Dialogic®

Dialogic® PowerMedia™ XMS Release 2.2

Release Notes

April 2016 05-2720-011

www.dialogic.com

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Revision History

This section summarizes the changes made in this and, if applicable, each previously published version of the Release Notes for PowerMedia XMS Release 2.2, which is a document that is planned to be periodically updated throughout the lifetime of the release.

Revision	Release Date	Notes
05-2720-011	April 2016	Updates to support PowerMedia XMS Release 2.2 Service Update 11. Removed WebRTC support. Release Issues: • Added the following Resolved Defects: IPY00117957, IPY00117915, IPY00117806, IPY00117788.
05-2720-010	December 2015	Updates to support PowerMedia XMS Release 2.2 Service Update 10. Release Issues: • Added a limitation for WebRTC. • Added the following Resolved Defects: IPY00117591, IPY00117702.
05-2720-009 (update)	November 2015	Upgrading: Updated the section.
05-2720-009	July 2015	Updates to support PowerMedia XMS Release 2.2 Service Update 9. Release Issues: • Added the following Resolved Defects: IPY00117160, IPY00117218, IPY00117253, IPY00117270, IPY00117371.
05-2720-008	April 2015	Updates to support PowerMedia XMS Release 2.2 Service Update 8. Release Issues: • Added the following Resolved Defects: IPY00116552, IPY00117050, IPY00117080, IPY00117081, IPY00117105, IPY00117196.

Revision	Release Date	Notes
05-2720-007	January 2015	Updates to support PowerMedia XMS Release 2.2 Service Update 7. Release Issues: • Added the following Resolved Defects: IPY00116210, IPY00116818, IPY00116934, IPY00116977, IPY00116978. • Added the following Known (permanent) Issue: XMS-180.
05-2720-006	December 2014	Updates to support PowerMedia XMS Release 2.2 Service Update 6. Release Issues: • Added the following Resolved Defects: IPY00116584, IPY00116849, IPY00116957, IPY00116960, IPY00116974.
05-2720-005	November 2014	Updates to support PowerMedia XMS Release 2.2 Service Update 5. Post-Release Developments: • NETANN Active Talkers Configuration. • RESTful Event Streaming Data Format Change. Release Issues: • Added the following Resolved Defects: IPY00116370, IPY00116491, IPY00116697, IPY00116704, IPY00116712, IPY00116722, IPY00116727, IPY00116777, IPY00116782, IPY00116789, IPY00116825, IPY00116842, IPY00116854, IPY00116855, IPY00116857, IPY00116873, IPY00116910.
05-2720-004	September 2014	Updates to support PowerMedia XMS Release 2.2 Service Update 4. Post-Release Developments: • GNU Bourne Again Shell (Bash) Vulnerability. Release Issues: • Added the following Resolved Defects: IPY00115554, IPY00116322, IPY00116430, IPY00116463, IPY00116477, IPY00116482, IPY00116509, IPY00116564, IPY00116581, IPY00116590, IPY00116593, IPY00116594, IPY00116624, IPY00116679, IPY00116682, IPY00116713, IPY00116734, IPY00116755, IPY00116763, IPY00116779, IPY00116793, IPY00116794, XMS-1220.

Revision	Release Date	Notes
05-2720-003	June 2014	Updates to support PowerMedia XMS Release 2.2 Service Update 2. Release Issues: • Added the following Resolved Defects: IPY00115830, IPY00116127, IPY00116169, IPY00116360, IPY00116361, IPY00116398, IPY00116438, IPY00116474, IPY00116557.
05-2720-002	May 2014	Updates to support PowerMedia XMS Release 2.2 Service Update 1. System Requirements: • Updated list of supported operating systems. • Added new section for supported virtual machines. Post-Release Developments: • PowerMedia XMS Release 2.2 Service Update. • OpenSSL Vulnerability Resolved. Release Issues: • Added the following Resolved Defects: IPY00101498, IPY00101895, IPY00115822, IPY00115866, IPY00115874, IPY00115887, IPY00115904, IPY00115963, IPY00116214, IPY00116216, IPY00116254, IPY00116272, IPY00116291, IPY00116296, IPY00116308, IPY00116310, IPY00116358, IPY00116369, IPY00116374, IPY00116379, IPY00116388, IPY00116394, IPY00116410, IPY00116411, IPY00116429, IPY00116430, IPY00116443, XMS-730.
05-2720-001	March 2014	Updates to support PowerMedia XMS Release 2.2.
05-2720-001-01	January 2014	Initial release of this document.
Last modified: April 2016		

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

1. Welcome

This Release Notes addresses new features and issues associated with the Dialogic® PowerMedia™ Extended Media Server (also referred to herein as "PowerMedia XMS" or "XMS") Release 2.2. This is a document that is planned to be periodically updated throughout the lifetime of the release.

