Oracle® AutoVue

Planning Guide

Release 21.0.2.10

F10646-08

January 2025

ORACLE

Oracle® AutoVue Planning Guide, Release 21.0.2.10

F10646-08

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Preface

The *Oracle AutoVue Planning Guide* provides recommendations on how to deploy AutoVue, VueServlet, AutoVue client and AutoVue client components. In addition, this document discusses deployment components and considerations of AutoVue for Agile. For more technical information on how to deploy/configure AutoVue and its associated components, refer to the *Oracle AutoVue Installation and Configuration Guide*.

For the most up-to-date version of this document, go to the AutoVue Documentation Web site on the Oracle Technology Network at
https://www.oracle.com/technetwork/documentation/autovue-091442.html

Audience

This document is intended for integrators or administrators whose task is the configuration and deployment of Oracle AutoVue.

Documentation Accessibility

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Related Documents

For more information, see the following documents in the Oracle AutoVue documentation set on OTN:

- *Oracle AutoVue Installation and Configuration Guide*
- *Oracle AutoVue Viewing Configuration Guide*
- *Oracle AutoVue Testing Guide*
- *Oracle AutoVue Client/Server Deployment Security Guide*

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.

1
Introduction

This document provides information that will help you plan your AutoVue and AutoVue for Agile deployment. Specific instructions for installing and configuring AutoVue and AutoVue for Agile are in the *Oracle AutoVue Installation and Configuration Guide* and *Oracle AutoVue for Agile Installation and Configuration Guide* respectively.

This document is structured as below:

- AutoVue Deployment Components

  This chapter provides information on the various AutoVue components that need to be factored in as part of the deployment planning.

- AutoVue Hardware and Software Requirements

  This chapter contains the hardware and the software requirements for AutoVue.

- Standard Deployment Architectures

  This chapter has standard recommended architecture diagrams for an integrated and a non-integrated deployment of AutoVue, in addition to architectural considerations.

- Feature Deployment Considerations

  This chapter contains information around features of AutoVue such as streaming files, Real-Time Collaboration, and Stamps.

- Deployment Components and Considerations of AutoVue for Agile

  This chapter has details of deployment components and considerations of AutoVue for Agile.

AutoVue can be integrated with Document Management Systems (DMS)[1] or can be deployed as a standalone application. The Standard Deployment Architectures chapter contains recommended deployment architectures for both integrated and non-integrated deployments. Most of the other architecture diagrams in this document are for integrated deployments. You can still refer to these architecture diagrams if you have a non-integrated deployment - you will just have to exclude the integration components from your planning.

[1] In this document, the terms document repository and DMS are used interchangeably to refer to Document Management Systems (DMS), Product Lifecycle Management (PLM) and Enterprise Resource Planning (ERP).

2

AutoVue Deployment Components

The Oracle AutoVue Client/Server Deployment is a multi-tiered, client-server architecture. You can deploy AutoVue either as a standalone application or integrated with a DMS. AutoVue has several components: the AutoVue server, an application server hosting the VueServlet and DMS, a Web server or an application server hosting AutoVue client components, and the AutoVue client.

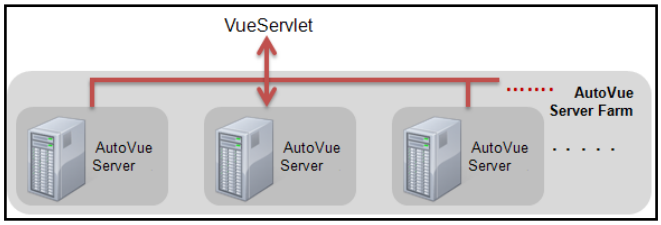
> **Note:** All components in the AutoVue deployment should be configured for fail-over and disaster recovery.

The following sections describe the components and deployment architectures of AutoVue.

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).

Figure 2–1 AutoVue Server Farm



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 while 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.

Note: For the minimum hardware requirements for the AutoVue server, the ProcessPoolSize should be set to 8-9.

WARNING: AutoVue servers may use more memory than available, set the value manually.

When the AutoVue servers are setup in a server farm, the session servers communicate with each other to distribute the load across all the document servers in the server farm.

Note: All servers in the server farm must set the same RMI host (jvueserver.rmi.host.*) for each server in the farm. For example, if a new server is added to an existing server farm without updating the jvueserver.properties file for each server in the farm, then the new server will not be able to connect to the farm. If this happens, a security warning is logged in the server logs.

The AutoVue server is very CPU, I/O, Memory and Graphics intensive. Ensure that the machine hosting AutoVue server is dedicated to AutoVue and is not being used for other applications.

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.

2.2 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 when used by external AutoVue clients to communicate with the AutoVue server.

Generally, the VueServlet can be deployed on any application server. For a list of application servers that are certified by Oracle, refer to AutoVue Hardware and System Requirements. 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. For more information, refer to the **VueServlet Configuration Options** section in the AutoVue Installation and Configuration Guide.

When deploying the VueServlet, your deployment steps should generally depend on whether you have integrated AutoVue with a DMS, or whether you are using it in a non-integrated environment. When AutoVue is integrated with a DMS, it is recommended to deploy the VueServlet on the application server (in a different context) that hosts the DMS. For more information, refer to the **Installing the VueServlet in an Integrated Environment** section of the AutoVue Installation and Configuration Guide.

Depending on your peak usage, you may need to have multiple VueServlets that can service requests to AutoVue. Since the VueServlet is hosted within an application server, you must rely on the application server's load balancing capabilities or rely on an external load balancer. Ensure that the load balancer is configured for session stickiness, that is, when requests come in

from the client, the load balancer directs them to the same server that handled the initial request for the session. Session stickiness is normally achieved through the use of browser cookies.

2.3 Java Network Launching Protocol (JNLP) Components

A new Java Network Launching Protocol (JNLP) XML file has been included in the Oracle AutoVue 21.0.1 solution that allows developers to specify where the application can be obtained, how it should be launched, and what the initial parameters are. This allows application developers to preserve the "zero-install" feature and cross-platform portability for launched applications. The JNLP components are as follows:

- JNLP Generator
- Rendezvous Servlet (VueRDVServlet)

2.3.1 JNLP Generator

AutoVue Client is a Java application that can be started through Java Web Start framework. This framework requires a JNLP file to start the application. The servlet VueJNLPServlet is designed to generate the required JNLP file. It is provided with the source code as a reference implementation for validation and testing purpose. An integrator could use the VueJNLPServlet as is, or update it as per requirements. VueJNLPServlet as is does dynamically generate the required JNLP file. It does not need customization to do so. It can be customized to fulfill other requirements.

