

# Media Gateway Control Function

## MGCF for IMS Core Networks

The IP Multimedia Subsystem (IMS) is ready to deliver on its promise of all-IP telephony, transitioning operators from being facilities-based to being true software telcos, while protecting their investment in transmission equipment and maintaining service continuity. As part of an IMS solution, Metaswitch's Media Gateway Control Function is a critical component in the evolution of the telco network.

- » Critical IMS transitional network element
- » Interworking between PSTN and NGN

### IMS & PSTN Emulation—New Network, Same Great Service

A Media Gateway Control Function (MGCF) in a PSTN Emulation Subsystem (PES) enables an IMS network to communicate with classic circuit switched networks and modern packet switched networks through a Media Gateway (MGW).

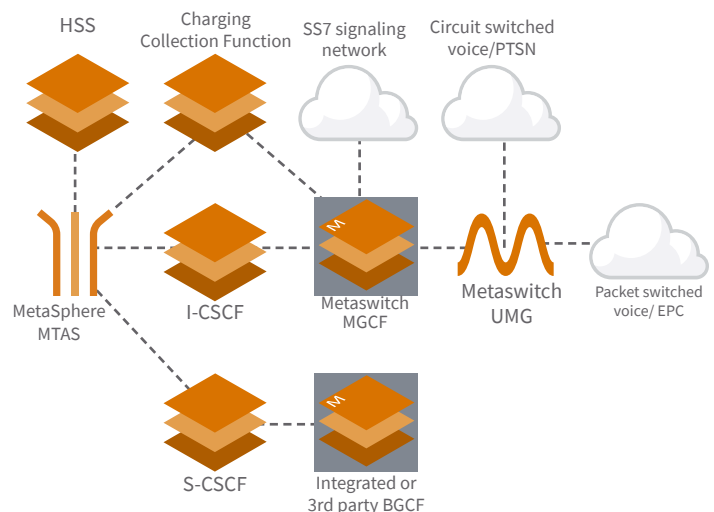
In the IMS architecture, this requires an MGCF working in conjunction with an MGW, I-CSCF and Telephony Application Server (TAS). The MGCF controls MGWs over H.248, and converts between ISUP and SIP to communicate with the I-CSCF and TAS for IMS-compliant call control. Additionally, an S-CSCF and BGCF select the most appropriate MGCF in each instance.

Metaswitch's IMS solution includes all of these functions, enabling you to migrate your TDM network to VoIP and IMS in complete confidence.

- » Controls one or more heterogeneous MGWs
- » Multiple hardware/software deployment models
- » Architected for scalability & resilience

### Metaswitch's Media Gateway Control Function

Metaswitch's MGCF is the result of more than a decade's experience helping service providers to build next-generation and IMS networks. With multiple deployment models, rich translations and extensive routing table logic, the Metaswitch MGCF is a powerful and flexible solution for MGW control in IMS architectures.



**Unique Software + Standard Hardware = Flexibility**

Architected as a pure software solution, Metaswitch's advanced MGCF is not dependent on any proprietary equipment. Deployed as standard on high-performance commercial off-the-shelf ATCA hardware, or available to install on your choice of generic server, the MGCF is easy to install and maintain, and can scale for the future.

You can deploy the Metaswitch MGCF exclusively with the Metaswitch Universal Media Gateway (UMG) and MetaSphere Multi-Service Telephony Application Server (MTAS); or in a multi-vendor environment (cap-and-grow); or with any other IMS-compliant MGW and TAS.

You can integrate the MGCF with the BGCF and UMG for a compact and efficient solution.

**As Big As You Want, As Reliable As You Need**

You can run multiple MGCF instances side-by-side to scale to 20M BHCA.

A fully redundant system architecture allows the MGCF to retain full operational capability in the event of an individual component fault, and geo-redundancy protects against regional failures.

**Metaswitch MGCF specifications****Interfaces & Protocol Support**

- 3GPP Mc and Mn H.248
- MGCP 1.0bis
- SS7 ISUP & TCAP via M3UA, M2UA or M2PA direct to STPs, or via SS7 links and SGW function on the UMG
- 3GPP Mg and Mj SIP
- 3GPP Mi, Mk, Mx SIP, when employing integrated BGCF
- 3GPP Rf Offline Charging (Optional GR-1100 BAF records or XML billing)
- SIP-I Q.1912.5 Profile C, ETSI EN 383 001, UK NICC ND 1017, Italian ST 769).
- SIP IPv4 and IPv6 dual-stack
- When deployed with Metaswitch Universal Media Gateway:
  - ISDN PRI (ETSI, NI-2, Lucent and Nortel variants)
  - ISUP
  - Multi-Frequency (MF) trunks (1-way, 2-way)
- Extensive on-board routing logic, or SIP 3xx redirect or ENUM interfaces to off-board LCR routing engines

**Architecture**

- 1+1 active-standby HA
- Local or geo-redundancy (with no limits on distance between locations)
- Integrated BGCF option

**Management**

- MetaView Explorer
- CORBA for provisioning
- SQL database for statistics and reporting
- SNMP for alarms
- Management of multiple chassis via MetaView NMS or integration with third-party OSS

## MGCF: CH6010 Hardware Specifications

### Physical

- Height: 5.2" (132mm, 3U)
- Width: 19" (483mm)
- Depth: 16.5" (420mm)
- Weight: 44 lbs (20kg)
- Mounting options: 19" or 23" racks, 14 chassis per 7' rack
- Operating temperatures: 41°F to 104°F (5°C to 40°C), 23°F to 131°F (-5°C to 55°C) short-term (up to 96 hours)
- Operating humidity: 5% to 90%
- Maximum operating altitude: 9800' (3000m)

### Power

- DC: dual feed -48V to -60V DC nominal (-40V DC to -72V DC), 1500W, fused to 20A
- AC: dual feed 110V to 250V AC, 1500W

### System Architecture

- 2 GX6340 processor blades (1:1 redundancy)
- 2 rear RE6310 transition modules
- 2 SMC6010 chassis shelf managers
- 2 IO6010 User Cards for dry alarm connections

### Capacity

- 84,000 concurrent calls
- Up to 2M Busy Hour Call Attempts (BHCA)
- Sustains 2M BHCA including all priority / emergency calls on up to 5x call overload (10M BHCA)
- Multiple MGCF instances can scale to tens of millions of BHCA

### Network Interfaces

- VoIP signaling: Auto-detecting Fast/Gigabit Ethernet
- Management: Ethernet and serial console access

### Carrier-Class Reliability

- GR-512-CORE (99.999% availability)
- Fault-tolerant software architecture with calls preserved on processor blade failover
- Redundant processor blades and shelf managers
- Redundant, hot-swappable user cards, power supplies and fans

### Compliance and Approvals

- Bellcore NEBS Level 3: Standard (GR-63-CORE), Verizon TEEER VZ.TPR.9205, ATIS 0600015, AT&T TP.76200
- Environmental: ETSI EN 300 132, EN6100-4-5, EN 300 753, EN 300 019
- Safety: UL 1950-1, IEC 60950-1, ETSI EN 60950-1, CAN/CSA C22.2 60950-1-07
- Electro-magnetic compatibility: FCC Part 15 Class A, ICES-003, EN 55022, ETSI EN 300 386, VCCI V3, CISPR22, AS/NZS CISPR22
- Lawful intercept: CALEA TIA J-STD-025A / T1.678, ETSI TS 101 331, ES 201 158, TS 101 671