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# Oracle Communications Virtual Signal Transfer Point (OC vSTP)

02, 2020

## OVERVIEW

Oracle Communications Virtual Signal Transfer Point (OC vSTP) is a cross platform virtualization software derived from the best of EAGLE STP and virtual Diameter Signaling Router (vDSR), enabling common signaling across 2G, 3G. This unified signaling solution is ideal for managing the communication service provider's network in the most effective way by leveraging the best of both worlds. With OC vSTP, the operator can easily demonstrate and deploy solutions across multiple platforms, irrespective of the virtual machine (VM) in use. With an impressive reputation for reliability and agility, OC vSTP contains innovative features of EAGLE and DSR to deliver tangible business benefits such as significant performance improvements, a more powerful virtualization system and a wider range of supported guest operating system platforms. OC vSTP is an intelligent signaling technology that boasts signaling system 7 (SS7) focused STP and signaling gateway (SGW) assets that help operators manage intelligent routing, screening services, mobile number portability (MNP), equipment identity register (EIR).

## PRODUCT DESCRIPTION

Oracle Communications vSTP is a unique signaling solution based on the Oracle Communications expertise and signaling heritage as well as the best in class STP and DSR products. OC vSTP leverages all the features of EAGLE along with the reliability and in-depth experience of the Oracle virtualization.

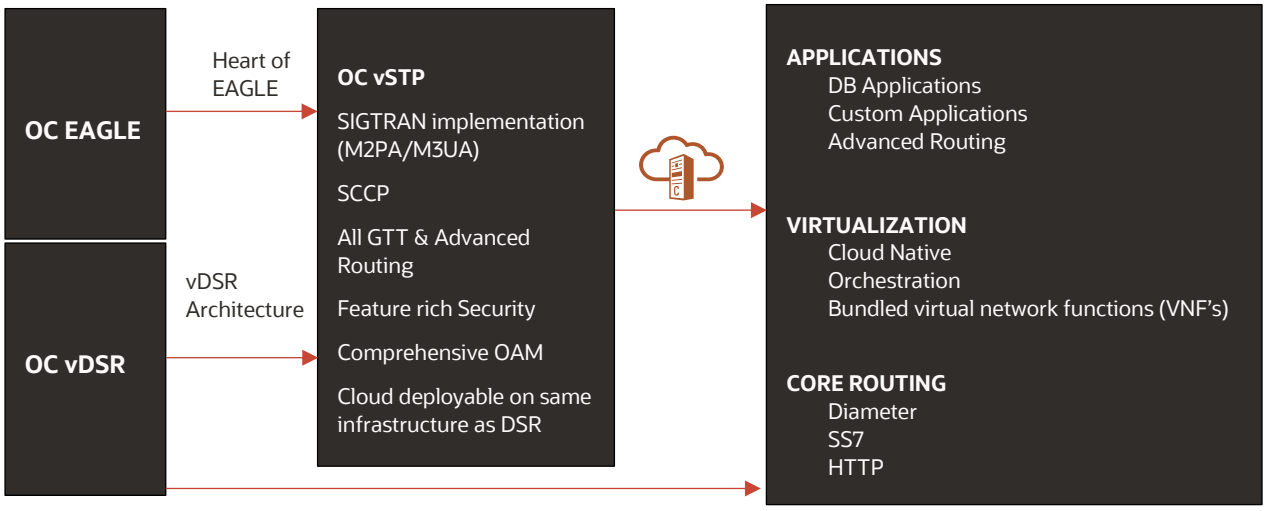


Figure 1. Oracle Communications vSTP

The OC vSTP provides a unified signaling platform across 2G, 3G. It leverages the DSR's system operation, administration and management (SOAM) and network operation, administration and management (NOAM) architecture to further enhance its operability. Configuration and management of topology data, security, servers, IP networking is taken care by Network OAM. While the configuration and management of signaling node, routing of data, transmission control protocol (TCP)/ stream control transmission protocol (SCTP) is done by the SOAM. At the message protocol (MP) layer, real time signaling, and database processing takes place, while different MP type can be created to process the diameter and SS7 traffic separately.