2.3.2 Rendezvous Servlet

After AutoVue is started through the JNLP protocol, some Integration solutions are needed to interact with it through its scripting API. AutoVue scripting API uses a JSON-RPC service to convert JSON requests into Java API calls. AutoVue supports two different approaches allowing the communication between an HTML client and AutoVue client:

- Loopback Connection: AutoVue client starts a socket listening to XML HTTP requests invoking this API. The socket is deployed on an embedded application server and listens to a localhost port suggested by the integration solution.
- Rendezvous Communication: The HTML client and AutoVue Client communicate together through a “Rendez-Vous” servlet named VueRDVServlet, deployed on server side. They share a common “Rendez-Vous” ID used by the Rendezvous servlet to link them together.

VueRDVServlet component is not customizable. It is a core component of AutoVue solution. It can be deployed on any application server supported by AutoVue.

2.4 AutoVue Client Components

AutoVue client components need to be hosted within an application server or a Web server. The client components need to 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.

You can deploy the AutoVue client components in a DMS-integrated or in a non-integrated environments.

For a non-integrated environment, you must copy the required java archive files (JAR) and online help files to your Web server document root. For more information, refer to the **Installing AutoVue Client Components** section in the AutoVue Installation and Configuration Guide.

When AutoVue is integrated with a DMS, you must copy over the required JAR and online help files to the application server that hosts the integration components and/or the DMS. For more information, refer to the **Installing AutoVue Client Components in an Integrated Environment** section in the AutoVue Installation and Configuration Guide.

2.4.1 AutoVue Client

The AutoVue client is a JAVA-based application that is launched through Java Web Start framework. It is fully customizable: you can modify the graphical user interface (GUI), setup a collaboration session, modify the menu options and toolbars, and so on. For more information on the configurable parameters of the AutoVue client, refer to the **Customizing the AutoVue Client** section in the *Oracle AutoVue Installation and Configuration Guide*.

3

AutoVue Hardware and System Requirements

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

3.1 Hardware Requirements

Table 3–1 Hardware Requirements

Component	Oracle-Certified Hardware Requirements
Server	**Note**: The AutoVue server is 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. ▪ 8GB of RAM minimum, 12 GB or more recommended depending on complexity of documents being served ▪ Quad-core processor ▪ 400 MB of disk space for installation ▪ At least 30 GB of free disk space: 1. 20 GB for streaming files (if you configure a larger size for the AutoVue cache directory, ensure that the additional disk space is available). 2. Additional space required for managing markup symbols, user profiles, and markups. 3. 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 3–1 (Cont.) Hardware Requirements

Component	Oracle-Certified Hardware Requirements
Client	▫ Minimum requirements for your operating system (OS): 1. 1 GHz CPU 2. 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 works on most operating systems and browsers that support Java WebStart. To see what is certified by Oracle, refer to 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 2GB per document server if the documents are of low complexity. For 3D files, it is recommended to allocate 4 GB of memory per doc server.

3.2 System Requirements

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

3.2.1 Server Platforms

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

Table 3–2 Oracle-Certified Operating Systems

Platform	AutoVue for Agile PLM	AutoVue Client/Server Deployment	AutoVue Desktop Deployment
Windows Server 2022—64-bit (AutoVue running in 32-bit)	x	x	
Windows Server 2019 —64-bit (AutoVue running in 32-bit mode)	x	x	
Windows Server 2016 —64-bit (AutoVue running in 32-bit mode)	x	x	
Windows Server 2012 R2 —64-bit (AutoVue running in 32-bit mode)	x	x	
Windows 11, 10—64-bit (AutoVue running in 32-bit mode)			x
Oracle Linux 9.x (x86_64) 64-bit (AutoVue running in 32-bit mode)			

Table 3–2 (Cont.) Oracle-Certified Operating Systems

Platform	AutoVue for Agile PLM	AutoVue Client/Server Deployment	AutoVue Desktop Deployment
Oracle Linux 8.x (x86_64) 64-bit (AutoVue running in 32-bit mode)	x	x	
Oracle Linux 7.X (x86_64) and 7.X (x86_64) 64-bit (AutoVue running in 32-bit mode)	x	x	
Red Hat Enterprise Linux 9.x (x86_64) 64-bit (AutoVue running in 32-bit mode)			
Red Hat Enterprise Linux 8.x (x86_64) 64-bit (AutoVue running in 32-bit mode)	x	x	
Red Hat Enterprise Linux 7.X (x86_64), and 7.X (x86_64) 64-bit (AutoVue running in 32-bit mode)	x	x	

3.2.2 Client Platforms

The following platforms are certified for the AutoVue client.

Table 3–3 Oracle-Certified Client Platforms

Platform	AutoVue for Agile PLM	AutoVue Client/Server Deployment
Windows OSes: Windows 11 — 64-bit Windows 10 — 64-bit ▫ Firefox ESR 128.5.0[1] ▫ Microsoft Edge 131[1] ▫ Chrome 131[1]	x	x
Apple Mac OS 14.3.1 ▫ Safari 17.3.1[1] ▫ Safari 16.6.1[1] ▫ Firefox ESR 128.5.0[1] Apple Mac OS 13.6.4 ▫ Safari 17.3.1[1] ▫ Safari 16.6.1[1] ▫ Firefox ESR 128.5.0[1]	x	x
Java Virtual Machine		
▫ Java SE 8 update 431 32-bit and 64-bit	x	x

[1] See the Oracle Software Web Browser Support Policy: https://www.oracle.com/middleware/technologies/browser-policy.html

3.2.3 Application Servers

The VueServlet has been certified on the following application servers:

Table 3–4 Oracle-Certified Application Servers

Platform	AutoVue for Agile PLM	AutoVue Client/Server Deployment
WebLogic 12cR2[12.2.1.4.0]		x
Tomcat 8.5.100, 9.0.97 and 10.1.33 **Note**: If you are using Tomcat 10 to deploy VueServlet, add the following in conf\Catalina\localhost\VirtualStore.xml or conf\context.html: <Context> ... <Loader jakartaConverter="TOMCAT" /> </Context>	x	x
Jetty 9.4.54		x

3.2.4 Integrations

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

Table 3–5 Oracle-Certified Integrations

Integrations	AutoVue for Agile PLM	AutoVue Client/Server Deployment
Agile PLM 9.3.6 (RUP 8 and later), and 9.3.5 (RUP 8 and later)	x	
VueLink 19.3.2 for Documentum[1]		x
VueLink for WCC[2]		x

[1] New VueLink for Documentum certifications made after this release of AutoVue are listed in Oracle Support Document 1425804.1 (VueLink for Documentum Certification Matrix) found at: https://support.oracle.com/epmos/faces/DocumentDisplay?id=1425804.1

[2] New VueLink for UCM certifications made after this release of AutoVue are listed in Oracle Support Document 1383416.1 (Oracle AutoVue VueLink for UCM Certification Matrix) found at: https://support.oracle.com/epmos/faces/DocumentDisplay?id=1383416.1

