Dialogic

Datasheet

Dialogic® PowerMedia™ XMS

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.

Features	Benefits
Highly scalable, software media server with advanced multimedia processing functionality with an optional PowerMedia Media Resource Broker (MRB)	Facilitates the development and deployment of rich communication applications and services across Web, VoIP/SIP, Mobile and PSTN networks with a wide range of connected endpoints. By offloading difficult media handling requirements to PowerMedia XMS, service providers, and developers are able to focus on unique aspects of their application without the burden and cost associated with developing highly-scalable media expertise in-house.
Standards-compliant IMS MRF with full Voice over LTE (IR.92) and Video over LTE (IR.94) support	Conforming to the 3GPP IMS architectural specifications, PowerMedia XMS can be deployed as a Media Resource Function (MRF), providing key media processing capabilities that may be required by IMS-based services such as VoLTE and RCS. Additionally, its conformance to IMS specifications promotes compatibility between legacy telephony networks and evolving IP telecommunication standards.
Robust HD audio and video media support with IETF, 3GPP and W3C WebRTC codecs	As new codecs are being introduced into the market, PowerMedia XMS can act as a transcoding gateway, providing interworking of a wide variety of audio and video codecs. PowerMedia XMS's software nature also means that new codec support can be rapidly added without changing physical DSPs or necessitating complicated firmware upgrades.
Support for Commercial-Off-The-Shelf (COTS), virtualization, and Network Function Virtualization (NFV) deployment models	Reduces both OPEX and CAPEX by utilizing existing datacenter infrastructure and cloud services for deployment of dynamically scalable communication solutions.
Media control through open, and industry standards based API's	Energizes service provider and communication developers by leveraging industry-standard programmable APIs to rapidly add sophisticated media handling capabilities to their applications.
Web-based GUI and HTTP RESTful Management interface for media server management, control and monitoring	Intuitive, yet powerful operator console can reduce OPEX when deploying solutions by enabling the quick resolution of operation issues. The HTTP RESTful web management interface provides seamless integration with existing infrastructure for real-time monitoring, alarms, logging, and tracing.
Scalable licensing from ten ports to thousands of ports per server	The simple, flexible, and scalable licensing model allows paying only for the functionality your application needs and only when you need it. Applications can start with licenses for basic audio services and can later add HD voice or video capabilities when required by the application, thus providing significant CAPEX savings opportunities by allowing solutions to be scaled easily by software upgrade as demand grows.

Overview

PowerMedia XMS allows for rapid integration and development through open, and industry standard APIs, including MSML, VXML, NetAnn, and JSR 309, plus a Dialogic RESTful API. As a 100% software solution with Network Function Virtualization (NFV), PowerMedia XMS allows for installation on commercial off-the-shelf (COTS) servers, virtual machines, or public & private clouds.

PowerMedia XMS supports an extensive range of real-time media processing needs, including:

- **Multi-party conferencing** – low-latency mixing of audio and video, including HD voice and high-resolution video up to HD 720p, and Multi-point Control Unit (MCU) for group communications with the ability to adapt individual streams to optimize the experience for each user
- **Transcoding** – any-to-any audio and video codec conversion for a wide-range of fixed, wireless, and web-oriented codecs, including transrating and transizing for video
- **Media interworking** – conversion of underlying transport protocols and encryption interworking, including support for a WebRTC Media Gateway
- **Recording** – flexible centralized audio and video recording for mixed conferences, or individual streams
- **Stream processing** – analyze, insert, and modify the audio or video stream for speech recognition, DTMF, video overlays, and much more
- **Person-to-Machine** – connect to computer-controlled interfaces, not just other people, for applications such as Interactive Voice (and Video) Response (IVR and IVVR) systems, and speech interaction

