Oracle® AutoVue Integration SDK

Overview and Installation Guide

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Oracle AutoVue Integration SDK Overview and Installation Guide, Release 21.0.1

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Contents

Preface

The *Oracle AutoVue Integration SDK Design, Installation and Configuration Guide* provides a high-level overview of the Oracle AutoVue Integration Software Development Kit (ISDK) and also describes the procedure for building and running a dynamic Web project in JDeveloper and Eclipse IDEs for Oracle AutoVue.

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

Audience

This document is intended for Oracle partners and third-party developers (such as integrators) who want to implement their own integration with AutoVue.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Related Documents

For more information, see the following documents in the AutoVue Integration SDK library on OTN:

- *Technical Guide*
- *Acknowledgments*
- *Javadocs*
- *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.

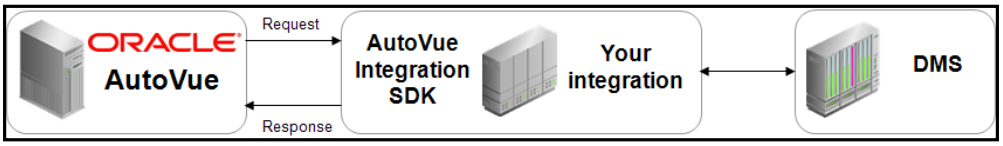
1 ISDK Overview

This chapter provides a general overview of the AutoVue Integration SDK, and is intended for Oracle partners and third-party developers (such as integrators) who want to create an integration between Oracle AutoVue and a content repository.

1.1 Introduction

The AutoVue Integration Software Development Toolkit (ISDK) is intended for third-party developers who want to integrate Oracle AutoVue with their Data Management System (DMS).

Figure 1–1 AutoVue ISDK work flow



Oracle AutoVue is a thin client viewing and collaboration solution for enterprise-wide data access.

The ISDK installation package includes four sample projects that can be modified to suit your integration needs. The following sections describe these projects in more detail.

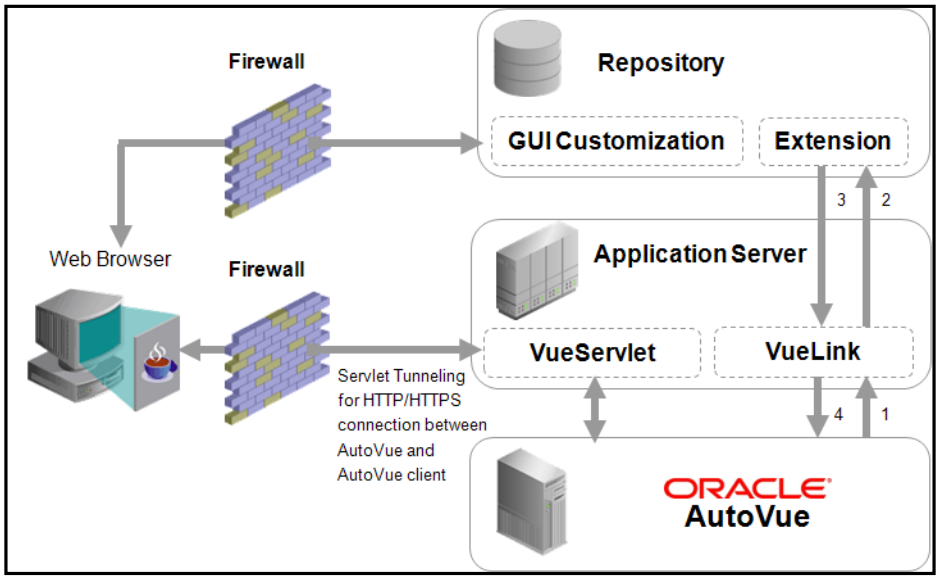
1.2 AutoVue and Repository Integration

AutoVue is the key component in Oracle's Enterprise Visualization solutions. AutoVue solutions deliver native document viewing, markup, and real-time collaboration capabilities that streamline the information flow and collaborative processes across the global enterprise. AutoVue solutions help organizations in a variety of industries including Utilities, Industrial Manufacturing, Electronics & High Tech, Engineering and Construction, Aerospace and Defense, Automotive, and Oil & Gas. AutoVue streamlines visualization and collaboration across the global enterprise, improves productivity, reduces errors, and accelerates innovation and time to market. In an enterprise, AutoVue can be part of many business workflows and use cases such as collecting comments and annotations during a design review, recording the actions and results for a maintenance work order, comparing archived documents, and collaborating with other users.

AutoVue can offer its capabilities to many different enterprise systems/repositories such as DMS, PLM, and Content Management Systems (CMS). AutoVue needs to be

integrated into these repositories in order to be able to access the documents that are stored in them. There exist many such integrations. For example, there is an integration between AutoVue and WebCenter Content (WCC) and AutoVue and Oracle Agile PLM. The Oracle-developed integration is known as a VueLink. The VueLink provides an interface that allows communication between the repository and AutoVue in order to retrieve documents and to store data that is generated by AutoVue for those documents (such as annotations). The VueLink is a Java Web application that is hosted on a Java Web application server. The following figure shows how the communication between AutoVue and the repository is done through a VueLink.

Figure 1–2 Communication between AutoVue and repository/backend system through a VueLink



Note:

- AutoVue sends a request to the VueLink.
- VueLink forwards the request to the repository.
- The repository sends a response back to the VueLink.
- VueLink forwards the response to the AutoVue server.

After AutoVue gets access to a document and other related data from the repository, it then streams the view of the document to the AutoVue client via the VueServlet. The AutoVue Client provides the user with an interface to manipulate document display and perform other operations.

As shown in the diagram, the repository contains two important components: the repository extension and the GUI customization.

In order for the VueLink to communicate with the repository there needs to be a component on the backend-side whose interface the VueLink understands. This component is known as the repository extension. For more information, refer to the Repository Extension section.

In a seamless integration, the AutoVue client should be launched from inside the repository user interface. The GUI Customization is applied to the repository user interface. For more information, refer to GUI Customization section.

The application server component of the diagram includes the VueServlet and the VueLink. The VueServlet is a Java Servlet that acts as a tunnel between the AutoVue server and the AutoVue client. The client makes requests using the HTTP/HTTPS protocol to the VueServlet and the VueServlet communicates with the AutoVue server using its socket port. All the communication between the AutoVue client and the AutoVue server goes through the VueServlet. The VueServlet is available out of the box with AutoVue and can be easily deployed. Information on the VueLink is provided in VueLink section.

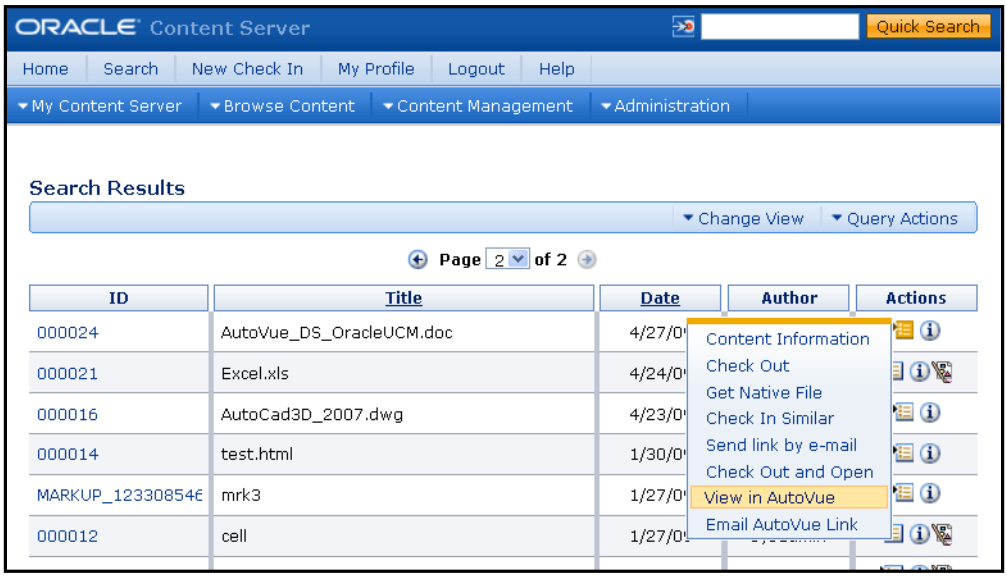
1.3 GUI Customization

Launching AutoVue should be implemented through the customization of the repositories graphical user interface (GUI). The AutoVue client will be launched in a second window.

Depending on the underlying technology, the implementation of the GUI customization can vary from one environment to another. For example, a very simple implementation may be a hyperlink to an HTML page that loads the AutoVue client. A more sophisticated implementation may involve a repository-based scripting language or APIs. In both cases, you must refer to the repository's documentation for information on how to modify its UI and the available capabilities.

Since the customization can be applied to different places in the repository GUI, its implementation should be looked at from a usability point of view as well as from a technical point of view. A good example is customizing the search results page in the repository GUI. In this example, each document in the Search Results page is associated with a menu item or icon that launches the AutoVue client to view that particular document. A sample GUI customization is shown in the following screenshot. The Search Results page in Oracle Content Server GUI is customized to launch the AutoVue client.

Figure 1–3 Sample GUI Customization



1.4 Repository Extension

The repository extension is the layer on the repository that the VueLink communicates with. It allows the VueLink to access the repository the same way the end-user accesses the repository through the GUI.

> **Note:** If the repository already provides a programming interface that gives access to all documents and related data required by the VueLink, then there is no need to develop a custom extension on the repository side for an AutoVue integration.

If this interface is not available, then a custom extension must be created using a technology that the repository supports. The extension must support the different requests that come from the VueLink. That is, the VueLink requests are related to retrieving and storing documents and their related data inside the repository. The extension can be built as a Web service or a Java Application Programming Interface (API). A Java API is the preferred approach as the performance is generally better and the overhead is lower in a Java to Java integration than in a Web service integration. This is because once the interface is provided by the repository then a VueLink-type component should be implemented to connect and communicate with it. The Web services should be used when a Java API cannot be provided (such as when integrating with a .NET environment). For more details about the required interface refer to the Implementation chapter.

1.5 VueLink

The VueLink is the integration component that acts as the gateway between AutoVue and the repository. The name VueLink is reserved for these types of Oracle-developed gateway components. Third-party integrators and partners should choose their own trademarks or preferred name for this piece of integration. However, regardless of its name, VueLink-type components enable AutoVue to access documents that are stored inside the repository. It also enables AutoVue to retrieve any data related to these documents from the repository. In addition, any data generated by AutoVue (for example, markups and renditions) can be stored into the repository using this component.

The VueLink is the center piece of an AutoVue integration with a repository. It is able to communicate with AutoVue and with the repository, thereby acting as a translator for each end and isolating AutoVue and the repository from each other's complexity. It is a Java Web application and needs to be deployed on a Java Web application server (such as WebLogic, GlassFish, and Tomcat). In case of a Web service-based integration, the application server must support Java Web service technology. For more information, refer to Deployment of ISDK-Based Integrations chapter.

Since the interface between the VueLink and AutoVue is the same for all VueLinks (regardless of the repository they are built for), it is good practice to have an integration framework that has built-in communication with AutoVue and is ready to be used as a starting point for building new integrations with any repository. The AutoVue Integration SDK is designed to fulfill this requirement. For more information, refer to the Configuring Sample Projects chapter.

1.6 Optional Components

Before discussing the AutoVue Integration SDK, the optional components to be used in conjunction with building an integration are presented.

1.6.1 CAD Connector

One of the characteristics of CAD models is that often they are not stored in one document. For example, an airplane CAD model consists of many parts (such as wings, wheels, and so on) which in turn have their own subparts. Each part or subpart might be designed and stored in a separate document and referenced in the airplane CAD model document directly or hierarchically. In order to view that airplane CAD model, all parts must be loaded and put together. These separate parts and subparts files are known as external references (XRefs). AutoVue supports loading and viewing documents along with their XRefs documents. However, in an integration, the XRefs support should also be provided at the repository level since they are all stored inside the repository. If the repository provides a mechanism to link documents to each other as references, then this mechanism can be used to provide XRefs support.

The storing and linking of references in a repository should not be done manually. In order to properly support the XRefs, some software tools should be provided that can import related documents from the CAD authoring software into the repository. An example is a CAD connector. A CAD connector is a software tool that integrates the repository with a CAD authoring software package (such as AutoCAD). It can check-in/check-out a set of related CAD files into/out-of the repository while preserving their relations and linkage.

Note: This software tool is not an AutoVue integration requirement. It is a facilitator for the repository to organize the XRefs.

1.7 Overview of ISDK Components

This section describes the various components included in the AutoVue Integration SDK.

1.7.1 Documentation

The following AutoVue Integration SDK documentation, with the exception of the *JavaDocs* which is included with the installation, can be found on the Oracle AutoVue Documentation Web site on the Oracle Technology Network (OTN) http://www.oracle.com/technetwork/documentation/autovue-091442.html:

- *Design, Installation and Configuration Guide*
  - This guide provides a high-level overview of the Integration SDK. In addition, it contains information related to the installation, configuration and deployment of projects included in this ISDK in JDeveloper and Eclipse IDE.
- *Security Guide*
  - This guide contains information related to the security and authentication mechanisms provided in this release of Integration SDK.
- *Release Notes*
  - Details changes and enhancements made in this release of the ISDK.
- *Technical Guide*
  - This guide contains in-depth technical information about the integration framework and describes how to implement your own integration based on the sample integration included in this ISDK.
- *Acknowledgments*

  - This document lists licenses and third-party notices.
- *JavaDocs*
  - This contains the JavaDocs of the underlying framework contained in the AutoVue Integration SDK. The *JavaDocs* is included the installation of this ISDK.

1.7.2 ISDK Skeleton Project

To speed up the integration and provide the integrators with a starting point, the ISDK includes a ISDK skeleton package, and Web service package.

The ISDK Java skeleton package has the structure for building a new VueLink. The skeleton comes with a set of TODO comments in places where the integrators need to add their code. The ISDK Java skeleton implementation means adding code to the skeleton codebase so that it can communicate with the repository's Java API. For more information, see ISDK Skeleton Project.

1.7.3 ISDK Web Services Client

The Web service package includes a Web Services Description Language (WSDL) file that describes an interface for a Web service to be implemented by the repository. The package includes a client-side implementation of this WSDL. This client package itself is built using the ISDK skeleton. With the ISDK Web service package, the implementation means building a proper Web service provider based on the defined WSDL on the repository. For more information, see ISDK Web Services Client.

2

System Requirements

The recommended system hardware configuration is:

- A system supporting the JDK/JRE version 7 or 8 with at least 8GB of main memory.
- At least 100MB of free disk space to install the software components and examples.

2.1 Required Software

- Oracle AutoVue 21.0.1

2.2 Server

The following operating systems have been certified with the Integration SDK:

2.2.1 Windows

- Windows 2008 R2 64-bit (AutoVue running in 32-bit mode)
- Windows 2012 R2 64-bit (AutoVue running in 32-bit mode)

2.2.2 Linux

- Redhat Enterprise Linux 6.X (x86_64), and 7.X (x86_64) 64-bit (AutoVue running in 32-bit mode)
- Oracle Linux 6.X (x86_64), and 7.X (x86_64) 64-bit (AutoVue running in 32-bit mode)

2.3 Client

The following Java Virtual Machines have been certified with the Integration SDK:

- Java JDK 1.7 update 75 (and up) and Java JDK 1.8 update 5 (and up) for Filesys Sample, Skeleton and Web Services Client.
- Web browsers supported by Oracle AutoVue 21.0.1.

