

# ORACLE COMMUNICATIONS SERVICES GATEKEEPER

## KEY FEATURES AND BENEFITS

THE FOUNDATION FOR  
CONVERGED WEB-TELECOM  
SERVICES

### FEATURES

- Runtime policy enforcement
- Clustering and geographic redundancy
- Telecom Web services support
- Third-party partner relationship management
- Integrated Java EE and Web services
- Network protocol support
- Integrated operations, administration, and maintenance with Oracle WebLogic Server
- Integrated IMS support
- Service creation environment suite

### BENEFITS

- Increase revenue by leveraging new application opportunities created through an open, standards-based service exposure platform.
- Lower cost of development and maintenance using SLA-based policy and partner management interfaces.
- Enhance agility and competitiveness through an extensible, customizable network access layer.
- Quickly develop real-time communication services via Java, Web services, and Web 2.0 interfaces.
- Leverage a rich set of out-of-the-box interfaces and an Eclipse-based service creation environment to rapidly create and deliver new services.

*Network operators and service providers are under pressure. They must attract and retain premium revenue customers, develop profitable new business models, improve returns on existing network investments, and launch new services as cheaply and quickly as possible. Oracle Communications Services Gatekeeper delivers an integrated service exposure platform that combines powerful policy enforcement, comprehensive Web services, partner relationship management, and an extensible network adaptation framework—designed to help network operators rapidly and cost effectively create and capture new revenue-enhancing opportunities.*

### Executive Overview

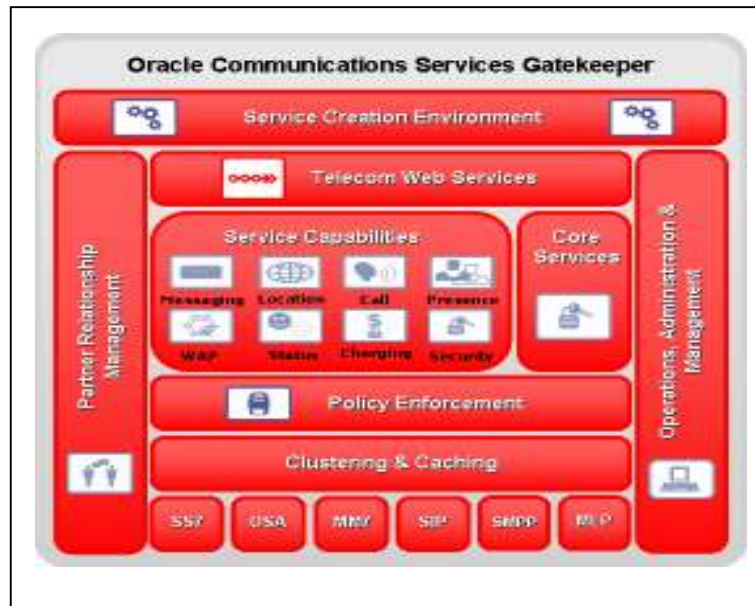
Faced with the challenges outlined above, most operators expect a drastic increase in their portfolio of services, from a handful now to hundreds or eventually thousands of content and application offerings. Although some of these new services will be developed in-house, the vast majority of these new applications will be sourced from partners, Web applications, and third-party service providers outside the carrier's network. This creates a tremendous challenge for business and network integration as well as partner ecosystem management.

Oracle Communications Services Gatekeeper enables network operators to rise to this challenge. It facilitates third-party service provider access to carrier network infrastructure, in a controlled, secure, optimized, and automated manner. It also helps to protect and manage third-party partner access to an operator's core network resources, such as messaging, call control, location, and subscriber profile. This carrier-grade network infrastructure platform is based on IT and telecom industry standards such as Java Platform, Enterprise Edition (Java EE), Web services, Session Initiation Protocol (SIP), IP Multimedia Subsystems (IMS), and Parlay X Web Services.

### Product Overview

Network operators worldwide have successfully deployed Oracle Communications Services Gatekeeper in their service delivery platform (SDP) to create a unified and integrated policy enforcement mechanism for all their services. Operators are evolving their SDPs into Internet Protocol-based Next Generation Networks (NGN) to bridge legacy network services with new IMS-NGN services. Oracle Communications Services Gatekeeper creates a futureproof architecture through integrated standards support.

