AVAYA

Engage The Power of We™

Flexible Resource Solutions with Avaya Aura Virtualized Environment

Help Reduce User Counts

Through the integration of real-time Avaya Aura® applications and the VMware virtualized server architecture, Avaya has alleviated major concerns about real-time communication in a virtualized environment.

Real-time applications and the virtualized network

Despite the well-known benefits of virtualization, many businesses delay the move to a virtual server architecture because, when communication applications run in a virtual environment, real-time traffic performance issues can arise. Through the integration of real-time Avaya Aura® applications and the VMware virtualized server architecture, Avaya has alleviated major concerns about real-time communication in a virtualized environment.

The Avaya Aura platform is available as an application installed onto a server, supporting a full set of business collaboration features and functionality. These servers are tested, programmed and installed by Avaya on the customer network. In addition to the hardware appliance deployment model, Avaya customers can use their own VMware infrastructure to add Avaya Aura applications as well. If customers need more capacity or additional application interfaces, they can expand Avaya Aura Communication Manager capabilities and/or deploy Application Enablement Services by simply downloading Avaya Aura applications for VMware, installing them within their existing infrastructure.

For customers who want to leverage the productivity-enhancing capabilities of the most recent Avaya Aura release or who want to migrate to Avaya Communicator, Avaya Aura Conferencing or another innovative collaboration solution, Avaya Aura Virtualized Environment offers a simple hardware-efficient way to accomplish this.

Avaya Aura® Virtualized Environment Flexible Resources

Initially, Avaya Aura on VMware was designed to scale to the same number of endpoints as supported by fully dedicated Avaya Aura servers. Avaya Communication Manager on VMware, for example, supported the same number of users (36,000) as Communication Manager on an Avaya provided server. As the value of virtualizing real-time communications became apparent, more customers became interested in the solution and asked for more flexible scaling that used fewer VMware server resources per application.

To meet this expanded demand Avaya now offers flexible resource requirements (based on maximum number of users for a given application) in the Avaya Aura Virtualized Environment 6.2 Feature Pack 3 release. This more flexible resource approach means, for example, that a customer can design a 500-user lab system (using the requirements table to configure resources appropriate for the installation) that minimizes the system resources required [Virtual CPUs (vCPU), RAM, memory] to scale to the desired user configuration.

Virtualized Resource Configuration

Virtual machine resource limits for both CPU and memory constitute an artificial boundary therefore knowing memory requirements and vCPUs per application is the key to allocating applications to a virtual server.

Virtual CPU (vCPU)

One or more vCPUs are assigned to each Virtual Machine within the VMware architecture and each vCPU is seen as a single physical CPU core by the VM's operating system. A virtual machine can use up to 4 or 8 vCPUs per host. Whether it uses 4 or 8 is determined by available VMware host licenses. Roughly speaking, each vCPU is equivalent to a hardware CPU. So a server with 6 core processors is roughly equivalent to 6 available vCPUs.

To calculate the number of applications per host server, add the number of vCPUs required for the applications and compare this number to the total available core processors. Then calculate the total RAM required (for all applications) and compare this total to the RAM installed with the hardware server. See "How to calculate number of applications per host server" in the call out below.

Why Avaya Sees Virtualization as an Essential Ingredient of UC

Better communications is key for any business—communications with customers and with employees. To be competitive, businesses need to be more capable in services, more intelligent in responses, and more efficient with resources. Traditional voice communications will give way to unified communications (UC), but making that move economically and efficiently is critical.

Virtualizing the infrastructure and the applications

Avaya Aura® Virtualized Environment offers a UC solution for businesses with virtualization in place, understand it well, and are ready to apply it to upgrade and enhance their business collaboration functionality. Avaya Aura Virtualized Environment provides advantages such as:

- Complete integration with the enterprises' VMware tools such as vSphere
- Close adherence to VMware concepts and methodologies such as vMotion

How to calculate number of applications per host server:

For Avaya Communication Manager + Session Manager + System Manager + Aura Application Enablement Services (500 users), this example shows that total vCPUs = 8 and required RAM = 17 GB.

