Agile Product Lifecycle Management

AutoVue for Agile PLM Deployment Guide

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Preface

The *AutoVue for Agile PLM Deployment Guide* provides recommendations on how to deploy AutoVue for Agile PLM, File Manager, AutoVue client and client components. For more technical information on how to deploy/configure AutoVue and its associated components, refer to the *AutoVue for Agile PLM Installation Guide*.

Audience

This document is intended for administrators and users of AutoVue for Agile PLM.

Documentation Accessibility

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Related Documents

Oracle's Agile PLM documentation set includes Adobe® Acrobat PDF files. The Oracle Technology Network (OTN) Web site
http://www.oracle.com/technetwork/documentation/agile-085940.html contains the latest versions of the Agile PLM PDF files. You can view or download these manuals from the Web site, or you can ask your Agile administrator if there is an Agile PLM Documentation folder available on your network from which you can access the Agile PLM documentation (PDF) files.

Oracle's AutoVue for Agile PLM documentation set is available at
http://www.oracle.com/technetwork/documentation/agile-085940.html#autovue

For more information on Oracle AutoVue products, refer to the Oracle AutoVue documentation set available at
http://www.oracle.com/technetwork/documentation/autovue-091442.html

Conventions

The following text conventions are used in this document:

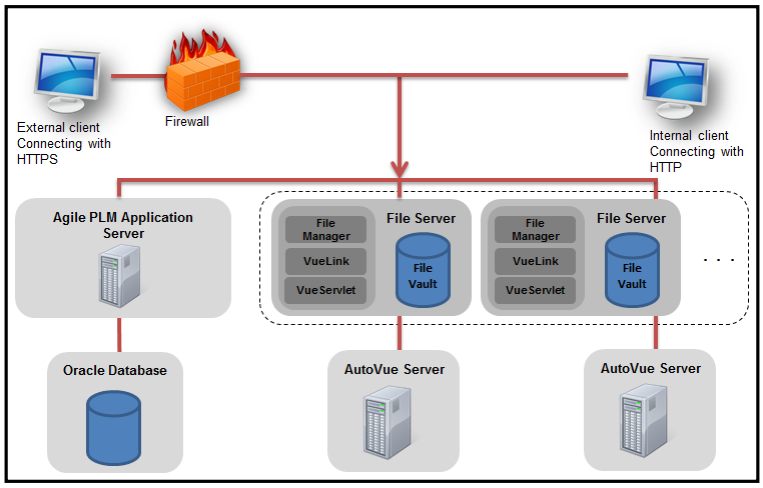
Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.
AutoVue	For simplicity, this document uses the product name AutoVue interchangeably with AutoVue for Agile PLM.

1

Deployment Components

AutoVue for Agile PLM has a multi-tiered, client-server architecture that enables document viewing, markup and collaboration capabilities for Agile PLM. These tiers are typically deployed across several components across a production environment: the AutoVue server, Application Server, File Manager, and AutoVue applet. The VueServlet is deployed in File Manager.

Figure 1–1 AutoVue for Agile Deployment



1.1 Agile PLM Components

The components of AutoVue for Agile PLM include the:

- Agile PLM Application Server
- Agile PLM File Manager
- AutoVue server
- AutoVue client libraries

1.1.1 Agile PLM Application Server

The Agile PLM Application Server is the center of the Agile PLM system, and manages data stored in the Agile PLM database. The Agile PLM Application Server runs on industry-leading J2EE application servers. The application server connects to the components in a persistence layer where product content is stored. All Agile PLM data is contained or organized in business objects that are set up by the administrator, and

specified and used by the enterprise's Agile PLM users. Business objects is a general term that implies objects created from the classes available to the enterprise, but other entities in Agile are also objects, such as workflows, searches, reports, and so forth.

