

QUANTiX Q20 SBC

“The Intelligent Session Border Controller”

Overview

The rapid adoption of IP for many voice and multimedia communications needs of enterprises, consumers, and service providers has resulted in an ever-broadening array of IP networks, user devices and IP endpoints. Customers increasingly expect secure, transparent access and utilization of these advanced networks, bringing the edges of networks into sharp focus. At the network edge, issues like security, interoperability, protocols, vendor implementations, system complexity, and service assurance are arising for network operators, and in turn they are demanding carrier grade, intelligent session border controllers (SBCs) and border gateways to ensure a seamless communications experience.

For over a decade, GENBAND has been an acknowledged industry innovator in session border control, developing Smart Edge products to resolve the growing challenges of IP. GENBAND's Q20 SBC is a market-leading, Intelligent Session Border Controller for fixed, mobile, cable, and Over-the-Top operators and enterprises. Deployed worldwide and operating in some of the world's largest IP networks, the Q20 SBC provides industry-leading scale, security, session management, policy control, and deployment flexibility to enable seamless SIP Trunking, IP eXchange (IPX), Peering, Intra-Network Interconnect, Multimedia Communications, VoLTE, and RCS-e solutions in IMS LiTE and IMS networks.

QUANTiX SBC - The Intelligent SBC

The QUANTiX Q20 SBC creates a Smart Edge for operators. Its smart session management technology reduces operational complexity and simplifies the network edge by securely managing, routing, and controlling real-time voice and multimedia sessions, while providing intelligent insight into network performance. With the Q20 SBC, operators gain predictability and assurance to the delivery of secure rich multimedia services. Through its adaptive security, insightful policy enforcement, flexible interworking and normalization, and advanced session routing capabilities, the Q20 SBC adds an unparalleled layer of intelligence in managing SIP and other IP-based voice and multimedia sessions.

Market Flexibility at the Edge

- Carrier-to-Consumer
- Carrier-to-Enterprise
- Carrier-to-Carrier
- Enterprise-to-Enterprise



Simplified Operational Control

- Centralized quality and performance management
- Intuitive web-based user access with granular controls
- Centralized open APIs for back office integration
- CDR mediation
- Advanced troubleshooting

Insightful Policy Management and Session Visibility

- Intelligent traffic & user screening, authentication, authorization
- Comprehensive SLA management
- Multi-stage rate limiting and traffic shaping
- Pattern recognition to dynamically blacklist malicious sources
- Detection & alarming for fraud & spam

Intelligent Interworking and Normalization

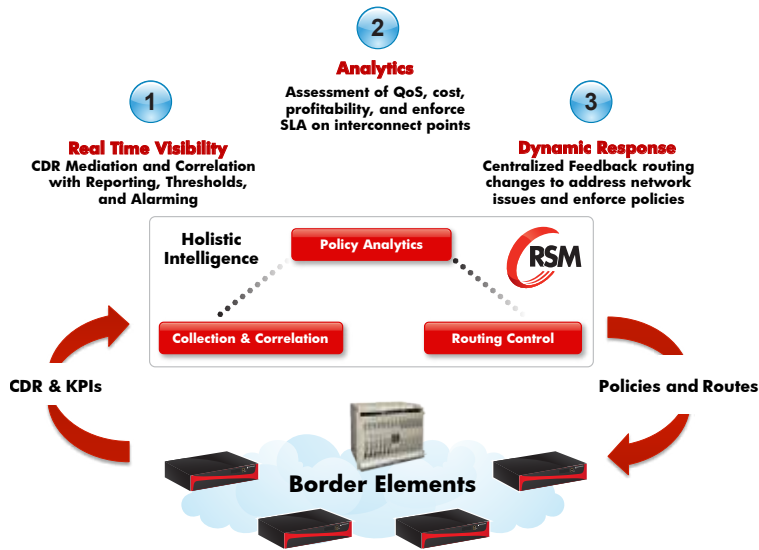
- Diverse, multi-vendor, multi-protocol interworking
- Proactive, high scale transcoding
- Real-time, menu-driven, SIP flexible message manipulation
- Separation of media and control planes for maximum network efficiency
- Network-proven interoperability with common end user and operator edge and core platforms

Advanced Security and Routing

- Routing based on capabilities, availability, profitability, and performance/quality of the destination
- Sophisticated routing intelligence with a variety of options including adaptive, least cost, dynamic route, per cent-based
- Multi-layered security including intelligent access/admission control, NAT/PAT, topology hiding

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Smart Management

Accompanying the QUANTiX Q20 SBC is the market leading GENView RSM, a smart management solution that simplifies day-to-day operations. RSM monitors, analyzes, reports, and enforces quality and performance at the network borders, providing visibility into edge traffic along with the ability to dynamically modify call-routing behavior based on a combination of business policies, network QoS, and subscriber usage patterns. RSM also provides a web-based provisioning interface with simple drop down menus and configuration templates for vendor-specific profiles, enabling faster time-to-market for services.