Application	vCPU	RAM (GB)
COMMUNICATION MANAGER	1	4
SM	2	4
SMGR	3	7
AES	2	2
Totals	**8**	**17**

A Dell R620 hardware server supporting 6 core processors (per blade) with 2 blades per single rack unit (12 vCPUs) with 64G of available integrated RAM (perhaps using VMware vSphere Storage Appliance (VSA)) should be sufficient for supporting all of the applications at the scale desired.

- Reduced hardware costs; simpler maintenance and administration
- The ability to install and administer Avaya applications, virtualized on existing infrastructures, and then expand as needed without investing in additional servers

The move of Avaya Aura applications to the VMware operating system is an important deployment alternative for any UC collaboration solution. Avaya Aura, the leading UC solution for mobile and video collaboration, offers an accelerated business environment for both large and midsize enterprises. The reasons are obvious; Avaya Aura provides more reliable collaboration solutions, efficient mobility solutions, enhanced video communications, and overall better business communications. As the network environment is changing and the model for server infrastructure is becoming one of better utilization of hardware it is critical to offer real-time applications that can be supported in a virtual architecture as well.

Running multiple 'virtual' applications on a single server is not as straightforward as it might seem especially when considering the system requirements for real time access to users. That is the where the experience and technical expertise of Avaya has been proven by combining the best in real-time collaboration with the leading solution for virtualization. With Avaya Aura on VMware, the leading UC features can now gain the advantages of running within a virtualized server arrangement.

Customers will be able to move the Avaya core from dedicated servers and use hardware components as dynamic resources rather than appliances. Virtualization of their Avaya solutions will enable enterprises to restore communications immediately if a hardware failure occurs, distribute multiple operating systems on a per-user basis, and simplify the duplication of services, the management of licenses, and the enforcement of policies.

Avaya Aura Virtualized Environment Resource allocation per user count

Avaya Aura on VMware Users per solution	500 vCPU/RAM	2000 vCPU/RAM	5000 vCPU/RAM	10000 vCPU/RAM	>10K vCPU/RAM
Communication Manager (Simplex)	1/4G	1/4G	1/4G	1/4G	1/4G
Communication Manager (Duplex)	3/5G	3/5G	3/5G	3/5G	3/5 (30K users with 2.4GHz 36K users with 2.9GHz)
Session Manager	2/4G	3/5G	5/7G	12/12G	NA
System Manager	3/7G	3/7G	3/7G	3/7G	3/7G (35K max users)
WebLM	1/1G	1/1G	1/1G	1/1G	1/1G
Utility Services	1/1G	1/1G	1/1G	1/1G	1/1G
SAL	2/2G	2/2G	2/2G	2/2G	2/2G
TOTALS (Simplex)	10/19G	11/20G	13/22G	24/36G (AES 4K max users)	24/36G (Max users AES 4K) SM 10K)
AES	1/2G	2/2G	4/4G (4K max users)	NA	NA
Presence Services	4/8G	4/8G	8/20G	8/32G	12/32G (max users 12K)

Table: Avaya Aura on VMware

Avaya Aura® applications for VMware:

- Avaya Aura® Communication Manager
- Avaya Aura® Session Manager
- Avaya Aura® System Manager
- Avaya Aura® Presence Services
- Avaya Aura® Application Enablement Services
- Avaya Aura® Agile Communication Environment (ACE)
- Avaya Aura® Utility Services
- WebLM
- Secure Access Link

Avaya Call Center on VMware (OVA files)

- Avaya Aura® Call Center Elite
- Elite Multichannel Feature Pack
- Avaya Aura® Experience Portal
- Call Management System

About Avaya

Avaya is a leading, global provider of customer and team engagement solutions and services available in a variety of flexible on-premise and cloud deployment options. Avaya's fabric-based networking solutions help simplify and accelerate the deployment of business critical applications and services. For more information, please visit **www.avaya.com**.

Avaya Aura Virtualized Environment is a flexible deployment option to offer Avaya Aura unified communications real-time collaboration capabilities to any enterprise. Avaya will continue to offer the server based solution for Avaya Aura in addition to the VMware compatible vAppliance approach. For some specific Avaya Aura installations, the two deployment options may be combined, mixing server applications and virtualized applications for a complete UC installation.

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vmware READY

Avaya Aura® core applications are VMware Ready offering a major step forward in the deployment of real time collaboration by supporting the VMware vSphere hypervisor.

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