FreeSBC™

DATA SHEET
Version 3.0

PulseSupply
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FreeSBC SESSION BORDER CONTROLLER

TelcoBridges' **FreeSBC** is a carrier-grade session border controller software package, designed for Network-to-network interface (NNI SBC), peering and access functions (access SBC). Scalable from 100 to 60,000 sessions. FreeSBC is a flexible pure-software solution that can be installed seamlessly onto general purpose servers, popular virtualization platforms and TelcoBridges' certified servers giving access to an extensive set of call routing, network adaptation and policing functions. Combined with TelcoBridges' TB Analytics network troubleshooting tools and field-proven SIP stack deployed in more than 100 countries, FreeSBC is the ideal choice for VoIP service providers and enterprises.

PRODUCT CHARACTERISTICS
- Back-to-back user agent (B2BUA) and topology hiding
- Line rate DOS/DDOS protection (64 bytes packets)
- Up to 60,000 simultaneous signaling and media sessions
- Flexible and extensive call routing capabilities
- TB Analytics network troubleshooting tools (traces, media/signaling recording, test call generation, etc) included with optional support package
- Versions for installation on bare-metal Intel servers and popular virtualized environments
- Easy installation and upgrades with no down time

NETWORK FUNCTION
Back-to-back user agent (B2BUA)
Overlapping IP realms
SIP registration pass-through/forwarding and throttling

IP NETWORK SECURITY
Topology hiding
Line-rate DOS/DDOS protection (64 bytes packets)
Rogue RTP detection
Dynamic blacklisting
Access control list (ACL)
Session admission control
Session bandwidth control (per trunk group)
Call access based on successful registration

INTEROPERABILITY FUNCTIONS
Extensive SIP header manipulation
Error/cause code adaptation
Local and remote NAT traversal adaptation
SIP to SIP-I interworking
SIP UDP/TCP interworking*

TRANSCODING AND MEDIA ADAPTATION
(Using external TSBC-HW-TRANS)
DTMF transcoding (inband, INFO, RFC2833/4733)
T.38 fax and video relay
T.38 V.17 & V.34 fax conversion to pass-through
NSE and VBD conversion
Transcoding unit IPs invisible from WAN/LAN
Media transcoding:
G.711, G.723.1, G.726, G.729ab, G.729eg, Clear mode (RFC 4040), G.728, iLBC,
G.722, AMR-NB, G.722.2 (AMR-WB), GSM FR/EFR, T38

VOICE SERVICES
(Using external TSBC-HW-TRANS)
Call progress tones
Announcement prompts playback
Call recording

ROUTING
Least cost routing
Scheduled routing
Class IV routing
Load-balancing and percentage routing
Routing customization through scripts
SIP REFER/3xx based routing
RADIUS based routing
Routing alternate retry routes
Digit/From/To matching and manipulation
Call blocking
Loop detection and prevention

QUALITY OF SERVICE
Per session network quality analysis and MOS scoring
Per session statistics
DSCP/TOS marking

FreeSBC

MANAGEMENT CAPABILITIES

Provisioning and status graphical interface (GUI)
HTTPS secured transport
CLI interface for local and remote management
RESTful northbound provisioning and status API
Level-based user access
Configuration change audit logging
SSH, sFTP, NTP, DNS, DHCP
SNMP v2, v3 GET, TRAPs (alarms)
Extensive SNMP call statistics MIBs
Configurable Call-detail-records (CDRs)
Local text customizable format
Customizable RADIUS accounting

TB ANALYTICS (NETWORK ANALYTICS)

Live session trace with protocol information (ladder)
Raw signaling protocol capture (pcap format)
Live test call with pre-recorded media
(Using external TSBC-HW-TRANS)

SUPPORTED PLATFORMS

Bare-metal x64 bits capable servers
OpenStack with KVM hypervisor
Native KVM hypervisor
Vmware 5/6 with vSphere hypervisor
TSBC-HW-SRV-HIGH
TSBC-HW-SRV-MID

REGULATORY

Lawful interception (ETSI 201 671)

HIGH AVAILABILITY & REDUNDANCY

1+1 redundancy support (active/standby)
Ethernet port bonding support
Fault-tolerant software
Seamless software upgrade

EMERGENCY ROUTING PERFORMANCE

METRICS	HARDWARE PLATFORMS		
	VMWARE 6.5 [1]	OPENSTACK KVM [2]	BARE-METAL[3]
Max. concurrent sessions (no transcoding)	26,000	32,000	60,000
Max. concurrent sessions (with 100% transcoding)	13,000	16,000	30,000
Max. completed sessions per seconds (CPS/CSPS)	600	600	1,100
Max. sessions attempts per seconds (CAPS/SAPS) when refused by routed destination endpoint	1,250	1,250	1,400
when refused by routing engine	1,920	1,920	2,000
when refused while in congestion	4,000	4,000	6,000
Max. registration per seconds (RPS)	3,400	3,400	4,700
Max. registration refresh per seconds (RRPS)	13,000	13,000	19,800
Max. registered devices 4	350,000	350,000	350,000

(1) As tested on TelcoBridges-installed Vmware 6.5.0 executing on Dell R610 (3.07GHz), VM with 6 vCPUs, 8GB RAM and PCI-Passthrough access to one Intel X540-AT2 (10GE) copper interface.
(2) As tested on TelcoBridges-installed 'OpenStack Newton' executing on Dell R610 (2.93GHz), Instance with 6 vCPUs (directly pinned to pCPUs), 16GB RAM and SR-IOV access to one Intel X710DA-2 (10GE) SFP+ optical interface.
(3) As tested on TelcoBridges TSBC-HW-SRV-HIGH SBC appliance server. (see https://docs.telcobridges.com/tbwiki/FreeSBC#TSBC-HW-SRV)
(4) With one contact per address-of-record (AOR)

* = Roadmap capabilities – check with TelcoBridges Sales for current status