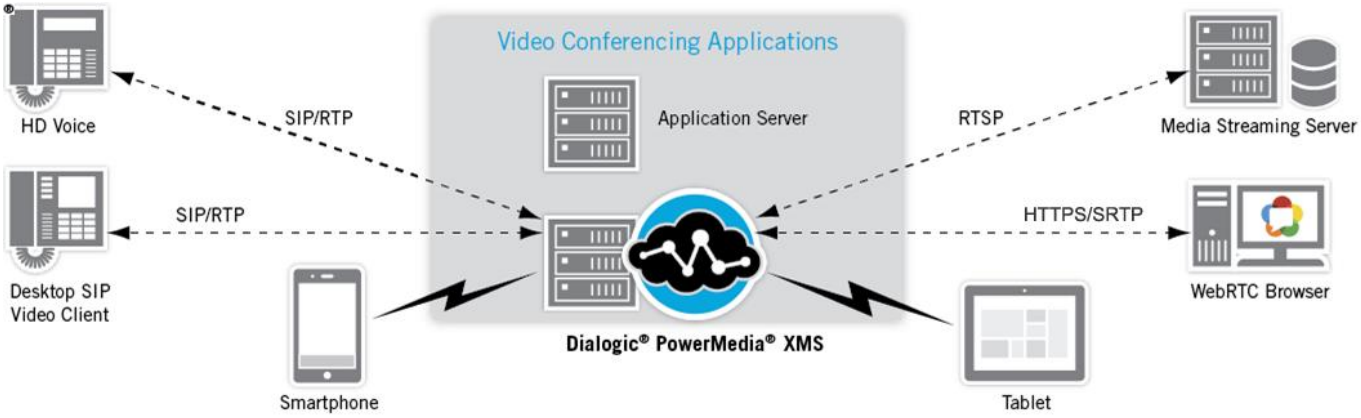
PowerMedia XMS is controlled by the business logic of applications deployed on SIP application servers and web application servers. PowerMedia XMS offers multiple media control protocols that can be used in a variety of network infrastructures. For example, a SIP application server (AS) can drive PowerMedia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



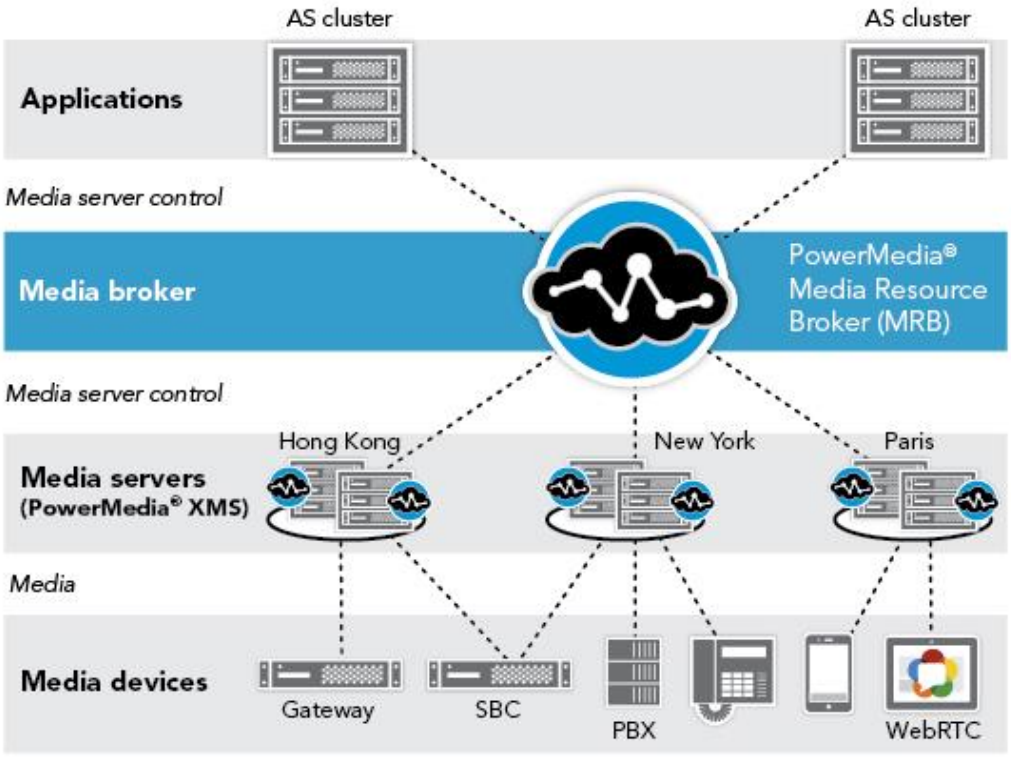
PowerMedia MRB

The Dialogic® PowerMedia® Media Resource Broker (also referred to herein as "PowerMedia MRB" or "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 3.2 documentation at http://www.dialogic.com/manuals/xms/xms3.2.aspx.
- 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 3.2.

The following documents are available for the PowerMedia XMS Release 3.2 at http://www.dialogic.com/manuals/xms/xms3.2.aspx.

Document	Description
PowerMedia XMS	
Dialogic® PowerMedia® XMS Release 3.2 Release Notes	Addresses new features and issues associated with PowerMedia XMS Release 3.2.
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 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 3.2.

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 **Note:** 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
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:** 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 *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 3.2.