4

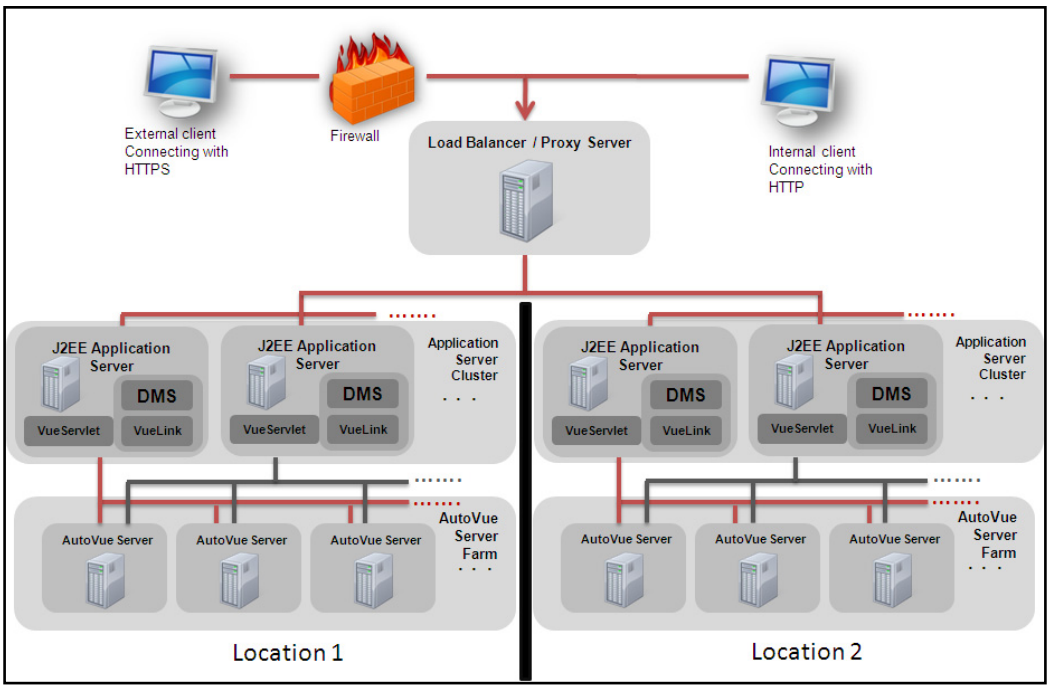
Standard Deployment Architectures

This chapter consists of the following:

4.1 Standalone/Non-Integrated Deployment

The following diagram displays a typical non-integrated AutoVue deployment with a VueServlet cluster and an AutoVue server farm. For more information on this deployment scenario, refer to section Scaling AutoVue for High Usage.

Figure 4–1 Standalone/Non-Integrated Deployment



In this scenario:

- Internal and external clients connect to a load balancer.
- A load balancer routes requests to the VueServlet which is deployed in an application server cluster.
- The VueServlet directs requests to an AutoVue server that is deployed in a server farm. The AutoVue server entries in the VueServlet configuration must be identical across all the VueServlet instances.

4.2 Integrated Deployment

AutoVue can be closely integrated with various Document Management Systems using the Integration Software Development Kit (ISDK). For faster development cycles, you can leverage the ISDK to provide efficient integration of AutoVue with a DMS. For more information and sample code, refer to the ISDK documentation on the Oracle Technology Network: https://www.oracle.com/technetwork/documentation/autovue-091442.html.

Oracle develops some pre-integrated solutions that integrate AutoVue with popular DMS[1]. These Oracle integrations are called VueLinks.

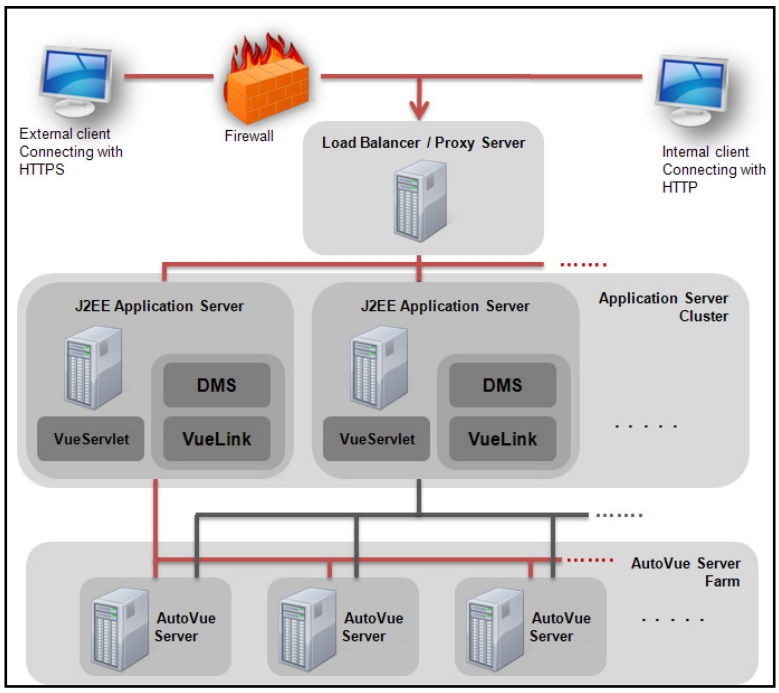
The following diagram displays a typical architecture for a VueLink-integrated environment with an application server cluster and an AutoVue server farm.

Note: If you are using your own integration or a third-party integration with AutoVue, refer to this architecture for generic guidelines. DMS deployment architecture may vary from one DMS to another--ensure that you refer to your DMS documentation and the VueLink/integration documentation for specific deployment instructions.

For more information on integrating AutoVue with a DMS, refer to Integrations with a Document Management Systems.

[1] In this document, the terms document repository and DMS are used interchangeably to refer to Document Management Systems (DMS), Product Lifecycle Management (PLM) and Enterprise Resource Planning (ERP).

Figure 4–2 Integrated Deployment



In this scenario:

- Internal and external clients connect to a load balancer
- A load balancer routes requests to the VueServlet which is deployed in an application server cluster
- The VueServlet directs requests to an AutoVue server that is deployed in a server farm.
- The AutoVue server in turn communicates with the VueLink and the VueLink communicates with the DMS to fulfill DMS requests.
- The AutoVue server entries in the VueServlet configuration must be identical across all the VueServlet instances.

4.3 Planning Your AutoVue Deployment

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

The following are architectural considerations for your deployment:

Table 4–1 Architectural Considerations

Deployment Considerations	Deployment Recommendations
- How to scale AutoVue for a high volume of concurrent users - How to scale AutoVue for high peak usage - How to configure AutoVue 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 *Scaling AutoVue for High Usage* for more information.

