Deltek Vision® 6.1

Configure Vision Analysis Cubes

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Overview

This document provides a list of the required prerequisites and the steps to configure your database server for Deltek Vision Analysis Cubes.

With Vision Analysis Cubes, you create custom Vision reports and Vision performance management canvases. Canvases are business intelligent tools that you use to view and interact with critical business information.

When you run the Deltek Vision 6.1 installation routine on your database server to install or upgrade your Vision software, Vision Analysis Cubes components and the Vision Resource Kit are installed and updated. After these are installed, a system administrator uses the Deltek Vision Resource Kit and Microsoft SQL Server Management Studio to configure Analysis Cubes before users can create custom reports and canvases.

The following two tables provide an overview of the configuration steps that you perform after you install the required prerequisites.

Vision Resource Kit Configuration Steps	Description
1	Check that all prerequisites are installed.
2	Create the Vision data warehouse and the Vision data cubes that are stored in the data warehouse.
3	If you have custom field labels in Vision, apply system labels to the data cubes.
4	Populate the data warehouse and data cubes. Create the SQL Server agent job to refresh the cubes.

Microsoft SQL Server Management Studio Configuration Steps	Description
5	Validate that the Analysis Cubes configuration completed successfully.
6	Create an Analysis Services role for Vision Analysis Cube users.
7	Script the Analysis Services role creation for Vision Analysis Cube users.

This guide also includes instructions on how to configure Vision Analysis Cubes for a SQL Server clustered environment.

After you complete the Analysis Cubes configuration steps, users can access the Vision data cubes through your corporate network (LAN or WAN). Custom Vision reports can now be created.

Before you can create canvases, you must install and configure the Performance Management Canvases software.

See the following help topic and guide for instructions:

- "Install the Performance Management Canvases" help topic — This provides overview information.
- *Deltek Vision Performance Management Canvas Technical Installation Guide* at the Deltek Customer Care Connect site — This provides detailed instructions.

To access the Vision data cubes over the Internet, additional configuration is required. Instructions for Internet configuration are available at the Deltek Customer Care Connect site in a document titled *Configure Deltek Vision Analysis Cubes for Internet Accessibility*.

Prerequisites

The following prerequisites must be met before you configure and use Analysis Cubes:

- You must have Microsoft SQL Server® 2005 or Microsoft SQL Server® 2008—Standard or Enterprise Edition installed.
- You must have Microsoft SQL Server 2005 Analysis Services or Microsoft SQL Server 2008 Analysis Services (a component of SQL Server) installed as the default instance or as a named instance.

  If Analysis Services is not installed, to add it, click Windows **Start » Control Panel » Add or Remove Programs » Microsoft SQL Server 2005** or **Microsoft SQL Server 2008 » Change**. (SQL 2005 or 2008 Workgroup and Express Editions do not include Analysis Services.)
- You must have Service Pack 2 (SP2) version 3052 or later for Microsoft SQL Server 2005 installed.

  SP2 must be installed **after** Analysis Services is installed. If you already installed SP2 and you still need to install Analysis Services, install Analysis Services, and then reinstall SP2.
- You must have an Active Directory domain environment. Your Analysis Cubes clients and database server must be members of the domain.
- The database tier of the Deltek Vision installation must be run on your database server. This is necessary so you can install the Vision Resource Kit and configure the environment for Analysis Cubes.

Deltek provides OLAP services to assist you with the installation, configuration, and optimization of your SQL Analysis Cubes. These services consists of consulting, Web conferencing and training, installation guides, and reporting assistance. For more information, please contact your Deltek account manager at accountmanager@deltek.com.

Configuration Steps — Vision Resource Kit

Use the Vision Resource Kit to complete the following configuration steps:

Step 1: Check that the Vision Analysis Cubes prerequisites are correctly installed.

Step 2: Create the Vision data warehouse and analysis cubes.

Step 3: Apply system labels to the analysis cubes.

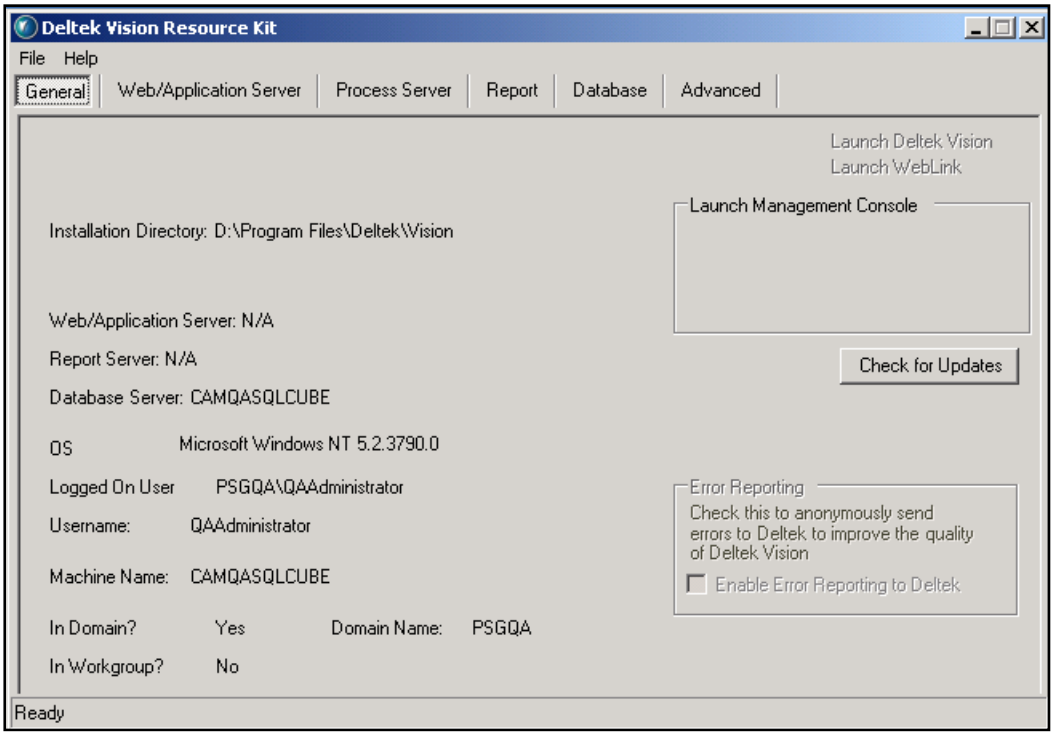
Step 4: Populate the Vision data warehouse and analysis cubes.

If you operate Vision on more than one tier, you must run the Resource Kit from the database tier.

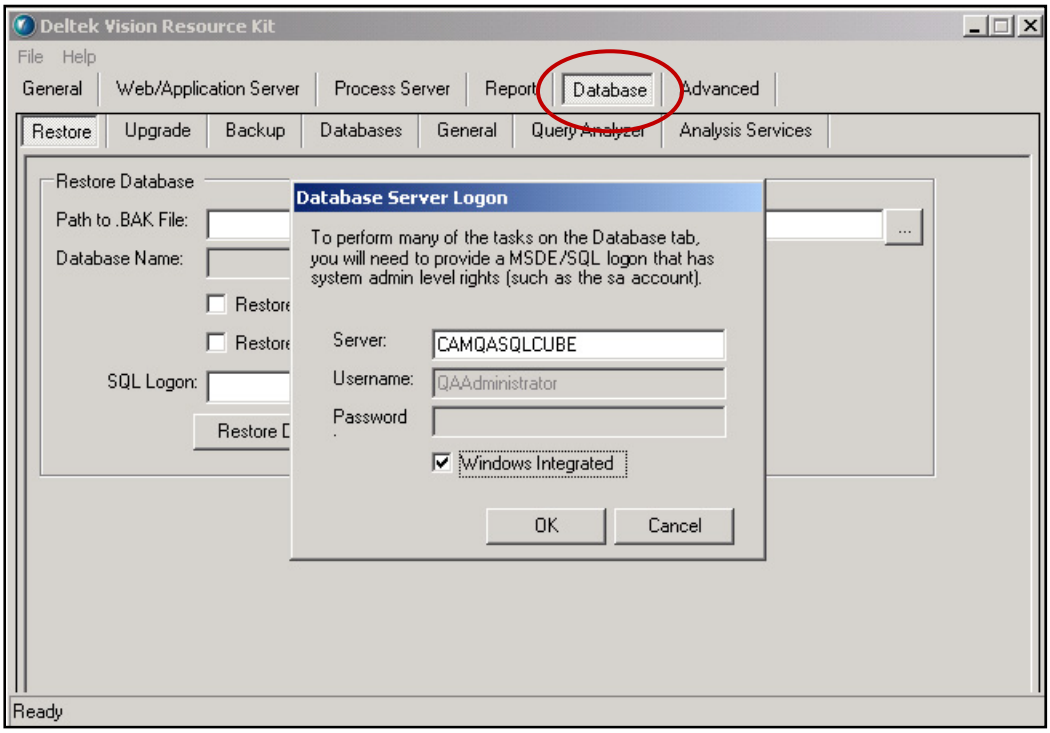
Open the Vision Resource Kit

To open the Vision Resource Kit, complete the following steps:

1. From your Vision database server, click **Start** » **All Programs** » **Deltek Vision** » **ResourceKit**.



2. On the Deltek Vision Resource Kit dialog box, click the Database tab, and on the Database Server Logon dialog box, select the **Windows Integrated** check box.