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

PowerMedia XMS Release 3.2

The key new features and functionality include:

- Amazon Web Services (AWS) Qualification
- Oracle Linux 7.2 with UEK 4
- Multiple NIC Media Routing
- Voice Quality Enhancements in Echo Cancellation
- NAT and RTP Profile Indications Support
- Media Resource Broker (MRB) Features
    - MRB Adaptor Service Startup Control
    - JSR 309 Connector Integration with the MRB
    - MRB for 3PCC RESTful
    - MRB RTP Proxy
- Video Enhancements
    - Enhanced Video Conference Layout Sizing
    - Audio/Video Join Enhancement
    - WebM Container Support
    - Video SDP Handling
- MSML Specific Enhancements
    - MSML <pattern> Support of Regular Expressions
    - MSML Global Scope Shadow Variables
- System Management Enhancements
    - System Logging
    - Globally Unique Session ID
    - SIP 180 Ringing Configuration
    - SIP OPTIONS Ping Enhancements
    - SNMP Thresholds
    - Fax Session Counter
    - SIP Session Counters
    - HTTP Session Counters
    - HTTP Client Cache Size
    - CDR Improvements
    - Export Audit Log as .csv
    - NTP Improvement
    - Secure MSRP Messaging
    - Language Pack Integration

Amazon Web Services (AWS) Qualification

PowerMedia XMS Release 3.2 supports XMS running Amazon Web Services (AWS) for cloud deployments. This release delivers cloud optimization and performance improvements to further validate the XMS on AWS compute images. Enhanced system capability allows XMS to perform better in AWS. This release is a noteworthy upgrade of the XMS media server/media resource function (MRF) because it delivers key capabilities for network functions virtualization (NFV) and cloud deployments, which accelerates adoption across both service provider and enterprise markets. Customers can deploy XMS on Red Hat or CentOS images in Amazon.

For more information, refer to the following application note:

- *Dialogic® PowerMedia™ XMS Application Note: Running PowerMedia XMS on Amazon Web Services* at http://www.dialogic.com/webhelp/XMS/3.2/XMS_AWSCombinedAppNote.pdf.

Oracle Linux 7.2 with UEK 4

PowerMedia XMS Release 3.2 adds support for the Oracle Linux 7.2 Operating System with Unbreakable Enterprise Kernel (UEK) Release 4. UEK is considered optimized for enterprise software and hardware so it delivers advanced performance and security over the Red Hat Compatible Kernel. XMS users have the option to select Red Hat, CentOS, or Oracle versions of Linux 7.2.

Multiple NIC Media Routing

PowerMedia XMS Release 3.2 provides user-defined media routing rules to support multiple NIC interfaces for RTP media traffic routing. This feature provides a method for XMS users to indicate a particular network interface that should be used when establishing SIP and WebRTC calls or media connections. A useful application of this feature is to separate media traffic between two interfaces, such as with a media gateway application supporting local and public network interfaces.

Multiple network interface support is enabled through media routing rules defined by a media routing profile. The media routing profiles allow a customer to define a media route profile for any call session request sent to XMS. XMS attempts to match each call to a media route profile and use the network interface that best matches the specified indication in the XMS offer. Using this method, a user can define routing rules that can be supported by any XMS remote API (MSML, RESTful, VXML, NETANN, or JSR309) to route media through the appropriate network interface to the desired network.

The multiple NIC media routing feature is available on all call sessions and is configured through the **Protocol** > **RTP** page in the WebGUI.

Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for more information.

Voice Quality Enhancements in Echo Cancellation

PowerMedia XMS Release 3.2 provides additional voice quality enhancements in echo cancellation (EC) by adding an adaptive "bulk delay" echo cancellation. For conferencing providers, voice quality is very important, especially echo cancellation capabilities. An adaptive bulk delay echo canceller can perform the task of an acoustic echo cancellation (AEC) function to cancel out noisy lines into a conference. This release supports an adaptive bulk delay of up to 600ms for application consideration. Bulk delay is configurable through the WebGUI on the **Codecs > Audio** page or using the RESTful Management API in XMS, and it can be enabled on all MRF sessions. Echo cancellation is disabled by default. It can be enabled on a per-call basis using the MSML or RESTful APIs.

Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for more information on configuring bulk delay.

NAT and RTP Profile Indications Support

PowerMedia XMS Release 3.2 supports various combinations of SIP header indications to specify NAT and RTP profiles on SIP calls. This feature supports ICE (Lite), SDES, DTLS, AVPF/SAVPF, and combinations in a SIP INVITE when using Dialogic proprietary Supported header tags. The tags apply to MSML, VXML, and NETANN to set up the given call with the provided feature support in the XMS offer SDP. In RESTful API calls, the tags are provided to the customer application through the SIP header. The RESTful application can extract the SIP header indications to control the call session response. Refer to the following table for a list of the Dialogic proprietary Supported header tags.

Tag	Description
dlgc-encryption-sdes	Enables sdes-srtp
dlgc-encryption-dtls	Enables dtls-srtp
dlgc-ice	Enables ICE (Lite)
dlgc-rtcp-feedback-audio	Enables AVPF/SAVPF for audio (not currently supported)
dlgc-rtcp-feedback-video	Enables AVPF/SAVPF for video
dlgc-rtcp-feedback-audiovideo	Enables AVPF/SAVPF for audio and video (only video is currently supported)
dlgc-rtcp-feedback-none	Overrides configuration and disables RTCP feedback on audio and video (only video is currently supported) if configured to be enabled by default

Media Resource Broker (MRB) Features

MRB Adaptor Service Startup Control

PowerMedia XMS Release 3.2 provides the ability to enable or disable the MRB Adaptor from the WebGUI or RESTful Management API. Customers can now choose to enable or disable the MRB Adaptor service based on their deployment scenario. The MRB Adaptor is disabled by default on a clean installation of this release. When upgrading an existing XMS system, the previous state of MRB Adaptor is preserved.

