



ADV OSS SIP APPLICATION SERVERS

PRODUCT DATA SHEET

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AdvOSS SIP AS



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1- ADV OSS SIP APPLICATION SERVERS

AdvOSS offers suite of Next Generation SIP based Application Servers for providing Call Control Intelligence and executing Service Logic for feature rich SIP Applications. This includes various Value Added & Class 5 Application Servers which can be used for providing Residential, Enterprise & Wholesale/Peering services and more.

Also SIP AS comes with an open API for Provisioning and has built-in AAA Client supporting Radius and Diameter protocols for AAA(Authentication Authorization & Accounting).

AdvOSS SIP Application Servers are powered by the AdvOSS Service Delivery Platform (SDP) and come bundled with AdvOSS Media Server and AdvOSS Database.

The following Application Servers are currently available:

1- VOIP PEERING AS:

AdvOSS VoIP Peering Application Server provides call-control intelligence for establishing, maintaining, routing, and terminating voice/video calls in a transit network. AdvOSS VoIP Peering AS offers unique & differentiating Prepaid Wholesale modules and features, enabling Carriers to nullify financial risk by offering them real time control and authorization.

AdvOSS VoIP Peering AS integrates with Core Softswitch and has integrated AAA client for interfacing with Billing & Charging Systems. It has built-in application logic for Least Cost Routing, Policy Routing, Route Fail-over, ENUM and more.



2- SIP TRUNKING AS:

AdvOSS SIP Trunking Application Server enables realization of SIP Trunking services, one of the most popular VoIP segment nowadays. It comes with Application logic and core modules/features required for execution of SIP Trunking services.

SIP Trunking AS integrates with CSP's other Network elements such as Core Softswitch, Billing & Customer Management Systems which are part of a complete SIP Trunking Solution. AdvOSS also offers complete solution with comprehensive SIP Trunking Management capabilities. Other products in SIP Trunking Solution offering includes Core Softswitch, SBC, LCR Engine, Billing & Provisioning System.

3- CLASS 5 RESIDENTIAL VOIP AS:

AdvOSS Class 5 Residential VoIP AS is specially designed to introduce emerging Class 5 Residential voice & IP Telephony services. It includes feature rich SIP application modules for delivery of enhanced Voice over Broadband services.

For complete service delivery, it integrates with other elements of CSP's network including Core Softswitch, Billing & Provisioning System etc. AdvOSS also provides Core Softswitch, Billing, Customer Care & Provisioning System as part of its complete Class 5 Residential VoIP Solution offering.

4- ADV OSS CALLBACK AS

AdvOSS Call Back AS incorporates service application logic for enabling Call Back services including ANI, PIN, Web & SMS based Call Back. Call Back AS
AdvOSS SIP AS



enables deployment and delivery of various Call Back services and integrates with other components such as Core Softswitch, Billing & Customer Care Systems of CSP. All these add-on components needed for full delivery of any Call Back service are also offered by AdvOSS with which Call Back AS comes pre-integrated.

5- PHONE-PHONE AS (PREPAID IVR BASED)

AdvOSS Phone to Phone AS is a feature enriched Application Server for delivering state of the art Prepaid voice Phone to Phone services or PSTN to PSTN or IP based services.

It has built-in application service logic for deployment and fulfillment of prepaid voice services. This includes following type of services and more

- Calling Cards
- PIN less/ANI based Calling
- Carrier Pre-Select
- other Specialized One Stage dialing services

