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<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>2013-12-17</td>
<td>First version</td>
</tr>
<tr>
<td>1.10</td>
<td>2013-12-20</td>
<td>The following sections were updated:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Naming Conventions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● SAP ERP Integration with SAP 3D Visual Enterprise Generator with Upload Client</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Configuring Authentication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● SAP 3D Visual Enterprise Integration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Visual Data Integration Upload Client</td>
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<tr>
<td>1.20</td>
<td>2014-06-26</td>
<td>Minor updates for Service Pack.</td>
</tr>
<tr>
<td>1.30</td>
<td>2014-12-10</td>
<td>Updates to Installing and Configuring SAP 3D Visual Enterprise Generator on a Master Computer section. Added farm certificate information</td>
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</tr>
<tr>
<td>2.00</td>
<td>2016-06-23</td>
<td>Major updates for 9.0.</td>
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<td></td>
<td>The following sections were updated:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Installation</td>
</tr>
<tr>
<td>2.10</td>
<td>2016-11-24</td>
<td>Minor updates for 9.0 FP01</td>
</tr>
</tbody>
</table>
1 Introduction

1.1 About this Document

Purpose

This Installation Guide is the central source of information for the technical implementation of SAP 3D Visual Enterprise Generator 9.0. It provides cross-scenario implementation information as well as scenario-specific information.

SAP 3D Visual Enterprise Generator can be installed in standalone mode to support a third party workflow or can be integrated with SAP DMS.

In an integrated scenario, SAP 3D Visual Enterprise Generator is used to convert CAD files managed by DMS into lightweight viewable files; for example, .VDS, .RH, .JPG, .GIF, .PDF, which are then stored in the DMS alongside CAD original files. You can then use standalone or embedded SAP 3D Visual Enterprise Viewer to view and interact with these lightweight viewable outputs.

This guide specifies the components that must be installed to support Integration of DMS with SAP 3D Visual Enterprise Generator and how these components are to be configured. The Installation section consists of two parts: the first part describes the installation process for SAP 3D Visual Enterprise Generator and the second part describes the necessary steps for integrating the SAP 3D Visual Enterprise Generator installation with DMS.

You use the Installation Guide to get an overview of SAP 3D Visual Enterprise Generator and its software units from a technical perspective. The Installation Guide is a planning tool that helps you to design your system landscape and it refers you to the detailed documentation that is required, mainly:

- Installation guides for single software units
- SAP Notes
- Configuration documentation
- SAP Library documentation

This Installation Guide is a single source of information for the documentation that is available to support the installation of SAP 3D Visual Enterprise Generator. Therefore, this Installation Guide contains all of the following:

- Planning Information

The first two sections of the Installation Guide provide you with the most important information regarding the implementation of SAP 3D Visual Enterprise Generator including an overview of the related planning information, its software units, the system landscape and the overall implementation sequence.

- Installation Information

This section gives you an overview of the installation components and the sequence in which they are installed.
Integration

The installation, post-configuration, and customizing completes the integration of DMS with SAP 3D Visual Enterprise Generator that provides the functionality of conversion. DMS may need the installation of a content server that serves as the storage location for the files to be attached to DMS. NetWeaver Business Client 3.5 (NWBC) enables you to have a side panel for SAP GUI in which the thumbnail and viewer can be embedded.

Table 1:

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP 3D Visual Enterprise Generator</td>
<td>Converts a CAD file into light weight viewable files</td>
</tr>
<tr>
<td>NWBC 3.5</td>
<td>Required to have side panel for SAP GUI transactions</td>
</tr>
<tr>
<td>SAP 3D Visual Enterprise Viewer</td>
<td>Required to display lightweight viewable files to the user, can be installed as a standalone application or an embedded object.</td>
</tr>
<tr>
<td>DMS</td>
<td>Manages original files that are submitted to SAP 3D Visual Enterprise Generator for conversion, as well as the lightweight files produced by the conversion process</td>
</tr>
</tbody>
</table>

Constraints

This Installation Guide discusses the overall technical implementation of SAP 3D Visual Enterprise Generator and the overall technical implementation of Integration of DMS with SAP 3D Visual Enterprise Generator, rather than its subordinate components. This means that additional software dependencies might exist without being mentioned explicitly in this document. You can find more information on component-specific software dependencies in the corresponding installation guides.

1.2 Introduction to SAP 3D Visual Enterprise Generator

Benefits

SAP 3D Visual Enterprise Generator is a graphical processing client-server application that allows you to automate the processing of CAD and other 2D and 3D graphics.

With SAP 3D Visual Enterprise Generator, you can create enterprise solutions that enable nontechnical users to search, access, manipulate, and integrate complex graphical data into any business or office application across an organization.
Key Features

SAP 3D Visual Enterprise Generator comprises the following parts:

- SAP 3D Visual Enterprise Generator Configuration: Used to start and stop SAP 3D Visual Enterprise Generator, and to establish configuration settings for SAP 3D Visual Enterprise Generator during and after installation
- SAP 3D Visual Enterprise Generator Administration: Used to manage configurable server procedures, monitor and manage the SAP 3D Visual Enterprise Generator server farm and control security within SAP 3D Visual Enterprise Generator
- SAP 3D Visual Enterprise Generator Web API: Used to explore and manage assets and their derivatives stored in the SAP 3D Visual Enterprise Generator database.
- SAP 3D Visual Enterprise Generator Integration API: Used by third party systems that use SAP 3D Visual Enterprise Generator as a conversion server and processing cache for assets and derivatives stored in that third party system
- SAP 3D Visual Enterprise Generator Visual Data Integration Upload Client: Used in specific integration scenarios to submit CAD assets from a third party to SAP 3D Visual Enterprise Generator for processing and subsequent storage in a configured third party repository

1.3 New Features

Table 2:

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDS file format</td>
<td>Support for the new VDS4 file format.</td>
</tr>
<tr>
<td></td>
<td>SAP 3D Visual Enterprise Generator 9.0 by default uses the new VDS4 file format as the default visualization file format instead of RH. VDS4 has advantages over RH as follows:</td>
</tr>
<tr>
<td></td>
<td>● Data-model that is easily stored in a database</td>
</tr>
<tr>
<td></td>
<td>● Support for change management and change propagation</td>
</tr>
<tr>
<td></td>
<td>● Enhanced method of representing the identifiers</td>
</tr>
<tr>
<td></td>
<td>● The ability to store assemblies in multiple files, such as CAD packages (shattered)</td>
</tr>
<tr>
<td></td>
<td>● Dynamic viewing of assemblies with assembly level features; supported by HTML5 viewer</td>
</tr>
<tr>
<td>Shattered Assemblies</td>
<td>You can now store shattered “viewable assemblies” in a similar fashion to CAD files.</td>
</tr>
<tr>
<td></td>
<td>All SAP 3D Visual Enterprise Generator 9.0 ERP integrated workflows will by default store shattered VDS4 files. It is now possible to configure workflows to build and store monolithic RH.</td>
</tr>
<tr>
<td>Area</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| CAD Processing | There have been significant changes to CAD processing as follows:  
  - SAP 3D Visual Enterprise Generator 9.0 only stores the conversion top-level document visualization; shattered or monolithic. This brings significant optimizations to the status change triggered batch processing.  
  - Improved caching of CAD originals and viewables that should, together with storing only top-level documents, bring significant speed optimizations  
  - New ERP CDESK variant APIs allow SAP 3D Visual Enterprise Generator to store variant viewables on the source CAD document BOM. In the case of an external PDM system, the VDI workflow can still create and maintain document BOMs but this is no longer required for SAP PLM scenarios.  
  - New CDESK services variant APIs to create variants in ERP if this is necessary  
  - SAP 3D Visual Enterprise Generator 9.0 stores all assembly level modification-related visualizations in a special VDS4 ALF file, and this enables dynamic viewing of assemblies with assembly level modifications in different explosion modes. |
| TCO          | SAP 3D Visual Enterprise Generator 9.0, when configured to work as an ERP integrated conversion server, no longer requires a separate MS SQL instance - only SAP 3D Visual Enterprise Generator needs to be installed |
| Configurator | The configurator has been re-designed to include the “Rapid Configuration” feature. This enables a user who is configuring SAP 3D Visual Enterprise Generator to complete the configuration through the configuration wizard so that at the end of the setup process, the conversion server is ready to run – no additional manual configuration steps are necessary.  
  - Tool that enables third parties/partners to automatically configure SAP 3D Visual Enterprise Generator using a script. This is handy in VM and testing environments  
  - Configuration copy feature – configuration can be copied from one running instance of SAP 3D Visual Enterprise Generator to another |
1.4 SAP Notes for the Installation

You must read the following SAP Notes before you start the installation. These SAP Notes contain the most recent information on the installation, as well as corrections to the installation documentation.

Make sure that you have the up-to-date version of each SAP Note, which you can find on SAP Service Marketplace at http://service.sap.com/notes.

Table 3: SAP Notes

<table>
<thead>
<tr>
<th>SAP Note Number</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2237061</td>
<td>Information relating to the latest Service Pack</td>
<td>Information regarding this service pack, including new features and installation instructions</td>
</tr>
<tr>
<td>2208206</td>
<td>Windows Server 2012 R2 support</td>
<td>Information relating to Windows Server 2012 R2 support</td>
</tr>
<tr>
<td>1787261</td>
<td>SAP 3D Visual Enterprise: Corrections to Online Documents</td>
<td>Description of corrections made to online documentation after delivery to the customer</td>
</tr>
<tr>
<td>1896319</td>
<td>Solidworks CAD config to create fully resolved viewables</td>
<td>Solidworks Integration specific, SolidWorks configuration to create fully resolved viewables</td>
</tr>
<tr>
<td>2334827</td>
<td>File Formats Supported by SAP 3D Visual Enterprise Generator</td>
<td>Clarification on the full list of 2D and 3D file formats supported by SAP 3D Visual Enterprise Generator, by version</td>
</tr>
</tbody>
</table>

1.5 Information Available on SAP Service Marketplace

More information is available as follows on SAP Service Marketplace.

Table 4: Documentation

<table>
<thead>
<tr>
<th>Title</th>
<th>Internet Address</th>
<th>Description</th>
</tr>
</thead>
</table>
Table 5: General Quick Links

<table>
<thead>
<tr>
<th>Title</th>
<th>Internet Address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP Notes</td>
<td><a href="http://service.sap.com/notes">http://service.sap.com/notes</a></td>
<td></td>
</tr>
<tr>
<td>Installation and Upgrade Guides</td>
<td><a href="http://service.sap.com/instguides">http://service.sap.com/instguides</a></td>
<td></td>
</tr>
<tr>
<td>Product Availability Matrix</td>
<td><a href="http://service.sap.com/pam">http://service.sap.com/pam</a></td>
<td></td>
</tr>
<tr>
<td>Sizing</td>
<td><a href="http://service.sap.com/sizing">http://service.sap.com/sizing</a></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td><a href="http://service.sap.com/security">http://service.sap.com/security</a></td>
<td></td>
</tr>
</tbody>
</table>

1.6 Naming Conventions

Throughout this document the following naming conventions apply.
## Terminology

The following terms and terminology is used in this documentation:

### Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;share&gt;</code></td>
<td>A shared directory used as a local processing cache and for communication and file sharing between servers in a farm configuration</td>
</tr>
<tr>
<td><code>&lt;VEGLogicalPort&gt;</code></td>
<td>Logical port name</td>
</tr>
<tr>
<td><code>&lt;VEGServiceUser&gt;</code></td>
<td>This is a Microsoft Windows user account that allows this service to run when no other user is logged in to the machine hosting SAP 3D Visual Enterprise Generator and to enable network file transfers and other communication while running (if required). This user is also used as the application pool user in IIS.</td>
</tr>
<tr>
<td><code>&lt;VEGCommunicationUser&gt;</code></td>
<td>This is the Microsoft Windows user account configured to allow access to the <code>&lt;SAPIntegrationService&gt;</code> from remote systems.</td>
</tr>
<tr>
<td><code>&lt;SAPIntegrationService&gt;</code></td>
<td>This is a Microsoft IIS Hosted Web Service that is used to accept uploaded assets and processing instructions from remote clients and pass these on to SAP 3D Visual Enterprise Generator for processing.</td>
</tr>
<tr>
<td><code>&lt;SAPERPCommunicationUser&gt;</code></td>
<td>This is a user configured in the SAP ERP that is used by SAP 3D Visual Enterprise Generator to obtain data and content from the SAP ERP and to submit data and content back to the SAP ERP.</td>
</tr>
<tr>
<td><code>&lt;SAPVisualDataIntegrationService&gt;</code></td>
<td>This is the Web service created during an Integrated mode configuration that is used in the SAP ERP Integration with SAP 3D Visual Enterprise Generator system landscape.</td>
</tr>
<tr>
<td><code>&lt;SAPERPCommunicationUserAuthRole&gt;</code></td>
<td>This is a role created in SAP ERP to manage authorizations for the <code>&lt;SAPERPCommunicationUser&gt;</code>..</td>
</tr>
<tr>
<td><code>&lt;VEG_Instance&gt;</code></td>
<td>The 'VEG Instance' configuration in SAP ERP is mapped to a <code>&lt;VEGLogicalPort&gt;</code> and is used in downstream configurations to dictate which SAP 3D Visual Enterprise Generator service to connect to for various operations.</td>
</tr>
<tr>
<td>Variables</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><code>&lt;SAPERPAdministrativeUser&gt;</code></td>
<td>SAP ERP user that has sufficient rights to create new users and execute SOAMANAGER to configure SAP ERP connection to SAP 3D Visual Enterprise Generator</td>
</tr>
<tr>
<td><code>&lt;deepserver&gt;</code></td>
<td>This is an SQL Server user created during the installation of SAP 3D Visual Enterprise Generator using a password you specify.</td>
</tr>
<tr>
<td><code>&lt;VEGAdministrator&gt;</code></td>
<td>The default SecurityAdministrator account in a combined Security and Project administration scenario (the default) will suffice for this role. If you chose to separate security and project administration then you may need to create another project administrator to cover all administration actions.</td>
</tr>
</tbody>
</table>
2 Planning

This section provides you with the most important information regarding the implementation of SAP 3D Visual Enterprise Generator including an overview of the related planning information, its software units, the system landscape and the overall implementation sequence.

You may also require the following reference material:


SAP 3D Visual Enterprise Generator is designed to integrate with other software applications, including databases and Web servers. We recommend that you consult the relevant application documentation, as SAP SE cannot make recommendations on requirements for any optional applications.
2.1 Standalone Setup

2.1.1 Standalone Setup - System Landscape

See below the system landscape for SAP 3D Visual Enterprise Generator with the required software units and the required business functions for a standalone configuration:

Figure 1: Standalone System Landscape
To install SAP 3D Visual Enterprise Generator, you need the following:

- Microsoft Windows Server 2008 R2 or 2012 R2 with
- Internet Information Server (IIS)
- Microsoft Message Queuing (MSMQ)
- Microsoft .NET Framework 4.6
- Microsoft SQL Server 2008 R2, 2012 R2, 2014

**Caution**

The Microsoft SQL Server instance has to be configured with **Accent-Sensitive, Case-Insensitive Collation**, and **Mixed Mode Authentication**.

- File Sharing enabled

### 2.1.2 Standalone Setup - Overall Implementation Sequence

The following table describes the overall installation sequence for SAP 3D Visual Enterprise Generator for a standalone implementation (with optional slave servers):

#### Procedure

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Install and configure all required Microsoft Windows components</td>
</tr>
<tr>
<td>2</td>
<td>Install SQL database</td>
</tr>
<tr>
<td>3</td>
<td>Install and configure SAP 3D Visual Enterprise Generator on the master computer</td>
</tr>
<tr>
<td>4</td>
<td>Activate purchased SAP 3D Visual Enterprise Generator modules on the master computer</td>
</tr>
<tr>
<td>5</td>
<td>Install SAP 3D Visual Enterprise Generator Administration on any client computers to administer SAP 3D Visual Enterprise Generator remotely</td>
</tr>
<tr>
<td>6</td>
<td>Install and configure SAP 3D Visual Enterprise Generator on additional computers as required if you are setting up a server farm. These are called the slave computers: computers that are added to the farm for additional processing capacity.</td>
</tr>
</tbody>
</table>

**Note**

As an alternative to adding a slave computer for extra processing capacity, additional processors and memory can be added to the master computer.

The following table can be used as a step-by-step guide to installing and configuring SAP 3D Visual Enterprise Generator in a standalone or server farm configurations. This table is divided into two columns and separates a SAP 3D Visual Enterprise Generator Master setup from SAP 3D Visual Enterprise Generator Slave installation.
Note

- Decide whether you are implementing a standalone (master) or server farm (slave) system landscape and then work through the ordered steps in the table completing every item in required columns in the order they appear.
- The rows of the table are divisions representing prerequisites that have been fulfilled by steps in the previous rows. You must complete all the steps in the columns of each row before proceeding on to the next row.

Each box in the table represents a configuration step. It corresponds directly to a section within this document. When working through sections, complete all contained sections and referenced sections.

Table 8:

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>SAP 3D Visual Enterprise Generator Master</th>
<th>SAP 3D Visual Enterprise Generator Slave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Install and configure Windows Server and any updates</td>
<td>Install and configure Windows Server and any updates</td>
</tr>
<tr>
<td></td>
<td>Install and configure IIS (see the <em>Installing and Configuring IIS</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td></td>
</tr>
<tr>
<td>IIS installed</td>
<td>Microsoft .NET Framework 4.6 – Installation and Verification (see the <em>Installing and Verifying Microsoft .NET Framework 4.6</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td>Microsoft .NET Framework 4.6 – Installation and Verification (see the <em>Installing and Verifying Microsoft .NET Framework 4.6</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
</tr>
<tr>
<td></td>
<td>Create and configure SAP 3D Visual Enterprise Generator Service User (see the <em>Creating and Configuring SAP 3D Visual Enterprise Generator Service User</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install and configure MSMQ (see the <em>Installing and Configuring MSMQ</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install SQL Server (see <em>Installing Microsoft SQL Server</em> [page 42])</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Create and Configure the SAP 3D Visual Enterprise Generator Network Share (see the <em>Creating and Configuring SAP 3D Visual Enterprise Generator Network Share</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install and Configure SAP 3D Visual Enterprise Generator on a Master Computer (see <em>Installing and Configuring an SAP 3D Visual Enterprise Generator</em> [page 47])</td>
<td></td>
</tr>
<tr>
<td>Prerequisites</td>
<td>SAP 3D Visual Enterprise Generator Master</td>
<td>SAP 3D Visual Enterprise Generator Slave</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>SAP 3D Visual Enterprise Generator Master Installed and Configured</td>
<td>Licensing CAD Modules (see Licensing CAD Modules [page 77])</td>
<td>Install and Configure SAP 3D Visual Enterprise Generator Slave Computers (see Installing SAP 3D Visual Enterprise Generator on Slave Computers [page 64])</td>
</tr>
<tr>
<td>CAD Modules Licensed</td>
<td>Install and configure SAP 3D Visual Enterprise Access 7.1 and SAP 3D Visual Enterprise Viewer as per the instructions in the respective guides</td>
<td></td>
</tr>
</tbody>
</table>
2.2 SAP ERP Integration Setup

2.2.1 SAP ERP Integration Setup - System Landscape

The graphic below shows the system landscape for SAP 3D Visual Enterprise Generator with the required software units and the required business functions for an ERP Integrated workflow (including the Visual Data Integration Upload Client):

Figure 2: ERP Integration Landscape
2.2.1.1 DMS Integration with SAP 3D Visual Enterprise Generator

SAP 3D Visual Enterprise Generator
The installation of SAP 3D Visual Enterprise Generator contains a Web service that is triggered from DMS through a consumer proxy.

The installation of SAP 3D Visual Enterprise Viewer enables you to view the 3D visualization of models.

DMS
Software units involved are SAP_BS_FND and SAP_APPL. SAP_APPL is dependent on the objects from SAP_BS_FND.

2.2.1.1.1 DMS Integration - Software Component Matrix

This section provides an overview of which business scenario of Integration of DMS with SAP 3D Visual Enterprise Generator uses which software unit:

<table>
<thead>
<tr>
<th>Business Scenario</th>
<th>Software Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Key: X = mandatory (X) = optional</td>
</tr>
<tr>
<td></td>
<td>SAP_BS_FND</td>
</tr>
<tr>
<td>Conversion of registered Object</td>
<td>X</td>
</tr>
<tr>
<td>Direct Conversion</td>
<td>X</td>
</tr>
<tr>
<td>JobLogMonitor</td>
<td>X</td>
</tr>
<tr>
<td>PDF Conversion</td>
<td>X</td>
</tr>
<tr>
<td>Batch Job Conversion</td>
<td>X</td>
</tr>
</tbody>
</table>
The graphic below shows the system landscape for SAP 3D Visual Enterprise Generator with the required software units and the required business functions for a DMS Integration scenario:

For the conversion process, the communication starts from SAP_APPL to SAP_BS_FND which then communicates with SAP 3D Visual Enterprise Generator for the actual process to be performed. SAP 3D Visual Enterprise Generator stores the files in the content server.

2.2.1.1.2  DMS Integration - System Landscape

To install SAP 3D Visual Enterprise Generator in an SAP DMS integrated system landscape, you need the following:

- Microsoft Windows Server 2008 R2 or 2012 R2 with
- Internet Information Server (IIS)
- Microsoft Message Queuing (MSMQ)
- Microsoft .NET Framework 4.6
- File Sharing enabled
2.2.1.3 DMS Integration - Overall Implementation Sequence

SAP 3D Visual Enterprise Generator integration with SAP DMS requires customization in both systems, and requires that the connection between the two systems is secured appropriately. Two authentication schemes are explicitly supported and documented in the Installation > Integrated Mode > Post-Installation > Configuring Authentication section; these are Username and Password authentication and Certificate Exchange. Although it is possible to configure the system landscape for both schemes, this document only describes the configuration steps for each scheme separately.