As of this release, the MRB Adaptor is disabled at startup by default on a clean installation. In order to use the MRB with XMS, the MRB Adaptor must be enabled via the WebGUI or via command line during RPM installation.

The command line installation script provides an additional option (--xms-optsrv) that can be used to install XMS with the MRB Adaptor enabled or disabled. For example:

```
xms_install.pl --xms-optsrv adaptor=on
```

Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for more information.

JSR 309 Connector Integration with MRB

PowerMedia XMS Release 3.2 introduces integration support for JSR 309 Connector applications to utilize the MRB for media load balancing, media server redundancy, and failover of conferences and bridged calls. The MRB provides clustering of XMS instances to support higher density, high availability (HA), and scalability requirements of large-scale JSR 309 applications. The MRB is designed to handle large transaction rates and efficiently load balances the traffic among available XMS instances (MRFs) even if those instances are located in different geographic regions.

The features supported by JSR 309 Connector are also supported with JSR 309 through the MRB and include the following:

- Audio recording
- Conference mixing
- Bridge conference
- Basic prompt and collect
- Video conference
- Signal detection
- Video streaming to network connections
- Media mixing with video layout
- Media play/record
- Media handling for WebRTC

MRB for 3PCC RESTful

The MRB has been updated to provide media load balancing, failover, and high availability features for 3PCC RESTful applications. 3PCC RESTful applications are those that support call signaling for WebRTC or SIP at the application server and use the XMS only for media establishment and media operations. The MRB provides media resource brokering of RESTful API media calls and conferences by handling the RESTful API calls (over HTTP transport) and providing an RTP proxy location for media routing and failover.

MRB RTP Proxy

The MRB supports a new RTP proxy mode. The MRB RTP proxy provides a single landing point for RTP media sessions that are monitored by the MRB. The RTP proxy routes media to the appropriate XMS instances that are managed by the MRB. The MRB RTP proxy monitors the RTP traffic and will indicate RTP information about the sessions to the MRB. This RTP monitoring allows the MRB to detect lost RTP sessions and re-route media to a new destination in order to support media server failover of media operations.

Video Enhancements

Enhanced Video Conference Layout Sizing

This feature provides video conferencing applications greater control over the video sizing of the regions in a conference layout and how the video content of each region gets rendered. This is extremely important to customers providing video conferencing services to user endpoints consisting of varying devices with contrasting display resolution sizes and orientations. Each video conference created can be customized using the enhancement attributes, such as aspect mode, background color, and relative size. The video conference layout enhancements provide additional control of the conference regions via the application programming interfaces MSML and RESTful. Applications can use either of these interfaces to customize the conference layout and viewable regions within the layout.

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

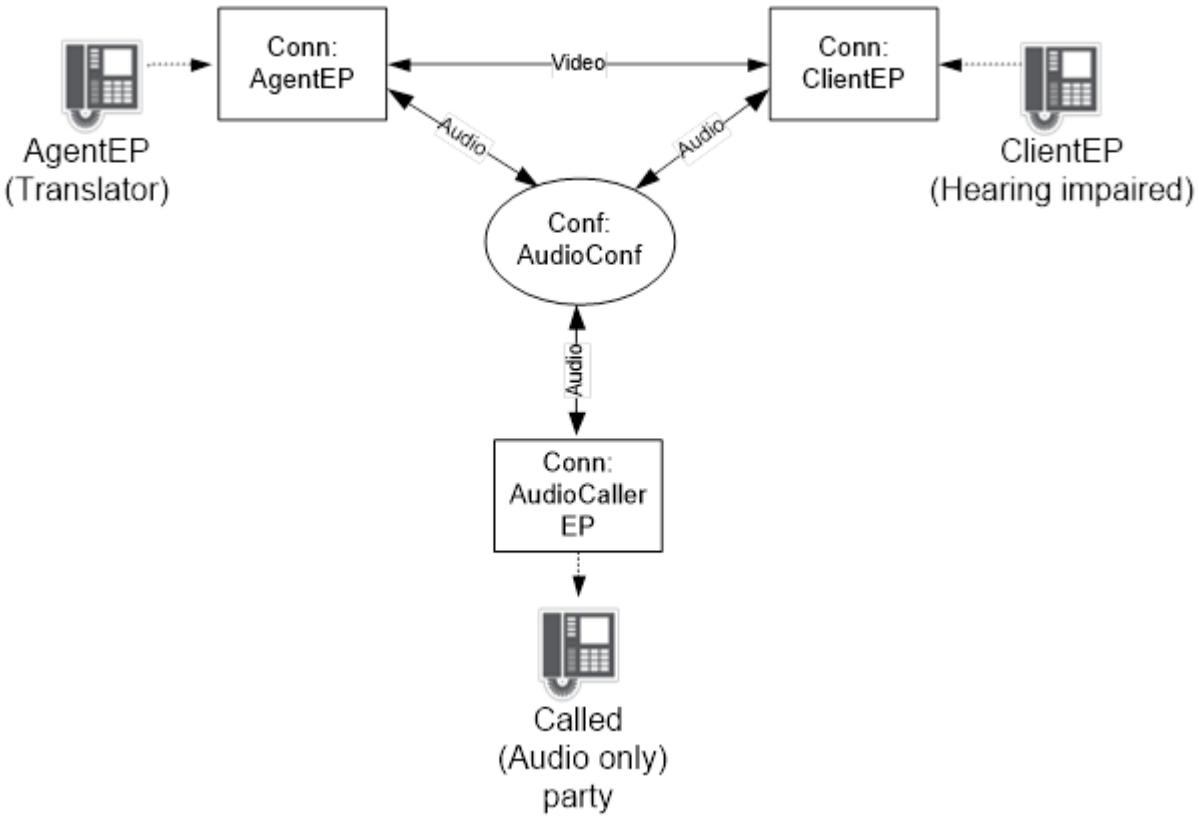
For the RESTful API, refer to the *Dialogic® PowerMedia™ XMS RESTful API User's Guide* for more information.