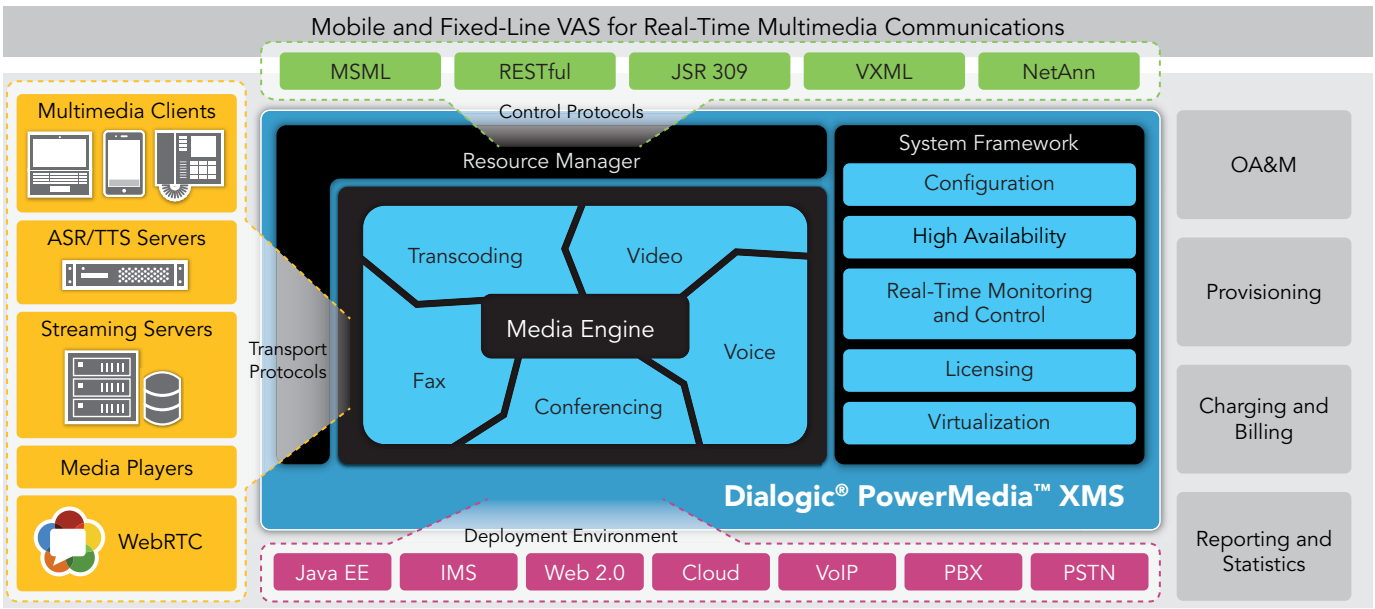

Figure 1. Dialogic® PowerMedia™ XMS: Interfaces, Functions, and Deployment Environments

Technical Specifications

Session Capacity

Typical media sessions per server (specific per server results will depend on a variety of factors, including but not limited to deployment conditions, configurations, and equipment):

Audio — Up to 2000 sessions of G.711 or 1000 sessions with full-duplex (RTP-RTP) transcoding

Video — Up to 450 unidirectional sessions (also includes audio transcoding), depending on system capacity, codec, resolution, frame rate, etc.

When multiple servers are deployed with PowerMedia MRB, total scaling can achieve upwards of 50,000 audio sessions and 2,000 video sessions.

Signaling, Protocol, and Control Interfaces

Control Protocols and Specification Compatibility

SIP (RFC3261)
SIP PreConditions (RFC3312, RFC4032)
SIP DNS (RFC3263)
GSMA IR.92 for Voice over LTE (VoLTE)
GSMA IR.94 for Video over LTE (ViLTE)
3GPP TS23.288 for IMS (Mr/Mr' and Cr interfaces)
WebRTC JavaScript API
MSRP for multimedia chat and RCS message services
RTSP client support for streaming multimedia content from RTSP servers
MRCP v2.0/v1.0 for connection to speech servers for ASR/TTS - see "*Third Party MRCP Speech Vendor Capability*" below

Media Protocols

IPv4, IPv6, and mixed-mode IPv4/IPv6 (Multiple-NIC support)
3GPP Mb (RTP) interface for IMS
RTP, RTCP, RTCP-XR, RTCP-HR
Secure SRTP: DTLS-SRTP (WebRTC), SDES-SRTP (VoIP)
ICE Lite, Trickle ICE
HTTP

Media Control Interfaces

RESTful API - HTTP-based RESTful web services interface
MSML (RFC5707) – SIP with XML-based Media Server Markup Language
JSR 309 Connector – industry-standard Java media server control API for multimedia application development
VXML v2.1/v2.0 (VXML v3.0 for Video) - W3C industry-standard XML interface for specifying interactive voice dialogs for IVR or speech enabled applications.
NetAnn (RFC4240) – Basic Network Media Services with SIP for announcements, dialogues, and simple conferences

Media and Coders

Audio

Voice and HD Voice play/record
Tone generation/detection (Inband DTMF, RFC2833/RFC4733 including RFC4734/RFC5244 tone events)
Call progress analysis (CPA)
Positive Voice Detection (PVD) and Positive Answering Machine Detection (PAMD)

Audio Codecs

Narrowband codecs: G.711u/a, G.723, G.726, G.729a, G.729b, iLBC, GSM-FR, GSM-EFR, and AMR-NB (including AMR2)
Wideband codecs: Opus, G.722 and AMR-WB (G.722.2)
Voice activity detection, silence suppression, comfort noise generation

Audio Conferencing

N-way (including HD Voice) audio mixing
Conference Recording (summed or individual parties)
Automatic Gain Control (AGC)
Per party gain/volume control
Active talker detection
DTMF clamping
Coach-pupil (whisper) mode
Loudest N-party mixing
Privileged party mixing
Echo cancellation