Procedure

The following table describes the overall installation sequence for a SAP DMS Integration with SAP 3D Visual Enterprise Generator:

Table 10:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Remarks/Subsequent Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Install SAP 3D Visual Enterprise Generator</td>
<td>This installs SAP 3D Visual Enterprise Generator and needs some post installation steps.</td>
</tr>
<tr>
<td>2</td>
<td>Configuration steps after installation of SAP 3D Visual Enterprise Generator</td>
<td>Mandatory configuration needs to be maintained.</td>
</tr>
<tr>
<td>3</td>
<td>Install content server</td>
<td>Place where originals are created and documents are created</td>
</tr>
<tr>
<td>4</td>
<td>Create logical ports for the proxy class CO_VEG_CONVERSION_SERVER_V3 in SOAMANAGER of DMS</td>
<td>Required to enable the communication to Web services created in SAP 3D Visual Enterprise Generator from DMS.</td>
</tr>
<tr>
<td>5</td>
<td>Create simple configurations for DocFileLinkInformation_Out, DocFileLinkCheckInRequest_In, VEGTaskRequest_In, VEGObjects Information_In in SOAMANAGER of DMS</td>
<td>Run the transaction DMS_SERDEPLOY to enable the service binding for the communication of services created in DMS from SAP 3D Visual Enterprise Generator.</td>
</tr>
<tr>
<td>6</td>
<td>Make necessary settings in Customizing under Cross Applications &gt; Document Management &gt; Visual Enterprise Generator</td>
<td>Required for the conversion</td>
</tr>
</tbody>
</table>

The following table can be used to plan integration between SAP 3D Visual Enterprise Generator and an SAP DMS. The table is divided into four columns and separates the SAP 3D Visual Enterprise Generator steps from SAP DMS Configuration. The authentication schemes occupy the two central columns.

The rows of the table are divisions representing prerequisites. You must complete all the steps in the columns of each row before proceeding on to the next row.

Each box in the table represents a configuration step and corresponds directly to a section within this document.
Recommendation

We recommend that you start your planning by deciding which authentication scheme you will follow. You should then work through all the corresponding steps/sections in the order in which they appear in the table.

Caution

You must complete all the steps in the columns of each row before proceeding on to the next row.

<table>
<thead>
<tr>
<th>Prerequisite</th>
<th>SAP 3D Visual Enterprise Generator</th>
<th>Username and Password Authentication</th>
<th>Certificate Exchange</th>
<th>SAP ERP Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIS Installed</td>
<td>Microsoft .NET Framework 4.6 – Installation and Verification (see the Installing and Configuring Microsoft .NET Framework 4.6 section of Configuring Microsoft Windows Server [page 38])</td>
<td>Create a Windows user for SAP ERP to SAP 3D Visual Enterprise Generator Service calls (see Configuring Authentication [page 80])</td>
<td>Import Server Certificate into IIS (see the Import Server Certificate into IIS section of Configuring Authentication [page 80])</td>
<td>Create a Communication User in SAP ERP (see the Create a Communication User in SAP ERP section of Configuring Authentication [page 80])</td>
</tr>
<tr>
<td>IIS Installed</td>
<td>Create and Configure SAP 3D Visual Enterprise Generator Service User (see the Creating and Configuring SAP 3D Visual Enterprise Generator Service User section of Configuring Microsoft Windows Server [page 38])</td>
<td>Configure IIS to Use Basic Authentication (see the Configure IIS to Use Basic Authentication section of Configuring Authentication [page 80])</td>
<td>Activate SSL Binding in IIS with Server Certificate (see the Activate SSL Binding in IIS with Server Certificate section of Configuring Authentication [page 80])</td>
<td>Create and Assign Authorization Role for SAP ERP Communication User (see the Create and Assign Authorization Role for SAP ERP Communication User section of Configuring Authentication [page 80])</td>
</tr>
<tr>
<td>Prerequisite</td>
<td>SAP 3D Visual Enterprise Generator</td>
<td>Username and Password Authentication</td>
<td>Certificate Exchange</td>
<td>SAP ERP Configuration</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------</td>
<td>-------------------------------------</td>
<td>----------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Install and Configure MSMQ (see the <em>Installing and Configuring MSMQ</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td>Import SAP 3D Visual Enterprise Generator Client Authentication Certificate into Local Machine store (see the <em>Import SAP 3D Visual Enterprise Generator Client Authentication Certificate into Local Machine store</em> section of <em>Configuring Authentication</em> [page 80])</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Install and Configure an SAP 3D Visual Enterprise Generator Master Computer (see <em>Installing and Configuring an SAP 3D Visual Enterprise Generator</em> [page 47])</td>
<td>Import SAP 3D Visual Enterprise Generator Client Authentication Certificate into SAP System (see the <em>Import SAP 3D Visual Enterprise Generator Client Authentication Certificate into SAP System</em> section of <em>Configuring Authentication</em> [page 80])</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integration Service User Available</td>
<td>Export SAP System Client Authentication Certificate (see the <em>Export SAP System Client Authentication Certificate</em> section of <em>Configuring Authentication</em> [page 80])</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Import SAP System Client Authentication Certificate into SAP 3D Visual Enterprise Generator System and Map to Integration Service User (see the <em>Import SAP System Client Authentication Certificate into SAP 3D Visual Enterprise Generator System and Map to Integration Service User</em> section of <em>Configuring Authentication</em> [page 80])</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prerequisite</td>
<td>SAP 3D Visual Enterprise Generator</td>
<td>Username and Password Authentication</td>
<td>Certificate Exchange</td>
<td>SAP ERP Configuration</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>------------------------------------</td>
<td>--------------------------------------</td>
<td>-----------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Integration Service Created</td>
<td>Licensing CAD Modules (see Licensing CAD Modules [page 77])</td>
<td>Grant SAP 3D Visual Enterprise Generator Communication User Basic Authentication rights to SAP Integration Service (see the Grant SAP 3D Visual Enterprise Generator Communication User Basic Authentication rights to SAP Integration Service section of Configuring Authentication [page 80])</td>
<td>Map Communication User to SAP 3D Visual Enterprise Generator Client Authentication Certificate (see the Map Communication User to SAP 3D Visual Enterprise Generator Client Authentication Certificate section of Configuring Authentication [page 80])</td>
<td></td>
</tr>
<tr>
<td>Prerequisite</td>
<td>SAP 3D Visual Enterprise Generator</td>
<td>Username and Password Authentication</td>
<td>Certificate Exchange</td>
<td>SAP ERP Configuration</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-----------------------------------</td>
<td>-------------------------------------</td>
<td>----------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Create Logical Port for Integration Service</td>
<td>SAP 3D Visual Enterprise Generator</td>
<td>Create Logical Port for Integration Service Consumer Proxy for Username and Password (see the Create Logical Port for Integration Service Consumer Proxy for Username and Password section of SAP 3D Visual Enterprise Integration [page 88])</td>
<td>Create Logical Port for Integration Service Consumer Proxy (see the Create Logical Port for Integration Service Consumer Proxy section of SAP 3D Visual Enterprise Integration [page 88])</td>
<td>Activating Service Bindings (see the Activating Service Bindings section of SAP 3D Visual Enterprise Integration [page 88])</td>
</tr>
<tr>
<td>Consumer Proxy Configuration Complete</td>
<td></td>
<td></td>
<td></td>
<td>Configure SAP 3D Visual Enterprise Generator Instance (see the Configure SAP 3D Visual Enterprise Generator Instance section of SAP 3D Visual Enterprise Integration [page 88])</td>
</tr>
<tr>
<td>Workflows Configured</td>
<td>Set up local project to act as a processing cache (see the Set up local project to act as a processing cache section of SAP 3D Visual Enterprise Integration [page 88])</td>
<td>Set Up Username and Password Mapping to Local Project using Communication User (see the Set Up Username and Password Mapping to Local Project using Communication User section of SAP 3D Visual Enterprise Integration [page 88])</td>
<td></td>
<td>Configuring Conversion Trigger (see the Configuring Conversion Trigger section of SAP 3D Visual Enterprise Integration [page 88])</td>
</tr>
</tbody>
</table>
2.2.1.2 Visual Data Integration with SAP 3D Visual Enterprise Generator

The system landscape described in this section focuses on functionality delivered through the Visual Data Integration workflow controller of SAP 3D Visual Enterprise Generator.

The Visual Data Integration workflow is used to analyze and convert CAD assets managed by an external Product Data Management system (PDM) into a configured DMS Document type. Visual Enterprise Document (VED) is the default document type. The default VED output contains the following viewables:

- A VDS file
- A JPG file
- A GIF file

\[\text{Note}\]

The 3D viewable format can be switched from VDS to RH by specifically configuring the workflow.

The workflow can be configured in SAP 3D Visual Enterprise Generator to create additional derivatives. Processes and child workflows can be configured based on the Workflow Controller settings.

\[\text{Caution}\]

See the supported CAD file formats in SAP Note 1945814 to ensure that your preferred CAD format is appropriately supported by the Visual Data Integration workflow.

Document Info Records (DIR), document BOM and viewables (generated visual representations of the asset) are the primary output of the workflow. The workflow stores outputs in the appropriate structure in the configured system.

There are two mechanisms that can be used to trigger the VDI Workflow:

- **External PDM system**: Triggered or manual submission of CAD assets managed by an external PDM system via the VDI API service
- **Visual Data Integration Upload Client**: A new client installable upload utility that connects to the Visual Data Integration API. The Upload Client utility gives a user the ability to manually upload 3D CAD data from a local...
file system into SAP ERP (using SAP 3D Visual Enterprise Generator) and is intended for customers who do not require an automated integration with their Product Data Management System.

For more information about the Visual Data Integration Workflow and detailed instructions of how to customize the default configuration or create your own custom implementation, see Application Help for SAP 3D Visual Enterprise Generator for this feature.

### 2.2.1.2.1 Visual Data Integration - System Landscape

To install SAP 3D Visual Enterprise Generator in a Visual Data Integration system landscape, you need the following:

- Microsoft Windows Server 2008 R2 or 2012 R2 with Internet Information Server (IIS)
- Microsoft Message Queuing (MSMQ)
- Microsoft .NET Framework 4.6
- File Sharing enabled

### 2.3 Minimal Setup (Generic Conversion)

#### 2.3.1 Minimal Setup - About Generic Conversion

You can use a Minimal setup to set the server for generic conversion only.

The Generic Conversion workflow is a streamlined SAP 3D Visual Enterprise Generator workflow focused on conversion of input data into supported output formats. It does not impose any requirements on where it gets input data from. Instead, the caller transfers all of the input data to SAP 3D Visual Enterprise Generator before initiating conversion. In addition, no requirements are imposed on where output files are stored. Output files are available after conversion has completed, until the caller is able to successfully retrieve them; they are not kept long-term.

For further information on Generic Conversion, see the following wiki page:

**Related Information**

https://wiki.scn.sap.com/wiki/display/SVE/Generic+Conversion++API+Reference
2.3.2 Minimal Setup - System Landscape

The following graphic shows the system landscape for minimal SAP 3D Visual Enterprise Generator with the required software units and the required business functions.

To use SAP 3D Visual Enterprise Generator in minimal mode, you need the following:

- Microsoft Windows Server 2008 R2, or 2012 R2 with Internet Information Server (IIS)
- Microsoft Message Queuing (MSMQ)
- Microsoft .NET Framework 4.6
- File Sharing enabled

Conversion Process

The conversion process is controlled by the client interacting with the Generic Conversion API. SAP 3D Visual Enterprise Generator stores the converted files locally for a period of time, allowing the client to download the data.
### 2.3.3 Minimal Setup - Overall Implementation Sequence

The following table describes the overall installation sequence for SAP 3D Visual Enterprise Generator for a minimal implementation (with optional slave servers):

#### Procedure

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Install and configure all required Microsoft Windows components</td>
</tr>
<tr>
<td>2</td>
<td>Install and configure SAP 3D Visual Enterprise Generator on the master computer</td>
</tr>
<tr>
<td>3</td>
<td>Activate purchased SAP 3D Visual Enterprise Generator modules on the master computer</td>
</tr>
<tr>
<td>4</td>
<td>Install SAP 3D Visual Enterprise Generator Administration on any client computers to administer SAP 3D Visual Enterprise Generator remotely</td>
</tr>
<tr>
<td>5</td>
<td>Install and configure SAP 3D Visual Enterprise Generator on additional computers as required if you are setting up a server farm. These are called the slave computers: computers that are added to the farm for additional processing capacity.</td>
</tr>
</tbody>
</table>

**Note**

As an alternative to adding a slave computer for extra processing capacity, additional processors and memory can be added to the master computer.

The following table can be used as a step-by-step guide to installing and configuring SAP 3D Visual Enterprise Generator in a minimal configuration. This table is divided into two columns and separates a SAP 3D Visual Enterprise Generator Master setup from SAP 3D Visual Enterprise Generator Slave installation.

#### Note

- Decide whether you are implementing a standalone (master) or server farm (slave) system landscape and then work through the ordered steps in the table completing every item in required columns in the order they appear.
- The rows of the table are divisions representing prerequisites that have been fulfilled by steps in the previous rows. You must complete all the steps in the columns of each row before proceeding on to the next row.

Each box in the table represents a configuration step. It corresponds directly to a section within this document. When working through sections, complete all contained sections and referenced sections.

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>SAP 3D Visual Enterprise Generator Master</th>
<th>SAP 3D Visual Enterprise Generator Slave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Install and configure Windows Server and any updates</td>
<td>Install and configure Windows Server and any updates</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>SAP 3D Visual Enterprise Generator Master</td>
<td>SAP 3D Visual Enterprise Generator Slave</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Install and configure IIS (see the <em>Installing and Configuring IIS</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td></td>
</tr>
<tr>
<td>IIS installed</td>
<td>Microsoft .NET Framework 4.6 – Installation and Verification (see the <em>Installing and Verifying Microsoft .NET Framework 4.6</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td>Microsoft .NET Framework 4.6 – Installation and Verification (see the <em>Installing and Verifying Microsoft .NET Framework 4.6</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
</tr>
<tr>
<td></td>
<td>Create and configure SAP 3D Visual Enterprise Generator Service User (see the <em>Creating and Configuring SAP 3D Visual Enterprise Generator Service User</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install and configure MSMQ (see the <em>Installing and Configuring MSMQ</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Create and Configure the SAP 3D Visual Enterprise Generator Network Share (see the <em>Creating and Configuring SAP 3D Visual Enterprise Generator Network Share</em> section of <em>Configuring Microsoft Windows Server</em> [page 38])</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install and Configure SAP 3D Visual Enterprise Generator on a Master Computer (see <em>Installing and Configuring an SAP 3D Visual Enterprise Generator</em> [page 47])</td>
<td>Install and Configure SAP 3D Visual Enterprise Generator Slave Computers (see <em>Installing SAP 3D Visual Enterprise Generator on Slave Computers</em> [page 64])</td>
</tr>
<tr>
<td>SAP 3D Visual Enterprise Generator Master Installed and Configured</td>
<td>Licensing CAD Modules (see <em>Licensing CAD Modules</em> [page 77])</td>
<td>Install and Configure SAP 3D Visual Enterprise Generator Slave Computers (see <em>Installing SAP 3D Visual Enterprise Generator on Slave Computers</em> [page 64])</td>
</tr>
</tbody>
</table>
3 Preparation

3.1 System Requirements

3.1.1 Hardware Requirements

You must have the following hardware installed for the SAP Visual Enterprise Generator master and client computers to function correctly. The administrator or a user with administrative rights must perform all installations:

**Note**

The SAP 3D Visual Enterprise Generator computer refers to the computer where the processing engine and SAP 3D Visual Enterprise Generator Administration is installed. The SAP 3D Visual Enterprise Generator client computer refers to the computer where only SAP 3D Visual Enterprise Generator Administration is installed.

**Note**

- The speed and number of processors depend on the number of models to be processed and the desired response time.
- More RAM may be required for large model and texture sizes
- The required amount of working disk space depends on the number of graphics to be processed simultaneously and the average size of the graphics files.

**Minimum Hardware Requirements**

Table 14:

<table>
<thead>
<tr>
<th>Hardware</th>
<th>SAP 3D Visual Enterprise Generator Computer</th>
<th>SAP 3D Visual Enterprise Generator Client Computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Xeon 64-bit or AMD equivalent</td>
<td>64-bit Intel or AMD processor</td>
</tr>
<tr>
<td>Number of cores</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Operating System</td>
<td>64-bit</td>
<td>64-bit</td>
</tr>
<tr>
<td>RAM</td>
<td>16 GB (4GB per core)</td>
<td>4 GB</td>
</tr>
<tr>
<td>Hard disk space</td>
<td>200 GB</td>
<td>5 GB</td>
</tr>
<tr>
<td>Graphics card</td>
<td>N/A</td>
<td>3D hardware accelerator with 128 MB of RAM</td>
</tr>
</tbody>
</table>
Recommended Hardware Requirements

Table 15:

<table>
<thead>
<tr>
<th>Hardware</th>
<th>SAP 3D Visual Enterprise Generator Computer</th>
<th>SAP 3D Visual Enterprise Generator Client Computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Xeon 64-bit or AMD equivalent</td>
<td>Pentium 4 3.6 GHz or higher</td>
</tr>
<tr>
<td>Number of cores</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Operating System</td>
<td>64-bit</td>
<td>64-bit</td>
</tr>
<tr>
<td>RAM</td>
<td>16 GB (4GB per core)</td>
<td>8 GB</td>
</tr>
<tr>
<td>Hard disk space</td>
<td>1000 GB</td>
<td>20 GB</td>
</tr>
<tr>
<td>Graphics card</td>
<td>N/A</td>
<td>3D hardware accelerator with 1 GB of RAM</td>
</tr>
</tbody>
</table>

3.1.2 Software Requirements

You must install the following software in order for SAP 3D Visual Enterprise Generator master and client computers to function correctly.

Prerequisites

- You have ensured that there are no previous SAP 3D Visual Enterprise Generator installations on the machine.
- For the SAP 3D Visual Enterprise Generator production system landscape, you have installed the following applications and applied all recommendations and best practices for SAP 3D Visual Enterprise Generator products and Microsoft applications as described in the following table:

Software Requirements

i Note

The SAP 3D Visual Enterprise Generator computer refers to the computer where the processing engine and SAP 3D Visual Enterprise Generator Administration is installed. The SAP 3D Visual Enterprise Generator client computer refers to the computer where only SAP 3D Visual Enterprise Generator Administration is installed.
Table 16:

<table>
<thead>
<tr>
<th>Recommended</th>
<th>SAP 3D Visual Enterprise Generator Computer</th>
<th>Web Server</th>
<th>Database Server (not required for Minimal installation scenario)</th>
<th>SAP 3D Visual Enterprise Generator Client Computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows Server 2008 R2 (with latest service pack) operating system</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet Information Services (IIS) 7.0 or later, configured to run ASP.NET applications using the .NET Framework 4</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The default application pool (IIS) should not use the network service account. It should be configured to run with the user account which has been granted access to MSMQ, and SAP 3D Visual Enterprise Generator Share. IIS should have the HTTP Redirect feature switched on.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended</td>
<td>SAP 3D Visual Enterprise Generator Computer</td>
<td>Web Server</td>
<td>Database Server (not required for Minimal installation scenario)</td>
<td>SAP 3D Visual Enterprise Generator Client Computer</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------</td>
<td>------------</td>
<td>---------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Microsoft Message Queuing ( MSMQ) (version supplied with your operating system)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Note**

For message queues to be created correctly, the name of each computer running SAP 3D Visual Enterprise Generator must be 15 characters or less.

| Microsoft SQL Server 2008 R2 Instance (with latest service pack, SQL Agent) with collation set to Accent Sensitive, Case Insensitive, and Mixed Mode Authentication. | X | X | X | X |

**Note**

SAP 3D Visual Enterprise Generator is compatible with SQL Server 2008 R2, 2012 R2, and 2014.

**Note**

SQL Server is only required for a stand-alone installation.

<table>
<thead>
<tr>
<th>Microsoft .NET Framework 4.6</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft DirectX 9.0c</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Microsoft Internet Explorer 8 and up</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
### Recommended

<table>
<thead>
<tr>
<th>Recommended</th>
<th>SAP 3D Visual Enterprise Generator Computer</th>
<th>Web Server</th>
<th>Database Server (not required for Minimal installation scenario)</th>
<th>SAP 3D Visual Enterprise Generator Client Computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP 3D Visual Enterprise Author</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See the SAP 3D Visual Enterprise Author Administrator Guide for more information.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAP 3D Visual Enterprise Viewer</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See the SAP 3D Visual Enterprise Viewer Administrator Guide for more information.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Windows Messaging Instrumentation (WMI) Service</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

A Windows account with local administrative privileges must be created for each user that will maintain configuration or administer the SAP 3D Visual Enterprise Generator service. This account must have full modification control permissions on the remote administration or <share> directory.

**Recommendation**

We recommend creating a specific Windows user group for SAP 3D Visual Enterprise Generator administrators.

If components are installed on separate machines, you must use a domain account. A local account should only be used when all components are installed on the same computer.

### 3.1.3 ERP Prerequisites

The following table shows minimum service pack levels required when integrating with SAP ERP to take advantage of the features and capabilities available in SAP 3D Visual Enterprise Generator.
Minimum (Manual actions required)

- ECC 6.0 EHP6 SP10
- ECC 6.0 EHP6 HANA SP04
- ECC 6.0 EHP7 SP03
- ECC 6.0 EHP8 SP00
- S/4HANA OP SP00

Recommended

- ECC 6.0 EHP6 SP17
- ECC 6.0 EHP6 HANA SP10
- ECC 6.0 EHP7 SP12
- ECC 6.0 EHP8 SP03
- S/4 HANA OP SP03

3.2 Obtaining License Keys for SAP 3D Visual Enterprise Generator

The process for acquiring a license key can be summarized as follows:
1. Get access to the license key system
2. Get license key from the license key system

Getting Access to License Key System

Prerequisites
Before you can proceed, ensure you have the contact details of your Account Executive.

Procedure
If you don’t already have access to the license key system, the process for getting access to is as follows:
- Liaise with your Account Executive to request for login to the license key system.
- Your Account Executive will liaise with Contracts Team to arrange for you to have access to the license key system.
- The Contracts Team will grant you access to the license key system, and let your Accounts Executive know when this is done. Your Account Executive will then let you know when you have access to the license key system.
Getting License Keys from the License Key System

Prerequisites
Ensure you have access to the license key system before attempting to get the license keys.