Table 4–1 (Cont.) Architectural Considerations

Deployment Considerations	Deployment Recommendations
▫ How to integrate AutoVue with a DMS ▫ How to integrate AutoVue with a DMS that has distributed file systems	When your AutoVue solution includes an integration with a DMS, you must ensure that this integration component is part of your deployment planning. When viewing files from a document management system, it is important to take into consideration the geographical locations of the end-users and the application server that the DMS is deployed on. Refer to Integrations with a Document Management Systems for more information.
▫ How to prepare AutoVue for failover and disaster recovery	For failover clusters, AutoVue must be deployed in a horizontal cluster (server farm). Refer to Failover and Disaster Recovery for more information.
▫ How to achieve secure communication between the AutoVue client and the AutoVue server ▫ How to achieve secure communication between the AutoVue server and the VueServlet	You can configure all communications between the AutoVue server and client, and between the AutoVue server and VueServlet through HTTPS which uses SSL. Refer to *Oracle AutoVue Client/Server Deployment Security Guide* for more information.
▫ How to deploy over distributed geographies	When multiple users are connected to the AutoVue server, it is important to take into consideration their geographical locations with respect to the server. That is, having the server located in close proximity to end-users may improve performance (loading of AutoVue, rendering time of documents, and so on). Refer to Distributed DMS Repositories and Failover and Disaster Recovery for more information.

Additional deployment scenarios are described in Feature Deployment Considerations.

Once your deployment requirements are identified, you can plan your AutoVue installation and 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 Testing Guide* can be found on the AutoVue Documentation OTN page:
https://www.oracle.com/technetwork/documentation/autovue-091442.html .

The following sections describe the various deployment considerations for AutoVue. 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.

4.4 Architectural Deployment Considerations

This section discusses the deployment considerations for scaling AutoVue for better usage.

4.4.1 Scaling AutoVue for High Usage

This section discusses the deployment considerations for AutoVue Server and VueServlet.

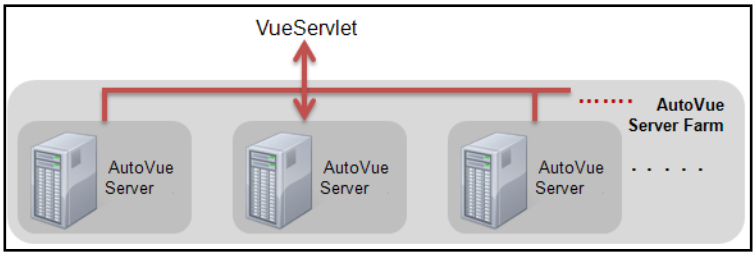
4.4.1.1 AutoVue Server

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 4–3 AutoVue Server 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 *Oracle AutoVue Client/Server Deployment Installation and Configuration 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.

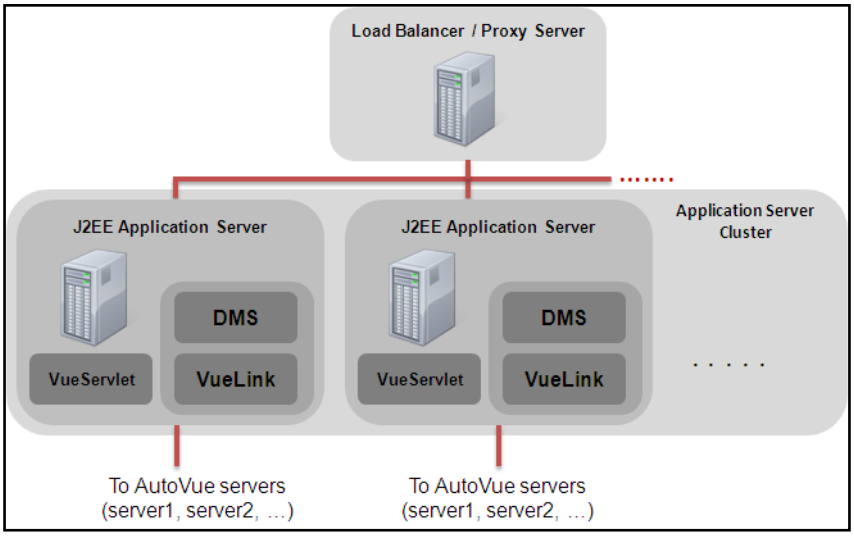
4.4.1.2 VueServlet

Based on your peak usage, it may be necessary to setup multiple VueServlets and distribute requests across the multiple VueServlet instances. You must rely on the load balancing capabilities of the application server or setup multiple VueServlet instances and rely on an external load balancer that is configured to distribute load across all your application server instances.

You must ensure that the AutoVue server entries in the VueServlet configuration are identical across all the VueServlets.

The following figure shows the VueServlet in a cluster with an external load balancer.

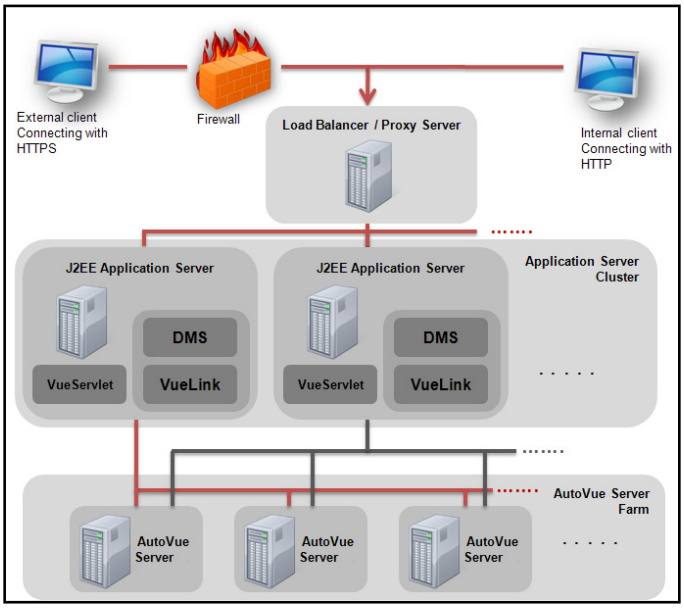
Figure 4–4 VueServlet Cluster



4.4.2 Integrations with a Document Management Systems

AutoVue can integrate with various Document Management Systems. You must factor the integration component into your deployment planning. If you are building your own integration or using a third-party integration with AutoVue, follow the deployment architecture shown below for the Oracle-developed VueLinks. Note that the deployment of a DMS and its integration components vary from one DMS to another. The instructions here should serve as generic guidelines and you should refer to your integration documentation for more specific information around deployments.

Figure 4–5 Integrations with Multiple DMS



Most document management systems are designed as J2EE Web applications and can be deployed into a wide range of J2EE application servers. When setting up a cluster of application servers, a load balancer is the main entry point for all communications. When accessing the DMS from a Web browser, the request is dispatched by the load balancer to one

of the application servers. If your DMS is deployed in a clustered environment, ensure that it works reliably.

