

***CAD Integration Package
For Pro/ENGINEER
Installation and User Manual***

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Introduction

The CAD Integration package from Oracle integrates AutoVue Web Version with Pro/ENGINEER to enable visualization of

- 1 Pro/ENGINEER Parts and Assemblies containing family table instances when the accelerator files are missing
- 2 Pro/ENGINEER Drawings that do not contain display lists when the reference Parts/Assemblies are missing

The components in the CAD Integration package make it possible for AutoVue to access the native application and retrieve data in a form that is suitable for viewing.

The package's components are:

- **Render Broker:** This is the main server component that maintains communication between AutoVue and the Render Engine. It is installed as part of the AutoVue server installation. There can only be one instance of Render Broker per AutoVue server installation.
- **Render Engine:** The Render Engine component is installed on the CAD machine. This component runs the conversion process on the native application — i.e., Pro/ENGINEER. Render Engine should be installed once for every CAD installation.

System Requirements

Render Engine

- Pro/ENGINEER Version 2001 (Windows only)
- Pro/ENGINEER Version Wildfire (Windows only)
- Pro/ENGINEER Version Wildfire 2.0 (Windows only)
- Pro/ENGINEER Version Wildfire 3.0 (Windows only)

Render Broker

Supported on all AutoVue Web Version Server platforms.

Render Broker component installation

Render Broker component is implemented as a Web application. It uses the Apache SOAP support library. By default, the AutoVue server installation installs the Render Broker component on your machine. Every time you start AutoVue server, Render Broker also starts.

To enable the integration with AutoVue, set **PROINTEGRATION** to 1 in the INI file **allusers.ini** in the AutoVue Web Edition installation directory.

For 3D files with family table instances and missing accelerator files, requests will go the Render Engine if **PROINTEGRATION=1**.

For 2D files, to enable the integration for 2D files, you should set **PROINTEGRATION=1** and set **ProE2DLoadSavedDisplayLists=0**. Render Engine will be used if **PROINTEGRATION=1** and files do not contain display lists and the reference 3D parts and assemblies are missing (option **ProE2DLoadSavedDisplayLists** is ignored). Render Engine will not be used if **PROINTEGRATION=1** and **ProE2DLoadSavedDisplayLists=1** and files contain display lists. Render Engine will not be used if **PROINTEGRATION** is off.

Configuration files

The INI file for Render Broker, **RenderBroker.ini**, is in the server's start directory. This file contains parameters to establish the connection between the Render Broker and the set of installed Render Engines.

The **[OPTIONS]** section contains the parameter **RenderEngineHttp**. It defines the list of Render Engine Servlet URLs (for details, see the section ["Render Engine component installation"](#)).

Example:

RenderEngineHttp=http://192.9.200.20:5050/servlet/RenderEngine,http://192.9.200.22:5050/servlet/RenderEngine

When the Render Broker starts and this file does not exist, it will be created automatically. The `RenderEngineHttp` parameter is also automatically set when the Render Engine component starts and registers itself on `RenderBroker`.

[OPTIONS]

Option	Description	Default
jobID	For internal usage only. Do not modify.	41
MaxRmiConnectionTest	When the connection to the Render Engine is lost, the Render Broker attempts to reconnect to the Render Engine for <code>MaxRmiConnectionTest</code> times. If no connection is established, the Render Engine is removed from the list of connected Render Engines.	5
MaxTimeFromCreateToProcess	Time in milliseconds that is allowed between the creation of a job and sending it to the Render Engine for processing. When this time expires, the job is destroyed.	180000 (3 minutes)
MaxTimeFromProcessToClose	Time in milliseconds that is allowed between processing the completion of a job and closing it on the Render Broker. When this time expires, the job is destroyed.	180000 (3 minutes)
RenderEngineHttp	Defines the list of Render Engine Servlet URLs (for details, see the section “Render Engine component installation” on page 13). When the Render Broker starts and this file does not exist, it will be created automatically. The <code>RenderEngineHttp</code> parameter is also automatically set when the Render Engine component starts and registers itself with the <code>RenderBroker</code> .	Example: <code>RenderEngineHttp=http://192.9.200.24:5050/servlet/RenderEngine</code>
Verbose	Sets the error and information messages output.	false

Administration tool

The Render Broker administration tool is an applet. The tool can be launched using a Web browser or as a standalone application.