Procedure
2. Click on the + button. The Add New System dialog window displays.
3. In the Add New System dialog, enter the following values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>SAP 3D Visual Enterprise Generator</td>
</tr>
<tr>
<td>Version</td>
<td>SAP 3D Visual Enterprise Generator 9.0</td>
</tr>
</tbody>
</table>

   Once you’ve entered these values, additional fields will display in the Add New Systems dialog.
4. Enter the following values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>System ID</td>
<td>VEG</td>
</tr>
<tr>
<td>System Name</td>
<td>&lt;your choice of name for the system&gt;</td>
</tr>
<tr>
<td>System Type</td>
<td>Productive System</td>
</tr>
</tbody>
</table>

5. Click Continue. The license key will navigate to the Details tab.
6. Click the + button under the License Keys section. The Create License Key Request dialog will display.
7. Enter the following values in the Create License Key Request dialog:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>License Type</td>
<td>Visual Enterprise Generator</td>
</tr>
<tr>
<td>Hardware Key</td>
<td>The hardware key can be found in the Visual Enterprise Generator Configurator application, either on the Licensing tab, or in the Configure Licensing page of the configuration wizard.</td>
</tr>
<tr>
<td>Quantity (of CPUs)</td>
<td>The number of CPUs the license should be entitled for.</td>
</tr>
<tr>
<td>Valid until</td>
<td>The license key expiry date.</td>
</tr>
</tbody>
</table>

8. Click the Add button. The license key details will display under the License Keys section.
9. Click the Generate button to generate the license key.
3.3 Configuring Microsoft Windows Server

The following sections describe how to install required Microsoft Windows Server Components.

Specific steps are provided for the recommended operating system (in this case Microsoft Windows Server 2008 R2) or component. For more information, see the table in the Preparation section of this Guide.

Prerequisites

You have installed Microsoft Windows Server and all the applicable service packs and updates.

Procedure

Creating and Configuring the SAP 3D Visual Enterprise Generator Network Share

You must create a network shared directory <share> that SAP 3D Visual Enterprise Generator can use for file sharing (in a farm environment) and a processing cache. The <VEGServiceUser> and any other Windows users that may be required to make configuration changes to SAP 3D Visual Enterprise Generator must have full access to this share.

1. Create a directory anywhere on your local file system by right clicking on the directory in Microsoft Windows Explorer and choosing Properties > Sharing > Share.
2. Full control over the share should be given to <VEGServiceUser> account and Microsoft Windows account that is configuring SAP 3D Visual Enterprise Generator.
3. Write access to the share must be given to any additional users that might be authoring SAP 3D Visual Enterprise Generator processes or modifying the configuration.

Note

The <share> is used to store working folders while processing, and in default configuration all working data is deleted once processing job has completed.

Creating and Configuring SAP 3D Visual Enterprise Generator Service User

The core component of SAP 3D Visual Enterprise Generator is a Windows service application. To allow this service to run when no other user is logged in to the machine hosting SAP 3D Visual Enterprise Generator and to enable network file transfers and other communication while running, you will need to create a Windows User specifically for the server. Depending on your desired system landscape this user may need to be a domain user account. However, the demands of your chosen system landscapes may only require this user to be a local machine user.

Once you have created the <VEGServiceUser> account you need to configure this account with the following settings (as a minimum):

- The ability to write to the Microsoft Windows Event log
- The ability to connect to an SMTP server (port 25) if you want to configure SAP 3D Visual Enterprise Generator to send e-mails
The same account should be used for all servers if running a SAP 3D Visual Enterprise Generator farm configuration.

The Logon as a Service and Logon as a Batch rights granted through Security Policy for all computers on which SAP 3D Visual Enterprise Generator engines are going to run.

**Installing and Configuring IIS**

IIS is supplied with the Microsoft Windows Server family of operating systems and is a critical component of SAP 3D Visual Enterprise Generator; client applications communicate with SAP 3D Visual Enterprise Generator using Web services hosted by IIS.

**Note**

There are multiple versions of IIS, depending on which operating system you are using. Each version has different installation options and features. For more information, see the Microsoft IIS documentation at [http://www.iis.net/ConfigReference](http://www.iis.net/ConfigReference).

1. Open the Control Panel and choose **Programs and Features > Turn Windows Features on or off**. The Server Manager is displayed listing the currently installed roles and features.

2. Choose **Roles > Add Roles**. The **Add Roles Wizard** opens.

3. Choose **Next** and check the **Application Server** checkbox. The **Required Features** screen is displayed, choose **Add Required Features**.

4. Check the **Web Server (IIS)** checkbox.

**Caution**

Windows Server 2012 has different default settings for Web Server (IIS) to Windows Server 2008 R2. When configuring IIS in Windows Server 2012, ensure that in the **Add Roles and Features Wizard > Roles > Web Server (IIS) > Web Server > Application Development** you select all the **.NET Extensibility** and **ASP.NET** options and explore the feature tree for Web Server node to ensure that all of the features specified in this section are installed. For more information and functional equivalents, see the Microsoft documentation at [http://go.microsoft.com/fwlink/?LinkID=216771](http://go.microsoft.com/fwlink/?LinkID=216771).

5. Choose **Next**. The Introduction to **Application Server** screen is displayed.

6. Choose **Next**. The **Select Role Services** screen for Application Server is displayed.

7. Select from the list to install the following features:

   ○ **.NET Framework 4.6**
   ○ **Web Server (IIS) Support**. (The Add role services and features required for Web Server (IIS) Support dialog is displayed. Choose to Add Required Role Services)
   ○ **COM (+) Network Access**
   ○ **Distributed Transactions**
     ○ **Incoming Remote Transactions**
     ○ **Outgoing Remote Transactions**
   ○ **WS-Atomic Transactions**

**Note**

Application Server requires Message Queuing. **WSAtomicTransactions** is required to support SSL.
Some versions of Windows server may display a hierarchy of checkboxes for the Web Server (IIS) required components instead of the Add Required Role Services dialog. If presented with this alternative, ensure that the features stated above are configured.


9. Select the option that is best for your environment.

**Recommendation**

We recommend that you create a self-signed certificate for testing locally. You can then choose an existing certificate at a later time.

10. Choose Next. The Introduction to Web Server (IIS) is displayed.

11. Choose Next. The Select Role Services screen for Web Server (IIS) is displayed.

12. Confirm that the following role services are flagged for installation:
   - Common HTTP Features (Install all of these unless local policy prohibits)
     - HTTP Redirection (required)
     - WebDAV Publishing (optional)
   - Application Development (Install all of these unless local policy prohibits)
     - ASP (optional)
     - CGI (optional)
     - Server Side Includes (optional)
   - Health and Diagnostics (Install all of these unless local policy prohibits)
     - Custom Logging (optional)
     - ODBC Logging (optional)
   - Security (Install all of these unless local policy prohibits)
     - Basic Authentication (Required)
   - Performance (optional)
   - Web Server
   - Management Tools (Install all of these unless local policy prohibits)
     - IIS Management Compatibility (optional)
   - FTP Server (optional)

13. Choose Next and then choose Install to confirm the components that you want to install. The selected components are installed and the Installation Progress screen is displayed.

14. Choose Close when the installation is complete.

**Installing and Configuring MSMQ**

MSMQ is supplied with the Microsoft Windows Server family of operating systems and is a critical component of SAP 3D Visual Enterprise Generator: MSMQ passes instructions to SAP 3D Visual Enterprise Generator to begin processing files.

**Note**

There are multiple versions of MSMQ, depending on which operating system you are using. Each version has different installation options and features. For more information, see the Microsoft MSMQ documentation at [http://msdn.microsoft.com/en-us/library/ms711472%28v=VS.85%29.aspx](http://msdn.microsoft.com/en-us/library/ms711472%28v=VS.85%29.aspx).
For message queues to be created correctly, the name of each computer running SAP 3D Visual Enterprise Generator must be 15 characters or less.

1. Open the **Control Panel** and choose **Programs** ➤ **Programs and Features** ➤ **Turn Windows Features on or off**. The Server Manager is displayed listing the currently installed roles and features.

2. Choose **Features** ➤ **Add Features**. The **Add Features Wizard** is displayed.

3. Expand **Message Queuing** ➤ **Message Queuing Services** checkbox nodes.

4. Ensure that **Message Queuing Server** checkbox is selected for installation, and select to install the required features when prompted.

   **Note**

   Disregard any checkboxes relating to applications that are already installed.

5. Choose **Next**. The confirm installation selections screen is displayed.

6. Choose **Install**. The system installs the selected components.

   **Note**

   Microsoft Windows may prompt you to provide the installation CD to complete this part of the MSMQ installation depending on your Windows installation configuration. Follow the instructions on the screen if this occurs.

7. Choose **Close**.

### Installing and Verifying Microsoft .NET Framework 4.6

Microsoft .NET Framework 4.6 should already be installed on your system. However, depending on the installation sequence and version of Windows Server you are using key components of the .NET Framework may not be configured correctly.

Verify that Microsoft .NET Framework 4.6 is installed on the SAP 3D Visual Enterprise Generator server as follows:

1. **Navigate to** `%windir%\Microsoft.NET\`.  
2. **Expand** the Framework64 directory if it exists.  
3. **Look for** a directory named `v4.0.30319`. If this exists then the .NET Framework 4.6 is installed on your server.  
   If this folder does not exist, obtain and run the .NET Framework 4.6 Installer from[http://www.asp.net](http://www.asp.net).

Verify that Web Server (IIS).NET Framework 4.6 components are configured as follows:

1. **Navigate to** Control Panel ➤ Administrative Tools ➤ Internet Information Services (IIS) Manager.  
2. **Select** the Root Node (Server Node) on the Connections panel. The Server Home pane opens in the center panel of the Microsoft Management Console.  
3. In the IIS section, double-click on the ISAPI and CGI Restrictions icon. A list of ISAPI and CGI components is displayed.  
4. **Verify** that at least one item named ASP.NET v4.0.30319 is present and ensure that all items with this name are allowed.

If the ASP.NET 4 component is not visible in the list then do the following:

1. Open a command prompt (Run as Administrator).  
2. **Navigate to** `%windir%\Microsoft.NET\Framework64\v4.0.30319`.  
3. Run aspnet_regiis -i.
4. When `aspnet_regiis` reports that it has finished execute `iisreset` or restart IIS from the Internet Information Services (IIS) Manager.
6. Repeat steps 2 to 4 to ensure that the ASP.NET components have been configured.

### 3.4 Installing Microsoft SQL Server 2008 R2

#### Remember

SQL Server is required only if you are configuring using **Standalone** Mode.

This section provides a detailed example of preparing the SAP 3D Visual Enterprise Generator Database Server with the following:

- Microsoft Windows Server 2008 R2 x64
- Microsoft SQL Server 2008 Web, Standard or Enterprise Edition R2 x64
- No Failover cluster
- Microsoft SQL Server 2008 workstation components
- English language


#### Prerequisites


#### Procedure

**Installing Microsoft SQL Server 2008 R2**

#### Note

Installation differences may be encountered, depending on the current operating system.

1. Log on the physical database server as a user who is a member of the local Administrators group.
2. Obtain the Microsoft SQL Server installer from Microsoft.
3. Choose `setup.exe` to start the SQL Server database software installation.
4. Choose the **Installation** link in the left screen of the SQL Server Installation Center.
5. Choose *New SQL Server* standalone installation or add features to an existing installation.
6. On the *Product Key* screen, enter the license key and choose *Next*.
7. On the *License Terms* screen, accept the Microsoft software license terms and choose *Next*.
8. On the *Setup Support Files* screen, choose *Install*.
9. If there are no failed operations or warnings, choose *Next*. Otherwise, first check the warnings on the *Setup Support Rules* screen.
10. On the *Setup Role* screen, select the *SQL Server Feature Installation* and choose *Next*.
11. On the *Feature Selection* screen, select *Database Engine Services and Management Tools – Complete*.

   **Note**
   Modify the Shared Feature directories if required.

12. Choose *Next*. The *Installation Rules* screen displays and automatically runs diagnostics. If there are no failed items, choose *Next*.
13. On the *Instance Configuration* screen, select the *Default* instance type and choose *Next*.
14. On the *Disk Space Requirements* screen, review the disk usage and choose *Next*.
15. On the *Server Configuration* screen, enter a domain account for the SQL Server Agent.

   **Recommendation**
   Microsoft recommends the use of a domain account that is not a Windows administrator for the SQL Server services.

16. Ensure that all the service startup types are set to *Automatic*.
17. Choose the *Collation* tab page to verify the default Microsoft SQL Server collation setting.
18. Ensure that the case-insensitive collation setting is selected.

   **Caution**
   The default collation setting is determined by the Regional and Language Options of the server. Ensure that SAP 3D Visual Enterprise Generator uses the same collation setting.

19. Choose *Next*.
21. Enter a password for the SQL Server Systems Administrator account.

   **Note**
   Ensure the password is strong enough to pass the SQL Server authentication. You will need this password for the installation and administration of the SQL Server instance.

22. Do one of the following:
   - Choose *Add Current User* to add the current user to the account as an administrator.
   - Choose *Add* to add a different Windows account as an administrator, and then choose *OK*.

   **Note**
   This account will also have Systems Administrator privilege on the SQL Server instance.

23. Choose the *Data Directories* tab page and verify the database file locations.
24. Choose Next. The Error Reporting screen is displayed. Choose the error reporting option appropriate to your organization.
25. Choose Next. The Installation Configuration Rules screen is displayed and automatically run diagnostic tests. Ensure that the all installation rules have passed.
26. Choose Next and verify the components to be installed.
27. On the Ready to Install screen, choose Install and wait for the setup process to complete. The Installation Progress screen is displayed showing the installed components.
28. On the Complete screen, choose Close to finish the installation.
29. Choose Control Panel > Administrative Tools > Services and verify that the SQL Server Services are running.

Enabling Remote Connections for Microsoft SQL Server 2008 R2

SAP 3D Visual Enterprise Generator can be configured to access a Microsoft SQL Server instance that is on a remote machine; however, Microsoft SQL Server does not allow remote connections by default. If you try to connect to Microsoft SQL Server from a remote computer which has not been manually enabled for remote connections, you may receive an error.

Enabling remote connections for remote servers is a three-stage process consisting of the following steps:
1. Enable remote connections on each instance of Microsoft SQL Server to which you want to connect from a remote computer.
2. Ensure the Microsoft SQL Server Browser service is running.
3. Configure the firewall to allow network traffic that is related to Microsoft SQL Server and to the SQL Server Browser service.

Enabling Remote Access

1. Choose All Programs > Microsoft SQL Server 2008 > SQL Server Management Studio on the Start menu. The Microsoft SQL Server Management Studio is displayed.
2. Log onto the server using authentication option you require (Windows Authentication or SQL Server Authentication), and choose Connect.
3. Right-click the Database Engine node (this is the root node of the tree) and choose Facets. The View Facets screen is displayed.
4. On the View Facets screen, select the Server Configuration option from the Facet drop-down list.
5. Navigate to the RemoteAccessEnabled facet property and ensure it is set to True.
6. Choose OK to save your changes.

Checking the SQL Server Browse Service (Optional)

1. In the Windows Start menu, choose All Programs > Microsoft SQL Server 2008 > Configuration Tools > SQL Server Configuration Manager. The SQL Server Configuration Manager is displayed.
2. Select the SQL Server Services node and ensure that the browser service is running.
3. Close the SQL Server Configuration Manager.

Creating Firewall Exceptions for SQL Server

If you are running a firewall on the computer with Microsoft SQL Server 2008 R2 or 2012 R2, external connections to Microsoft SQL Server are blocked unless Microsoft SQL Server and the SQL Server Browser service can
communicate through the firewall. To ensure that communication through the firewall is possible, you must create an exception for each instance of Microsoft SQL Server that you want to accept remote connections. You must also create an exception for the SQL Server Browser service.

The procedures differ depending on the current operating system and the installed version of Microsoft SQL Server. See your system’s documentation if you are using a different firewall setup.

SQL Server uses an instance ID to form part of the path when you install its program files. You must identify the correct ID when creating an exception for each instance of SQL Server; described in the following procedure.

The subsections describe how to create a firewall exception for the different system configurations.

**Finding the SQL Server Instance ID**

1. In the Windows Start menu, choose **All Programs** and choose **Microsoft SQL Server 2008**.
2. Choose **Configuration Tools** > **SQL Server Configuration Manager**. The SQL Server Configuration Manager is displayed.
3. Select the **SQL Server Services** node, right-click the instance of SQL Server you require, and choose **Properties**. The **SQL Server Properties** screen is displayed.
4. On the **SQL Server Properties** screen, choose the **Advanced** tab page, locate the instance ID in the list, make a note of the name, and then choose **OK**.
5. Repeat the above steps for each instance of SQL Server.
6. Configure SQL Server Browser Service (optional):
   1. Right-click **SQL Server Browser** in the right pane, and choose **Properties**.
   2. On the **SQL Server Browser Properties** screen, choose the Advanced tab, locate the dump directory, make a note of the path, and then choose **OK**.
7. Close all property dialogs and the **SQL Server Configuration Connection** screen.
8. Continue at **Enabling Firewall Exceptions for SQL Server 2008 R2**.

**Creating Firewall Exceptions for SQL Server 2008 R2**

This section describes the procedure for creating an exception for each instance of SQL Server 2008 for which you want to accept remote connections. It also describes the procedures for creating an exception for the SQL Server Browser service.

### Note

These procedures apply to Windows Firewall for Windows Server 2008 R2. See your Microsoft Windows documentation if you are using a different system setup.

1. Ensure you have at hand the IDs for each instance of Microsoft SQL Server 2008 for which you want to accept remote connections.
2. In the Windows Start menu, choose **All Programs** > **Administrative Tools** > **Server Manager**. The Server Manager is displayed.
3. Expand the **Configuration** node, and then expand the Windows Firewall with **Advanced Security** node.
4. Select the **Inbound Rules** node, right-click the node, and then choose **New Rule**. On the **New Inbound Rule Wizard** screen, the **Rule Type** page is displayed.
5. Select the **Program** option and choose **Next**. The **Program** page is displayed.
6. On the **Program** page, navigate to the instance of SQL Server 2008 R2, for example, `C:\Program Files \Microsoft SQL Server\MSSQL.1\MSSQL\Binn\sqlservr.exe`. 
Caution

The path may be different depending on where the SQL Server is installed. “MSSQL.1” is a placeholder for the instance ID that you obtained in the previous procedure.

7. Choose Open and then choose Next.
8. On the Action page, choose the Allow the connection option and choose Next.
9. On the Profile page, ensure that all profile types are selected and choose Next.
10. On the Name page, enter a meaningful name and a description for the exception, for example, SQL Server 2008.
12. Repeat the above steps for each instance of SQL Server 2008 R2 that requires an exception.
13. Create an exception for the SQL Server 2008 Browser service as described in the section below.

Creating Firewall Exception for the SQL Server 2008 Browser Service

Follow the steps in Enabling Firewall Exceptions for SQL Server 2008 R2 above to create a rule that points to the SQL Server Browser service. For example, C:\Program Files\Microsoft SQL Server\90\Shared\sqlbrowser.exe.

Caution

The path may be different depending on where SQL Server is installed. For example, the path will be C:\Program Files (x86)\Microsoft SQL Server\90\Shared\sqlbrowser.exe for a 64-bit machine. “90” is a placeholder for the instance ID that you obtained in the previous procedure.
4  Installation

4.1  Installing SAP 3D Visual Enterprise Generator on a Master Computer

This section describes the process of installing SAP 3D Visual Enterprise Generator on a master computer. When installing SAP 3D Visual Enterprise Generator for the first time, it must first be installed on the master computer. If a master is not yet designated, SAP 3D Visual Enterprise Generator nominates the existing computer as the master. If a master has been designated, SAP 3D Visual Enterprise Generator adds the computer as a slave to the existing installed master server.

Prerequisites

- You have created the SAP 3D Visual Enterprise Generator <share> directory.

  **Note**
  When you install SAP 3D Visual Enterprise Generator on the master server for the first time, the master initializes the SAP 3D Visual Enterprise Generator shared directory.

- For performance reasons, you may want to consider turning virus scanning off for any SMTP scanning, the SAP 3D Visual Enterprise Generator share, and the folder where SAP 3D Visual Enterprise Generator files are installed (C:\Program Files\SAP\).

  **Caution**
  This action will result in a reduction in security.

Procedure

**Installing SAP 3D Visual Enterprise Generator on a Master Computer**

1. Close all applications and log on with administrative rights to the computer that will be used as the SAP 3D Visual Enterprise Generator computer.
2. Navigate to, and double-click the SETUP.exe file in Microsoft Windows Explorer.
3. Choose Next when the installer starts.
4. On the Installer Section screen, do one of the following:
   - Choose **Select All** to ensure that all features are installed on the local hard drive. This is the recommended option.
5. Choose Next. The installer location screen is displayed.

6. Do one of the following:
   - Accept the default location in which to install SAP 3D Visual Enterprise Generator.
   - Choose Browse, navigate to and select the installation folder you require, and then choose OK.

7. Choose Next. The installation begins automatically.

8. Choose Close when the installation is complete. The SAP 3D Visual Enterprise Generator Configuration Wizard is displayed.

### 4.2 Configuring SAP 3D Visual Enterprise Generator on a Master Computer

This section describes the process of configuring SAP 3D Visual Enterprise Generator on a master computer. The configuration workflow varies a great deal, depending on your setup, and each setup scenario displays different windows in the Wizard.