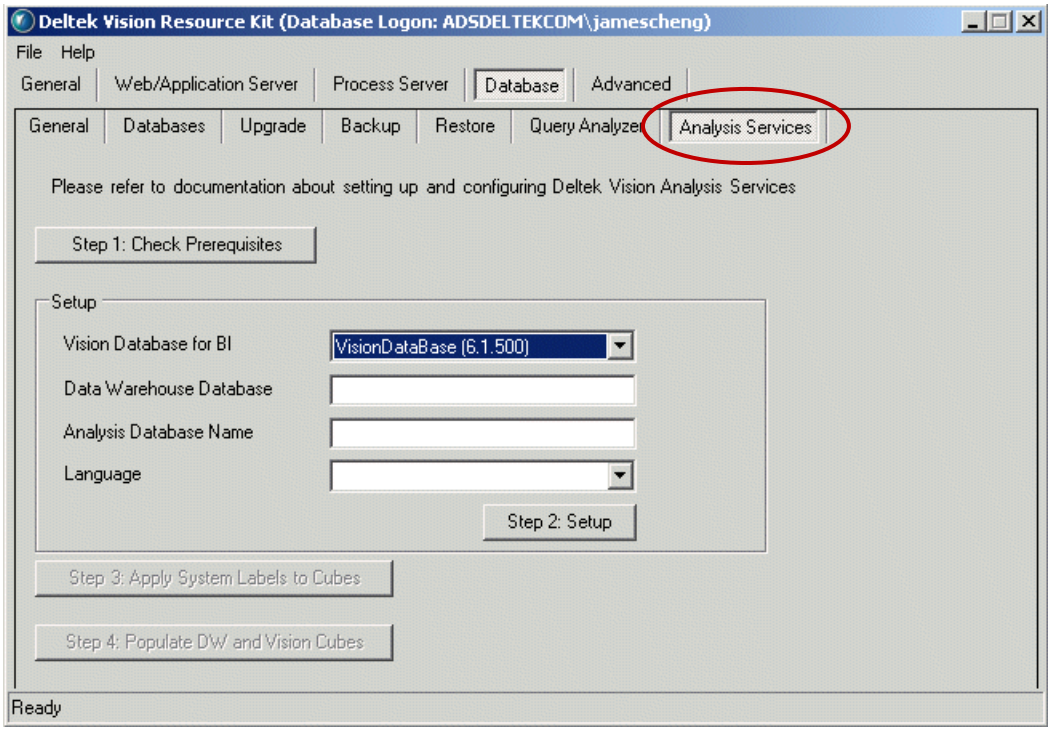


If you use SQL Authentication, the Analysis Cubes components will not be set up properly.

Step 1: Check Prerequisites

To check that the Analysis Cubes prerequisites are installed correctly, complete the following steps:

1. On the Database tab of the Deltek Vision Resource Kit dialog box, click the Analysis Services tab.



2. On the Analysis Services tab, click the **Step 1: Check Prerequisites** button to confirm whether or not you have all the Analysis Cube prerequisite software installed.
   - If all prerequisites are installed, you receive a **Vision BI Prerequisites are satisfied** message.

   - If prerequisites are not installed, you receive a message that identifies the missing prerequisites. You must install all missing prerequisites before you can continue with the Analysis Cubes configuration steps.

Step 2: Setup

To create the Vision data warehouse and analysis cubes, complete the following steps:

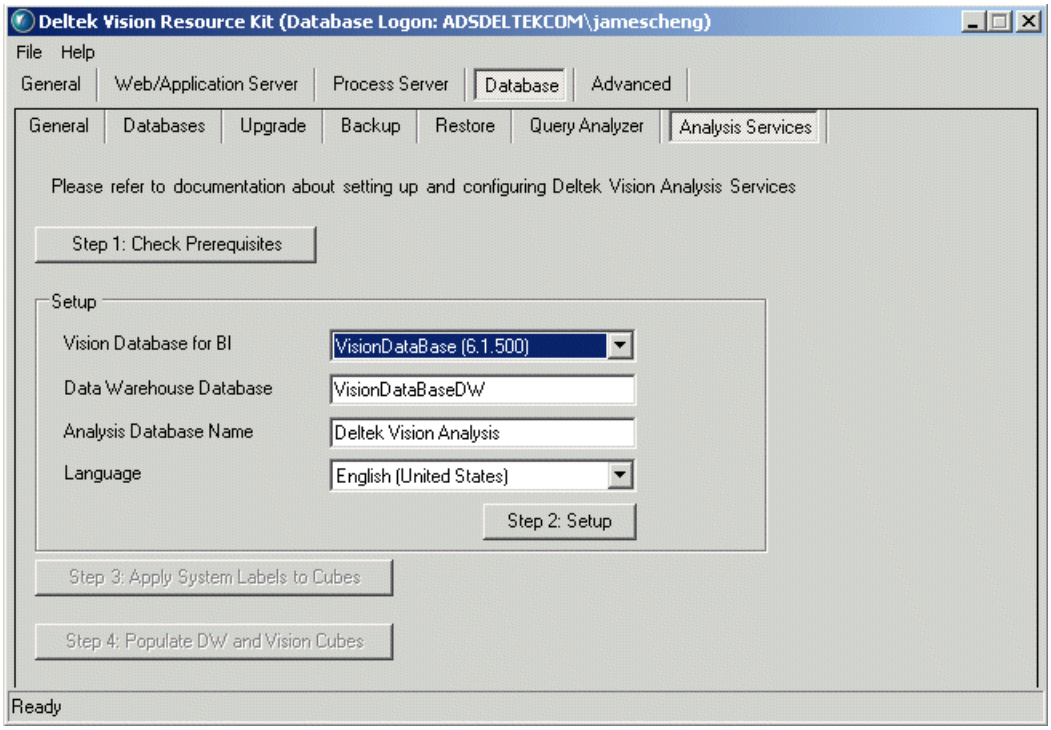
1. In the **Setup** section of the Analysis Services tab (on the Database tab in the Resource Kit), complete the following:
   - Select your Vision database from the **Vision Databases for BI** drop-down list.
   - Enter a name for the Vision data warehouse in the **Data Warehouse Database** field.

     Deltek recommends that you use the same database name and add DW to the end (for example, VisionDataBase would be VisionDataBaseDW).

   - The **Analysis Database Name** field prefills with **Deltek Vision Analysis**.
   - From the **Language** drop-down list, select a language to use with Analysis Cubes. Only the languages that you purchased for Vision display in the list.

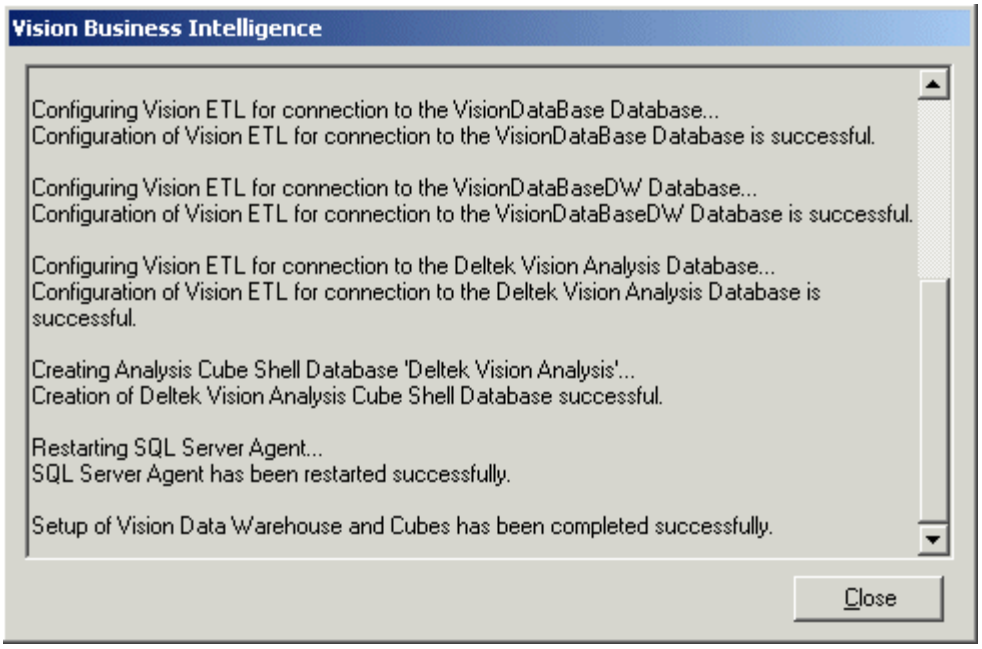
     Possible options are:

     - **English (United States)**
     - **English (International)**



2. Click the **Step 2: Setup** button to create the data warehouse.

   During this process, a Vision Business Intelligence dialog box identifies each component as it is created.



   When it completes, a **Setup of Vision Data Warehouse and Cubes has been completed successfully** message displays at the bottom of the Vision Business Intelligence dialog box.

