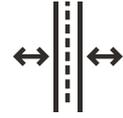


# Oracle Enterprise Session Border Controller



Enterprise Session Border Controller

The Oracle Enterprise Session Border Controller protects IP communications networks from cyber-threats and fraud, 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, creating 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 Enterprise Session Border Controller is specifically designed to address the unique security, reliability and interoperability problems that can occur when real-time communications sessions cross network borders. It defends against myriad cyber-attacks and ensures communications privacy, dynamically routes communications around network faults, and manipulates sessions to resolve interoperability problems.

The Enterprise 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, cloud applications as well as migration to cloud services such as Unified Communications as a Service (UCaaS) or Contact Center as a Service (CCaaS) solutions.

## 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

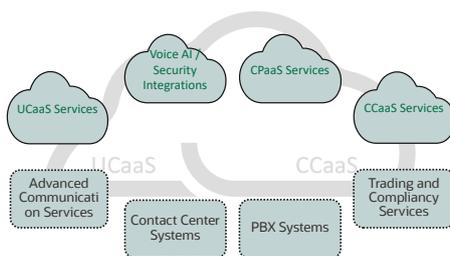


Figure 1. Oracle Enterprise Session Border Controller connects disparate IP communications networks securely.

## 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. Oracle's Enterprise 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.

It incorporates Oracle's architecture, a comprehensive vision focusing on world-class Security, being Application aware, Flexible delivery and Extensible platforms. The Oracle 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 Enterprise 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. It 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 Enterprise 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 Enterprise 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 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. Biometrics, Compliance, Speech Analytics, Geographic Redundancy).

### Assured reliability

Impairments and failures can occur anywhere in a communications network – including the SBC – and they can be difficult to isolate and repair. The Oracle Enterprise SBC includes a complete set of carrier-grade routing and

### Oracle Advantage

- Advanced Denial of Service (DoS) and overload protection
- 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 up 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 Session Delivery Management Cloud provides a simple, more insightful way to manage your network
- VNF HEAT Templates
- REST APIs
- FIPS/JITC Compliant

survivability features to ensure business continuity during network failures or impairments.

It features 1:1 high availability that continuously monitors its health and routes sessions from active to standby units with no loss in session state or impact to user experience. The Enterprise 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 Enterprise SBC features a monitoring and tracing tool that enables them to quickly visualize complex session information. For large networks, an embedded probe enables the Enterprise SBC to integrate with the sophisticated troubleshooting capabilities provided by Oracle Enterprise Operations Monitor.

## Applications

Businesses install the Oracle Communications Enterprise Session Border Controller 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

## Bring your own carrier (BYOC) in a multi cloud world

Best-of-breed enterprise session border controllers enable BYOC connections for multi-cloud environments and solve the multivendor interoperability challenges that arise from deploying the multiple cloud and on-prem solutions, transforming independent islands of technology into a cohesive enterprise communications network. As security devices deployed at the enterprise edge, Enterprise 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 UCaaS, 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.

### New features

- Advanced filtering options for embedded probe
- T.38 transcoding support in Virtual Enterprise SBC
- TACACS+ support for REST API

Cloud-based deployments also alleviate the responsibilities of physical management.

For maximum flexibility, Oracle's Enterprise SBC support a wide range of hypervisors & public clouds:

| PRIVATE CLOUD (HYPERVISORS) | PUBLIC CLOUDS               |
|-----------------------------|-----------------------------|
| VMware ESXi                 | Oracle Cloud Infrastructure |
| KVM                         | Microsoft Azure             |
| Microsoft Hyper-V           | Amazon Web Services (AWS)   |
|                             | Google Cloud Platform       |

**Related products**

- Oracle Enterprise Operations Monitor
- Oracle Enterprise Communications Broker
- Oracle Session Delivery Management Cloud
- Oracle Communications Session Delivery Manager

**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 Phone Premise Peering
- Genesys PureEngage
- Cisco Webex
- Google Voice

**Integrating communications environments**

Oracle offers multiple solutions to enable easy interoperability of communication environments, simplifying operations and resolving network and protocol incompatibilities with strong security. Additional products complement the Enterprise Session Border Controller and offer a robust and field-proven suite of communications applications to enable and protect communications in a multi-cloud world.