The process comprises:
- Configuring the shared directory and database
- Configuring the database and SAP 3D Visual Enterprise Generator engine password
- Configuring security and owner rights
- Configuring the SAP 3D Visual Enterprise Generator service account
- Configuring message queues and logging settings
- Configuring licensing settings
- Configuring e-mail settings
- Completing registration and activation
- Choosing an automatic configuration

**Recommendation**

Depending on the number of processors that comprise the master server, you can configure it to designate any of its own additional processors as processing engines. We recommend that the maximum number of processors to allocate as processing engines is \( n-1 \) where \( n \) is total number of processors on the master server.
Features

Figure 5: Configuration Workflow

Start

Select VEG share

Configure VEG Farm certificate

Configure VEG Slave Account

Configure MSMQ Address Specification

Select Deployment Type

Slave Server or Web API Proxy

Master Server

Select Processing Mode

Integrated

Standalone

Configure Integrated DB

Configure Standalone DB

Configure VEG Share

Configure VEG Master account

Configure MSMQ

Configure IIS Application Pool

Configure DMS Integration Web Service

Configure VDI Integration Web Service

Configure Conversion API Web Service

Configure Subscription and Notifications

Configure Email

Configure Logging

Configure Licensing

Configure Ports

Configure Processing Engines

Configure Workflows

Rapid Configuration

Master Server or Slave Server

Web API Proxy

Slave Server

Master Server

Standalone

Integrated

Configure IIS Application Pool

Configure Web API

End

Confirm Configuration

Apply Configuration
**Master Server Setup**

When you are configuring a Master Server, the screens described in the following table will display:

<table>
<thead>
<tr>
<th>Window</th>
<th>Description</th>
<th>Integrated</th>
<th>Standalone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Deployment Type</td>
<td>Indicates the deployment type is the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● <strong>Master Server</strong>: The server is set up as a master of a SAP 3D Visual</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enterprise Generator farm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select Processing Mode</td>
<td>The processing mode is the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● <strong>Integrated</strong>: Server is set up for integration SAP ERP systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● <strong>Standalone</strong>: Server is set up for standalone data processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure database</td>
<td>Configures the database</td>
<td>Configure Integrated DB</td>
<td>Configure Standalone DB</td>
</tr>
<tr>
<td>Configure Share Directory</td>
<td>Sets the location of the share directory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure VEG Master Account</td>
<td>Configures the SAP 3D Visual Enterprise Generator service user account</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure MSMQ</td>
<td>Configures the message queues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure IIS Application Pool</td>
<td>Sets an application pool name for web services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure Web Service</td>
<td>Selects the appropriate web site</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● Configure DMS Integration Web Service: Creates a DMS integrated web</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>service virtual directory</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● Configure VDI Integration Web Service: Creates a VDI integrated web</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>service virtual directory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure E-Mail</td>
<td>Configures email settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure Logging</td>
<td>Configures settings for logging</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Window Description

<table>
<thead>
<tr>
<th>Window</th>
<th>Description</th>
<th>Integrated</th>
<th>Standalone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure Ports</td>
<td>Configures the port numbers for SAP 3D Visual Enterprise Generator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure Licensing</td>
<td>Configures the license settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure Engine Processors</td>
<td>Sets the number of engines processors required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configure Workflow Setup Script</td>
<td>Runs rapid configuration for an integrated environment</td>
<td>Runs rapid configuration for an integrated environment</td>
<td></td>
</tr>
<tr>
<td>Confirm Configuration</td>
<td>Commits the selected configuration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply Configuration</td>
<td>Applies the selected configuration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Configuration

Additional configuration options are available from within SAP 3D Visual Enterprise Generator Administration. For example, if you selected to configure SAP 3D Visual Enterprise Generator manually, you can load the operations and processes that you need at a later time. You can also import PDF templates for use with publishing PDF documents, and you can configure SAP 3D Visual Enterprise Generator to authenticate with LDAP.

See the SAP 3D Visual Enterprise Generator application help for further information on manual configuration.

Continue at the section on [Activating Modules](#) if you have modules to activate, or continue at [Installing and Configuring Slave Computers](#) if you want to configure SAP 3D Visual Enterprise Generator to run in a farm configuration; otherwise continue at [Starting and Stopping SAP Visual Enterprise Generator](#).

### 4.2.1 Configuring Standalone Mode

#### Context

If you are configuring for a standalone setup, proceed as follows:

#### Procedure

1. Ensure that the **SAP 3D Visual Enterprise Generator Configuration Wizard** is displayed. Choose **Next**.
2. On the **Select SAP 3D Visual Enterprise Generator Deployment Type** screen, select your deployment type as **Master Server**. The server is set up as a master of a SAP 3D Visual Enterprise Generator farm. Choose **Next**.
3. On the Select SAP 3D Visual Enterprise Generator Processing Mode screen, select your processing mode as Standalone. The server is set up for standalone data processing. Choose Next.

4. **Note**

   Ensure that you use the same user name and password for every computer in the SAP 3D Visual Enterprise Generator farm where you plan to install SAP 3D Visual Enterprise Generator.

   **Tip**

   Use the same passwords for both fields.

The wizard opens the Configure Asset Database screen. Enter a password for the Server user that SAP 3D Visual Enterprise Generator will use to communicate with the database, and a password for the default SAP 3D Visual Enterprise Generator Security Administrator account. Ensure that the password is strong enough to pass authentication and make a note of it for later use. Note that you may choose a different database file placement strategy for performance reasons. We recommend that you significantly increase the size of the Data file Initial size and automatically extend the database by options. The initial size value should be large enough to allow enough space for at least one year’s expected data volume.

5. Enter the name of the SQL Server (and Instance ID if applicable) you intend to use or choose the Browse button to navigate to a server and instance on your network. If you are using an SQL Server that is on a different machine than the one that will host the SAP 3D Visual Enterprise Generator service then you will need to make sure that the firewall settings and remote administration are configured on the SQL Server machine. For information about how to set this up, refer to the Installing SQL Server sections of the preparation part of this guide. The selected database must have mixed (Windows on SQL Server) authentication turned on. For further details, see the Microsoft-provided online information for SQL Server and Authentication, Mixed Mode.

6. Choose OK to display the Select Security Options screen.

7. On the Select Security Options screen, select the security and owner rights options you require, and then choose OK. Select the Security Administrator is Project Administrator option, if you are installing SAP 3D Visual Enterprise Generator in a large organization; for a small business, select the Separate Security and Project Administrators option.

8. On the Configure Share Directory screen, navigate to, and select the location of the SAP 3D Visual Enterprise Generator <share> directory. Note that the location uses the UNC naming convention. In an upgrade scenario you will be using an existing <share> at this point. SAP 3D Visual Enterprise Generator automatically scans the <share> directory you enter to see whether it has already been initialized. If the share has not been initialized, you will see a message in the validation results text box stating Uninitialized shared directory. farm.config does not exist in share. This validation message is normal for a new installation.

9. **Note**

   In an upgrade scenario you will be using an existing <share> at this point. SAP 3D Visual Enterprise Generator automatically scans the <share> directory you enter to see whether it has already been initialized. If the share has not been initialized, you will see a message in the validation results text box stating Uninitialized shared directory. farm.config does not exist in share. This validation message is normal for a new installation.
Choose Next. When prompted to initialize the share as a SAP 3D Visual Enterprise Generator shared directory, choose Yes. An initializing share progress pop-up is displayed. When this completes, the wizard opens the Configure the SAP 3D Visual Enterprise Generator Service Account screen.

10. Enter the user account and password that you created during the preparation phase for SAP 3D Visual Enterprise Generator to use as its service account (this is the same account that was given Read/Write access to the <share> directory). Ensure that you use the same user name and password for every computer in the SAP 3D Visual Enterprise Generator farm where you plan to install SAP 3D Visual Enterprise Generator. Choose Next. The Changing Service account pop-up displays progress. When this completes, the wizard opens the Configure Message Queues screen.

11. **Recommendation**

   We recommend that you use the default message queue settings.

   The Configure Message Queues screen is used to configure the names and locations of the primary default message queues. These are the following:

<table>
<thead>
<tr>
<th>Message Queue</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming Queue</td>
<td>Used by the SAP 3D Visual Enterprise Generator middle tier to add a processing task to the internal processing queue</td>
</tr>
<tr>
<td>Engine Queue</td>
<td>A mechanism by which the Processing Engine controller notifies engines of processing tasks to execute. All farm servers monitor this queue for work that is required to be performed</td>
</tr>
<tr>
<td>Response Queue</td>
<td>A mechanism by which a slave computer notifies the controller of the status or outcome of a task that it was assigned to execute</td>
</tr>
<tr>
<td>Job Manager Queue</td>
<td>A mechanism by which the SAP 3D Visual Enterprise Generator service communicates with the Job Manager</td>
</tr>
</tbody>
</table>

12. Choose Next, and if you are prompted to create the message queues, choose Yes.

13. **Note**

   You must have read and write access to the file system directory being mapped to the API virtual directory.

   On the Configure IIS Application Pool screen, enter the Web application pool name, <VEGServiceUser> username and password to create or configure the IIS application pool that will be used by the SAP 3D Visual Enterprise Generator Integration API. Choose Next.

14. The Configure Web API Virtual Directory screen is displayed. Choose Next to accept the default settings, noting that the username must have the privilege set for Logon as a Batch. If your Web server does not have SSL certificate installed, do not accept the default settings; instead deselect the Require SSL check box to use HTTP instead of HTTPS.

15. The Configure Conversion API Virtual Directory screen is displayed. Select the appropriate web site and ensure that the Require SSL check box is checked. Choose Next.

16. On the Configure Message Queues Address Specification screen, accept the specific communication settings for the configured MSMQ: database, connection method, workspace to be used, and Incoming Message queue. If needed, change default network protocol to use for MSMQ. Choose Next to test connection to workspace and MSMQ.

17. If you plan to use subscriptions and notifications, select the Configure Subscriptions and Notifications check box.
18. Choose Next. The **Configure E-Mail Settings** screen is displayed. Enter the e-mail account, to which you want SAP 3D Visual Enterprise Generator to send e-mail notifications, and the fully-qualified hostname of the SMTP server from which you want SAP 3D Visual Enterprise Generator to send e-mail notifications.

19. The **Configure Logging** screen is displayed. You must configure SAP 3D Visual Enterprise Generator with a certain level of logging to ensure that administrative messages (warnings, errors, general information, and debug messages) are saved. Choose one of the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trace</strong></td>
<td>Logs errors, warning and informational messages and to create additional detailed log file used for diagnostic purposes</td>
</tr>
<tr>
<td><strong>Errors, Warnings and Information</strong></td>
<td>Logs errors, warnings and informational messages</td>
</tr>
<tr>
<td><strong>Errors and warnings</strong></td>
<td>Logs errors and warnings</td>
</tr>
<tr>
<td><strong>Errors only</strong></td>
<td>Logs only errors</td>
</tr>
</tbody>
</table>

20. Choose Next to display the **Configure Licensing** screen. Choose one of the following to register and activate SAP 3D Visual Enterprise Generator:

<table>
<thead>
<tr>
<th>Option</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Import License</strong></td>
<td>If you already have a license file, choose <strong>Import License</strong> button, navigate to and select the file, and then choose Open. SAP 3D Visual Enterprise Generator is activated.</td>
</tr>
<tr>
<td><strong>Create 90 Day Temporary License</strong></td>
<td>If you have not yet requested your permanent license, choose the <strong>Create 90 Day Temporary License</strong> button to generate a 90 day license for SAP 3D Visual Enterprise Generator. This temporary license allows 90 days in which to arrange a permanent license.</td>
</tr>
</tbody>
</table>

Once you have imported a license file or generated a temporary license, the **Active license details** field will display information regarding the selected license.

21. Choose Next to display the **Configure Ports** screen. The port numbers default to the following values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lock Manager Port</strong></td>
<td>Used by internal SAP 3D Visual Enterprise Generator components when communicating with the lock manager component. The default value for <strong>Lock Manager Port</strong> is 8099.</td>
</tr>
<tr>
<td><strong>Slave Port</strong></td>
<td>Used by the master server when communicating with slave servers. The default value for <strong>Slave Port</strong> is 8087.</td>
</tr>
<tr>
<td><strong>Master Port</strong></td>
<td>Used by slave servers when communicating with the master server. The default value for <strong>Master Port</strong> is 8086.</td>
</tr>
<tr>
<td><strong>Legacy Administration Port</strong></td>
<td>Used by the legacy SAP 3D Visual Enterprise Generator administration application when communicating with the master server (deprecated). The default value for <strong>Legacy Administration Port</strong> is 8085.</td>
</tr>
<tr>
<td><strong>Administration Port</strong></td>
<td>Used by the SAP 3D Visual Enterprise Generator administration application when communicating with the master server. The default value for <strong>Administration Port</strong> is 8091.</td>
</tr>
<tr>
<td><strong>File Transfer Port</strong></td>
<td>Used by the SAP 3D Visual Enterprise Generator administration application when transferring files to and from the master server. The default value for <strong>File Transfer Port</strong> is 8090.</td>
</tr>
</tbody>
</table>
You can leave the port settings to use the default values. If you need to change the port numbers, make sure that the port numbers are between 1024 and 49151 (inclusive), and that each port does not have the same value as the other ports listed on this Configure Ports screen.

22. Choose Next to display the Configure Engine Processors screen. Set the required number of engine processors and choose Next.

23. On the Select Processing Configuration screen, choose one of the following to select a configuration type:

<table>
<thead>
<tr>
<th>Configuration Type</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong></td>
<td>Automatically configures SAP 3D Visual Enterprise Generator to allow basic asset and assembly workflow processing, building of secondary derivatives during workflow processing, and building derivatives from a collection</td>
</tr>
<tr>
<td><strong>Conversion Server</strong></td>
<td>Configures SAP 3D Visual Enterprise Generator with the default conversion server configuration and allows workflow processing when SAP 3D Visual Enterprise Generator is used with a PLM system</td>
</tr>
<tr>
<td><strong>Manual</strong></td>
<td>Configures the system manually at a later time</td>
</tr>
</tbody>
</table>

When you select **Standard**, SAP 3D Visual Enterprise Generator is connected and ready to run basic asset and assembly workflows.

24. Having selected a configuration type, choose Commit. The Configuration Complete appears. When complete, the Finish button will be enabled. Choose Finish to exit the configuration wizard. The SAP 3D Visual Enterprise Generator Configuration screen is displayed.

**Next Steps**

To complete your installation, proceed as follows:

1. Open the Configurator screen if it is not displayed already.
2. Ensure that the SAP 3D Visual Enterprise Generator Service field on the General tab shows the Started status. Choose Start if the service has not started automatically. The SAP 3D Visual Enterprise Generator Processing Engine is started.
3. To export the farm certificate, click the Farm Certificate tab on the SAP 3D Visual Enterprise Generator Configurator screen and choose Export Farm Certificate. Specify the folder path and file name, specify a password for the certificate file, and choose OK.
4. Copy the file and store it in a safe folder.

⚠️ **Caution**

It is extremely important to keep the file in a safe location, and to remember the password. If this service password is lost, or any other user has to be given rights to configure SAP 3D Visual Enterprise Generator at a later time, the certificate must be imported into that user account. If you do not have a backed up certificate in this scenario, SAP 3D Visual Enterprise Generator must be totally re-configured. See “Importing Farm Certificate” in the SAP 3D Visual Enterprise Generator Application Operations Guide for details on how to import a certificate.
5. Choose OK to close the screen. The configuration is completed and you can now begin to use SAP 3D Visual Enterprise Generator.

### 4.2.2 Configuring Integrated Mode

#### Context

As a part of the configuration process for integrated mode, you can rapidly configure the workflows relating to DMS and VDI integration. The relevant workflows are: “Convert Assembly CAD” for DMS Integration, and “Visual Data Integration (VDI)” for VDI Integration.

#### Rapid Configuration

If you opt to rapidly configure the workflows at this point, you are presented with an additional four screens in the configurator to assist you in setting your workflow options. These are the following:

<table>
<thead>
<tr>
<th>Screen</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure SAP System Connections</td>
<td>Sets your SAP system connection for integration. SAP system connections are used by the VDI integration workflows to connect to the SAP ERP system.</td>
</tr>
<tr>
<td>Configure SAP System Users</td>
<td>Sets your SAP system users for integration. SAP system users are used by the DMS and VDI integration workflows to connect to the SAP ERP system.</td>
</tr>
<tr>
<td>VDI Integration Workflow Settings</td>
<td>Establishes your settings for using the VDI Integration workflow. These settings are used by this workflow to connect to SAP ERP systems, and also for storing data in DMS.</td>
</tr>
<tr>
<td>DMS Integration Workflow Settings</td>
<td>Establishes your settings for building default viewables in the Convert Assembly CAD workflow.</td>
</tr>
</tbody>
</table>

If you are configuring for an integrated setup, proceed as follows:

#### Procedure

1. Ensure that the SAP 3D Visual Enterprise Generator Configuration Wizard is displayed. Choose Next.
2. On the Select SAP 3D Visual Enterprise Generator Deployment Type screen, select your deployment type as **Master Server**. The server is set up as a master of a SAP 3D Visual Enterprise Generator farm. Choose Next.
3. On the Select SAP 3D Visual Enterprise Generator Processing Mode screen, select your processing mode as **Integrated**. The server is set up for integrated data processing. Choose Next.
4. **i Note**

Ensure that you use the same user name and password for every computer in the SAP 3D Visual Enterprise Generator farm where you plan to install SAP 3D Visual Enterprise Generator.

**Tip**

Use the same passwords for both fields.

The wizard opens the `Configure Processing Configuration Database` screen. Enter a password for the server user that SAP 3D Visual Enterprise Generator will use to communicate with the database, and a password for the default SAP 3D Visual Enterprise Generator Security Administrator account. Ensure that the password is strong enough to pass authentication and make a note of it for later use. Note that you may choose a different database file placement strategy for performance reasons. We recommend that you significantly increase the size of the Data file Initial size and automatically extend the database by options. The initial size value should be large enough to allow enough space for at least one year’s expected data volume.

5. On the `Configure Share Directory` screen, navigate to, and select the location of the SAP 3D Visual Enterprise Generator `<share>` directory. Note that the location uses the UNC naming convention.

6. **i Note**

In an upgrade scenario you will be using an existing `<share>` at this point. SAP 3D Visual Enterprise Generator automatically scans the `<share>` directory you enter to see whether it has already been initialized. If the share has not been initialized, you will see a message in the validation results text box stating `Uninitialized shared directory. farm.config does not exist in share`. This validation message is normal for a new installation.

Choose **Next**. When prompted to initialize the share as a SAP 3D Visual Enterprise Generator shared directory, choose **Yes**. An initializing share progress pop-up is displayed. When this completes, the wizard opens the `Configure the SAP 3D Visual Enterprise Generator Service Account` screen.

7. Enter the user account and password that you created during the preparation phase for SAP 3D Visual Enterprise Generator to use as its service account (this is the same account that was given Read/Write access to the `<share>` directory). Ensure that you use the same user name and password for every computer in the SAP 3D Visual Enterprise Generator farm where you plan to install SAP 3D Visual Enterprise Generator. Choose **Next**. The `Changing Service` account pop-up displays progress. When this completes, the wizard opens the `Configure Message Queues` screen.

8. **Recommendation**

We recommend that you use the default message queue settings.

The `Configure Message Queues` screen is used to configure the names and locations of the primary default message queues. These are the following:

<table>
<thead>
<tr>
<th>Message Queue</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incoming Queue</strong></td>
<td>Used by the SAP 3D Visual Enterprise Generator middle tier to add a processing task to the internal processing queue</td>
</tr>
<tr>
<td><strong>Engine Queue</strong></td>
<td>A mechanism by which the Processing Engine controller notifies engines of processing tasks to execute. All farm serv-</td>
</tr>
<tr>
<td>Message Queue</td>
<td>Functional Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>ers monitor this queue for work that is required to be performed</td>
</tr>
<tr>
<td>Response Queue</td>
<td>A mechanism by which a slave computer notifies the controller of the status or outcome of a task that it was assigned to execute</td>
</tr>
<tr>
<td>Job Manager Queue</td>
<td>A mechanism by which the SAP 3D Visual Enterprise Generator service communicates with the Job Manager</td>
</tr>
</tbody>
</table>

9. Choose **Next**, and if you are prompted to create the message queues, choose **Yes**.

10. **Note**
    You must have read and write access to the file system directory being mapped to the API virtual directory.

On the **Configure IIS Application Pool** screen, enter the Web application pool name, `<VEGServiceUser>` username and password to create or configure the IIS application pool that will be used by the SAP 3D Visual Enterprise Generator Integration API. Choose **Next**.

11. The **Configure DMS Integrated Web Service Virtual Directory** screen is displayed. Choose the appropriate web site and ensure that the **Require SSL** check box is checked. Note that to use SSL, you will need to have a web site SSL certificate installed. Choose **Next**.

12. The **Configure VDI Integrated Web Service Virtual Directory** screen is displayed. Choose the appropriate web site and ensure that the **Require SSL** check box is checked. Note that to use SSL, you will need to have a web site SSL certificate installed. Choose **Next**.

13. The **Configure Conversion API Virtual Directory** screen is displayed. Select the appropriate web site and ensure that the **Require SSL** check box is checked.

14. Choose **Next**. The **Configure E-Mail Settings** screen is displayed. Enter the e-mail account, to which you want SAP 3D Visual Enterprise Generator to send e-mail notifications, and the fully-qualified hostname of the SMTP server from which you want SAP 3D Visual Enterprise Generator to send e-mail notifications. Choose **Next**.

15. The **Configure Logging** screen is displayed. You must configure SAP 3D Visual Enterprise Generator with a certain level of logging to ensure that administrative messages (warnings, errors, general information, and debug messages) are saved. Choose one of the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trace</strong></td>
<td>Logs errors, warning and informational messages and to create additional detailed log file used for diagnostic purposes</td>
</tr>
<tr>
<td><strong>Errors, Warnings and Information</strong></td>
<td>Logs errors, warnings and informational messages</td>
</tr>
<tr>
<td><strong>Errors and warnings</strong></td>
<td>Logs errors and warnings</td>
</tr>
<tr>
<td><strong>Errors only</strong></td>
<td>Logs only errors</td>
</tr>
</tbody>
</table>

16. Choose **Next** to display the **Configure Licensing** screen. Choose one of the following to register and activate SAP 3D Visual Enterprise Generator:

<table>
<thead>
<tr>
<th>Option</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Import License</strong></td>
<td>If you already have a license file, choose <strong>Import License</strong> button, navigate to and select the file, and then choose Open. SAP 3D Visual Enterprise Generator is activated.</td>
</tr>
</tbody>
</table>
If you have not yet requested your permanent license, choose the **Create 90 Day Temporary License** button to generate a 90 day license for SAP 3D Visual Enterprise Generator. This temporary license allows 90 days in which to arrange a permanent license.

Once you have imported a license file or generated a temporary license, the **Active license details** field will display information regarding the selected license.