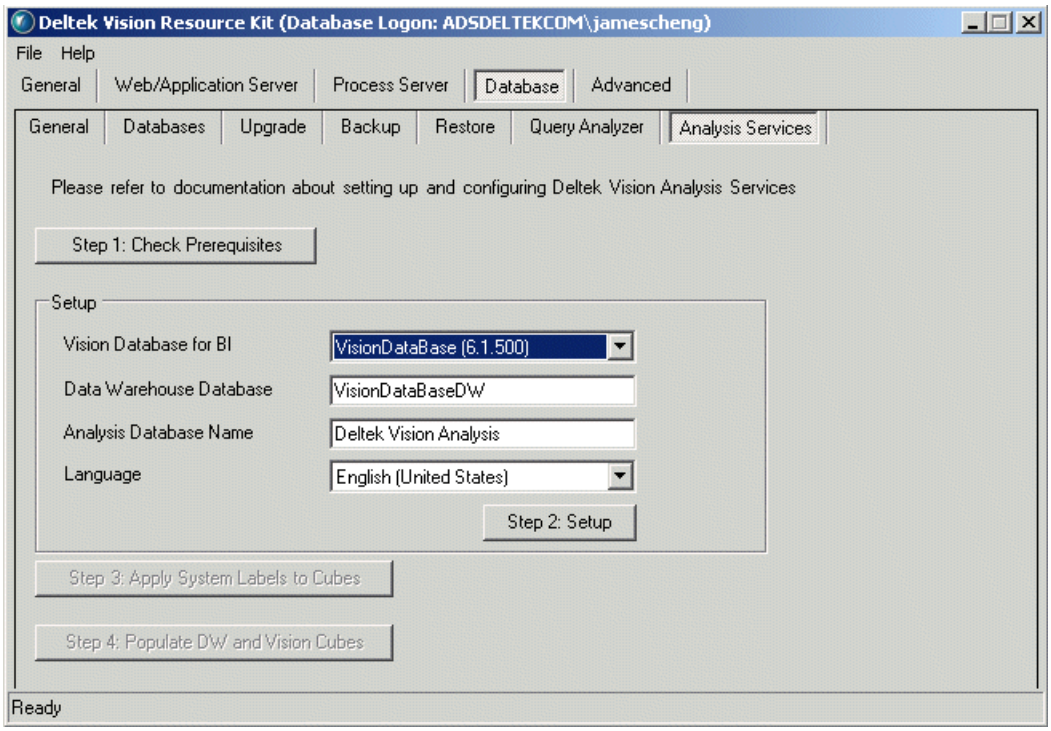
3. Click **Close**.

Step 3: Apply System Labels to Cubes

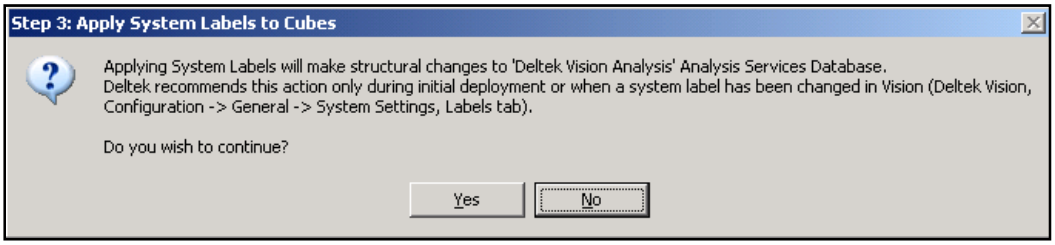
If you do not use custom labels for any Vision field, you can ignore this step and continue with Step 4.

If you use custom labels for any Vision field, complete the following steps:

1. On the Analysis Services tab (on the Database tab in the Resource Kit), click the **Step 3: Apply System Labels to Cubes** button to apply your custom field labels to the data warehouse.



You receive a message that informs you that you are about to modify the structure of the Analysis Services database.



2. Click **Yes** to continue.

3. When you receive a message that the system field labels were successfully applied, click **OK**.

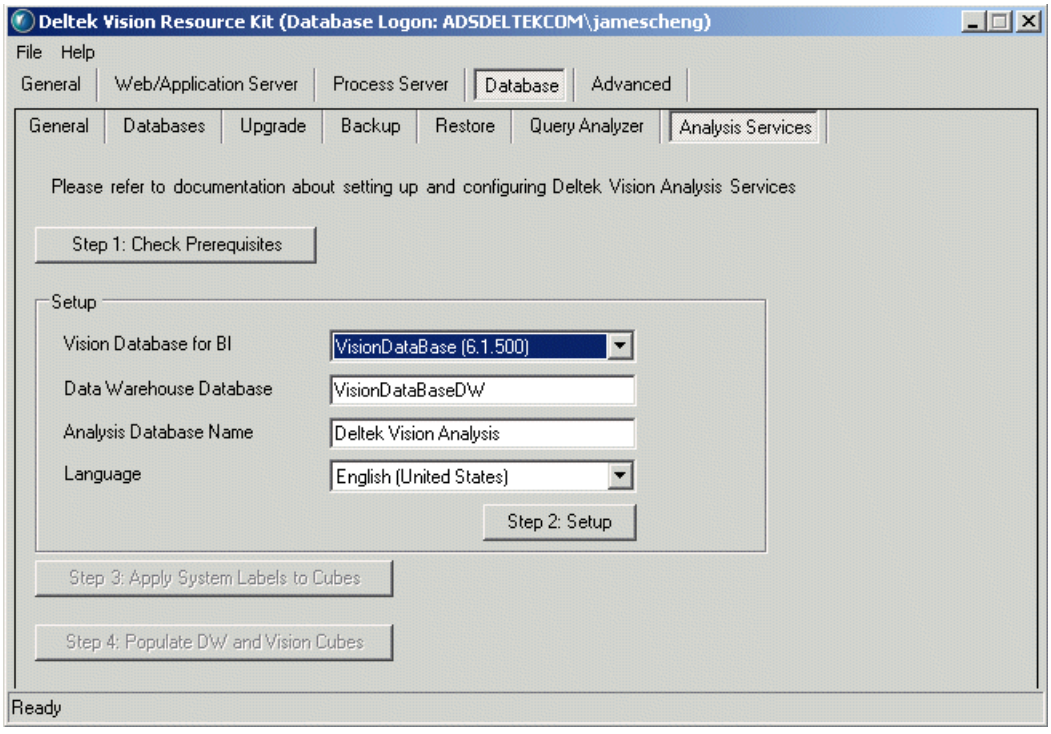
If you modify Vision field labels after you perform Step 3, you must repeat Step 3 to update and reapply the field labels in the data warehouse.

Step 4: Populate DW and Vision Cubes

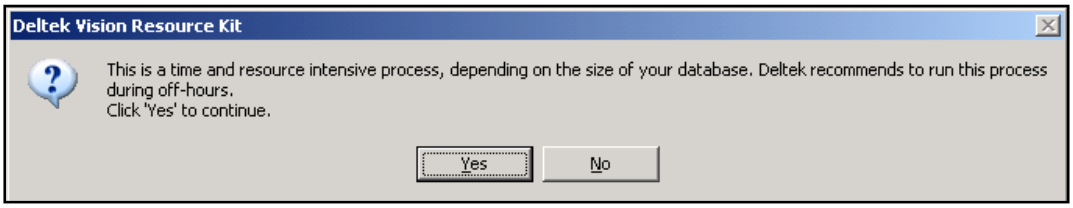
Deltek recommends that you do this step after business hours when users are not connected to the Vision transactional database.

To populate the data warehouse and the data cubes, complete the following steps:

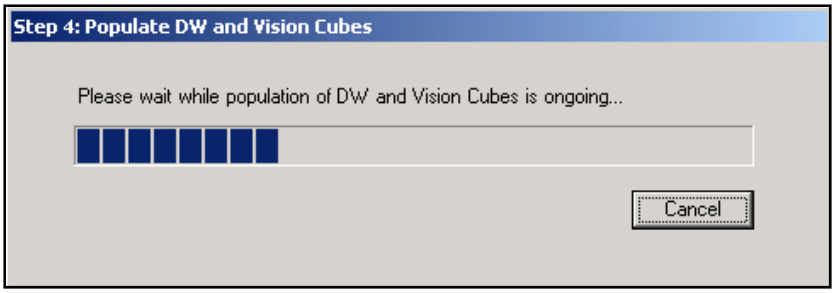
1. On the Analysis Services tab (on the Database tab in the Resource Kit), click the **Step 4: Populate DW and Vision Cubes** button.



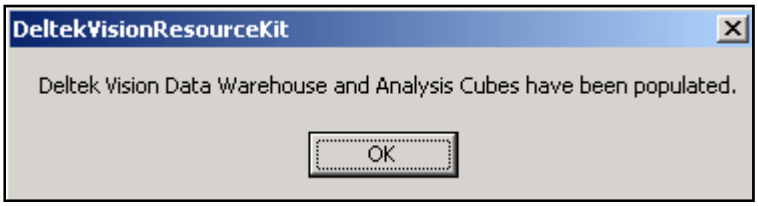
2. On the Deltek Vision Resource Kit dialog box that recommends that you run this process after business hours, click **Yes**.



During this process, you see a status bar that displays the progress.



3. When you receive the message that the Deltek Vision data warehouse and analysis cubes are populated, click **OK**.



Validate that the Analysis Cubes Configuration Completed Successfully

After you complete the configuration steps 1–4 in the Vision Resource Kit, you must connect to your SQL 2005 Database Engine and Analysis Services to confirm that:

- The Vision data warehouse, analysis cubes, and SQL Server agent job to refresh them are created.
- The Vision data warehouse and analysis cubes are populated correctly.
- The Vision analysis cubes are processed as part of the execution of the SQL Server agent job.

