# Rhino TAS for Mobile

Transform your service layer with Rhino Telecom Application Server

Rhino Telecom Application ServerTM (Rhino TAS) enables service agility in the telecoms network through an open, flexible platform that utilises commodity server hardware. Rhino TAS provides the development and delivery environment for legacy SS7 services , IMS services and, of course, converged services that span multiple network technologies. The extensive array of resource adapters enable services to interact with charging platforms, internal IT systems and databases, and web servers.

The platform unlocks the value of the telecom service layer using modern software systems architectures, designed to meet the exacting 'five nines' availability requirements of the telecoms signalling network.
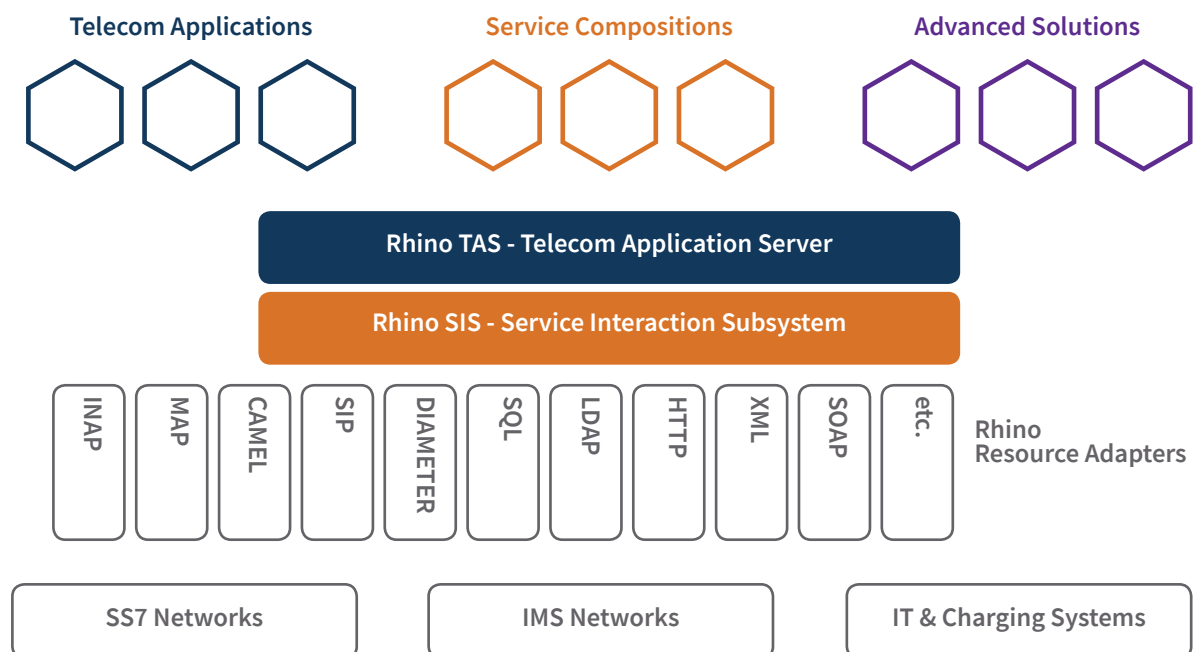
Rhino is a fully convergent, real-time Telecom Application Server (TAS) for agile development, deployment and ef cient management of classic and next generation telecommunication services. It can be used to develop and deploy carrier-grade applications that use SS7 and IMS based protocols such as INAP, CAP, Diameter and SIP as well as IT / Web protocols such as HTTP and XML. Multiple Java-based telecom applications can be deployed within Rhino TAS, including converged JAIN SLEE and SIP-Servlet apps.

A Full Range Of Telecom Services Are Available For Rhino Telecom Application Server

Rhino TAS includes a range of classic IN and SIP services. OpenCloud and third-party ISVs provide a wide array of classic and next generation telecom services such as Personal Call Routing, MultiSIM, Number Translation, Calling Circles, Call Waiting, Home Zone, Call Forwarding, Find-me/Follow-me, Who Called, Free Phone, Premium Numbers and Virtual Private Network.