The VueLink is a connector that acts as a bridge between AutoVue and the DMS. When the AutoVue server needs to retrieve metadata or transfer files to/from the DMS, all communications go through the VueLink. For failover clusters, the VueLink should be deployed on multiple application server instances and configured in a horizontal clustered environment. The VueLink should be deployed on the same application server where the DMS is deployed. If one node where the VueLink is deployed goes down, the load balancer automatically redirects requests to another available node.

In an integrated environment, the VueServlet can be deployed onto the same application server as the VueLink and the DMS. It is recommended that the VueServlet be deployed as a separate web application and not in the same Web application as the VueLink or the DMS.

Regarding JNLP components, VueRDVServlet must be deployed on the same application server as the Vuelink to use SSO session. The JNLP servlet (as VueJNLPServlet) must be deployed on the same server as VueRDVServlet in order to read and pass the session authentication cookies to AutoVue at the start-up. The Key-Pair generator servlet (as VueKeyPairServlet) can also be deployed anywhere.

For more information, refer to ISDK documentation on the Oracle Technology Network: https://www.oracle.com/technetwork/documentation/autovue-091442.html.

4.4.2.1 Multiple DMS Integrations

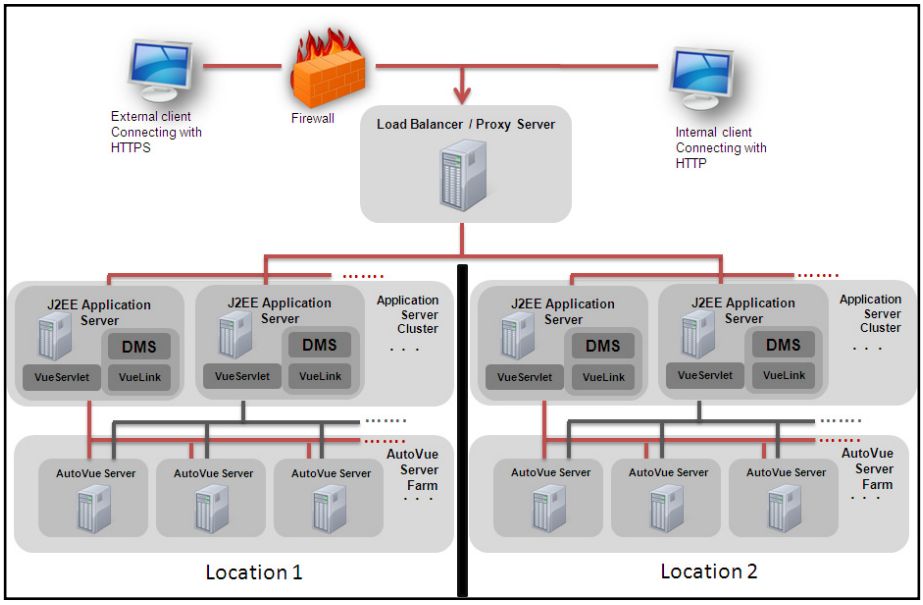
AutoVue can work with multiple backend systems simultaneously.

You can also configure the AutoVue client so that it can browse and search DMS systems even if a connection to the DMS has not already been established. Refer to section "Multiple Document Repositories" in the *Oracle AutoVue Client/Server Deployment* Installation and Configuration Guide.

4.4.2.2 Distributed DMS Repositories

If the DMS supports distributed geographies, you can configure AutoVue such that it works efficiently across these distributed geographies.

Figure 4–6 Distributed DMS Repository



In this scenario:

- The load balancer is configured such that users at Location 1 are always routed to the Application server cluster at Location 1.
- Location 1 and Location 2 should have equivalent configurations - AutoVue server farm, Application server cluster,...
- AutoVue servers at a location are not aware of and do not communicate with the servers at a different location.

For more information, refer to your DMS and your integration documentation.

4.5 Failover and Disaster Recovery

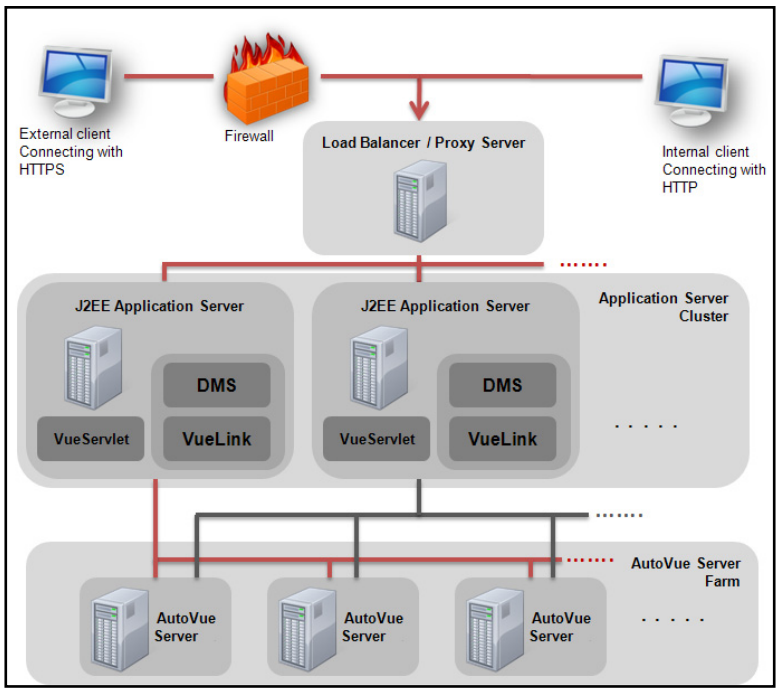
When planning for a failover/disaster recovery scenario, you must plan for backups of the AutoVue Server, VueServlet and the AutoVue client components. If there is a failure of any one of these AutoVue components, another instance will be able to handle requests so that work can continue with minimal or no disruption.

4.5.1 Failover

If you setup a server farm in order to perform load balancing, it is important that you configure AutoVue servers and VueServlets for failover. In the event of a planned or unexpected shutdown of one or more of the servers in the server farm, the failover capability ensures a predetermined level of operational performance by switching to a backup or standby server.

The following diagram shows the components that are involved in a failover deployment.

Figure 4–7 Failover Deployment



4.5.2 AutoVue Server Setup for Failover

For failover, AutoVue server should be deployed in a cluster. In a cluster, servers are spread over multiple machines and grouped together in a single server farm. All servers are identified as peer servers acting as multiple entry points for all VueServlets communications (that is, there is no primary AutoVue server handling all the VueServlet communication). Each server in the farm acts as a backup server so that if one server goes down, another server is available to continue serving clients.

Note: When a server goes down, the users on that machine, along with all their open documents, are moved over to another machine. Any markups not stored in a DMS, or any user specific settings, are not moved over to the backup machine.

