

Oracle Enterprise Session Border Controller

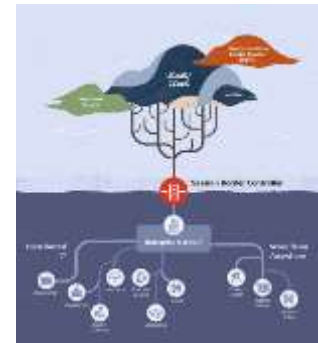
The Oracle Enterprise Session Border Controller (E-SBC) protects IP communications networks from cyber-threats and fraud, it mitigates the effects of network impairments and outages, and cures interoperability problems so that the users of your networks can enjoy highly secure and reliable voice, video, and unified communications services.

Overview

With the decentralization of IT and speedy adoption to cloud, the once centralized “edge” of the enterprise is expanding. This creates greater security, management, and control challenges for enterprises. Moreover, applications are becoming more mobile as workloads are moved to flexible and efficient infrastructure both on and off premises. Similarly, users, like applications, are becoming more decentralized and mobile making it difficult to maintain consistent and superior quality of experience.

As a result, enterprise voice, video and unified communications services are vulnerable to cyber-attacks, outages and interoperability problems that can occur when communications sessions traverse IP network borders. Attacks and outages can disrupt business operations, endanger revenues and tarnish the brand image. Interoperability problems can reduce business agility, delay projects and put IT investments at risk.

The Oracle E-SBC is a field-proven solution for connecting a wide range of multivendor VoIP, Unified Communications and Contact Center systems to public network services, including SIP trunking services, the Internet and cloud applications. It is also an important element for granular migration to cloud services such as UCaaS and CCaaS.



Key business benefits

- Protects IT-based services, applications and infrastructure
- Guards against cyber-attacks
- Accelerates service deployment

Applications

- Bring your own carrier (BYOC) deployments for UCaaS and CCaaS
- Connect to SIP trunking services and the Internet
- Access cloud communications services
- Communicate securely with remote workers
- Connect contact center locations and business process outsourcing (BPO) services

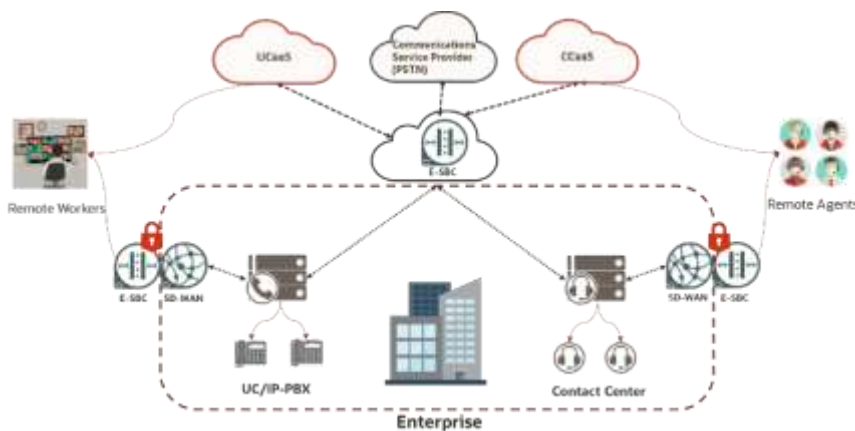


Figure1. Oracle Enterprise SBC solves the challenges posed by decentralization of IT with faster adoption to Clouds, and application and users becoming remote.

Oracle Enterprise SBC advantages

Strong security

IP communications are susceptible to cyber-security threats, including Distributed Denial of Service (DDoS) attacks, fraud and privacy breaches that result in lost revenue and productivity, poor customer experiences, compliance violations and damages to the corporate brand. The Oracle E-SBC protects IP-based systems and services from these threats and delivers secure, private voice, video and UC sessions across trusted and untrusted networks alike.

The Oracle E-SBC incorporates Oracle's S.A.F.E. Architecture, a comprehensive vision focusing on world-class Security, being Application aware, Flexible delivery and Extensible platforms. The Oracle E-SBC's own architecture protects communications confidentiality and integrity and ensures the availability of services, systems and applications. It uses dedicated resources and deep packet inspection technology to identify and block denial of service attacks at line rate while enabling valid communications to continue to flow during an attack.