2.4 Application Servers

The following application servers are compatible with the Integration SDK:

- Oracle WebLogic Server 11gR1 (and up)

- Any other application server that supports Servlet 2.5 may work but are not certified by Oracle

2.5 Development Tools

The following IDEs are compatible with the ISDK:

- Oracle Enterprise Pack for Eclipse llgR1 (11.1.1.7.3) for Eclipse 3.6.2 Helios Edition
- Oracle JDeveloper 11gR1 (11.1.1.x)
- Microsoft Visual Studio 2008 (and up)

3

Installation

This chapter assumes you are familiar with Java development and with basic Web application development concepts, such as deployment descriptors and WAR archives. Understanding XML language is beneficial, but not mandatory.

The software products listed in Chapter 2, "System Requirements" must be installed and configured on your system according to the manufacturer's instructions.

3.1 Downloading Required Software

Before proceeding with the installation of the AutoVue ISDK, the following software must be installed and configured on your system according to the manufacturer's instructions.

3.1.1 Oracle JDeveloper 11gR1

You can download Oracle JDeveloper Studio Edition from http://www.oracle.com/technetwork/developer-tools/jdev/downloads/jdev11120download-495887.html.

3.1.2 Oracle Enterprise Pack for Eclipse 11gR1

Oracle Enterprise Pack for Eclipse (OEPE) is a free set of certified plug-ins, enabling WebLogic developers to support Java EE and Web Service standards. The Oracle Enterprise Pack for Eclipse All-In-One installer includes a preconfigured version of Eclipse and the OEPE plug-ins. You can download the Eclipse 3.6 (Galileo) Edition for your desired platform from http://www.oracle.com/technetwork/developer-tools/eclipse/downloads/oepe-11114-088679.html.

If you download Eclipse IDE for Java EE Developers from the Eclipse Web site, you must download the Oracle WebLogic Server plug-in separately when creating the server.

3.1.3 Oracle AutoVue

Oracle AutoVue 21.0.0 is available from http://edelivery.oracle.com. The description name is Oracle AutoVue 21.0.0. Select a Media Pack for your desired platform.

3.1.4 WebLogic Server

You can download WebLogic Server from the following location: http://www.oracle.com/technetwork/middleware/weblogic/downloads/wls-for-dev-1703574.html.

3.2 Installing and Configuring

This section describes the installation and configuration steps for the ISDK.

Note: If you are planning on deploying the ISDK in a secured environment, you should read the *Oracle AutoVue Integration Software Development Toolkit (ISDK) Security Guide* before installing the ISDK.

To install, run the installer to extract all necessary files. You must then create a server runtime environment on IDE and create a project. At this point you must manually configure ISDK components such as the ISDK Skeleton and Web Service Client.

Once these steps are complete, and the ISDK is installed correctly, you can configure the sample projects. For information on configuring the sample projects, refer to Configuring Sample Projects.

3.2.1 Installing ISDK

There are two folders included in the Oracle AutoVue SDK Media Pack: *win32* and *linux*. Each of these folders contains the installer of the ISDK for the corresponding platform. The following steps outline the installation for Windows and Linux OSes.

1. For Windows, go to the win32 folder and launch the setupwin32.exe file. For Linux, go to the linux folder and launch the setuplinux.bin file. The Installer dialog appears.
2. Click **Next**.
3. Enter the location and directory name for the AutoVue Integration SDK. The default location and name for Windows is C:\Oracle\AutoVueIntegrationSDK. Click **Next**.
4. Select the components to install. By default, the ISDK Skeleton and Web Service Client are selected. To install the sample projects, select **Sample Integration (filesys and Web Services Sample Server)**.
5. Click **Next**. The installation summary page appears.
6. Click **Next** to begin installation. The files are extracted to the location specified in step 3. Note that the ISDK is installed by default with Secure Sockets Layer (SSL) enabled.
7. Click **Finish** to complete the installation.

Note: If the Linux installer is unable to run in graphical mode, install the libXp package.

The *Quick Start.html* file found in the root folder is a top-level readme file that acts as an entry point to the rest of the ISDK documentation. To view the contents of this file, open it in your browser. After running the installer, all the required files are created

under your AutoVueIntegrationSDK installation directory with the following structure:

- The /docs folder contains javadocs. All other ISDK documentation can be found on the Oracle AutoVue Documentation OTN site at http://www.oracle.com/technetwork/documentation/autovue-091442.html.
- The /FileSys folder contains four subfolders:
  - The /Repository folder contains filesysRepository.zip which contains sample files used by the Sample Integration for Filesys.
  - The /OEVF folder contains two GUI files used for the OEVF demo.
  - The /WebApplication folder contains a filesys.war file and a /filesys folder. The content in the /filesys folder is the unzipped version of the filesys.war file. The filesys.war can be imported into JDeveloper or Eclipse workspace to demo the Sample Integration for Filesys and to demo RTC & OEVF functionalities. The project contains source code for sample integration, AutoVue client and third party libraries required by the integration.
  - The /ESAPI_Resources folder contains the OWASP Enterprise Security API properties files: ESAPI.properties and validation.properties.
- The /ISDKSkeleton folder contains two subfolders:
  - The /WebApplication folder contains an isdk_skeleton.war file and a /isdk_skeleton folder. The content in the /isdk_skeleton folder is the unzipped version of the isdk_skeleton.war file. The isdk_skeleton.war can be imported into JDeveloper or Eclipse workspace to create the Integration SDK Skeleton project. Your integration with Java-based backend systems will be developed based on this skeleton project and fulfill the TODO comments in this project.
  - The /ESAPI_Resources folder contains the OWASP Enterprise Security API properties files: ESAPI.properties and validation.properties.
- The /WebServicesIntegration folder contains three subfolders:
  - The WebServiceClient folder contains the /ESAPI_resources and /WebApplication folders. The /ESAPI_Resources folder contains the OWASP Enterprise Security API properties files: ESAPI.properties and validation.properties. The /WebApplication folder contains the wsclient.war and a /wslcient folder which is the unzipped version of the WAR file.
  - The /WSDL folder contains the BluePrint WSDL file and the XSD file that accompanies it.
  - The /WebServicesSampleServer folder contains a /C# folder. The /C# folder contains the Service1.asmx.cs file and the zipped project template wsserver_VisualStudio2008_ProjectTemplate.zip. The Service1.asmx.cs file is used when creating an ISDK Web Services project manually.
- The /etc folder contains a list of files and folders structure contained in this ISDK, and folders containing licenses of third-party software used by the ISDK.
  - The /_jvm and /_uninst folders for uninstalling the ISDK.

Note: The ESAPI.properties and validation.properties files are placed in the folder based on the configuration settings defined by the user. If there is no path defined in the application, the library looks for them inside the esapi folder of the user's home directory. One way is to add the path to the project is: From **Project Properties**, select **Run/Debug/Profile** and then **Edit**. From **Edit**, select **Java Options**, and then add the path to the ESAPI.properties and validation.properties files (e.g.: -Dorg.owasp.esapi.resources=C:\temp\esapi). Make sure you copy the ESAPI.properties and validation.properties to the location defined (e.g.: C:\temp\esapi). If there is no path defined in the application, the library looks for them inside the esapi folder of the user's home directory.

3.2.2 Creating a Server Runtime Environment on IDE

This section describes how to create a server runtime environment on JDeveloper and Eclipse IDEs.

3.2.2.1 Create Default Runtime on JDeveloper

JDeveloper has an integrated WebLogic Server (IntegratedWebLogicServer) configured. As a result, you can skip this step if using JDeveloper.

3.2.2.2 Create Server Runtime on Eclipse

You can create a server to identify the runtime environment that you want to use to test your Oracle AutoVue project. To create the WebLogic Server, complete the following steps:

Note: Your Oracle WebLogic Server domain needs to be created in development mode in order to create the server successfully in Eclipse.

1. From the **File** menu, select **New**, and then select **Other**.
2. Expand the Server folder, then select **Server**.
3. Click **Next**.

   The Define a New Server wizard opens. This wizard lets you define a new server that contains information required to point to a specific runtime environment for local or remote testing, or for publishing to an application server.

   Note: If you installed Eclipse using Oracle Enterprise Pack for Eclipse Galileo Edition, Oracle WebLogic Server (11gR1) is listed in the New Server wizard under Oracle server type. If you downloaded Eclipse 3.6.2 directly from Apache Web site, you need to click Download Additional Server Adapters and download Oracle WebLogic Server adapter from the Internet yourself.

4. Select Oracle WebLogic Sever 11gR1, click **Next**, and then perform the following steps:

Note: These steps also apply for Oracle WebLogic Server on Linux.

a. In the Define WebLogic Runtime dialog, enter the WebLogic Home location. For example, C:\bea\wlserver_11.1 on Windows and /home/my/bea/wlserver_11.1on Linux. Then provide the domain directory at Define a WebLogic Server dialog.

b. If you do not have the WebLogic domain available yet or you want to create a different one, click **Click Here to launch Configuration Wizard to create a new domain**. Write down the Domain Location for your created domain. For example, C:\bea\user_projects\domains\base_domain.

c. Now suppose you already have a domain directory available. You can input or browse to get it on your machine and click **Next**.

5. Select the projects from the available projects list in the Add and Remove dialog and then click **Add** to add them to the configured projects list.
6. Click **Finish**. The Oracle WebLogic Server 11gR1 appears in the Servers view. You can start and stop the Server from this view.
7. Open the Server view to verify that the server has been created. You can click **Servers** or click **Window** from the menu bar, then **Show View** and **Servers** to display the Server view.

3.2.3 Creating Projects on IDE

This section describes how to create a project on JDeveloper and Eclipse IDEs.

3.2.3.1 Projects on JDeveloper

1. Create an application if you do not have one yet. You can create an application by clicking **File** from the menu bar, then select **New**. The New Gallery dialog appears.
2. Select **Applications** under the **General** category from the left panel and then select **Custom Application** from the right panel.
3. Click **OK.** The Create Application dialog appears.
4. Complete the Create Application dialog to create an application with the Application Package Prefix field left empty. Click **Finish** to the create the project.
5. Click **File** and then **Import.** The Import dialog appears.
6. Select **WAR File** and then click **OK**. The Create Project from WAR File dialog appears.
7. Browse to the ISDK component folder or sample projects folder and then select a WAR file.
8. In the following Create Project from WAR file dialogs perform the following:
   - Enter your project name.
   - Choose a directory to put your project.
   - Select the WAR file to import. For example, filesys.war.
   - Verify the location for Root Directory for Web Module.
9. Click **Finish** to finish the creation of your project.

10. In the Project view, browse to verify that your project has been created successfully.
11. Click **Build** to make your project. There should be no compilation error.
12. Check Libraries and Classpath:
    a. Right-click the project and select Project Properties to bring out the Project Properties dialog
    b. Click **Libraries and Classpath** in the left panel.
    c. Check the JSP Runtime and JSF 1.2 are available under the Classpath Entries. If there are not available, you can add them manually in the following steps:

       Click **Add Library** in the right panel.

       Select **JSP Runtime** under Extension from the pop-up window.

       If you are going to deploy the project later to an external WebLogic Server instead of using the IntegratedWebLogicServer, you also need to add JSF 1.2 under Extension from the pop-up window.

       Click **OK.**
13. This step is for the ISDK Web Service Sample project for WebLogic when the "WeblogicUserNameTokenHandler.java" (Username token profile security for WebLogic) is needed.
    a. WeblogicUserNameTokenHandler.java.excluded needs to be renamed to WeblogicUserNameTokenHandler.java.
    b. Add weblogic.jar to the project's build path if you see compilation error for WeblogicUserNameTokenHandler.java. The steps are as follows:

       Right-click the project and select **Project Properties** to bring out the Project Properties dialog.

       Click **Libraries and Classpath** in the left panel

       Click **Add JAR/Directory** in the right panel

       In Add Archive or Directory dialog, browse to WebLogic Server's lib folder to select weblogic.jar and click on **Select**. Weblogic.jar appears in the Classpath Entries.

       Click **OK** to exit the Project Properties dialog.

       Rebuild your project and there should be no compilation error.
14. To start the WebLogic Server. You can click on **Run** from menu bar and then click **Start Server Instance** to start or click **On** from the toolbar.

3.2.3.2 Projects on Eclipse

1. From the **File** menu select **Import**. The Import dialog appears.
2. In the Import dialog, expand Web and select **WAR file** and then click **Next** to bring out the WAR Import dialog.
3. To import the sample WAR files, click **Browse**.
4. Browse to the ISDK component folder or sample projects folder and then select a WAR file.
5. Provide a name for your Web project. If you have already configured Oracle WebLogic Server runtime, Oracle WebLogic Server 11gR1 is shown as Target

runtime. If you have not created it yet, you can create one now by clicking on **New**. For more information, refer to Creating a Server Runtime Environment on IDE.

6. Click **Next**.
7. Accept the default at the WAR Import: Web libraries dialog and click **Finish** to populate the Web project.
8. Click **Yes** if Eclipse asks you to open J2EE perspective for this project.
9. This step is for the ISDK Web Service Sample project for WebLogic when the "WeblogicUserNameTokenHandler.java" (Username token profile security for WebLogic) is needed.
    a. WeblogicUserNameTokenHandler.java.excluded needs to be renamed to WeblogicUserNameTokenHandler.java.
    b. Add weblogic.jar to the project's build path if you see compilation error for WeblogicUserNameTokenHandler.java. The steps are:

       Right-click the project and select **Build Path**, then select **Configure Build Path** to open the Project's Properties dialog.

       Click on the Add Library tab and click on **Server Runtime**, and then click **Next**.

       If WebLogic appears, you can select and add.

       If you cannot find the WebLogic runtime, then click on **Add External JAR** from the previous dialog to open the JAR Selection dialog. Browse to WebLogic Server's lib folder to select weblogic.jar and then click **Open**.

       Weblogic.jar should appear in the Classpath Entries panel.

       Click on **OK** to exit the Properties dialog.

       Recompile the project and there should be no compilation error
10. After completing all these steps, there should be no compilation error with Java code in your project.

3.2.4 Configuring ISDK Components

This section provides information on configuring ISDK components.

3.2.4.1 Configuring the ISDK Skeleton

The AutoVue Integration SDK Skeleton provides a basic framework for you to build your own integration.

After you complete the steps outlined in Section 3.2.3, "Creating Projects on IDE," you must configure the ISDK Skeleton as described in the following steps.

3.2.4.1.1 Step 1: Copy the AutoVue Jar Files Copy the following files from the directory <AutoVue Installation directory>\bin to your project's WebContent\applet folder (for Eclipse) or public_html\jvue folder (for JDeveloper):

- jvue.jar
- jogl.jar
- gluegen-rt.jar
- jsonrpc4j.jar

Copy the file vueservlet.jar from the directory <AutoVue Installation directory>\bin to your project's WebContent\WEB-INF\lib folder (for Eclipse) or public_ html\WEB-INF\lib folder (for JDeveloper).

3.2.4.1.2 Step 2: Configure the AutoVue Server **1.**From the WEB-INF folder of your project, open the web.xml file in a text editor.

2. Locate the following block.

```
<servlet id="csi_servlet_2">
<servlet-name>VueServlet</servlet-name>
<servlet-class>com.cimmetry.servlet.VueServlet</servlet-class>
<init-param>
<param-name>JVueServer</param-name>
<param-value>localhost:5099</param-value>
</init-param>
<init-param>
```

3. Update the default location of JVueServer "localhost:5099". You must replace localhost with the host name/IP address of the machine that is running the AutoVue server, and replace 5099 with the socket port number that the AutoVue server is listening to (default is 5099).
4. Save your changes.