Audio/Video Join Enhancement

PowerMedia XMS Release 3.2 is updated with a new enhancement to media join functionality between callers and conferences. XMS now provides the ability to separate the audio and video streams so media can be routed separately on the join command. Prior to this release, all connections between multimedia callers or conferences had to include both audio and video streams. The ability to separate multimedia join into audio and video streams is available through the MSML and RESTful API for connections between call connections and conferences.

Highlighted Use Case: Join Video with an Audio Conference

The main use case enabled in this release is the ability to join video between two callers while joining the audio of the callers into an audio conference. This capability enables an application to provide a peer-to-peer video connection between the two callers while sending the audio into an audio conference where other audio only callers can join the conversation. The use case is applicable when it is intended that only two video callers see each other and it is not desirable to utilize a video conference mix. Audio can be joined separately to an audio conference so that other audio only participants can be conferenced in later.



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.

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

WebM Container Support

PowerMedia XMS Release 3.2 enables the ability to record to and playback from the WebM file container using Opus audio and VP8 video (up to 720p) codecs. The WebM container is an open media file format designed for the web and the file structure is based on the Matroska media container. The WebM container is popular because of its native support by the Google browser and support as a container for WebRTC codecs, such as the VP8 video codec and the OPUS audio codec. Some of the highlighted functionality provided in this release for the WebM container includes the following:

- Play and record directly to and from .webm
- Support for audio only, video only, and multimedia (A/V) files
- Support for the VP8 video codec
- Support for the OPUS audio codec

Native Record Support for WebM

PowerMedia XMS Release 3.2 enables the ability to record natively to the WebM container without transcoding. This capability allows applications to record multimedia streams (VP8/Opus) as they are transmitted by the endpoint and reduces the amount of CPU required to record individual caller multimedia streams especially at higher resolutions.

Note: XMS prevents starting a native record to WebM if the IP coder is not supported in the WebM container, however will continue recording with original codecs if the IP coder is changed after the recording starts.

Video SDP Handling

PowerMedia XMS Release 3.2 adds support for new video SDP parameter handling during the setup of video calls. The following video SDP parameters are now provided as part of video call capabilities when supported by the remote client in the Offer/Answer exchange:

- **sprop-parameter-set** - The "sprop-parameter-set" attribute is used to convey the sequence and picture parameter set of the encoded stream to a remote decoder.
- **Framerate** - The "a=framerate" attribute specifies the maximum frame rate setting for the video encoder.
- **RTCP Bandwidth Parameters** - The "b=RR" and "b=RS" attributes specify the RTCP bandwidth parameters for receiver and sender reports.
- **Coordination of Video Orientation (CVO)** - Support for CVO to indicate the orientation of the client video.

MSML Specific Enhancements

MSML <pattern> Support of Regular Expressions

PowerMedia XMS Release 3.2 adds support for regular expressions in the MSML <pattern> method. In order to support much more complex digit patterns than the current "moml+digits", this release adds support in MSML for a new <pattern> format named "perlregex" that permits perl regex compliant regular expressions to be specified.

MSML Global Scope Shadow Variables

This feature implements MSML shadow variables at the global scope in addition to the shadow variables at the local scope. The global scope shadow variables will represent the last local (in scope) shadow variables returned.

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

System Management Enhancements

The PowerMedia XMS Release 3.2 has been updated with a number of system management enhancements. This section describes the system management enhancements in this release.

System Logging

PowerMedia XMS Release 3.2 improves the XMS logging subsystem. The XMS logging subsystem has been updated with the capability to start and stop logging on the fly with ability to change the log level, log file size, and max number of log files collected. The logging improvements are also available at the subsystem level to provide independent granular control over logging at each subsystem. Additionally, WebGUI options are provided to collect system logs and machine statistics into a diagnostics package or to remove log files from the system.

Globally Unique Session ID

PowerMedia XMS Release 3.2 adds support for RFC 7329, which defines a globally unique session identifier SIP header for SIP calls. The globally unique session ID feature is supported at both the MRB and XMS to support advanced call tracing for the life of the call through both the MRB and XMS MRF components.

SIP 180 Ringing Configuration

PowerMedia XMS Release 3.2 adds support for a WebGUI configurable option to suppress SIP 180 Ringing. This provides a user the ability to enable or disable the sending of a SIP 180 Ringing response from XMS based on the system settings. On the **Protocol > SIP** page of the WebGUI, Send 180 Response is enabled by default.

SIP OPTIONS Ping Enhancements

PowerMedia XMS Release 3.2 includes SIP OPTIONS ping processing enhancements. The SIP OPTIONS ping responses are coordinated between the XMS and MRB to provide consistent responses that take into consideration the system status and resource availability at each network element. The SIP OPTIONS ping response also considers the status of the XMS-monitored subservices and licenses.

Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for more information.

SNMP Thresholds

PowerMedia XMS Release 3.2 has added improvements to the SNMP alarms. The XMS SNMP subsystem has been updated to allow configuration of separate user-defined thresholds for Warning, Minor, Major, and Critical alarm levels. The new configuration allows users to specify the percent threshold for each of the SNMP alarm levels based on their deployment needs. The new SNMP threshold settings are available for XMS licenses and resources and can be configured through the WebGUI or RESTful Management API.

Fax Session Counter

PowerMedia XMS Release 3.2 has been updated to include fax session resource counter as part of the XMS meters. The fax session resource counter is also available for SNMP alarm reporting through configurable SNMP trap thresholds.