The latest release of Oracle Communications Services Gatekeeper delivers a Java EE–based architecture, implemented on the telecom industry’s leading, carrier-grade Java EE application server—Oracle WebLogic Server—and a more-modular and standards-based approach. Oracle Communications Services Gatekeeper runs as a set of standard Java EE applications on the Oracle WebLogic Server, leveraging a highly scalable container and extensive tooling support. With robust clustering capabilities, Oracle WebLogic Server provides high-availability, failover, and load-balancing capabilities.



**Figure 1: Oracle Communications Services Gatekeeper functional architecture**

Oracle Communications Services Gatekeeper establishes a secure common entry point for applications accessing an operator’s network resources through both telecom Web services and policy-based, secure, and extensible network interfaces. This helps accelerate development of new communication applications by abstracting core network resources residing in wireless, wireline, or IP networks, and exposing them to the wider community of IT application developers using industry standard Web services and Java interfaces, in addition to telecom Web services.

### **Key Features**

Through comprehensive functionality, Oracle Communications Services Gatekeeper empowers service providers to excel in an NGN environment.

#### **Runtime Policy Enforcement**

At the core of this solution is a service-level agreement (SLA)–based policy enforcement engine, which upholds third-party partner SLA policies at runtime. It allows network operators to dynamically customize partner SLA data and access

rules to fit traffic prioritization models and the capacity of individual network nodes. Additionally, using a rich traffic management and shaping capability, operators can create a deterministic traffic management solution that will increase service access and reliability.

### **Clustering and Geographic Redundancy**

To ensure the highest level of service availability and reliability, production systems of Oracle Communications Services Gatekeeper are deployed in clusters for each tier, access, and network. Each tier consists of a cluster, with at least two instances deployed per cluster. Oracle Communications Services Gatekeeper also supports the fault-tolerant deployment architecture of geographic redundancy. In this deployment, the operator deploys services across geographically distributed data centers, with real-time, SLA-based policy enforcement applied across each geographical site. This provides operators with fault tolerance and helps minimize service outages, thereby maximizing customer satisfaction and revenue retention.

### **Telecom Web Services**

The “northbound” application interface layer of Oracle Communications Services Gatekeeper provides developers and partners with a standards-based Web services interface to telecom network service capabilities based on a common access control, security, and policy management framework. By using the extension toolkit for Oracle Communications Services Gatekeeper, network operators can also add their own value-added network service API extensions. Below are the service enablers exposed as telecom Web services by Oracle Communications Services Gatekeeper:

- **Call control (Parlay X 2.1/ES 202 391 v1.2.1).** Third-party call control, call notification, call handling, and audio call.
- **Messaging (Parlay X 2.1/ES 202 391 v1.2.1).** SMS, MMS, and EWS WAP push (WAP 1.2).
- **Mobility (Parlay X 2.1/ES 202 391 v1.2.1).** Terminal status and terminal location.
- **Payment (Parlay X 2.1/ES 202 391 v1.2.1).**
- **Presence (Parlay X 2.1/ES 202 391 v1.2.1).**

### **Third-Party Partner Relationship Management**

Oracle Communications Services Gatekeeper provides a standard interface that easily integrates with any self-service portal application for third-party partners. This allows them to self-administer and manage their SLAs with network operators, including the registration of additional services. Using this approach, Oracle Communications Services Gatekeeper lowers the cost for operators to sign, administer, and retain a large number of third-party partners.

### **Core Platform Services**

Oracle Communications Services Gatekeeper consists of a base platform, which provides a collection of critical core platform services shared by all service capability modules. These core platform services include alarm, caching, call detail records (CDRs), charging, events, geo-redundancy, logging, policy, resource, statistics, storage, timer, and transactions. The policy enforcement capabilities of

Oracle Communications Services Gatekeeper can also be extended to external applications using the callable policy interface. This allows operators to create and enforce policy decisions on external applications.

