Vocera Alarm Management Server Sizing Matrix

Version 2.2.5

Notice

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Server Sizing Matrix

The following information provides guidelines for implementing the Vocera Alarm Management infrastructure.

Vocera Alarm Management Requirements

These are the installation requirements and prerequisites for Vocera Alarm Management.

Note: Vocera recommends that VAM and SQL are to be installed on separate servers.

VAM Application Server Requirements

These are the installation requirements and prerequisites for the VAM server.

Hardware:

- Intel Xeon Quad Core
- 16 GB RAM
- Dedicated 500 GB hard drive for Vocera

Operating System:

- Microsoft Windows Server 2012 R2 Standard Version (recommended) 64-bit
- Microsoft Windows Server 2008 R2 Standard Version 64-bit
- Microsoft Windows Server 2008 R2 Enterprise Version 64-bit

VAM version:

- VAM 2.2.4 (required)

Additional Microsoft software and utilities:

- IIS 7 or above
- Microsoft .NET Framework 4.5 (for Windows Server 2008 R2 only - installs natively with Windows Server 2012 R2 Standard)
- The MS SQL ODBC Driver and Command Line Utilities (required if the SQL database is on a separate server, as is recommended)

Java version:

- Java JRE version 1.7.0_45 or 1.7.0_75 (64-bit version, required)

Supported browser versions:

- Chrome 48.0
- Internet Explorer 11
- Mozilla Firefox 44.0.1

VAM Database Server Requirements

These are the installation requirements and prerequisites for the VAM database server.

Hardware:

- Intel Xeon Octa Core 2GHz
- 16 GB Memory
- Disk Provisioning

  If you partition your database server disk into multiple drives, Vocera recommends the following:

  Table 1: VAM Database Server Disk Provisioning

Drive	Size
SQL Installation and OS	120 GB
SQL Log Files	240 GB
TEMPDB-Logs	240 GB
TEMPDB	240 GB
SQL_DATA	240 GB

  Disk space provisioning depends on the number of alarms you receive and how much data you intend to archive. If you want to save all archived files, it is better to have 500 GB on the drive where the archived files are stored.

  If you do not logically partition your hard disk, Vocera recommends a minimum of 500 GB on a single drive for the SQL Server installation, the JSON files created by alarms, application log files, and the archiver service's saved CSV files (and additional space if you intend to save all archived files).

Operating System:

- Microsoft Windows Server 2012 R2 Standard Version (recommended) 64-bit
- Microsoft Windows Server 2008 R2 Standard Version 64-bit
- Microsoft Windows Server 2008 R2 Enterprise Version 64-bit

Microsoft SQL Server:

- SQL Server 2012 R2 Standard Version (recommended) 64-bit
- SQL Server 2012 R2 Enterprise Version 64-bit
- SQL Server 2008 R2 Standard Version 64-bit
- SQL Server 2008 R2 Enterprise Version 64-bit

Note: The account that is running Microsoft SQL Server must have system administration privileges.

SQL clustering is supported in VAM.

Wave Form Integration Requirements

These are the requirements for wave form integration for GE and Philips.

- GE and Patient Monitoring Wave Form Connector require third-party software.
- Vocera recommends operating this third-party software on a separate server.

For more information, refer to the appropriate third-party provided documents.

Vocera Alarm Analytics Requirements

To run Vocera Alarm Analytics, you must meet the requirements described here.

Note: Vocera recommends that Vocera Alarm Analytics and SQL are to be installed on separate servers.

VAA Application Server Requirements

These are the installation requirements and prerequisites for the VAA server.

Hardware:

- Intel Xeon Quad Core, 2.60 GHz or more
- 16 GB RAM
- Dedicated 250 GB hard drive for Vocera

Operating System:

- Microsoft Windows Server 2012 R2 Standard Version (recommended) 64-bit
- Microsoft Windows Server 2008 R2 Standard Version 64-bit
- Microsoft Windows Server 2012 R2 Enterprise Version 64-bit
- Microsoft Windows Server 2008 R2 Enterprise Version 64-bit

VAA Database Server Requirements

Vocera Alarm Analytics requires an independent Microsoft SQL Server instance; it does not share the Vocera Alarm Management SQL Server instance.

