ORACLE COMMUNICATIONS

Oracle Enterprise Communications Broker

The Oracle Enterprise Communications Broker is a software-based core communications controller purpose-built to simplify complex, multivendor Unified Communications (UC) networks and to extend their services to mobile users. It abstracts key communications services, centralizes the management of session routing, dial-plans and SIP trunking pools for multivendor environments, providing a vendor-neutral infrastructure for the delivery of next-gen applications.

OVERVIEW

The Oracle Enterprise Communications Broker (ECB) controls the routing of SIP sessions across disparate access and application layer network elements. It dramatically simplifies network operations, optimizes use of on-net resources, enforces enterprise policies, and ensures compliance.

Featuring SIP protocol normalization capabilities developed over the last two decades and deployed in solutions worldwide, the ECB addresses the proprietary tweaks to SIP protocols that various UC vendors have implemented over the years, the ECB cures the resulting incompatibilities between multivendor communications systems that can slow UC projects and limit their success. It provides seamless interoperability between these communications systems, session managers and legacy infrastructure, thereby eliminating UC vendor lock-in.

ECB is deployed in the network core where UC, PBX and contact center systems interconnect with each other and with service provider trunk interfaces. It works together with the Oracle Enterprise Session Border Controller (E-SBC) which connects, secures and controls access to service provider SIP trunks and hosted communications applications and services.

ECB is available for running on either a commercial off the shelf-based server (COTS) appliance or in a virtual-machine environment (VME).

NEW FEATURES IN ECB'S RELEASE 3.1

The latest enhancements to the Oracle Enterprise Communications Broker enable it to support advanced UC solutions, such as MS Skype, and their support for non-numeric dialing plans (e.g. joe.doe@oracle.com, 15557891010@oracle.com, etc.). ECB now empowers our customers to spread their signaling traffic across multiple networks, such as for regional or departmental domain separation. Other improvements support security, performance, networking flexibility and automation capabilities. Together, these features include:

- Alphanumeric User / Routing Support
- Support for VLAN Traffic Separation
- Automated UserDB Updates and Management via CSV
- Source-Based Routing Scaling
- Support Group Matching for ENUM Queries
- SFTP for CDR Push

Key Features

- Centralized dial-plan management
- Centralized session routing and forking
- Multivendor UC protocol normalization and interoperability, verified by TekVizion, including:
  - Avaya
  - Cisco
  - Microsoft
- SIP registrar
- Call admission control
- Carrier-class high availability

Key Business Benefits

- Simplify multivendor Unified Communications networks
- Cure interoperability problems across a wide range of third-party UC systems and legacy PBXs
- Smoothly migrate from legacy telephony to Microsoft TEAMS and Skype for Business
- Enable users to access UC applications with their mobile devices
- Optimize utilization of on-net resources
- Improve visibility and simplify troubleshooting
- Integrate business automation applications with communications

ORACLE

FEATURES AND FUNCTIONS

The Oracle Enterprise Communications Broker incorporates Oracle's S.A.F.E. Architecture, a comprehensive vision focusing on Secure networks, advanced Analytics, Flexible deployments and Extensible platforms.

The ECB's own architecture and rule-based policy control offers the flexibility and reliability which ensures the availability of services, applications and systems within an enterprise. Further, it simplifies network operations and abstracts key communication services for enterprises, enabling a best-of-bred communications strategy that delivers consistent experiences as users move between locations and devices.

Centralized Dial-Plan Management

ECB offers industry-leading dial-plan management that enables location-specific administrative control while maintaining a uniform worldwide dial-plan and providing a consistent experience for users as they travel between geographic locations.

ECB centralizes the administration of company-wide dialing plans into a single element, reducing tedious and error-prone administrative tasks. It features a unique context-aware dial-plan engine that enables users to maintain dialing habits even when connecting to their company's network from a foreign location. Using an onboard user database, the dial-plan engine automatically identifies user context and maps dialed digits to the dialing conventions established for communication in the user's current location.

