radisys

MediaEngine™ vMRF

Virtualized Media Resource Function

Datasheet

FEATURES

- High-performance media processing capabilities in a software product offering
- 3GPP IMS-compliant MRF for VoLTE, ViLTE, VoWiFi and RCS
- Real-time media processing for OTT and WebRTC communication services
- Performance-optimized virtualization support
- Cloud deployment capabilities

SERVICES POWERED BY RADISYS MRF

- VoLTE/ViLTE/VoWiFi
- Real-time Audio/Video Transcoding
- WebRTC Gateway and MCU
- Advanced Multimedia Conferencing
- Value-added Services (VAS)
- Audio/Video Ringback
- Audio/Video Messaging
- Interactive Voice and Video Response
- Voice controlled services
- Ad subsidized communications
- Contextual communications

Virtualized Multimedia Processing Solution for VoLTE, VoWiFi and WebRTC

Core Revenue-generation Platform for Real-time Multimedia Communication Services

The Radisys MediaEngine™ Virtualized MRF (vMRF) is a media processing powerhouse for a wide range of revenue-generating interactive HD audio and HD video services. The software-only solution is highly optimized to deliver exceptional performance in virtualized and cloud environments. With support for 3GPP IR.92, IR.94 and WebRTC, the vMRF is ideally suited for communication service providers deploying VoLTE, IMS and over-the-top (OTT) services.

Virtualization Support for Cloud and NFV Deployments

The Radisys solution offers rich OpenStack/ETSI-NFV compatibility and is designed for rapid deployment using an Open Virtualization Format (OVF) package. The vMRF has been widely deployed with leading hypervisors such as VMware™ and KVM and in the Amazon™ EC2 cloud

Industry-leading Virtualized Media Processing Performance

The Radisys vMRF has been carefully engineered to achieve more than 95% of the performance and capacity available in bare metal configurations while running in a virtualized environment—a significant achievement compared to alternative virtualized media processing solutions available today, and one that maximizes return on hardware investment and total cost of ownership.

Support for OTT, WebRTC and Multimedia Transcoding

When combined with Radisys WebConnect, the Radisys vMRF can be integrated with leading Java-based application servers, web applications and content. Support for VoIP, wireless, and WebRTC audio/video codecs, coupled with seamless, high-performance transcoding, allows the Radisys vMRF to bridge the gaps between fixed-line, mobile, and OTT communication service providers and services.

Specifications

FEATURE		DESCRIPTION
Capacity		Entry-level systems starting at 50 ports Scalable to thousands of ports (dependent on compute platform)
Media Processing Features	Multimedia Conferencing	Voice–activated video switching (video conferencing) Continuous presence video conferencing N-way audio mixing across all supported codecs (including HD audio) Cascaded conference mixing Loudest N mixing and preferred speaker Automatic Gain Control (AGC) and programmable gain control Current speaker notification Whisper feature Personalized mixing for each participant (e.g. for complex call center mixing models, network gaming, voice chat, etc.)
	Multimedia Announcements and Tones	Audio and video announcements (e.g. call completion messages and ringback tones) Multi-lingual prompts (over 40 languages) - Set Announcement Features (e.g. same prompt in multiple languages) - Variable Announcement Features (e.g. date, time, currency, etc.) Caller-specific Announcement Volume Control (AGC and programmable gain) DTMF detection and generation - Inband, RFC 2833, Redundant RFC 2833
	Multimedia Recording and Playback	Recording/playback: audio-only, video-only, audio/video VCR Control (pause/resume, skip forward, skip back) Internal and external storage (NFS or HTTP) RTSP 1.0 supported for video and audio playback Programmable text and icon overlay (over video stream)
	Voice Quality Enhancements (VQE)	Noise Reduction, Noise Gating, Noisy Line Detection Acoustic Echo Cancellation (AEC) Packet Loss Concealment Voice Quality Statistics including R-Factor
	IP-IP Transcoding	3rd party control of transcoding using SIP (RFC 4117), SIP with MSML (RFC 5707) Inline Transcoding supported using SIP Back-to-Back User Agent (B2BUA) IP-IP Transcoding integrated with VQE, gain control, and DTMF transcoding
	Fax	Fax Detection and Notification Embedded Fax Server (Send/Receive) T.38 or G.711 (T.30 Passthrough) TIFF Fax Storage Format Fax over HTTP
	Speech	MRCP v1.0 and v2.0 support with 3rd party speech servers for: - Text-to-speech (TTS) - Automatic speech recognition (ASR)
Media Support	Video	Codecs - H.263 (RFC 2190) - H.264 (RFC 3984 – MPEG4 part 10) - VP8 - MPEG4 Part 2 - H.265[1] - VP9[1] Video Resolutions - From QCIF to 720p - Up to 2 Mbps per stream - Up to 30 fps RTCP Feedback Support: TMMBR, TMMBN, FIR, PLI
	Audio	HD codecs: G.722, AMR-WB, OPUS, EVS Narrowband codecs: G.711, G.729AB, AMR-NB Mid-call audio codec changes between NB and WB modes Voice activity detection, silence suppression, comfort noise generation 5ms packetization for minimized delay Advanced Jitter Buffer Configurability