SIP Session Counters

A new set of SIP meters has been added to the WebGUI **Monitor > Graphs** page in PowerMedia XMS Release 3.2. These meters track the count of various SIP messages sent and received. They allow monitoring of the number of SIP INVITEs sent and received and track the 200 OKs.

HTTP Session Counters

A new set of HTTP meters has been added to the WebGUI **Monitor > Graphs** page in PowerMedia XMS Release 3.2. These meters track the count of various HTTP messages sent and received, such as count of HTTP GET, PUT, POST requests and Error responses.

HTTP Client Cache Size

PowerMedia XMS Release 3.2 provides configuration for HTTP client cache size. This new parameter allows users to define the size of the HTTP cache utilized before cached http data is deleted.

CDR Improvements

PowerMedia XMS Release 3.2 includes improvements to the XMS Call Data Record (CDR) subsystem. In this release, the WebGUI has been updated with additional configuration options for querying, displaying, and filtering CDR records. The CDR page on the WebGUI now allows users to create and apply user-defined queries of the CDR records to a number of additional filter options. Users can also configure the display output with additional CDR information, including new media and QoS statistics.

Export Audit Log as .csv

PowerMedia XMS Release 3.2 supports the capability to export the XMS audit log to a .csv file. The audit log on XMS tracks and stores configuration and management access through the WebGUI as audit log entries. The audit log output can now be exported to a .csv file through the WebGUI or through RESTful Management API by a user with an admin role.

NTP Improvement

PowerMedia XMS Release 3.2 now supports the *chronyd* clock synchronization, which is provided by the Linux 7.x OS. The *chronyd* provides a number of system timing and synchronization advantages over *ntpd* and can usually synchronize the system clock faster with better accuracy.

Secure MSRP Messaging

PowerMedia XMS Release 3.2 now supports secure MSRP messaging transfers with support for TLS encryption on MSRP socket connections. Users have the ability to select TLS encryption as the preferred transport and preference to accept or reject unencrypted MSRP connections.

Language Pack Integration

PowerMedia XMS Release 3.2 supports the addition of new variable content language packs from Dialogic through rpm installation. Variable content language packs, delivered by Dialogic, are now installed and maintained through rpm method for simplified maintenance, installation and upgrade. The variable content language packs that are installed will be saved during system upgrade to preserve system settings. For more information about purchasing additional language packs, please contact Dialogic Sales.

Note: Custom languages added prior to this release ***must*** be changed to follow the new convention. Refer to the *Dialogic® PowerMedia™ XMS Variable Content Announcements Feature Guide* for more information.

Previous Releases

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 3.2 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 3.2 controlled introduction.

Multitrack Recording

PowerMedia XMS Release 3.2 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.

Video Encoder Sharing Support

PowerMedia XMS Release 3.2 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. Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for more information.

VP9 Video Codec

PowerMedia XMS Release 3.2 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.

CDR Remote Database

As a controlled introduction, 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.

Selective Forwarding Unit (SFU)

PowerMedia XMS Release 3.2 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 3.2 Service Update 1 provides an API (primary_video_source) 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 add_party and update_party.

Note: This feature is not supported in update_conference as of this release.

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

Dynamic Frame Size Adaptation

PowerMedia XMS Release 3.2 Service Update 1 enhances the dynamic frame size adaptation that dynamically changes the encoding frame size based on the estimated bandwidth. This feature has been delivered in XMS 3.2 as a controlled introduction, and has been further developed in XMS 3.2 SU1 to provide good video quality of experience even at low bitrates in the varying network environment.

This feature is available only for VP8 and VP9 to maintain interoperability with legacy multimedia devices. This is controlled by a configuration file parameter in */etc/xms/hmp/hmp.conf*. The following should be added to in the [mdrsc] section to enable this feature:

```
[mdrsc]
allow_encoder_change_frame_size = 1
```

When this parameter is absent (default) or set to "0", the frame size adaptation is disabled.

Maintain Video Aspect Ratio in Join and Play

PowerMedia XMS Release 3.2 Service Update 1 supports a transcoding mode that maintains the video aspect ratio in video calls and playing multimedia files. When the level (in MPEG-4, H.264, and H.263) and/or max-fs of the remote client support frame size of incoming video, XMS doesn't do resizing. If not, XMS performs resizing to meet the maximum frame size specified by level and/or max-fs but maintaining the aspect ratio so that the video frame is not distorted. When the SDP includes sprop for H.264, XMS uses the frame size specified in the sprop.

This behavior is controlled by a configuration file parameter in */etc/xms/xmserver.conf.* The following should be added to in the [extras] section to enable this feature:

```
auto_frame_size = yes or auto_frame_size = no
```

When this parameter is absent (default) or set to "no", the previous behavior is maintained.

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.

Note: PowerMedia XMS Release 3.2 Service Update 4 introduces enhanced account management and security functionality of the WebGUI. Once XMS 3.2 SU4 or later SU is installed, the system will be converted to use the new password policy feature, and users **must** upgrade only to other release lines that include this feature. If the system is being upgraded to a release that does not have the new configurable password feature, then it is required to uninstall and reinstall the XMS software, as well as record any configuration changes they may have made to XMS prior to uninstalling, so that configuration can be re-applied to the new update. The new configurable password feature will be added to future release lines, so check the Release Notes to see if the feature is present before upgrading.

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 3.2 Service Update

This Service Update for PowerMedia XMS Release 3.2 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*.