6- CLASS 5 ENTERPRISE VOIP AS

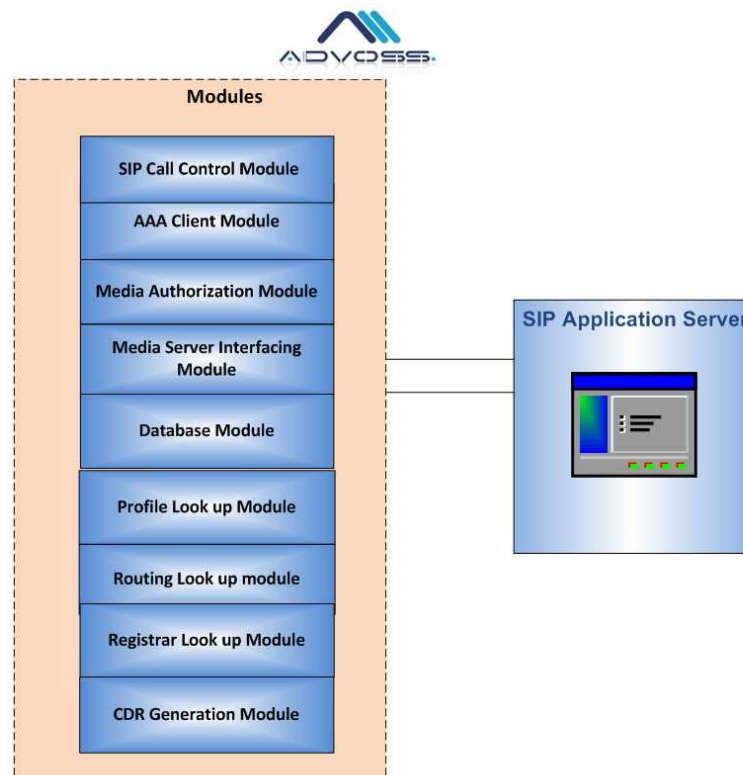
AdvOSS Class 5 Enterprise VoIP AS allows CSPs to offer leading edge Next Generation VoIP services for businesses such as banks, enterprises and companies with workforce and multiple offices. This product enables any customized IVR realization for enterprise applications.



AdvOSS Class 5 Enterprise VoIP AS incorporates key SIP application modules required for smooth delivery of cost effective and innovative services targeting corporate customers by CSP's.

2- CORE AS MODULES:

AdvOSS SIP Application Servers have the following modules with rich combination of features:



a) SIP Call Control Module:

This module enables the AdvOSS SIP Application Server to deploy and manage call-control based services in SIP networks. It offers full support to act in the following roles:



- User Agent: It offers functionalities of User Agent Client (UAC) as well as User Agent Server (UAS)

- B2BUA: It may act as a (Back 2 Back User Agent

- SIP Proxy: SIP Application Server can also be used as a Sip Proxy (e.g. when it has AAA features etc)

- SIP Redirect Server

b) AAA Client Module:

AdvOSS AS has an integrated AAA Client supporting Radius and Diameter protocols for AAA (Authentication, Authorization & Accounting).

-Authentication:

As part of configuration of application server from global settings, service profile settings and subscriber profile settings it will decide whether to do authentication from local file , local DB or AAA protocol like Radius and Diameter. The following types of authentication criteria are supported independent of where the actual authentication takes place:

- PIN based
- CLI based



- Username & Password based
- IP Based
- Tech Prefix Based

-Authorization:

Supports Authorization of the following types:

- Credit Authorization and control

Supports complete real time Authorization of incoming traffic from Originating Carriers and subscribers. This enables support for prepaid models via balance checks and postpaid models via credit limit checks, all in real time. This limits the financial risks for the CSP.

It also supports enhanced options like support for unit /quota reservation model with periodic reauthorizations.

- Concurrency control and Authorization:

This feature enables the CSP to deal with maximum number of ongoing sessions per Customer/Originator.

-Accounting:

Supports AAA Accounting for sending following types of accounting packets to Charging Systems:



- Start Accounting
- Interim Accounting
- Stop Accounting

c) Media Authorization Module

AdvOSS AS supports Media Authorization, media proxy and relaying based on allowed codecs for Originators/subscribers. This module offers Policy Enforcement based on the configuration of the system whereby the AdvOSS AS can be configured to selectively enable or disable sessions based on combination of the following:

- Codec Types
- Subscriber /Originator

i.e. different subscribers/originators can have different policy for allowed codecs.

d) Media Server Interfacing Module

Through Media Server Interfacing module, AdvOSS AS controls the behaviour of the AdvOSS Media Server by sending it commands through SIP. The following features of the AdvOSS Media Server can be controlled through this module:

- Media Transcoding
- Media relaying



- Media mixing
- DTMF collection
- Recording of media files e.g. for voicemail applications
- Playing of media files

The AdvOSS Media Server has support for the following codecs:

- G729
- G711 ulaw
- G711 alaw
- GSM

e) Database Module

The Database Module is a repository for all the data required for the realization of services by an Application Server. This contains data like configuration settings, service profiles and subscriber profiles.

f) Profile Look up Module

The Profile Look up Module has the capability to look up subscriber and service profiles from the attached database of the Application Server. The semantics of the profile data are application and service dependent.



g) Routing Look up module:

The Routing Look up module provides support for the following routing look up options:

- Support for ENUM Look up
- Support for Policy Routes Look up
- Support for Static Routes Look up
- Support for LCR Look up

h) Registrar Look up Module:

The Registrar Look up module supports the querying of SIP Registrar to get the updated AOR to IP mapping.

i) CDR Generation Module

The CDR Generation module supports the following three types of CDRs that can be generated for ongoing sessions:

- Radius based CDRs to be sent to Radius AAA Servers
- Diameter based CDRs to be sent to Diameter AAA Servers
- File based CDRs for consumption by other systems like mediation etc.

Note: Based on specific Application Server(s) licenses acquired by the Customer, set of modules & features are made available and configured.



3- INTEGRATION POINTS

In order to provide end to end Call Control and Service Delivery, AdvOSS SIP Application Servers communicates with other Call Servers, Media Servers, Core Soft Switches & IMS Application Servers etc over standard SIP interface. AdvOSS has a broad range of Call Control & Switching Applications currently available in its Product Portfolio. This includes Core Softswitch, Session Border Controller & Least Cost Routing Engine.

AdvOSS SIP Application Servers offer point of integration with the following

Softswitch:

AdvOSS SIP Application integrates with main Call Control & Switching system of CSP. AdvOSS also offers Core Softswitch which can act as a base Call Server interfacing with SIP Application Servers.

Session Border Controller: AdvOSS Application Server can be integrated with Session Border Control for providing border control functions and media handling. AdvOSS also provides Session Border Controller which can be an add-on product and is pre-integrated with Application Server.

AAA Server: AdvOSS SIP Application Server has built-in AAA client for interfacing with AAA server supporting Radius & Diameter protocols

Billing System: AdvOSS SIP AS can integrate with Billing Systems that are responsible for billing and revenue management.



- External web applications:e.g. ecommerce, credit card authorization , etc

- VoMS:** Voucher Management System for IVR based Voucher redemption and more. AdvOSS also offers state-of the art Voucher Management System

- Location Server**

4- KEY BENEFITS

AdvOSS Application Servers offers the following key benefits to the CSPs, in addition to its feature set:

- **Scalability:** Built on top of AMPS Platform, Application Server provided very high scalability and can accommodate requirements from medium size CSPs to Carrier Grade Telco's.
- **High Availability and Failover Clustering:** AdvOSS Core SIP Application Server supports a Virtual IP based high availability solution where it is primarily listening on a Virtual IP instead of physical IP.
- **Resilience:** System has the capacity to absorb sudden shocks in usage. It will have graceful rejection of packets if they go beyond its capacity to process. In anticipation of DDOS attacks, the Core SIP Proxy will clean its session on first possible timer when a malformed packet is received or if IFC asks the



dispatcher to Reject the call. This is to keep RAM under control if an Avalanche of DOS packets is received.

- **Robustness:** The system is very robust and keeps performing in the fact of errors.
- **Customizability:** The system is designed to allow for easy and rapid customizations as per CSP requirements, on demand.
- **Disaster Recovery:** The System can be deployed in two geographically distant data centers, for disaster recovery reasons. AdvOSS Database solutions provide real-time DB replication to remote slaves. This gives the remote location an almost real-time image of the live database and the system can fall back to remote location in a disaster situation.
- **Flexibility:** The system has the architectural provision to support new business models. This allows for easy customizability to support specific requirements of a CSP.
- **Speed:** The system guarantees high speed of operations and latency times associated with the operations.
- **Data Integrity:** The system preserves the integrity and correct relationship of data in order to guarantee the correct behavior.
- **Redundancy:** The system achieves redundancy through multiple methods like having database servers in active/active configuration. The database servers as well as the servers hosting the GUIs are hosted in geographically distributed data centers.
- **Security:** Powerful security mechanism is implemented in the AdvOSS SIP AS to avoid any misuseage. It offers IP based authentication for clients.