4.5.3 VueServlet Setup for Failover

The VueServlet is invoked from the AutoVue client. When planning failover deployments, the AutoVue client should be configured such that if one VueServlet instance is not available, requests get routed to another VueServlet instance. This implies that the VueServlet itself should be deployed over multiple machines.

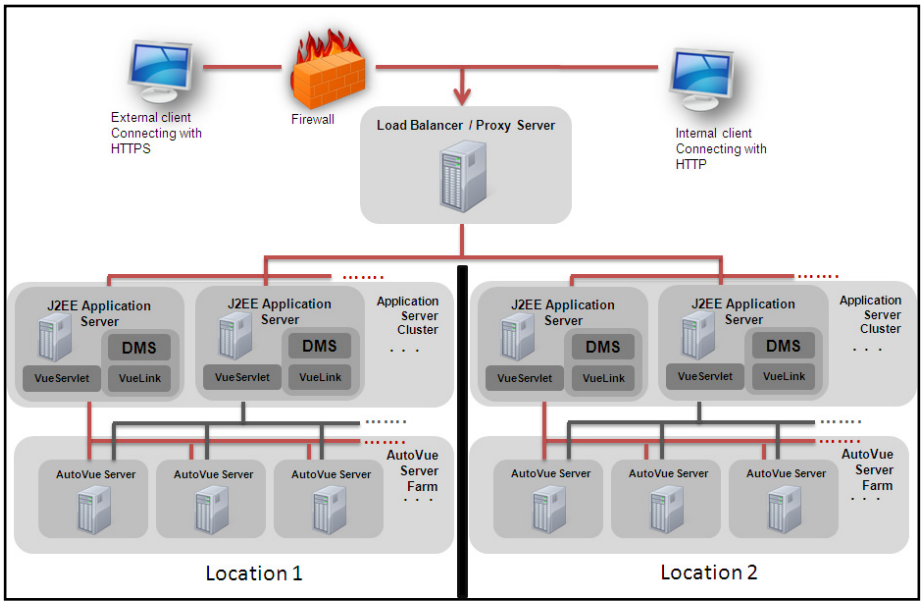
Generally, when AutoVue is integrated with a DMS, the integration servlet and the VueServlet are deployed at the same location. In this scenario, ensure that the integration servlet and the VueServlet are deployed on multiple machines to ensure predetermined level of operational performance.

4.5.4 Disaster Recovery

You can deploy AutoVue in two locations: a host site and a secondary site. In the event of a planned or unexpected shutdown of the host site (Location 1), the secondary site (Location 2) automatically takes over the AutoVue processes from host site and ensures a predetermined

level of operational performance. The following diagram shows all the components involved in a disaster recovery scenario.

Figure 4–8 Disaster Recovery



In this scenario:

- The load balancer is configured such that users at Location 1 are always routed to the Application server cluster at Location 1.
- In the event of a failure of a location, the load balancer is configured to route requests to another location.
- Location 1 and Location 2 should have equivalent configurations - AutoVue server farm, Application server cluster,...
- AutoVue servers at a location are not aware of and do not communicate with the servers at a different location.

5

Feature Deployment Considerations

The following sections discuss how to leverage streaming files, Stamps, AutoVue graphical user interface (GUI), and Real-Time Collaboration (RTC).

5.1 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.

If you have an integration with a DMS, your integration component may check-in streaming files into the DMS. Your integration component may also pre-generate streaming files so that even the first load of the file is from the streaming file.

When planning your AutoVue deployment, you must determine how to size AutoVue's cache folder for streaming files. In most situations, AutoVue downloads the native document and its external references into the cache folder and then generates streaming files. You can specify various parameters for sizing the cache folder 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 Installation and Configuration 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 folder is very big or if there are more files in the Cache folder.

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

Important: For performance reasons, it is recommended that AutoVue's streaming file cache directory be 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.

5.2 Stamps

Stamps are dynamic stamp markup entities that can retrieve/update document metadata from the DMS. All images to be included in the stamp must be copied to the DMS. They should first be designed by the system administrator before they are accessible to end-users.

For more information on Stamps, refer to the **Creating a Stamp Template** section in the Oracle AutoVue Client/Server Deployment Installation and Configuration Guide.

5.3 AutoVue GUI

AutoVue provides you the option of customizing AutoVue's graphical user interface (GUI). By default, a GUI definition file is not set and AutoVue uses an internal GUI file for the menus and toolbars. The GUI definition file describes which controls are added to which context (such as MenuBar, ToolBar, and so on). Using the GUI customization capability, you can create a role-based UI when integrating AutoVue with a third-party application. Depending on the role assigned to the user, you can provide a different interface.

If you wish to have a customized GUI for AutoVue, you must create a custom GUI file and specify this custom file using the GUIFILE client parameter.

For more information, refer to the **Customizing the GUI** section of the Oracle AutoVue Client/Server Deployment Installation and Configuration Guide.

5.4 Real-Time Collaboration

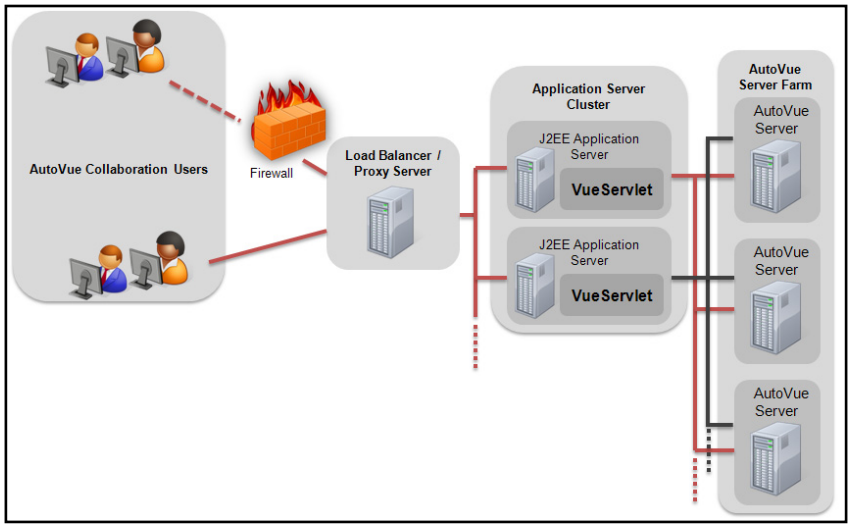
AutoVue provides a real-time collaboration (RTC) feature that enables multiple end-users to review files interactively over distributed geographies, from distributed Document Management Systems, and from behind a firewall. The following sections described how to plan your collaboration deployment.

For detailed information on configuring AutoVue for collaboration, refer to section **Configuring for Real-Time Collaboration** in the Oracle AutoVue Client/Server Deployment Installation and Configuration Guide.

5.4.1 Default Configuration

The following diagram shows a default RTC deployment.