To start the applet, use one of the following launch methods:

- Open the HTML file rbadmintool.html in a Web browser such as Internet Explorer or Netscape Navigator. This HTML file is installed along with the other web server components as part of the AutoVue Server installation.
Example: http://<Host_name>/jVue/rbadmintool.html
- Launch rbadmintool.bat that is in <Install_Dir>\bin, where Install_Dir is the directory where AutoVue Server is installed.

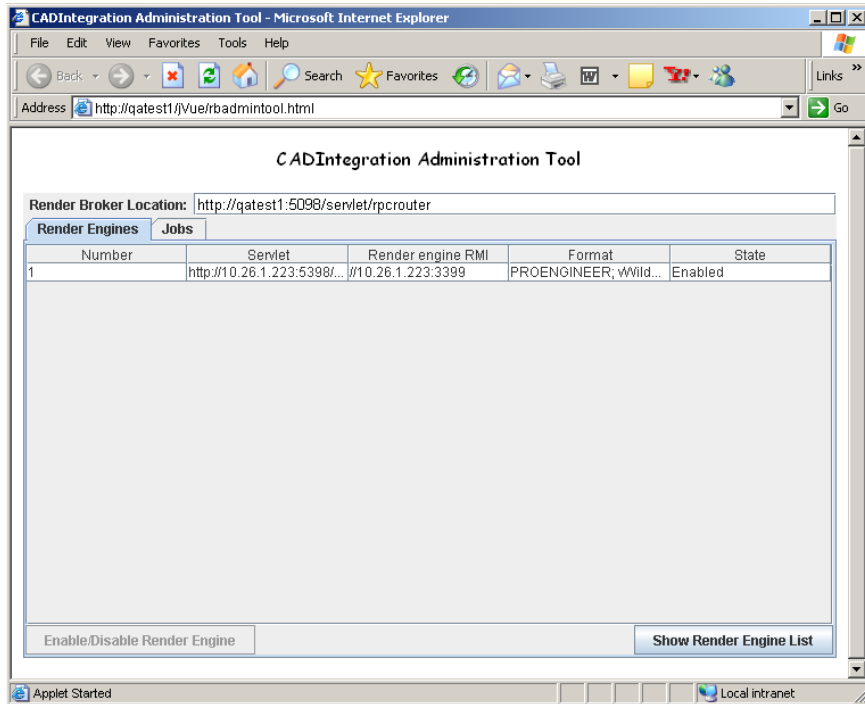
At the top of the panel, the Render Broker's location is specified in the text field. By default, the location is: **http://<Host_name>:5098/servlet/rpcrouter**, where **Host_name** is the name of the machine where AutoVue Server is installed. To specify another Render Broker, enter the new location in the text field.

To display a list of all the Render Engines running and their states

- 1 Open the HTML file rbadmintool.html.
- 2 In the text field at the top of the panel, the Render Broker location is displayed. To connect to another Render Broker, enter the new location.
Example: http://devcad2:5098/servlet/rpcrouter
- 3 Make sure the **Render Engines** radio button is selected.

4 Click **Show Render Engine List**.

The list of all the Render Engines running and their states is displayed (enabled or disabled).



To enable or disable a Render Engine

You can enable or disable a Render Engine by selecting the corresponding row and then clicking the toggle command button to enable or disable it.

1 Open the HTML file rbadmin tool.html.

2 Make sure the **Render Engines** radio button is selected.

3 Click **Show Render Engine List**.

The list of all the Render Engines running and their states (enabled or disabled) is displayed.