1.1.2 Agile PLM File Manager

The File Manager stores all documents, drawings, and other files within the Agile PLM system. A File Manager provides a place to store and retrieve files locally or remotely. Due to the geographically dispersed nature of the global enterprise, multiple Agile PLM File Managers can be deployed in a distributed configuration for fast and efficient access to file attachments. Agile PLM File Manager is made up of two main components: the File Manager Web application and the file vault. The file vault is the file system where the actual files reside. The file vault can be located on the same server as the Web application or on a dedicated storage system.The File Manager can be installed on the same machine as the Agile PLM Application Server but is often installed on a separate machine. The File Manager can also be installed in a redundant configuration and distributed across geographic regions.

1.2 AutoVue Components

The AutoVue components include:

- AutoVue Server
- AutoVue Client Libraries
- VueServlet
- AutoVue Applet/Client

The installation involves AutoVue installed on a server, to which client machines are connected to access and view documents. An AutoVue solution has several components: the AutoVue server, and the VueServlet deployed in File Manager. The File Manager also delivers the "client components" – AutoVue applet/client. The Agile PLM clients always access AutoVue through the VueServlet deployed in File Manager. In the case of AutoVue for Agile PLM installation, the AutoVue for Agile PLM Servlet (VueLink and VueServlet) is packaged and deployed as part of the File Manager installation. The VueLink is also deployed on the File Manager and tunnels the requests to the Agile Application Server using HTTP protocol.

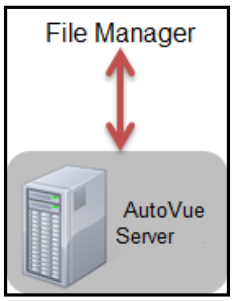
The AutoVue client is a JAVA-based applet that is the main entry point to AutoVue's capabilities. The AutoVue client components need to be made accessible to end-users at an application server or Web server location.

1.2.1 AutoVue Server

The AutoVue server is the core of the AutoVue solution. An AutoVue server instance is comprised of one session server and multiple document servers (by default, there are four document servers, and one streaming file document server).

Note: The AutoVue server can be installed on a different platform than the AutoVue for Agile PLM integration components.

Figure 1–2 AutoVue Server



The session server receives all requests sent to the AutoVue server and then delegates the tasks to a document server. When a file is opened, all the processing is performed on the document server. It parses the file and generates the streaming file to send to the AutoVue client. A document server can be dedicated to streaming file generation. During AutoVue installation, AutoVue dedicates four document servers and one streaming file document server by default. When a document server reaches the predefined memory threshold, it may start unloading its memory by dumping some graphical data to a specific folder. When this dumping occurs, performance is usually degraded when loading a file on that document server. To optimize performance in this case, it is recommended to distribute the load onto a larger process pool rather than using data dumping. Note that if the process pool size becomes too large, and the operating system spends significant time swapping between processes, then another node in the AutoVue server cluster should be added.

For more information on the AutoVue server, refer to the "AutoVue Server Configuration" section in the *AutoVue for Agile PLM Installation Guide*.

The AutoVue Server can be very CPU, I/O, memory and graphics intensive. Ensure that the machine hosting AutoVue Server has sufficient resources for it and any other applications running on the machine.

If the AutoVue server is running in a virtualized environment, ensure that the proper resources are allocated to the virtual machine hosting it. Note that virtualized environments may have slight degradation in performance compared to running on native hardware.

1.2.2 AutoVue Client Libraries

AutoVue client libraries need to be hosted within an application server or a Web server. The client libraries must be configured to communicate with the VueServlet, which in turn communicates with the AutoVue server. End-users connect to AutoVue using the URL served by this application/Web server.

1.2.3 VueServlet

The VueServlet acts as the main entry point for communication between AutoVue clients and the AutoVue server. The VueServlet must be configured for access to a firewall when used by external AutoVue clients to communicate with the AutoVue server.

The Agile PLM File Manager hosts the VueServlet. The number of synchronous or asynchronous requests that the VueServlet can handle is limited by the capabilities of the application server that it is deployed on. The requests can include new session requests, file open requests, requests to execute functionality that requires server-side

operations, or all of these. You can configure the number of simultaneous connections from the VueServlet to the AutoVue server by setting the InvokerCount parameter.

1.2.4 AutoVue Applet/Client

The AutoVue applet is a JAVA-based applet that is displayed via a Web page (HTML, ASP, and so on).