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

- Overview: This section provides an overview of this release.
- Related Documentation: This section provides information about the documentation that supports this release.
- System Requirements: This section describes the system requirements for this release.
- Release Features: This section describes the new features and functionality in this release.
- Installation, Configuration, Licensing, and Upgrading: This section describes topics that are useful for getting started with this release, such as: Installation, Configuration, Licensing, and Upgrading.
- Post-Release Developments: This section describes significant changes to this release subsequent to the general availability release date.
- Release Issues: This section lists the issues that may affect this release.

2. Overview

PowerMedia XMS energizes application delivery by boosting performance with:

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

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

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

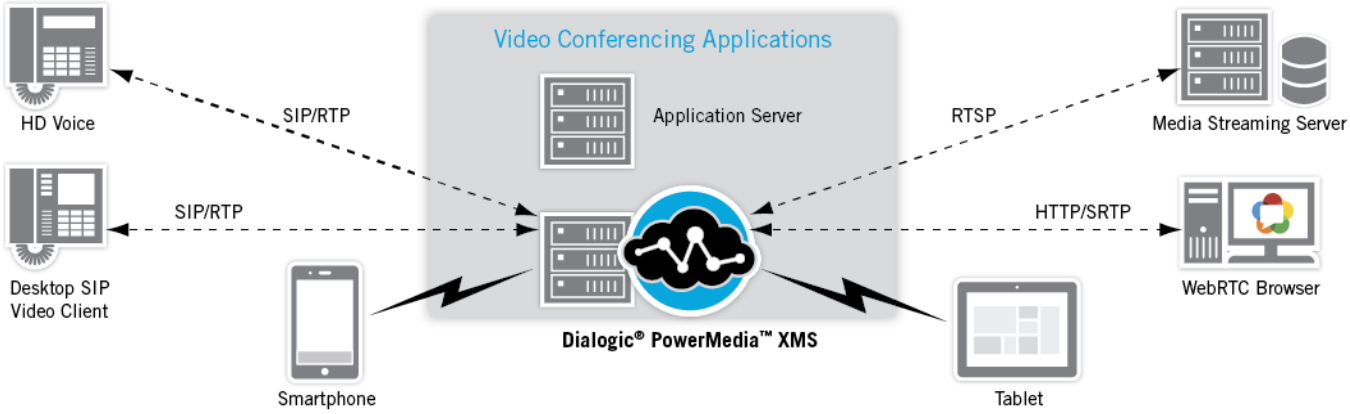
PowerMedia XMS is controlled by the business logic of applications deployed on SIP application servers and web application servers. PowerMedia XMS offers multiple media control protocols that can be used in a variety of network infrastructures. For example, a SIP application server (AS) can drive PowerMedia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

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

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

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

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



Note: WebRTC functionality is no longer supported on XMS 2.2 due to fundamental changes in the newer versions of Chrome and Firefox. For any further WebRTC work, use XMS 3.0 or later.

Related Information

See the following for additional information:

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

3. Related Documentation

This section provides information about the documentation that supports the PowerMedia XMS Release 2.2.

The following documents are available for the PowerMedia XMS Release 2.2 at http://www.dialogic.com/manuals/xms/xms2.2.aspx.

Document	Description
Dialogic® PowerMedia™ XMS Release 2.2 Release Notes	Addresses new features and issues associated with PowerMedia XMS Release 2.2.
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 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 MSML Media Server Software User's Guide	Provides guidelines for using the Media Sessions Markup Language (MSML) software. The MSML media server software enables a remote client, also known as an Application Server (AS), to control media resources on a media server (MS). The connection between the AS and MS is established using the SIP protocol, thereafter media control commands/responses (in the form of MSML control syntax) are exchanged in SIP messages, such as the INFO message or the 200 OK response.
Dialogic® PowerMedia™ XMS RESTful API User's Guide	Provides information for application developers using RESTful API over http transport to control media and call control resources of PowerMedia XMS.

Document	Description
Dialogic® PowerMedia™ XMS RESTful Management API User's Guide	Provides an alternative method of performing PowerMedia XMS system management tasks in an automated or distributed manner.
Dialogic® PowerMedia™ XMS Variable Content Announcements Feature Guide	Describes how to use variable content announcements for multiple languages in PowerMedia XMS.
Dialogic® PowerMedia™ XMS VoiceXML Reference Guide	Contains an alphabetical reference of supported VoiceXML elements and provides information about application properties, SSML support, session variables, and application variables.
JSR 309 Connector Software for Dialogic® PowerMedia™ XMS User's Guide	Describes the JSR 309 Connector, provides installation and configuration information, and describes the test servlets included in PowerMedia XMS.