Connect to Your SQL 2005 or 2008 Database Engine and Analysis Services

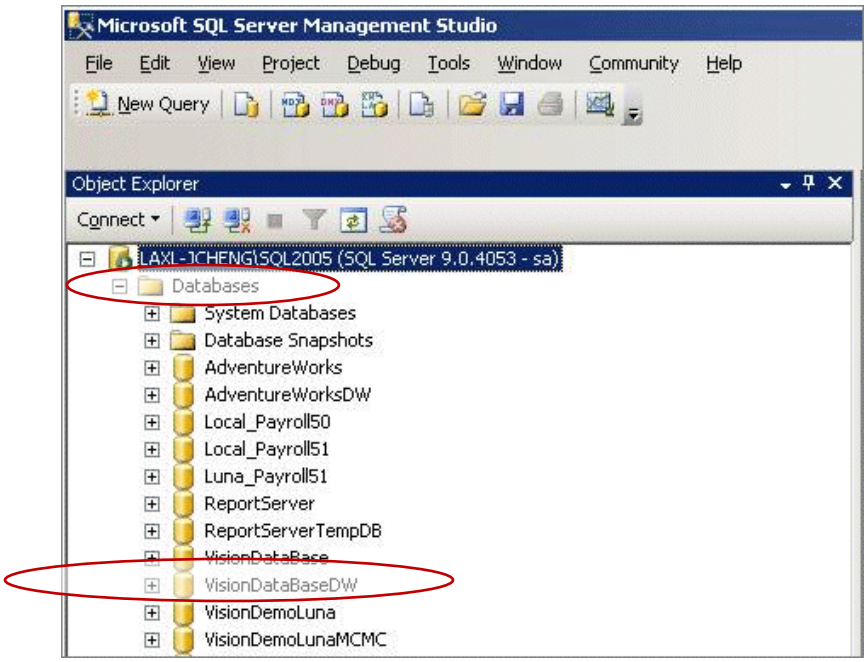
To connect to your SQL 2005 or SQL 2008 Database Engine and Analysis Services, complete the following steps:

1. Click Windows **Start » All Programs » Microsoft SQL Server 2005** or **Micrsoft SQL Server 2008 » SQL Server Management Studio**.
2. On the Connect to Server dialog box, complete the following steps:
   a. In the **Server Type** field, select **Database Engine**.
   b. In the **Server Name** field, select your SQL server.
   c. If you choose **SQL Server Authentication** in the **Authentication** field, you must enter **sa** in the **Login** field, and enter the password in the **Password** field that you established for this username during the Microsoft SQL Server 2005 or Microsoft SQL Server 2008 installation process.
   d. Click the **Connect** button.
3. In the **Connect** drop-down list in the Object Explorer window, select **Analysis Service**.
4. Select your Analysis Server as the server name.

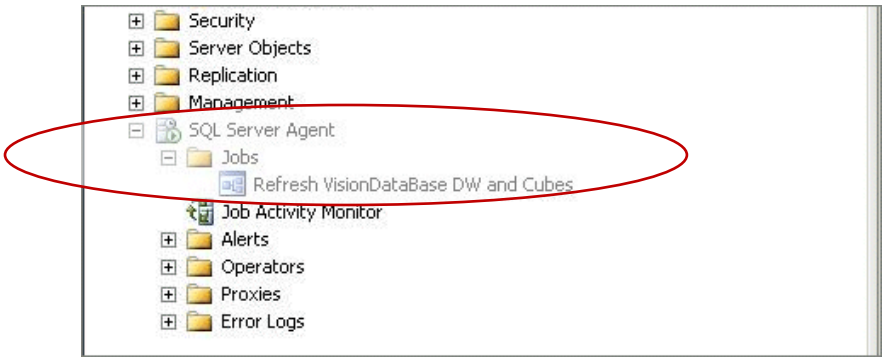
Confirm that the Vision Data Warehouse, Analysis Cubes, and SQL Server Agent Job Are Created

After you connect to your SQL 2005 or SQL 2008 Database Engine and Analysis Services, confirm that the following items are added to SQL Server 2005 or SQL Server 2008:

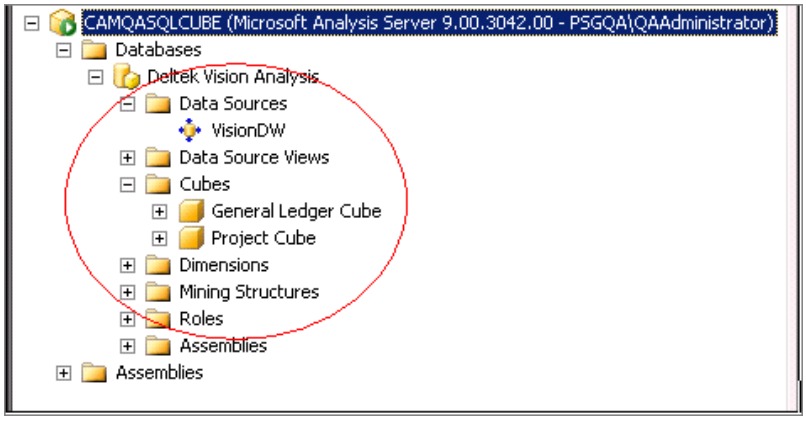
- The Vision data warehouse displays in the Databases folder of the SQL Server Database Engine.



- The **Refresh <*Vision data warehouse name*> DW and Cubes** job displays in the SQL Server Agent Jobs folder.



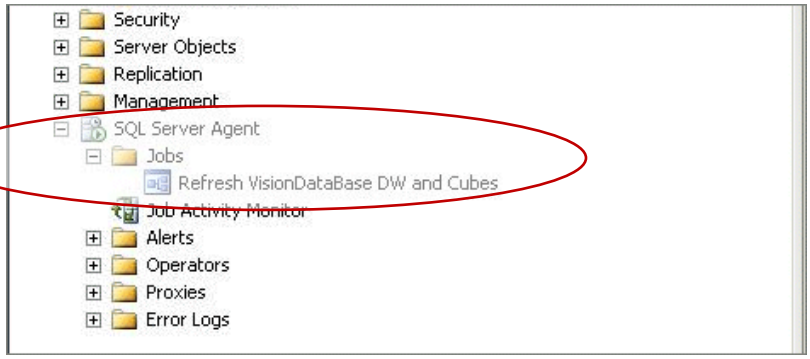
- **Deltek Vision Analysis** displays in the Databases folder of Analysis Services.



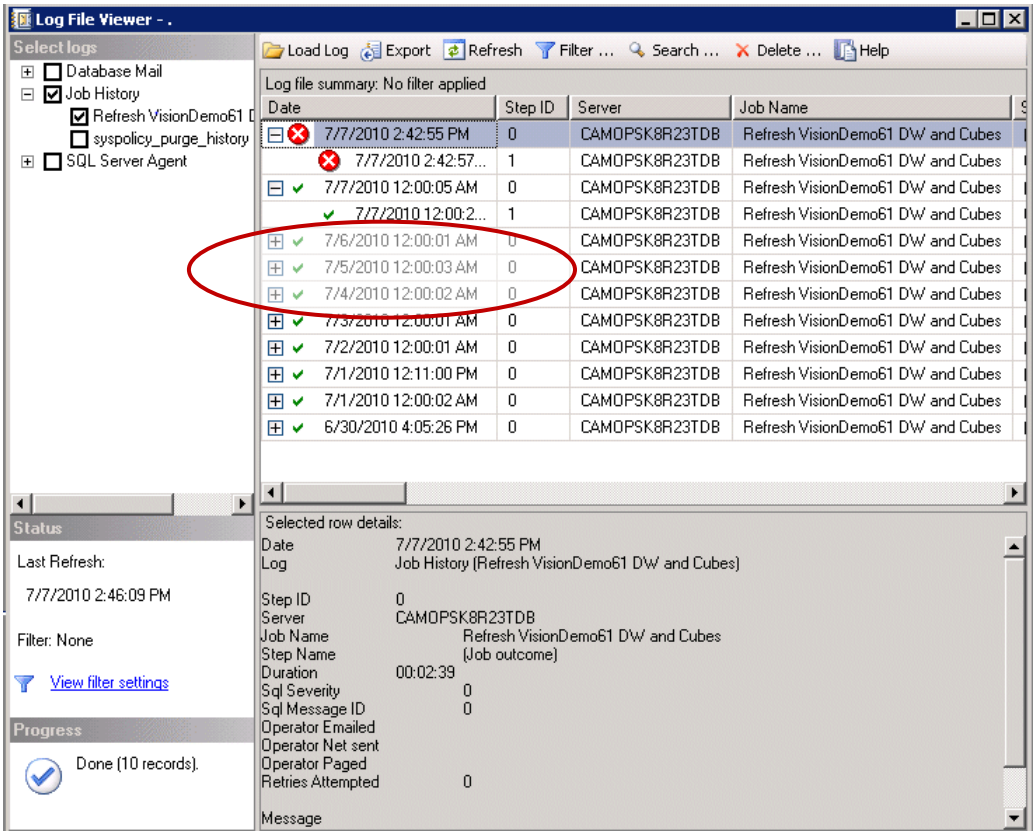
Validate that the Vision Data Warehouse and Analysis Cubes Are Populated

To confirm that the Vision data warehouse and analysis cubes are populated, complete the following steps:

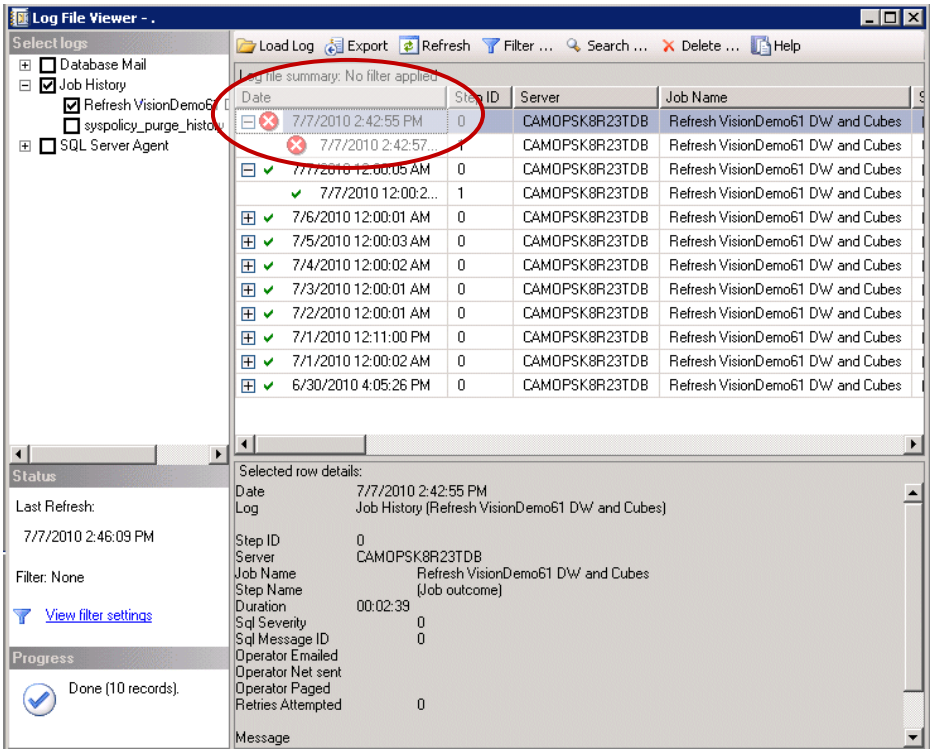
1. In the SQL Server Agent Jobs folder, right-click the **Refresh <*Vision data warehouse name*> DW and Cubes** job, and select **View History** from the shortcut menu.



