

Overview

The MetaSwitch MG3510 offers state-of-the-art media processing capabilities in a carrier-class system with unparalleled scalability, flexibility and reliability. An architecture designed around IP Multimedia Subsystem (IMS) standards ensures a future-proof solution.

Class-Leading Scalability

Supporting 112,000 concurrent calls (168 DS3s) in a standard 19" rack, the MG3510 scales to meet the demands of the largest carrier networks. A non-blocking native packet switching fabric delivers dual gigabit links to each interface card, and avoids unnecessary VoIP decode/ encode operations for maximum voice quality.

The MG3510 is populated with up to 14 media gateway cards. Built onto each card is a powerful digital signal processor (DSP) farm sufficient to deliver echo cancellation, announcements, tone detection, silence suppression, and transcoding to every channel. This removes the need for dedicated DSP cards or media servers, simplifying configurations and reducing spares.

Flexibility for Every Application

The MG3510 supports the widest range of protocols of any media gateway on the market, with comprehensive next generation and legacy capabilities including SIP, MGCP, H.248, ATM, AIN, GR-303, CAS, ISDN, MF and ISUP. In addition, the MG3510 can be deployed as a signaling gateway, enabling cost-effective termination of SS7 signaling links anywhere within the network.

Future-Proof Open Architecture

Open standards and interoperability are the core of MetaSwitch's philosophy – and of the MG3510. Support for H.248 (also known as Megaco) and SIGTRAN, which have been adopted by all key industry bodies and architectures such as IMS, ensures future-proof interoperability as networks continue to evolve.



Carrier-Grade Reliability

The NEBS Level 3-certified MG3510 was designed from the outset for 99.999% ("five nines") system reliability. It achieves this goal through a fully redundant, hot-swappable hardware design, with n:1 protection for all interface cards, power supplies and CPUs, as well as all TDM, IP and ATM interfaces. Even the internal packet bus is powered by two redundant switches. In addition, a sophisticated application-aware software fault tolerance scheme ensures that, in the event of a program logic error, the backup processor takes over control of the chassis ensuring uninterrupted service.

VP3510 Integrated Softswitch

The MG3510's powerful processor cards have more than enough horsepower to host MetaSwitch's call agent functionality. The result is a single-chassis solution, known as a VP3510 Integrated Softswitch, incorporating all the functions (call agent, media gateway, signaling gateway and media server) required to deliver Class 4 and/or Class 5 services. A single VP3510 system supports up to 250,000 busy hour call attempts and 70,000 subscriber lines.

MG3510 / VP3510 Specifications

► PHYSICAL

- Height: 21" (533mm, 12U)
- Width: 17.2"W (436mm)
- Depth: 17" (431mm)
- Weight: 97.5 lbs (44.2kg)
- Mounting options: 19" or 23" racks, 4 chassis per 7' rack
- Operating temperatures: 41°F to 104°F (5°C to 40°C), 41°F to 122°F (5°C to 50°C) short-term (up to 96 hours)
- Operating humidity: 5% to 85%, 5% to 90% short-term
- Maximum operating altitude: 9800' (3000m)

► POWER

- Dual feed -48V DC nominal (-40V DC to -56V DC)
- Fused 1500W (40A)

► SYSTEM ARCHITECTURE

- Passive midplane design with 48Gbps nonblocking packet-switched bus
- Parallel TDM bus for TDM-TDM switching
- Timing: BITS, external T1 or internal clock source
- 2 half-height alarm card slots
- 2 SG1200 signaling gateway card slots
- 14 universal gateway slots (2 x 6:1 redundancy) populated by PB4000 (1xDS3) or PB4500/5000 (3xDS3)

► NETWORK INTERFACES

- TDM: T1/E1, DS3
- VoATM: OC3c
- VoIP: Auto-detecting Fast/Gigabit Ethernet
- Management: Ethernet and serial console access

► SCALABILITY

- 42xDS3 (36xDS3 protected)
- 28,224 concurrent calls

► CARRIER-CLASS RELIABILITY

- GR-512-CORE (99.999% availability)
- TDM, VoIP and VoATM equipment protection switching
- Redundant, hot-swappable interface cards, alarm cards, power supplies, fans, and processor cards
- Fault-tolerant software architecture with calls preserved on CPU failover

► NETWORK MANAGEMENT

- SNMP, CORBA and XML interfaces for alarms and system management
- Management of multiple chassis via MetaSwitch EMS or integration with third-party OSS

► PROTOCOLS

- Media Gateway Control: H.248 / Megaco, MGCP 1.0bis
- Session Initiation Protocol (SIP) v2
- PacketCable Network-based Call Signaling (NCS)
- T.38 Fax Relay
- GR-303
- ISDN PRI (NI-2, Lucent and Nortel variants), NFAS
- T1 Channel Associated Signaling (CAS)
- SS7: ISUP, TCAP, SCCP, MTP, AIN 0.1
- Multi-Frequency (MF) trunks (1-way, 2-way)
- Ground start, loop start, E&M immediate/wink start

► CODECS

- G.711 (64kbps PCM)
- G.726 (32kbps ADPCM)
- G.729AB (8kbps CS-ACELP)
- Automatic fallback to G.711 for fax/modem calls

► MEDIA AND QUALITY OF SERVICE

- QoS: IP Differentiated Services (DiffServ) with 802.1p prioritized weighted fair queuing
- Echo cancellation: G.165, G.168 (up to 128ms)
- Idle channel suppression
- Silence suppression and comfort noise generation
- Tone generation / detection (DTMF, MF, FSK)
- Onboard mixing and announcement server

► CALL AGENT (VP3510)

- Full Class 4 and 5 functionality including tandem routing, residential and business services for up to 70,000 lines
- 250,000 Busy Hour Call Attempts (BHCA)
- Bellcore AMA GR-1100 call detail records (CDRs)

► COMPLIANCE AND APPROVALS

- Bellcore NEBS: Level 3 (Bellcore SR-3580, GR-63-CORE, GR-1089-CORE) certified
- Safety: UL 1950, CSA C22.2.950, EN 60950, IEC 60950
- CALEA: TIA J-STD-0025A implemented on-board
- Electro-magnetic compatibility: FCC Part 15 Class A, ICES-003 Class A, EN 55022 Class A, EN55024
- Network: FCC Part 68
- ILECs: SBC TP 76200MP, Verizon RNSA-NEB-95-003, Qwest TP 77351 § 11, BellSouth CG-COLH-001 § 5.1.2
- SS7: Verizon, BellSouth, Verisign, SBC, Qwest, Bell Canada, BT, INS
- MultiService Forum (MSF) Release 3 Architecture

Specifications subject to change without notice. Contact your local sales representative or go to www.metaswitch.com/specs for current feature and availability information.