3.2.4.1.3 Step 3: Configure log4j.properties for Debugging The location of log4j.properties file is defined in web.xml. By default, it is located at <ISDK Installation Directory>\ISDKSkeleton\WebApplication\isdk_skeleton\WEB-INF\lib folder.

```
<init-param>
<param-name>log4jInitFile</param-name>
<param-value>/WEB-INF/lib/log4j.properties</param-value>
</init-param>
```

To configure log4j.properties for debugging, do the following:

1. Open the log4j.properties file with a text editor.
2. Set the location and the filename of your log4j logging file, for example, C:/tmp/filesys.log.

```
# setting the logging file
log4j.appender.R.File=<Your logs directory>/<logfile>.log
```

3. You can change the level and location of output by modifying this file, for example, log4j.logger.com.cimmetry.vuelink=DEBUG.

   The following table shows the different levels of logging available.

Table 3–1 Will Output Messages of Level

Logger Level	DEBUG	INFO	WARN	ERROR	FATAL
DEBUG	YES	YES	YES	YES	YES
INFO	NO	YES	YES	YES	YES
WARN	NO	NO	YES	YES	YES
ERROR	NO	NO	NO	YES	YES
FATAL	NO	NO	NO	NO	YES
ALL	YES	YES	YES	YES	YES

Table 3–1 (Cont.) Will Output Messages of Level

Logger Level	DEBUG	INFO	WARN	ERROR	FATAL
OFF	NO	NO	NO	NO	NO

- If you set Logger Level to FATAL, then only output messages of level FATAL are logged in log4j file.
- If you set Logger Level to ERROR, then only output messages of level ERROR or FATAL are logged in log4j file.
- If you set Logger Level to DEBUG, then output messages of any level are logged in log4j file.

4. Save your changes.

For more information on log4j capabilities, refer to log4j documentation.

3.2.4.2 Configuring the Web Services Client

The AutoVue Integration SDK Web Services Client (WSC) is a package built on top of ISDK Skeleton. It is developed based on Java API for XML Web Services (JAX-WS) and is designed to communicate out of the box with any Web Service provider that implements the BluePrint.wsdl file bundled with this AutoVue Integration SDK distribution.

The WSC must be configured before using it with your integration. To do so, you must perform the following steps.

3.2.4.2.1 Step 1: Copy the AutoVue Jar files Copy the following files from the directory <AutoVue Installation directory>\bin to your project's WebContent\applet folder (for Eclipse) or public_html\jvue folder (for JDeveloper):

- jvue.jar
- jogl.jar
- gluegen-rt.jar
- jsonrpc4j.jar

Copy the file vueservlet.jar from the directory <AutoVue Installation directory>\bin to your project's WebContent\WEB-INF\lib folder (for Eclipse) or public_ html\WEB-INF\lib folder (for JDeveloper

3.2.4.2.2 Step 2: Configure the AutoVue Server Configuring the AutoVue Server for the ISDK Web Service client project follows the same steps as Section 3.2.4, "Configuring ISDK Components."

3.2.4.2.3 Step 3: Configure log4j.properties for Debugging Configuring the log4j.properties for the ISDK Web Service client project debugging follows the same steps as Section 3.2.4, "Configuring ISDK Components."

3.2.4.2.4 Step 4: Configure the SOAP Handler Locate and uncomment the following block in web.xml and update the param-value for parameter wsclient.WSHandler.

```
<!-- the SOAP handler class must extend
com.cimmetry.vuelink.wsclient.backend.WSHandler -->
<init-param>
<param-name>wsclient.WSHanlder</param-name>
<param-value>com.cimmetry.vuelink.wsclient.backend.UserNameTokenHandler</param-val
```

```
ue>
</init-param>
```

1. Replace the param-value for wsclient.WSHandler with your desired handler.

Here is a list of handlers delivered with the Filesys Sample inside the com.cimmetry.vuelink.wsclient.backend package.

Table 3–2 List of handlers delivered with Filesys Sample

Handler Name	Usage
WSHandler	No security implementation.
HTTPBasicHandler	HTTP basic authentication.
UserNameTokenHandler	Generic username token profile security.
WeblogicUserNameTokenHandler	Username token profile security for WebLogic. Use this one if the generic UserNameTokenHandler does not work on Oracle WebLogic Server. You need to rename the source code named "WeblogicUserNameTokenHandler.java.excluded" to "WeblogicUserNameTokenHandler.java" and add "weblogic.jar" to the project's class path.

3.2.4.2.5 Step 5: Define the Location of BluePrint WSDL Locate the following block in web.xml and update the <param-value> for parameter WSDL.

```
<!-- Define the location of BluePrint WSDL -->
<init-param>
<param-name>WSDL</param-name>
<param-value>…. </param-value>
</init-param>
<load-on-startup>1</load-on-startup>
</servlet>
```

A sample param-value for WSDL is:

```
http://mymachine:7001/WSClient/BluePrint?wsdl
```

3.3 Configuring Sample Components

If you installed the Sample Integration for Filesys project, then you must import the project into JDeveloper or Eclipse IDE, and then configure, deploy and run the sample integration. To do so, you must follow the steps outlined in the Deployment of ISDK-Based Integrations. You need to make sure that you have all the prerequisite software installed before you start deployment. For the complete list of requirements, specific to your platform, refer to the System Requirements chapter.

Once you have successfully deployed the Eclipse project, the next step is for you to get familiar with the sample integration. To learn more about the features and functionality provided by the sample integration, refer to the Configuring Sample Projects chapter in this book.

Once you are familiar with the sample integration, the next step is for you to build your own integration. To do so, refer to the Implementation chapter in *Oracle AutoVue Integration SDK Technical Guide* and *Javadocs*. The Oracle AutoVue Integration SDK Technical Guide explains the technical details and provides step by step guidance for developing your own integration.

4

Configuring Sample Projects

The sample projects included with the ISDK provide a good introduction to the many uses of the ISDK. You can take the information provided and apply it to your own integration.

> **Note:** These projects are not installed by default. During ISDK installation, you must select the **Sample Project** check box to install. For more information, refer to Installing ISDK.

The following sections detail the configuration steps for these sample projects.

4.1 Sample Integration for Filesys DMS

This section describes the steps required to run the Sample Integration for Filesys DMS. This project is located in the <ISDK Installation Directory>\AutoVueIntegrationSDK\FileSys folder.

4.1.1 Step 1: Copy the AutoVue Jar Files

Copy the following files from the directory <AutoVue Installation directory>\bin to your project's WebContent\jvue folder (for Eclipse) or public_html\jvue folder (for JDeveloper):

- jvue.jar
- jogl.jar
- gluegen-rt.jar
- jsonrpc4j.jar

Copy the file vueservlet.jar from the directory <AutoVue Installation directory>\bin to your project's WebContent\WEB-INF\lib folder (for Eclipse) or public_html\WEB-INF\lib folder (for JDeveloper).

4.1.2 Step 2: Configure the AutoVue Server

1. From the WEB-INF folder of your project, open the web.xml file in a text editor.
2. Locate the following block:

```
<servlet id="csi_servlet_2">
<servlet-name>VueServlet</servlet-name>
<servlet-class>com.cimmetry.servlet.VueServlet</servlet-class>
<init-param>
```

```
<param-name>JVueServer</param-name>
<param-value>localhost:5099</param-value>
</init-param>
<init-param>
```

3. Update the default location of JVueServer "localhost:5099". You must replace localhost with an IP address/FQDN of the machine that is running the AutoVue server, and replace 5099 with the socket port number that the AutoVue server is listening to (default is 5099).
4. Save your changes.

4.1.3 Step 3: Configure log4j.properties for Debugging

The location of log4j.properties file is defined in web.xml. By default, it is located at WEB-INF/lib folder.

```
<init-param>
<param-name>log4jInitFile</param-name>
<param-value>/WEB-INF/lib/log4j.properties</param-value>
</init-param>
```

To configure log4j.properties for debugging, do the following:

1. Open the log4j.properties file with a text editor.
2. Set the location and the filename of your log4j logging file. For example, C:/tmp/filesys.log.

   ```
   # setting the logging file
   log4j.appender.R.File=<Your logs directory>/<logfile>.log
   ```

3. You can change the level and location of output by modifying this file. For example, log4j.logger.com.cimmetry.vuelink=DEBUG

   The following table shows the different levels of logging available.

Table 4–1 Will Output Messages of Level

Logger Level	DEBUG	INFO	WARN	ERROR	FATAL
DEBUG	YES	YES	YES	YES	YES
INFO	NO	YES	YES	YES	YES
WARN	NO	NO	YES	YES	YES
ERROR	NO	NO	NO	YES	YES
FATAL	NO	NO	NO	NO	YES
ALL	YES	YES	YES	YES	YES
OFF	NO	NO	NO	NO	NO

   - If you set Logger Level to FATAL, then only output messages of level FATAL are logged in log4j file.
   - If you set Logger Level to ERROR, then only output messages of level ERROR or FATAL are logged in log4j file.
   - If you set Logger Level to DEBUG, then output messages of any level are logged in log4j file.]

4. Save your changes.

For more information on log4j capabilities, refer to log4j documentation.

4.1.4 Step 4: Configure RootDir for the Filesys Repository

1. From the public_html\WEB-INF folder of your project, open the web.xml file in a text editor.
2. Replace the RootDir param-value. For example, if you have unzipped the Filesys Repository to folder c:\tmp on Windows, the param-value for RootDir will be c:\tmp\filesysRepository.

```
<!-- context parameters are available to all servlets -->
<context-param>
<param-name>RootDir</param-name>
<param-value>Put path to repository here:</param-value>
</context-param>
```

3. Save your changes.

4.1.5 Step 5: Configure for an Embedded or Pop-Up Window (Optional)

AutoVue applet can be launched in a pop-up window or embedded inside the caller's browser window.

By default, the Filesys demo uses embedded mode and the RTC demo uses pop-up mode.

For the OEVF demo, you can select the mode by providing *embedded=0* or *embedded=1* request parameter in the launching URL. Refer to jvue/OEVFDemo.html.

To change the mode in Filesys demo:

1. Open jvue/frmApplet.jsp.
2. Change the line
   boolean embedded = true;
   to
   boolean embedded = false;

To change the mode in RTC demo:

1. Open jvue/RTCDemo_init.jsp and jvue/RTCDemo_join.jsp.
2. Change the line
   boolean embedded = false;
   to
   boolean embedded = true;

4.1.6 Step 6: Configure the Markup Policy (Optional)

The location of MarkupPolicy.xml file is defined in web.xml that controls markup operation. By default, it is located at WEB-INF/lib folder.

```
<init-param>
<param-name>CSI_MarkupPolicyDefLocation</param-name>
<param-value>/WEB-INF/lib/MarkupPolicy.xml</param-value>
</init-param>
```

If you need to update the Markup Policy file, refer to the *Oracle AutoVue User's Manual*. On Windows, the link is http://localhost/jVue/help/en/AutoVueOnLineHelp.html. If the link does not work,

check whether there is a virtual directory, jVue, with IIS. It is created during AutoVue server installation.

4.1.7 Step 7: Configuring User Control

By default, the Sample Integration for Filesys bundles a file called credential.txt that contains valid user information for authentication. The location of credential.txt file is defined in web.xml.

```
<init-param>
<param-name>CredentialInfoLocation</param-name>
<param-value>/WEB-INF/lib/credential.txt</param-value>
</init-param>
```

To add new users or modify existing user name or password, update credential.txt. Each line of the file contains an entry for a user and its password. The field separator is colon (:).

4.1.8 Step 8: Configure the Picklist

This list is for controlling the content of a picklist for Stamp (formerly called Intellistamp) DMS properties. You can remove/modify existing values or add new values for the <Status> and <RelatedInfo> elements in WEB-INF/lib/picklist.xml, but you are not supposed to delete these two elements or add new elements directly under <Data> element.

4.1.9 Step 9: Configure the Thumbnail Display

If you want to show thumbnails based on BMP renditions when browsing the Filesys Repository, you can do the following configuration.

1. For Windows operating systems, create a virtual directory on Internet Information Services (IIS) for the Filesys repository. For example, if you have unzipped the Filesys repository to folder c:\tmp on Windows, you can create a virtual directory with alias filesysRepository and the location path c:\tmp\filesysRepository. Suppose IIS is available at the default port 80.
2. For Linux system, if Apache Server is available, do the following configuration.
   - Open Apache's httpd.conf file.
   - Locate the line: DocumentRoot "/var/www/html".
   - Copy this line and comment out the original one.
   - Change the copied line to, for example, DocumentRoot "/home/ucm/tmp"

     Suppose your Filesys repository is upzipped to /home/ucm/tmp folder and your /home/ucm/tmp/filesysReposity folder allow executing file as program. If your DocumentRoot has already been used, you need to put your Filesys repository under the existing DocumentRoot folder in order to preview thumbnails.
   - Save the file and restart Apache Server.
3. Replace the param-value for RootURL in web.xml. This URL is mainly used for thumbnail displaying. However, you must enter a URL (for example, http://localhost) even if thumbnail displaying is not intended. With the configuration sample in Step 1, the param-value for RootURL will be http://localhost/filesysRepository. Note the case sensitivity of IIS.

```
<!-- This URL is only needed to construct thumbnail URLs -->
<context-param>
<param-name>RootURL</param-name>
<param-value>http://localhost/filesysRepository</param-value>
</context-param>
```

4.1.10 Step 10: Configure for Redirection

To test the redirection functionality in Filesys, you need to install IDE and deploy the Filesys sample project on two machines (a main server and a remote server) and complete the generic configuration and other configurations based on your needs. You must then perform the following configurations for redirection:

1. On the main server machine, change the folder permission for the filesys repository to Full Control for all users.
2. On the remote server machine, create a network mapping drive to the Filesys repository directory on the main server machine. In Filesys demo, both remote server and the main server use the same Filesys repository data.
3. On the main server, modify web.xml to comment out the blocks *RemoteVueLink*, *RemotejVueServer* and *RemoteVueServlet*. Specify the param-values for these three parameters.

Table 4–2 Param-names and param-values for web.xml

Param-name	Description and param-value
RemoteVueLink	URL to the remote VueLink. The param-value is http://host:port/context/servlet/FilesysVuelink where host is the remote host name or IP address, port is the remote IDE's server runtime port number, context is the Filesys project name on the remote IDE.
RemotejVueServer	Hostname or IP address of the remote AutoVue server. The remote server can use another AutoVue server instead of the one running on the main server.
RemoteVueServlet	URL to the remote VueServlet. The param-value is http://host:port/context/servlet/VueServlet

For Example:

```
<context-param>
<param-name>RemoteVuelink</param-name>
<param-value> http://sremote:7001/ISDK_Remote/servlet/FilesysVuelink</param-value>
</context-param>
<context-param>
<param-name>RemotejVueServer</param-name>
<param-value>sremote</param-value>
</context-param>
<context-param>
<param-name>RemoteVueServlet</param-name>
<param-value>http://sremote:7001/ISDK_Remote/servlet/VueServlet</param-value>
</context-param>
```

4.1.11 Step 11: Configure the Real-Time Collaboration (RTC) Demo

The following section describe how to configure the RTC demo:

4.1.11.1 Verify the RTC Demo

Make sure the WEB-INF/lib/credential.txt has an entry for user "rtc" and "rtc1". Although every valid user can initiate and join a meeting, by default the meeting is initiated as user "rtc" and joined by user "rtc1" and the AutoVue applet is named after the username.

Prior to running the demo, you must do the following:

- Uncomment the two users (rtc and rtc1) from the WEB-INF/lib/credential.txt file and change the default passwords.
- Update the password parameter in the jvue\RTCDemo_init.jsp file for user rtc:

  ```
  request.getSession().setAttribute("password", "rtc");
  ```

  Update the password parameter in the jvue\RTCDemo_join.jsp file for user rtc1:

  ```
  request.getSession().setAttribute("password", "rtc1");
  ```

  Updating these parameters avoids an Authentication dialog when initializing or joining a RTC meeting when using the ISDK RTC demo.