The Oracle E-SBC can block calls to known fraudulent destinations, limit calls to unusual or suspicious destination ranges and apply policies to users based on time of day and other parameters. The Oracle E-SBC provides topology hiding to prevent reconnaissance and enumeration by hackers and DTMF suppression to enable PCI compliance in contact centers.

For enhanced communications privacy, the Oracle E-SBC is both Federal Information Processing Standard (FIPS) 140-2 and Joint Interoperability Testing Command (JITC) compliant.

Easy interoperability

IT managers frequently encounter interoperability problems when connecting on-premises systems to each other and to cloud communications services. These problems can reduce network agility and reliability, delay projects, increase costs and put investments at risk of obsolescence.

The Oracle E-SBC features header manipulation capabilities that can resolve a wide range of protocol interoperability problems. An extensive library of application notes dramatically simplifies and accelerates the configuration and deployment of any UC network and SIP trunking service.

An IETF compliant SIPREC trunk recording interface provides a lower cost and more efficient alternative to conventional line-side interfaces for connecting a call-recording server to the network. The Oracle E-SBC's open standard SIPREC interface is field-proven for interoperability with a wide range of 3rd-party SIPREC compliant Session Recording Servers (SRS), has a rich SIPREC load balancing functionality, and supports up to 10 simultaneous SRS destinations (e.g. connecting to Biometrics, Compliance, Speech Analytics in parallel, as well as using geographically redundant recording solutions).

Oracle Advantage

- Advanced Denial of Service (DoS) and overload protection
- Fraud prevention
- SIP protocol normalization
- Header Manipulation Rules
- H.323 to SIP protocol interworking
- 1:1 high availability
- On-board Oracle Enterprise Operations Monitor probe
- Scalable from 25 to 160,000 RTP sessions
- Scalable to 40,000 SIPREC sessions
- Proven multivendor UC and Service Provider interoperability
- Microsoft Teams certified for Direct Routing, in both non-Media Bypass and Media Bypass modes
- Microsoft Azure Communications Services (ACS) Direct Routing certified
- Zoom Premise Peering (BYOC) certified
- Genesys PureEngage contact center certified
- Oracle Communications Security Shield (OCSSC) provides an always-on, real-time communications security solution to protect your network
- Oracle Session Delivery Management Cloud (OSDMC) provides a simple, more insightful way to manage your network
- Oracle SD-WAN delivers a reliable, secure, high-performance network for business-critical services
- VNF HEAT Templates
- REST APIs
- FIPS 140-2/JITC Compliant
- Minimal touch instantiation and configuration using Terraform scripts to deploy OCI and AWS

Assured reliability

Impairments and failures can occur anywhere in a communications network – including the Oracle E-SBC – and they can be difficult to isolate and repair. The Oracle E-SBC includes a complete set of carrier-grade routing and survivability features to ensure business continuity during network failures or impairments.

All models feature 1:1 high availability that continuously monitors the Oracle E-SBC's health and routes sessions from active to standby units with no loss in session state or impact to user experience. The Oracle E-SBC dynamically routes sessions to protect against failures anywhere in the network. It can optimize performance across multiple SIP trunk services by routing sessions based on observed QoS and balancing loads.

To help IT managers monitor and troubleshoot their networks, the Oracle E-SBC features a monitoring and tracing tool that enables them to quickly visualize complex session information. An embedded probe enables the Oracle E-SBC to integrate with the sophisticated troubleshooting capabilities provided by Oracle Enterprise Operations Monitor.

The Oracle E-SBC also is an enforcement element for Oracle Communications Security Shield Cloud, which evaluates SIP-based calls and enforces actions for each call it processes, based on reputation assessment, or deny lists.

Applications

Businesses install the Oracle E-SBC at SIP network borders where enterprise communications systems connect to public network services or where disparate multivendor systems must be interconnected.

