

S3™ Session Border Controller

GENBAND's S3 Session Border Controller delivers secure carrier class, real-time communications for mobile and fixed service providers, enabling new service offerings, rapid revenue generation and network cost-savings. With extensive security, policy enforcement, and session management capabilities, the S3 brings service providers advanced levels of functionality, flexibility, and performance at IP network borders.

Carrier-to-Carrier: The S3 provides secure connectivity with granular controls to proactively manage interconnect quality, capacity, and availability, supporting bilateral and multilateral carrier interconnect agreements for national call routing, international long distance, and local PSTN termination

Carrier-to-Enterprise Access: Normalizing traffic for seamless connectivity between carrier and enterprise networks, the S3 provides extensive SLA management, SIP trunking, PBX/IP PBX and H.323/SIP interworking, and call center and hosted VoIP application support

Carrier-to-Consumer Access: The S3 protects the network edge with overload protection via multi-stage rate limiting policies, registration throttling, and subscriber authentication and authorization, enabling service providers to deliver the highly differentiated voice and multimedia services

Security: The S3 protects service provider and enterprise networks by providing multi-layered security against a wide variety of Internet threats meant to disrupt or disable IP networks including flood attacks, DoS/DDos attacks, and SIP signaling attacks. Capabilities include intelligent access and admission control, private-to-public IP network address and port address translation (NAT and PAT) and NAT traversal, and topology hiding.

Interoperability and Interworking: The S3 normalizes the network edge, providing a wide range of flexible policies to seamlessly interoperate with multi-vendor and multi-protocol VoIP equipment. Normalization includes ANI/DNIS, network address, protocol, DTMF, and codec interworking for smooth interworking between interconnect and access networks. Compatibility across firewalls, application servers, proxies, endpoints, media gateways, and softswitches is ensured with a large community of interoperability partners. The S3 can separate media and control planes and supports 3GPP™, IMS, TISPAN NGN, MSF, and PacketCable™ networks.

Advanced Routing via MSX Feature Set: As an SBC feature in the S-Series platforms, the MSX feature set offers service providers intelligent call routing at network interconnect borders, including dynamic route hunting, adaptive routing, and least cost routing -- enabling the dynamic routing of traffic to interconnect peers based on call completion rates, route profit, and route availability. Sophisticated routing intelligence reduces IP-IP session routing complexity, and policy enforcement enables advanced traffic-engineering at the session layer for managed service assurance and SLA compliance. The GENBAND MSX feature set also facilitates VoIP traffic management by monitoring and maximizing utilization of high-value feature or application servers and media gateways.

Policy Enforcement, SLA Management and Session Visibility: GENBAND's comprehensive SLA management solution has multi-staged policies to admit, inspect, and shape traffic. It manages network access using real-time and aggregated admission control policies; prevents service theft by authenticating users, inspecting media address, and codec; and shapes traffic per QoS marking, and egress session and bandwidth rates and capacity. IP session visibility is provided into each IP session by generating real-time session detail records (SDRs) with over 90 fields.

Carrier-class Performance, Reliability, and Management: The S3 is based on a carrier-grade Linux OS platform in a high availability, 2U NEBS configuration, including hot standby for redundancy and high availability with state migration of active sessions in less than 200 milliseconds. The S3 scales from 500 to 25,000 media sessions on the same chassis. The S3 is managed by the feature rich GenView-RSM EMS that provides enhanced visibility and QoS via on-demand session reports on session statistics such as ASR and QoS, actionable alarms to feed back into SLA policies, and tools for granular troubleshooting and diagnostics.