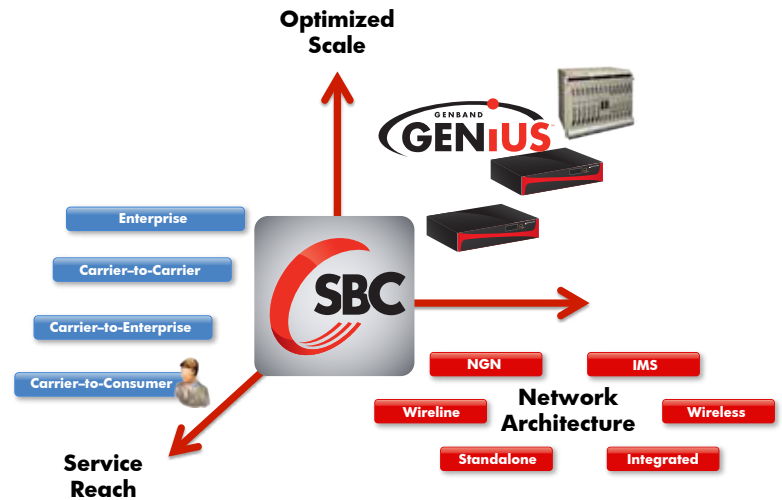
Delivering Holistic Visibility and Dynamic Adaptation

- **Quality/QoS Monitoring:** providing visibility into how the network is delivering service
- **Comprehensive Reporting:** exposing historic and real-time network performance
- **Business Reporting:** providing visibility into route profitability
- **Adaptive Call Routing:** re-shaping routing policies to ensure network quality targets are met
- **Advanced Call Diagnostics:** enabling views into sessions that may straddle multiple SBCs

Multi-dimension Adaptability

Delivered on a common off the shelf platform (COTS), the QUANTiX Q20 SBC provides substantial and measurable deployment benefits, providing a price/performance ratio that leads the industry. Combining the benefits of COTS hardware, a software-centric architecture, and deployment flexibility, the QUANTiX Q20 SBC addresses a wide-range of performance needs while ensuring lowest TCO. GENBAND's SBC is available as a best-of-breed carrier-grade, stand-alone SBC on a family of rack mount servers or as part of the integrated, award-winning ATCA-based GENBAND IP Unified Services (GENiUS) Platform. The SBC leverages common software across all versions of target hardware options, offering deployment flexibility and the ability to seamlessly grow networks as needed.

Common Software - Common Management



Network Functions

- Enterprise SBC, Access SBC, Interconnect SBC, IPX Proxy, B2BUA, Outbound Proxy, Mirror Proxy, H.323 gatekeeper, H.248 Proxy Relay

QUANTiX Q20 SBC

Product Specifications

IP Network Security

- Topology hiding with signaling and media NAT traversal, Rogue RTP Detection, Denial of Service (DoS/ DDoS) protection
- Multi-stage Rate Limiting – Layer 2,3 Rate Limiting including TCP, ICMP, Syn; Registration Rate Limiting; SIP methods Transaction Rate Limiting
- Detect and Drop malformed packets
- Dynamic Blacklisting, Access Control Lists, Session Admission Controls
- Per flow Bandwidth Call Admission Control (CAC)
- TLS, IPSec (IKEV1) for signaling encryption
- Secure RTP/RTCP for media encryption

Interworking and Interoperability

- IPv4, IPv6, IPv4/IPv6 interworking
- H.323/SIP Interworking Function; SIP over UDP / TCP / TLS / SCTP interworking
- H.245 Tunneling; H.225 RAS messages support for alternative gatekeeper functionality; stateful H.225 and H.245 routing
- SIP Flexible Message Manipulation (FMM)
- Hosted NAT traversal
- Up to 1024 signaling and media realms
- Overlapping realm and IP signaling addresses