The dial-plan engine enables IT administrators to define a single hierarchical, worldwide dial-plan and gives regional administrators the flexibility to define local dialing conventions. It transforms locally dialed digits to the global convention.

Centralized Session Routing Dial-Plan

Organizations often encounter difficulty optimizing and troubleshooting their networks when disparate routing elements are deployed. The ECB centralizes all routing decisions, applies policies and provides visibility into network operations. It can optimize the use of private network resources and reduce toll costs.

Using ECB, enterprises can streamline implementation of advanced routing algorithms, including tail-end hop-off, simultaneous ring and load-balancing. They can apply policies to prevent fraud, enforce compliance and leverage network resources. IT managers can offer flexible routing to one or more user-designated endpoints by using the ECB's LDAP interface to query an external database.

ECB monitors the availability of SIP agents and ENUM servers and re-routes traffic over alternate paths to maintain service availability in case of network failure.

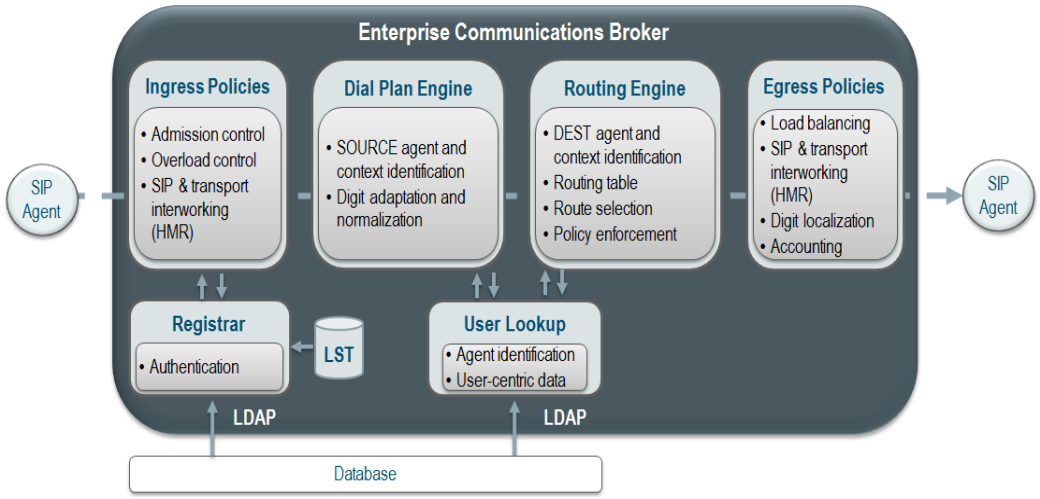


Figure 1
Oracle Enterprise Communications Broker System Architecture

New Features in ECB R3.1

- Alphanumeric user/routing support
- Support for VLAN traffic separation
- Automated UserDB updates and management via CSV
- Source-Based Routing scaling
- Support Group matching for ENUM queries
- SFTP for CDR push

Related Products:

- Oracle Enterprise Session Border Controller
- Oracle Enterprise Operations Monitor
- Oracle Communications Telephony Fraud Monitor
- Oracle Communications Interactive Session Recorder
- Oracle Communications Session Delivery Manager

SIP Interoperability

Enterprises often face interoperability problems when connecting the trunk interfaces of UC systems made by different vendors. These problems can delay deployments, increase costs and reduce functionality while waiting for the vendors to resolve their Enterprise's problems through feature enhancements or software updates.

The ECB interoperates with the industry's widest range of third-party SIP communications systems, enabling enterprises to rapidly integrate multivendor telephony, UC, contact center and business automation applications. It uses dynamic manipulation to normalize disparate SIP protocol implementations. SIP message headers can be modified, added, or removed based on specified criteria as they flow through the ECB.

Dynamic manipulation provides IT staffs a powerful interoperability tool they can use to accelerate deployment of new systems and upgrades, and consolidate communications systems added through mergers and acquisitions. They can future-proof their networks and simplify deployment of business automation applications.