4.1.11.2 Create or Update the meetingfiles.txt

Verify that the meetingfiles.txt file under your <Filesys repository>/Meeting folder exists. If this file does not exist, you need to create it manually.

If you want to change the files shown in the Meeting File drop down list when initiating a RTC meeting from RTCDemo_init.jsp page similar to the following figure, then you need to update the meetingfiles.txt file.

Each entry in the meetingfiles.txt file represents one meeting file; it starts with "/" and reflects one viewable document file in the Filesys repository.

To select another file to collaborate on during a meeting, form the AutoVue menu bar, the meeting controller can click **File**, **Open URL**, and then **DMS Browse**. The Meeting folder shows files already defined in meetingfiles.txt. The new collaborated file is appended to meetingfiles.txt.

After the host closes a RTC meeting by clicking **Collaboration** and then **Close Collaboration Session**, the chat transcript is saved to the Meeting folder.

4.1.12 Step 12: Configure the Oracle Enterprise Visualization Framework (OEVF)

The following sections describe how to configure the OEVF:

4.1.12.1 Define OEVFInfoLocation in web.xml

By default, ISDK filesys bundles a file called oevf.xml which defines the mapping of document IDs with assetIDs and workflowIDs. The default location of oevf.xml is under the folder WEB-INF/lib. If you move the file to another location, then you need to specify the full path for the parameter *OEVFInfoLocation* in web.xml.:

```
<!--
# the location of xml file which contains all the info about assetIDs, workflowIDs
# and full path of the latest revision in FileSys DMS
-->
<init-param>
```

```
<param-name>OEVFInfoLocation</param-name>
<param-value>/WEB-INF/lib/oevf.xml</param-value>
</init-param>
```

4.1.12.2 Update oevf.xml

This step is required if you want to establish new or update existing mappings of document IDs with assetIDs and workflowIDs.

The root element of the oevf.xml file is <*data*>. The direct elements under <*data*> are <*file*> elements that contain the definition for files. Each <*file*> element represents one file. If you want to add mapping relationships for a new file, then you need to add a new <*file*> entry.

A <*file*> element can include multiple <*revision*> elements that represent the multiple revisions of the file. If you want to add a new revision section to an existing file, then you must add one new <*revision*> entry.

Each <*version*> element includes a <*docID*>, <*assetIDs*>, <*workflowIDs*> and <*version*> elements. The value for <*version*> element is the revision number. The value for <*docID*> element is the relative path to a file in the Filesys data repository. It starts with "/". For example, /2D/MicroStation.dgn/MicroStation.dgn(2)/MicroStation.dgn.

The <*assetID*> elements can contain multiple <*assetID*> elements and the <*workflowID*> elements can contain multiple <*workflowID*> elements. You can add or delete an assetID that is associated with one revision of a file by adding or deleting element a <*assetID*> element. You can add or delete a workflowID. that is associated with one revision of a file by adding or deleting a <*workflowID*> element.

4.1.12.3 Update OEVFDemo.html

This step is needed to add new or modify existing test cases for OEVF.

The launching OEVF URL defined inside <*a*> tag calls "…/jvue/frmApplet.jsp" page combined with some of the following parameters.

Table 4–3 OEVF URL parameters

URL Request Parameter	Value and Description
aID	A Value defined for <assetID> element in oevf.xml.
docID	A value defined for <docID> element in oevf.xml.
wID	A value defined for <workflowID> element in oevf.xml.
embedded	V0 or new such parameter: AutoVue applet appears in a new window.
	1: AutoVue applet is embedded in the caller's browser window.
goBack	Work together with embedded=0.
	0 or no such parameter: The caller's browser displays an empty page with the launching OEVF URL.
	1: The caller's browser displays the OEVFDemo.html page.
guiFile	Name of the AutoVue GUI to be used.

You can pass in only aID, only wID, aID with wID, aID with dID, wID with dID, aID with wID and dID in addition with embedded or goBack or guiFile param. Refer to *OEVFDemo.html* for the meaning of different combinations.

4.1.12.4 Copy the OEVF GUI files to AutoVue

Copy assetView.gui and assetEdit.gui files from inside the ISDK installation AutoVueIntegrationSDK/FileSys/OEVF folder to the folder <AutoVue Installation Directory>/bin/Profiles folder. If the Profiles folder does not exist, create one before copying.

4.1.13 Step 13: Configure New Sample Data

You can add new data to the existing sample Filesys repository. It is recommended not to rename the folder name or file name, or delete existing data, because the sample data is preconfigured to demonstrate certain functionalities (for example, for RTC Demo and OEVF demo). To add new data to the existing repository, refer to Add new data to the document repository.

4.1.13.1 Add new data to the document repository

With Filesys DMS application you can add new data to the document repository by manually creating the data structure or by using a utility class com.cimmetry.vuelink.filesys.dms.util.FilesysDataStructureCreator coming with filesys.

4.1.13.1.1 Create data structure manually To add a new document into the repository, such as "my.dwg", follow these steps:

1. Browse to the <filesys data repository unzipped folder>/filesysRepository folder.
2. You can create a new folder in parallel to "2D", "3D" and "Meeting" folder or create a new folder inside "2D" or "3D" folder. Suppose you want to add the file inside "2D" folder. You can name the folder using the file's name that you want to view, that is, "my.dwg". This is the convention for sample data.
3. Under this folder, create a new folder for the first revision of the file. Name it "my.dwg(1)" and put the file "my.dwg" inside the folder.
4. If you have another revision for "my.dwg" file, then you can create "my.dwg(2)" folder under "my.dwg" folder and put the second revision of the file inside.
5. If the file "my.dwg" has XRefs, then create an "xrefs" folder under the base file's folder "my.dwg(1)" and put all the XRefs files there.

4.1.13.1.2 Add data from IDE To add the new data to your document repository, you must execute the main() method of com.cimmetry.vuelink.filesys.dms.util.FilesysDataStructureCreator class.

Example 4–1 main() method

```
public static void main(String[]  args) {
    BasicConfigurator.configure();
//String[] params = {"-url", "C:/temp/filesysRepository/ECAD", "-b", "C:/program
files/jVue/html/samples/ECAD/PAD//PADS_ILEARN.pcb"};
//params = {"-url", "C:/temp/filesysRepository/2D", "-b", "C:/program
files/jVue/html/samples/2D/MicroStation.dgn" -v 3};
    FilesysDataStructureInfos data = new FilesysDataStructureInfos();
    try{
data.constructStructure(args);
FilesysDataStructureCreator struct = new FilesysDataStructureCreator(data);
struct.createStructure();
    }catch(FileNotFoundException fex){
m_logger.error(fex);
```

```
System.exit(0);
    }catch(Exception ex){
m_logger.error(ex);
System.exit(0);
```

You need to pass in arguments for the main() method. These arguments indicate types, versions and locations of the files to add in the repository. You can add several types of documents to the repository such as: base documents, XRefs, markups and conversions files. We use options **<-option>** to indicate the document type. Here is the complete list the options:

-url: location of filesys repository

-b: base file

-v: version number

-x: xrefs files

-m: master markups files

-n: normal markups files

-c: consolidated markups files

-tiff: TIFF conversion file

-pdf: PDF conversion file

-meta: metaFile

For the first sample argument in the figure above, the url is c:\temp\filesysRepository\ECAD (You don't have to specify the exact destination location of a file, you have just to specify the repository location) and the base file is PADS_ILEARN.pcb and is located in C:\program files\jVue\html\samples\ECAD\PAD folder.

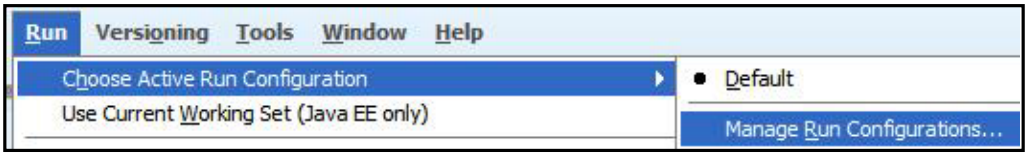
For the second sample argument, the url is c:\temp\filesysRepository\2D and the base file is MicroStation.dgn and is located in C:\program files\jVue\html\samples\2D folder. The version number is 3.

4.1.13.1.3 Adding Data from JDeveloper

On JDeveloper IDE, to run the FilesysDataStructureCreator class, you need to complete the following steps:

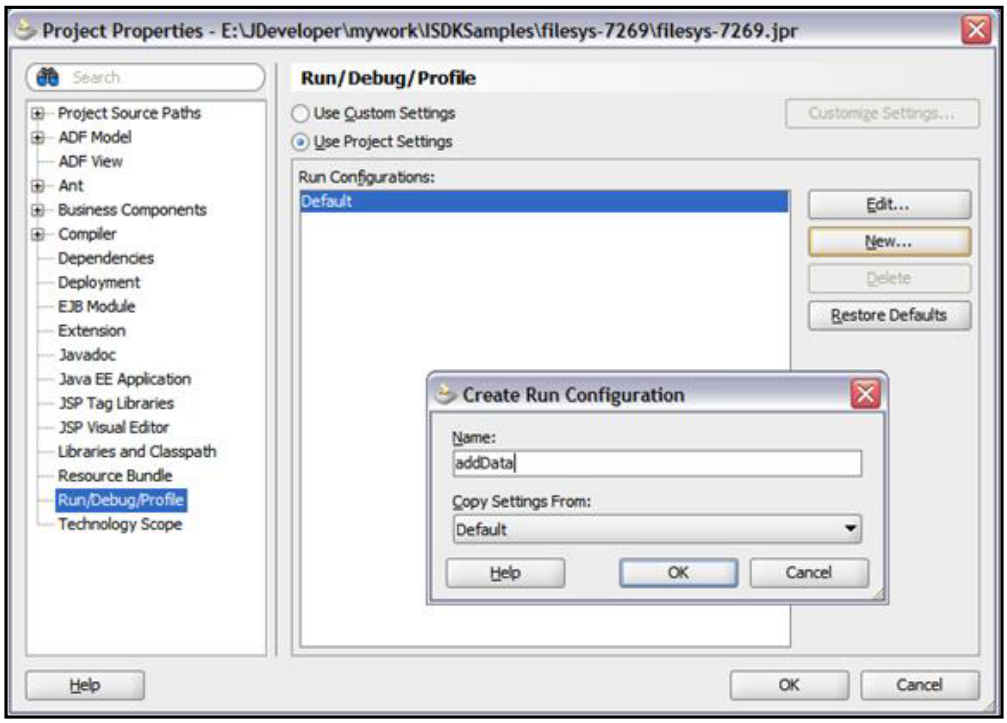
1. Select the **filesys** project
2. From the **Run** menu, select **Choose Active Run Configuration,** and then select **Manage Run Configurations…**

Figure 4–1 JDeveloper Manage Run Configurations



3. Click **New…** at the right side of the Project Properties windows, name it **addData** and then click **OK**. addData appears under the Run Configurations.

Figure 4–2 JDeveloper create addData run configuration 1



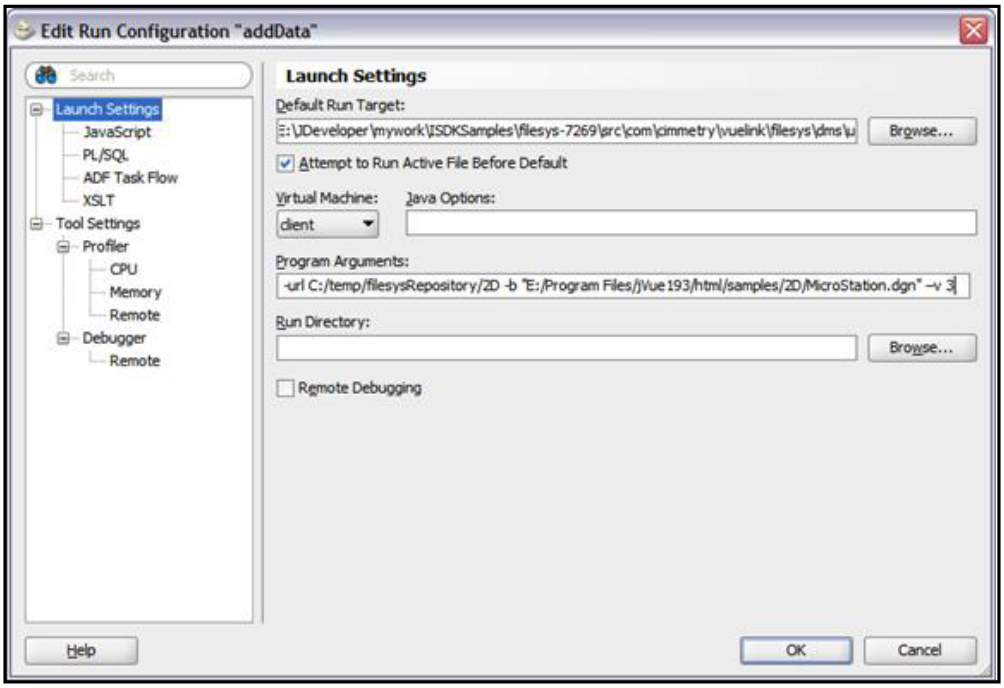
4. Select **addData** and click **Edit.**
5. Browse to set the Default Run Target to be com.cimmetry.vuelink.filesys.dms.util.FilesysDataStructureCreator and input Program Arguments. Click **OK** to exit. Two sample program arguments are

```
-url C:/temp/filesysRepository/EDA -b "C:/Program
Files/jVue/html/samples/EDA//PADS/PADS_ILEARN.pcb"
```

and

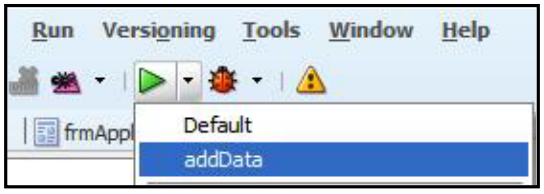
```
-url C:/temp/filesysRepository/2D -b "C:/Program
Files/jVue/html/samples/2D/MicroStation.dgn" -v 3
```

Figure 4–3 JDeveloper create addData run configuration 2



6. Run addData to create new file structure in the filesys repository.

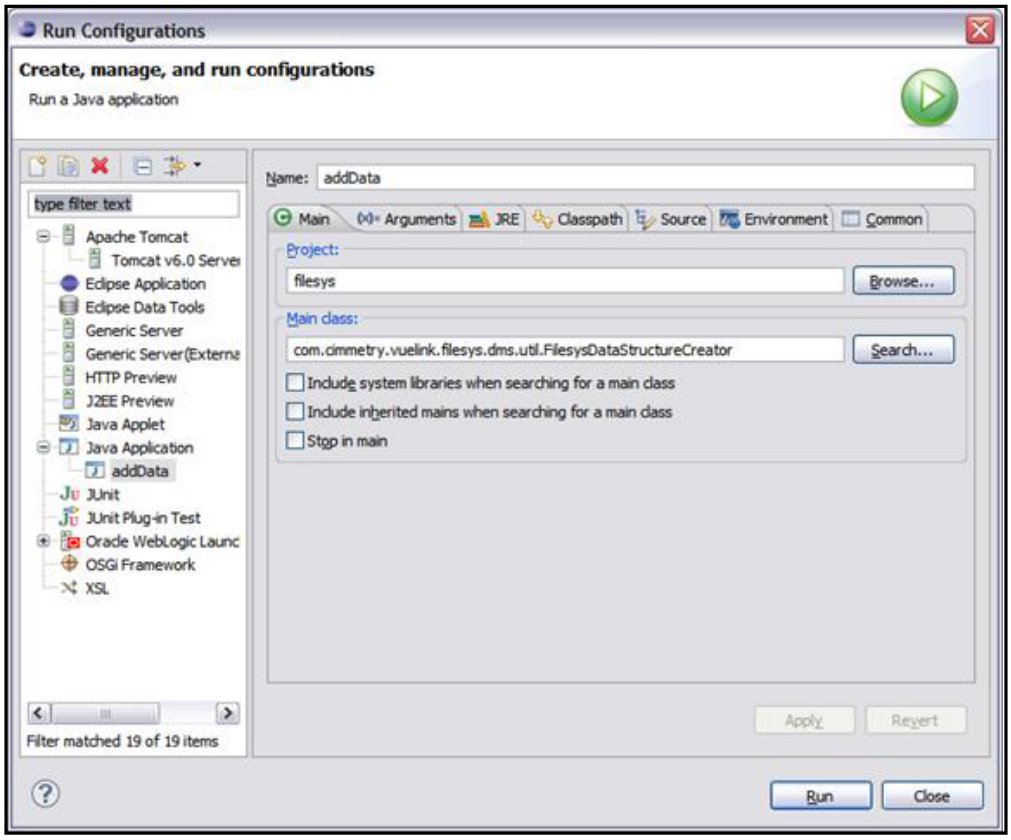
Figure 4–4 JDeveloper run addData



4.1.13.1.4 Adding Data from Eclipse On Eclipse IDE, to run the FilesysDataStructureCreator class, you need to complete the following steps:

1. Select the **filesys** project.
2. From the **RUN** menu click on the **RUN...** artifact.
3. Select the **Java Application** item.
4. Right click and select **New** from the context menu.
5. Enter **addData** in the Name field.
6. Search the class to execute (the class must have public static main method) com.cimmetry.vuelink.filesys.dms.util.FilesysDataStructureCreator

Figure 4–5 Eclipse create addData run configuration 1



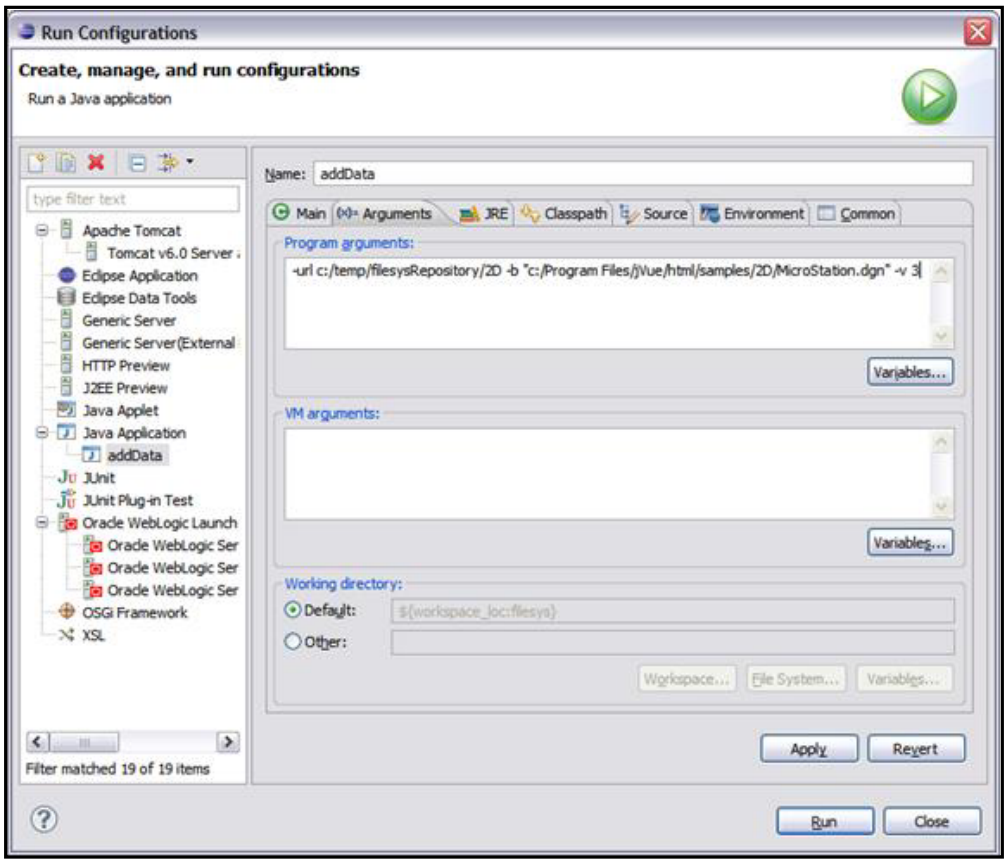
7. Click the **Arguments** tab. You can add **Program Arguments** to create a file. Two sample arguments are:

   ```
   -url C:/temp/filesysRepository/EDA -b "C:/Program
   Files/jVue/html/samples/EDA//PADS/PADS_ILEARN.pcb"
   ```

   and

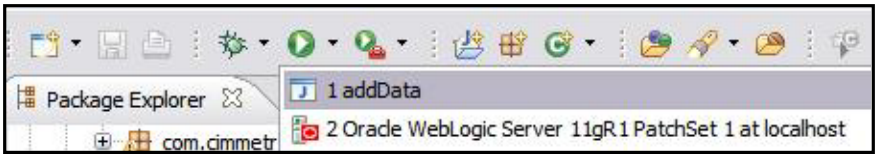
   ```
   -url C:/temp/filesysRepository/2D -b "C:/Program
   Files/jVue/html/samples/2D/MicroStation.dgn" -v 3
   ```

Figure 4–6 Eclipse create addData run configuration 2



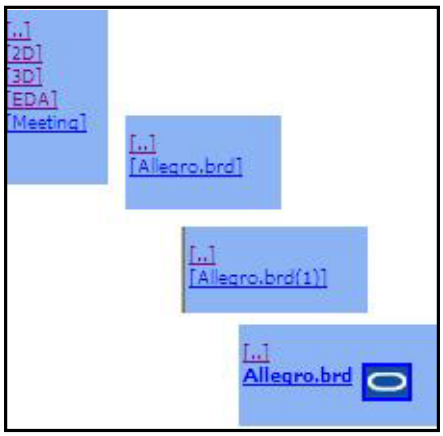
8. You can click **RUN** directly from the above to create new file structure in the filesys repository or you can click **Apply** and **Close**, then click on addData artifact from the **RUN** icon.

Figure 4–7 Eclipse run addData



If you provide the first sample argument when running the addData, from your filesys demo application, you can navigate to check the following new repository structure under the EDA folder.

Figure 4–8 Repository structure for PADS_ILEARN.pcb



If you provide the second sample argument when running the addData, from your filesys demo application, you can navigate to check the following new repository structure.

Figure 4–9 Repository Structure for the third version of MicroStation.dgn

4.1.14 Step 14: Run the Filesys Project

The following steps describe how to run the Sample Integration for Filesys project:

1. Run the AutoVue Server.
2. Deploy project and start WebLogic server on Eclipse:
   - Go to the Servers view by clicking Servers.
   - Right-click on the Oracle WebLogic Server and then click **Add and Remove.** In the Add and Remove dialog, select your project from the left panel, click **Add** to add the project to the right panel, and then click **Finish** to exit.
   - Click to start the server.
3. Start WebLogic server and deploy project on JDeveloper:
   a. From menu bar select **Run** and then select **Start Server Instance** (IntegratedWeblogicServer) to start the WebLogic Server.
   b. Right-click the project, click **Deploy** and click your project's name. The Deploy dialog appears.
   c. From the Deploy dialog, select **Deploy on Application Server**, click **Next**, then select **IntegratedWeblogicServer**.
   d. Accept the default setting and click **Next**.
   e. At the last page, click **Finish**.

f. Note down the host IP and port number from the server's Deployment log. For example, the following may appear in the log: <*Channel "Default" is now listening on 10.10.1.1:7101 for protocols...*>. In this case, note down *10.10.1.1:7101*.

4. Launch a Web browser and enter the URL address http://<*localhost* :*port*>/<*context*> to launch the home page for ISDK Demo. For example:
   - For Eclipse, the URL can be http://<*localhost*> :7001/filesys.
   - For JDeveloper, the URL can be http://10.10.1.1:7101/ISDKSamples-filesys-context-root.
5. If you run into an issue when launching the project, verify that the FilesysVueLink and VueServlet servlets are running properly using the following URLs:
   - http://<*host:port*>/context/servlet/FilesysVuelink
   - http://<*host:port*>/context/servlet/VueServlet

   Replace the <*host:port*> using your own host name, WebLogic server's port.

   Replace context with the context for Filesys project on IDE.

If VueLink and VueServlet are running properly, the URLs load and display their respective version and build information, and in the case of the VueServlet, whether the connection state is OK. If you do not get a successful response, perform the following verifications:

- Verify that the AutoVue server is running.
- Verify that your project is installed deployed correctly.
- Verify that web.xml is configured properly.
- Verify that your application server is running and functioning properly.

4.2 ISDK Web Services Sample Server

The ISDK Web Services Sample Server project can be created by either basing it on an existing project or by creating a new project manually. The following sections discuss both methods.

Note: The SOAP Message Transmission Optimization Mechanism (MTOM) is not supported in this release of Sample Web Services Server.

In the event you have updated the BluePrint WSDL file, it is recommended that you create the project manually by following the steps described in Method 2: Create a Project Manually.

4.2.1 Method 1: Use an Existing Project Template

The following steps describe how to create an ASP.NET Web Services Server project using Microsoft Visual Studio 2008 based on an existing project template.

1. Copy the template wsserver_VisualStudio2008.zip from the <ISDK Installation Root>\WebServicesIntegration\WebServicesSampleServer\C# directory to the <User home directory>\Templates\ProjectTemplates\Visual C# directory.
2. Select **New** and then select **Project**.
3. From the left panel select **Other Languages** and then select **Visual C#**.

4. From My Templates select **wsserver_VisualStudio2008**.
5. In the Name field change it to **wsserver_VisualStudio2008**.
6. Click **OK**.
7. Open Service1.asmx.cs file.
8. Locate the following lines and verify that the filepaths mentioned are available.

```
// Path to the filesys repository sample data. You might need to update it.
private static string filesysRepositoryRoot =
"c:\\Oracle\\filesysRepository\\";
// Path to the Stamp files (dmstamps.ini and stampimage.bmp) and
// MarkupPolicy.xml. You might need to update it.
private static string definitionPath = "C:\\Oracle\\definition\\";
```

9. After the ISDK default installation on Window OSes, the Filesys repository sample data is available in a compressed format (*.zip) at C:\Oracle\AutoVueIntegrationSDK\FileSys\Repository\filesysRepository.zip. You must extract the contents of the file to the *filesysRepositoryRoot* location as defined in the Service1.asmx.cs file. The definition files are available from the C:\Oracle\AutoVueIntegrationSDK\FileSys\WebApplication\filesys\WEB-INF\lib directory. You must copy these files to *definitionPath* as defined in the Service1.asmx.cs file.
10. Verify that the project compiles without error.
11. Run the project.

4.2.2 Method 2: Create a Project Manually

The following steps describe how to create an ASP.NET Web Services Server project manually using Microsoft Visual Studio 2008.

1. Generate the ASP.NET Web Services code from the ISDK Web Services WSDL file. To do so:
   a. Open Visual Studio Command Prompt.
   b. Run the following command from the temp folder: *wsdl.exe /Language:CS /si wsdl_location xsd_location*
   c. After the ISDK default installation on Windows, the ISDK Web Services WSDL file is located at C:\Oracle\AutoVueIntegrationSDK\WebServiceClient\WSDL\BluePrint.wsdl and the ISDK Web Services XSD file is located at C:\Oracle\AutoVueIntegrationSDK\WebServiceClient\WSDL\BluePrint.xsd.
   d. A BluePrintInterfaces.cs file is generated in the temp folder.
   e. Create the ASP.NET Web Services project using Microsoft Visual Studio 2008:
2. Create the ASP.NET Web Services project using Microsoft Visual Studio 2008:
   a. Select **New** and then select **Project**.
   b. Select **Visual C#** and then select **Web**.
   c. Select **ASP.NET Web Services Application**.
   d. Enter the project name and then click **OK**.
   e. Update the ASP.NET Web Services project:
3. Update the ASP.NET Web Services project:

a. Right-click the project you just created and then select Add and then select Existing Item.

b. Browse to the temp folder and then select **BluePrintInterfaces.cs**.

c. Click **Add**.

d. Open the BluePrintInterfaces.cs file and locate the following line:

```
[System.Web.Services.WebServiceBindingAttribute(Name="BluePrintBinding",
Namespace="artifact.wsclient.vuelink.cimmetry.com")]
```

e. Change the Name to *BluePrint*.

f. Open the Service1.asmx.cs file and locate the following lines:

```
[WebService(Namespace = "http://tempuri.org/")]
[WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1)]
[ToolboxItem(false)]
```

g. Replace these lines with the following:

```
[WebService(Name = "BluePrint", Namespace =
"artifact.wsclient.vuelink.cimmetry.com")]
[System.Web.Services.Protocols.SoapDocumentService(RoutingStyle =
SoapServiceRoutingStyle.RequestElement)]
```

h. Replace the implementation code for the Service class with those available in the Service1.asmx.cs file.

i. Locate the following lines:

```
//Path to the filesys repository sample data. You might need to update it.
private static string filesysRepositoryRoot =
"c:\\Oracle\\filesysRepository\\";
//Path to the Stamp files (dmstamps.ini and stampimage.bmp) and
//MarkupPolicy.xml. You might need to update it.
private static string definitionPath = "C:\\Oracle\\definition\\";
```

Note: After the ISDK default installation on Window OSes, the Filesys repository sample data is available in a compressed format (*.zip) at C:\Oracle\AutoVueIntegrationSDK\FileSys\Repository\ filesysRepository.zip. You must extract the contents of the file to the filesysRepositoryRoot location as defined in the Service1.asmx.cs file. The definition files are available from the C:\Oracle\AutoVueIntegrationSDK\FileSys\WebApplication\filesys \WEB-INF\lib directory. You must copy these files file to definitionPath as defined in the Sevice1.asmx.cs file.

---

j. Verify the project compiles without error.

k. Run the project.

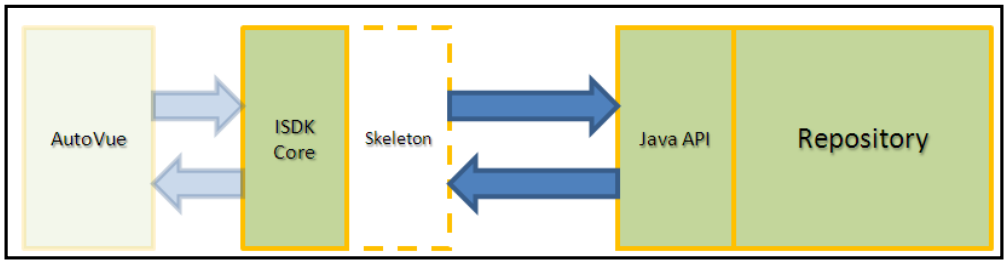
5 Implementation

To speed up the integration and provide the integrators with a starting point, the ISDK includes a skeleton package and a Web service package.