2

AutoVue Hardware and System Requirements

This chapter discusses the hardware, and system requirements for installing Oracle AutoVue for Agile PLM.

2.1 Hardware Requirements

Table 2–1 Hardware Requirements

Component	Oracle-Certified Hardware Requirements

Server	**Note**: The AutoVue Server can be very CPU, I/O, memory and graphics intensive. Ensure that the machine hosting AutoVue Server has sufficient resources for it and any other applications running on the machine.
	▪ 8 GB of RAM
	▪ Quad-core processor
	▪ 400 MB of disk space for installation
	▪ At least 30 GB of free disk space:
	  ▪ 20 GB for streaming files (if you configure a larger size for the AutoVue cache directory, ensure that the additional disk space is available).
	  ▪ Additional space required for managing markup symbols, user profiles, and markups.
	  ▪ AutoVue also stores temporary files. It stores files at %TEMP% path on Windows operating systems. On the Linux operating system, the temporary files are stored at the default location ie the /tmp/autovue folder. These files are generally deleted after processing is complete. Ensure that there is available disk space for AutoVue temporary files.

Table 2–1 (Cont.) Hardware Requirements

Component	Oracle-Certified Hardware Requirements
Client	▪ Minimum requirements for your operating system (OS): ▪ 1 GHz CPU ▪ 1 GB of RAM It is recommended that the Java Virtual Machine (JVM) used for the AutoVue client is configured for a maximum memory of 256 MB. If loading larger documents, you may need to increase this memory to a higher value (for example, 512 MB). ▪ The AutoVue client is a Java applet and as such works on most operating systems and browsers that support Java applets. To see what is certified by Oracle, refer to Section 2.2, "System Requirements". ▪ When running the AutoVue client on machines with non-Windows operating systems (OSes), ensure that these machines have a graphics card that supports OpenGL. This is necessary for loading 3D models. ▪ On Windows machines, it is recommended to have a graphics card with OpenGL support. In the absence of an adequate graphics card driver, Windows uses its OpenGL capability which is slower as compared to having a graphics card that supports OpenGL.

Important: It is recommended to allocate 2 GB per doc server if the documents are of low complexity. For 3D files, it is recommended to allocate 4 GB of memory per doc server.

2.2 System Requirements

This section details system requirements for the Oracle AutoVue line of products and integrations.

2.2.1 Platforms

The following platforms are certified for AutoVue installation and/or hosting.

Table 2–2 Oracle-Certified Operating Systems

Platform	AutoVue for Agile PLM[1]	AutoVue Client/Server Deployment[1]	AutoVue Desktop Deployment
Windows Server 2012 R2, 2012 —64-bit	x	x	
Windows Server 2008 R2—64-bit	x	x	
Windows 8.1, 8, 7, VISTA—64-bit			x
Oracle Linux 5.8 and up (x86), 6.X (x86) and 7.X (x86)[2] 64-bit (AutoVue running in 32-bit mode)	x	x	
Red Hat Enterprise Linux 5.8 and up (x86), 6.X (x86), and 7.X (x86)[2] 64-bit (AutoVue running in 32-bit mode)	x	x	

[1] The installation requires about 400MB of free space. Additional space will be required by AutoVue for storing other data such as streaming files and markups.

[2] AutoVue is supported on a 64-bit Linux operating systems (OS), but will run in 32-bit mode. All prerequisites libraries should be in 32 bit, with the exception of the X Windows base package (xorg-x11-server-Xorg) along with the Xvfb package xorg-x11-server-Xvfb. These should be the same architecture (64-bit) as the OS.

2.2.2 Client Platform

The following platforms are certified for the AutoVue client.