4. System Requirements

This section describes the system requirements for the PowerMedia XMS Release 2.2.

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. Community ENTerprise Operating System (CentOS) 6.4 (provided with the ISO Method installation) Red Hat Enterprise Linux (RHEL) 6.4 Oracle Enterprise Linux (OEL) 6.4 **Note:** The *perl-core-5.10.1-xxxxx.x86_64.rpm* is required if using the RPM Method installation.
Processor	**Minimum:** Intel Xeon E5420 Quad-Core (2.50 GHz, 1333 MHz FSB, 80W) for low density systems running less than 500 channels **Recommended:** Intel Xeon X5650 Dual Hex-Core (2.66 GHz, 1333 MHz FSB) or better for performance systems or Intel Xeon E5-2665 Dual Octal-Core (2.40 GHz, 1333 MHz, 20 MB Cache), 2 Intel QPI (8 GT/s) or better for performance systems
Ethernet	Single or Dual NIC 1000Base-TX (RJ-45)
Memory	**Minimum:** 8 GB RAM **Recommended:** 16 GB RAM or higher
Storage	**Minimum:** 250 GB HDD **Recommended:** 2 TB HDD for advanced logging
Note: The recommended server configuration is applicable for higher density audio solutions of 1500 or greater sessions, video transcoding solutions, or solutions utilizing virtualization.	

Supported Virtual Machines

The supported virtual machines (VM) are as follows:

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

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

5. Release Features

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

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

Note: WebRTC functionality is no longer supported on XMS 2.2 due to fundamental changes in the newer versions of Chrome and Firefox. For any further WebRTC work, use XMS 3.0 or later.

PowerMedia XMS Release 2.2

The key new features and functionality include:

- Language Phrasing (Variable Content Announcement) Support
- Additional Audio Codec Support
  - Opus Codec Support
  - iLBC Codec Support
  - GSM-FR Codec Support
  - GSM-EFR Codec Support
- Resource and License Monitoring Support
- Graceful Shutdown Support
- External RTP Address Support

Language Phrasing (Variable Content Announcement) Support

PowerMedia XMS now supports variable content announcements for multiple languages. Variable content announcements consist of prerecorded audio segments that are selected and dynamically played in a sequence that is determined by specified variables, such as "date", "digits", "duration", "month", "money", "number", "silence", "time", or "weekday".

Variable content announcements provide a way for customers to obtain similar language support for deployments in different countries. The application controls the "sound and feel" of the service provided to end users by stringing together prerecorded selected audio segments, and the variable content announcements blend seamlessly with the surrounding audio segments.

PowerMedia XMS supports customization of the variable content announcements to provide support beyond the included language types. Users can modify configuration files to provide language support and language phrasing for virtually any language type. PowerMedia XMS comes pre-packaged with languages files to support US English, Mandarin Chinese and Spanish without the need for customization.

For more information, refer to the *Dialogic® PowerMedia™ XMS Variable Content Announcements Feature Guide*.

Additional Audio Codec Support

PowerMedia XMS now supports new audio codecs available to use on any media session connection. The new audio codecs, Opus, iLBC, GSM-FR, and GSM-EFR are available for use with both SIP (RTP) and WebRTC (DTLS-SRTP) media transports and supported by the standard PowerMedia XMS media functions such as Audio Transcoding, Play/Record, DTMF detection, and Conferencing.

Opus Codec Support

PowerMedia XMS now supports the Opus codec as one of the supported audio codec options for media streaming or audio transcoding.

Note: The Opus codec is an open source, royalty free interactive speech audio codec provided by Google and designed to handle a wide range of interactive audio.

The Opus codec is composed of a layer based on Linear Prediction Coding (LPC) and a layer based on the Modified Discrete Cosine Transform (MDCT) that enables it to operate over a wider bandwidth range. It scales from low bitrate narrowband speech at 6 kbit/s to very high quality stereo music at 510 kbit/s. The Opus codec uses both Linear Prediction Coding (LPC) and the Modified Discrete Cosine Transform (MDCT) to achieve good compression of both speech and music. The specification for the Opus codec can be found in RFC 6717. The Opus codec is currently supported by the WebRTC implementations of Firefox and Chrome browsers. PowerMedia XMS supports streaming Opus to SIP or WebRTC endpoints.

In PowerMedia XMS, the Opus implementation supports 20ms frames up to 48 kbit/s.

iLBC Codec Support

PowerMedia XMS now supports the Internet Low Bitrate Codec (iLBC) as one of the supported audio codec options for media streaming or audio transcoding at 13.33 kbps and 15.2 kbps.