17. Choose **Next** to display the **Configure Ports** screen. The port numbers default to the following values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lock Manager Port</strong></td>
<td>Used by internal SAP 3D Visual Enterprise Generator components when communicating with the lock manager component. The default value is 8099.</td>
</tr>
<tr>
<td><strong>Slave Port</strong></td>
<td>Used by the master server when communicating with slave servers. The default value for <strong>Slave Port</strong> is 8087.</td>
</tr>
<tr>
<td><strong>Master Port</strong></td>
<td>Used by slave servers when communicating with the master server. The default value for <strong>Master Port</strong> is 8086.</td>
</tr>
<tr>
<td><strong>Legacy Administration Port</strong></td>
<td>Used by the legacy SAP 3D Visual Enterprise Generator administration application when communicating with the master server (deprecated). The default value for <strong>Legacy Administration Port</strong> is 8085.</td>
</tr>
<tr>
<td><strong>Administration Port</strong></td>
<td>Used by the SAP 3D Visual Enterprise Generator administration application when communicating with the master server. The default value for <strong>Administration Port</strong> is 8091.</td>
</tr>
<tr>
<td><strong>File Transfer Port</strong></td>
<td>Used by the SAP 3D Visual Enterprise Generator administration application when transferring files to and from the master server. The default value for <strong>File Transfer Port</strong> is 8090.</td>
</tr>
</tbody>
</table>

You can leave the port settings to use the default values. If you need to change the port numbers, make sure that the port numbers are between 1024 and 49151 (inclusive), and that each port does not have the same value as the other ports listed on this **Configure Ports** screen.

18. Choose **Next** to display the **Configure Engine Processors** screen. Set the required number of engine processors and choose **Next**.

19. On the **Select Processing Configuration** screen, choose one of the following to select a configuration type:

<table>
<thead>
<tr>
<th>Configuration Type</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integrated</strong></td>
<td>Automatically configures SAP 3D Visual Enterprise Generator workflows for DMS and VDI integrated workflows, based on the information provided in the sub-steps</td>
</tr>
<tr>
<td><strong>Manual</strong></td>
<td>Configures the system manually at a later time.</td>
</tr>
</tbody>
</table>

a. On the **Configure SAP System Connections** screen, add your SAP system connection for integration and choose **Next**.

b. On the **Configure SAP System Users** screen, add your SAP system users for integration and choose **Next**.

c. On the **VDI Integration Workflow Settings** screen, enter your required **Storage Category**, **Instance ID** and **Viewable Type**. If you need to set additional options, choose Non-SAP PLM Settings, and make your required selections. Choose **Next**.
d. On the **DMS Integration Workflow Settings** screen, enter your required **Viewable Type** and choose **Next**. When you select **Integrated**, and complete the four rapid configuration sub-steps, SAP 3D Visual Enterprise Generator is connected and ready to run DMS and VDI integrated workflows.

20. Having selected a configuration type and performed the appropriate actions, choose **Commit**. The **Configuration Complete** appears. When complete, the **Finish** button will be enabled. Choose **Finish** to exit the Configuration wizard. The **SAP 3D Visual Enterprise Generator Configurator** screen is displayed.

**Next Steps**

To complete your installation, proceed as follows:

1. Open the **Configurator** screen if it is not displayed already.
2. Ensure that the **SAP 3D Visual Enterprise Generator Service** field on the **General** tab shows the **Started** status. Choose **Start** if the service has not started automatically. The SAP 3D Visual Enterprise Generator Processing Engine is started.
3. To export the farm certificate, click the **Farm Certificate** tab on the **SAP 3D Visual Enterprise Generator Configurator** screen and choose **Export Farm Certificate**. Specify the folder path and file name, specify a password for the certificate file, and choose **OK**.
4. Copy the file and store it in a safe folder.

**Caution**

It is extremely important to keep the file in a safe location, and to remember the password. If this service password is lost, or any other user has to be given rights to configure SAP 3D Visual Enterprise Generator at a later time, the certificate must be imported into that user account. If you do not have a backed up certificate in this scenario, SAP 3D Visual Enterprise Generator must be totally re-configured. See “Importing Farm Certificate” in the SAP 3D Visual Enterprise Generator Application Operations Guide for details on how to import a certificate.

5. Choose **OK** to close the screen. The configuration is completed and you can now begin to use SAP 3D Visual Enterprise Generator.

### 4.2.3 Configuring Minimal Mode

**Context**

You can use a Minimal setup to set the server for generic conversion only.
If you are configuring for an integrated setup, proceed as follows:

**Procedure**

1. Ensure that the SAP 3D Visual Enterprise Generator Configuration Wizard is displayed. Choose Next.

2. On the Select SAP 3D Visual Enterprise Generator Deployment Type screen, select your deployment type as Master Server. The server is set up as a master of a SAP 3D Visual Enterprise Generator farm. Choose Next.

3. On the Select SAP 3D Visual Enterprise Generator Processing Mode screen, select your processing mode as Minimal. The server is set up for generic conversion processing only. Choose Next.

4. **Note**
   
   Ensure that you use the same user name and password for every computer in the SAP 3D Visual Enterprise Generator farm where you plan to install SAP 3D Visual Enterprise Generator.

   **Tip**
   
   Use the same passwords for both fields.

   The wizard opens the Configure Processing Configuration Database screen. Enter a password for the server user that SAP 3D Visual Enterprise Generator will use to communicate with the database, and a password for the default SAP 3D Visual Enterprise Generator Security Administrator account. Ensure that the password is strong enough to pass authentication and make a note of it for later use. Note that you may choose a different database file placement strategy for performance reasons. We recommend that you significantly increase the size of the Data file Initial size and automatically extend the database by options. The initial size value should be large enough to allow enough space for at least one year’s expected data volume.

5. On the Configure Share Directory screen, navigate to, and select the location of the SAP 3D Visual Enterprise Generator <share> directory. Note that the location uses the UNC naming convention.

6. **Note**
   
   In an upgrade scenario you will be using an existing <share> at this point. SAP 3D Visual Enterprise Generator automatically scans the <share> directory you enter to see whether it has already been initialized. If the share has not been initialized, you will see a message in the validation results text box stating Uninitialized shared directory. farm.config does not exist in share. This validation message is normal for a new installation.

   When prompted to initialize the share as a SAP 3D Visual Enterprise Generator shared directory, choose Yes. An initializing share progress pop-up is displayed. When this completes the wizard opens the Configure the SAP 3D Visual Enterprise Generator Service Account screen.

7. Enter the user account and password that you created during the preparation phase for SAP 3D Visual Enterprise Generator to use as its service account (this is the same account that was given Read/Write access to the <share> directory). Ensure that you use the same user name and password for every computer in the SAP 3D Visual Enterprise Generator farm where you plan to install SAP 3D Visual Enterprise Generator. Choose Next. The Changing Service account pop-up displays progress. When this completes, the wizard opens the Configure Message Queues screen.
8. **Recommendation**

We recommend that you use the default message queue settings.

The *Configure Message Queues* screen is used to configure the names and locations of the primary default message queues. These are the following:

<table>
<thead>
<tr>
<th>Message Queue</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incoming Queue</strong></td>
<td>Used by the SAP 3D Visual Enterprise Generator middle tier to add a processing task to the internal processing queue</td>
</tr>
<tr>
<td><strong>Engine Queue</strong></td>
<td>A mechanism by which the Processing Engine controller notifies engines of processing tasks to execute. All farm servers monitor this queue for work that is required to be performed.</td>
</tr>
<tr>
<td><strong>Response Queue</strong></td>
<td>A mechanism by which a slave computer notifies the controller of the status or outcome of a task that it was assigned to execute.</td>
</tr>
<tr>
<td><strong>Job Manager Queue</strong></td>
<td>A mechanism by which the SAP 3D Visual Enterprise Generator service communicates with the Job Manager</td>
</tr>
</tbody>
</table>

9. Choose *Next*, and if you are prompted to create the message queues, choose *Yes*.

10. **Note**

You must have read and write access to the file system directory being mapped to the API virtual directory.

On the *Configure IIS Application Pool* screen, enter the Web application pool name, `<VEGServiceUser>` username and password to create or configure the IIS application pool that will be used by the SAP 3D Visual Enterprise Generator Integration API. Choose *Next*.

11. The *Configure Conversion API Virtual Directory* screen is displayed. Select the appropriate web site and ensure that the *Require SSL* check box is checked.

12. Choose *Next*. The *Configure E-Mail Settings* screen is displayed. Enter the e-mail account, to which you want SAP 3D Visual Enterprise Generator to send e-mail notifications, and the fully-qualified hostname of the SMTP server from which you want SAP 3D Visual Enterprise Generator to send e-mail notifications. Choose *Next*.

13. The *Configure Logging* screen is displayed. You must configure SAP 3D Visual Enterprise Generator with a certain level of logging to ensure that administrative messages (warnings, errors, general information, and debug messages) are saved. Choose one of the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trace</strong></td>
<td>Logs errors, warning and informational messages and to create additional detailed log file used for diagnostic purposes</td>
</tr>
<tr>
<td><strong>Errors, Warnings and Information</strong></td>
<td>Logs errors, warnings and informational messages</td>
</tr>
<tr>
<td><strong>Errors and warnings</strong></td>
<td>Logs errors and warnings</td>
</tr>
<tr>
<td><strong>Errors only</strong></td>
<td>Logs only errors</td>
</tr>
</tbody>
</table>

14. Choose *Next* to display the *Configure Licensing* screen. Choose one of the following to register and activate SAP 3D Visual Enterprise Generator:
If you already have a license file, choose *Import License* button, navigate to and select the file, and then choose Open. SAP 3D Visual Enterprise Generator is activated.

If you have not yet requested your permanent license, choose the *Create 90 Day Temporary License* button to generate a 90 day license for SAP 3D Visual Enterprise Generator. This temporary license allows 90 days in which to arrange a permanent license.

Once you have imported a license file or generated a temporary license, the *Active license details* field will display information regarding the selected license.

15. Choose *Next* to display the *Configure Ports* screen. The port numbers default to the following values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock Manager Port</td>
<td>Used by internal SAP 3D Visual Enterprise Generator components when communicating with the lock manager component. The default value for <em>Lock Manager Port</em> is 8099.</td>
</tr>
<tr>
<td>Slave Port</td>
<td>Used by the master server when communicating with slave servers. The default value for <em>Slave Port</em> is 8087.</td>
</tr>
<tr>
<td>Master Port</td>
<td>Used by slave servers when communicating with the master server. The default value for <em>Master Port</em> is 8086.</td>
</tr>
<tr>
<td>Legacy Administration Port</td>
<td>Used by the legacy SAP 3D Visual Enterprise Generator administration application when communicating with the master server (deprecated). The default value for <em>Legacy Administration Port</em> is 8085.</td>
</tr>
<tr>
<td>Administration Port</td>
<td>Used by the SAP 3D Visual Enterprise Generator administration application when communicating with the master server. The default value for <em>Administration Port</em> is 8091.</td>
</tr>
<tr>
<td>File Transfer Port</td>
<td>Used by the SAP 3D Visual Enterprise Generator administration application when transferring files to and from the master server. The default value for <em>File Transfer Port</em> is 8090.</td>
</tr>
</tbody>
</table>

You can leave the port settings to use the default values. If you need to change the port numbers, make sure that the port numbers are between 1024 and 49151 (inclusive), and that each port does not have the same value as the other ports listed on this *Configure Ports* screen.

16. Choose *Next* to display the *Configure Engine Processors* screen. Set the required number of engine processors and choose *Next*.

17. On the *Select Processing Configuration* screen, choose one of the following to select a configuration type:

<table>
<thead>
<tr>
<th>Configuration Type</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>Automatically configures SAP 3D Visual Enterprise Generator for generic conversion</td>
</tr>
<tr>
<td>Manual</td>
<td>Configures the system manually at a later time.</td>
</tr>
</tbody>
</table>

When you select *Minimal*, SAP 3D Visual Enterprise Generator is connected and ready to run generic conversion workflows.
18. Having selected a configuration type and performed the appropriate actions, choose **Commit**. The **Configuration Complete** appears. When complete, the **Finish** button will be enabled. Choose **Finish** to exit the Configuration wizard. The **SAP 3D Visual Enterprise Generator Configurator** screen is displayed.

**Next Steps**

To complete your installation, proceed as follows:

1. Open the **Configurator** screen if it is not displayed already.
2. Ensure that the **SAP 3D Visual Enterprise Generator Service** field on the **General** tab shows the **Started** status. Choose **Start** if the service has not started automatically. The SAP 3D Visual Enterprise Generator Processing Engine is started.
3. To export the farm certificate, click the **Farm Certificate** tab on the **SAP 3D Visual Enterprise Generator Configurator** screen and choose **Export Farm Certificate**. Specify the folder path and file name, specify a password for the certificate file, and choose **OK**.
4. Copy the file and store it in a safe folder.

> **Caution**
>
> It is extremely important to keep the file in a safe location, and to remember the password. If this service password is lost, or any other user has to be given rights to configure SAP 3D Visual Enterprise Generator at a later time, the certificate must be imported into that user account. If you do not have a backed up certificate in this scenario, SAP 3D Visual Enterprise Generator must be totally re-configured. See “Importing Farm Certificate” in the SAP 3D Visual Enterprise Generator Application Operations Guide for details on how to import a certificate.

5. Choose **OK** to close the screen. The configuration is completed and you can now begin to use SAP 3D Visual Enterprise Generator.

### 4.3 Installing SAP 3D Visual Enterprise Generator on Slave Computers

After you install and configure the master server, you may add additional servers or slaves to the server farm, configuring the master server to share its workload with any given number of additional SAP 3D Visual Enterprise Generator computers. Each additional SAP 3D Visual Enterprise Generator computer (slave) connects to the master server and uses its processes and latest configuration files.

This section describes the process for installing and configuring SAP 3D Visual Enterprise Generator on a slave computer. The installation process comprises:

- Configuring a SAP 3D Visual Enterprise Generator slave service account
- Installing SAP 3D Visual Enterprise Generator on a slave computer
- Configuring SAP 3D Visual Enterprise Generator on a slave computer
### Note
For message queues to be created correctly, the name of each computer running SAP Visual Enterprise Generator must be 15 characters or less.

### Recommendation
We recommend setting up a server farm in the following order:

1. Install and configure SAP 3D Visual Enterprise Generator on the master computer.
2. Activate SAP 3D Visual Enterprise Generator modules on the master computer.
3. Install and configure SAP 3D Visual Enterprise Generator on the slave computers.

### Prerequisites

- You have installed, configured, and licensed SAP 3D Visual Enterprise Generator on a master computer.
- You have activated all required modules on a master computer.
- Depending on the number of processors that comprise the master server, you have configured it to designate any of its own additional processors as processing engines. We recommend that the maximum number of processors to allocate as processing engines is n-1 where n = total number of processors on the master server.
- For performance reasons, you may want to consider turning virus scanning off for any SMTP scanning, the SAP Visual Enterprise Generator share, and the folder where SAP Visual Enterprise Generator files are installed (`C:\Program Files\SAP\`).

#### Caution
This action will result in a reduction in security.

- You have exported the share certificate from the master computer and it is available on the slave computer that is going to be installed.

### 4.3.1 Configuring a Slave Server Account

#### Context
The user account must have, as a minimum:

- Modification access to the directory and subdirectories where SAP 3D Visual Enterprise Generator is installed, granted directly to that user account or through the appropriate group membership.
- Modification control permissions on the SAP 3D Visual Enterprise Generator shared directory since SAP 3D Visual Enterprise Generator is most likely to run in a farm environment.
A Windows account with local administrative privileges must be created for each user that will administer SAP 3D Visual Enterprise Generator. This account must have as a minimum, modification control permissions on the remote administration or shared server farm directory.

**Recommendation**

We recommend creating a specific Windows user group for SAP 3D Visual Enterprise Generator administrators.

**Procedure**

1. Open the Computer Management window from Control Panel → Administrative Tools.
2. Expand Local Users and Groups, right-click Users and choose New User.
3. **Note**
   
   Ensure the password is strong enough to pass authentication and make a note of it for use during the installation.

   On the New User screen, enter the user name and password for the account.
4. Deselect the User must change password at next logon checkbox.
5. Select the User cannot change password and Password never expires checkboxes.
6. Choose Create, choose Close and then close the Computer Management screen.
8. Expand Local Policies → User Rights Assignment.
9. **Note**

   This policy controls permissions for SAP 3D Visual Enterprise Generator.

   Navigate to, and right-click Log on as a service policy, and then choose Properties.
10. Choose Add User or Group and choose Locations.
11. Select the location in which you created the account and choose OK.
12. Enter the name of the new account, and choose Check Names. The account directory is displayed.
13. Make a note of this directory for later use and choose OK twice.

**Next Steps**

Move to Installing SAP 3D Visual Enterprise Generator on a Slave Computer [page 67]
4.3.2 Installing SAP 3D Visual Enterprise Generator on a Slave Computer

Context

You must first install SAP 3D Visual Enterprise Generator on the master computer before installing it on any slave computers. If a master is not yet designated, SAP 3D Visual Enterprise Generator nominates the existing computer as the master. If a master has been designated, SAP 3D Visual Enterprise Generator adds the computer as a slave to the existing installed master server.

- You can obtain the license file and module authorization codes from your SAP consultant. Otherwise, these can be obtained during SAP 3D Visual Enterprise Generator configuration.
- The master computer is currently running SAP 3D Visual Enterprise Generator so that the slave computers can locate and connect to it.
- The slaves are likely to be separate computers from the master computer. However, they may also be separate processors on the same master server, depending on the number of processors that comprise the master server.
- For performance reasons, you may want to consider turning virus scanning off for any SMTP scanning, the SAP 3D Visual Enterprise Generator share, and the folder where SAP 3D Visual Enterprise Generator files are installed (C:\Program Files\SAP\).

⚠️ Caution

This action will result in a reduction in security.

Procedure

1. Close all applications and log on with administrative rights to the computer you plan to use as the SAP 3D Visual Enterprise Generator slave.
2. Ensure that the master computer is running.
3. Navigate to, and double-click the `SETUP.exe` file in Windows Explorer.
4. Choose Next when the installer starts. The Installer Selection dialog is displayed.
5. Select one of the following:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select All</td>
<td>All features are installed on the local hard drive. This is the recommended option.</td>
</tr>
<tr>
<td>corresponding checkboxes</td>
<td>○ Core Server: Installs the SAP 3D Visual Enterprise Generator Processing Engine and associated plug-ins, and also the SAP 3D Visual Enterprise Generator API</td>
</tr>
</tbody>
</table>
### Next Steps

Move to Configuring SAP 3D Visual Enterprise Generator on a Slave Computer [page 68]

### 4.3.3 Configuring SAP 3D Visual Enterprise Generator on a Slave Computer

#### Prerequisites

- You have identified the computer to use as a slave server.
- The master computer is currently running SAP 3D Visual Enterprise Generator so that the slave computers can locate and connect to it.

#### Context

To configure slaves, proceed as follows:

#### Procedure

1. Ensure that the SAP 3D Visual Enterprise Generator Configuration Wizard is displayed.
2. Choose Next. On the Select SAP 3D Visual Enterprise Generator Deployment Type screen, select your deployment type as Slave Server. The server is set up as a slave of a SAP 3D Visual Enterprise Generator farm. Choose Next.
3. **Note**  
This location uses the UNC naming convention.

On the **Select Share Directory** screen, navigate to, and select the location of the shared directory used by the master computer to which you are connecting.

4. You are asked whether you want to join a server farm. Choose **Yes**. The **Initializing Share** progress dialog is displayed.

5. **Note**  
Ensure that you use the same username and password for every computer in the SAP 3D Visual Enterprise Generator farm where you plan to install SAP 3D Visual Enterprise Generator.

On the **Configure SAP 3D Visual Enterprise Generator Service Account** screen, enter the service account username and password in the appropriate fields. These are the account details that were used for the shared directory.

6. Choose **Next** and you will be prompted to locate farm certificate file and its password.

7. Locate share certificate and its password; choose **OK** to confirm the names and locations of the primary default message queues.

8. **Note**  
The address specification setting facilitates communication between the slave computer and master.

On the **Configure Slave Account** screen, enter your required configuration information. Confirm the default address specification as **FormatName:DIRECT=OS:**

9. **Recommendation**  
We recommend using the default address setting; however, you can edit this setting depending on your requirements. See the Microsoft MSMQ Documentation at [http://msdn.microsoft.com/en-us/library/ms711472%28v=VS.85%29.aspx](http://msdn.microsoft.com/en-us/library/ms711472%28v=VS.85%29.aspx) for information on determining the appropriate MSMQ.

On the **Configure Message Queues Address Specification** screen, accept the specific communication settings for the configured MSMQ: database, connection method, workspace to be used, and Incoming Message queue. If needed, change default network protocol to use for MSMQ. Choose **Next** to test connection to workspace and MSMQ.

10. The **Configure Logging** screen is displayed. You must configure SAP 3D Visual Enterprise Generator with a certain level of logging to ensure that administrative messages (warnings, errors, general information, and debug messages) are saved. Choose one of the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trace</strong></td>
<td>Logs errors, warning and informational messages and to create additional detailed log file used for diagnostic purposes</td>
</tr>
<tr>
<td><strong>Errors, Warnings and Information</strong></td>
<td>Logs errors, warnings and informational messages</td>
</tr>
<tr>
<td><strong>Errors and warnings</strong></td>
<td>Logs errors and warnings</td>
</tr>
<tr>
<td><strong>Errors only</strong></td>
<td>Logs only errors</td>
</tr>
</tbody>
</table>
11. Choose Next to display the Configure Engine Processors screen. Set the required number of engine processors and choose Next.

12. Having performed the appropriate actions, choose Commit. The Configuration Complete appears. When complete, the Finish button will be enabled. Choose Finish to exit the Configuration wizard. The SAP 3D Visual Enterprise Generator Configurator screen is displayed.

4.3.4 Configuring SAP 3D Visual Enterprise Settings for a Web API Proxy

Prerequisites

- The master computer is currently running SAP 3D Visual Enterprise Generator before installing it on any Web API Proxy

Context

The configuration requirements for a Web API Proxy are as follows:

- Note
  Web API Proxy can only be a slave.