They use the product to:

- Connect to SIP trunking services and the Internet
- Access cloud communications services
- Communicate securely with remote workers
- Connect contact center locations and business process outsourcing (BPO) services

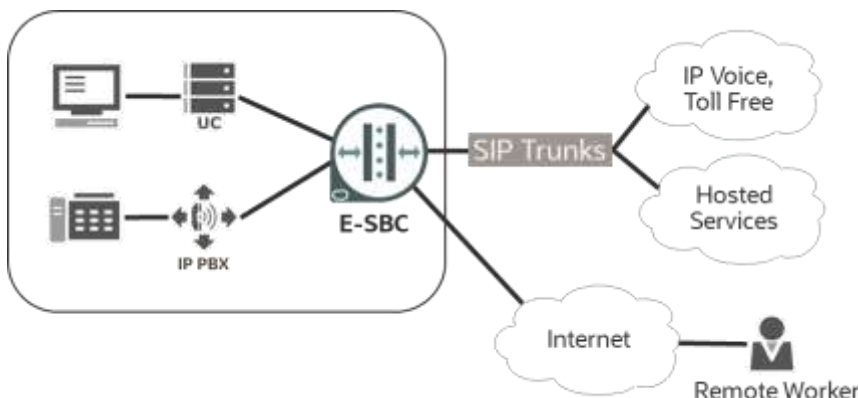


Figure2. Oracle Enterprise Session Border Controller connects disparate IP communications networks securely.

New features

- Enhanced Web GUI
- Support for OCI resource manager
- Additional SIP KPI
- TrFo for Asymmetric preconditions to avoid unnecessary transcoding

Bring your own carrier (BYOC)

The best-of-breed Oracle E-SBCs enable BYOC and solve the multivendor interoperability challenges that arise from deploying multiple solutions, transforming independent islands of technology into a cohesive enterprise communications network. As security devices deployed at the enterprise edge, Oracle E-SBCs also allow direct connections to new and innovative cloud services and access to the remote workforce.

Once a session border controller is deployed, organizations can swap out legacy platforms or introduce new services at their own pace with minimal disruption. They can decommission outdated and underused services and systems over time to get out of expensive subscription plans and maintenance contracts. Or they can quickly deliver newer capabilities like Unified Communications as a Service (UCaaS), Contact Center as a Service (CCaaS), video conferencing, or SMS messaging to existing platforms, extending previous investments.

Deploy a software-based architecture

With virtual and cloud-based deployments enterprises can avoid overprovisioning and tightly align operating expenses with usage. They also help them avoid hardware vendor lock-in and accelerate time-to-market. Cloud-based deployments also alleviate the responsibilities of physical management.

For maximum flexibility, Oracle E-SBC supports a wide range of hypervisors & public clouds. To reduce the need for cloud expertise, orchestration using Terraform scripts is supported on OCI and AWS.

PRIVATE CLOUD (HYPERVISORS)	PUBLIC CLOUDS
VMware ESXi	Amazon Web Services (AWS)
KVM	Microsoft Azure
	Oracle Cloud Infrastructure

A trusted partner with a security mindset

Oracle invests heavily in the technology necessary to remain the market leader in session border control. Technology is constantly evolving and the security landscape continues to change. Our solutions are flexible, vendor independent and support interconnection with any SIP device or service. Technology certifications from our partners give further peace of mind that our solutions are secure and reliable. Some of our formal certifications include:

- Microsoft Teams Direct Routing
- Microsoft Azure Communication Services Direct Routing
- Zoom Premise Peering
- Genesys PureEngage

Related products

- [Oracle Enterprise Operations Monitor](#)
- [Oracle Enterprise Telephony Fraud Monitor](#)
- [Oracle Enterprise Communications Broker](#)
- [Oracle Session Delivery Management Cloud](#)
- [Oracle Communications Session Delivery Manager](#)
- [Oracle Communications Security Shield Cloud](#)
- [Oracle SD-WAN Orchestration Cloud](#)
- [Oracle SD-WAN Edge](#)
- [Oracle Talari Platforms](#)