Note: The iLBC codec was originally developed by Global IP Solutions to support voice audio over unreliable IP connections. The iLBC codec has since been acquired by Google and now licensed as part of the WebRTC project (http://www.webrtc.org/ilbc-freeware).

The iLBC codec is a high-complexity speech codec that is suitable for robust voice communication over IP. The iLBC codec enables graceful speech quality degradation in the case of lost frames, which occurs in connection with lost or delayed IP packets. The specification for the iLBC codec can be found in RFC 3951. PowerMedia XMS supports streaming iLBC to SIP or WebRTC endpoints.

GSM-FR Codec Support

PowerMedia XMS now supports the GSM-Full Rate (GSM-FR) codec as one of the supported audio codec options for media streaming or audio transcoding. The GSM-FR codec was the first digital speech coding standard used in the GSM digital mobile phone system. The bit rate of the GSM-FR codec is 13 kbit/s and uses a Regular Pulse Excited (RPE) codec algorithm. It offers reasonable quality speech through compromises between computational complexity and quality. The GSM-FR codec is still widely used in networks around the world. The main advantage over other low rate codecs is its relative simplicity. The GSM-FR codec provides features such as VAD, CN, and DTX. The specification for the GSM-FR codec can be found in ETSI EN 300 960.

GSM-EFR Codec Support

PowerMedia XMS now supports the GSM-Enhanced Full Rate (GSM-EFR) codec as one of the supported audio codec options for media streaming or audio transcoding. The GSM-EFR codec is a speech coding standard that was developed in order to improve the quality of GSM-Full Rate (GSM-FR) codec. The GSM-EFR codec operates at 12.2 kbit/s and provides wire-like quality in any noise free or background noise conditions. Although the Enhanced Full Rate helps to improve call quality, the GSM-EFR codec has higher computational complexity in comparison to Full Rate, thus requiring more platform CPU cycles (MIPS) to run. The GSM-EFR codec provides features such as VAD, CN, and DTX. The specification for the GSM-EFR codec can be found in ETSI EN 300 960 Enhanced Full Rate.

Resource and License Monitoring Support

PowerMedia XMS now supports resource and license monitoring through the PowerMedia XMS Admin Console (via the **Dashboard** page accessed from the **Meters** menu), RESTful Management API, and SNMP. The Resource and License Monitoring feature displays the real-time active counts of resources being used by PowerMedia XMS. Applications can use this data to monitor the system call, code and conferencing status, and usage.

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

Graceful Shutdown Support

PowerMedia XMS now supports shutting down the media server gracefully, without intrusively terminating established calls. This new mode of operations is called Graceful Shutdown (GS) and is invoked through the PowerMedia XMS Admin Console (via the **Services** page accessed from the **System** menu). When activated, all active calls will remain connected for a configurable grace period length of time. Any new ingress call attempts are rejected and result in a 503 "Service Unavailable" response when in GS mode.

An additional feature is supported to allow calls initially established with a special SIP extension header (X-Call-Group) to remain active and process ingress calls containing a SIP header that references an active call group. When using this feature, new ingress calls that contain a SIP extension header referencing an active call group identifier (e.g., a party requesting to connect to a conference established with a unique X-Call-Group number) will get processed normally. All other call attempts will get rejected with a 503 response. When the grace period expires, the system will forcefully terminate all sessions and shut down.

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

External RTP Address Support

PowerMedia XMS now supports the ability to set the external IP address of the system through the PowerMedia XMS Admin Console (via the **NAT Configuration** page accessed from the **Network** menu). This is a useful feature when PowerMedia XMS is installed behind a firewall or Network Address Translation (NAT) device that is not address aware. Such is the case when installed in private networks, public or private clouds, or any network configuration in which its endpoints are not publicly accessible. The feature allows users to enter the public facing external IP address either manually (if known) or by discovery when running PowerMedia XMS in the Amazon EC2 public cloud. In the latter case, the system will query the EC2 cloud with the local IP address for the corresponding external address associated with machine image. After the external address is obtained, entered either manually or dynamically retrieved, the system will use the external address for all subsequent IP media transactions. Current support is for IPv4 addresses only.

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

PowerMedia XMS Release 2.1

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

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

PowerMedia XMS Release 2.0

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

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

6. Installation, Configuration, Licensing, and Upgrading

This section describes topics that are useful for getting started with the PowerMedia XMS Release 2.2, such as: Installation, Configuration, Licensing, and Upgrading.