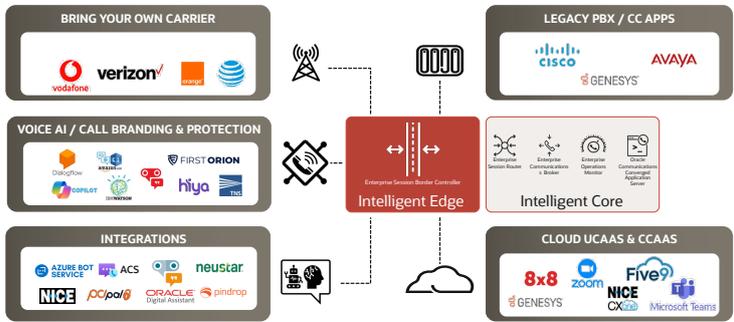


Figure 2. Oracle offers a robust suite of communications applications

## Enterprise SBC datasheet

### Critical features and capabilities

| FEATURE               | CAPABILITIES   |
|-----------------------|--|
| Security              | <ul style="list-style-type: none"> <li>Granular access control</li> <li>IP address and SIP signaling concealment</li> <li>Layer three through five topology hiding and signaling overload controls</li> <li>IP telephony spam protection</li> <li>Stateful deep packet inspection</li> <li>Signaling and media encryption</li> <li>Telephony fraud protection</li> <li>NIST Suite B cryptography (also available for WebGUI connection)</li> <li>FIPS Compliant and being validated, including MSRP FIPS for virtualized SBC, 1100 &amp; 3900 platforms. (All prior images, including SCz9.0.0 are FIPS Certified.)</li> <li>JITC Compliant and being validated. (Image SCz9.0.0 is JITC Certified.)</li> <li>Transport Layer Security (TLS) including TLS v1.3, and Mutual TLS</li> <li>Secure Real-time Transport Protocol (SRTP)</li> <li>IP Security (IPsec)</li> <li>Datagram TLS (DTLS) - server mode</li> </ul>                                       |
| Interoperability      | <ul style="list-style-type: none"> <li>SIP message normalization</li> <li>Response code translation</li> <li>SDP and Dual Tone Multi-Frequency (DTMF) manipulation</li> <li>Number and uniform resource identifier (URI) manipulation</li> <li>Header manipulation rules (HMR)</li> <li>SIP / H.323 signaling interworking</li> <li>Protocol interworking: Transmission Control Protocol (TCP), User Datagram Protocol (UDP), Stream Control Transmission Protocol (SCTP)</li> <li>Encryption interworking</li> <li>Network address translation (NAT) and firewall traversal</li> <li>IP address translation: private/public, IPv4/IPv6</li> <li>Transcoding</li> <li>IETF standard SIP Recording (SIPREC) interface</li> <li>Support for Microsoft ELIN Gateway and Avaya Personal Profile Manager proxy</li> <li>Session routing based on LDAP (Microsoft Active Directory) query</li> <li>Calling Line Identification Presentation (CLIP/COLP)</li> </ul> |
| Reliability           | <ul style="list-style-type: none"> <li>Standby SIP registrar with caching for remote site survivability</li> <li>Stateful signaling and media failover</li> <li>Quality of service (QoS) marking, virtual local area network (VLAN) mapping</li> <li>Registration storm avoidance</li> <li>Call rate limit enforcement</li> <li>Trunk load balancing</li> <li>Stateful session routing</li> <li>QoS-based routing</li> <li>Microsoft Active Directory based routing enhancements</li> <li>H.323 destination address based routing</li> </ul>   |
| Regulatory compliance | <ul style="list-style-type: none"> <li>Session prioritization for emergency services</li> <li>Call detail records (CDRs) with local or remote storage via RADIUS</li> </ul>  |
| Cost management       | <ul style="list-style-type: none"> <li>Least cost routing</li> <li>CODEC renegotiation</li> </ul>  |
| Management            | <ul style="list-style-type: none"> <li>Embedded Oracle Enterprise Operations Monitor probe</li> <li>Browser-based GUI</li> <li>SIP monitoring and tracing tool</li> <li>SNMP agent, XML configuration files, Syslog, SFTP, RADIUS interfaces</li> <li>Subnet masks for SNMP</li> <li>Secure WebGUI access with HTTPS</li> </ul>  |
| T1/E1 module          | <ul style="list-style-type: none"> <li>One T1/E1 port (RJ-48) for TDM</li> <li>Four T1/E1 ports (RJ-48) for TDM</li> </ul>   |
| Analog module         | <ul style="list-style-type: none"> <li>Four FXS ports</li> <li>Four FXO ports</li> </ul>   |

### Platforms supported

- Acme Packet 1100
- Acme Packet 3900
- Acme Packet 3950
- Acme Packet 4600
- Acme Packet 4900
- Acme Packet 6300
- Acme Packet 6350
- Acme Packet 6400
- Private Cloud (hypervisors):
  - VMware ESXi
  - KVM
  - Microsoft Hyper-V:
- Public Cloud:
  - Oracle Cloud Infrastructure
  - Microsoft Azure
  - Amazon AWS
  - Google GCP

## 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, AP6350 and AP6400.

**Virtual and cloud:** The virtualized enterprise SBC leverages the same code base as Oracle’s appliance-based 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<sup>a</sup> for Enterprise SBC



| Feature                                  | Virtualized SBC <sup>b</sup> | AP1100        | AP3900        | AP3950        | AP4600        | AP4900        | AP6350        | AP6400        |
|--|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Form factor                              | Virtualized                  | 1U System     | 3U System     | 1U System     |
| System Architecture                      | Data Centre /COTS            | Purpose Built |
| Max. Media Sessions                      | 60,000                       | 240           | 8,000         | 10,000        | 32,000        | 40,000        | 160,000       | 160,000       |
| Max. SRTP Call Legs                      | 30,000                       | 240           | 4,000         | 5,000         | 16,000        | 16,000        | 120,000       | 70,000        |
| Max. SIPREC Sessions                     | 19,000                       | 120           | 6,000         | 7,500         | 16,000        | 20,000        | 40,000        | 40,000        |
| Max. Transcoded Sessions (G711 <-> G729) | 3,500 <sup>c</sup>           | 360           | 6,250         | 6,700         | 15,000        | 6,700         | 60,000        | 60,000        |
| Max. Calls Per Second                    | 3,000                        | 30            | 100           | 150           | 580           | 700           | 1,700         | 1,700         |

- a. Performance and capacity vary by signaling protocol, call flow, codec, configuration, and feature usage.
- b. VM configuration dependent
- c. Software transcoding

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