5.1 ISDK Skeleton Project

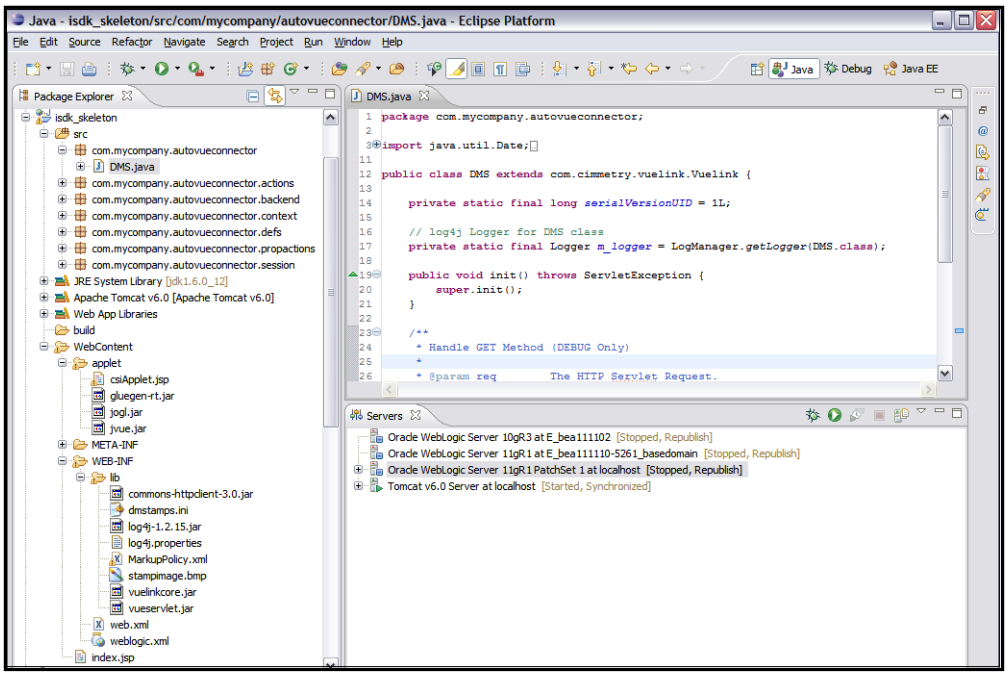
The ISDK Java skeleton package has the structure for building a new VueLink. The skeleton comes with a set of *TODO* comments in places where the integrators need to add their code. The ISDK Java skeleton implementation means adding code to the skeleton codebase so that it can communicate with the repository's Java API as shown in the Figure 5–1:

Figure 5–1 ISDK Java skeleton implementation



This project is located under the ISDKSkeleton/WebApplication folder and is available as single WAR (isdk_skeleton.war) as well as separate files. It can be imported into JDeveloper or Eclipse workspace.

Figure 5–2 Eclipse workspace



It contains four main subcomponents:

- Framework (VueLink Core): vuelinkcore.jar
- Integration Skeleton
- AutoVue Components:
  - AutoVue Client (jvue.jar, jogl.jar, gluegen-rt.jar, jsonrpc4j.jar)
  - VueServlet tunneling servlet (VueServlet.jar)
- Third-Party Libraries:
  - log4j-1.2-15.jar
  - esapi-2.0.1.jar

Refer to Sample Projects for description about the two subcomponents: Framework and AutoVue Components.

It includes skeleton classes containing TODO tasks to realize the following functionalities:

- Document viewing
- Retrieve document attributes
- Create, save and review markups
- Compare document versions
- Convert documents to other formats
- Returning External References (XREFS)
- Browse DMS repository
- Search DMS repository
- Support for Stamps markup entity

- Support for Set Property action
- Support for AutoVue authorization mechanism
- Support for integration between Online meeting managements and AutoVue Real-Time Collaboration (RTC)
- Support for markup save alert before applet close
- Enhanced framework to support Oracle Enterprise Visual Framework (OEVF)

The Integration Skeleton contains the following packages:

- com.mycompany.autovueconnector
- com.mycompany.autovueconnector.actions
- com.mycompany.autovueconnector.backend
- com.mycompany.autovueconnector.context
- com.mycompany.autovueconnector.defs
- com.mycompany.autovueconnector.propactions
- com.mycompany.autovueconnector.session

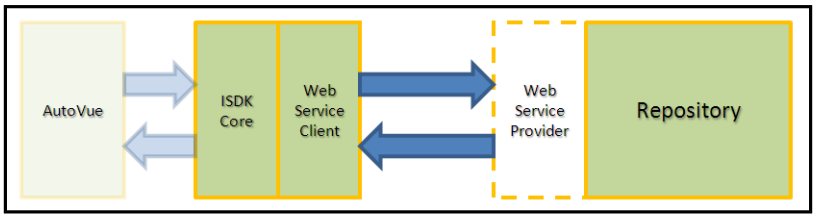
It includes a sample Front-UI file - applet/csiApplet.jsp - which contains HTML code for launching AutoVue applet (<applet> tag). When you develop your DMS extension on the DMS Server, you can customize this sample file.

Refer to the *Oracle AutoVue Integration SDK Technical Guide* about steps to design your integration based the ISDK Skeleton.

5.2 ISDK Web Services Client

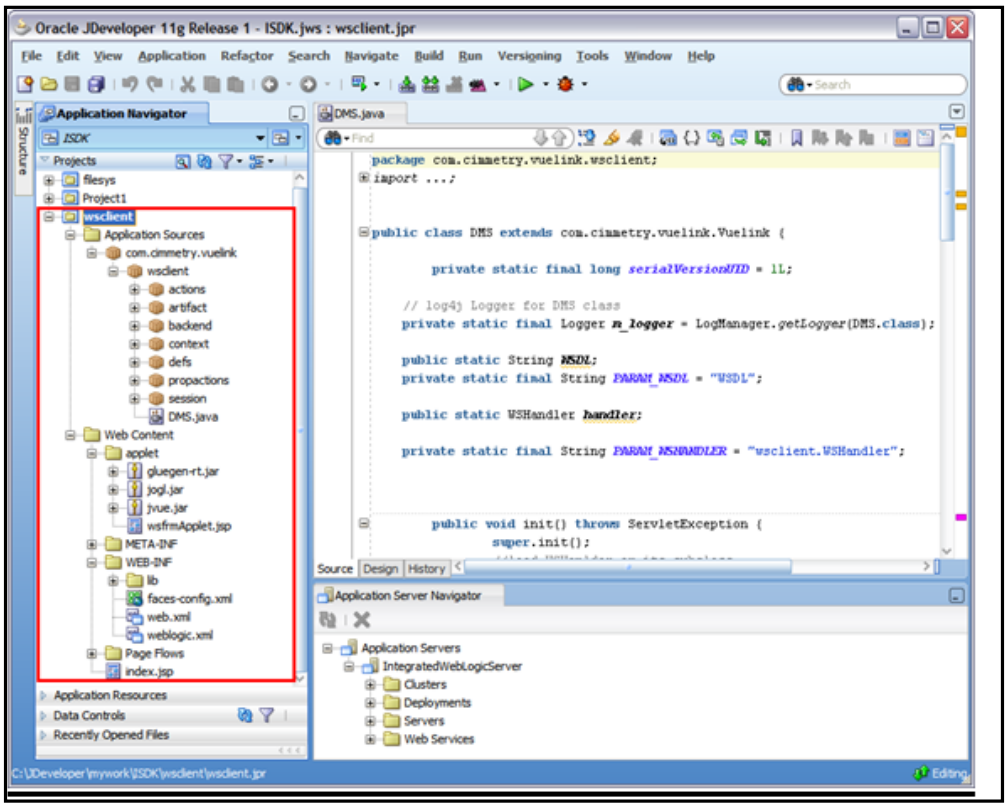
The Web service package includes a Web Services Description Language (WSDL) file that describes an interface for a Web service to be implemented by the repository. The package includes a client-side implementation of this WSDL. This client package itself is built using the ISDK skeleton. With the ISDK Web service package, the implementation means building a proper Web service provider based on the defined WSDL on the repository as shown in Figure 5–3. This means more flexibility since the Web service provider can be implemented on any platform and with any programming language.

Figure 5–3 ISDK Web Services client implementation



The ISDK Web Services Client project is located under the WebServiceClient/WebApplication folder and is available as a single WAR (wsclient.war) and separate files. It can be imported into JDeveloper or Eclipse workspace. The BluePrint.wsdl is located in WebServiceClient/WSDL folder.

Figure 5–4 Oracle JDeveloper workspace



It contains also four main subcomponents:

- Framework (VueLink Core): vuelinkcore.jar
- Web Services Client
- AutoVue Components:
  - AutoVue Client (jvue.jar, jogl.jar, gluegen-rt.jar, jsonrpc4j.jar)
  - VueServlet tunneling servlet (VueServlet.jar)
- Third-Party Libraries:
  - log4j-1.2-15.jar
  - esapi-2.0.1.jar

Refer to the Sample Projects for descriptions of the three subcomponents: Framework, AutoVue Components and Third-Party Libraries.

The Web Services Client project includes APIs that provide the same functionalities as ISDK Skeleton. The following packages are included:

- com.cimmetry.vuelink.wsclient
- com.cimmetry.vuelink.wsclient.actions
- com.cimmetry.vuelink.wsclient.artifact
- com.cimmetry.vuelink.wsclient.backend
- com.cimmetry.vuelink.wsclient.context
- com.cimmetry.vuelink.wsclient.defs

- com.cimmetry.vuelink.wsclient.propactions
- com.cimmetry.vuelink.wsclient.session

It includes a sample Front-UI file - applet/wsfrmApplet.jsp - which contains HTML code for launching AutoVue applet (<applet> tag). When you develop your DMS extension on the DMS Server, you can customize this sample file.

5.3 Sample Projects

The installation of the ISDK includes two sample projects:

- Sample Integration for Filesys DMS
- Web Services Sample Server

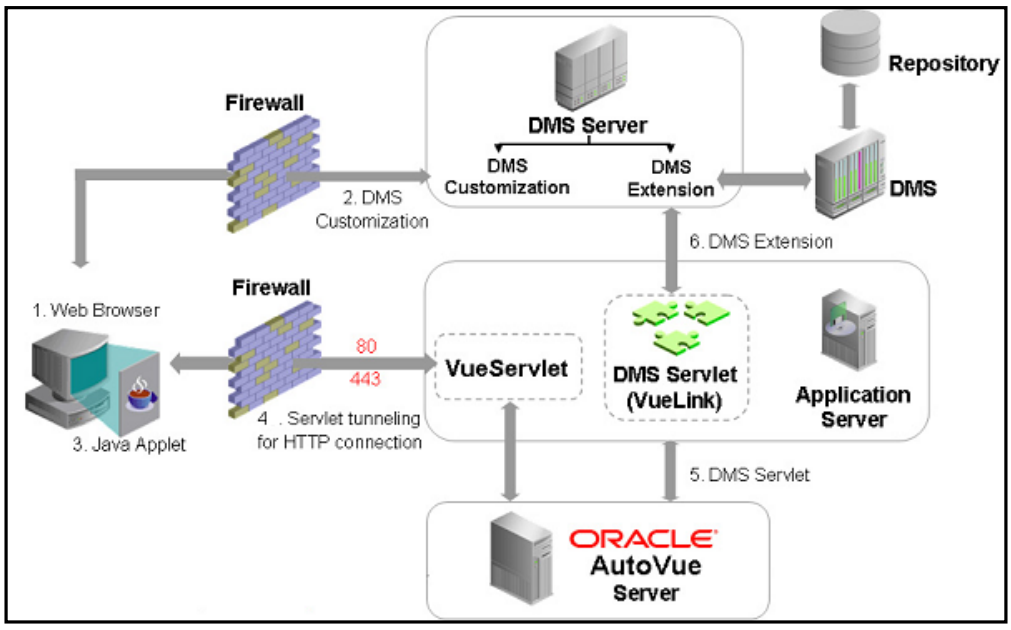
These projects provide a good introduction to the many uses of the ISDK. The following sections provide an introduction to each project. For full configuration information, refer to Configuring Sample Projects.

5.3.1 Sample Integration for Filesys Project

The AutoVue Integration SDK bundles a sample integration into a JDeveloper-based or Eclipse-based project. This project is located under the FileSys\WebApplication folder and is available as single web archive (WAR) filesys.war file and separate files. This provides you with an option of either importing the project from single WAR file into your workspace or manually creating a project and adding individual pieces to it.

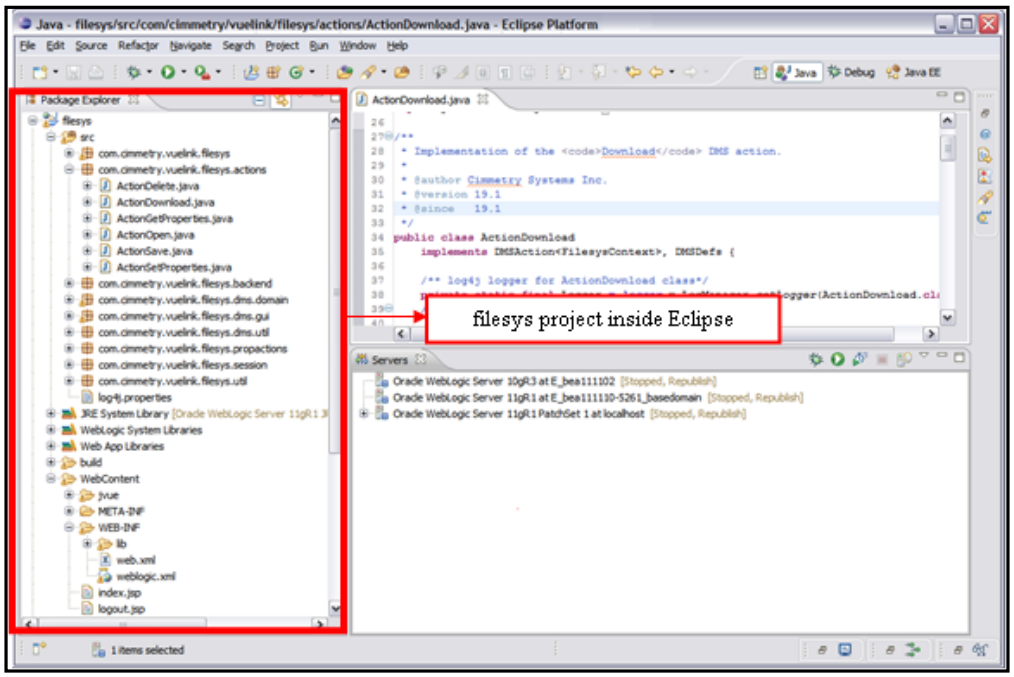
The following high-level architectural diagram shows how various components included in the Sample Integration for Filesys are related to each other as well as to others. For detailed description about this architectural diagram, refer to *Oracle AutoVue Integration SDK Technical Guide*.

Figure 5–5 High-level architectural diagram of Sample Integration for Filesys components



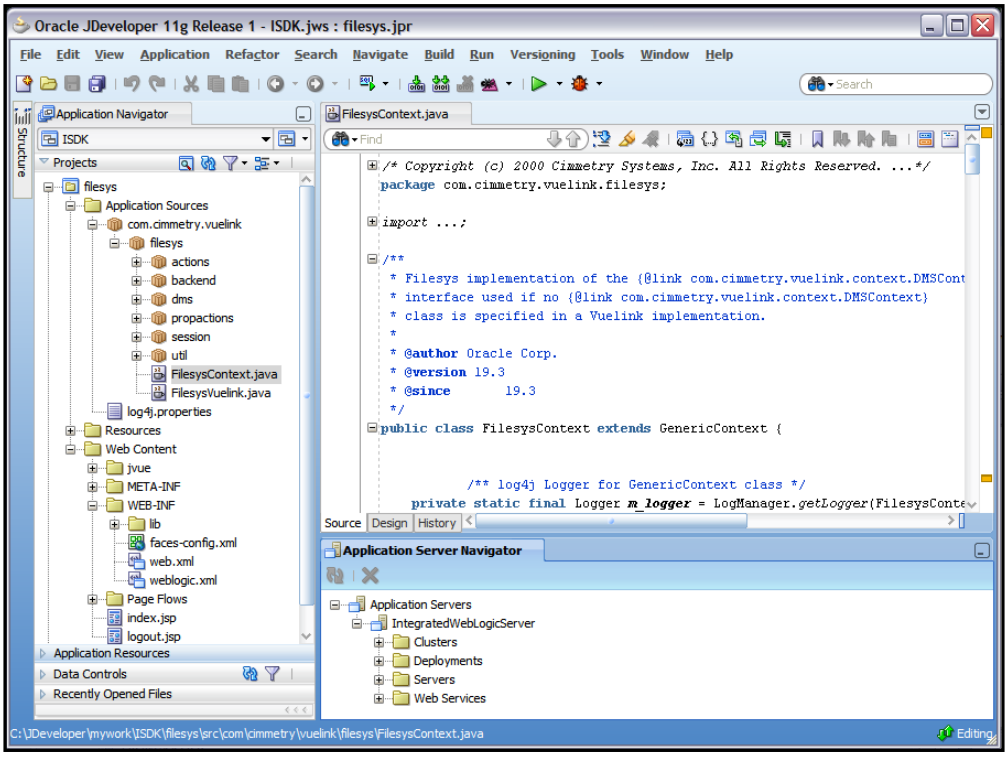
The following is a sample integration project on Eclipse.