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

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

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

Installation

There are two installation methods available:

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

ISO Method

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

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

RPM Method

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

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

Configuration

There are two configuration methods available:

- PowerMedia XMS Admin Console
- RESTful Management API

PowerMedia XMS Admin Console

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

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

RESTful Management API

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

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

Licensing

PowerMedia XMS comes with a 2-port verification license to get started. The name of the license file is *verification.lic*.

A temporary 4-port evaluation license for 45 days can also be obtained from the Dialogic website at http://www.dialogic.com/products/media-server-software/xms/xms-download.aspx.

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

The following licensing capabilities are supported in this release:

- **Host-based Licensing**
  The license is associated with a particular machine based on the machine's MAC address (Host ID).
- **Additive Licensing**
  To increase licensed resources or scale system capability, you can augment an existing license with multiple licenses. The licenses must be production (non-trial or non-verification) licenses.

Upgrading

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

System Upgrade

Perform the following steps to upgrade the system:

1. Select the **System** menu.
2. Click the **Upgrade** tab.
3. Click **Browse** from the **Upload System Upgrade Package** section to access a system upgrade package file (.tgz) that has been downloaded.
4. Once you select the system upgrade package file, click **Upload**. After the upload completes, the system upgrade package file will be listed in the **System Upgrade Package** section.
5. Locate the appropriate system upgrade package file and click **Upgrade**.

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

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

7. Post-Release Developments

This section describes significant changes to the PowerMedia XMS Release 2.2 subsequent to the general availability release.

- PowerMedia XMS Release 2.2 Service Update
- NETANN Active Talkers Configuration
- RESTful Event Streaming Data Format Change
- GNU Bourne Again Shell (Bash) Vulnerability
- OpenSSL Vulnerability Resolved

Note: WebRTC functionality is no longer supported on XMS 2.2 due to fundamental changes in the newer versions of Chrome and Firefox. For any further WebRTC work, use XMS 3.0 or later.

PowerMedia XMS Release 2.2 Service Update

This Service Update for PowerMedia XMS Release 2.2 is now available. This updates provide fixes to known problems, and may also introduce new functionality. It is intended that new versions of the Service Update will be released periodically.

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

NETANN Active Talkers Configuration

Service Update 5 adds the ability to configure the number of active talkers in a NETANN conference. The active talkers are those conferees providing "non-silence" energy and are determined by their loudness (i.e., the strength of their "non-silence" energy). The active talker feature sums the most active talkers in a conference so that the conversation doesn't get drowned out when too many people talk at once. The parameter can be configured through the PowerMedia XMS Admin Console under **NETANN Configuration** page of the **NETANN** menu. The default setting is 3 and the maximum is 10.

RESTful Event Streaming Data Format Change

With Service Update 5, the RESTful event format has been updated to be compliant with HTTP chunked data formatting (RFC 7230, Section 4.1). The extra carriage return / line feed (CRLF) in previous PowerMedia XMS versions has been removed from the beginning of each chunk. Each chunk returned begins with the size of the XML payload in hex format.

Example:

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

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

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.

OpenSSL Vulnerability Resolved

A vulnerability "Heartbleed bug" has been identified in the OpenSSL cryptographic software library. In PowerMedia XMS, the vulnerability was limited to WebRTC connections between PowerMedia XMS and WebRTC clients in a production environment. This Service Update 1 resolves the vulnerability in the WebRTC component.

PowerMedia XMS also makes use of the operating system version of the OpenSSL library in several other components. For RPM installations, the user should check the operating system version of OpenSSL to make sure this vulnerability does not apply. For ISO installations, the version of OpenSSL included is not affected by the issue. If any updates or patches have been applied to the operating system, then the user should check the installed version of OpenSSL.

Additional information about the Heartbleed bug can be found at http://heartbleed.com.

8. Release Issues

This section lists the issues that may affect the PowerMedia XMS Release 2.2.

Limitations

PowerMedia XMS Release 2.2 has the following limitations:

- WebRTC functionality is no longer supported on XMS 2.2 due to fundamental changes in the newer versions of Chrome and Firefox. For any further WebRTC work, use XMS 3.0 or later.
- Due to changes in the WebRTC browsers, PowerMedia XMS 2.2 is not optimal for WebRTC. PowerMedia XMS 2.4 or higher is recommended.
- 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.

Issues Table

The table below lists issues that affect the PowerMedia XMS Release 2.2. The following information is provided for each issue:

Issue Type

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

- Known – A minor issue. This category includes interoperability issues and compatibility issues. Known issues are still open but may or may not be fixed in the future.
- Known (permanent) – A known issue or limitation that is not intended to be fixed in the future.
- Resolved – An issue that was resolved (usually either fixed or documented) in this release.

Defect No.

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

SU No.