Procedure

1. Ensure that the SAP 3D Visual Enterprise Generator Configuration Wizard is displayed.

2. Choose Next. On the Select SAP 3D Visual Enterprise Generator Deployment Type screen, select your deployment type as Web API Proxy. The server is set up as a slave of a SAP 3D Visual Enterprise Generator farm. Choose Next.

3. - Note
   This location uses the UNC naming convention.

   On the Select Share Directory screen, navigate to, and select the location of the shared directory used by the master computer to which you are connecting.

4. You are asked whether you want to join a server farm. Choose Yes. The Initializing Share progress dialog is displayed.
5. **Note**

Ensure that you use the same username and password for every computer in the SAP 3D Visual Enterprise Generator farm where you plan to install SAP 3D Visual Enterprise Generator.

On the **Configure SAP 3D Visual Enterprise Generator Service Account** screen, enter the service account username and password in the appropriate fields. These are the account details that were used for the shared directory.

6. Choose **Next** and you will be prompted to locate farm certificate file and its password.

7. Locate share certificate and its password; choose **OK** to confirm the names and locations of the primary default message queues.

8. **Note**

The address specification setting facilitates communication between the slave computer and master.

On the **Configure Slave Account** screen, enter your required configuration information. Confirm the default address specification as **FormatName:DIRECT=OS:**

9. **Recommendation**

We recommend using the default address setting; however, you can edit this setting depending on your requirements. See the Microsoft MSMQ Documentation at [http://msdn.microsoft.com/en-us/library/ms711472%28v=VS.85%29.aspx](http://msdn.microsoft.com/en-us/library/ms711472%28v=VS.85%29.aspx) for information on determining the appropriate MSMQ.

On the **Configure Message Queues Address Specification** screen, accept the specific communication settings for the configured MSMQ: database, connection method, workspace to be used, and Incoming Message queue. If needed, change default network protocol to use for MSMQ. Choose **Next** to test connection to workspace and MSMQ.

10. The **Configure Logging** screen is displayed. You must configure SAP 3D Visual Enterprise Generator with a certain level of logging to ensure that administrative messages (warnings, errors, general information, and debug messages) are saved. Choose one of the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Functional Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Trace</em></td>
<td>Logs errors, warning and informational messages and to create additional detailed log file used for diagnostic purposes</td>
</tr>
<tr>
<td><em>Errors, Warnings and Information</em></td>
<td>Logs errors, warnings and informational messages</td>
</tr>
<tr>
<td><em>Errors and warnings</em></td>
<td>Logs errors and warnings</td>
</tr>
<tr>
<td><em>Errors only</em></td>
<td>Logs only errors</td>
</tr>
</tbody>
</table>

11. **Note**

You must have read and write access to the file system directory being mapped to the API virtual directory.

On the **Configure IIS Application Pool** screen, enter the Web application pool name, `<VEGServiceUser>` username and password to create or configure the IIS application pool that will be used by the SAP 3D Visual Enterprise Generator Integration API. Choose **Next**.
12. The Configure Web API Virtual Directory screen is displayed. Choose the appropriate web site and ensure that the Require SSL check box is checked. Note that to use SSL, you will need to have a web site SSL certificate installed. Choose Next.

13. Having performed the appropriate actions, choose Commit. The Configuration Complete appears. When complete, the Finish button will be enabled. Choose Finish to exit the Configuration wizard. The SAP 3D Visual Enterprise Generator Configurator screen is displayed.

4.4 SAP 3D Visual Enterprise Generator Integrated Mode

Prerequisites

The following EHP releases include the necessary functionality for SAP 3D Visual Enterprise Generator 9.0 integration without having to apply additional set of notes:

- EHP6 SP17
- EHP6 HANA SP10
- EHP7 SP12
- EHP8 SP03
- S/4 HANA OP SP03

SAP 3D Visual Enterprise Generator 9.0 works on the following systems if a set of additional notes is applied:

- EHP6 SP10
- EHP6 HANA SP04
- EHP7 SP03
- EHP8 SP00
- S/4HANA OP SP00

The following additional notes are required:

1. 2306031
2. 2181482
3. 2306611
4. 2256561
5. 2307725
6. 2307109
7. 2308121
8. 2297293
9. 2049249
10. 2149484
11. 2186082
12. 2142405
13. 2149487
14. 2261146
15. 2169332
Process

Process Flow

1. To make the conversion set up work, make the Customizing settings under Cross-Application Components Document Management Visual Enterprise Generator.

2. Install SAP 3D Visual Enterprise Generator in Integrated mode (see SAP 3D Visual Enterprise Generator Standalone subsection of this Installation Guide section).


5. To obtain the external object tagging information for an object, ensure that you have installed the latest patch of NWBC 3.5.

4.5 Visual Data Integration Upload Client

The Visual Data Integration Upload Client is a component of SAP 3D Visual Enterprise Generator used to upload visualization data into an SAP ERP system.

The SAP 3D Visual Data Integration Client uploads base CAD files and stores them as Visual Enterprise documents in the ERP after the SAP 3D Visual Enterprise Generator associated with that ERP system has converted them to the aforementioned format.

This guide documents how to set up a workflow from on an ERP system to be used in conjunction with one or more instances of the SAP 3D Visual Data Integration Client. Will need to add or refer to elsewhere the process of configuring the Upload Client to operate with a SAP 3D Visual Enterprise Generator instance.

Prerequisites

This section describes the requirements for effective usage of the SAP 3D Visual Data Integration Upload client.
The application can be installed at any time. However, it will not become functional until all the requisite components are installed and configured for correct usage. Please refer to 2.6 SAP ERP Integration with SAP 3D Visual Enterprise Generator with Upload Client for more information about the system landscape that supports the Visual Data Integration Upload Client.

- You have installed SAP GUI (Logon) on the SAP 3D Visual Enterprise Generator server that will be integrated with the SAP ERP.
- You have installed SAP 3D Visual Enterprise Generator on a Windows Server 2008 R2 (or Windows Server 2012) that is configured to support SAP 3D Visual Data Integration Upload client.
- You have created an SAP ERP system communication user that can be used with an instance of the Visual Data Integration Upload Client to authenticate against the target SAP ERP.
- You have obtained the Visual Data Integration Upload Client installer from a system administrator or the SAP Software Center.

**Procedure**

### Installing and Configuring SAP GUI on the SAP 3D Visual Enterprise Generator machine

SAP GUI is needed to be installed on the SAP 3D Visual Enterprise Generator machine that will host the Visual Data Integration Service that your Visual Data Integration upload clients will connect to when submit CAD files to the server for processing and storage. SAP GUI is used to authenticate Upload Client sessions against ERP connections configured in SAP GUI.

1. Log onto `<VEGServer>` as the `<VEGServiceUser>`.

   **Note**

   The following steps create user specific configurations for SAP Logon. SAP 3D Visual Enterprise Generator will attempt to access configurations in the security context of the `<VEGServiceUser>`.

2. Obtain the SAP GUI installer from the SAP Marketplace and install on the `<VEGServer>` as per SAP GUI installation and configuration instructions.
3. Create a connection to your `<SAPERP>` in SAP GUI and test that the `<SAPERPAdministrativeUser>` can log onto the SAP System.
4. Close SAP Logon
5. Open the SAP 3D Visual Enterprise Generator configuration utility and restart the SAP 3D Visual Enterprise Generator service.

   **Note**

   SAP 3D Visual Enterprise Generator loads SAP Logon connection configurations as the service is starting.

### Configuring an SAP ERP Connection in SAP 3D Visual Enterprise Generator Administration

1. Log onto the SAP 3D Visual Enterprise Generator Administration tool as `<VEGAdministrator>`.
2. Navigate to `SAP Integration ➤ Connections`. 

3. Choose *New* from the Connections list menu.
4. From the *Type* list, choose *RFC*.
5. In the *SAP System* field, enter the `<SAPERP>` connection you created in the *Install and Configure SAP GUI on the SAP 3D Visual Enterprise Generator Machine* section.
6. Enter a display name for the connection.

⚠️ **Caution**

The display name must be unique; multiple connections with the same name are not permitted.

7. In the *Client* field, enter the SAP client ID that `<SAPERPCommunicationUser>` would be expected to use if logging into this system interactively.
8. Choose *OK*.

### Installing Visual Data Integration Upload Client

This section describes how to install an instance of the SAP 3D Visual Data Integration Upload Client, and assumes all the prerequisites for installing the application are present on the operating system.

1. Navigate to and double-click the SAP 3D Visual Data Integration Upload Client *Setup.exe* file in windows explorer. The installation wizard will be displayed. Choose *Next*.
2. The *SAP Front End Installer* screen displays. The SAP 3D Visual Data Integration Upload Client full install will be selected by default.

⚠️ **Caution**

By default, the option to add to the startup applications is enabled. If this option is not needed, the user can deselect it from the drop-down.

When enabled, this option adds the SAP 3D Visual Data Integration Upload Client to the startup applications list, which allows it to run automatically when the user begins a Windows session on that machine. This will not occur when disabled.

3. Apply the desired installation options. Choose *Next*.
4. Accept the default install location, or browse to select a different location.
5. Choose *Next*. The installation will begin automatically.
6. Choose *Close* once the installation process is complete.

The user can now run the application from the *Start* menu and Windows explorer. If installed as a startup application (the recommended option) the client will run automatically every time the user starts or resumes a Windows session.

### Post-Installation

**Testing the Visual Data Integration Upload Client System Landscape**
If all the required components have been installed and configured correctly, open the application, configure the <SAPVisualDataIntegrationService> connection, supply a valid <UploadClientCommunicationUser> and start an upload process. If the process completes successfully, the installation was successful.

To test the Upload Client connection in the SAP ERP Integration with SAP 3D Visual Enterprise Generator system landscape, proceed as follows:

1. Open the Visual Data Integration Upload Client application from the Start menu. The Upload Client logon screen is displayed.
2. If the target <SAPVisualDataIntegrationService> URL is not displayed in the Web Service URL list, click on the drop down list and choose the Use new URL... Enter and accept the new URL.
3. Choose Visual Data Integration from the Workflow list.
4. In the User Name field, enter the <SAPERPCommunicationUser> user name.
5. Enter the <SAPERPCommunicationUser> password in the Password field.
6. Choose Connect. The upload monitoring screen is displayed.
8. Choose Select and locate a suitable test CAD file from your local file system. Select a CAD assembly that has no issues to resolve.

⚠️ Caution

You must have configured all the required documents during the Configuring Conversion Trigger section. If you have not done this, do it now.

9. Choose Start. The screen closes and your new upload is displayed on the Monitoring screen.

The application should track the upload jobs progress through to completion. You can view more details about the job and its progress and operations in the SAP 3D Visual Enterprise Generator Administration tool.
5 Post-Installation

5.1 SAP 3D Visual Enterprise Generator Standalone

5.1.1 Licensing Modules

Use

SAP 3D Visual Enterprise Generator comes with a number of additional processing modules. By default, most of these modules are automatically configured with valid serial numbers and authorization codes. However, the JTPMI module is configured with a temporary 90 day trial license only.

Procedure

Obtaining a Valid License for JTPMI Module (Optional)

If you use this module, after the trial license expires, you must obtain a valid license as follows:

1. Create a message at http://service.sap.com/message using the component XX-SER-LIKEY.
2. Include the following information in the message:
   ○ Subject of the message: License Key for SAP 3D Visual Enterprise Module < JT Extension Module >
   ○ Text: Please provide a license key for SAP 3D Visual Enterprise Module < JT Extension Module >.
   ○ Installation number is: <Your installation number>

Installing Module Licenses

1. Once you have your server started, start the SAP 3D Visual Enterprise Generator Administration application on the main server and log on as SecurityAdministrator using the password you specified during the Configuring SAP 3D Visual Enterprise Generator on a Master Computer procedure.
2. Choose Server Configuration Activate Modules to activate your modules.
3. On the Activate Modules screen, the modules that have expired, are registered with a non-expired temporary license, or are not yet activated are listed. Choose the Activate button for the modules that you have codes for and enter the serial number and authorization code on the Activation popup.
4. Restart the server or the whole farm (from SAP 3D Visual Enterprise Configuration) after licensing the Modules.
5.1.2 Uninstalling SAP 3D Visual Enterprise Generator

Use

The removal process for SAP 3D Visual Enterprise Generator is performed using the Windows Control Panel.

⚠ Caution

Uninstalling removes all of the installed files.

Uninstalling does not remove any database information: the share, licenses, log files and working files.

Module bundles have been installed separately for either application must be removed separately.

Procedure

1. Stop SAP 3D Visual Enterprise Generator from running.
2. Remove the SAP 3D Visual Enterprise Generator and any module bundles that may have been installed separately for SAP 3D Visual Enterprise Generator using Programs and Features (http://windows.microsoft.com/en-US/windows7/Uninstall-or-change-a-program):
3. Remove the following:
   ○ The entire contents of the SAP 3D Visual Enterprise Generator <share>.
   ○ The following directories:
     ○ C:\Program Files\SAP\SAP 3D Visual Enterprise Generator\.
     ○ C:\ProgramData\SAP\Visual 3D Enterprise Generator\.

   i Note

   The Program Data directory is hidden by default in Microsoft Windows.

   The Program Files path will be different if you changed this during installation.

4. Open the Computer Management screen from Control Panel > Administrative Tools.
5. Choose Services and Applications > Message Queuing > Private Queues and remove the following queues:
   ○ Engine
   ○ Incoming
   ○ Jobmanager
   ○ Response

   ⚠ Caution

   Removing the queues is especially important if you are going to reinstall SAP 3D Visual Enterprise Generator under a different account, due to the defined account permissions for each queue.

6. Open SQL Server and delete the database used by SAP 3D Visual Enterprise Generator.
7. Restart your computer. SAP 3D Visual Enterprise Generator is now completely removed from the computer.
8. Repeat this process for all slave computers.

Note
Disregard steps for module bundles as these are only installed on the master computer.

5.2 SAP 3D Visual Enterprise Generator Integrated Mode

Prerequisites

The following EHP releases include the necessary functionality for SAP 3D Visual Enterprise Generator 9.0 Integration without having to apply additional set of notes:

- EHP6 SP17
- EHP6 HANA SP10
- EHP7 SP12
- EHP8 SP03
- S/4 HANA OP SP03

SAP 3D Visual Enterprise Generator 9.0 works on the following systems if a set of additional notes is applied:

- EHP6 SP10
- EHP6 HANA SP04
- EHP7 SP03
- EHP8 SP00
- S/4HANA OP SP00

The following additional notes are required:

1. 2306031
2. 2181482
3. 2306611
4. 2256561
5. 2307725
6. 2307109
7. 2308121
8. 2297293
9. 2049249
10. 2149484
11. 2186082
12. 2142405
13. 2149487
14. 2261146
15. 2169332
16. 2222392
17. 2186083
18. 2195345
19. 2189604
20. 2303612
21. 2305905
22. 1978641
23. 2094632

Process

Process Flow

1. To make the conversion set up work, make the Customizing settings under Cross-Application Components Document Management Visual Enterprise Generator.
2. Install SAP 3D Visual Enterprise Generator in Integrated mode (see SAP 3D Visual Enterprise Generator Standalone subsection of this Installation Guide section).
5. To obtain the external object tagging information for an object, ensure that you have installed the latest patch of NWBC 3.5.

5.2.1 Configuring Authentication

Use

The connection between SAP 3D Visual Enterprise Generator and SAP ERP is secured using the following authentication schemes:

- Username and Password Authentication
  This method is based on an SQP System passing the credentials of a Windows user that has granted access to the SAP Integration Service to this service.
- Certificate Exchange
  This method is based on the mutual trust of Client Authentication certificates between an SAP System and an SAP 3D Visual Enterprise Generator installation.

Although it is possible to configure the system landscape for both schemes, this document describes the configuration steps for each scheme separately. The following sections detail the steps required to configure either scheme. See the appropriate sections in the Planning section of this Guide for the recommended sequence for the steps laid out in this section.
Procedure

Username and Password Authentication

Configuring IIS to Use Basic Authentication

Configure IIS to use Basic Authentication and restrict permission to the Web server to the user account created in Create/Designate SAP 3D Visual Enterprise Generator Communication User.

1. Open the Internet Information Services (IIS) Manager and navigate to the Settings pane for the Web Server instance.
2. Choose Authentication from the IIS options.
4. Enable Basic Authentication.

Creating a Microsoft Windows User for SAP ERP to SAP 3D Visual Enterprise Generator Service Calls

You need to create a Microsoft Windows user <VEGCommunicationUser> that will be used to authenticate the SAP ERP service calls to SAP 3D Visual Enterprise Generator <SAPIntegrationService>. This can be a domain user or a local machine user. To create the <VEGCommunicationUser> user, proceed as follows:

2. Right-click Users and select New User.
3. Fill in the fields of the New User screen using the user name <VEGCommunicationUser>. Deselect User must change password at next logon and select the User cannot change password and Password never expires checkboxes.
4. Deselect the Account is disabled checkbox. Click Create and then click Close.

i Note

New users are usually added to the Users group by default. To check this, expand Local Users and Groups Groups and double-click the Users group. You should find that the <VEGCommunicationUser> is listed here. If it is not, click Add to locate and add the <VEGCommunicationUser> to the list.

Granting SAP 3D Visual Enterprise Generator Communication User Basic Authentication rights to SAP Integration Service

1. Open the Internet Information Services (IIS) Manager and navigate to the Settings pane for the Web Server instance.
2. Select the <SAPIntegrationService> node under the Web site you installed the service on.
3. From the Actions menu for this service, click Edit Permissions. A Properties screen is displayed.
4. Click the Security tab page.
5. Click Edit and add user <VEGCommunicationUser> with full access.

i Note

Test the service by browsing to the HTTPS binding of the service. When asked for a user name and password, enter <VEGCommunicationUser> and the password. Successful authentication should result in a blank screen and no errors on the page.

Certificate Exchange
The SAP system and SAP 3D Visual Enterprise Generator communicate with each other using Web services. The SAP system calls Web services to start and stop conversion jobs on the SAP 3D Visual Enterprise Generator system, and the SAP 3D Visual Enterprise Generator calls Web services to log statuses on the SAP system.

Both sides require authentication to call Web services. This requires client certificates to be mapped to users on both sides. The systems therefore need to identify and authenticate the other side’s certificate.

This section explains how the certificates are implemented, exchanged, and mapped to a user.

Importing Server Certificate into IIS

You import your certificate into IIS for the machine running SAP 3D Visual Enterprise Generator and configure it for use with SSL binding. There are two import options to choose from, depending on the source format of your certificate. The first option describes importing a .PFX-file, the second one describes importing a .CER-file.

Procedure with .PFX-file

1. Open the Internet Information Services (IIS) Manager from the machine running SAP 3D Visual Enterprise Generator by choosing Windows Start Menu ➔ All Programs ➔ Administrative Tools ➔ Internet Information Services (IIS) Manager.
2. In the Connections list, select the <Visual Enterprise Generator hostname> node.
3. In the IIS section of the Features View, select Server Certificates.
4. In the Actions list, click Import. Enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate File (.pfx)</td>
<td>&lt;PFX File including full path&gt;</td>
</tr>
<tr>
<td>Password</td>
<td>&lt;Password with which the PFX was encrypted&gt;</td>
</tr>
<tr>
<td>Allow this certificate to be exported</td>
<td>X</td>
</tr>
</tbody>
</table>

5. Choose OK.

Procedure with .CER-file

1. Open the Internet Information Services (IIS) Manager on the machine running SAP Visual Enterprise Generator by choosing Windows Start Menu ➔ All Programs ➔ Administrative Tools ➔ Internet Information Services (IIS) Manager.
2. In the Connections list, select the <Visual Enterprise Generator hostname> node.
3. In the IIS Section of the Features View, click Server Certificates.
4. In the Actions list, click Complete Certificate Request.
5. Enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certification Authority’s Response(.cer)</td>
<td>&lt;CER Certificate File including full path&gt;</td>
</tr>
<tr>
<td>Friendly</td>
<td>&lt;Display Name for the certificate&gt;</td>
</tr>
</tbody>
</table>
Activating SSL Binding in IIS with Server Certificate

You activate SSL binding for the default Web site on the IIS of the machine running SAP 3D Visual Enterprise Generator.

1. Open the Internet Information Services (IIS) Manager on the machine running SAP 3D Visual Enterprise Generator by selecting Windows Start Menu > All Programs > Administrative Tools > Internet Information Services (IIS) Manager.

2. In the Connections list, navigate to <Visual Enterprise Generator hostname> > Sites > Default Web Site.

3. Right-click Default Web Site > Edit Bindings...

4. Click Add... in the Bindings window site.

5. In the Add Site Binding window, enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>https</td>
</tr>
<tr>
<td>IP address</td>
<td>All Unassigned</td>
</tr>
<tr>
<td>Port</td>
<td>443</td>
</tr>
<tr>
<td>Host name</td>
<td>N/A</td>
</tr>
<tr>
<td>SSL certificate</td>
<td>&lt;Certificate you imported before&gt;</td>
</tr>
</tbody>
</table>

6. Click OK.

7. Exit the Bindings window site.

8. Select SSL Setting.

9. Set Require SSL and Require Client certificates.

10. In the Actions list, click Apply.

Importing SAP 3D Visual Enterprise Generator Client Authentication Certificate into Local Machine Store

You install the certificate on the machine running SAP 3D Visual Enterprise Generator to authenticate this system as a client on the SAP system.

1. On the machine running SAP 3D Visual Enterprise Generator, choose Windows Start Menu > Run > MMC.

2. Click File > Add/Remove Snap-in.

3. In the Available snap-ins list, select Certificates and click Add.

4. Select Computer Account and click Next.

5. Select Local Computer and click Finish.

6. Choose OK.

7. Expand the tree on the left as follows: Console Root > Certificates > Personal.

8. Right-click Personal > All Tasks > Import.

9. Choose Next.


11. Choose Next twice, then Finish.
12. Choose OK to confirm the success message.

If the certificate has been created correctly, Client Authentication is listed in the Intended Purposes column if you selected Certificates below Personal in the left-hand tree view.

1. Right-click the certificate
2. Add the SAP 3D Visual Enterprise Generator service user with Full control.
3. Choose OK to confirm.

**Importing SAP 3D Visual Enterprise Generator Client Authentication Certificate into SAP System**

You import the SAP 3D Visual Enterprise Generator client authentication certificate into the SAP system. This is needed for the SAP system to accept connections authenticated with that certificate. For the SAP 3D Visual Enterprise Generator, it is required in order to be able to send status messages and transfer files to and from the SAP Content Server.