#### **Integrated Java EE and Web Services**

Oracle Communications Services Gatekeeper is implemented on a Java EE architecture, based upon the industry-leading Oracle WebLogic Server. This allows the native telecom Web services to be integrated with the robust Web Services Security; authentication, authorization, and accounting; clustering; and management frameworks provided by Oracle WebLogic Server. Additional benefits include improved performance, enhanced caching and persistence, as well as asynchronous and transaction-based messaging.

#### **Flexible Charging Models and Billing System Integration**

Oracle Communications Services Gatekeeper reduces the cost and complexity of implementing and managing billing processes between service providers and subscribers. It facilitates the implementation of flexible charging models for its services by supporting CDR-based charging and content- and value-based charging models. Content-based charging support enables users and subscribers to be charged for the value of the services consumed, rather than under a time-based or a flat-rate system.

#### **Integrated IMS Support**

Oracle Communications Services Gatekeeper is tightly integrated with the fully IMS-compliant Java EE–SIP application server, Oracle SIP Server, which supports all the key interfaces for an IMS application server, as well as the general SIP profile mandated by the Third Generation Partnership Project (3GPP) Release 6 specifications. This allows Oracle Communications Services Gatekeeper to seamlessly integrate with IMS core network elements, such as the Home Subscriber Server, Call Session Control Function, and Media Resource Function components.

#### **Integrated Operations, Administration, and Maintenance with Oracle WebLogic Server**

Installing and configuring Oracle Communications Services Gatekeeper is simplified with Oracle WebLogic Server's GUI and text-based installation and configuration wizards. Once your installation is up and running, the Oracle WebLogic Server administration console provides a single Web-based place for controlling your servers; provisioning, configuring, and managing assets; and viewing alarms.

#### **Service Creation Environment Suite**

Oracle Communications Services Gatekeeper provides developers, independent software vendors (ISVs), and service providers with a powerful collection of service creation, simulation, and testing capabilities with its service creation environment (SCE) suite. The SCE suite includes the software development kit, the platform development studio, and integrated development environment tools.

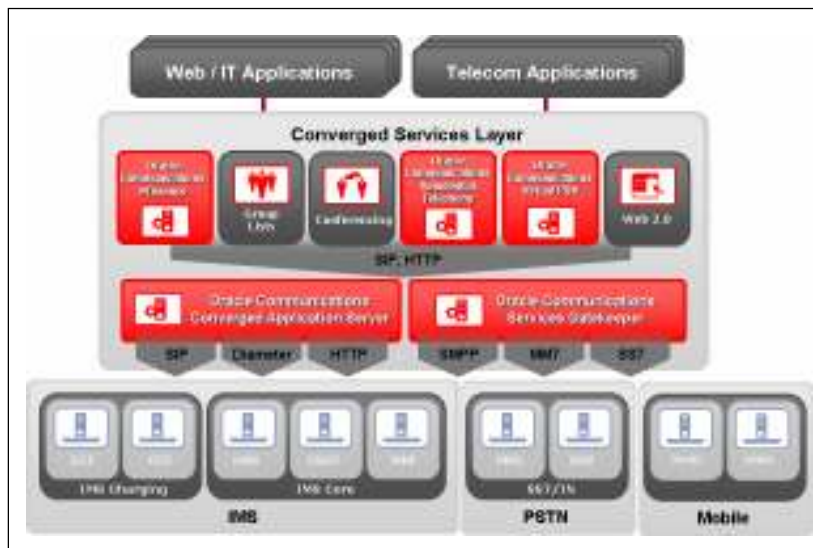
**Network Protocol Support**

Oracle Communications Services Gatekeeper provides comprehensive support for network adaptation modules for integrating legacy fixed, mobile, and IMS network elements. In addition, operators and their integration partners can use the platform development studio to create network adaptations for custom communication services and service enablers. Oracle Communications Services Gatekeeper provides the following out-of-the-box network protocol adaptation modules:

- **Call control.** Third-party call control (Parlay 3.3, RFC 3261), call notification (Parlay 3.3, RFC 3261), call handling (Parlay 3.3), and audio call (Parlay 3.3).
- **Messaging.** SMS (Parlay 5.0, SMPP 3.4), MMS (Parlay 5.0, MM7 R5.3, Ericsson MM7 R1.0/2.0/2.5), and WAP push (Parlay 5.0, PAP 2.0).
- **Mobility.** Terminal status (Parlay 3.3) and terminal location (Parlay 3.3, MLP 3.0/3.2).
- **Payment (Parlay 3.3).**
- **Presence (RFC 3261).**

**Oracle Communications Service Delivery**

Oracle Communications Service Delivery is composed of applications and software-based delivery platform products for communications service providers to increase revenue via out-of-the-box applications and decrease time to market associated with deploying third-party services and implementing traditional network control capabilities onto a lower cost, standards-based software platform.