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

Product or Component

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

Description

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

Issues Sorted by Type, PowerMedia XMS Release 2.2

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117915	11	MSML	After rebooting a web server, there is an "XML input load failure. Check syntax." error message despite having another web server available to handle the traffic load throughout the reboot.
Resolved	IPY00117806	11	MSML	XMS system locks up and reports "External Document Fetch Error" after external web servers are rebooted.
Resolved	IPY00117788	11	MSML	When using MSML Legacy mode, the collect digits dialog is not terminated when the second digit pattern is matched.
Resolved	IPY00117957	11	RESTful	There is a javax error when the xmsrest schema has a value of "none" for media_type.
Resolved	IPY00117591	10	MRCP	The MRCP Client service crashes.
Resolved	IPY00117702	10	MSML	XMS system locks up after a web server has a minor network issue.
Resolved	IPY00117160	9	HMP	The first 250 ms of a conference recording contains audio from a different call.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117270	9	MSML	When sending dialog.exit and a 200 OK response at the same time, transactions are completed twice.
Resolved	IPY00117253	9	MSML	If a call leg is terminated while an announcement is playing, the RTF log reports an ERROR despite it being a normal situation.
Resolved	IPY00117371	9	XMS	Calls are hanging when a re-INVITE is sent without SDP.
Resolved	IPY00117218	9	XMS	When XMS is queried for the total available ports using localhost, XMS provides negative values.
Resolved	IPY00117196	8	XMS	It is observed that call resources are not cleared from the system when the request is added to a conference.
Resolved	IPY00117105	8	MSML	When recording calls and playing announcement files, there is a crash on the Media Server.
Resolved	IPY00117080	8	MSML	When recording calls and playing announcement files, there is a crash on the Media Server.
Resolved	IPY00117081	8	MSML	There is no response to INVITEs after the web server runs out of disk space, which leads to XMS locking up and not able to handle any calls.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00117050	8	VXML	There is a VXML crash observed when an HTTP fetch returned 200 OK with no content.
Resolved	IPY00116552	8	MSML	In certain scenarios, XMS does not terminate RTP stream when it receives a 481 error in response to a sent INFO.
Resolved	IPY00116978	7	MRCP	When using RESTful interface, there is no response to the MRCP delete request.
Resolved	IPY00116977	7	RESTful	When using RESTful interface and trying to include both grammar and set-asr-param in the recognize request, the recognition is failing.
Resolved	IPY00116210	7	Virtual Machine	There is a delay playing prompts when the system is under load on virtual machines (httpclient cache issue).
Resolved	IPY00116934	7	WebUI	There is an "ERROR response=TypeError" error message that appears while navigating to the Routing page.
Resolved	IPY00116818	7	XMS	There is a difference in behavior when PRACK is requested based on whether or not there is an SDP in the initial INVITE and if the call is accepted or not with early media enabled.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116584	6	MRCP	The keep alive functionality does not behave as expected, where the MRCP Client does not detect that the speech server is down.
Resolved	IPY00116974	6	RESTful	The events are missing when eventhandler sub-resource closes.
Resolved	IPY00116960	6	RESTful	The xmsrest service goes into failed state when trying to perform load testing.
Resolved	IPY00116957	6	RESTful	It is observed that call resources are not cleared from the system when a call is remotely disconnected.
Resolved	IPY00116849	6	RESTful	The terminate_digits mask does not behave as expected when using record request in RESTful.
Resolved	IPY00116491	5	MRCP	The Start-Input-Timers parameter is being used by MRCPv1 instead of Recognizer-Start-Timers.
Resolved	IPY00116910	5	MSML	There is an intermittent issue where XMS does not receive any response to the HTTP GET.
Resolved	IPY00116842	5	MSML	There is offset calculation issue causing a crash on the Media Server.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116782	5	MSML	When playing announcement files and attempting to record, there is a crash on the Media Server.
Resolved	IPY00116727	5	MSML	There is an excessive timer message logging in RTF traces.
Resolved	IPY00116722	5	MSML	There is a memory leak due to the transaction processing being left in RUNNING state.
Resolved	IPY00116855	5	RESTful	When multiple RESTful applications are registered with XMS, events routed to a specific appid are sent to all applications.
Resolved	IPY00116854	5	RESTful	The events are missing when eventhandler sub-resource closes.
Resolved	IPY00116789	5	RESTful	The playrecord terminating event end_playrecord is missing transaction_id.
Resolved	IPY00116777	5	RESTful	The xmsrest service crashes when trying to delete call resources.
Resolved	IPY00116704	5	RESTful	There is an extra new line in the beginning of chunk data which should not be there.
Resolved	IPY00116825	5	RESTful Management	The lighttpd log files do not rotate and keeps growing in size.
Resolved	IPY00116873	5	VXML	The recordings made in non-default language cannot be submitted to HTTP server.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116712	5	VXML	The recordings are failing due to missing directory on the Media Server.
Resolved	IPY00116857	5	XMS	When initiating a second playcollect request, XMS returns an event immediately without collecting digits.
Resolved	IPY00116697	5	XMS	There is intermittent media engine crash on XMS when removing a conference.
