

Access Gateway Control Function

AGCF 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 Access Gateway Control Function is a critical component in the evolution of the telco network.

- » Critical IMS transitional network element
- » Interworking between IMS and non-SIP access networks

IMS & PSTN Emulation—New Network, Same Great Service

An Access Gateway Control Function (AGCF) in a PSTN Emulation Subsystem (PES) enables an IMS network to communicate with legacy non-SIP access networks through an Access Media Gateway (A-MGW).

In the IMS architecture, this requires an AGCF acting as a SIP User Agent and working in conjunction with an A-MGW, I/S-CSCF and PES Application Server (PES-AS). The AGCF controls packet switched endpoints (such as MGCP and NCS) directly and non-SIP lines over H.248 through an A-MGW. It converts between H.248 and SIP to allow the I/S-CSCF and PES-AS to provide IMS-compliant call control.

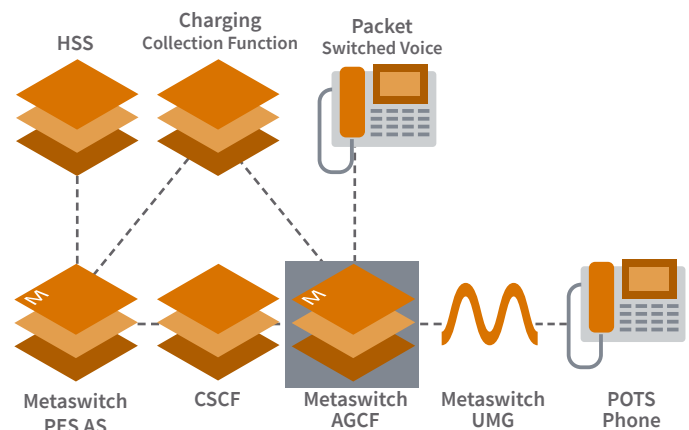
The AGCF is ideal for Cable MSOs who want to migrate to a SIP-based core network (PacketCable V2.0) and retain interworking with older CPE like NCS eMTAs that do not natively support SIP. Metaswitch's IMS solution includes all of these functions, enabling you to migrate your TDM network to VoIP and IMS in complete confidence.

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

Metaswitch's Access Gateway Control Function

Metaswitch's AGCF is the result of more than a decade's experience helping service providers to build next-generation and IMS networks.

With multiple deployment models and theoretically unlimited scalability, the Metaswitch AGCF is a powerful and flexible solution for A-MGW control in IMS architectures.



Unique Software + Standard Hardware = Flexibility

Architected as a pure software solution, Metaswitch's advanced AGCF 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 AGCF is easy to install and maintain, and can scale for the future.

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

You can integrate the AGCF with the UMG for a compact and efficient solution. If the AGCF does not need to be in the media path, eg in pure MGCP or NCS access networks, you can deploy the AGCF without the UMG.

The AGCF is suitable for deployment in IMS or pre-IMS networks.

As Big As You Want, As Reliable As You Need

You can run multiple AGCF instances side-by-side to scale to millions of subscriber lines, with no theoretical limit to how big your network can grow.

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

Metaswitch AGCF specifications**Interfaces & Protocol Support**

- Internet Protocol version 6 (IPv6) and Internet Protocol version 4 (IPv4)
- Session Initiation Protocol (SIP) v2
- 3GPP Mw SIP interface to IMS core (I/S-CSCF)
- SIP interface to pre-IMS feature server
- 3GPP Rf offline charging
- H.248 v1 and v2
- MGCP 1.0bis
- PacketCable Network-based Call Signaling (NCS)
- When deployed with Metaswitch Universal Media Gateway:
 - ISDN PRI (ETSI, NI-2, Lucent and Nortel variants)
 - T1 Channel Associated Signaling (CAS)
 - GR-303
 - TR-08
 - V5.2 signaling

Architecture

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

Network Management

- MetaView Web
- SOAP APIs
- 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

AGCF: 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 1.3M Busy Hour Call Attempts (BHCA)
- 500,000 subscriber lines
- 250,000 subscriber gateways / CPE devices
- Multiple AGCF instances can scale to millions of subscriber lines

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