2. In the Log File Viewer dialog box, you see a green check mark beside the date of the **Refresh <*Vision data warehouse name*> DW and Cubes** job if the Vision data warehouse and data cubes were populated correctly.

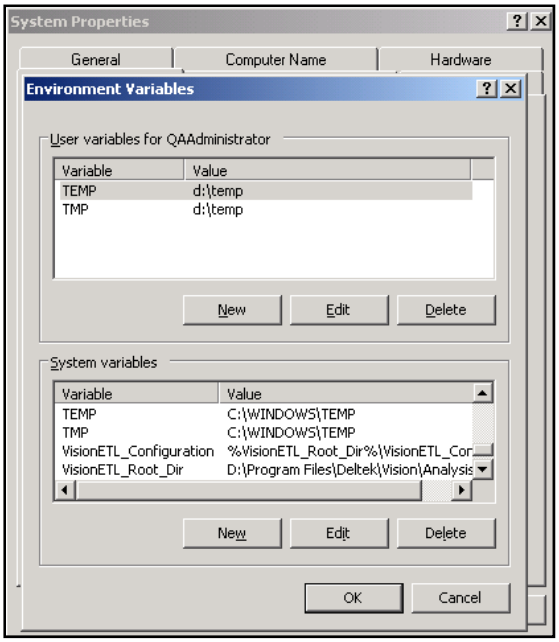


3. If you see a red X instead of a green check mark, it is possible that there is a problem with the environment variables that are required for the Integration Services packages to read the configuration data. Complete the following troubleshooting steps for environmental variables.

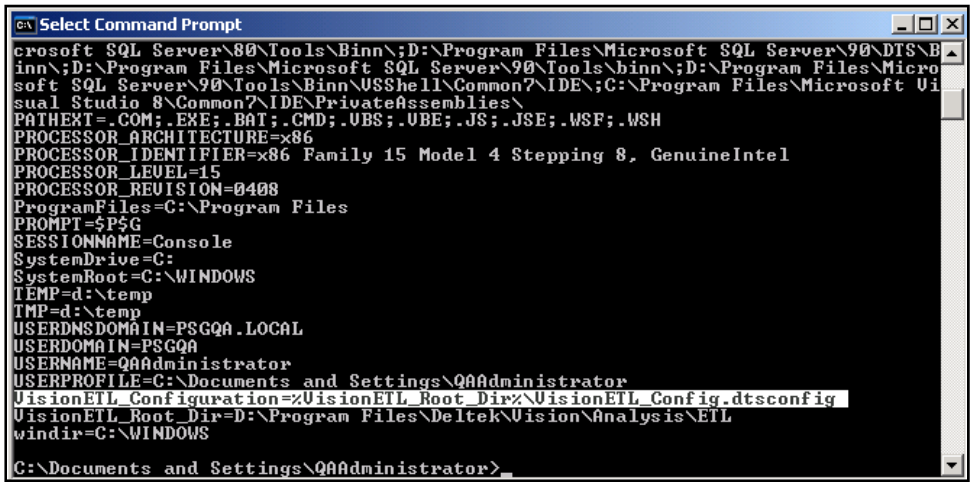


Troubleshooting steps:

a. In SQL Server Management Studio, validate that the environment variable exists in **System Properties** » **Advanced** » **Environment Variables**.



b. At a command prompt, enter **set**. If the VisionETL_Configuration environment variable reads %VisionETL_Root_Dir% and not the full path to the VisionETL_Config.dtsconfig file, then it is likely that the server was not rebooted after the environment variables were set by the Vision database tier installation. Reboot your server.



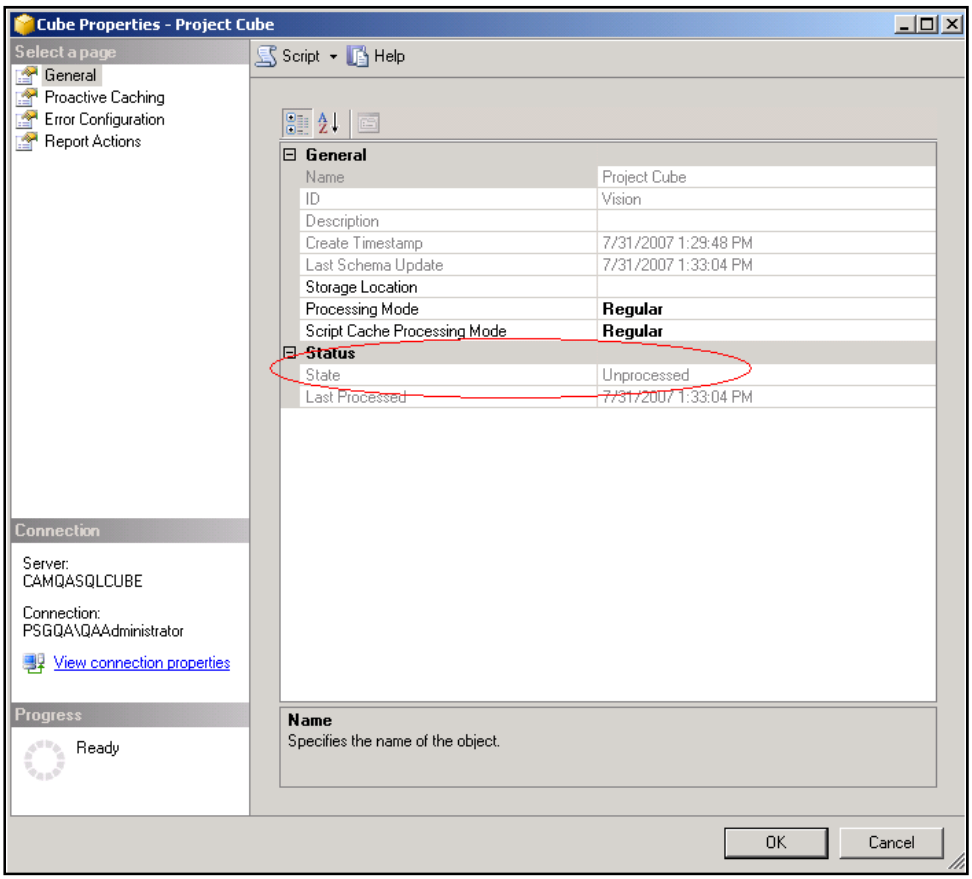
The default schedule for the SQL agent job runs every night at 12:00 am. If this schedule interferes with your nightly backup or any other processing or SQL agent scheduled jobs, then modify the job to run at an appropriate time for your environment.

Validate that the Vision Cubes Are Processed Via the SQL Server Agent Job

To validate that the Vision Project and General Ledger cubes are processed as part of the execution of the SQL Server agent job, complete the following steps:

1. In SQL Server Management Studio, connect to Analysis Services.
2. In the Object Explorer pane, in Analysis Services, navigate to **Databases » Deltek Vision Analysis » Cubes**.
3. In the Cubes folder, right-click the Project Cube folder, and select **Properties** from the shortcut menu.

   In the **Status** section of the Cube Properties – Project Cube dialog box, the **State** displays **Processed**. When the cubes are not in a processed state, you cannot connect to them.



4. If the status displays **Unprocessed**, right-click the Project Cube folder, and select **Process** from the shortcut menu.
5. Repeat steps 3 and 4 for the General Ledger Cube folder.

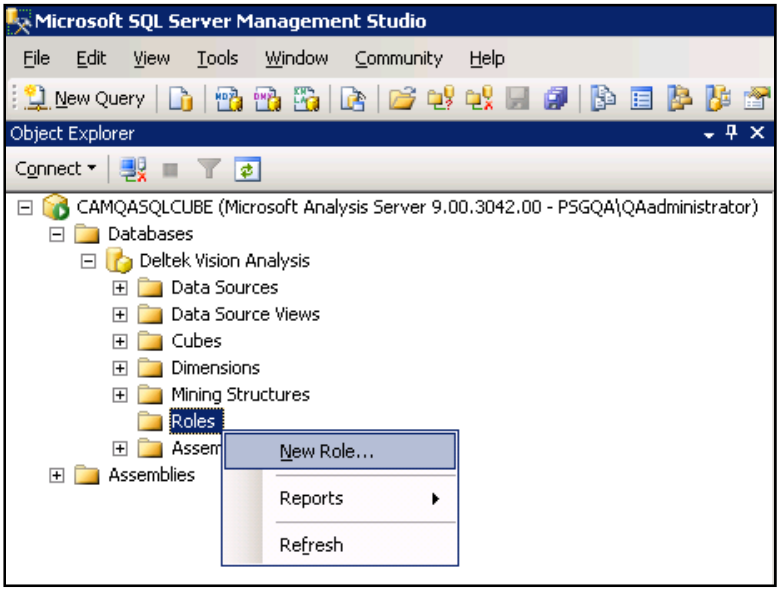
Create an Analysis Services Role for Your Domain Users

You must create an Analysis Services role so that the domain users who will create Vision custom reports have access to the Vision Analysis database—the data cubes.