Resolved	IPY00116370	5	XMS	XMS does not respond with 200 OK to incoming re-INVITE.
Resolved	IPY00116624	4	HMP	There is an intermittent HMP service crash.
Resolved	XMS-1220	4	HMP	Under rare conditions, there is a crash when playing 16k 16bit prompts from HTTP server.
Resolved	IPY00116793	4	MSML	The media disconnect of resource returns failed errors after restarting HTTP servers.
Resolved	IPY00116593	4	MSML	When removing and adding connection to a conference on XMS, there is a crash on the Media Server.
Resolved	IPY00116509	4	MSML	When SIP ACK carries a hold SDP answer, XMS responds with a BYE.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116482	4	MSML	There is intermittent conference join failure on XMS with "Internal Media Server Error" or no response from the Media Server.
Resolved	IPY00116477	4	MSML	The MSML Media Server lock ups after announcements are expired from cache and web server is unavailable.
Resolved	IPY00116463	4	MSML	The media disconnect of resource returns a failed error but call recording file is written.
Resolved	IPY00116430	4	MSML	Announcements and recordings can fail if a single web server is unavailable.
Resolved	IPY00115554	4	MSML	HTTP "External Document Fetch Error" is returned instead of "Put Error" when web server is unavailable.
Resolved	IPY00116779	4	NETANN	Basic Audio/RTP Sessions are blocked when cancelling a NETANN call.
Resolved	IPY00116794	4	RESTful	The xmsrest service crashes when trying to delete call resources.
Resolved	IPY00116763	4	RESTful	The call_id element is missing from MRCP End_Recognize events.
Resolved	IPY00116734	4	RESTful	There are failures when setting MRCP ASR attributes.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116594	4	RESTful	XMS answers an incoming call without specifying media type. XMS sets media port for audio and video to 0 in the SDP answer. This causes SIP caller devices to fail.
Resolved	IPY00116322	4	RESTful	There is intermittent media engine crash on XMS when playing into a conference.
Resolved	IPY00116755	4	VXML	Some attempts to use [say-as interpret-as='vxml:digits'] fail.
Resolved	IPY00116713	4	VXML	While playing an audio prompt that does not exist, it causes issues in the call-flow (rather than just playing silence).
Resolved	IPY00116682	4	VXML	After the first playback of audio file inside record element, script execution is halted until the user hangs up the call.
Resolved	IPY00116679	4	VXML	The returning JavaScript array object from a subdialog does not work.
Resolved	IPY00116590	4	VXML	There is interaction issue with grammar fetching/JSESSIONID cookies.
Resolved	IPY00116581	4	VXML	VXML record fails when specifying G.711 A-law and ''a=sendonly''.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116564	4	XMS	The Media Server services fail to start on XMS after attempting restart via the WebUI console due to long network device names.
Resolved	IPY00115830	2	MRCP	The MRCP message length calculation will be incorrect if the string representation of the length is greater or less than three characters.
Resolved	IPY00116360	2	RESTful	The async_completion parameter does not seem to be working as documented in the *Dialogic® PowerMedia™ XMS RESTful API User's Guide*.
Resolved	IPY00116557	2	WebRTC	On WebRTC sessions, video freezes immediately after connecting on some calls.
Resolved	IPY00116398	2	WebRTC	On WebRTC sessions, encountering an issue where the video portion of the call is delayed about 2-5 seconds behind the audio.
Resolved	IPY00116169	2	WebRTC	When interoperating with WebRTC to SIP gateways, there are video quality issues.
Resolved	IPY00116127	2	WebUI	The WebUI and WebRTC applications do not appear to work on the same session (in different tabs) together.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116474	2	XMS	The ice-pwd field of the SDP produced by XMS is too short for the length of characters.
Resolved	IPY00116438	2	XMS	When using certain Android tablets, there are video quality issues.
Resolved	IPY00116361	2	XMS	RTP and RTCP timer alarms are going off on the XMS while call is being established.
Resolved	IPY00116374	1	MRCP	MRCP stops working when pcmu audio codec is disabled.
Resolved	IPY00116443	1	MSML	There is no MSML INFO error returned when both HTTP servers are unavailable.
Resolved	IPY00116430	1	MSML	MSML announcements and recordings can fail when a single HTTP server is unavailable.
Resolved	IPY00116411	1	MSML	Unable to process any calls after HTTP server fails and recovers when using MSML.
Resolved	IPY00115963	1	MSML	The play.complete.maxtime variable was added to differentiate between normal Play termination versus termination due to Duration Exceeded.
Resolved	IPY00115874	1	MSML	When there is no SDP in Invite and video codecs are not available, the MSML call is not established.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00101895	1	MSML	HTTP requests are done in serial when multiple HTTP server addresses are provided when using MSML.
Resolved	IPY00116394	1	NETANN	XMS is not able to process NETANN call when it is waiting for ACK in previous call.
Resolved	IPY00116429	1	RESTful	When using grammar type as application/srgs+xml, the MRCP recognize response does not correctly escape special characters.
Resolved	IPY00116369	1	RESTful	The xmsrest service core dumps when originating a WebRTC call from RESTful application to unknown user.
Resolved	IPY00116358	1	RESTful	There's an additional and unnecessary ampersand added on each GET.
Resolved	IPY00116272	1	RESTful	The resource update from audio call to video call stays as audio.
Resolved	IPY00101498	1	RESTful	The internal resource (ipm) is not properly released when call is disconnected from remote end.
Resolved	XMS-730	1	RESTful	The custom tone events should be reported as event type="tone" but instead it is being reported as event type="dtmf".