1. Log onto the SAP system from the SAP GUI.
2. Open transaction STRUSTSSO2.
3. Expand the node SSL client SSL Client (Standard) and double-click <sap hostname>_<SID>_<Instance number>.
4. In the Certificate section, choose Import Certificate (on lower left with green arrow). Enter the following values and click Input:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>File Path</td>
<td>Click F4 and browse to your .CER file of the Visual Enterprise Generator certificate</td>
</tr>
<tr>
<td>File Format</td>
<td>Select Base64</td>
</tr>
</tbody>
</table>

5. Choose Input.
7. Save your entries.

**Exporting SAP System Client Authentication Certificate**

You export the client authentication certificate from the SAP system. This certificate is needed by the machine running SAP 3D Visual Enterprise Generator to map the client authentication certificate of the SAP system to the SAP 3D Visual Enterprise Generator Service user. This enables the SAP system to call Web services on the machine running SAP 3D Visual Enterprise Generator.

1. Log onto the SAP system from the SAP GUI.
2. Enter transaction STRUSTSSO2.
3. Expand the node SSL client SSL Client (Standard) and choose <sap hostname>_<SID>_<instance number>.
4. In the Own Certificate section, click Owner.
5. In the Certificate section, click Export certificate.
6. Enter the following data:

Table 26:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>File Path</strong></td>
<td>Choose F4 and specify where you want to store the certificate</td>
</tr>
<tr>
<td><strong>File Format</strong></td>
<td><strong>Base64</strong></td>
</tr>
</tbody>
</table>

---

**Importing SAP System Client Authentication Certificate into SAP 3D Visual Enterprise Generator System and Map to Integration Service User**

You import the client authentication certificate of the SAP system into the machine running SAP 3D Visual Enterprise Generator and map it to the SAP 3D Visual Enterprise Generator Service user. This allows the SAP system to connect to the SAP Visual Enterprise Generator and call Web services on the SAP 3D Visual Enterprise Generator in order to start conversion jobs.

1. Open `Windows Start Menu > All Programs > Administrative Tools > Internet Information Services (IIS) Manager`.
2. Expand the node `<SAP 3D Visual Enterprise Generator host name> > Sites` and select `Default Web Site`.
3. In the right-hand panel, click `Configuration Editor`.
4. In the `Section` drop-down list, navigate to `system.webServer/security/authentication/iisClientCertificateMappingAuthentication`. Once you have reached the bottom level `MACHINE/WEBROOT/APPHOST/Default Web Site` section, select the `oneToOneMappings` column.
5. Click `Edit Items`.
6. Click the `Add` link on the right side in the `Collection` section.
7. In the `Properties` section on the button enter the following data:

Table 27:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Certificate</strong></td>
<td><code>&lt;certificate string accessible by opening the certificate in any editor&gt;</code></td>
</tr>
<tr>
<td><strong>Enabled</strong></td>
<td>True</td>
</tr>
<tr>
<td><strong>Password</strong></td>
<td>Password of <code>&lt;VEGServiceUser&gt;</code></td>
</tr>
<tr>
<td><strong>username</strong></td>
<td><code>&lt;VEGServiceUser&gt;</code></td>
</tr>
</tbody>
</table>

---

**Note**

The mapping is a one-to-one mapping. If there is more than one certificate maintained the system will not work correctly.

The certificate string of the certificate file that is maintained here must not include the first `(-----BEGIN CERTIFICATE-----)` nor the last line `(-----END CERTIFICATE-----)`. 
8. Close the dialog.
9. Click the **Apply** link on the right side in the **Actions** section.
10. In the **Connections** section on the left, select the node `<SAP Visual Enterprise Generator host name>`.
11. Click the **Restart** link on the right side in the **Actions** section.

**Creating a Communication User in SAP ERP**

Create a user that will later be used for communication between the SAP ERP system and SAP 3D Visual Enterprise Generator server as follows:

1. Log onto the SAP ERP system from the SAP GUI with `<SAPERPAdministrativeUser>`.
2. Enter transaction code **SU01**.
3. Enter `<SAPERPCommunicationUser>` into the **User** field.
4. Choose **Create**.
5. Enter `<SAPERPCommunicationUser>` into the **Last Name** field.
6. Choose the **Logon Data** tab page.
7. Enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alias</strong></td>
<td></td>
</tr>
<tr>
<td><strong>User Type</strong></td>
<td><strong>Service</strong></td>
</tr>
<tr>
<td><strong>Security Policy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>New Password</strong></td>
<td>Choose a secure password</td>
</tr>
<tr>
<td><strong>Repeat Password</strong></td>
<td>Repeat the password</td>
</tr>
<tr>
<td><strong>User Group</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Valid from</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Valid through</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Account No.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cost Center</strong></td>
<td></td>
</tr>
</tbody>
</table>

8. Save your entries.

**Creating and Assigning Authorization Role for SAP ERP Communication User**

1. Enter transaction code **PFCG**.
2. Enter `<SAPERPCommunicationUserAuthRole>` into the **Role** field.
3. Click **Single Role** to create the role.
4. Complete the role description **Visual Enterprise**.
5. Save the role.
6. Go to the **Menu** tab page.
7. Create Menu items for <SAPERPCommunicationUserAuthRole>:
8. Click Create Folder and enter Visual Enterprise.
10. Fill in transaction code MM03 Display Material.
15. Save the role.
16. Switch to the Authorizations tab page.
18. If the authorization tree structure indicates missing values (yellow triangle), double-click the topmost node with missing values. The Assign Full Authorization for Sub tree screen is displayed. When prompted to set authorization fields to * (full authorization) for all unmaintained authorizations, choose Execute. The authorization structure refreshes to show that no authorizations are missing.
19. Click Generate. The Generate Profile screen is displayed. Choose Generate and then choose Save.
20. Click Back to return to the main screen.
21. Switch to the User tab page.
22. Enter user ID <SAPERPCommunicationUser> to the list.
23. Save your entries.
24. Click User Comparison.
25. Click Complete comparison.
26. Click Cancel.

⚠️ Caution

You will need to assign the appropriate authorizations to ensure that the <SAPERPCommunicationUser> has the right to call web service methods. If the user is not properly configured you will receive an Authorization missing for service error in the SAP 3D Visual Enterprise Generator job.

Mapping Communication User to SAP 3D Visual Enterprise Generator Client Authentication Certificate

You map the <SAPERPCommunicationUser> to the certificate you imported into the SAP system from the SAP Visual 3D Enterprise Generator server.

1. Log onto the SAP ERP system from the SAP GUI.
2. Enter transaction code SM30.
3. Enter VUSREXTID into the Table/View field and click Maintain.
4. In the External ID type field, enter DN and choose ENTER.
5. Click New Entries to create the mapping entry.
6. To import the .CER file from SAP 3D Visual Enterprise Generator, click the Import button next to the External ID field.
7. Enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seq. No.</td>
<td></td>
</tr>
<tr>
<td>User</td>
<td>&lt;SAPERPCommunicationUser&gt;</td>
</tr>
<tr>
<td>Min. Date</td>
<td></td>
</tr>
<tr>
<td>Activated</td>
<td>X</td>
</tr>
</tbody>
</table>

8. Save your entries.

### 5.2.2 SAP 3D Visual Enterprise Integration

#### Enabling Client Certificate Mapping in IIS for SAP Integration Service

This enables the certificate mapping of the SAP Integration Service on the SAP Visual Enterprise Generator server.

1. Open Windows Start Menu and navigate to **All Programs** > **Administrative Tools** > **Internet Information Services (IIS) Manager**.
2. Expand the nodes **<SAP 3D Visual Enterprise Generator host name>** > **Sites** > **Default Web Site** and select SAPIntegrationService.
3. In the right-hand panel, choose Configuration Editor.
4. In the **Section** dropdown list, navigate to `system.webServer/security/authentication/iisClientCertificateMappingAuthentication`.
5. Once you have reached the bottom level `MACHINE/WEBROOT/APPHOST/Default Web Site/SAPIntegrationService` section, enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>defaultLogonDomain</td>
<td>&lt;default value&gt;</td>
</tr>
<tr>
<td>enabled</td>
<td>True</td>
</tr>
<tr>
<td>logonMethod</td>
<td>&lt;default value&gt;</td>
</tr>
<tr>
<td>manyToOneCertificateMappingsEnabled</td>
<td>&lt;default value&gt;</td>
</tr>
<tr>
<td>manyToOneMappings</td>
<td>&lt;default value&gt;</td>
</tr>
<tr>
<td>oneToOneCertificateMappingsEnabled</td>
<td>True</td>
</tr>
<tr>
<td>oneToOneMappings</td>
<td>&lt;default value&gt;</td>
</tr>
</tbody>
</table>

6. On the **Actions** panel, click **Apply**.
7. On the Connections panel, select <SAP Visual Enterprise Generator host name>.
8. On the Actions panel, choose Restart.

Creating Logical Port for Integration Service Consumer Proxy

Create a Logical Port connected to the Web Service on the SAP 3D Visual Enterprise Server as follows:

1. Download and extract the WebService_Template_VEG_90.zip attached to SAP Note 1694219: https://service.sap.com/sap/support/notes/1694219.
2. Open the WSDL-File with a text editor and replace every occurrence of VEG_SERVER_NAME with the full qualified domain name of your machine running SAP 3D Visual Enterprise Generator.

   **Note**
   If you are using SSL (HTTPS) to secure your <SAPIntegrationService>, then you will also need to change the protocol for the service address from http to https.

   **Caution**
   You should test the complete service URL by entering it into a browser. You should see no errors once the page has loaded. If you receive a Request format that is unrecognized, you will need to delete the <remove name="Documentation"/> node from the services web.config:

   ```xml
   <webServices>
   <protocols>
   <remove name="Documentation"/>
   </protocols>
   </webServices>
   ```

3. Save the changed file.
4. Log onto your SAP system from the SAP GUI.
5. Enter transaction code SOAMANAGER.
6. Choose the Web Service Configuration link.
7. Change the Search Criteria first line dropdown menu to Object Type is Consumer Proxy and for Object Name is enter the search pattern *VEG*.
8. Click on the hyperlinked internal name CO_VEG_CONVERSION_SERVER_V3. The Details of Consumer Proxy screen is displayed.
9. In the main window, choose the Configurations tab page.
10. Click Create and select the WSDL Based Configuration. A New WSDL based Configuration of Logical Port for Consumer Proxy screen is displayed.
11. Proceed through the screens of the logical port configuration accepting defaults and entering the following data as you encounter the fields:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logical Port Name</td>
<td>&lt;VEGLogicalPort&gt;</td>
</tr>
<tr>
<td>Description</td>
<td>&lt;Logical Port for SAP 3D Visual Enterprise Generator&gt;</td>
</tr>
<tr>
<td>Configuration Type</td>
<td>WSDL Based Configuration</td>
</tr>
<tr>
<td>Logical Port is Default</td>
<td>X</td>
</tr>
<tr>
<td>WSDL Base</td>
<td>Via File</td>
</tr>
<tr>
<td>File with WSDL Document</td>
<td>Choose the Browse pushbutton and navigate to the WSDL file you previously downloaded from the SAP Note</td>
</tr>
</tbody>
</table>

12. Make a note of the logical port name for future reference in the subsequent activities of this document.

13. Choose Apply Settings.

14. Choose Apply Settings on the Select one single binding out of the list of potential bindings indicated by WSDL document screen.

15. Enter DEFAULT in the SSL Client PSE field of transaction STRUST in the section Configuration of Logical Port <name of port from above>.

16. Switch to the Transport Settings tab page.

17. Change the value of the ESR target Client field to <your SAP client ID>.

18. Save your entries.

Creating Logical Port for Integration Service Consumer Proxy for Username and Password Authentication

Create a logical port connected to the Web service on the SAP 3D Visual Enterprise Server as follows:

1. Download and extract the WebService_Template_VEG_90.zip attached to SAP Note 1694219: https://service.sap.com/sap/support/notes/1694219/

2. Open the WSDL-File with a text editor and replace every occurrence of VEG_SERVER_NAME with the full qualified domain name of your machine running SAP 3D Visual Enterprise Generator.

   **Note**

   If you are using SSL (HTTPS) to secure your <SAPIntegrationService> then you will also need to change the protocol for the service address from http to https.

   **Recommendation**

   Test the complete service URL by entering it into a browser. You should see no errors once the page has loaded. If you receive an error “Request format is unrecognized”, then you will need to delete the <remove name="Documentation"/> node from the services web.config.

   <webServices>
3. Save the changed file.
4. Log onto your SAP system from the SAP GUI.
5. Enter transaction code SOAManager.
6. Choose the Web Service Configuration link.
7. Change the Search Criteria first line dropdown menu to Object Type is Consumer Proxy and for Object Name is enter the search pattern *VEG*.
8. Choose the hyperlinked internal name CO_VEG_CONVERSION_SERVER_V3. The Details of Consumer Proxy screen is displayed.
9. In the main window, choose the Configurations tab page.
10. Click Create and select the WSDL Based Configuration. A New WSDL Based Configuration of Logical Port for Consumer Proxy screen is displayed.
11. Proceed through the screens of the logical port configuration (using the Next button) accepting defaults and enter the following data in the fields:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logical Port Name</td>
<td>&lt;VEGLogicalPort&gt;</td>
</tr>
<tr>
<td>Description</td>
<td>&lt;Logical Port for SAP 3D Visual Enterprise Generator&gt;</td>
</tr>
<tr>
<td>Configuration Type</td>
<td>WSDL Based Configuration</td>
</tr>
<tr>
<td>Logical Port is Default</td>
<td>X</td>
</tr>
<tr>
<td>WSDL Base</td>
<td>Via File</td>
</tr>
<tr>
<td>File with WSDL Document</td>
<td>Choose the Browse pushbutton and navigate to the WSDL file you downloaded previously from the SAP Note</td>
</tr>
<tr>
<td>User Name</td>
<td>&lt;VEGCommunicationUser&gt;</td>
</tr>
<tr>
<td>Password</td>
<td>&lt;The password you created for this user&gt;</td>
</tr>
</tbody>
</table>

12. Choose Finish to complete configuration of the logical port.
13. Make a note of the logical port name for future reference in the subsequent activities of this document.

i Note

If you are securing the $<SAPIntegrationService$ with HTTPS, you may need to make the following changes to your configuration.

14. Choose Apply Settings on the Select one single binding out of the list of potential bindings indicated by WSDL document screen.
15. Enter DEFAULT in the SSL Client PSE field of transaction STRUST in the section Configuration of Logical Port $<name of port from above>$.
16. Switch to the Transport Settings tab page.
17. Change the value of the ESR target Client field to `<your SAP client ID>`.
18. Save your entries.

**Perform Simplified Web Service Configuration for Certificate Exchange Authentication**

You perform simplified Web service configuration for the SAP Visual Enterprise Web services as follows:

1. Log onto your SAP system from the SAP GUI.
2. Enter transaction code `SOAMANAGER`.
3. Choose Simplified Web Service Configuration.
4. Enter search pattern `DocFileLinkCheckInRequest_In` and click Go.
5. In the Configure Service Definitions list, enter the following:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Name</td>
<td>DocFileLinkCheckInRequest_In</td>
</tr>
<tr>
<td>User Name/Password (Basic)</td>
<td>X</td>
</tr>
<tr>
<td>X.509 Certificate</td>
<td>X</td>
</tr>
<tr>
<td>SAP Logon Ticket</td>
<td></td>
</tr>
</tbody>
</table>

6. Save your entries.
7. Enter search pattern `DocFileLinkInformation_Out` and click Go.
8. In the Configure Service Definitions list, enter the following:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Name</td>
<td>DocFileLinkInformation_Out</td>
</tr>
<tr>
<td>User Name/Password (Basic)</td>
<td>X</td>
</tr>
<tr>
<td>X.509 Certificate</td>
<td>X</td>
</tr>
<tr>
<td>SAP Logon Ticket</td>
<td></td>
</tr>
</tbody>
</table>

9. Save your entries.
10. Enter search pattern `VEGTaskRequest_In` and click Go.
11. In the Configure Service Definitions list, enter the following:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Name</td>
<td>VEGTaskRequest_In</td>
</tr>
<tr>
<td>User Name/Password (Basic)</td>
<td>X</td>
</tr>
<tr>
<td>X.509 Certificate</td>
<td>X</td>
</tr>
</tbody>
</table>
Field Name | Input Value
---|---
SAP Logon Ticket |  

12. Save your entries.
13. Enter search pattern `VEGObjects.Information.In` and click **Go**.
14. In the Configure Service Definitions list edit the following setting:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Name</td>
<td><code>VEGObjects.Information.In</code></td>
</tr>
<tr>
<td>User Name/Password (Basic)</td>
<td>X</td>
</tr>
<tr>
<td>X.509 Certificate</td>
<td>X</td>
</tr>
<tr>
<td>SAP Logon Ticket</td>
<td></td>
</tr>
</tbody>
</table>

15. Save your entries.

### Performing Simplified Web Service Configuration for Username & Password Authentication

You perform simplified Web service configuration for the SAP 3D Visual Enterprise Web services.

1. Log onto your SAP system from the SAP GUI.
2. Enter transaction code **SOAMANAGER**.
3. Choose **Simplified Web Service Configuration**.
4. Enter search pattern `DocFileLinkCheckInRequest_In` and click **Go**.
5. In the **Configure Service Definitions** list, enter the following:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Name</td>
<td><code>DocFileLinkCheckInRequest_In</code></td>
</tr>
<tr>
<td>User Name/Password (Basic)</td>
<td>X</td>
</tr>
<tr>
<td>X.509 Certificate</td>
<td></td>
</tr>
<tr>
<td>SAP Logon Ticket</td>
<td></td>
</tr>
</tbody>
</table>

6. Save your entries.
7. Enter search pattern `DocFileLinkInformation_Out` and click **Go**.
8. In the **Configure Service Definitions** list, enter the following:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Name</td>
<td><code>DocFileLinkInformation_Out</code></td>
</tr>
<tr>
<td>Field Name</td>
<td>Input Value</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>User Name/Password (Basic)</td>
<td>X</td>
</tr>
<tr>
<td>X.509 Certificate</td>
<td></td>
</tr>
<tr>
<td>SAP Logon Ticket</td>
<td></td>
</tr>
</tbody>
</table>

9. Save your entries.

10. Enter search pattern VEGTaskRequest_In and click Go.

11. In the Configure Service Definitions list, enter the following:

   Table 39:
<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Name</td>
<td>VEGTaskRequest_In</td>
</tr>
<tr>
<td>User Name/Password (Basic)</td>
<td>X</td>
</tr>
<tr>
<td>X.509 Certificate</td>
<td></td>
</tr>
<tr>
<td>SAP Logon Ticket</td>
<td></td>
</tr>
</tbody>
</table>

12. Save your entries.

13. Enter search pattern VEGObjects_Information_In and click Go.

14. In the Configure Service Definitions list, enter the following:

   Table 40:
<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Name</td>
<td>VEGObjects_Information_In</td>
</tr>
<tr>
<td>User Name/Password (Basic)</td>
<td>X</td>
</tr>
<tr>
<td>X.509 Certificate</td>
<td></td>
</tr>
<tr>
<td>SAP Logon Ticket</td>
<td></td>
</tr>
</tbody>
</table>

15. Save your entries.

### Activating Service Bindings

You activate the service binding you configured previously. To run the report to activate service bindings, enter the following:

Table 41:
<table>
<thead>
<tr>
<th>Transaction Code</th>
<th>SPRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customizing Menu</td>
<td><a href="#">Cross-Application Components</a></td>
</tr>
<tr>
<td>(SAP Reference Image)</td>
<td><a href="#">Document Management</a></td>
</tr>
<tr>
<td></td>
<td><a href="#">Visual Enterprise Generator</a></td>
</tr>
<tr>
<td></td>
<td>Activate Service Binding to Access Web Services</td>
</tr>
</tbody>
</table>
Setting Up Username and Password Mapping to Local Project using Communication User

1. Log onto the SAP 3D Visual Enterprise Generator Administration Tool as <VEGAdministrator>.
2. Navigate to SAP Integration User Name and Passwords.
3. Choose New. The Create Username and Password window is displayed.
4. Select the project you created earlier from the Project list.
5. Enter the <SAPERPCommunicationUser> user name and password in the fields provided.
6. Enable this configuration.
7. Click OK.

Testing Connectivity between SAP 3D Visual Enterprise Generator and SAP System

This section explains how to test connectivity between the SAP 3D Visual Enterprise Generator and the SAP System. The Obtain Service URL from SAP System and Validate portion tests to see if the SAP System can be accessed and is trusted. The Extended Connectivity Test is only applicable to system landscapes that use a username and password to secure the channel between SAP 3D Visual Enterprise Generator and the SAP System. This extended test ensures that SAP 3D Visual Enterprise Generator can authenticate and communicate with the SAP System.

Obtaining Service URL from SAP System and Validating It

1. Log onto target SAP System as <SAPERPAdministrativeUser> and execute transaction SOAMANAGER. It launches in a browser.
2. Navigate to Simplified Web Service Configuration. The Simplified Service Configuration screen is displayed.
4. Select the DocFileLinkInformation_Out entry and click Show Details. A Details screen opens.
5. In the Configuration Details section, make a note of the With WS Policy URL from the WSDL URLs section.
6. Choose OK. You can now close the browser.
7. Enter the URL into your Web browser. If you receive certificate errors, see Certificate Issues section in Application Operations Guide for SAP 3D Visual Enterprise Generator. If you are prompted to log on, do so using <SAPERPCommunicationUser>. A WSDL is displayed. Make a note of the URL displayed in the address bar when the WSDL is visible.

Extended Connectivity Test

If your system landscape uses Certificate Exchange as the security mechanism for SAP 3D Visual Enterprise Generator to SAP System security, then the steps in the previous section should suffice as a communication test. However, if you are using Username and Password authentication to secure the connection then you can use the SAP 3D Visual Enterprise Generator Administration tool to test this connection further. To do this, carry out the following steps:

1. Open SAP 3D Visual Enterprise Generator Administration and log in as <VEGAdministrator>.

3. Enter the WSDL URL you noted at the end of step 8. Choose Test. Success is indicated by the message Username and password appear to be valid. If the test is not successful, continue to the next step.