Figure 5–6 Sample integration project on Eclipse



The following is a sample integration project on JDeveloper:

Figure 5–7 Sample integration project on JDeveloper



The project contains four main subcomponents:

- Framework (VueLink Core)

- Sample Integration
- AutoVue Components
- Third-Party Libraries

The following sections describe each of these subcomponents.

5.3.1.1 Framework (VueLink Core)

The framework is implemented based on Java Servlet API provided by SUN as part of J2EE. The main class is called *com.cimmetry.Vuelink* which extends *javax.servlet.http.HttpServlet*. Servlets do not run on their own, they require a servlet engine such as Oracle WebLogic Server.

The framework links AutoVue system with a third-party DMS. Integration framework receives requests from AutoVue, obtains information from the DMS, and then builds a response back to AutoVue.

The framework provides plumbing for parsing XML requests received from AutoVue Server as well as constructing XML responses sent back to AutoVue Server. The framework uses XML parser libraries included in your servlet container.

The framework defines a set of interfaces and classes that facilitate the integration task. The framework is packaged into vuelinkcore.jar and contains many packages including following:

- com.cimmetry.vuelink
- com.cimmetry.vuelink.authentication
- com.cimmetry.vuelink.backend
- com.cimmetry.vuelink.context
- com.cimmetry.vuelink.defs
- com.cimmetry.vuelink.io
- com.cimmetry.vuelink.property
- com.cimmetry.vuelink.prosaction
- com.cimmetry.vuelink.query
- com.cimmetry.vuelink.session
- com.cimmetry.vuelink.util
- com.cimmetry.vuelink.xml

The framework uses log4j for logging messages into application server log file or console.

5.3.1.2 Sample Integration

The ISDK includes a sample integration of a simplified file system management (Filesys). This sample includes VueLink for filesys DMS and aims to act as a starting point for developing your own integration as well as familiarizing yourself with the integration framework.

Figure 5–8 Sample integration framework

The Filesys DMS comes with a database repository that is preloaded with some sample files in 2D/3D formats. To simplify things, the structure of this repository is based on local file system. Markups and renditions are stored back into this content repository.

The sample integration demonstrates how you can add basic and advanced functionalities to your own integration including:

- Document viewing of native formats
- Retrieve document attributes
- Create, save and review markups
- Browse DMS repository
- Search DMS repository
- Compare document versions
- Convert documents to other formats
- Support for Stamps markup entity
- Support for Set Property action (with Pick List support)
- Enhanced framework to support Oracle Enterprise Visual Framework (OEVF)
- Support for markup save alert before applet close
- Support for browser Pop-up blocker notification
- Support for AutoVue authorization mechanism (encrypted Authorization block and password)
- Improved performance with support for distributed file servers
- Support for integration between Online meeting managements and AutoVue Real-Time Collaboration (RTC)
- Support for saving/deleting on-line master markups based on default markup policy
- Support for read-only markups
- Bundled demos for OEVA and RTC

The sample integration for Filesys contains many packages including the following:

- com.cimmetry.vuelink.filesys
- com.cimmetry.vuelink.filesys.actions
- com.cimmetry.vuelink.filesys.backend
- com.cimmetry.vuelink.filesys.dms
- com.cimmetry.vuelink.filesys.dms.gui
- com.cimmetry.vuelink.filesys.propactions

- com.cimmetry.vuelink.filesys.session
- com.cimmetry.vuelink.filesys.util

The sample integration includes a front-end UI which allows users to navigate the Filesys DMS data structure. This UI consists of:

- A default home page: index.jsp. It provides links for Filesys demo, RTC demo and OEVF demo.
- RTC demo pages: RTCDemo.jsp, RTCDemo_init.jsp, RTCDemo_join.jsp
- OEVF demo pages: OEVFDemo.html, OEVFDemoDes.html
- Filesys demo pages: jVue.html, frmApplet.jsp and a single servlet called com.cimmetry.vuelink.filesys.dms.gui.ListDirServlet. The main filesys demo page contains two frames as shown in the following figure.
- The frame on the left displays the structure of Filesys DMS data. The content of this frame is displayed by ListDirServlet which allows you to navigate the Filesys DMS by expanding folders and selecting documents to view.
- The frame on the right displays the AutoVue applet using frmApplet.jsp. When you click a document in the frame on the left, it displays in the frame on the right.

5.3.1.3 AutoVue Components

The ISDK bundles following two components of Oracle AutoVue:

- AutoVue Applet Client (jvue.jar, jogl.jar,gluegen-rt.jar)

  Referenced by frmApplet.jsp which contains HTML code for AutoVue Applet (<applet> tag).

- VueServlet tunneling servlet (vueservlet.jar)

  This servlet is used to allow AutoVue applet connects to AutoVue Servlet.

The AutoVue Integration SDK does not bundle AutoVue Server. You need to download and install it separately. Refer to the Installation chapter for more information.

5.3.1.3.1 Third-Party Libraries The Sample Integration for Filesys bundles third-party open-source libraries needed by the framework. For information, refer to the *Acknowledgments* document.

5.3.2 ISDK Web Services Sample Server Project

The Web Services Sample Server project is a sample implementation of the Web Services provider and uses the Filesys repository as the backend DMS.

It implements the Web Services methods defined in the BluePrint WSDL file. The ISDK Web Services Sample Server project is located under the WebServiceIntegration/WebSserviceSampleFolder folder.

5.4 Implementation

The ISDK Java skeleton should be used when a Java API is available in the repository. The reason is the ISDK is written in Java and a Java-to-Java integration with a repository (if possible) performs better with less overhead than a Web service-based integration.

On the other hand, if Java API is not available on the repository (or the flexibility in implementation is more important and/or all other parties in the enterprise are using Web services to communicate), then the ISDK Web service package is more suitable for building the AutoVue integration.

The implementation steps are dependent on whether the ISDK Java skeleton or the Web service package is being used. However, the expected functionality of the integration can be understood in three phases that range from the most basic (phase one) to the more advanced (phase three) capabilities. The following sections discuss these integration phases.

5.4.1 Phase One

The requirement for phase one is viewing the document. To view the document, the integration should cover the Open and Download actions and a subset of GetProperties (get name, size, last modified date and multi-content values) actions.

5.4.2 Phase Two

Phase two of the integration adds the following capabilities:

- Save, update and delete markups (annotations) inside the repository
- Compare a document with other versions of the same document
- Download the external references (XRefs) of a document from the repository (if applicable)
- Save (and reuse) the renditions of a document into the repository
- Add the repository attributes to the print output in the header/footer sections

For this to happen, the integrators should add implementation for the Save and Delete and a subset of GetProperties related to listing versions, listing markups, listing XRefs, listing renditions and listing all attributes of a document.

As mentioned in Optional Components, the repository should support XRefs and the development of a CAD connector for the repository may be required.

5.4.3 Phase Three

Phase three of the integration adds the following capabilities:

- Search and browse the repository through the AutoVue client UI
- Use the AutoVue Intellistamp with the repository attributes

AutoVue Intellistamp is one of the AutoVue advanced markup features. For more information, refer to the *Oracle AutoVue User's Manual*.

For these features, integrators must add an implementation for SetProperties and the remaining subset of GetProperties that are defined to retrieve these information: search/browse UI, search/browse query results, and the collaboration-related data from the repository.

6

Deployment of ISDK-Based Integrations

Once the development of an ISDK-based component is complete, it should be deployed on a Java Web application server. If the integration is done using the ISDK Web services package, then deployment should be done on an application server that supports Java Web services (that is, Java EE5 or higher).

The deployment may involve some configuration depending on its complexity. For example, if multiple instances of integrations are being used in a server farm, the deployment must be scaled for high usage. For more information, refer to Scaling for High Usage over Distributed Environments. Additionally, it may be required to support proper failover when deploying in a distributed environment.

For technical information on deploying the ISDK and supported Web application servers, refer to the *Oracle AutoVue Integration SDK Technical Guide.*

6.1 Scaling for High Usage over Distributed Environments

Depending on the number of concurrent users, the type and size of documents that users typically view, and whether files are to be loaded natively or from streaming files, it may be required to deploy your ISDK-based integration in a server farm. Additionally, it may be required to deploy it in distributed environments. In order to support proper failover in a distributed environment, the HTTP session needs to be replicated across all cluster nodes. In the event that a node fails, a second cluster node takes over and continues to process the requests. Seamless failover is when the user's actions are not disrupted and no authorization dialog is requested during this process.

Depending on the type of DMS integration and connection, login or session information may need to be remembered. For the information to be replicated across nodes, the objects attached to the HTTP session need to be serializable.

For example, in the FileSys sample integration, the com.cimmetry.vuelink.filesys.FilesysContext class manages this aspect. The back-end session objects may not always be serializable. The FilesysContext stores the username and password strings in the session. This allows the node that is taking over another session to reinitialize the connection with the back-end. The DMSSession class is provided by the ISDK to wrap the HTTP session variable. It provides the setAttribute() and getAttribute() methods to handle the storing of serializable objects to be saved and replicated. For more information, refer to the *Oracle AutoVue Integration SDK Technical Guide*.

Consider the following when serializing objects:

- The DMS provides a session ID: If the back-end DMS provides a session ID, this session ID can be serialized into the DMSSession object. This way when a cluster

node fails, the new node can pick up the replicated DMSSession and use the stored session ID to continue communicating with the back-end DMS.

- The DMS connection object is not serializable: If the connection object cannot be serialized into the DMSSession, the information needed for recreating this object should be serialized and replicated. This way, when the active node fails, the second node retrieves this information and recreates the DMS connection object.

If seamless failover is not possible, an authorization exception can be thrown to request the user login information. This way, the user retains the ability to save any markups that they have created provided that they can enter a valid username and password.

Non-serializable objects should be added to the DMSSession to increase performance and allow caching of data between requests. However, they need to be declared as transient in order not to break the session replication during failover. These transient objects will need to be regenerated once the session was migrated to a different cluster node.

For information on scaling AutoVue servers for high usage and seamless failover, refer to the "Scaling AutoVue for High Usage" section of the *Oracle AutoVue Planning Guide*.

A

Updating Existing Integrations to the Java Web Start Client

As an alternative to browser based Java Applets, the new solution is based on "Java Web Start" utility. Java Web Start provides a facility for launching Java-based applications from web browsers, running out of the browser as a separate process. The browser uses file download and file association capabilities to start Web Start automatically. In place of the HTML APPLET tag and attributes, a new "Java Network Launching Protocol" (JNLP) XML file allows developers to specify where the application can be obtained, how it should be launched, and what the initial parameters are. The sections covered in this chapter will help you migrate your Applet based deployment to the new version of AutoVue.

A.1 Update your Integration

This section will help you migrate your Applet based deployment to the new version of AutoVue. Do the following for updating your integration to the new solution of AutoVue:

1. **Update the server**: Deploy the different AutoVue artefacts on the server side.
2. **Setup the server for SSL mode**: This is required only if you need to run AutoVue under HTTPS protocol.
3. **Test the AutoVue sample**: Test the sample to ensure you have properly deployed all the artefacts on the server side.
4. **Specify Cookies:** Specify cookies that are necessary for authenticating the different components necessary for a seamless integration. These cookies must be specified in the VueJNLPServlet so that AutoVue can correctly integrate with your application (single sign on).
5. **Update the client side code:** Update the Client code (customization) to use the new AutoVue *JavaScriptAPI* provided in *autovue.js*.
6. **Security:** Ensure your deployment is secure and follows all the security guidelines of your organization.
7. **Customize your code:** If needed, customize your integration solution to fulfill your specific needs.

A.1.1 Update the server

Add *VueJNLPServlet* descriptor and mapping to the deployment descriptor file – *web.xml* of the *VueServlet* container. Then setup *VueJNLPServlet* initialization parameters in it. Following are the servlet initialization parameters:

- **URL-Dir**: This parameter refers to the *URL* of AutoVue Client folder with respect to the context root in your Java Servlet container. You may use the integrated jetty servlet container AutoVue ships with. Make sure your root context is used consistently across your entire deployment. From now on, your root context is "*/AutoVue*", which would be the value of this "*URL-Dir*" parameter.

  Note: An integrator specific implementation will most certainly not need this parameter defined, as the context root is usually known by the servlet and does not need to be different from the one present inside the JNLP.

- **Cookies**: Semicolon ';' separated list of cookie names identifying the cookies to transfer to AutoVue at the start-up:

The rest of initialization parameters are usual AutoVue Client Parameters (also called "*Applet Parameters*", usually). Refer to the section – Client Parameters for more information about these parameters. Following is the sample code to be included in the deployment descriptor file *web.xml*:

```
<servlet id="VueJNLPServlet">
<servlet-name>VueJNLPServlet</servlet-name>
    <servlet-class>com.cimmetry.servlet.VueJNLPServlet</servlet-class>
    <init-param>
           <param-name>URL-Dir</param-name>
           <param-value>/AutoVue</param-value>
    </init-param>
    <init-param>
           <param-name>Cookies</param-name>
           <param-value>JSESSIONID;COOKIE2;COOKIE3...</param-value>
    </init-param>
    ...
    <load-on-startup>0</load-on-startup>
</servlet>

<servlet-mapping>
<servlet-name>VueJNLPServlet</servlet-name>
    <url-pattern>/servlet/VueJNLPServlet</url-pattern
    <url-pattern>/servlet/VueJNLPServlet/*</url-pattern>
</servlet-mapping>
```

Validation:

- Start AutoVue Server
- Start AutoVue Servlet Container (*Jetty*, *Tomcat* or *WebLogic*)
- Connect with a browser to the *URL* of *VueJNLPServlet* and *CodebaseHost* as an argument indicating the codebase URL*:*

  As an example, for Jetty:
  `http://localhost:5098/servlet/VueJNLPServlet?CodebaseHost=http://localhost:5098/AutoVue`

If you follow the steps provided above, AutoVue Client should start.

A.1.2 Setup the server for SSL Mode

To run AutoVue under HTTPS Protocol, the administrator has to follow these additional steps:

1. Generate a security certificate for "localhost". This certificate will only be used to enable SSL communication between users' browsers and the AutoVue Client, so it should be as restricted as possible. An administrative tool is provided with AutoVue (**makeAvCert**) which produces suitable certificates. Running the utility will generate two files: **av_cert.pem** which contains the complete certificate with key-pair, and **localhost.cer** which contains the public information. The utility need the package **tools.jar** to run.
2. Copy the complete certificate file (**av_cert.pem**) to a secure location in the application server where it can be accessed by web browsers when their users have been authenticated.

