END-TO-END SIGNALING ACROSS 2G, 3G, AND 4G NETWORKS

KEY FEATURES

- Support for 1 million GTT records and 240 million NP (ITU markets) and HLR manager subscriber records in a single platform
- Equipment Identity Register solution to work with multiple protocols, networks, and devices
- Portfolio of NP solutions for 2G, 3G, and 4G networks
- 3G-VoLTE solutions to efficiently route 3G and 4G calls
- Support for multiple link interface types and industry standards

KEY BENEFITS

- Supports key functions in a single platform
- Enables operators to purchase the capacity and connectivity needed to meet existing network needs
- Centralizes signaling connectivity to other service providers
- Protects operators’ original investment by leveraging a migration path to next-generation networks

OVERVIEW

To successfully consolidate networks for economies of scale and to improve performance for end users, end-to-end signaling across 2G, 3G and 4G networks is needed. Rather than engage in costly forklift upgrades, service providers need the ability to purchase capacity and connectivity on an “as-needed” basis. Currently, the IP portion of networks is small, and many Signaling System No. 7 (SS7) technologies are managed as individual components. This makes inter-technology handovers difficult and complicates unification of disparate platforms at the signaling level.

An “intelligent evolution” toward LTE is better achieved through a convergence of key SS7 assets on a single signaling platform. Oracle Communications EAGLE is a signaling platform that boasts SS7-focused STP and SGW assets that help operators manage intelligent routing, screening services, number portability (NP), equipment identity register, and integrated performance/service management from the same database technology and footprint. As they build out the LTE portions of their networks, operators gain seamless connections to PSTN SS7/TDM transports.

PRODUCT DESCRIPTION

Signal Transfer Point

At the center of EAGLE are three key rudiments: the Oracle Communications Eagle Home Location Register (HLR) Router, a robust signal transfer point and signaling gateway.

The HLR flexibly allocates numbers across multiple HLRs in a network and overcomes the limitations of traditional range-based routing that ultimately waste HLR capacity. The HLR Router provides the mapping between subscriber numbers and HLRs so operators can fill every HLR to 100-percent capacity, eliminating the need to maintain subscriber routing tables in every mobile switching center.

The STP delivers ANSI / International Telecommunication Union (ITU) international gateway functionality in addition to centralized signaling routing, and bridges the existing circuit-switched and packet networks. It offers advanced routing and screening functions and support for multiple link interface types and industry standards, fostering flexible configuration and connection of network devices. It also controls network congestion to guard against propagation of network problems from other networks.

SGW is a complement to the STP; it transfers signaling messages relevant to call establishment, billing, location, short messages, address conversion, and other services.

Operators can migrate to a packet-based architecture without reconfiguring their networks,
and, using the SGW’s multi-protocol support, have the freedom to choose best-in-class products. With its packet-based technology, the SGW can handle the signaling requirements of the most complex networks, delivering dynamic bandwidth sharing to support increases in signaling traffic without additional nodes.

These three components yield compelling use cases around 3G-VoLTE migration, number portability and equipment identity register:

- **3G-VoLTE Migration** – This solution identifies and routes calls destined for 4G/VoLTE subscribers by managing two critical variables: Identifying whether a call is destined for a 4G/VoLTE subscriber and establishing the location of the called 4G/VoLTE subscriber.

- **Number Portability** – This simplifies NP by integrating advanced database management and signaling functions onto a single platform, providing superior throughput, and avoiding link congestion and bottlenecks in the network.

- **Equipment Identity Register** – This database can “blacklist” stolen handsets on 2G, 3G or LTE networks and track stolen devices in compliance with the FCC and other regulatory bodies.

By providing the above solutions and use cases, the Oracle Communications EAGLE platform goes beyond just signaling at the core; it offers operations, administration and management (OA&M), as well as support for a variety of functions and applications:

- Voice, SMS, Prepaid
- Mobility, Roaming, Authentication
- Number Portability, EIR, HLR Selection
- Reliability, Screening, Security
- Scalability, Load Sharing, Robustness
- Interworking, Troubleshooting, Visibility

Most importantly, Oracle Communications EAGLE offers investment protection, providing a migration path to next-gen networks through the building blocks of its integrated Signal Transfer Point and Signaling Gateway products.

**Benefits**

Oracle Communications EAGLE is a signaling platform that offers operators the following advantages:

- **Single platform.** Supports key functions such as integrated monitoring, signal transfer, signaling gateway, advanced routing applications, screening and security, and NP.

- **Scalability.** Enables operators to purchase the capacity and connectivity needed to meet existing network needs.

- **Reliability.** Provides five-nines, field-proven reliability in wireless and wireline networks worldwide.¹

- **Flexibility.** Supports multiple link interface types and industry standards for flexible configuration and connection of network devices.

- **Network security.** Centralizes signaling connectivity to other service providers.

¹ Reliability is calculated using accepted industry methods of measuring Signal Transfer Point population availability in a mated pair configuration.
• **Investment protection.** Protects original investment by providing a migration path to next-generation networks.

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Figure 1. The Oracle Communications EAGLE platform supports key functions such as security, screening, routing, load sharing, and triggering.

**Features**

The EAGLE platform includes the following advanced features:

• **Reliable, secure, flexible, single platform.** Support for 1 million global title translation (GTT) records and 240 million NP (ITU markets) and HLR manager subscriber records. Performs up to 1 million message signal units (MSUs) per second.

• **Oracle Communications EAGLE Equipment Identity Register.** Network operators can enter the International Mobile Equipment Identity of stolen handsets into a “blacklist,” thus preventing the handsets from being registered on the 2G, 3G, or LTE network. Oracle Communications EAGLE Equipment Identity Register works with multiple protocols, networks, and devices.

• **Oracle Communications EAGLE Mobile Number Portability and EAGLE LNP.** Market-leading NP solutions for 2G, 3G, and 4G networks. Number portability impacts nearly all services in an operator’s network, including correct routing of voice calls; messaging services; and correct billing, particularly related to prepaid services.

• **3G-VoLTE.** Efficient routing for 3G and 4G calls that avoids tromboning and enhances user experience. EAGLE is already in the call routing path; therefore, these solutions are value-added services.

**Contact Us**

For more information about Oracle Communications EAGLE platform, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.