Table 2–3 Oracle-Certified Client Platforms

Platform	AutoVue for Agile PLM	AutoVue Client/Server Deployment
Windows OSes: Windows Vista— 64-bit Windows 7— 64-bit Windows 8— 64-bit Windows 8.1—64-bit ■ Internet Explorer 9 ■ Internet Explorer 10 ■ Internet Explorer 11 ■ Firefox 31 ESR	x	x
Apple OS X 10.10 ■ Safari 8.0[1] ■ Firefox 31 ESR	x	x
Solaris 10 (Sparc) ■ Firefox 31 ESR	x	x
Java Virtual Machine		
■ Java SE 7 update 45 and higher - 32-bit and 64-bit	x	x
■ Java SE 8 update 11 and higher - 32-bit and 64-bit	x	x
■ Java JDK 1.6 update 41 (and up)[2] - 32-bit and 64-bit		
■ Java JDK 1.7 update 15 (and up)[2] - 32-bit and 64-bit		

[1] When launching AutoVue from a Mac client, certain configurations may be required. For more information, refer to Oracle Support Document 1662405.1 (Getting Message "Select a temporary directory" When Printing With AutoVue) which can be found at: https://support.oracle.com/epmos/faces/DocumentDisplay?id=1662405.1

[2] For AutoVue ISDK Filesys Sample, Skeleton and Web Services Client.

2.2.3 Integrations

The following integrations have been certified for this release of AutoVue.

Table 2–4 Oracle-Certified Integrations

Integrations	AutoVue for Agile PLM	AutoVue Client/Server Deployment
Agile PLM 9.3.5, 9.3.4, 9.3.3, and 9.3.2	x	

2.2.4 AutoVue for Agile PLM Integration Components

AutoVue for Agile PLM integration components can be installed on the following OSes:

- Oracle Solaris (SPARC and x64)
- Linux (Oracle, Red Hat Enterprise, SUSE)
- Microsoft Windows
- HP-UX Itanium
- IBM AIX (POWER)

For supported versions, refer to the "Agile Product Lifecycle Management Capacity Planning Guide" on OTN
http://www.oracle.com/technetwork/documentation/agile-085940.html

3

Planning AutoVue for Agile PLM Deployment

Before installing and using AutoVue, you must identify your deployment requirements.

The following are architectural considerations for your deployment:

Table 3–1 Architectural Considerations

Deployment Considerations	Deployment Recommendations
▪ Scale AutoVue for Agile PLM for a high volume of concurrent users. ▪ Scale AutoVue for Agile PLM for high peak usage. ▪ Configure AutoVue for Agile PLM to support viewing of different document types	Depending on types of document to be viewed (2D, 3D, and so on), number of concurrent users of AutoVue, and peak usage, it might be necessary to have multiple instances of the AutoVue server. Refer to Section 4.1, "Scaling AutoVue for Agile PLM for High Usage" for more information.
▪ Prepare AutoVue for Agile PLM for distributed geography.	The AutoVue for Agile PLM installer supports a 1-1 mapping between a File Manager and an AutoVue Server instance. Agile PLM File Managers can be installed in a redundant configuration having multiple File Manager instances and using a load-balancer to distribute load across the File Manager instances. Refer to Section 4.2, "Distributed Geography."

Additional deployment scenarios are described in Chapter 5, "Feature Deployment Considerations".

Once your deployment requirements are identified, you can plan your AutoVue for Agile PLM deployment. Since AutoVue can plug into and work with various other components, it is highly recommended to perform a Systems Integration Test and User Acceptance Test to ensure that AutoVue works well with all components and can reliably meet your technical and business/end-user needs. The *AutoVue for Agile PLM Testing Guide* can be found on the AutoVue for Agile PLM Documentation OTN page: `http://www.oracle.com/technetwork/documentation/agile-085940.html#autovue`.

For information on the various deployment considerations for AutoVue, refer to Chapter 5, "Feature Deployment Considerations." In most cases, more than one of these scenarios are applicable to your deployment. It is recommended that you review all of these various deployment scenarios and identify what is applicable to your deployment.

4

Deployment Considerations

This chapter discusses the deployment considerations and best practices for scaling AutoVue for Agile PLM for better usage.

4.1 Scaling AutoVue for Agile PLM for High Usage

This section discusses the deployment considerations for AutoVue Server and File Manager.

