\Orchestrating a brighter world   **NEC**

Session Border Controller

UNIVERGE BX9000

Benefits

- Designed for deployment in standardized data center environments
- Supports Network Functions Virtualization (NFV)
- Same code base as NEC field-proven hardware-based SBC
- Simplifies and accelerates SBC deployment
- Offers comprehensive security, interoperability and reliability
- Delivers high service performance and voice quality
- Flexible licensing options for cost-effective scalability
- Runs in virtualized datacenter environments

Key features

- Supports VMware, Hyper-V and KVM
- Cloud environments: Openstack, Amazon Web Services (AWS) and Cloudband (ALU)
- Scalable to thousands of SBC sessions
- Extensive SIP mediation capabilities
- Supports remote workers and mobile SIP clients
- Perimeter defense against denial of service, fraud and eavesdropping
- VoIP quality monitoring and enforcement
- Branch survivability during WAN failure
- Active/Standby High Availability

The UNIVERGE BX9000 is a sofware-only version of NEC field proven hardware-based SBC products, designed to offer service providers and enterprises a flexible and scalable SBC solution that meets the requirements of today's data center infrastructures. The BX9000 SBC supports wide-ranging SIP interoperability, delivering service assurance and enabling scalable, reliable and secured connectivity between different VoIP networks.

Extensive Mediation Capabilities and Proven Interoperability

The UNIVERGE BX9000 SBC includes comprehensive media security and SIP normalization capabilities. It offers full interoperability with an extensive list of IP-PBXs, unified communications solutions and SI trunking provider networks.

Security

The UNIVERGE BX9000 SBC provides robust protection for the IP communications infrastructure, preventing fraud and service theft and guarding against cyber-attacks and other service-impacting events.

Reliability

The UNIVERGE BX9000 SBC offers active/standby high availability and maintains high voice quality to deliver reliable enterprise VoIP communications. Advanced call routing mechanisms, network voice quality monitoring and branch survivability capabilities result in minimum communications downtime.

Applications

- SIP trunking
- Hosted PBX & UC as a Service
- Remote and mobile worker support
- SIP mediation between UC and IP-PBX systems
- Residential VoIP

Specifications

Capacities	
Max. Signaling Sessions	6,000
Max. Media Sessions	6,000
Max. SRTP-RTP Sessions	4,000
Max. Registered Users	30,000

Security	
Access Control	DoS/DDoS line rate protection, bandwidth throttling, dynamic blacklisting
VoIP Firewall	RTP pinhole management, rogue RTP detection and prevention, SIP message policy, advanced RTP latching
Encryption/Authentication	TLS, DTLS, SRTP, HTTPS, SSH, client/server SIP Digest authentication, RADIUS Digest
Privacy	Topology hiding, user privacy
Traffic Separation	VLAN/physical interface separation for multiple media, control and OAMP interfaces
Intrusion Detection Sytem	Detection and prevention of VoIP attacks, theft of service and unauthorized access

Interoperability	
SIP B2BUA	Full SIP transparency, mature and broadly deployed SIP stack, stateful proxy mode
SIP interworking	3xx redirect, REFER, PRACK, session timer, early media, call hold, delayed offer
Registration and Authentication	User registration restriction control, registration and authentication on behalf of users, SIP authentication server for SBC users
Transport Mediation	SIP over UDP/TCP/TLS/WebSocket, IPv4 / IPv6, RTP / SRTP (SDES/DTLS)
Message Manipulation	Ability to add/modify/delete SIP headers and message body using advanced regular expressions (regex)
URI and Number Manipulations	URI user and host name manipulations, ingress and egress digit manipulation
Transcoding and Vocoders	Coder normalization including transcoding, coder enforcement and re-prioritization, extensive vocoder support: G.711, G.723.1, G.726, G.729, GSM-FR, AMR-NB/WB, SILK-NB/WB, Opus-NB/WB, iLBC
Signal Conversion	DTMF/RFC 2833/SIP, T.38 fax, packet-time conversion
WebRTC Controller	Interworking between WebRTC devices and SIP networks Supports WebSocket, Opus, VP8 video coder, lite ICE, DTLS, RTP multiplexing, secure RTCP with feedback
NAT	Local and far-end NAT traversal for support of remote workers

Voice Quality and SLA	
Call Admission Control	Based on bandwidth, session establishment rate, number of connections/registrations
Packet marking	802.1p/Q VLAN tagging, DiffServ, TOS
Standalone Survivability	Maintains local calls in the event of WAN failure
Impairment Mitigation	Packet Loss Concealment, Dynamic Programmable Jitter Buffer, Silence Suppression/Comfort Noise Generation, RTP redundancy, broken connection detection
Voice Enhancement	Transrating, RTCP-XR, Acoustic echo cancellation, replacing voice profile due to impairment detection, Fixed & dynamic voice ga n control
Direct Media (No Media Anchoring)	Hair-pinning of local calls to avoid unnecessary media delays and bandwidth consumption
Voice Quality Monitoring	RTCP-XR
High Availability (Redundancy)	SBC high availability with two-box redundancy, active calls preserved
Quality of Experience	Access control and media quality enhancements based on QoE and bandwidth utilization
Test agent	Ability to remotely verify connectivity, voice quality and SIP message flow between SIP UA

SIP Routing	
Routing Methods	Request URL, IP address, FQDN, ENUM, advanced LDAP, third-party routing control through REST API
Advanced Routing Criteria	QoE, bandwidth, SIP message (SIP request, coder type, etc.), Layer-3 parameters
Redundancy	Detection of proxy failures and subsequent routing to alternative proxies
Multiple LANs	Support for up to 100 separate LANs
Routing Features	Least-cost routing, call forking, load balancing, E911 gateway support, emergency call detection and prioritization
SIPRec	IETF standard SIP recording interface

Management	
OAM&P	Browser-based GUI, CLI, SNMP, INI Configuration file, REST API, E
Multi Tenancy	Advanced multi-tenant SBC partitioning

Minimum Requirements	
Hypervisor	VMware® vSphere ESXi™ 5.x, Linux KVM, Microsoft Hyper-V
Memory	2 GB
Disk space	10 GB
Virtual NICs	2 (Standalone) / 3 (High Availability)
Virtual CPUs	1

Corporate Headquarters (Japan)	Asia Pacific	Australia	Americas (US, Canada, Latin America)	EMEA (Europe, Middle East, Africa)
NEC Corporation	NEC Asia Pacific	NEC Australia Pty Ltd	NEC Corporation of America	NEC Enterprise Solutions
www.nec.com	*www.nec.com.sg*	*au.nec.com*	*www.necam.com*	*www.nec-enterprise.com*