Configurable Password Policy

PowerMedia XMS Release 3.2 Service Update 4 provides the ability to configure a customized Password Policy through the WebGUI configuration. Customers can now enable password policy considerations to define the rules that govern user password usage and validation guidelines. For example, this feature allows customization of minimum and maximum password lengths, password expiration timeout period, and enforcement of required password character categories, such as digits, lowercase, uppercase, or special characters.

Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for more information.

Note: PowerMedia XMS Release 3.2 Service Update 4 introduces enhanced account management and security functionality of the WebGUI. Once XMS 3.2 SU4 or later SU is installed, the system will be converted to use the new password policy feature, and users **must** upgrade only to other release lines that include this feature. If the system is being upgraded to a release that does not have the new configurable password feature, then it is required to uninstall and reinstall the XMS software, as well as record any configuration changes they may have made to XMS prior to uninstalling, so that configuration can be re-applied to the new update. The new configurable password feature will be added to future release lines, so check the Release Notes to see if the feature is present before upgrading.

Ability to Access User-to-User SIP Header

PowerMedia XMS Release 3.2 Service Update 2 provides the ability to access User-to-User SIP header (UUI defined by RFC 7433) through VXML or RESTful interfaces.

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

13. Release Issues

This section lists the issues that may affect the PowerMedia XMS Release 3.2.

PowerMedia XMS Release 3.2 includes all of the applicable resolved issues from the following releases:

- 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 3.2 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.

PowerMedia MRB has the following limitations:

- The MRB does not support MRCP in RESTful.

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 Tables

The tables in this section list issues that affect the PowerMedia XMS and PowerMedia MRB. 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-9766	9	Installation	When installing on CentOS 6.10, XMS detects unsupported Linux distribution or version.
Resolved	XMS-9274	9	XMS	The xmsrest service fails by SIGABRT with core dump.
Resolved	XMS-9231	9	XMS	When making calls, some Samsung devices fail to decode AMR-WB SID packets.
Known (permanent)	XMS-10720	9	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-8538	8	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	8	Fax	The faxservice crashes by SIGSEGV.
Resolved	XMS-9016	8	HMP	A segfault occurs in xmserver after 51 days of continuous operation.
Resolved	XMS-8159	8	MRB	The *nst-ms-adaptor-config.xml* points to the incorrect interface resulting in XMS being unavailable.
Resolved	XMS-5745	8	MRB	MRB is not sending SNMP trap that states "MS Alive".

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-8640	8	MSML	Basic Audio license leak observed as RTP session is not stopped by XMS.
Resolved	XMS-8889	8	WebGUI	Creating a user account fails when the password has any special symbol characters other than "@" and "!".
Resolved	XMS-9164	8	XMS	XMS stops answering inbound calls with 408 SIP responses.
Resolved	XMS-8732	8	XMS	RTP counter is being incremented twice on a call but decremented only once when call gets released.
Known (permanent)	XMS-8931	8	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-7107	7	HMP	There are high deltas and missing packets on streams going out of XMS.
Resolved	XMS-8371	7	Nodecontroller	The setting for disabling CVO parameter is cleared after applying a license and issuing XMS restart.
Resolved	XMS-8270	7	VXML	The SIP Header "P-Asserted-Identity" returns an array even when a comma exists in the value.
Resolved	XMS-8297	7	XMS	When the precondition mechanism is used during session establishment, session modification through re-INVITE fails.
Resolved	XMS-8277	7	XMS	XMS rejects incoming calls with "503 Service Unavailable" even when enough licenses/resources are available.
Resolved	XMS-8129	7	XMS	A segfault occurs in xmserver service with "trap divide error".

