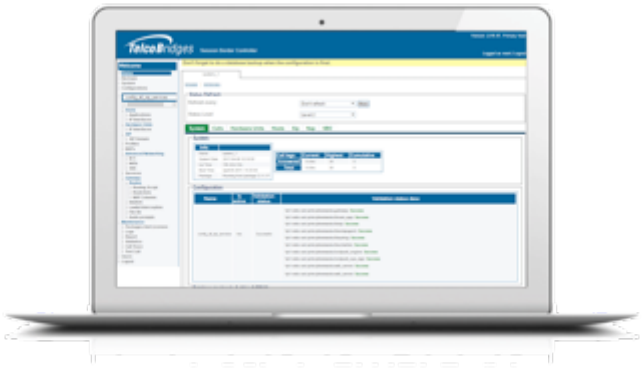
TelcoBridges' FreeSBC
Session Border Controller



The TelcoBridges **FreeSBC** is a carrier-grade session border controller designed for Network-to-network interface (NNI SBC), peering and access functions (access SBC).

Scalable from 100 to 60,000 sessions, the FreeSBC software is a flexible solution that can be installed seamlessly onto general purpose servers, virtualization platforms and TelcoBridges' certified servers giving access to an extensive set of call routing, network adaptation and policing features. Combined with TelcoBridges' TB Analytics network troubleshooting tools and field-proven SIP stack deployed in more than 100 countries, the FreeSBC solution is the ideal choice for VoIP service providers handling small to large traffic loads.

Product Characteristics:

- ✓ Back-to-back user agent (B2BUA)
- ✓ Line rate DOS/DDOS protection (64 bytes packets)
- ✓ Up to 60,000 simultaneous signaling and media sessions (with no transcoding) or up to 30,000 sessions (with all channels transcoded)
- ✓ Flexible and extensive routing capabilities
- ✓ TB Analytics network troubleshooting tools (traces, media/signaling recording, test call generation, etc) included with support package
- ✓ Installable on physical servers and virtualized environments

FreeSBC
Data Sheet

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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
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

TB Routing (routing and policy)

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
Per session statistics
DSCP/TOS marking

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 RTP (silence) media

(Using external TSBC-HW-TRANS)

- Live test call with media playback (and recording)
- Live media call recording with selectable targets

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)
Emergency routing

High Availability & Redundancy

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

Performance

Metrics	Hardware platforms		
	Vmware 6.5 [1]	OpenStack KVM [2]	Bare-metal[3]
Max. nb. of concurrent sessions (no transcoding)	26,000	32,000	60,000
Max. nb. of concurrent sessions (with 100% transcoding)	13,000	16,000	30,000
Max. nb. of completed sessions per seconds (CPS/CSPS)	600	600	1,100
Max. nb. of 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. nb. of registration per seconds (RPS)	3,400	3,400	4,700
Max. nb. of registration refresh per seconds (RRPS)	13,000	13,000	19,800
Max. nb. 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)

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