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Avaya Aura® Session Manager

Transform existing infrastructure into on-demand services

Overview

Avaya Aura® Session Manager is the core of Avaya's revolutionary Session Initiated Protocol (SIP) based "cloud computing" architecture. The Session Manager platform makes it possible to unify media, modes, networks, devices, applications and real-time, actionable presence across a common infrastructure, creating the web-style on-demand access to services and applications that users increasingly expect from their enterprise communications solution.

Session Manager provides the true values of converged communications, satisfying the needs of customers and employees, while helping drive down overall costs and simplifying system management. In addition, this unique platform provides the ability to quickly and easily distribute new and enhanced applications that can deliver on-going improved business performance.

Session Manager's SIP based routing provides more centralized control capabilities and significant improvements in scale and redundancy, enabling more cost effective and larger distributed enterprise deployments. Avaya Aura Session Manager leverages the existing PBX infrastructure helping ensure an evolutionary path forward that protects investment in today's Avaya systems and software. Session Manager provides:

- Lower total cost of ownership
- Centralized infrastructure and management
- Reduced operational costs with single routing and dial plan control
- Unified architecture combining the best of Avaya Communication Server 1000 and Avaya Aura® Communication Manager
- Integration of third-party equipment
- Replacement and upgrade for the legacy Network Routing Server (NRS)
- True converged multimedia call admission control with revolutionary video "down-speeding"
- Quick incremental application deployments without PBX upgrades

Key Customer Benefits

- Business agility driven through holistic enterprise architectures for connecting users, applications and multi-vendor solutions.
- New cost savings from SIP connectivity and reduced PSTN usage through centralized, enterprise-wide routing.
- Increased customer satisfaction by more efficiently and effectively connecting people and accelerating

processes in real-time across the "customer ready" enterprise.

- Lower total cost of ownership with a centralized, easy to use management interface plus the ability to efficiently deploy enterprise-wide central applications.
- Unprecedented enterprise wide scalability with support for truly global deployments of up to 100,000 SIP endpoints, 500 Communication Managers, and 25,000 locations with a single point of management.
- Solid reliability and redundancy through RFC 5626 simultaneous endpoint registrations with two core Session Managers and a third Survivable Remote "mini" Session Manager in the branch.
- Outstanding geo-redundancy with up to 10 "active-active" Session Manager instances that safely tolerate network delays up to 1000 msec.

Feature Summary

Scale and Capacity

Session Manager provides up to 25,000 locations with more than 3 Million Busy Hour Call Completions (BHCC). A single instance of Session Manager is now certified for over 300,000 BHCC of trunk and inter-location calling. In addition, up to 100,000 SIP endpoints can redundantly register with the Session Manager core and access services from up to 500 Communication Manager instances and the other applications in the enterprise cloud.

Reliability and Redundancy

Avaya Aura® employs the new Internet Engineering Task Force (IETF) standard RFC 5626 to deliver multiple, simultaneous registrations to endpoints. Avaya and RFC compliant endpoints can register with multiple core Session Managers and with a local branch Avaya Aura® Survivable Remote Session Manager instance for a total of three simultaneous registrations. Combined with Avaya's unique application of the SIP Timer Band OPTIONs messaging, calls can be placed during network outages without dropping, and with only a delay of two seconds or less.

Session Manager also supports Network Interface Card (NIC) bonding and up to 10 geo-redundant Session Manager instances. It can tolerate up to 1,000 msec of network round trip delay while requiring less than three Mb/s throughput between Session Managers.

Support for Legacy Systems

Avaya Aura supports connectivity to older versions of Avaya Communication Server 1000, Avaya Communication Server 2100, and Avaya Business Communications Manager systems and offers the advantages of innovative "implicit" user sequencing to all endpoints on these existing systems. With Communication Server 1000 Release 7.5, implicit user sequencing is even available for intra-Communication Server 1000 calling. In addition, the core Session Managers can be used for legacy Routing Server (NRS) replacements.

Third-Party PBX Support

Avaya Aura supports connectivity to Cisco, Siemens, Alcatel Lucent, and other third-party PBXs as well as legacy Avaya H.323, analog and digital endpoints with new, innovative "implicit" user sequencing. In addition, the application sequencing capabilities of Session Manager can also be applied to the endpoints on the third-party PBXs.

