

Sonus Breakout Gateway Control Function (BGCF) Routing Server

In the years to come, IP Multimedia Subsystem (IMS) networks will need to interoperate with both the PSTN and circuit-based GSM and CDMA wireless networks. The Breakout Gateway Control Function (BGCF) provides a bridge between those networks by determining where and how to route calls from IMS networks to circuit-based networks. The BGCF Routing Server from Sonus Networks provides a best-in-class IMS breakout gateway with extra features that go beyond standard BGCF functionality to deliver even more value to IMS networks. Based on the Centralized Policy Server, the BGCF Routing Server provides a centralized, scalable solution for routing calls between IMS and circuit-switched networks that leverages years of experience in IP packet-to-circuit interoperability.

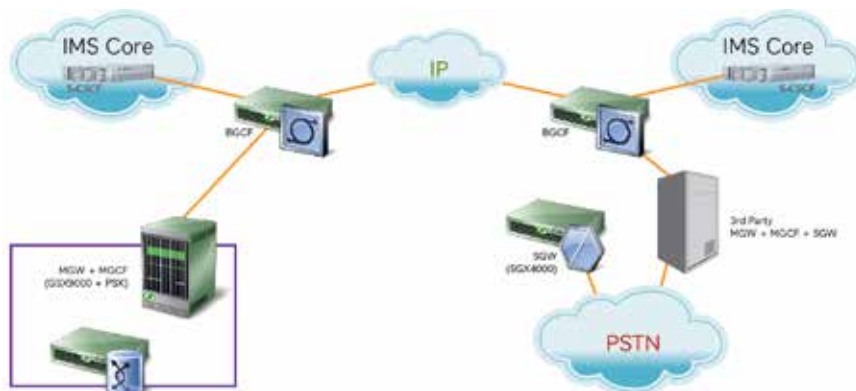


The BGCF element plays an important role in IMS networks as a SIP proxy to route calls between IMS and non-IMS endpoints. As a number of wireless service providers plan to roll out multimedia-based IMS networks in conjunction with their existing circuit-based GSM/CDMA networks, there will be a growing need to route calls between the two network architectures, not just between peer networks but within the same network. The BGCF Routing Server can be deployed in several different scenarios to provide this functionality:

- As the call routing device between IMS and non-IMS networks, where a call originates on an IMS-based endpoint and terminates on a PSTN-based endpoint, via a Media Gateway Controller;
- As the call routing device between IMS and circuit-based networks within the same logical network, where a call originates on an IMS-based endpoint and terminates on a circuit-based endpoint within the same service provider network, via a Media Gateway;
- As the call routing device between two IMS networks, where a call originates on an IMS-based network and terminates on a circuit-based endpoint in a service provider network that contains both IMS and non-IMS networks, via an S-CSCF, IBCF or peering BGCF.

More Than a BGCF... A BGCF PLUS!

The BGCF Routing Server is a transaction-stateful SIP proxy server that delivers everything you would expect in a BGCF device, including high performance (1,000 calls per second on a single server), 3GPP R9 compliance and complete support for IMS ecosystem elements via Mi, Mj, Mk and Mx interfaces. In addition, the BGCF Routing Server includes many value-added features not available in any other BGCF device, such as Next-Generation and SS7 Service Control Point (SCP) lookups, DNS/ENUM server overload controls and Address Reachability Service (ARS) controls.



SCP and DNS/ENUM Lookups

The BGCF Routing Server provides more efficient routing between SIP and Tel URL endpoints by dipping into DNS, ENUM and SCP databases for routing information and then directing the media to the relevant gateway, rather than “tromboning” the signaling and media between multiple gateways. The BGCF Routing Server also supports a variety of routing configurations, including standard routing, routes based on IP trunk groups, carrier pre-selection for least-cost routes and class-of-service routing. By leveraging many of the same rich routing functions found in the PSX™ server platform, the BGCF Routing Server provides a powerful solution for networks transitioning from Next-Generation Network (NGN) to IMS platforms and beyond.

DNS/ENUM Overload Controls

There's no shortage of SIP session routers that provide overload controls for theoretical situations, but the BGCF Routing Server's overload controls are based on more than a decade of practical experience in the field with the PSX platform. As a result, the BGCF Routing Server has overload functionality you won't find anywhere else, such as the ability to throttle DNS/ENUM dips to avoid DNS/ENUM server overloads.

Address Reachability Service

In the event that a SIP server in the network is down or overloaded, the BGCF Routing Server provides ARS controls that automatically “blacklist” that server and forward the call to the next available SIP server. Once a SIP server is blacklisted, the BGCF Routing Server's customizable policies can be configured to ignore the blacklisted server for a period of time or continually ping it until it completes several successful responses in a row, at which point the SIP server will be whitelisted again.

A Scalable Platform

The BGCF Routing Server provides a scalable BGCF solution on a low-cost, open UNIX-based platform. Single servers can be deployed in redundant, high-availability pairs and scaled across the IMS network using the same centralized master/replica architecture featured in the Centralized Policy Server (CPS) platform. This allows IMS operators to provision call routing tables from a single master incidence—or port them directly from an existing CPS or PSX server—and automatically replicate them to BGCF Routing Servers throughout their network for increased efficiency and savings.

Build a Best-of-Breed Solution

The BGCF Routing Server supports interoperability with a variety of H.248-based media gateways and media gateway controllers including the Sonus PSX Server and GSX9000™/GSX4000™ gateways, allowing network operators to build a best-of-breed IMS solution with confidence. Whether operators are deploying a completely new IMS network or migrating their existing NGN architecture to IMS, the BGCF Routing Server is more than a breakout gateway controller, it's a breakthrough gateway controller.

About Sonus

Sonus provides network transformation through IP communications technology. Sonus solutions and services enable fixed, mobile and cable operators to add more value to their subscribers through new session awareness and multimedia capabilities. Sonus' standards-based solutions extend the investments made in traditional networks by enabling operators to seamlessly migrate to next-generation technology and deliver the secure, reliable, scalable and cost-effective network needed to grow their business.

Technical Specifications

Hardware

- Oracle Sun Netra™ X4270 server:
Intel® Xeon® Single Four-Core
L5518 2.13 GHz processor, 16GB
DDR3 SDRAM, 4 x 300GB 10K RPM
2.5" SAS disk storage (NEBS Level
3 certified)

Database Management System

- Oracle 11g

Operating System

- Red Hat Enterprise Linux 6.1

Transport Protocol Support

- SIP over SCTP
- SIP over TCP
- SIP over UDP
- IPv4
- IPv6

IMS Standards Support

- 3GPP Release 9 TS 24.229
compliance
- Mi interface toward S-CSCF
- Mj interface toward MGCF
- Mk interface toward peer BGCF
- Mx interface toward peer IBCF

Storage System

- IBM DS3524 RAID System

Connectivity

- Four 10/100/1000 Mbps
Ethernet ports

Routing Capabilities

- DNS/ENUM lookups with
overload controls
- SCP lookups
- 3xx recursive routing
- Proactive/reactive Address
Reachability Service

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