4 Select the row corresponding to the Render Engine you want to enable or disable.

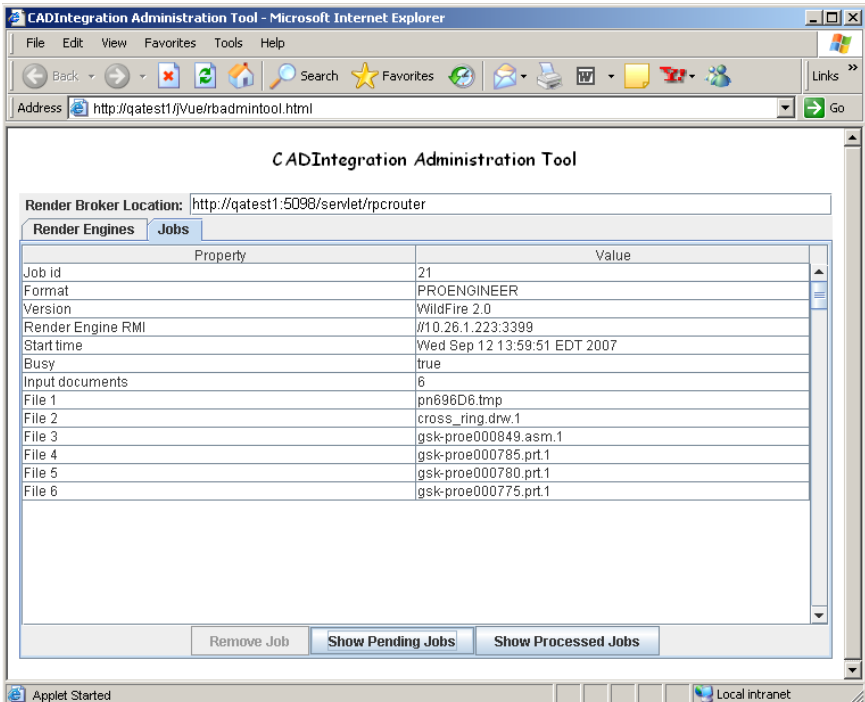
The **Enable/Disable Render Engine** toggle command button is available to click.

- Click the **Enable/Disable Render Engine** button.

If the Render Engine you selected in the previous step was disabled, it is now enabled. Likewise, if the Render Engine you selected in the previous step was enabled, it is now disabled. When the Render Engine is disabled, it will not process any more jobs.

To display a list of the pending jobs

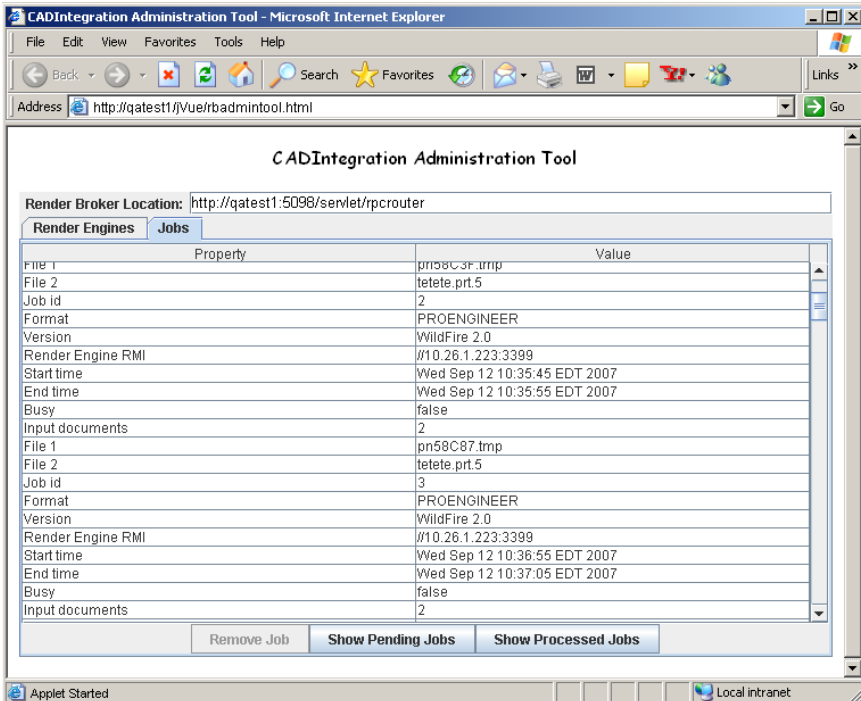
- Open the HTML file rbadmintool.html.
- Select the **Jobs** radio button.
The **Show Pending Jobs** command button appears at the bottom of the panel.
- Click **Show Pending Jobs**.
The list of pending jobs is displayed in rows.



Jobs are listed in the order they are processed. Each new job begins with the **Job Id** row represented by a different color than the other table rows.