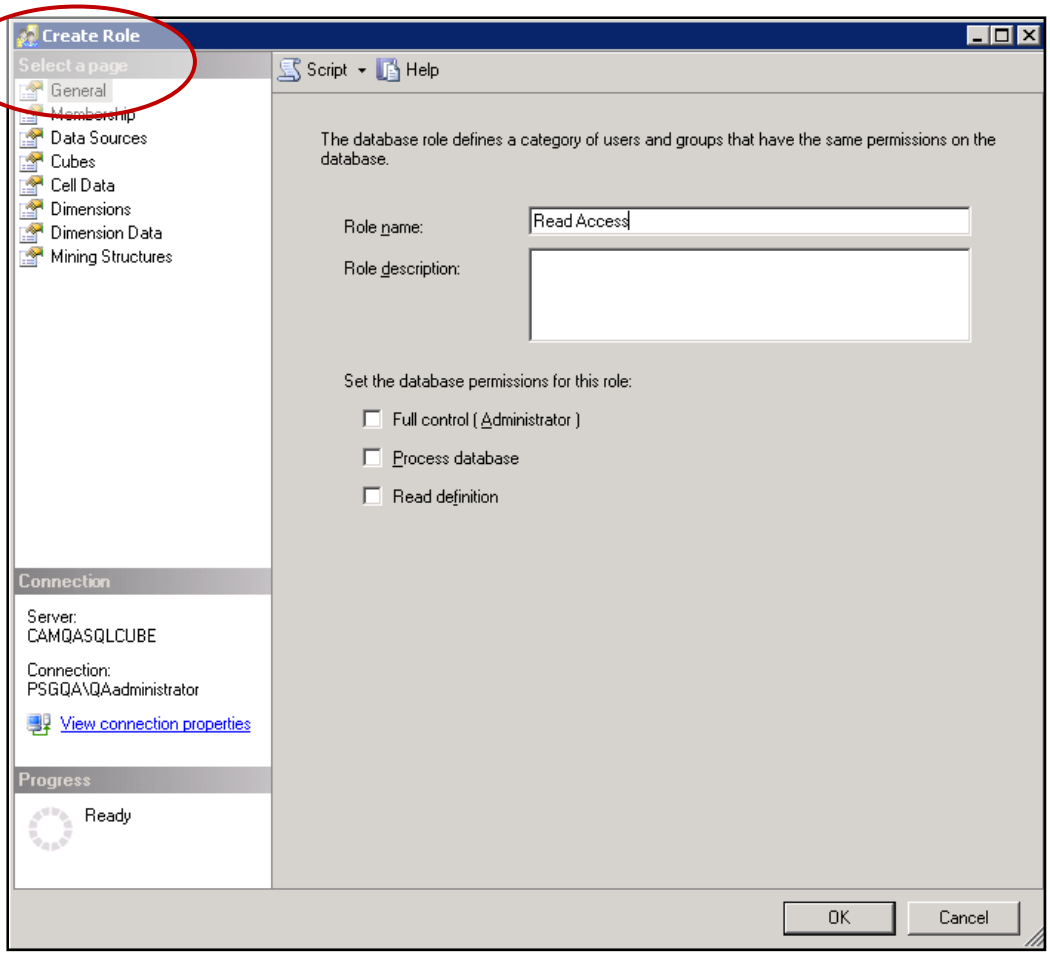
To create an Analysis Services role, complete the following steps:

1. Use SQL Server Management Studio to connect to Analysis Services.

2. In Object Explorer, navigate to **Databases » Deltek Vision Analysis » Roles**.
3. Right-click **Roles**, and select **New Role** from the shortcut menu.

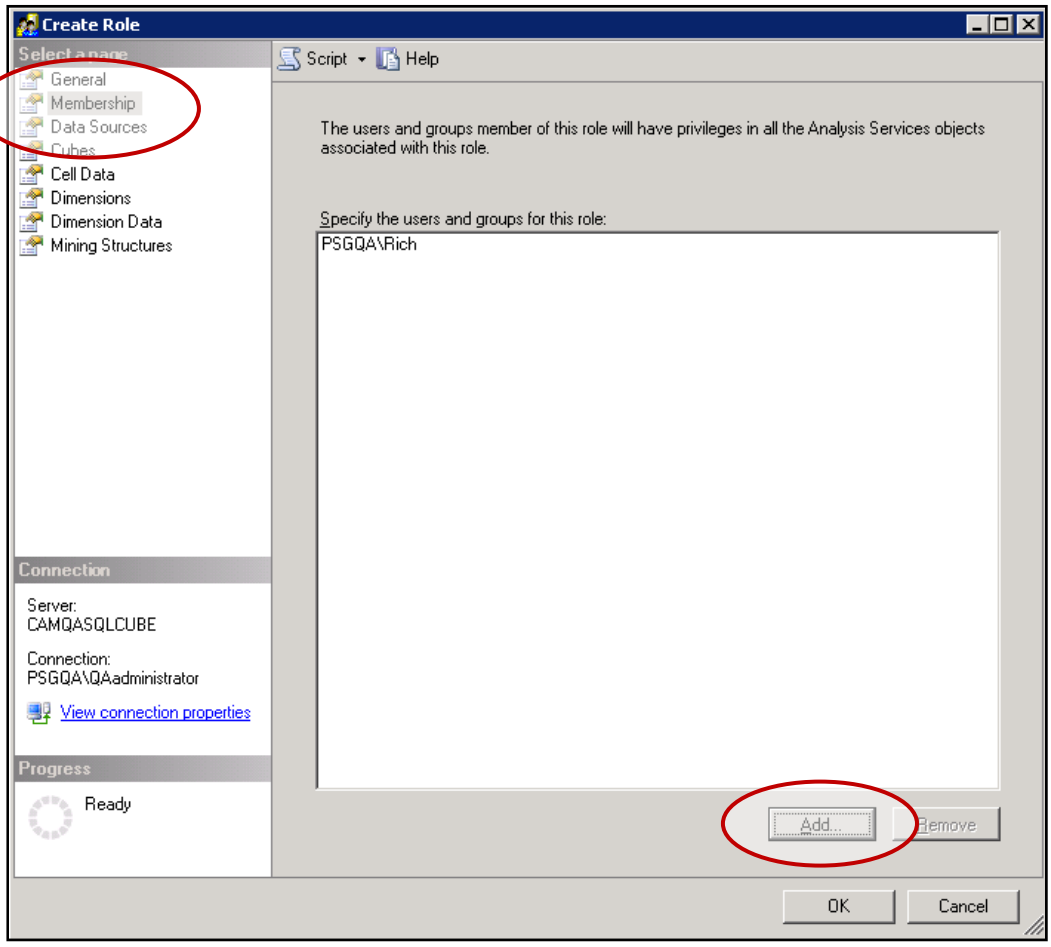


4. On the General page of the Create Role dialog box:
   - Enter a name in the **Role name** field.
   - Select the **Read definition** check box.