Continued on next page

[1] Planned features

Specifications, continued

FEATURE		DESCRIPTION
Media Support, continued	Stream Connection	Full transcoding, transrating, and rate matching Packet forking, switching, and media replication (fan out) in support of applications such as Lawful Intercept
	Media over IP	RTP, RTP Redundancy (RFC 2198), RTSP streaming, RTCP, RTCP-XR, SRTP, Secure RTCP (SRTCP), RTP Redundancy (RFC 2198), DTLS IPv4 and IPv6
	IP QoS	DiffServ/ToS Markings (RFC 2474) Adaptive or programmable jitter buffer
	Security	SSH v1 and v2, SRTP, SFTP, IPSec
Control Interfaces		RFC 4117 3PCC for transcoding RFC 4240 Netann with SIP (RFC 3261) RFC 5707 Media Server Markup Language (MSML) with SIP (RFC 3261) RFC 6230 IETF Media Control with MSML Package JSR-309 With Radisys WebConnect H.248.1 v2 ITU MEGACO Control Protocol
Media Storage		For audio and video announcements, recordings, ringback tones, and other multimedia content Container Formats: WAV, QuickTime™, 3GP, 3GP2 Internal storage: Expandable External storage: unlimited (via NFS/HTTP)
Network Interfaces		1000 BaseT Gigabit Ethernet (RJ45) VLAN TAGGING
Redundancy		1+1 redundancy on control cards N+1 redundancy[1] on media processing cards Redundant power inputs, backplane, and cooling fans Redundant network I/O and BITS interfaces Ethernet Port Redundancy In-service, hitless software upgrades Hot swappable cards
Network Management		Full management, configuration, and provisioning supported via SNMP v2c, v3 and/or web-based element management tools Permission levels by user role, Audit trail of user actions, password aging RADIUS authentication for Web UI access Rich alarms, logs, and statistics
Operating System Required		Red Hat Enterprise Linux 5.7, 6.4 (64 bits) Oracle Enterprise Linux 5.5, 5.7 (64 bits) CentOS 6.5
Co-Residency		User-configurable Linux processor affinity for co-resident applications
Virtualization Support		KVM VMware (including vMotion support) MRF Packaged in Open Virtualization Format (OVF)
Cloud Support		Amazon EC2 ETSI-NFV OpenStack
Hardware Requirements		Processor: Intel Multi-Core Xeon Architecture Server Memory: 4 GB RAM Minimum Storage: 20 GB HD Minimum

[1] Planned features

radisys

CORPORATE HEADQUARTERS: 5435 NW Dawson Creek Drive | Hillsboro, OR 97124 | USA
+1-503-615-1100 | 800-950-0044 | Fax +1-503-615-1121 www.radisys.com | info@radisys.com