To remove a pending job

- 1 Open the HTML file rbadmintool.html.
- 2 Select the **Jobs** radio button.
The **Show Pending Jobs** command button appears at the bottom of the panel.
- 3 Click **Show Pending Jobs**.
The list of pending jobs is displayed in rows.



- 4 Select the row corresponding to the pending job that you want to remove.
- 5 Click **Remove job**.
The job is removed from the list.

Render Engine component installation

The Render Engine component should be installed on the machine that has an installation of Pro/ENGINEER.

- 1 From the Render Engine installation CD, open the folder corresponding to your application and run **setupwin32.exe**.
The **Welcome** dialog appears.
- 2 Click **Next**, then select the directory where you want the Render Engine component installed.
- 3 Click **Next** and read the installation summary information.
- 4 Click **Next**.
The installer displays the progress bar while copying files.
The next screen informs you that in the screens that follow you will enter information used to create the Render Engine initialization file and the batch file that starts it.
- 5 Click **Next**, then enter the hostname and port for the Render Broker.
The hostname is the name of your AutoVue Server computer.
The RenderBroker port is usually 5098 and is specified in the file **jVue\bin\jetty\etc\jetty.xml** by the following line:

```
<Set name="Port"><SystemProperty name="jetty.port"
default="5098"/></Set>
```
- 6 Click **Next**, then specify the Pro/ENGINEER launch file.
- 7 Click **Next**, then specify the Pro/ENGINEER version.
- 8 Click **Next** and read the summary information.
- 9 Click **Finish**.
- 10 Set the system environment variable '**PRO_COMM_MSG_EXE**' on the server running the ProEngineer.
PRO_COMM_MSG_EXE=<ProEngineer Installation directory>\i486_nt\obj\pro_comm_msg
Example:
PRO_COMM_MSG_EXE=C:\cad\proe\proe2001\i486_nt\obj\pro_comm_msg

Note: You need to configure AutoVue server to enable CAD integration with Pro/ENGINEER, refer to section [AutoVue Server Configuration](#).

INI settings

AutoVue Server Configuration

The CAD integration with Pro/ENGINEER is disabled by default in AutoVue. To enable the integration, set below option in allusers.ini. This ini file is found in the AutoVue server installation directory. Default is **C:\Program Files\jVue\bin**

Option	Description	Default
PROINTEGRATION	Specify if you wish to enable or disable the integration. Set to 1 to enable. Set to 0 to disable.	0
ProE2DLoadSavedDisplayLists	To enable the integration for 2D files. If set to 1 and file contains display list, then Render Engine will not be used. If set to 0, will always force the use of the Render Engine. Note: This option is to avoid out-of-date display list saved in the file.	1
ProEAbortOnREFailure	If set to 1, error message will be displayed when Render Engine is not running or not responding. If set to 0, no error message will be displayed.	0

Pro/ENGINEER integration

The Render Engine installation creates the file **RenderEngine.ini**. For Pro/ENGINEER, the following table lists the options set in the INI file

[Decoder]

Option	Description	Default
ProE.Exec	Contains the string to launch the Pro/ENGINEER application.	C:\CAD\ProE\ProE2001\proe2001\bin\proe2001.bat
ProE.Version	Contains the number of the Pro/ENGINEER application version. It can be set to the following values depending on the Pro/E executable version: 23 = Pro/E 2001 24 = Pro/E WildFire 25 = Pro/E WildFire 2.0 27 = Pro/E WildFire 3.0 This is a mandatory parameter.	23

[RenderEngine]

CadMaxLicenses	Defines the maximum number of licenses for the CAD application. This parameter is optional.	1
host	Defines the host for the Render Engine.	localhost
HttpPort	Defines the http port for the Render Engine.	5050
RenderBrokerLocation	Specify the location of the Render Broker or the AutoVue Server.	http://<jvue server>:5098/servlet/rpccrouter
RenderDriverClassName	Defines the name of the specific Render Driver class. This parameter is mandatory.	proe.RenderDriverProE

RMIPort	Defines the port for the Render Engine RMI connection.	3099
UploadDownload Dir	Defines the name of the Upload/Download directory. Must point to the existing directory. Note: This parameter is mandatory. Note: Make sure this directory is empty. It should not contain any files.	C:\CSI_CadIntegration\tmp

Starting the Render Engine and the Render Broker

To start the Render Engine

Launch **StartRenderEngine.bat** that is located in the Render Engine Installation directory.