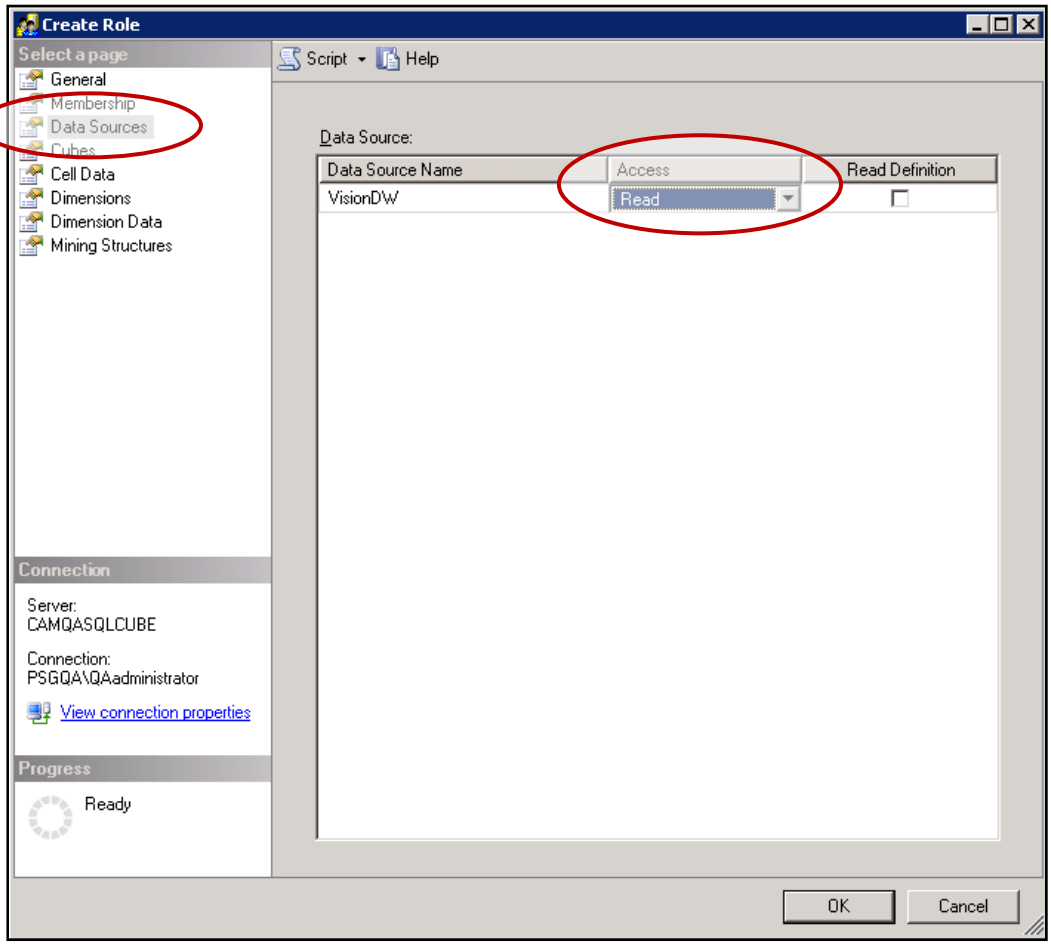


5. On the Membership page, add the domain users whom you want as members of the Analysis Services role.

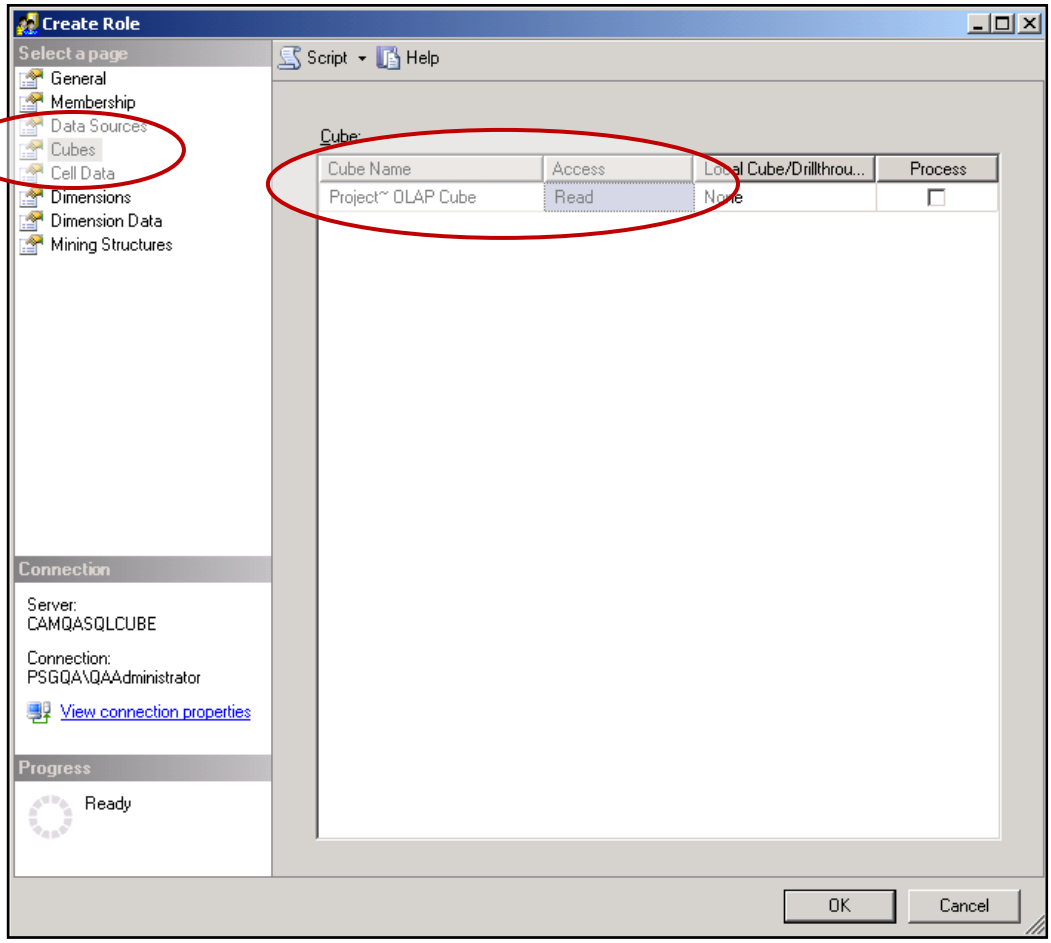
> Your network administrator may find it easier to create a domain group that contains all the necessary domain users. If this is the case, you must add the domain group and not each individual domain user.



6. On the Data Sources page, select **Read** in the **Access** field for the Vision data warehouse.



7. On the Cubes page, select **Read** in the **Access** field for each Vision OLAP cube.



8. Change the **Local Cube/Drillthrough** setting to **Drill through** for each Vision OLAP cube.
9. On the Create a Role dialog box, click **OK** to complete the creation of the role.

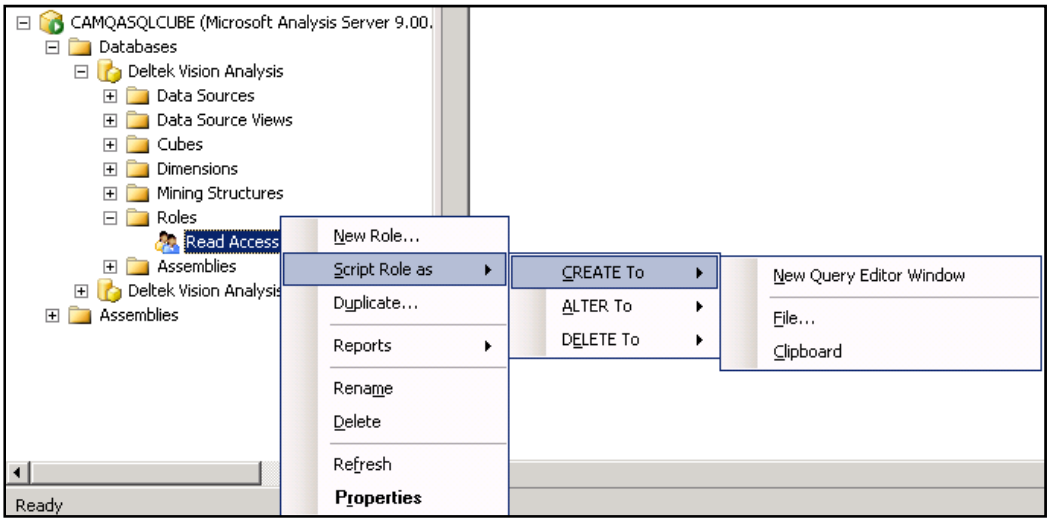
Script the Role

After you create an Analysis Services role for Vision Analysis Cube users, Deltek recommends that you script the creation of the role so that it can be easily recreated. At some point, you may need to rebuild the Vision data warehouse and data cubes rather than refresh them. When you rebuild them, any Analysis Service roles that you previously created for them are lost.

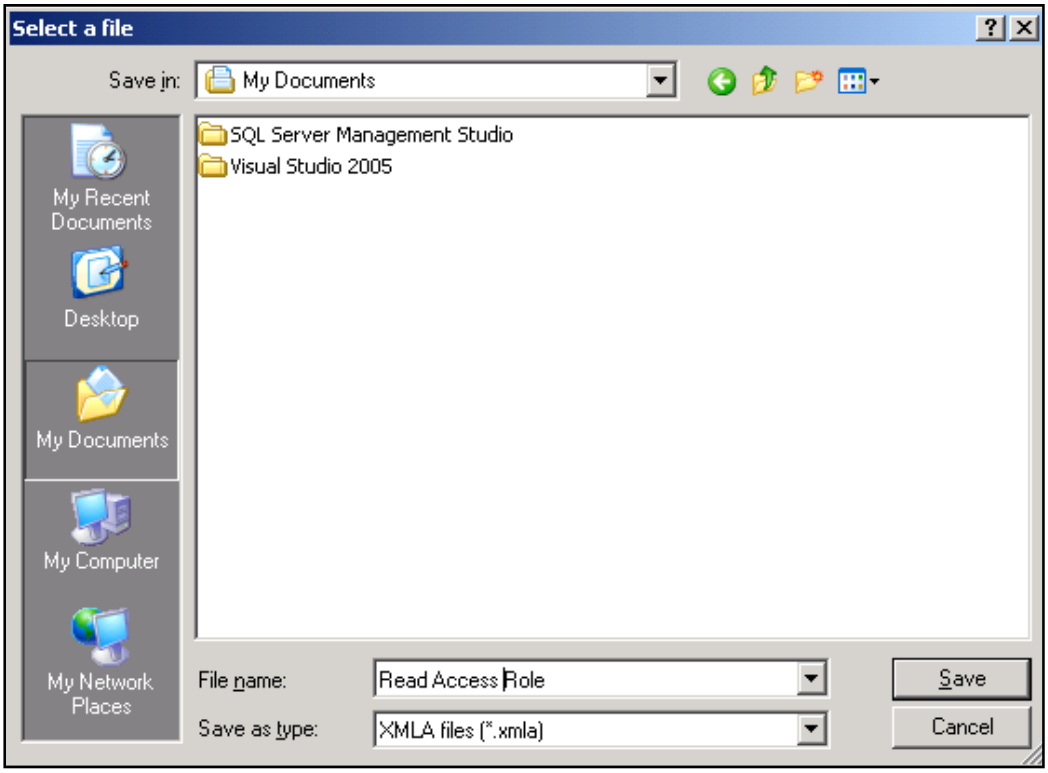
To save a role to a script, complete the following steps:

1. Use SQL Server Management Studio to connect to Analysis Services.
2. In Object Explorer, navigate to **Databases » Deltek Vision Analysis » Roles**.

3. Right-click the role that you created for Analysis Cubes, and click **Script Role as** » **CREATE To » File** on the shortcut menu.



4. On the Select a file dialog box, save the file as an .XMLA file type to a location on your server.



5. If you must recreate the role, open the .XMLA file while you are connected to Analysis Services, and run it against your Analysis Services database. This script recreates the role name and the domain users that are members of the role. You then must reassign access to the data source and the data cubes as in steps 6 and 7 in the "Create an Analysis Services Role for Your Domain Users" section of this document (on page 21 and 22).