**Figure 2: Oracle Communications Service Delivery products in the Converged Services Layer**

**ORACLE COMMUNICATIONS  
SERVICE DELIVERY PRODUCT  
FAMILY**

Oracle Communications Service Delivery is a portfolio of powerful, standards-based telecom middleware products. It enables service providers, enterprises, and developers to harness and cross-leverage the power of the Web, social networking, IT and telecommunications. The result is the rapid and cost effective creation of new, innovative, and converged internet communication services.

**ORACLE COMMUNICATIONS  
SERVICE DELIVERY  
PRODUCTS**

- Oracle Communications Converged Application Server
- Oracle Communications Services Gatekeeper
- Oracle Communications Presence
- Oracle Communications Residential Telephony
- Oracle Communications Virtual PBX

**RELATED ORACLE  
PRODUCTS FOR SERVICE  
DELIVERY**

- Oracle SOA Suite
- Oracle Identity Management
- Oracle WebCenter

**Comprehensive Industry Standards Support and Leadership**

Oracle is a leader in internet, Java, and telecom industry standards, not only in terms of product implementations of these standards, but also in leadership roles. Oracle is a member of the board of directors of the Parlay Group, helping to define the next-generation of Parlay X-based telecom Web services. Below are the industry standards and platforms supported by Oracle Communications Services Gatekeeper.

OS PLATFORMS	SIP STANDARDS (IETF)
Solaris 9/10 (SPARC) HP-UX 11.23 (Itanium 2) Red Hat Linux AS4 (Xeon)	2543 (SIP) 2617 (HTTP Basic & Digest Authentication) 2976 (INFO) 3261 (SIP)
IMS STANDARDS (3GPP R6)	3262 (PRACK) 3265 (SUBSCRIBE, NOTIFY) 3311 (UPDATE) 3325 ("P-Asserted-Identity" header) 3327 ("path" header) 3428 (MESSAGE)
TS 23.228/TS 24.229 (ISC, SIP Profile) TS 29.328/TS 29.329 (Sh) TS 32.260/TS 32.299 (Ro/Rf) TS 33.222 (X-3GPP-Asserted-Identity, HTTP Authentication)	3515 (REFER) 3608 ("serviceroute" header) 3824 (ENUM with SIP) 3903 (PUBLISH) draft-ietf-sip-content-indirect-mech-05 (content indirection) draft-ietf-simple-xcap-08 (XCAP: XML Configuration Access Protocol) draft-ietf-sip-gruu-14 (GRUU: Globally Routeable User Agent URI)
WEB SERVICES SECURITY STANDARDS (OASIS)	
WS-Security 1.0 Username Token Profile 1.0 X.509 Certificate Token Profile SAML Token Profile 1.1 SOAP Message Security 1.0	
PARLAY X WEB SERVICES STANDARDS (ETSI)	
ES 202 391 v1.2.1 (Part 1-6, 8-11, 14)	
WEB SERVICES STANDARDS (OASIS)	DIAMETER STANDARDS (IETF)
SOAP 1.1 WS-I Basic Profile 1.0 WSDL 1.1	2960 (Stream Control Transmission Protocol) 3588 (Diameter Base Protocol) 4006 (Diameter Credit Control)
WAP STANDARDS (OMA)	JAVA STANDARDS (JCP)
WAP-167 (Service Indication) WAP-168 (Service Loading) WAP-175 (Cache Operation)	Java EE 1.4 Java SE 5 SIP Servlet 1.0 (JSR 116)

**Contact Us**

For more information about Oracle Communications Services Gatekeeper, please visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.

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