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-8027	7	XMS	gc_AcceptModifyCall() fails with the reason that no answer SDP is attached.
Resolved	XMS-7859	7	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).
Known	XMS-8658	7	Nodecontroller	Viewer level account can modify the **Bulk Delay** parameter in the WebGUI and apply the setting.
Known (permanent)	XMS-8048	7	WebRTC	When using Firefox and connecting to the verification demo (or using *webrtc.js* for other applications), no audio or video will be established. This issue is fixed in XMS 3.5 or later.
Resolved	307865	6	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	310287	6	XMS	When call is disconnected, xmserver does not release the media resource.
Resolved	309649	6	XMS	XMS does not handle precondition call offered with pre-reserved QOS.
Resolved	309310	5	CDR	When applying call load, the CDR service crashes.
Resolved	309046	5	MRB	If the interface hosting VIP is restarted, the VIP is lost.
Resolved	303088	5	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	303529	5	SNMP	When issuing "service nodecontroller stop", no V3 traps are generated.
Resolved	309340	5	XMS	XMS goes into failed state when trying to process calls after idle period.
Resolved	308466	5	XMS	During re-INVITE processing, streams are getting stuck.
Resolved	303977	5	XMS	An inbound MSRP call is consuming one MSRP license and one voice license.
Resolved	302279	5	XMS	When making inbound call on the XMS Test Tool, an error is received.
Resolved	300886	4	HMP	When **Remote NAT Traversal** is enabled and the caller is not behind the NAT, XMS sends RTP to the incorrect destination.
Resolved	302440	4	MRB	When sending SIP MSML traffic to the MRB, approximately 1 in 5,000 calls get rejected with "404 Not Found" error.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-5033/ XMS-4983	4	MRB	If an MRB failover occurs from the primary to the secondary MRB while IVR calls exist on any XMS, those IVR calls will be orphaned on the XMS. An XMS service restart is required to recover the channels.
Resolved	301285	4	Nodecontroller	When using **Export RRD** to CSV or XML format, XMS generates an empty file.
Resolved	303529	4	SNMP	When "service nodecontroller stop" is sent, the V3 traps are not generated.
Resolved	302255	4	SNMP	SNMP queries against XMS MIBs are resulting in a general failure.
Resolved	301833	4	Video	Video prompts played by XMS are distorted.
Resolved	303352	4	VXML	During active MRCP sessions, VXML crashes followed by MRCP crash.
Resolved	304270	4	WebGUI	The admin password is unable to be changed.
Resolved	303462	4	WebGUI	The call session cannot be terminated through the CDR terminate function within WebGUI using Internet Explorer.
Resolved	300711	4	WebGUI	The **Monitor** page shows active calls that are not shown in the CDR.
Resolved	302157	4	XMS	Occasional 1-2 s short silences in the stream going out from XMS.
Resolved	301553	4	XMS	The dtmfgen fails with a bad state error when RFC2833 is not selected.
Resolved	301467	4	XMS	When using HTTP cache with XMS, the XMS cache is not properly updating the internal etag value stored in the cache.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	301343	4	XMS	Server crashes after deleting conference while recording two files (audio & video and audio).
Resolved	300029	4	XMS	When the termkey digit is received immediately after the record has started, the recorded files are removed (deleted).
Resolved	IPY00118601	3	HMP	When <modifyconference> is being issued, a condition has been observed that may result in an HMP service crash.
Resolved	IPY00118600	3	HMP	XMS appears to be introducing jitter and skew when there is no network jitter.
Resolved	IPY00118575	3	HMP	SFU call has delayed video rendering in the callee web browser.
Resolved	299984	3	Installation	There is an issue installing XMS on fresh Linux OS installation.
Resolved	IPY00118539	3	Licensing	When attempting to upload license file, the file upload is not complete and HMP fails upon restart since the license file is inaccessible.
Resolved	299623	3	MRCP	XMS responds to MRCP request with a 500 Internal Server Error message.
Resolved	299293	3	MSML	XMS deletes a recorded message if it was terminated due to no input from user.
Resolved	IPY00118604	3	MSML	When the Parallel Processing of Overlapped INFO parameter is disabled, the MSML service fails.
Resolved	IPY00118580	3	MSML	Due to memory corruption, the MSML service crashes.
Resolved	300370	3	RTC Demo	The conf_demo_sfu demo is not properly maintaining the caller count.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	299997	3	VXML	When bargein is not set, audio delays are seen on VXML playback.
Resolved	299960	3	WebGUI	Diagnostic logging levels are displayed in alphabetical order rather than tracing level in drop-down list.
Resolved	299267	3	XMS	When attempting to make outgoing call, XMS stops responding to 180 Ringing.
Resolved	IPY00118581	3	XMS	XMS sets a private IP address instead of a public IP address when ice parameter is set to "yes" on RESTful call action.
Resolved	IPY00118574	3	XMS	Various security vulnerabilities exist in lighttpd 1.4.28 which is installed by XMS.
Resolved	IPY00118303	3	XMS	Security scan detects vulnerability related to SSL version and encryption used by web server running on XMS.
Known	XMS-6783	3	XMS	MCU video conference creation returns a 520 "Bad layout regions" error if the MCX device chosen for the conference was previously used as a SFU conference.
Resolved	IPY00118475	2	HMP	There is audio issue in long conferences.
Resolved	IPY00118572	2	MRCP	MRCP service may crash when processing a BYE sent from the server.
Resolved	IPY00118551	2	Nodecontroller	Nodecontroller may crash with SIGABRT (signal 6).
Resolved	XMS-6036	2	Nodecontroller	Nodecontroller may crash when continuously queried via HTTP REST for license and service status.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-6039	2	SFU[CI]	Video freeze is observed (typically 5-10 s) when switching from primary video source to VAS with dtmf_clamping=yes.
Resolved	IPY00118544	2	VXML	VXML transfer to the target is failing with internal error encountered in SIP address.
Resolved	IPY00118546	2	XMS	XMS is using the incorrect Contact header address in the OK response.
Resolved	IPY00118531	2	XMS	SIP headers and extended data were not provided to the failover IP address in cases where SIP INVITE is sent to a server with multiple addresses.
Resolved	IPY00118421	2	XMS	XMS fails to establish WebRTC media connection over IPv6 and uses IPv4 instead for RTP communication causing no media at client side.
Known	N/A	2	SFU[CI]	Video freezes have been observed in a bandwidth limited environment for SFU and joined calls with no transcoding. In these scenarios, the bandwidth estimation is not being forwarded from the sender side to the receiver side of the XMS. This can result in network congestion and ultimately may result in video freezes.
Known	XMS-6407	2	XMS	Whenever XMS sends an offer SDP, the action of starting STUN on the IPM device causes the RTP direction(s) to be overwritten with sendrecv. Therefore, this will affect new outbound calls from XMS and updates to established calls that are requested by the application.
Resolved	IPY00118358	1	HMP	There is audio issue when static HMP buffers are used.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00118280	1	MRB	When using MRB in RTP proxy mode, the video may freeze.
Resolved	IPY00118273	1	MRB	MRB incorrectly routes <play> request received from AS conference control leg to MS even though call leg belongs to connection identifier present in MSML request.
Resolved	IPY00118449	1	MRCP	When using MRCP, barge-in does not stop playing a file even when it is enabled.
Resolved	IPY00118468	1	MSML	When a caller enters digits while playing a file, the MSML service crashes.
Resolved	IPY00118391	1	Phrase Server	When playing a variable prompt using 24-hour time format, the parser incorrectly inserts a "hundred " after every hour.
Resolved	IPY00118477	1	RESTful	When the hangup_ack_mode parameter is set to "manual ", RESTful interface still acknowledges call hangup automatically and deletes its associated call resources.
Resolved	IPY00118383	1	RESTful	RESTful goes into failed state with no requests getting processed.
Resolved	IPY00118374	1	RESTful	There is no response returned for RESTful conference requests.
Resolved	IPY00118369	1	RESTful	There is no response returned for RESTful call requests.
Resolved	IPY00118427	1	Video	There are pixelation effects due to resolution changes.
Resolved	IPY00118432	1	WebGUI	The WebRTC demo fails to run if there is already a previously opened WebGUI page in the same browser.
Resolved	IPY00118410	1	WebGUI	WebGUI does not restrict the character set in username and password.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00118505	1	XMS	XMS is not relaying video flows with Google Chrome (Version 56).
Resolved	IPY00118408	1	XMS	The Call-Info from SIP header is not delivered to RESTful application.
Resolved	IPY00118399	1	XMS	RESTful is not responding due to insufficient Basic Audio licenses.
Resolved	IPY00118311	1	XMS	There is no video on outbound call when H.264 codec is selected.
Known	XMS-6066	1	HMP	Video quality may occasionally degrade over time on ingress side of HMP. For mobile clients, the video quality may be degraded from the beginning of the call into the SFU conference.
Known	XMS-5875	1	HMP	When recording to MP4, MKV or WebM, the messages file may indicate failures writing certain frames to files. For example: `ssp_x86Linux_boot: MMRSC(161):VRCRD Cannot write one frame to a+v file`
Known	XMS-5626	1	HMP/SFU[CI]	Many improvements have been made in both the video receiver and sender sides of XMS to reduce video freezes in low bandwidth environments. Further improvements are planned specifically around bandwidth estimation and adapting the video frame size based on bandwidth conditions. Until these changes are fully complete, video freezes are still likely when the available bandwidth is below 500 kbps for 720p video.
Known	XMS-6076	1	SFU[CI]	Occasional long waits when connecting 4G clients to SFU before seeing any video.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	XMS-6075	1	SFU[CI]	Frequent video source changes may cause audio and video to become out of sync for some parties in the SFU conference; the video is delayed in relation to the audio.
Known	XMS-6061	1	SFU[CI]	Initial ramp-up time and recovery speed of bandwidth estimation can be improved when the network becomes good. The same root cause may also result in degraded video quality out of the SFU conference to Google Chrome.
Known	XMS-6050	1	SFU[CI]	Switching between VAS and primary video source very quickly will result in a failure to switch.
Known	XMS-6049	1	SFU[CI]	Playing OPUS/VP8 WebM file to SFU conference has no effect.
Known	XMS-6028	1	SFU[CI]	Video may disappear for about 1 s when changing audio RTP direction.
Known	XMS-6026	1	SFU[CI]	When updating a call in a conference with a re-INVITE to change the direction XMS is streaming from audio=sendrecv and video=sendrecv to audio=sendonly and video sendrecv, video disappears in Google Chrome Canary.
Known (permanent)	IPY00117920	1	XMS	XMS is recognizing CED tone in VXML while playing a file even when no tones are being sent. **Workaround:** If a false positive occurs, comment out the CED tone definition in *system-tones.conf* under */etc/xms/tones.d*.
Known	XMS-5406		HMP	Various issues have been observed when using DVR control functionality (forward and rewind) resulting in stuck multimedia resources or incomplete media transactions.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	XMS-3430		HMP	When receiving G.723 with a 30 ms frame size and recording to AMR-WB or Opus, recordings are not played back properly.
Known	XMS-4294		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	N/A		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 WebGUI. 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.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	N/A		WebGUI	If upgrading from XMS 3.0 SU1 or XMS 2.4 SU7, 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.
Known	XMS-5034		XMS	XMS does not support the first row referenced in "Table 2: UAS Behavior" from "Section 9: UAS Behavior" of RFC 4028.
Known	XMS-4592		XMS	XMS responds with an IPv4 address for the RTP stream in SDP even though RTP is configured to use IPv6 only.
Known	XMS-3685		XMS	Any WebRTC or SIP calls that remain active when the XMS services are restarted or stopped (either by a normal stop or stopped after the graceful shutdown timer has expired) will be displayed as active in the CDR results even though those calls have been terminated.