   The .XMLA file looks similar to the following:

```
<Create xmlns="http://schemas.microsoft.com/analysisservices/2003/engine">
   <ParentObject>
      <DatabaseID>Deltek Vision Analysis</DatabaseID>
   </ParentObject>
   <ObjectDefinition>
      <Role xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ddl2="http://schemas.microsoft.com/analysisservices/2003/engine/2"
xmlns:ddl2_2="http://schemas.microsoft.com/analysisservices/2003/engine/2/2
">
         <ID>Role</ID>
         <Name>Read Access</Name>
         <Members>
            <Member>
               <Name>PSGQA\Rich</Name>
               <Sid>S-1-5-21-3417474370-2234044941-4097925607-
1142</Sid>
            </Member>
         </Members>
      </Role>
   </ObjectDefinition>
</Create>
```

Configure Vision Analysis Cubes for a SQL Server Clustered Environment

The following are instructions on how to configure Vision Analysis Cubes if you operate in a SQL Server clustered environment. Deltek supports only an active/passive SQL Server cluster. When you operate in an active/passive clustered environment, you cannot use Vision's Resource Kit software to check whether or not the Analysis Cubes prerequisites installed successfully, set up your data warehouse, apply system labels to data cubes, or populate the data warehouse and data cubes.

If you use an active/passive SQL Server cluster, you first install the required prerequisite software for Vision Analysis Cubes (as described on page 3 of this guide), and then in a stand-alone (non-clustered) SQL Server environment, you manually perform the configuration tasks that Vision's Resource Kit accomplishes.

To manually configure Vision Analysis Cubes in a stand-alone SQL Server environment, complete the following steps:

1. Back up your live Vision database.
2. Restore the backup copy of your Vision database to a stand-alone (non-clustered) SQL Server environment.
3. In the SQL Server stand-alone environment, use Vision's Resource Kit to create and populate a Vision data warehouse and Vision data cubes.

   Follow "Step 2: Setup," "Step 3: Apply System Labels to Cubes," and "Step 4: Populate DW and Vision Cubes" on page 7–10 of this guide to create and populate the data warehouse and analysis cubes and apply system labels to cubes if you have custom field labels.

   You can run the Deltek Vision installation with the three-tier database options to install the Resource Kit and environmental variables in your stand-alone environment.
4. Use SQL Server Management Studio to back up the Vision data warehouse and analysis cubes that you created in the stand-alone environment.
5. Use SQL Server Management Studio to restore the backup copy of the data warehouse and analysis cubes (created in the stand-alone environment) to the Database Engine and Analysis Engine in the active SQL Server cluster.
6. Add the following system environmental variables to the active SQL Server cluster:

System Environmental Variable	Value
VisionETL_Configuration	%VisionETL_Root_Dir%\VisionETL_Config.dtsconfig
VisionETL_Root_Dir	C:\Program Files\Deltek\Vision\Analysis\ETL

   To add the environmental variables to the active cluster, complete the following steps:

   a. In Windows Explorer, right-click **My Computer**, and click **Properties** from the shortcut menu.

   b. On the Advanced tab of the System Properties dialog box, click the **Environmental Variables** button.

c. On the Environmental Variables dialog box, click the **New** or **Edit** buttons to add the variables to the **System variables** section if they are not already there, or modify them if they already exist.

d. After you enter the variables, you must reboot your servers.

7. Use Notepad to modify the connection strings in the **VisionETL_Config.dtsconfig** file to include the names of the Vision data source, database, data warehouse, and analysis cube. The default location of this file is C:\Program Files\Deltek\Vision\Analysis\ETL.

   The following example shows the contents of a VisionETL_Config.dtsconfig file. You must modify the following items within the file (color-coded here for easier identification).

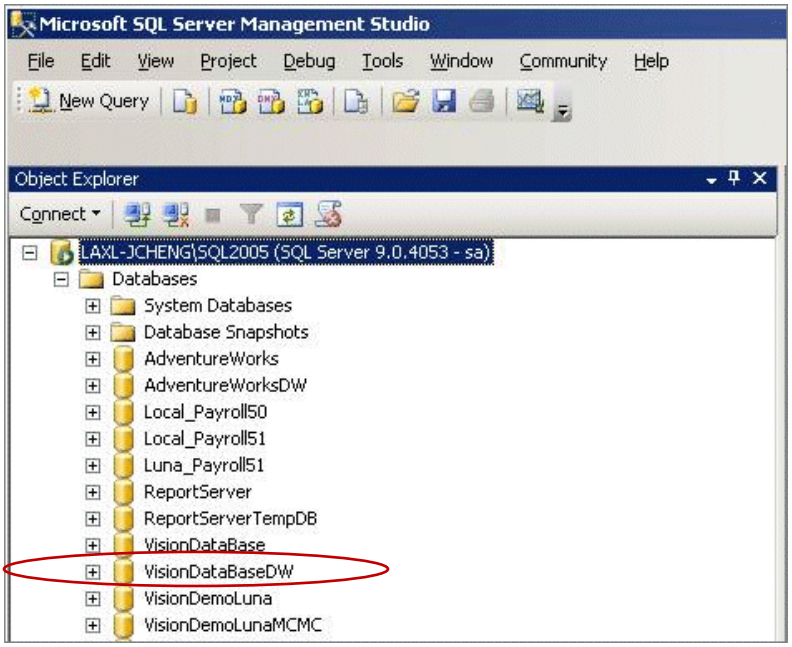
   - **Data Source**=<*Your server name*>
   - **First instance of Initial Catalog**=<*Vision database name*>
   - **Second instance of Initial Catalog**=<*Vision data warehouse name*>
   - **Third instance of Initial Catalog**=<*Vision analysis cube name*>

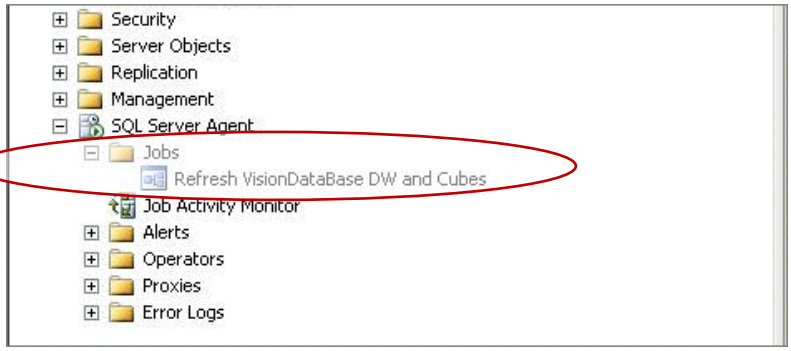
   Example of the contents of the VisionETL_Config.dtsconfig file:

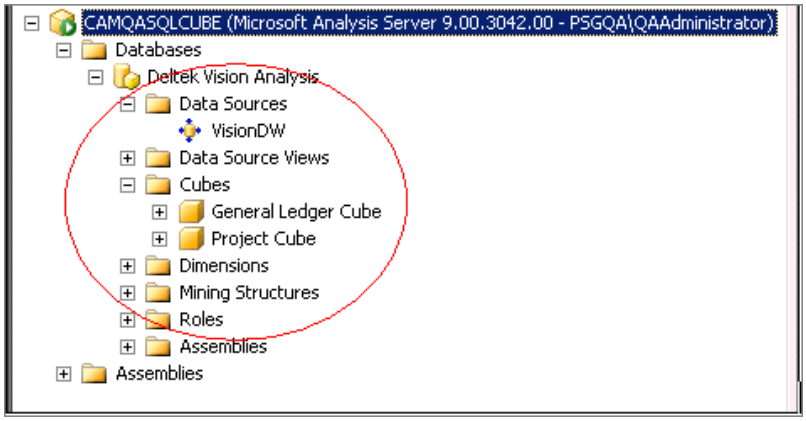
```
<?xml version="1.0"?>

<DTSConfiguration>

  <DTSConfigurationHeading>

    <DTSConfigurationFileInfo GeneratedBy="DELTEK\joep" GeneratedDate="7/27/2007
4:29:36 PM" />

  </DTSConfigurationHeading>

  <Configuration ConfiguredType="Property"
Path="\Package.Connections[Vision].Properties[ConnectionString]" ValueType="String">

    <ConfiguredValue>Data Source=CAMD-NGLASER;Initial
Catalog=VisionDemo;Provider=SQLNCLI.1;Integrated Security=SSPI;Auto
Translate=False;</ConfiguredValue>

  </Configuration>

  <Configuration ConfiguredType="Property"
Path="\Package.Connections[VisionDW].Properties[ConnectionString]"
ValueType="String">

    <ConfiguredValue>Data Source=CAMD-NGLASER;Initial
Catalog=VisionDemoDW;Provider=SQLNCLI.1;Integrated Security=SSPI;Auto
Translate=False;</ConfiguredValue>

  </Configuration>

  <Configuration ConfiguredType="Property"
Path="\Package.Connections[VisionCubes].Properties[ConnectionString]"
ValueType="String">

    <ConfiguredValue>Data Source=CAMD-NGLASER;Initial Catalog=Deltek Vision
Analysis;Provider=MSOLAP.3;Integrated Security=SSPI;Impersonation
Level=Impersonate;</ConfiguredValue>

  </Configuration>

</DTSConfiguration>
```

8. In your active SQL Server cluster environment, use SQL Server Management Studio to recreate the **Refresh <*Vision data warehouse name*> DW and Cubes** SQL Server agent job that was created in the stand-alone SQL. You can view the **Refresh <*Vision data warehouse name*> DW and Cubes** SQL Server agent job in the stand-alone SQL Server environment to match it on your active SQL Server cluster.

   The following is what you see in Microsoft SQL Server Management Studio after you complete the steps to configure Vision Analysis Cubes manually.







9. To test that the configuration is complete, in SQL Server Management Studio, right-click the **Refresh <*Vision data warehouse name*> DW and Cubes** SQL Server agent job to refresh the Vision data warehouse and analysis cube.