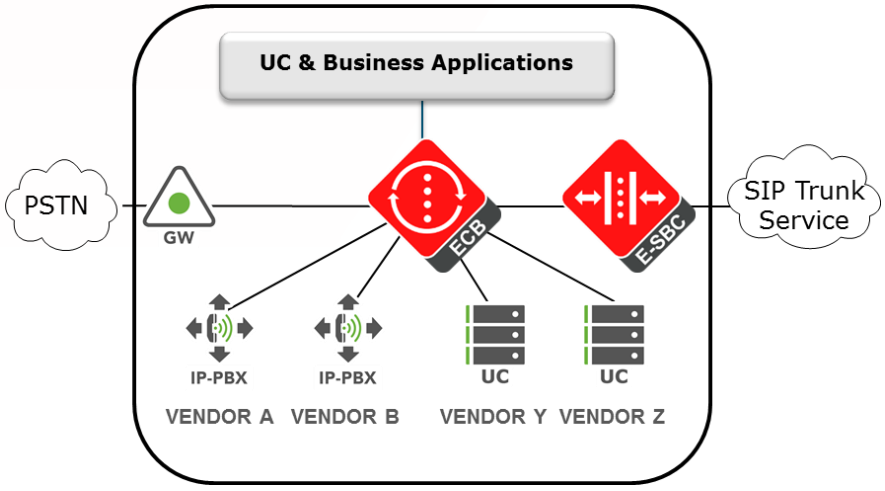


Figure 2
Oracle Enterprise Communications Broker normalizes SIP protocol differences and provides seamless interoperability across multivendor communications systems

Registrar

An onboard SIP registrar enables 3rd party SIP clients to access UC applications, extending collaboration capabilities to the mobile workforce. The registrar can authenticate users via local or external user databases.

Call Admission Control

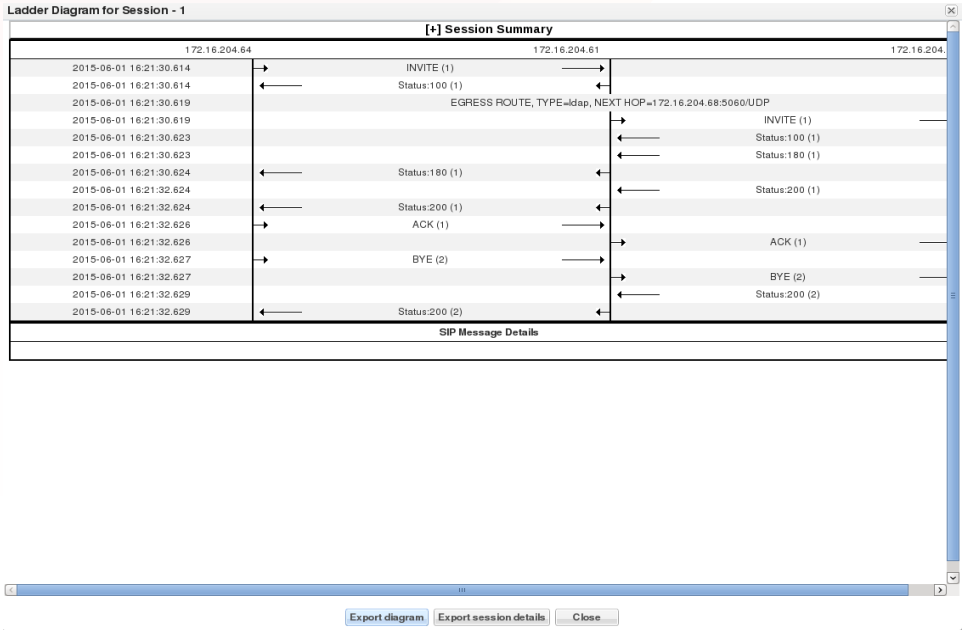
The ECB features powerful, granular call admission control functions to protect itself and all interconnected UC systems from non-malicious overloads. Its dynamic signaling rate limiting feature rejects incoming messages that exceed configured maximums for each SIP proxy.