Figure 5–1 RTC Deployment



In this scenario:

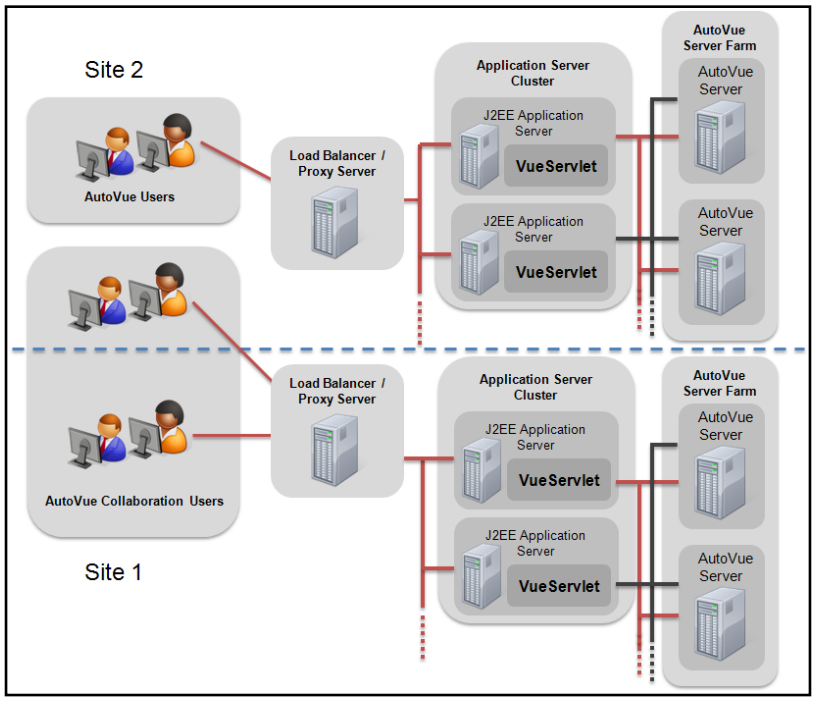
- There is no need for extra configuration around RTC in this setup.

- Users connecting to AutoVue can initiate and participate in collaboration with the other users connected to AutoVue.

5.4.2 Configuration for Distributed Geographies

The following diagram shows RTC between users over distributed geographies.

Figure 5–2 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.

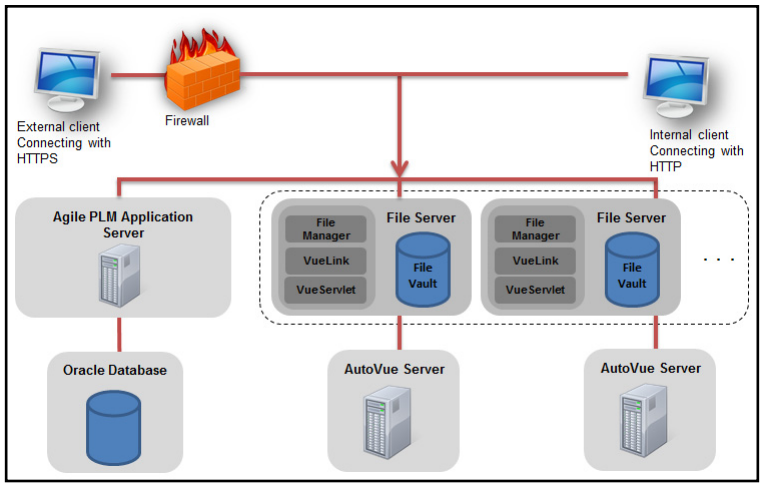
6

Deployment Components and Considerations - AutoVue for Agile

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

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 Client. The VueServlet is deployed in File Manager.

Figure 6–1 AutoVue for Agile Deployment



6.1 Agile PLM Components

The components of AutoVue for Agile PLM include the following:

- Agile PLM Application Server
- Agile PLM File Manager
- AutoVue Server
- AutoVue Client Libraries

6.1.1 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 object 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.

6.1.2 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.

6.1.3 AutoVue Components

The AutoVue components include:

- AutoVue Server
- AutoVue Client Libraries
- VueServlet
- AutoVue Client
- VueRDVSerlvet
- VueJNLPServlet (Provided as a reference implementation for validation and testing purposes)
- VueKeyPairServlet (Provided as a reference implementation for validation and testing purposes)

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 client. The Agile PLM clients always accesses 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 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.

6.1.3.1 AutoVue Server

The AutoVue server is the core of the AutoVue for Agile PLM solution.

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

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 **AutoVue Server**.

6.1.3.2 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. You can connect to AutoVue using the URL served by this application/Web server.

For more information, refer to AutoVue Client Components.

6.1.3.3 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.

It is recommended that you deploy the VueServlet on the File Manager application server.

For more information refer to VueServlet.

6.1.3.4 AutoVue Client

The AutoVue Client is displayed via a Web page (HTML, ASP, and so on).

For more information, refer to AutoVue Client.

6.2 Planning AutoVue for Agile Deployment

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

The Table provides the architectural considerations for your deployment.

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 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 1X1 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 Distributed Geography

Additional deployment scenarios are described in Feature 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 Testing Guide* discusses the testing scenarios for AutoVue for Agile PLM deployment and can be found on the AutoVue for Agile PLM Documentation OTN page: https://www.oracle.com/technetwork/documentation/agile-085940.html#autovue.

For information on the various deployment considerations for AutoVue, refer to Feature 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.

6.3 Scaling AutoVue for Agile PLM for High Usage

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

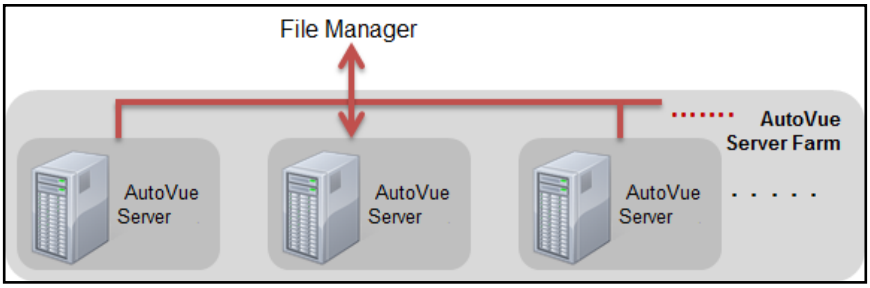
6.3.1 AutoVue Server

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 6–2 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 *Oracle AutoVue Installation and Configuration Guide* for more information on configuring an AutoVue server farm.