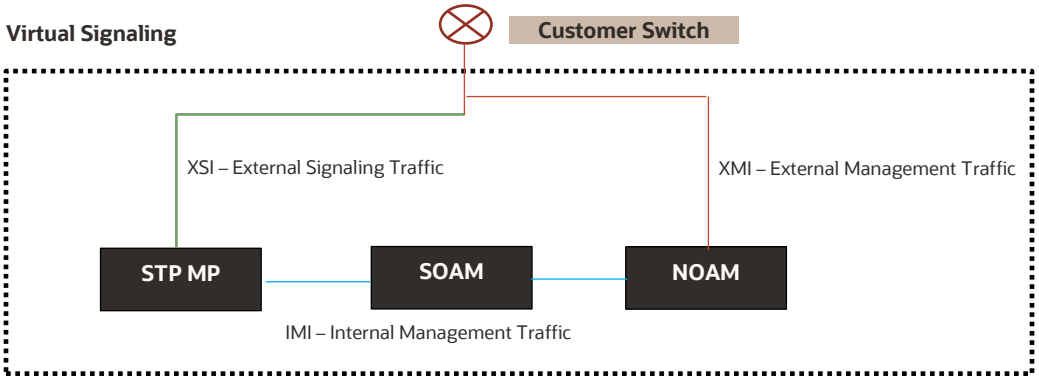


Figure 2. Oracle Communications vSTP Network Architecture

## OC vSTP supports the following interfaces:

| TRAFFIC MANAGEMENT | OC vSTP MANAGED OBJECTS |
|---|---|
| • External management traffic<br>• Internal management<br>• Interface for signaling traffic | • SS7 addressing resources<br>• Basic media transfer protocol (MTP) routing resources<br>• Global title addresses, global title translation (GTT) selectors<br>• GTT sets, GTT load sharing resources<br>• Message transfer part 2 (M2PA) options<br>• Signaling connection control part (SCCP)<br>• MTP level 3 user adaption (M3UA) options<br>• Alarm aggregation options and much more |

OC vSTP supports 10K MPS SS7 traffic capacity at the system level. This allows vSTP to support redundancy and diversity at the signaling interfaces. That is, more than one active STP-MP server can support signaling interfaces pointing toward the same remote signaling point. Also, OC vSTP is fully compatible with Oracle and 3rd party infrastructure. At the virtual compute stack, it supports other virtual machines.

The configuration management capabilities in vSTP provides a graphical user interface (GUI) to configure vSTP and security configuration. It also provides a common interface for vSTP provisioning.

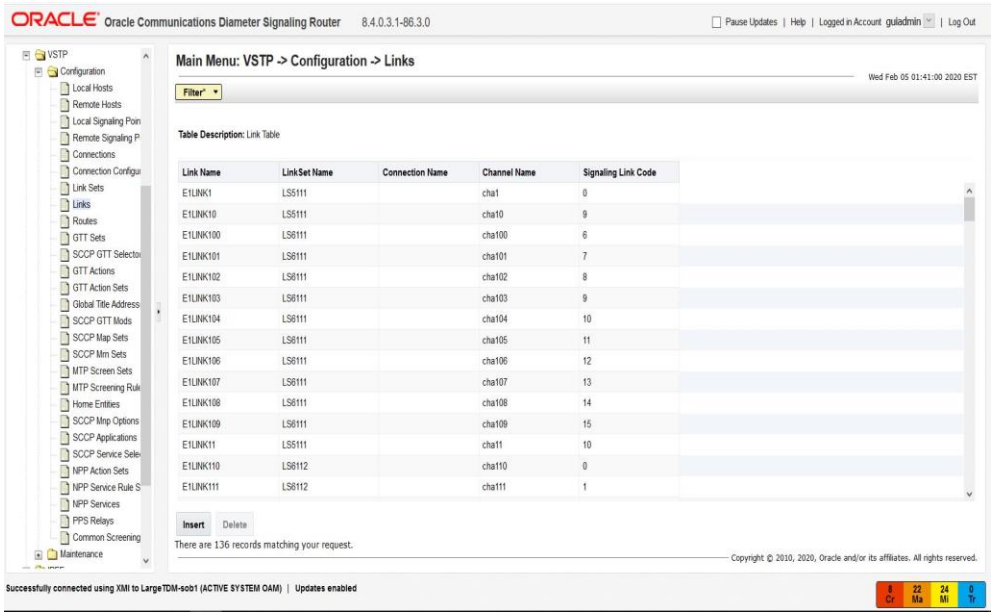


Figure 3. Oracle Communications vSTP GUI

## ELEMENTS

### Home Location Register (HLR)

The HLR flexibility allocates numbers across multiple HLR's 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 HLR's operators can fill every HLR to 100 percent capacity, eliminating the need to maintain subscriber routing tables in every mobile switching center.