Endpoint Support

Session Manager provides extensive endpoint support including the Avaya 9600 Series IP Deskphones, Avaya one-X® Communicator, Avaya 1603SW-I IP Deskphone, Avaya 4600 Series IP Deskphones (with SIP software), Avaya 1100 Series IP Deskphones, Avaya 1200 Series IP Deskphones, Avaya 1000 Series Video Conferencing Systems and the Avaya Desktop Video Device with the Avaya Flare™ Experience.

Advanced Administration

With Avaya Aura® System Manager 6.1, the new tab-based administration interface allows lightning-quick screen changes between operations. In addition, System Manager 6.1 simultaneously supports both Session Manager Releases 6.0 and 6.1 for flawless system upgrades.

Converged Call Admission Control

Session Manager supports truly converged voice and video bandwidth management with System Manager centralized administration and control. In a converged network, each SIP entity link can be administered for fixed allocations handling voice, video and the remainder for data traffic. Flexible options allow voice to utilize unused bandwidth from video allocations, and Avaya's revolutionary new video down-speeding allows video calls to be completed when the full bandwidth requested is not available, without affecting the quality of existing calls.

Enhanced Emergency Calling

Through integration with the RedSky E911 Manager, SIP endpoints can now report their exact location down to the specific IP phone jack.

Easy Lab Setup

The Avaya Solution Designer design tool allows any enterprise administrator or developer to quickly get up-to-speed with Session Manager capabilities.

Security
Session Manager can now connect SIP entities and every endpoint in the enterprise with encrypted Transport Layer Security connections using a new software-based technology that no longer requires Transport Layer Security acceleration hardware. In addition, the System Manager Trust Management interface is easy to use, and makes sending and applying unique third-party security certificates to any SIP entity simple to accomplish. Session Manager has also moved to Red Hat Enterprise Release 5.5 with the added security updates of this newer operating system release.

SIP Connectivity
Supports SIP connections (but not limited) to:

- Avaya Aura® Communication Manager
- Avaya Aura® Messaging and Avaya Modular Messaging
- Avaya Aura® Conferencing
- Avaya Voice Portal and Intelligent Call Routing
- Avaya Aura® Contact Center
- Avaya SIP Endpoints including Video Capable Endpoints
- Avaya G860 Media Gateway
- Avaya IP Office
- Avaya Secure Router 2330, Avaya Secure Router 4134 and Secure Gateways
- Avaya Aura® Session Border Controller
- ACME Packet Session Border Controller
- Third-party equipment from Cisco, Siemens, Alcatel Lucent, etc.
- Third-party SIP endpoints from Tandberg, Polycom, SNOM, Grandstream, Cisco, etc.

Dial Plan
Session Manager allows central enterprise-wide dial plans across multi-vendor PBX environments. It implements a uniform dial plan where required, or binds together multiple length dial plans in one centralized, easy-to-manage database so users do not have to change the way they dial.

Network Routing
It supports creating system-wide network routing rules to cost-effectively route calls using an enterprise's IP network, including:

- Enterprise-wide least cost routing
- Enterprise-wide alternate routing including routing around failures, following customer-provided priorities, and dynamically avoiding routes with bandwidth limits
- Enterprise-wide time of day routing
- Tail end hop off
- Toll avoidance

Application Agility
Avaya Aura enhances user productivity while increasing business agility — by enabling faster, and easier deployment of applications targeted to unique users and workgroups. The promise of Application Agility can now be delivered — with the appropriate collaboration, conferencing, customer handling and SIP-based applications. Each application can be added to an enterprise without any modifications or upgrades to the other applications in the enterprise cloud including Communication Manager. Even third-party endpoints and trunk callers can participate in application sequencing with Session Manager's "implicit" user sequencing.

SIP Tracing
Session Manager leverages the central SIP session architecture with flexible SIP tracing and trace displays that can be manipulated and filtered as debugging requires. Tracing results can also be forwarded to Syslog servers for enhanced reporting.