Video

Play/record, including fast forward, rewind, pause, resume
Video transcoding, transrating, and transizing
Video overlays (text and image overlay with scrolling)
Dialogic patented Video Encoder Sharing technology

Video Codecs

H.264 Baseline Profile, up to Level 3.1 (HD720p)
VP9, up to HD720p
VP8, up to HD720p
MPEG 4 Simple Profile, up to Level 4 (VGA)
H.263, H.263+, H.263++ Baseline Profile, up to CIF

Image sizes:	HD720p, 4CIF, VGA, CIF, QVGA, QCIF, SQCIF (and custom resolutions)
Frame rates:	Up to 30 FPS
Bit rates:	Up to 2Mbps

Video Fast Update (VFU): Configurable responses to I-Frame Update requests
Fully adaptive video jitter buffer
Dialogic patent-pending Packet Loss Concealment (PLC) technology
Dialogic patent-pending Dynamic Bitrate Adaptive Encoding technology
Dialogic patented Encoding Bitrate Control technology
RTCP feedback support (PLI, FIR, REMB, TMMBR, TMMBN, Generic NACK)

Media Handling

File operations:	HTTP1.1, HTTPS, and/or NFS; RTSP/RTP
Audio File Containers:	.wav, .pcm, .vox, .aud, .amr,.amb
WAV/PCM Codec Formats:	8k lin PCM, 11k lin PCM, 16k lin PCM, 8k alaw PCM, 8k mulaw PCM
AMR Codec Formats (RFC 4867):	AMR-NB(.amr) and AMR-WB(.amb)
Multimedia File Formats:	.3gp, .mp4, .mkv, Dialogic .vid/.aud
3GP Container Codec Formats:	Video: H.264, MPEG4, H.263 Audio: AMR-NB, AMR-WB
MP4 Container Codec Formats:	Video: H.264 Audio: AMR-NB, AMR-WB
MVK Container Codec Formats:	Video: VP8, H.264 Audio: Opus

Fax

Fax Tone Detection & Notification

Fax Send and Receive:	G.711 or T.38 (Up to v.17) RFC 6913 – Indicating Fax with SIP TIFF and PDF file formats

Language Support

Variable content announcement / language phrasing:	"date", "digits", "duration", "month", "money", "number", "silence", "time", "weekday"

Customizable to support virtually any language or dialect

Built-in voice files:	US English, Mandarin Chinese, Spanish are standard; French, German, Japanese, Italian, Greek and others are available upon request

Virtualization & Cloud

VMWare ESXi 5.x
Kernel-based Virtual Machine (KVM)
Oracle VM
XEN Virtual Machine
Rackspace Cloud Servers
Amazon Web Services (AWS)[1]

System Management

Intuitive Web GUI

Real-time monitoring and management via HTTP RESTful control interface

Command Line Interface (CLI) Scripting

Remotely managed tracing and logging

SNMP v2c/v3 for management and traps

Call Detail Records (CDR)

Active Call Monitoring

Audit Logging

Licensing

Scalable from (10) to thousands of ports per server

A time-limited trial license is available for evaluation purposes

For more information about development licenses, please contact Dialogic inside sales (insidesales@dialogic.com)

Hardware Support and Minimum System Requirements

Hardware: Intel Architecture-based server

Operating System (64-bit OS):	CentOS Release 7.0 ISO installation OR RedHat Enterprise Linux 7.0 CentOS Release 6.4 (rpm-only) RedHat Enterprise Linux 6.4 (rpm-only) Oracle Enterprise Linux 6.4 (rpm-only)
Processor:	Intel Dual 56xx or greater
Ethernet:	Single or Dual 1000Base-TX (RJ-45)
Memory:	8 GB RAM minimum
Storage:	120 GB HD minimum

Third Party MRCP Speech Vendor Compatibility

Lumenvox (ASR and TTS)

Nuance (ASR and TTS)

Vestec (ASR)

[1] *Planned future feature*

Getting Started

Start building your new innovative application **NOW** with a **FREE** download and trial license of PowerMedia XMS:
PowerMedia XMS trial software download: http://www.dialogic.com/Products/media-server-software/xms/xms-download.aspx

PowerMedia XMS Documentation: http://www.dialogic.com/goto?xmsdocs

PowerMedia XMS Product Page: http://www.dialogic.com/en/products/media-server-software/xms.aspx

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

PowerMedia Media Resource Broker (MRB) Datasheet:
https://www.dialogic.com/~/media/products/docs/media-server-software/14160-powermediamrb-ds.pdf

www.dialogic.com

For a list of Dialogic locations and offices, please visit: https://www.dialogic.com/contact.aspx

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