In the application-desc portion of the **autovue.jnlp** template, add the URL which will reference the SSL certificate file, as a parameter:

```
<application-desc main-class="com.cimmetry.jvue.JVueApp">
<argument>-paramsslcert_url=https://plm.example.com/AutoVue/secure/av_
cert.pem

</argument>

...

</application-desc>
```

Note that you have to load the self-signed localhost as a certificate exception in each user's browser (the localhost.cer file generated by makeAvCert is intended for this purpose). It would be better to do this before users attempt to use AutoVue. In Microsoft Windows environments, administrators can automate this operation by using the Group Policy Management facility. Mozilla Firefox maintains its own independent certificate store, normally stored in a file named cert8.db. A variety of third party tools have been developed for administrators to manage the certificates pushed to users. Any of these tools may be used to import the localhost certificate for AutoVue.

In Apple and Linux environments, there are fewer standard distributed administration tools. Importing the certificate may be handled manually if necessary by exporting the certificate from the keystore to DER or PEM format and importing to certificate stores by opening the files in the browser, or by using the command line tools provided in each system (keychain application (macOS), certutil (Linux)).

In Enterprise environments where a local certificate authority has been set up, a localhost certificate can be generated that is signed by the local CA. Since users will already have the local CA configured in their browsers, importing of a self-signed certificate can be omitted. This option is applicable for environments where the infrastructure work has already been configured.

A.1.3 Test AutoVue Sample

A new *HTML* sample page (**av_jnlp.html**) illustrating a basic AutoVue integration and similar to the usual sample page *autovue.html* is delivered within the files of the new solution.

In order to test this client sample, you should:

- Start AutoVue Server

- Start AutoVue Servlet Container (*Jetty*, *Tomcat* or *WebLogic*)
- Connect with a browser to the *URL* of the new *HTML* sample page *av_jnlp.html*. As an example, for Jetty, the *URL* is

  ```
  http://localhost:5098/AutoVue/av_jnlp.html
  ```

As soon as the page loads, *Java Web Start* is triggered and launches AutoVue Client standalone outside of the browser. You can then test the file links and the scripting *API*. It should work exactly as it used to do for the Applet sample *autovue.html*, except that AutoVue Client is not embedded in the browser as an Applet.

The new HTML sample *av_jnlp.html* has similar options as *autovue.html*, and they can be customized. Following are the options:

- CL_PRTS
- INIT_PARAMS
- ONINIT
- ONINITERROR
- USER_DATA

All these options are explained in detail in the following sections.

A.1.3.1 CL_PRTS

A *JavaScript* array representing a list of client ports and/or range ports to try in order to establish communication between the browser and the AutoVue Client. The communication will be established with the first available port of the list. E.g.: [4545, [7000, 7010], [8000, 8050], 55555].

A.1.3.2 INIT_PARAMS

Similar to "*Applet Parameters*", INIT_PARAMS is the list of AutoVue Client parameters that is set at initialization stage. They should be provided into a Java Script Object wrapping the parameters to pass. An example follows:

```
INIT_PARAMS = {'FILENAME':'<myFileURL>', 'LOCALE':'fr_CA'}
```

A.1.3.3 USER_DATA

Custom object to provide within the *start* API and receive within the failure callback **ONINITERROR** below.

A.1.3.4 ONINIT

This is a JavaScript callback to register. It will be called when AutoVue starts and listens to JSON-RPC requests in order to handle JavaScript calls. By default it is set to the function **onAvStartup** provided in *av_jnlp.html* sample. This callback is similar to the one used in the earlier solution and has the same name.

A.1.3.5 ONINITERROR

This is a *JavaScript* callback to send within the *start* API. It will be called in case AutoVue does not start. As for AutoVue Applet, a suggestion is given in*av_jnlp.html* (**onAvInitError**) which prompts the user 3 times to retry, then; suggests sending an e-mail to the server administrator notifying him about this failure. This callback is similar to the one used in the earlier solution and has the same name. It must follow the prototype described in the *start* API.

A.1.4 Specify Cookies

AutoVue Client is not an applet anymore. It cannot access the cookies directly. You need to pass these cookies to AutoVue at the start-up. A new AutoVue Client parameter is introduced to address this. The new parameter "**COOKIES**" holds a list of cookies in a key-value format (*name=value*) separated by a semicolon ";".

The server administrator should specify a semicolon ";" separated list of cookie names passed as init parameter of *VueJNLPServlet*, named *COOKIES* as well. This init parameter supports two special values:

- **true:** Pass all the browser cookies of the domain to AutoVue (this must be combined with filtering in the VueJNLPServlet and encryption to ensure a secure deployment).
- **false:** Do not pass any cookie to AutoVue

Basically, add cookies' names to the server configuration file *web.xml*:

```
<servlet id="VueJNLPServlet">
    <servlet-class>com.cimmetry.servlet.VueJNLPServlet</servlet-class>
    <init-param>
           <param-name>Cookies</param-name>
           <param-value>JSESSIONID;...</param-value>
    </init-param>
    <load-on-startup>0</load-on-startup>
</servlet>
```

The required cookies' values will be collected by the "*GET*" method of *VueJNLPServlet* during the client start-up and passed to the client within the new Client parameter (*COOKIES*).

A.1.5 Update client side code

In order to update the client side code, you have to do the following:

- Remove AutoVue Applet tag and related code, after that include *autovue.js* as follows:

```
<script type="text/javascript" src="graphics/autovue.js"></script>
```

Instantiate an *AutoVue* object within a *JavaScript* block as in *av_jnlp.html* (refer to the section – AutoVue Constructor Parameters for more information about the constructor parameters):

```
var myAvApp = new AutoVue(<VueJNLPServlet Host>, <Codebase Host>, ...);
```

- If you need to pass sensitive cookies to AutoVue, you need to generate an Encryption key-pair and set it in *AutoVue* Object before you start AutoVue Client, as follows:

```
myAvApp.setEncryptionKeyPair(public_key, private_key);
```

See the section – Enabling Security for more details about security.

- Call the **start** method to launch an AutoVue Client (refer to the *JavaScript API* section of the *Oracle AutoVue API Guide* for more information about the function parameters):

```
myAvApp.start(onInit, onFail, user_data);
myAvApp.setFile(<URL of a file to load in AutoVue>);
```

Update the calls to AutoVue Applet scripting *API* using the new *AutoVue* Object. Refer to the *JavaScript API* section of the *Oracle AutoVue API Guide* for a complete description of AutoVue scripting *API* supported by *AutoVueJavaScript* Object. An example follows:

Validation: Start AutoVue Server, AutoVue Servlet Container and launch AutoVue Client using your integration solution. It should work as before and AutoVue will start in a separate window.

Note:

- If you call the Scripting API directly without starting AutoVue, the *JavaScriptAutoVue* Object will start AutoVue client automatically for you before invoking the scripting API.
- You can recycle this *JavaScriptAutoVue* Object across your *HTML* pages. The object will remember its previous state. For example, if you had previously connected to AutoVue, the JavaScript will remember the port used for that. The JavaScript will re-connect to a new AutoVue application using the previously defined parameters in case AutoVue was closed.

A.1.6 Enabling Security

Cookies contain sensitive information that will become a security concern if they are not encrypted when passed from the server to the client. The new AutoVue solution encrypts these cookies on server side before passing them to AutoVue client. However, you need to give an encryption key-pair, in order to enable it in *AutoVue*. You should specifically call the following *API* before you start AutoVue Client in order to enable encryption:

```
myAvApp.setEncryptionKeyPair(public_key, private_key);
```

Cookie encryption may be disabled when you initialize *AutoVue* from *JavaScript*. The section – AutoVue Constructor Parameters has information about this functionality (see item for **ENCRYPT_COOKIES)**.

When the encryption of the cookies is enabled but no encryption keys were specified, no cookie will be forwarded to the JNLP application.

You can use the VueKeyPairServlet servlet to generate an encryption keypair. The communication with this servlet should be over HTTPS. This is how you can use it:

- Include the following line in your client code next to the inclusion of *autovue.js*:

  ```
  <script type="text/javascript"
  ```

- Invoke the included script within your *JavaScript* code, as follows:

  ```
  if( typeof getEncryptionKeys !== 'undefined' ){
  myAvApp.setEncryptionKeyPair( getEncryptionKeys().public_key,
  getEncryptionKeys().private_key);
  }
  ```

- Supported ciphers

  Only RSA encryption and "RSA/ECB/PKCS1Padding" ciphers are currently supported.

- Constraints

  It is essential that you keep the list of cookies short for security reasons.

Sensitive information applicable to the document management system could be carried by the client parameters sent when AutoVue Client starts (usually called "*Applet Parameters*"). Setting up these parameters is described in the section – Client Parameters. The preferred approach is to send data as client parameters. These will be passed directly to AutoVue Client on the same machine through the port opened for the scripting API.

Another mechanism has been introduced to prevent a wrong caller from communicating with an AutoVue Client instantiated by another caller. A ticket is generated randomly by *AutoVueJavaScript* Object and passed to AutoVue Client at the start-up (as *Client Parameter*). After this a call is sent to init API establishing the communication with AutoVue Client. This will carry the ticket and creates a session on AutoVue side to be authenticated in any subsequent call to the scripting API.

A.1.7 Customizing AutoVue

The new solution provides customization capabilities similar to AutoVue applet solution. Following are the customizable options:

- Client Parameters
- AutoVue Constructor Parameters

The sections - Client Parameters and AutoVue Constructor Parameters discuss the customizable options.

A.1.7.1 Client Parameters

The new solution provides the following mechanism to set Client Parameters (usually set in the applet and known as **"Applet Parameters"**):

- Client Setting

Client Setting: Pass the parameters to the constructor of *AutoVueJavaScript*Object. Refer to the section – AutoVue Constructor Parameters for a description of expected parameters format.

A.1.8 AutoVue Constructor Parameters

Additional options are specific to the new *API* and the new solution. They are available in *autovue.js*. They can be passed as arguments to the constructor of *AutoVueJavaScript* Object:

```
var myAvApp = new AutoVue(JNLP_HOST, CODEBASE_HOST , CLIENT_PORTS, INIT_PARAMS,
ECNRYPT_COOKIES, VERBOSITY, STARTUP_DELAY);
CSI_ClbSessionSubject=Subject;CSI_ClbSessionType=public|private;CSI_
ClbUsers=user1,user2,x;
```

The Table A–1 provides the list of AutoVue Constructor Parameters.

Table A–1 AutoVue Constructor Parameters

Parameter	Description	Default Value
JNLP_HOST	Specifies the URL of VueJNLPServlet deployed within AutoVue Servlet container. For example, for an AutoVue fresh installation, this URL would be http://localhost:5098/servlet/VueJNLPServlet. This parameter is mandatory. It is needed to connect to VueJNLPServlet servlet that generates the JNLP file required to trigger Java Web Start. AutoVue Client cannot start without the required JNLP file.	
CODEBASE_HOST	Specifies the URL of AutoVue Client codebase (jvue.jar, jsonrpc4j.jar, jogl.jar, gluegen_rt.jar). For an AutoVue fresh installation with built-in Jetty server, this URL would be http://localhost:5098/AutoVue. This parameter is also mandatory. Without it, Java Web Start will not be able to find AutoVue Client's codebase in order to launch it.	
CLIENT_PORTS	The client ports are used for communication between browser and AutoVue Client. Both AutoVue and the browser will try these client ports starting with the first one until it finds a free one to use for communication between AutoVue and the browser. If nothing is available on the client machine, then this communication cannot be established and AutoVue scripting will not be possible.	
INIT_PARAMS	These replace the AutoVue applet parameters. This is the list of AutoVue Client parameters to be set at an initialization stage. They should be provided wrapped into a JavaScript object.	`null`
ENCRYPT_COOKIES	This option toggles ON/OFF the encryption of the cookies passed from the browser to AutoVue Client, passing by VueJNLPServlet on Server side. See the section "**Specify Cookies**" for more details about the transfer of cookies from the browser to AutoVue and the section "**Enabling Security**" about their encryption. The option is optional and the encryption is enabled by default.	`true`
VERBOSITY	This parameter specifies how autovue.js should output error messages: ■ None ■ Browser Console ■ JavaScript alert popup ■ Both Browser Console and JavaScript alert popup	`1`

Table A–1 (Cont.) AutoVue Constructor Parameters

Parameter	Description	Default Value
STARTUP_DELAY	AutoVue is launched using *Java Web Start*. The start-up process can take some time to complete since the java classes (jars) have to be downloaded to the client machine and the browser may prompt the user before starting any download. At the same time, AutoVue JavaScript Object tries to establish communication with AutoVue Client through JSON-RPC to detect when it is ready to handle scripting methods. This variable specifies the required delay before assuming a start-up failure of AutoVue Client (For example, AutoVue Server not running). It is set by default to 30 seconds.	30

A.2 Steps for Integration

For partners who have developed an integration to link AutoVue to a file repository (typically using the *ISDK* toolkit), the recommendation is to follow the incremental process provided in Table A–2 for migrating the implementation to the new *Web Start* based AutoVue Client.

Table A–2 Steps for integrating with the new Web Start-based AutoVue Client

Step	Tasks	Expected Result
AutoVue Client Launch	The initial goal is to have the AutoVue Client launched in the integrated environment through the *Web Start* framework. Actions: ■ Install and configure *VueJNLPServlet* and the template file it uses on the application server of your environment. ■ Validate *JNLP* file produced by *VueJNLPServlet*. ■ Verify that AutoVue Client can be launched from client machines.	An empty AutoVue Client can be launched from the embedding environment. Local files can be opened from the user interface of AutoVue.

Table A–2 (Cont.) Steps for integrating with the new Web Start-based AutoVue Client

Step	Tasks	Expected Result
Basic File Viewing	The second step is to enable the viewing of files from the document repository. The implementation work here will involve passing authentication and document identification information to the AutoVue client. Actions: ■ Adapt viewer launch page in existing integration to invoke *VueJNLPServlet* with parameters that are currently added as applet parameters. ■ Validate that viewer can be launched with files chosen by the user through the user interface of the embedding system.	Files can be selected from the document repository and viewed in the AutoVue client.
Migrate Additional Functionality	Most integrations provide additional document related functionality through the use of the *LiveConnectAPI* of AutoVue. These functions may include markup, printing, comparison, etc. The *JSON-RPCAPI* provides the same functionality as the *LiveConnectAPI*. Actions: ■ Identify all *LiveConnectAPI* usage in the current integration. Generate a checklist of user operations that are built through these capabilities. ■ Convert integration code that was using the AutoVue applet's *LiveConnectAPI* s to invoke the functionality through the *JSON-RPC* interface. We recommend using the provided AutoVue *JavaScript* class to simplify this process. ■ Validate that all checklist items have been successfully migrated. Provide feedback to Oracle for any functionality that cannot be migrated.	Revised integration should match functionality of original integration to a very high degree. Any deficiencies have been reviewed and a remediation plan established.

Table A–2 (Cont.) Steps for integrating with the new Web Start-based AutoVue Client

Step	Tasks	Expected Result
Refine Security	The migration of the AutoVue integration from applet-based to *Web Start* may allow for an improvement in the overall system security. If applicable, the following actions may be taken: ■ Revise security implementation to make use of *VueJNLPServlet* cookies capabilities. ■ Restore *HTTPOnly* attribute on authentication related cookies if it had been removed for AutoVue applet use. Enable cookie encryption feature: ■ Decide on an approach for generating the required key-pair information. ■ Enable cookie encryption in *VueJNLPServlet* invocation.	Security related cookies are protected through *HTTPOnly* attribute. Security information in *JNLP* files is secured to a level appropriate for the operating environment.

B

Feedback

If you have any questions or require support for AutoVue, please contact your system administrator. If the administrator is unable to resolve your issue, please contact us using the links below.

B.1 General AutoVue Information

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

B.2 Oracle Customer Support

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

B.3 My Oracle Support AutoVue Community

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

B.4 Sales Inquiries

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