SIP Monitoring
To assist with load balancing and alternate routing, Session Manager allows the configuration and implementation of monitoring controls that can be adapted and customized for each link to the Session Manager core.

Call Detail Recording
Each instance of Session Manager provides a third-party Call Detail Recording (CDR) interface, allowing enterprise-wide CDR data to be recorded and saved. New video bandwidth parameters for multimedia calls are also included in the CDR output.

Avaya Aura Session Manager Solutions
Any SIP entity may be directly connected to the Session Manager core as long as it is fully compliant with SIP standards. Solutions include:

Highly Redundant IP Telephony
Connect up to 25,000 SIP entities together including up to 500 Communication Manager instances in a redundant, centralized configuration. Avaya Aura® Survivable Core and Survivable Remote allow each SIP endpoint to simultaneously register with up to three Session Manager instances, including the capability to provide full Communication Manager feature sets (well beyond the SIPPING 26 features typically supported) in the branch when cut off from the enterprise core. With Communication Manager configured as an Evolution Server, the survivable branch can have a mix of SIP, analog, digital, and H.323 endpoints.

Third-Party PBX Integration
Session Manager not only connects to Communication Manager and Communication Server 1000, but has also been tested with Cisco UCM, Siemens Highpath, Alcatel Lucent OmniPBX, and

Aastra systems with direct SIP connections. Each of these third-party PBXs can be programmed to let the Session Manager core do the inter-PBX routing so that central dial plan, alternate and priority routing and other benefits can be enjoyed by the users of third-party PBXs as well as Avaya PBXs.

Secure Centralized Trunking

Avaya Aura® Session Manager can be used to redundantly connect to the PSTN. Connections to the PSTN can be via the G860 gateway, Avaya Aura® Session Border Controller, or ACME Packet Session Border Controller to a SIP service provider. New "From" and "To" header manipulations make multiple service provider SIP integration simple to implement.

Centralized Messaging

The load balancing and star connectivity capabilities of Session Manager allows a single Modular Messaging instance to provide service (including lighting message waiting indicator lamps) for Avaya, Cisco and other SIP-compliant PBX systems.

Centralized Conferencing

A common Avaya Aura® Conferencing server can be "shared" with the Session Manager connected PBXs. Up to three Avaya Aura Conferencing systems may be added to the enterprise cloud to expand the scalability for large conferencing needs while still providing local access to conferencing resources. This avoids mesh conferencing connections that waste bandwidth across large multi-data center enterprise configurations.

Avaya Aura®
Quick Reference Specifications

Item	R6.0	R6.1
SIP Users	50,000	100,000
Total Users	100,000	100,000
SIP Users/SM	10,000	12,000
Total Enterprise Presence Users	45,000	81,000
Presence Users/SM	7,000	9,000
TLS Connections	50,000	100,000
Session Manager (SM) Instances	6	10
BHCC per SM	250,000	300,000
Simultaneous Sessions	65,000	80,000
Survivable Remotes	250	250
Communication Manager Instances	500	500
Locations/Adaptations/SIP Entities	25,000	25,000
SIP Domains	1000	1000
Dial Patterns/Routing Policies	250,000	300,000

Voice Portal and Intelligent Call Routing (ICR)

Geo-redundancy and load balancing capabilities can be leveraged to provide a powerful contact center solution with Voice Portal and the optional ICR with centralized SIP trunking to the core enterprise cloud.

Sequenced Applications

With the simple addition of an application server running sequenced applications, any Avaya or third-party endpoint can enjoy an application installation from the enterprise cloud. In addition, these installations can be accomplished without costly PBX upgrades.

Avaya and third parties offer a wide range of application possibilities including the Avaya Notification Service, Flexible Call Blocker, Toll Avoidance, and ANI Name Insertion.

Learn More

To learn more about Avaya Aura Session Manager talk to your Avaya Account Manager or Authorized Partner. Also, visit us at **www.avaya.com**.

About Avaya

Avaya is a global leader in enterprise communications systems. The company provides unified communications, contact centers, and related services directly and through its channel partners to leading businesses and organizations around the world. Enterprises of all sizes depend on Avaya for state-of-the-art communications that improve efficiency, collaboration, customer service and competitiveness. For more information please visit www.avaya.com.

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