### Signal Transfer Point (STP)

The STP delivers American National Standards Institute (ANSI) / International Telecommunication Union (ITU) international gateway functionality in addition to centralized signaling routing and bridges the existing circuit-switch and packet switch networks. It offers advanced routing and screening functions while supporting multiple link interface types and industry standards. This helps in fostering flexible configuration and connection of network devices.

### Signaling Gateway (SGW)

SGW is a complement to STP, it transfers signaling messages relevant to call establishment, billing, location, short messages, address conversion and other services. Operators can migrate to packet switched networks without modifying their existing infrastructure. Without any additional nodes, Oracle SGW can manage changes in the traffic and can manage signaling in the most complex networks. These three components yield compelling use cases around 3G-VoLTE migration, mobile number portability and equipment identity register.

### Key Functions

- Easily create isolated environments
- Enriched GUI for vSTP configuration
- Flexible load sharing, flexible routing options using GTT features like FLOBR/ TOBR/ MBR/ SBR
- SIGTRAN support
- TDM support with optional 3rd party hardware
- Administration and access control with a click of a button
- Short learning curve graphical user interface
- Common signaling license that offers investment protection
- Network security addressing both stateful and stateless security cases with clear future path
- Migration path for cloud

## OC vSTP features:

- Flexible routing options using GTT features like flexible linkset optional based routing (FLOBR)/ Transaction capabilities application part opcode-based routing (TOBR)/ mobile application part-based routing (MBR)/ sub system routing (SBR)
- SIGTRAN support
- Time division multiplexing (TDM) support using optional 3rd party hardware
- Enriched GUI for vSTP configuration
- SCCP and MTP Loop Detection, ITU Duplicate Point code, and tagged image format (TIF) support
- EIR supports up to 220M subscribers
- MNP supports up to 180M subscribers
- Stateful Security Application supports up to 250M subscribers
- Stateful Firewall Support for SS7 and Diameter
- Mobility, Roaming, Authentication
- Reliability, Security, Screening
- Agility, Scalability, Load Sharing

## OC vSTP benefits:

- Extends the lifetime and usefulness of existing hardware without having to refresh unnecessarily
- Provides an option for seamless journey to cloud without major changes in the existing infrastructure.
- Assures unified signaling solution for ease of operability
- Supports key functions such as integrated monitoring, signal transfer, signaling gateway, advanced routing applications, screening, security and NP
- Supports 3rd party hardware
- Renders accurate projections for future growth in network traffic
- Ensures real time monitoring and observability
- Uses common signaling license that offers investment protection
- Provides five-nines, field proven reliability in wireless and wireline networks worldwide

### Oracle Communication Signaling and Policy Solutions

- Oracle Communications Policy Management.
- Oracle Communications DSR
- Oracle Communications Policy Control Function (PCF)
- Oracle Communications Common Signaling, Security and Edge Protection Proxy (SEPP)
- Oracle Communications Common Signaling, Network Repository Function (NRF)
- Oracle Communications Common Signaling, Unified Data Repository/ Unstructured Data Storage Function (UDR /UDSF)
- Oracle Communications Common Signaling, Service Communication Proxy (SCP)
- Oracle Communications Common Signaling, Binding Support Function (BSF)
- Oracle Communications Common Signaling, Interworking and Mediation Function (IWF)
- Oracle Communications Common Signaling, Network Exposure Function (NEF)

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## PERFORMANCE, AVAILABILITY AND RELIABILITY

Customers can deploy converged IP-based applications into their networks with unmatched availability and reliability, by having the application session state automatically distributed in real time across multiple regional data centers and mobile switching center's (MSC's). The risk involving service losses can be avoided from single points of failure. High performance and low latency are the key attributes of the OC vSTP inherited from the market leading Oracle Communications signaling products. OC vSTP is the go-to platform for running and managing the signaling traffic efficiently.

## SUMMARY

Oracle Communications solutions enable service providers to both manage and monetize the explosive growth in mobile data traffic and multimedia applications. They help service providers analyze subscribers' quality of service, design policies to improve customer experience and optimize network performance.
Oracle Communications helps billions of people, devices and machines intelligently connect and engage over any network. With proven capabilities, scalable solutions, network security, common intelligent signaling platform, Oracle Communications solutions guarantees high availability and continued support.

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