Enterprise SBC datasheet

Critical features and capabilities

FEATURE	CAPABILITIES
Security	<ul style="list-style-type: none"> Granular access control IP address and SIP signaling concealment Layer three through five topology hiding and signaling overload controls IP telephony spam protection Stateful deep packet inspection Signaling and media encryption Telephony fraud protection NIST Suite B cryptography (also available for WebGUI connection) FIPS Compliant and being validated, including MSRP FIPS for virtualized E-SBC, 1100 & 3900 platforms. (All prior images, including SCz9.0.0 are FIPS Certified.) JITC Compliant and being validated. (Image SCz9.0.0 is JITC Certified.)
Interoperability	<ul style="list-style-type: none"> SIP message normalization Response code translation SDP and Dual Tone Multi-Frequency (DTMF) manipulation Number and uniform resource identifier (URI) manipulation Header manipulation rules (HMR) SIP / H.323 signaling interworking Protocol interworking: Transmission Control Protocol (TCP), User Datagram Protocol (UDP), Stream Control Transmission Protocol (SCTP) Encryption interworking: Transport Layer Security (TLS), Mutual TLS, Secure Real-time Transport Protocol (SRTP), IP Security (IPsec) Network address translation (NAT) and firewall traversal IP address translation: private/public, IPv4/IPv6 Transcoding IETF standard SIP Recording (SIPREC) interface Support for Microsoft ELIN Gateway and Avaya Personal Profile Manager proxy
Reliability	<ul style="list-style-type: none"> Standby SIP registrar with caching for remote site survivability Stateful signaling and media failover Quality of service (QoS) marking, virtual local area network (VLAN) mapping Registration storm avoidance Call rate limit enforcement Trunk load balancing Stateful session routing QoS-based routing Microsoft Active Directory based routing enhancements
Regulatory compliance	<ul style="list-style-type: none"> Session prioritization for emergency services Call detail records (CDRs) with local or remote storage via RADIUS
Cost management	<ul style="list-style-type: none"> Least cost routing CODEC renegotiation
Management	<ul style="list-style-type: none"> Embedded Oracle Enterprise Operations Monitor probe Browser-based GUI SIP monitoring and tracing tool SNMP agent, XML configuration files, Syslog, SFTP, RADIUS interfaces Subnet masks for SNMP Secure WebGUI access with HTTPS Support for orchestration on OCI and AWS using Terraform scripts
Analog module (Acme Packet 1100)	<ul style="list-style-type: none"> Four FXS and four FXO ports Support for fax interworking with T.38 transcoding
T1/E1 module	<ul style="list-style-type: none"> One T1/E1 port (RJ-48) for TDM fallback Four T1/E1 ports (RJ-48) for TDM fallback

Platforms supported

- Acme Packet 1100
- Acme Packet 3900
- Acme Packet 3950
- Acme Packet 4600
- Acme Packet 4900
- Acme Packet 6300
- Acme Packet 6350
- Private Cloud (hypervisors):
 - VMware ESXi
 - KVM
- Public Cloud:
 - Microsoft's Azure
 - Amazon's AWS
 - Oracle's OCI

Supported Enterprise SBC Platforms

Appliance-based: The Enterprise SBC is available on Oracle's purpose-built hardware platforms, catering to the needs of different Enterprises starting from branch offices to large enterprises. The supported hardware platforms are AP1100, AP3900, AP3950, AP4600, AP4900, AP6300 and AP6350.

Virtual and cloud: The virtualized E-SBC leverages the same code base as Oracle's appliance-based E-SBCs, and can be deployed by small to very large enterprises based on capacity needs in both On-Premises & Private Clouds and Public Clouds environments.

Capacity and performance comparison for E-SBC



Feature	Virtualized E SBC*	AP1100	AP3900	AP3950	AP4600	AP4900	AP6300	AP6350
Form factor	Virtualized	1U System	1U System	1U System	1U System	1U System	3U System	3U System
System Architecture	Data Centre /COTS	Purpose Built	Purpose Built	Purpose Built	Purpose Built	Purpose Built	Purpose Built	Purpose Built
Max. Media Sessions	60,000	360	8,000	10,000	32,000	40,000	80,000	160,000
Max. SRTP Call Legs	40,000	450	4,000	5,000	16,000	16,000	40,000	120,000
Max. SIPREC Sessions	19,000	180	6,000	7,500	16,000	20,000	20,000	40,000
Max. Transcoded Sessions (G711 <-> G729)	3,500**	360	6,250	5,800	15,000	5,800	60,000	60,000
Max. Calls Per Second	2,000	30	100	150	580	700	1,200	1,700

* VM configuration dependent

** Software transcoding

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