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116388	1	VXML	The parameters are not passed to JSP in dialog call.
Resolved	IPY00116379	1	VXML	The .wav extension is incorrectly added to some audio fetches.
Resolved	IPY00116310	1	VXML	Recordings made during a call cannot be played back at times.
Resolved	IPY00116296	1	VXML	Relative URLs differ between calls.
Resolved	IPY00116291	1	VXML	The SIP URI is not maintaining case in the VXML Interpreter.
Resolved	IPY00116254	1	VXML	Using the language phrasing feature results in clicking sounds in the phrases that are built.
Resolved	IPY00116216	1	VXML	The SRGS tags do not work for second grammar in a field.
Resolved	IPY00116214	1	VXML	When using namelist, there is issue with content encoding in BYE message.
Resolved	IPY00115887	1	VXML	When using VXML scripts, there is issue with case sensitivity in the VXML Interpreter.
Resolved	IPY00115866	1	VXML	When using VXML scripts, there is parsing error (case sensitivity of URI parameters) in the VXML Interpreter.
Resolved	IPY00116410	1	WebRTC	Due to bad certificate, the Chrome browser needs to be restarted after XMS restart.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00115904	1	WebRTC	There is intermittent segmentation fault in XMS rtcweb service.
Resolved	IPY00116308	1	WebUI	The setting specified in NAT Configuration page of the Network menu gets ignored due to wrong file permission.
Resolved	IPY00115822	1	XMS	The video codec bitrate drop-down configuration list does not work properly.
Known	IPY00116140		MSML	MSML Media Server with phrase CGI is not properly encoding HTTP URLs for character "#" when sending play requests to xmserver.
Known	IPY00115850		MSML	MSML Media Server crash is observed with random hangup but has not been reproduced internally.
Known	IPY00115992		NETANN	When using NETANN and phrase CGI with either var:// or http://, the string "#" does not play properly.
Known	IPY00116108		RESTful	RESTful with phrase CGI is not properly encoding HTTP URLs for character "#" when sending play requests to xmserver.

Issue Type	Defect No.	SU No.	Product or Component	Description
Known	IPY00116110		XMS	The default mime-type returned by phrase CGI "text/uri-list; charset=ISO-8859-1" is not accepted in xmserver. **Workaround:** In order to play a playlist, the type attribute must be specified and set to "text/uri-list".
Known	IPY00116041		XMS	Opus codec packets with frame lengths other than 20ms have poor audio quality when decoded by XMS.
Known	IPY00116025		XMS	HTTP play sequence using text/uri-list plays nothing and shows no error.
Known (permanent)	IPY00102868		MSML	Simultaneous play and record with record beep is not possible because both play and record cannot transmit to the same connection.
Known (permanent)	IPY00102674		MSML	When playing audio and video, both files must reside on either local (file://) or server (http://).
Known (permanent)	IPY00102025		MSML	MSML returns error when using the var element with "duration" type and "yrs" subtype.
Known (permanent)	XMS-180		MSML	For legacy MSML, the value for <var> silence should be in 1 ms units. The MSML documentation states 100 ms units.

Issue Type	Defect No.	SU No.	Product or Component	Description
Resolved	IPY00116174		XMS	SIP Request-URI is limited to 255 characters. It has been increased to 1024 characters.