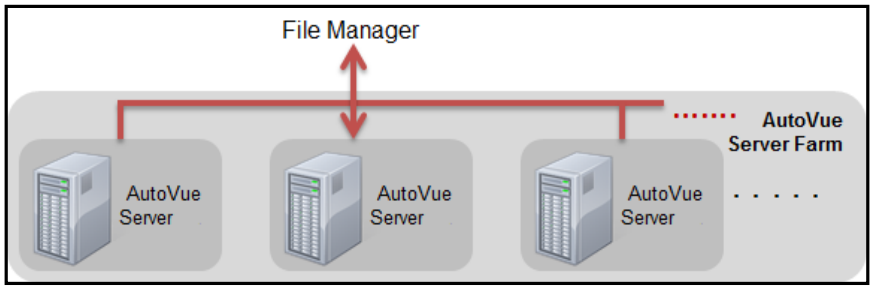
4.1.1 AutoVue Server

Depending on the number of concurrent users, the kind and size of documents that users will typically view, and whether files will be loaded natively or from streaming files, an AutoVue Deployment Expert may recommend that you have multiple instances of AutoVue servers to meet your needs. A setup where multiple AutoVue servers are communicating with each other to handle the load is referred to as an AutoVue server farm.

Note: In a multi-AutoVue server deployment, it is recommended to install AutoVue in the exact same folder path on each server otherwise streaming file validation will fail.

The following figure shows the AutoVue server deployed in a server farm.

Figure 4–1 AutoVue Server Farm Deployment



Each AutoVue server has a session server and multiple document servers. The session server accepts all requests to AutoVue and is responsible for distributing document requests across the document servers. When AutoVue is configured in a server farm, the session servers across the servers in the farm communicate with each other in order to distribute load across all the document servers in the server farm.

In order to setup AutoVue for load balancing, you must perform some configuration on the AutoVue server-side. Refer to the *AutoVue for Agile PLM Installation Guide* for more information on configuring an AutoVue server farm.

Note: Streaming files and user profiles are not shared between servers in the server farm.

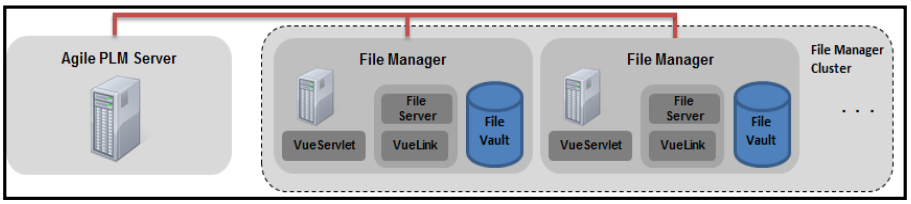
4.1.2 File Server (File Manager/VueServlet/File Vault)

Based on your peak usage, it may be necessary to setup multiple File Servers and distribute requests across the multiple instances. This is the preferred method of providing scalability/redundancy for both File Manager and AutoVue Server in Agile PLM. You could also increase the number of document servers in AutoVue Server assuming sufficient hardware resources on the machine. If you setup multiple File Manager/VueServlet instances then you must use a load-balancer to enforce session persistence and distribute load across the instances.

Important: It is required that the VueServlets in a clustered environment have identical settings (especially, the jvueserver parameter).

The following figure shows the File Server in a cluster.