4. If the failure message includes Could not establish trust relationship for the SSL/TLS secure channel, refer to the Untrusted Certificate section.

5. If the failure message indicates (401) Unauthorized it is possible that the username or password entered against this project configuration is incorrect. Check and correct the username and password combination and retest.

6. If you still receive a (401) Unauthorized and you can successfully browse to the WSDL as outlined in steps 1 to 8 (without certificate errors), then it is possible that the user does not have sufficient rights to call the Web service. Review the Create a Communication User in SAP ERP section. If this does not resolve the issue, see the troubleshooting section Connections to SAP DMS.

### Configuring SAP 3D Visual Enterprise Generator Instance

You configure the SAP 3D Visual Enterprise Generator instance. This instance name represents SAP 3D Visual Enterprise Generator as the conversion server in SAP.

1. Enter the following:

<table>
<thead>
<tr>
<th>Transaction Code</th>
<th>SPRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customizing Menu</td>
<td>[Cross-Application Components] &gt; [Document Management] &gt; [Visual Enterprise Generator] &gt; [Map VEG Instance to Logical Port]</td>
</tr>
</tbody>
</table>

2. On the Maintain VEG Instance: Overview screen, click New Entries and enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance</td>
<td>&lt;VEG_Instance&gt;</td>
</tr>
<tr>
<td>Logical Port</td>
<td>&lt;Name of your logical Port&gt;</td>
</tr>
</tbody>
</table>

3. Save your entries.

**Note**

Depending on your system, you may have to create or use an existing Customizing request.
Configuring Conversion Trigger

You configure the conversion trigger. This is the main configuration activity to define what can be converted, and how.

Conversion triggers must be defined for all possible application types supported by your chosen CAD Provider. For example, if your CAD Provider is SolidWorks, then you would need to define a conversion trigger for both SWA (assembly) and SWP (Part).

1. Navigate to the following:

   Table 44:
<table>
<thead>
<tr>
<th>Transaction Code</th>
<th>SPRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customizing Menu</td>
<td><img src="budget.png" alt="Cross-Application Components" /> <img src="budget.png" alt="Document Management" /> <img src="budget.png" alt="Visual Enterprise Generator" /> <img src="budget.png" alt="Maintain Conversion Trigger" /></td>
</tr>
</tbody>
</table>

2. On the **DMS VEG Conversion Specifications: Overview** screen, click **New Entries** and enter the following data:

   Table 45:
<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Type</td>
<td>ASM</td>
</tr>
<tr>
<td>Sequence No</td>
<td>1</td>
</tr>
<tr>
<td>Document Status</td>
<td>Auto Start</td>
</tr>
<tr>
<td>Application Type</td>
<td>&lt;Your CAD Workstation Application from the list&gt;</td>
</tr>
<tr>
<td>Explosion Mode</td>
<td>Single File</td>
</tr>
<tr>
<td>VEG Instance</td>
<td>&lt;Your VEG instance defined in Configure SAP 3D Visual Enterprise Generator Instance&gt;</td>
</tr>
<tr>
<td>Configuration ID</td>
<td>&lt;Select From List&gt;</td>
</tr>
</tbody>
</table>

   Table 46:
<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Type</td>
<td>PRT</td>
</tr>
<tr>
<td>Sequence No</td>
<td>1</td>
</tr>
<tr>
<td>Document Status</td>
<td>Auto Start</td>
</tr>
<tr>
<td>Application Type</td>
<td>&lt;Your CAD Workstation Application&gt;</td>
</tr>
<tr>
<td>Explosion Mode</td>
<td>Single File</td>
</tr>
<tr>
<td>VEG Instance</td>
<td>&lt;Your VEG instance defined in Configure SAP 3D Visual Enterprise Generator Instance&gt;</td>
</tr>
</tbody>
</table>
Enriching 3D Construction Files with Business Data

The tagging approach is to store business data within the 3D file. During conversion from an original CAD file into the 3D RH lightweight model, this data is added to the file.

Before calling SAP 3D Visual Enterprise Generator, check that the document object contains SAP business data, such as a material object link. Irrespective of whether or not there is an object link, changes to the conversion are only triggered when changes are made to the original in the DIR.

Maintaining Tag Category

You define a tag category that represents a metadata category in the converted RH files for metadata from the SAP system.

1. Navigate to the following:

<table>
<thead>
<tr>
<th>Table 47:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transaction Code</strong></td>
<td><strong>SPRO</strong></td>
</tr>
<tr>
<td>Customizing Menu</td>
<td>[Cross-Application Components ➤ Document Management ➤ Visual Enterprise Generator ➤ Maintain Tag Category]</td>
</tr>
</tbody>
</table>

2. Confirm the cross-client configuration warning that appears.

3. On the *Tag Category: Overview* screen, choose the *New Entries* pushbutton and enter the following data:

<table>
<thead>
<tr>
<th>Table 48:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Field Name</strong></td>
<td><strong>Input Value</strong></td>
</tr>
<tr>
<td>Tag Category</td>
<td>SAP</td>
</tr>
<tr>
<td>Category Description</td>
<td>SAP Business Objects</td>
</tr>
</tbody>
</table>

4. Save your entries.

Creating Metadata Field Within Tag Category

You create a new metadata field, MATERIAL, to display tagged IDs of a linked material master, and place it in a previously created metadata category.
1. Navigate to the following:

<table>
<thead>
<tr>
<th>Table 49: Transaction Code</th>
<th>SPRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customizing Menu</td>
<td>⬜ Cross-Application Components ⬜ Document Management ⬜ Visual Enterprise Generator ⬜ Map Tag Name to Tag Category ⬜</td>
</tr>
</tbody>
</table>

2. Confirm the cross-client configuration warning that appears.

3. On the Tag ID for Metadata: Overview screen, click New Entries and enter the following data:

<table>
<thead>
<tr>
<th>Table 50: Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag Category</td>
<td>SAP</td>
</tr>
<tr>
<td>Tag Name</td>
<td>MATERIAL (in upper case only)</td>
</tr>
<tr>
<td>Tag Description (+)</td>
<td>&lt;MATERIAL OBJECT&gt;</td>
</tr>
</tbody>
</table>

4. Save your entries.

**Maintaining Tag Mapping**

Any object link of a DIR can be tagged in the RH file generated by SAP 3D Visual Enterprise Generator. In this activity, you define an object link for a material master object to be tagged. This definition has to be made for each document type containing originals to be converted by SAP 3D Visual Enterprise Generator.

1. Navigate to the following:

<table>
<thead>
<tr>
<th>Table 51: Transaction Code</th>
<th>SPRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customizing Menu</td>
<td>⬜ Cross-Application Components ⬜ Document Management ⬜ Visual Enterprise Generator ⬜ Maintain Tag Mapping ⬜</td>
</tr>
</tbody>
</table>

2. On the Assembly Tagging Customizing Table: Overview screen, click New Entries and enter the following data:

<table>
<thead>
<tr>
<th>Table 52: Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ty.</td>
<td>RDS &lt;Assembly Document Type&gt;</td>
</tr>
<tr>
<td>SAP object</td>
<td>MARA</td>
</tr>
<tr>
<td>Tag Category</td>
<td>SAP</td>
</tr>
<tr>
<td>Tag Name</td>
<td>MATERIAL</td>
</tr>
</tbody>
</table>

3. Save your entries.

Depending on your system, you may have to create or use an existing Customizing request.

To see SAP Business information, launch an RH assembly file and view the tree structure.
Creating Variant for Background Job

You create a variant to enable scheduling of a conversion background job for automatic conversion.

1. In the Launch field in SAP NWBC, enter transaction code VEG_BATCHJOB.
2. On the Background Job for Conversion Overview screen, enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Type</td>
<td>DMS</td>
</tr>
<tr>
<td>Total No of Jobs</td>
<td>10</td>
</tr>
<tr>
<td>Jobs per Block</td>
<td>2</td>
</tr>
</tbody>
</table>

3. Navigate to Go to Variants Save as Variant…
4. On the Variant Attributes screen, enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variant Name</td>
<td>RDS</td>
</tr>
<tr>
<td>Description</td>
<td>Variant for Visual Enterprise</td>
</tr>
</tbody>
</table>

Leave all remaining fields unchanged.

5. Save your entries.

Creating or Configuring VED Document Type in SAP ERP

The VED document type is required for the SAP ERP Integration with SAP 3D Visual Enterprise Generator with Upload Client to work as described in this document. Proceed as follows:

1. Log onto your SAP ERP as <SAPERPAdministrationUser>.
2. Execute transaction SPRO.
3. Choose SAP Reference IMG.
5. Create or edit document type VED. Enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Type</td>
<td>VED</td>
</tr>
<tr>
<td>Attributes</td>
<td></td>
</tr>
</tbody>
</table>
Creating or Configuring RH, VDS, and VDX Workstation Applications

You need to define workstation application types in the SAP ERP to enable users to open RH, VDS, and VDX files stored in the SAP ERP directly into SAP 3D Visual Enterprise Generator.

1. Log onto your SAP ERP as <SAPERPAdministrationUser>.
2. Execute transaction SPRO.
3. Choose SAP Reference IMG.
5. Create or edit Workstation Application RH.
6. Enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WS Application</td>
<td>RH</td>
</tr>
<tr>
<td>Description</td>
<td>SAP Product Visualization</td>
</tr>
<tr>
<td>Archive Identification</td>
<td>*</td>
</tr>
<tr>
<td>File Suffix for appl.</td>
<td>RH</td>
</tr>
<tr>
<td>File format</td>
<td>*.rh, *.rhz, *.jt</td>
</tr>
</tbody>
</table>

Leave all the fields that not mentioned in the table above blank or deselected.

6. Save your entries.
7. Save your entries.

8. Repeat steps 5 - 7 to create a workstation application type for VDS files by entering the following data:

Table 57:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WS Application</td>
<td>VDS</td>
</tr>
<tr>
<td>Description</td>
<td>SAP Product Visualization</td>
</tr>
<tr>
<td>Archive Identification</td>
<td></td>
</tr>
<tr>
<td>File Suffix for appl.</td>
<td>VDS</td>
</tr>
<tr>
<td>File format</td>
<td>*.vds</td>
</tr>
<tr>
<td>MIME Type</td>
<td>application/vds</td>
</tr>
<tr>
<td>Appl. Icon</td>
<td>@AR@</td>
</tr>
<tr>
<td>Start Authorization</td>
<td>Selected</td>
</tr>
<tr>
<td>You cannot rename temporary files</td>
<td>Selected</td>
</tr>
<tr>
<td>Original Model</td>
<td></td>
</tr>
<tr>
<td>Addlnl Files</td>
<td>Selected</td>
</tr>
<tr>
<td>Original Model</td>
<td></td>
</tr>
<tr>
<td>Content version</td>
<td>Selected</td>
</tr>
</tbody>
</table>

9. Repeat steps 5 - 7 to create a workstation application type for VDX files by entering the following data:

Table 58:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WS Application</td>
<td>VDX</td>
</tr>
<tr>
<td>Description</td>
<td>SAP Product Visualization</td>
</tr>
<tr>
<td>Archive Identification</td>
<td></td>
</tr>
<tr>
<td>File Suffix for appl.</td>
<td>VDX</td>
</tr>
<tr>
<td>File format</td>
<td>*.vds</td>
</tr>
<tr>
<td>MIME Type</td>
<td>shattered/vds</td>
</tr>
<tr>
<td>Appl. Icon</td>
<td>@AR@</td>
</tr>
</tbody>
</table>
Creating Background Job for Conversion Using Registration

Documents can be sent to SAP 3D Visual Enterprise Generator for conversion in different ways. One possibility is by using a background process to add these documents to a queue when they reach a specific lifecycle status. The job periodically checks this queue and sends the documents it contains to SAP 3D Visual Enterprise Generator for conversion. In this activity, you create this job.

1. In the Launch field in SAP NWBC, enter transaction code SM36.
2. On the Define Background Job screen, enter the following data:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Name</td>
<td>Convert Registered Files</td>
</tr>
<tr>
<td>Job Class</td>
<td>B</td>
</tr>
<tr>
<td>Status</td>
<td>Scheduled</td>
</tr>
<tr>
<td>Exec. Target</td>
<td>&lt;SAP System Server&gt;</td>
</tr>
</tbody>
</table>

3. Press Enter.
4. On the Create Step 1 screen, enter the following data in ABAB program:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>VEG_CNV_BATCHJOB</td>
</tr>
<tr>
<td>Variant</td>
<td>RDS</td>
</tr>
<tr>
<td>Language</td>
<td>EN</td>
</tr>
</tbody>
</table>

5. Save your entries.
6. Go back.
7. On the Define Background Job screen, click Start condition.
9. Select the Periodic job checkbox.
10. Click Periodic values.
11. Choose Other period.
12. Enter 2 in the Minute(s) field.
13. Save your entries.
14. Repeat save again three times.
Appendix A: Upgrade Information

The SAP 3D Visual Enterprise Generator 9.0 installer supports automatic upgrade from any previous version. This means that you do not need to uninstall previous versions of SAP 3D Visual Enterprise Generator and then install the new version in their place.

The SAP 3D Visual Enterprise Generator 9.0 installer can use and upgrade the database and shares of previous releases of the software.

⚠️ Caution

Upgrading SAP 3D Visual Enterprise Generator will also upgrade the SAP 3D Visual Enterprise Generator API. If you are using SAP Visual Enterprise Access you will need to upgrade this to release 7.1.

If you are using SAP 3D Visual Enterprise Viewer, you will need to upgrade to version 9.0.

Prerequisites

Ensure that you have obtained the following information from the current configuration and performed backup operations recommended:

- Usernames and passwords of all connected systems and components that are going to be reused or upgraded by the new installation.
- SMTP (mail) server that you want to use to send E-mail from the system. You will be required to reenter this information during the configuration step.
- E-mail address to which any Administrative alerts or system default messages will be sent.
- Current system log level setting.

Ensure that you have performed the following tasks:

- Stop the SAP 3D Visual Enterprise Generator service and backup the database (recommended)
- Stop the SAP 3D Visual Enterprise Generator service and backup the contents of the share

ℹ️ Note

If the SAP 3D Visual Enterprise Generator service you are upgrading previously used a Windows system user account, ensure that the user VEGServiceUser has been created and has all the privileges required (for example, have full access to the share).

Procedure

Upgrade Steps

Installation and Upgrade
1. Start the SAP 3D Visual Enterprise Generator Installation program. The system will identify that you have an existing installation, and rather than installing, will upgrade the existing installation to SAP 3D Visual Enterprise Generator 9.0. After the upgrade is completed, close the form.

2. The SAP 3D Visual Enterprise Generator Configuration tool starts automatically. If it does not, run this application from the Windows Start menu.

Configuration

At the conclusion of the installation step, the SAP 3D Visual Enterprise Generator is effectively configured as a new installation. Follow the standard configuration instructions for your chosen installation pathway (see Installation section) and refer to the following steps as you work through the steps of the configuration wizard.

If you are upgrading a previous SAP 3D Visual Enterprise Generator Share, then once you have selected and validated this share, many of the subsequent wizard steps will already be populated with your old settings.

1. On the Select Shared Directory screen, use the previously configured SAP 3D Visual Enterprise Generator Share directory. The configuration tool reads previous configuration and uses this information during the following steps.

2. On the Configure SAP 3D Visual Enterprise Generator Service Account screen, specify the service account used for the previous installation, or the new VEGServiceUser account if a Windows system user account was used for the previous installation.

3. On the Select Database screen, enter the database that was connected to the previous installation.

4. Choose to UPGRADE the existing database and enter password for the deepserver account. Click OK.

5. Choose Yes at the upgrade prompt.

6. Accept defaults on subsequent wizard steps.

7. On the Configure Logging Level screen, set preferred logging level.

8. On the Configure E-Mail Settings screen, enter the SMTP server name and Administrative E-mail account. Verify that all other settings on this screen are correct.

9. Accept defaults on subsequent wizard steps.

10. On the Configure IIS VDIR and Application screen, if you do not want to use SSL encryption or you do not have an SSL certificate for the target server, deselect the Require SSL checkbox if it was deselect for previous configuration. If not, leave it selected (default).

11. Accept defaults on subsequent wizard steps.


Post-Upgrade

Check that Services have been upgraded and initialized correctly:

1. Make sure that the SAP 3D Visual Enterprise Generator Service is running.

2. Open the SAP 3D Visual Enterprise Generator Administration Application and log on using a valid Administrator or SecurityAdministrator account.
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The following is an overview of the most important documentation types that you need in the various phases in the life cycle of SAP software.

Cross-Phase Documentation

SAPterm is SAP’s terminology database. It contains SAP-specific vocabulary in over 30 languages, as well as many glossary entries in English and German.

- Target group: Relevant for all target groups
- Current version:
  - In the SAP system in transaction STERM

SAP Library is a collection of documentation for SAP software covering functions and processes.

- Target group:
  - Consultants
  - System administrators
  - Project teams for implementations or upgrades
- Current version:
  - On SAP Help Portal at http://help.sap.com (also available as documentation DVD)

The security guide describes the settings for a medium security level and offers suggestions for raising security levels. A collective security guide is available for SAP NetWeaver. This document contains general guidelines and suggestions. SAP applications have a security guide of their own.

- Target group:
  - System administrators
  - Technology consultants
  - Solution consultants
- Current version:

Implementation

The master guide is the starting point for implementing an SAP solution. It lists the required installable units for each business or IT scenario. It provides scenario-specific descriptions of preparation, execution, and follow-up of an implementation. It also provides references to other documents, such as installation guides, the technical infrastructure guide and SAP Notes.

- Target group:
  - Technology consultants
Project teams for implementations

Current version:

On SAP Service Marketplace at http://service.sap.com/instguides

The Installation guide describes the technical implementation of an installable unit, taking into account the combinations of operating systems and databases. It does not describe any business-related configuration.

Target group:

- Technology consultants
- Project teams for implementations

Current version:

On SAP Service Marketplace at http://service.sap.com/instguides

Configuration Documentation in SAP Solution Manager – SAP Solution Manager is a life-cycle platform. One of its main functions is the configuration of business scenarios, business processes, and implementable steps. It contains Customizing activities, transactions, and so on, as well as documentation.

Target group:

- Technology consultants
- Solution consultants
- Project teams for implementations

Current version:

In SAP Solution Manager

The Implementation Guide (IMG) is a tool for configuring (Customizing) a single SAP system. The Customizing activities and their documentation are structured from a functional perspective. (In order to configure a whole system landscape from a process-oriented perspective, SAP Solution Manager, which refers to the relevant Customizing activities in the individual SAP systems, is used.)

Target group:

- Solution consultants
- Project teams for implementations or upgrades

Current version:

In the SAP menu of the SAP system under Tools > Customizing > IMG

Production Operation

The technical operations manual is the starting point for operating a system that runs on SAP NetWeaver, and precedes the application operations guides of SAP Business Suite. The manual refers users to the tools and documentation that are needed to carry out various tasks, such as monitoring, backup/restore, master data maintenance, transports, and tests.

Target group:

- System administrators

Current version:

On SAP Service Marketplace at http://service.sap.com/instguides

The application operations guide is used for operating an SAP application once all tasks in the technical operations manual have been completed. It refers users to the tools and documentation that are needed to carry out the various operations-related tasks.

Target group:

- System administrators
Technology consultants
○ Solution consultants

Current version:
○ On SAP Service Marketplace at http://service.sap.com/instguides

Upgrade

The upgrade master guide is the starting point for upgrading the business scenarios and processes of an SAP solution. It provides scenario-specific descriptions of preparation, execution, and follow-up of an upgrade. It also refers to other documents, such as upgrade guides and SAP Notes.

Target group:
○ Technology consultants
○ Project teams for upgrades

Current version:
○ On SAP Service Marketplace at http://service.sap.com/instguides

The upgrade guide describes the technical upgrade of an installable unit, taking into account the combinations of operating systems and databases. It does not describe any business-related configuration.

Target group:
○ Technology consultants
○ Project teams for upgrades

Current version:
○ On SAP Service Marketplace at http://service.sap.com/instguides

Release notes are documents that contain short descriptions of new features in a particular release or changes to existing features since the previous release. Release notes about ABAP developments are the technical prerequisite for generating delta and upgrade Customizing in the Implementation Guide (IMG).

Target group:
○ Consultants
○ Project teams for upgrades

Current version:
○ On SAP Service Marketplace at http://service.sap.com/releasenotes
○ In the SAP menu of the SAP system under Help Release Notes (only ABAP developments).

Typographic Conventions

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Example&gt;</td>
<td>Angle brackets indicate that you replace these words or characters with appropriate entries to make entries in the system, for example, “Enter your &lt;User Name&gt;”.</td>
</tr>
<tr>
<td>Example</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td><img src="Example" alt="Example" /> <img src="Example" alt="Example" /></td>
<td>Arrows separating the parts of a navigation path, for example, menu options</td>
</tr>
<tr>
<td>Example</td>
<td>Emphasized words or expressions</td>
</tr>
<tr>
<td>Example</td>
<td>Words or characters that you enter in the system exactly as they appear in the documentation</td>
</tr>
<tr>
<td><a href="http://sap.com">http://sap.com</a></td>
<td>Textual cross-references to an internet address</td>
</tr>
<tr>
<td>/Example</td>
<td>Quicklinks added to the internet address of a homepage to enable quick access to specific content on the Web</td>
</tr>
<tr>
<td>123456</td>
<td>Hyperlink to an SAP Note, for example, SAP Note 123456</td>
</tr>
<tr>
<td><img src="Example" alt="Example" /></td>
<td>• Words or characters quoted from the screen. These include field labels, screen titles, pushbutton labels, menu names, and menu options. • Cross-references to other documentation or published works</td>
</tr>
<tr>
<td>Example</td>
<td>• Output on the screen following a user action, for example, messages • Source code or syntax quoted directly from a program • File and directory names and their paths, names of variables and parameters, and names of installation, upgrade, and database tools</td>
</tr>
<tr>
<td>EXAMPLE</td>
<td>Technical names of system objects. These include report names, program names, transaction codes, database table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE</td>
</tr>
<tr>
<td>EXAMPLE</td>
<td>Keys on the keyboard</td>
</tr>
</tbody>
</table>
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