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)	IPY00102868		MSML	Simultaneous play and record with record beep is not possible because both play and record cannot transmit to the same connection.

Issue Type	Defect No.	SU No.	Product or Component	Description
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-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.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	XMS-5172		MSML	MSML <dtmf/collect> with the child <play> and starttimer="true" starts the timer before the play completes.
Resolved	XMS-4117		MSML	The termination shadow variables were being overwritten with event="terminate". Now that the defect has been resolved, the termination shadow variables are preserved when terminated on their own and are not overwritten by event="terminate".

PowerMedia MRB

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	MRB-459		MRB	When using the MSML audit functionality from RFC 5707, the MRB provides wildcard support for querying conferences that are currently running (for example, <audit queryid="conn:*" />). No other MSML audit functionality is currently supported by the MRB.
Known	MRB-178		MRB	If failover occurs while performing an unjoin, the MRB will fail to respond to the unjoin.
Known	MRB-134		MRB	MRB does not transmit MSML send events to the correct media server.
Known	MRB-129		MRB	When the conference is moved to the new MS such that all licensed ports are taken over, the Signaling Sessions are reduced to 0. This results in OPTIONS pings to the MS getting returned with a "486 Busy Here", which the MRB Adaptor interprets to mean the MS has failed.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	MRB-97		MRB	There are active dialogs on the conference (such as record or play announcement into the conference) when the MRB decides to perform a failover. In this case, the active dialogs are not recreated on the conference after it has been failed over to the different XMS.
Known			MRB	MRB does not support the management of multiple MSML conference instances in a single SIP control channel.
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.