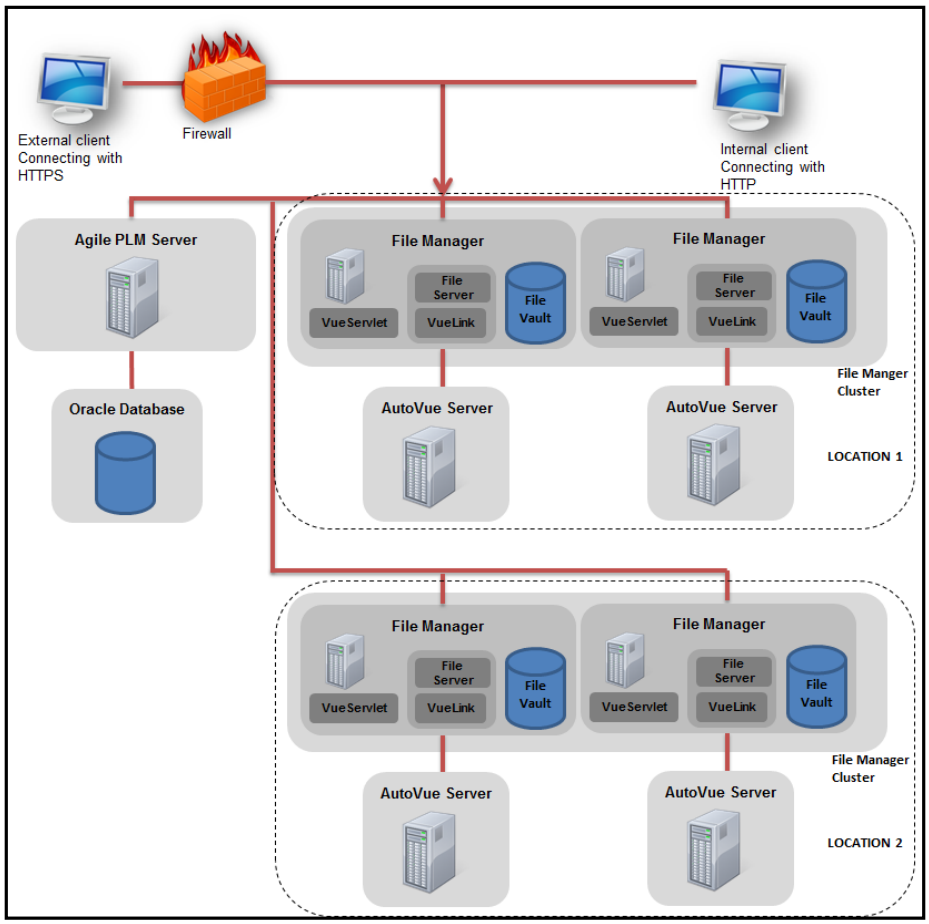
Figure 4–2 VueServlet/File Manager Cluster



4.2 Distributed Geography

When Agile PLM users are distributed geographically, it is common practice to install a File Server (File Manager/VueServlet/AutoVue for Agile PLM) in remote locations to reduce latency to the File Manager and improve file upload/download/view times.

Figure 4–3 Distributed Geography



In this scenario:

- In Agile PLM, the application server is not distributable (i.e. the application server exists in only one location). Only the File Manager and AutoVue Server components are distributable.
- The AutoVue servers are local to the File Manager.

4.3 Best Practices

The following are best practices to follow when deploying AutoVue for Agile PLM:

- Always run the AutoVue server as a service. For more information, refer to the "Running the AutoVue Server as a Service" section of the *AutoVue for Agile PLM Installation Guide*.
- Always run the AutoVue server as a named user and not as a LocalSystem account, as the latter has more privileges than the user name account.
- It is recommended to have the Oracle database installed on a separate machine than the AutoVue server.

5

Feature Deployment Considerations

This chapter discusses the deployment considerations for scaling AutoVue for Agile PLM for better usage.

5.1 Feature Considerations

The following sections discuss how to leverage streaming files and real-time collaboration (RTC).

5.1.1 Streaming Files

AutoVue generates streaming files by default for most of its supported file formats. A streaming file is created the first time you access a document in AutoVue. It contains all the information needed to display and to perform queries on the document. Streaming files provide the advantage that AutoVue can load from streaming files significantly faster than loading a file natively. Loading from streaming files also consumes a lot less memory on the server-side than when loading a file natively. All streaming files are checked into Agile PLM as .CMF files.

When planning your AutoVue deployment, you must determine how to size AutoVue's cache directory for streaming files. In most situations, AutoVue downloads the native document and its external references into the cache directory and then generates streaming files. You can specify various parameters for sizing the cache directory such as the size, number of files or last access date. For information on how to set these parameters, refer to the "Streaming Files Options" section of the *AutoVue for Agile PLM Installation Guide*. A default installation of AutoVue specifies the size of the cache directory to 20 GB. If you have a large deployment or your deployment involves loading of very large files, you must set this size to a bigger value. Note that you may experience performance issues if the cache directory is very big or if there are a large number of files in the cache directory.