Network Visibility

The ECB is designed to simplify troubleshooting and monitoring of the entire UC network. An onboard probe captures and forwards signaling information to the Oracle Enterprise Operations Monitor (EOM), which provides real-time dashboards and statistics for network equipment, user groups and trunks. The solution correlates end-to-end session information from all of the ECB probes, enabling rapid identification and localization of problems,

including call set-up and tear-down errors, registration problems and call quality. It also enables easy-to-use drill-down troubleshooting for analysis of any reported problem related to a user, user group, trunk, network device or an IP address.

When used in tandem with the Oracle Enterprise Telephony Fraud Monitor (FM), this same signaling information from the ECB's probes can also be used for the detection and prevention of telephony-based fraud, such as International Premium Rate Service Numbers (IPRS), Call Pumping, and Telephony Denial of Service (TDoS).



The ECB includes an onboard SIP Monitoring and Tracing panel that provides a searchable list of sessions, registrations, subscriptions and other device-specific events. Complete detail for each event can be displayed in an easy-to-read ladder diagram format. (See Figure 3)

Figure 3
Onboard GUI displays ladder diagrams for easy network troubleshooting

Accounting

The ECB captures comprehensive call detail records (CDRs) that can be used for compliance reporting, internal billing and service provider invoice reconciliation. CDRs can be stored in external servers using the Remote Authentication Dial-In User Service (RADIUS) protocol, or they can be saved locally and pushed to external servers. CDRs also enable traffic planning and performance management.

Carrier-Class High Availability

Optional active/standby high availability (HA) configurations are supported for both the COTS-based and VME-based software models. SIP signaling and peer state are check-pointed between active and standby units to ensure seamless business continuity in the event of a system or network failure.

Platforms and Management

The ECB is available in several form factors, allowing enterprises to match performance and price points to their own operations. It is delivered either as a fully integrated COTS-based appliance or as software-only edition for VME environments. For the latter option, it is offered on VMware's ESXi and Oracle's OVM hypervisors.

It can be managed through an easy-to-use onboard graphical user interface. A comma separated value (CSV) utility enables easy import of dial-plans, routes and users from other systems, simplifying provisioning.

CRITICAL ECB R3.1 FEATURES & FUNCTIONALITIES

FEATURE	FUNCTIONALITIES
Centralized Session Routing	• Controls and optimizes session routing based on identity, costs and other parameters
Session Forking	• Forks sessions to multiple endpoints, sequentially and/or in parallel, based on LDAP query
Centralized Dial-plan Management	• Reduces operating costs and simplifies consolidation of disparate dial-plans
Policy Engine	• Modifies or denies routing based on criteria, including time of day, day of week, address pairs, and presence/absence of codecs in SDP • Modifies SIP headers based on user look-up
SIP Registrar	• Enables BYOD access to unified communications applications using standard SIP clients
Call Admission Control	• Provides granular control of access to resources and services
Normalize Multivendor Protocol Implementations	• Protects investments in legacy IP-PBXs and other communications systems • Enables best-of-breed communications strategies
Call Detail Records	• Enables departmental charge-back
Alternate Routing	• Routes sessions over alternate paths if primary route fails
Load-Balancing Services	• Optimizes utilization across multiple session agents and/or registration servers
Multi-node Synchronization	• Dynamically synchronizes user database and routing information across up to 10 ECB nodes per network
Stateful High Availability	• Rapid automatic failure detection and stateful failover to standby unit
LDAP Interface	• User authentication and routing based on enterprise policies
Management	• RADIUS accounting records • Syslog and SNMP interfaces

ECB R3.1 SPECIFICATIONS

REQUIREMENT	DESCRIPTION
Capacities	• 32,000 Concurrent sessions per node • 400,000 Max. registrations per node
Performance	• 30 – 170 cps, depending on configuration, call flows

ORACLE COMMUNICATIONS

CONNECT WITH US

Call +1.800.ORACLE1 or visit oracle.com.
Outside North America, find your local office at oracle.com/contact.

blogs.oracle.com/oracle facebook.com/oracle twitter.com/oracle

Integrated Cloud Applications & Platform Services

ORACLE