Transcoding and Media Adaptation

- Voice Transcoding and DTMF Translation, SIP Info, SIP Notify, RFC 2833; G.711/T.38 Fax Relay
- Centralized shared transcoding across multiple SBCs
- Per device codec profiles, re-ordering and prioritization

Advanced Routing and Policy

- Least Cost Routing, Profitability-based Routing, and Percentage-based Routing
- Quality and Performance-based Routing
- Digit Matching/ Manipulation; Called Number Translation; Calling Number Translation / Randomizations; Call Blocking; Call Loop Detection and Prevention
- Flexible policy to enable hosting of direct media routing between end points behind the same NAT
- ENUM, DNS, SIP Redirect (RFC 4904) based route query
- Service partitioning based on customer and service type

QOS and SLA Assurance

- Bandwidth call admission control
- Per session network quality analytics: jitter, packet loss, latency, R-factor
- Per session service quality analytics: ASR, NER, post dial delay
- Per call statistics
- DSCP packet marking for TOS/ COS
- Support for 3GPP Rx Interface (PCRF)

Regulatory

- Lawful Interception
- Emergency Call Routing

Management

- Intuitive Graphical User Interface (GUI) for ease of configuration
- Embedded web-based management / GUI access via secure HTTPS access
- Command Line Interface (CLI) for local and SSH access
- Secure RADIUS-based user authentication
- Role-based user access
- SNMP V2 status and statistics
- Local logging of events, alarms, and traps; call trace
- Support for storing CDRs; RADIUS accounting records
- 1:1 redundant management control ports

Performance and Resiliency

- 1:1 high availability, redundant system with stateful call migration of signaling and media with no loss of service
- Up to 625 Call Attempts Per Second (CPS)
- Up to 160,000 simultaneous SIP Signaling sessions
- Up to 18,000 simultaneous media sessions (G.711)
- Up to 28,000 simultaneous media sessions (G.729)
- Up to 200,000 SIP registered endpoints
- Up to 2 million routes and calling plans

QUANTiX Q20 SBC Product Specifications

Q20 Hardware

Chassis

- 2U, rack mount; Measurements:
Standard: 17.14" Wide x 3.45" High x 20" Deep
Metric: 87.6mm X 508mm X 435.3mm
- 19" or 23" adjustable brackets for mounting
- Maximum weight: 45lb

Memory/Hard Drives

- 16 Gbytes RAM
- 2 Hot-Swappable 300GB 10K SAS HDD

Front Panel

- Status Indicators front panel LEDs: Power indicator; HDD indicator, Fan alarm, Telco alarm, ID indicator
- 1 USB V2.0 interface
- 1 VGA interface
- 1 Serial Console interface

Rear Panel

- 12 Ethernet Ports
 - * 4 standard 1G Ethernet SFP ports for media
 - * 8 Standard 10/100/1000 Ethernet RJ-45 ports, configurable for signaling, management, and redundancy
- Power Input -AC or DC
- Telco alarm relay indicator
- ID indicator
- Chassis ground connection
- 4 USB V2.0 interface

Heat Dissipation

- Fully-populated maximum: 350 Watts; 1194 BTU per Hour

Operating Altitude

- Up to 1,800 m @ 40° C
- Up to 4000 m @ 30° C

Power Option

- 650W AC or DC hot-swap, 80+% efficient redundant power supplies

DC Power Option

- Input: -40 to -72 VDC redundant inputs
- Nominal Consumption: 6.5A @-48VDC input
- Peak Consumption: 10A

AC Power Option

- RMS Input Voltage: Minimum 90 VAC; Nominal 100-240 VAC; Maximum 264 VAC
- RMS Current: 2.7A @115VAC input; 1.4A @230VAC input
- Input Frequency: Minimum 47 Hz; Nominal 50/60 Hz; Maximum 63 Hz

Environmental

- 5 to 40° C Operating
- -40 to 70° C Non-Operating
- Humidity, Non-Operating: 95%, non-condensing at temperatures of 20° C to 40° C

NEBS

- GR-63-CORE – Issue 3, March 2006
- GR-1089 IS6
- ETSI EN300 019
- EN 300-386
- ETSI ETS 300 753

Safety

- UL 60950-1 – United States
- CAN/CSA-C22.2 NO. 60950-1-03 – Canada
- IEC/ EN 60950-1 – European Union
- IEC 60950; IECCE CB Scheme – International

EMI/EMC

- FCC Part 15 Class A – United States
- ICES-03 – Canada Compatibility (EMC) requirements
- EN 55022 Class A emissions
- EN 55024 Immunity

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