Hardware

- Intel Xeon Octa Core 2GHz
- 16 GB Memory
- Dedicated 1 TB hard drive for Vocera

Operating System

- Microsoft Windows Server 2012 R2 Standard Version (recommended) 64-bit
- Microsoft Windows Server 2008 R2 Standard Version 64-bit
- Microsoft Windows Server 2012 R2 Enterprise Version 64-bit
- Microsoft Windows Server 2008 R2 Enterprise Version 64-bit

Microsoft SQL Server

- SQL Server 2012 R2 Standard Version (recommended) 64-bit
- SQL Server 2008 R2 Standard Version 64-bit
- SQL Server 2012 R2 Enterprise Version 64-bit
- SQL Server 2008 R2 Enterprise Version 64-bit

For information on VMWare requirements, see **VMware Requirements for Vocera Alarm Analytics** on page 7.

Note: For most deployments, Vocera recommends installing the Microsoft SQL Server and the Vocera Alarm Analytics server on separate machines. For extremely small deployments, you may install both servers on the same machine. Make sure you contact Vocera Technical Support if you are planning to deploy the two servers on one machine.

Vocera Support and Recommendations for VMware Products

Vocera supports Vocera Alarm Management running in a VMware virtualized environment.

Important: Vocera has validated that the Vocera Alarm Management and Vocera Alarm Analytics work with the requirements described here. However, we understand that every virtual infrastructure has unique characteristics. Consequently, you may need to deviate from the required configuration. If you encounter performance issues with virtualized

Vocera servers, Vocera Technical Support will work with your VMware administrator to help identify the cause of the problem and make recommendations to help fix or mitigate the problem. The recommendation could be to move the Vocera servers to a host with more available resources or higher performing disk capabilities. In some cases, Vocera Technical Support may recommend migrating to physical hardware if the virtual environment is not able to maintain the level of performance required by the Vocera solution.

VMware Platforms

VMware vSphere 5 with ESXi 5.0 and later is supported.

The ESXi hosts in this environment must be managed by a VMware vCenter Server, using a minimum of Standard licensing for both ESXi and vCenter.

Important: Vocera does not support other virtualization platforms, including VMware Workstation, Citrix XenServer, Red Hat KVM and Microsoft Hyper-V.

VMware Feature Recommendations

Vocera does not recommend that you use VMware vMotion, DRS, Storage vMotion, or Storage DRS features.

These features have the potential to disrupt real-time communication. VM Override rules or Affinity/Anti-Affinity rules should be used if possible, or selectively disabling some of these features, to prevent these actions.

VMware Requirements for Vocera Alarm Management

Here are the VMware requirements for VAM.

Component	Requirements
Virtual CPU's (vCPU's) per VM	4
Minimum Memory Size or Configuration	16 GB
Resource Reservation	See CPU Oversubscription on page 8 and see Memory Oversubscription on page 8
Network Interface	VMXNET 3
Minimum Disk Space	500 GB (thick provisioned)
Guest Operating System	Windows Server 2012 R2 Standard or Enterprise, or Windows Server 2008 R2 Standard or Enterprise

VMware Requirements for Vocera Alarm Analytics

Here are the VMware requirements for Vocera Alarm Analytics.

Component	Requirements
Virtual CPU's (vCPU's) per VM	4
Minimum Memory Size or Configuration	16 GB
Resource Reservation	See CPU Oversubscription on page 8 and see Memory Oversubscription on page 8
Network Interface	VMXNET 3
Minimum Disk Space	1 TB (thick provisioned)
Guest Operating System	Windows Server 2012 R2 Standard or Enterprise, or Windows Server 2008 R2 Standard or Enterprise

Disk Oversubscription

No disk oversubscription is allowed on the host.

All virtual disks should use a “thick” provisioning method. Only direct-attached storage is recommended.

Recommendation: If you are using NAS or SAN, the maximum disk latency should be in line with the best practices for a real-time Voice application. For more information, see **VMware vSphere® 5.5 Documentation Center**.

CPU Oversubscription

No CPU oversubscription is allowed on the host.

The amount of provisioned vCPU's should be one less than the amount of physical processor cores available in the hypervisor (ESXi host). CPU affinity is not required or recommended.

Hyper-threading can be enabled but additional logical processors made available via the hyper-threading feature do not count toward the provisioning totals.

Example:

Host machine contains 2 quad-core processors with hyper-threading enabled.

- Physical CPUs = 8
- Logical processors = 16
- Maximum vCPU’s allowed = 7 (8 – 1 available for hypervisor use)

Memory Oversubscription

No memory oversubscription is allowed on the host.

Provisioned memory of all virtual machines combined should equal 1GB less than the amount of memory installed in the hypervisor.

Example:

Host machine contains 24 GB of RAM

24 – 1 = 23 GB of RAM available for guest VMs memory allocation

High Availability Requirements

The following load balancer has been used for high availability in VAM.

- NetScaler VPX(5) version NS10.5 : Build 57.7.nc May 14 2015