Note: Cache directories are not shared between servers in a server farm.

Important: For performance reasons, it is recommended that AutoVue's streaming file cache directory is excluded from real-time virus scans. If real-time virus scans are enabled, there is a performance impact on AutoVue and the impact is tied to the kind of operations done by the virus scan. It is also recommended that you run scheduled virus scans at a time when the AutoVue server is not heavily in use.

5.1.2 Real-Time Collaboration

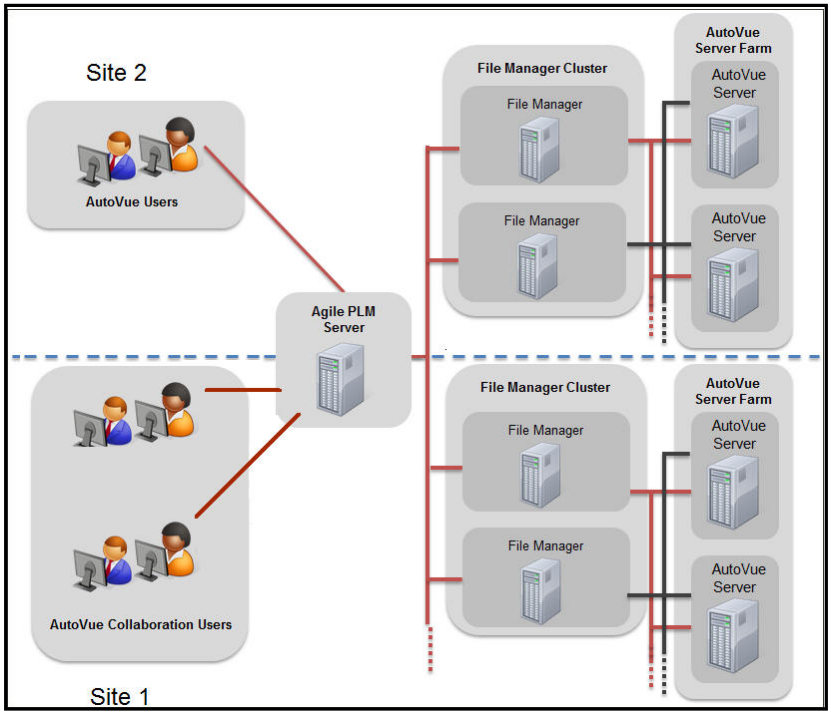
AutoVue provides a real-time collaboration (RTC) feature that enables multiple end-users to review files interactively over distributed geographies, from distributed Document Management Systems, and from behind a firewall. The following sections describe how to plan your collaboration deployment.

For detailed information on configuring AutoVue for collaboration, refer to the *AutoVue for Agile PLM Installation Guide*.

5.1.2.1 Configuration for Distributed Geographies

The following diagram shows RTC between users over distributed geographies.

Figure 5–1 Configuration for Distributed Geographies



Note the following:

- Users are located over distributed geographies.
- AutoVue collaboration is done over a single location (Site 1). This ensures that users have access to the same files and do not require distributed DMS.

- This is the recommended deployment when there are distributed geographies and the DMS/VueLink do not support distributed scenarios.
- High bandwidth is required between Site 2 and Site 1 because users from Site 2 are connecting to Site 1 for RTC.

A
Feedback

If you have any questions or require support for AutoVue please contact your system administrator.

If at any time you have questions or concerns regarding AutoVue, please contact us.

A.1 General AutoVue Information

Web Site	http://www.oracle.com/us/products/applications/autovue/index.html
Blog	http://blogs.oracle.com/enterprisevisualization/

A.2 Oracle Customer Support

Web Site	http://www.oracle.com/support/index.html

A.3 My Oracle Support AutoVue Community

Web Site	https://communities.oracle.com/portal/server.pt

A.4 Sales Inquiries

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