Note: You can also set up the Render Engine to start as a service, refer to [Appendix A](#).

To start the Render Broker

This component starts automatically when AutoVue Server is started.

To view Pro/ENGINEER files

Open the file from the AutoVue client just like you would open any other file.

Note: For more information on how to use AutoVue, refer to AutoVue online help.

Appendix A: Running the Render Engine for Pro/ENGINEER as an NT service

The Pro/ENGINEER Render Engine can be run as an NT Service. The advantage to this is that it will continue to run even after you log off of Windows NT. Before running the service, verify that Render Engine runs properly in “non-service” mode.

To install the service, go to the directory where Render Engine is installed and type **InstallRendEng-NT.bat**. The service then appears in the **Service** panel as “ProEngineer Render Engine”.

To remove the service, go to the directory where Render Engine is installed and type **UninstallRendEng-NT.bat**.

Note: Make sure to remove the service before uninstalling the RenderEngine.

To start the service

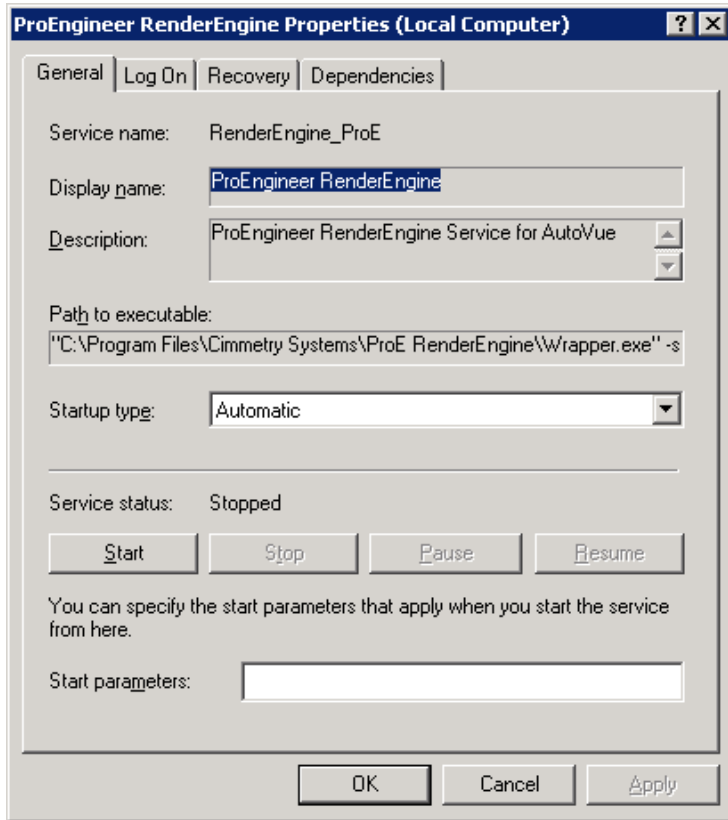
- 1 From the Control Panel, start Services.
- 2 Select the ProEngineer RenderEngine service.
- 3 Click **Startup**.
- 4 Select whether you want the service started automatically upon rebooting or manually. The default option is set to automatic.
- 5 Select **Log On System Account and Allow Service to Interact with Desktop**.

Once the service has been started, it operates exactly as it would in “non-service” mode.

Note: If you select **Manual**, you can start the service in one of the following three ways:

- click **Start** in the **Service** dialog,

- use the sc.exe utility (e.g., SC start “RenderEngine_ProE”) or
- use the NET program (e.g., NET start “RenderEngine_ProE”).



To stop the service

To stop the service, click **Stop**.

Render Engine messages

When running the Render Engine as an NT service, Render Engine messages are written into **<InstallDir>\logs\wrapper.log**, where **<InstallDir>** is the directory where the Render Engine is installed. You can modify this by editing

wrapper.conf in **<InstallDir>\lib**. Modify the following line to specify another name or location for the log file **wrapper.logfile=logs/wrapper.log**.

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