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IP Network Security

- Access Control Firewall, including Signaling Control of Media Pinholes; Firewall/Hosted NAT traversal - with and without SIP ALG-enabled NAT device
- Topology Hiding, Rogue RTP Detection, Blacklisting, TLS
- Session Admission Control
- Denial of Service (DoS) and Distributed DoS Protection

Rate Limiting and SLA Assurance

- Admission Control via Call Utilization and Capacity
- SIP Method-based Transaction Rate Limiting
- Layer 2,3 Rate Limiting, including TCP, ICMP, Syn; Registration Rate Limiting
- Detect and Drop Malformed Packets
- Per Flow Bandwidth RTP Policing, Codec Policing
- Optimized registration timeout determination

IP Layer 2+ Functionality

- Ethernet: IEEE 802.3, 802.1q VLAN tagging, QoS Marking Diffserv/802.1p

Interworking Function and Interoperability

- B2BUA, Outbound Proxy Mode (OBP)
- H.323/SIP Protocols: H.323/SIP Interworking Function (IWF); H.323/SIP RADIUS AAA Support; H.323 Version 4 with Version 2, 3 Compatibility; H.323 Fast and Slow Start; SIP timers, media inactivity timers; SIP over UDP/ TCP/ TLS; SIP/Tel URI; SIP-T/SIP-I; SIP Support for Instant Messaging and Presence
- H.245 Tunneling Support; H.225 RAS Messages Support for Alternative Gatekeeper Functionality; Stateful H.225 and H.245 Routing
- Support for 3GPP Rx Interface (PCRF)
- Endpoint detection availability
- Overlapping realm and IP signaling addresses
- Simultaneous Peering with Multiple Gatekeepers and Gateways

Advanced Routing Services

- Least Cost Routing
- Digit Matching/Manipulation
- Called Number Translation; Calling Number Translation/Randomizations; Call Blocking; Call Loop Detection and Prevention
- Call Route Hunting with Route Advances Determined by Static and Dynamic Parameters
- Flexible policy to enable Hosted or Direct Media routing between endpoints behind the same NAT
- Source and Destination Trunk Groups
- 2 Million routes
- ENUM interface
- DNS SRV interface
- Service Partitioning - Customer and Service Type

Transcoding and Media Adaptation

- Voice Transcoding and DTMF Translation, SIP Info, SIP Notify, RFC 2833; G.711/T.38 Fax Relay

SLA Reporting and Management

- Comprehensive Session Detail Records (SDRs) based on Trunk Groups, Signaling, and Protocol Information
- Over 80 SDR fields, QoS Metrics, RADIUS AAA Support
- CLI, SNMP (v2, v2c, v3), syslog, SSL, HTTPS, Web Services, User role-based system access

Regulatory Compliance

- Lawful Intercept (LI)/CALEA, E911 prioritization

Performance

- High Availability Active/Standby System with Call State Mirroring of Signaling and Media with no Loss of Service
- Call Rate - 150 Call Attempts per Second (CPS)
- 100,000 subscribers
- Real World Session Capacity - SIP-SIP - up to 25,000 Concurrent Sessions/Active Calls
- H.323-H.323 - Up to 16,000 Concurrent Sessions/ Active Calls Management

Hardware Specifications

Power - Redundancy (1+1)

- 700W 120/240VAC; 600W - 48V DC

Interfaces

- Ethernet: Optical or Copper 10/100/1000
- 6 Signaling & Management Ethernet interfaces; 4 Ethernet media interfaces; Serial console port

Storage

- Two 73GB hard drives

Environmental

- Operating Temperature - +10°C to +35°C with the maximum rate of change not to exceed 10°C per hour; Non-operating Temperature - -40°C to +70°C; Non-operating Humidity - 90%, non-condensing @35°C; System Cooling Requirement - 1826 BTU/Hr

Dimensions

- 2U, 19" rack mountable; NEBS Dimensions - 3.45" x 17.4" x 20.0"; Non-NEBS Dimensions - 3.4" x 16.9" x 26.5"; Weight: NEBS - 60 lbs; Non-NEBS - 75 lbs

Safety

- UL60950 - CSA 60950 (USA/Canada); EN60950 (Europe); IEC60950 (International)

EMC

- FCC Class A (USA); NEBS Level 3 Certified; CISPR 22 (International); EN55022 (Europe) ROHS; 6B 9254 (China); AS/NZ5 3548 (Australia/New Zealand)