The latest document is available here:
https://www.oracle.com/technetwork/documentation/autovue-091442.html

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

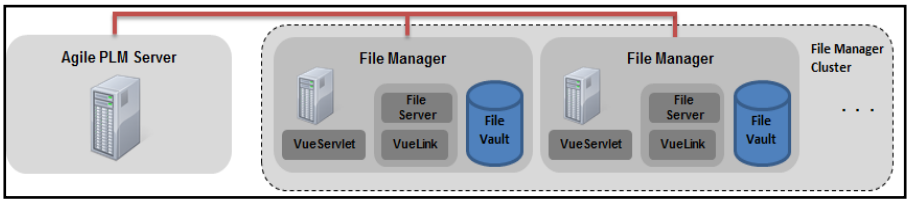
6.3.2 File Server (File Manager/VueServlet/File Vault)

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.

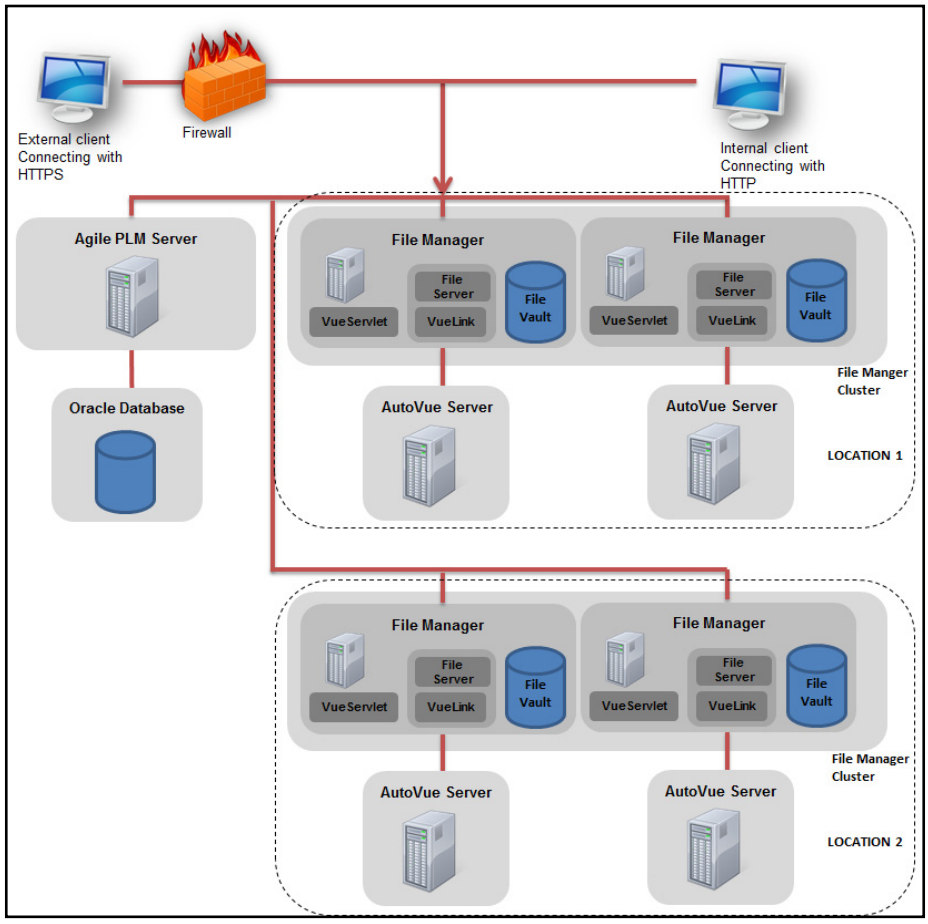
Figure 6–3 VueServlet/File Manager Cluster



6.4 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 6–4 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.

6.5 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 *Oracle AutoVue for Agile PLM Installation and Configuration Guide*. The latest document is available here: https://www.oracle.com/technetwork/documentation/agile-085940.html#autovue

- 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.

6.6 Feature Considerations

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

6.6.1 Streaming Files

Note: The concept – Streaming Files is discussed in the Feature Deployment Considerations chapter.

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 *Oracle AutoVue Installation and Configuration Guide*. The latest document is available here – https://www.oracle.com/technetwork/documentation/autovue-091442.html. 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 is 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.

6.6.2 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 section describe how to plan your collaboration deployment.

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

Following are the two types of configuration for RTC Deployment:

- Default Configuration

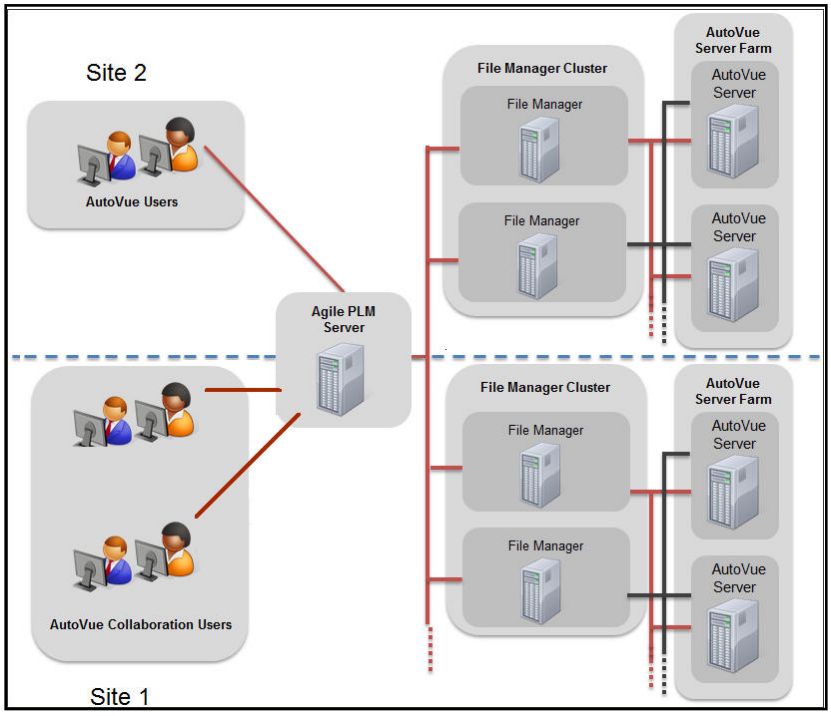
Note: For more information regarding default RTC deployment, refer to Default Configuration.

- Configuration for Distributed Geographies

6.6.2.1 Configuration for Distributed Geographies

The Figure 6–5 shows RTC for distributed geographies.

Figure 6–5 Configuration for Distributed Geographies



Note: Refer to the Configuration for Distributed Geographies in the Feature Deployment Considerations chapter for more information.

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	https://www.oracle.com/applications/autovue/
Blog	https://blogs.oracle.com

A.2 Oracle Customer Support

Web Site	https://www.oracle.com/support/

A.3 My Oracle Support AutoVue Community

Web Site	https://community.oracle.com/hub/

A.4 Sales Inquiries

E-mail	https://www.oracle.com/corporate/contact/global.html