Benefits

Service Agility

Create and deliver innovative, 'smart' next generation services on Rhino TAS whilst retaining existing SCP assets for current services during migration. These new, targeted services can be delivered to customers in days rather than months giving CSPs a competitive edge, encouraging customer loyalty and increasing ARPU.

Significantly Lower Price-Points

Rhino TAS utilizes commercial-off-the-shelf (COTS) commodity hardware and software. Coupled with an environment where new services can be developed at a radically lower price-point, or sourced from an open marketplace of application providers and taken to market faster, signi cantly reduces OPEX.

Open Standards Eliminate Vendor Lock-in

Regain control of your services roadmap. Open systems and architectures promote competition, result in lower prices and encourage innovation. New and variant services can be procured from an open and competitive market of product and custom-build application providers.

Maximize Value of Existing Infrastructure

Rhino TAS is an open, scalable platform that integrates with proprietary infrastructures to maximize existing investments. As a rst low-cost step, Rhino TAS can be deployed to augment existing assets. This strategy offers access to 'smart' next generation service.

Features

Carrier-Grade

The Rhino Telecom Application Server utilizes commodity, standard IT server hardware but with carrier-grade credentials:
- 'Five-nines' availability featuring on-line upgrades of the platform and services.
- No single point of failure.
- Clustering for scalability and high-availability
- Single Image management of the cluster.
- Capacity can be added as required, transparently joining the cluster to deliver the services.

Service Interaction And Service Brokering

The Service Interaction ServerTM (a component of Rhino TAS) is a powerful, flexible and extendable service interaction platform for both SS7 and IMS networks. New services can be created by blending together multiple independent services (hosted on SCPs, TASs and locally on RhinoTAS) using a drag-and-drop GUI. This means that new service compositions can be created by the operator from existing, proven and functioning assets without requiring specialist programming skills. The SIS also makes it commercially viable to innovate in TDM IN services or combinations of IN and SIP based services.

SSF Functionality

One of the challenges operators have in introducing IMS is the cost and risk of adding it into an existing network that includes a vast array of revenue generating services.

Operators cannot move their entire services layer to a new platform when they introduce IMS, and their IMS subscribers will not accept a reduction in the number and quality of services.

SIP-IN Translation (IM-SSF) and IN-SIP Translation (R-IM-SSF) aim to address this migration problem by enabling access between the existing CAMEL service environment and an IMS network. The IM-SSF SIP_IN Translation function is defined in 3GPP 23.278.

Connectivity

An extensive array of Resource Adaptors provides for service interaction with both circuit-switched and packet-switched networks, charging systems, internal IT systems and databases, and web services.

A wide variety of protocols and protocol variants exist, and further variants and new adaptors can be openly created and added to further extend connectivity. The connectivity layer decouples network integration from the applications deployed within Rhino so that integration work is minimized when deploying new applications.

Using this rich connectivity, Rhino enables economically sustainable network evolution, solving signaling protocol challenges, while providing for the delivery of innovative communication services to subscribers.

Basic
Connectivity Pack

Messaging
- MM7
- SMPP

Charging/Billing
- CDR

Reference
- DB (JDBC) Query
- LDAP

Other Systems
- HTTP
- SOAP

IN
Connectivity Pack

- **INAP** - ETSI CS1*
- **MAP** - 3GPP
- **CAP** - ETSI CAMEL phase 1,2,3, and 4

*Contact OpenCloud for details about the range of vendor-specific and country-specific INAP variants available

SIP
Connectivity Pack

- **SIP Servlet** - JSR-289
- **SIP** - IETF and ISC interfaces

SS& (SIGTRAN)
Connectivity Pack

- **TCAP**
- **SCCP**
- **M3UA**

Charging and Policy
Connectivity Pack

Diameter Base plus variants for the following interfaces:

- Sh
- Ro
- Rf
- Gx
- Gy
- CCA

Support for Open Standards

Rhino TAS complies with the Java open standard for telecommunication application servers–JAIN SLEE v1.1. This gives access to an ecosystem of suppliers developing person-to-person applications, to rapidly deliver innovative new services to market, without the issue of proprietary protocols.

Supports SS7 and SIP/IMS Connectivity

Unlike a traditional SCP, Rhino TAS supports all SS7 protocols (including vendor variants) and IP/IMS protocols. We believe that open systems and architectures promote competition, result in lower prices and encourage innovation.