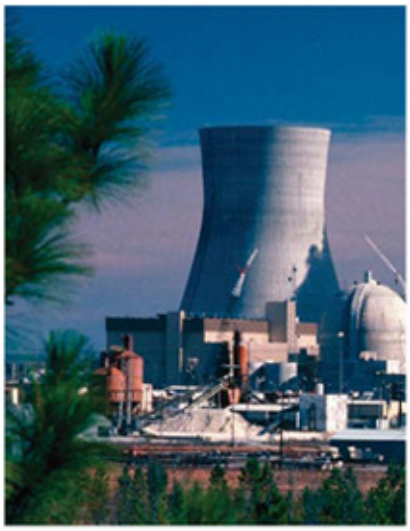
SmartPlant 3D

Setup and Administration Course Guide

Process, Power & Marine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LAB 1: Domain, server and client setup

Create users and groups in Windows

In class you will do this locally on the training workstation. At the office, users and groups are created at the Domain level

1. Open Control Panel – Administrative Tools – Computer Management
2. Create new users named piping1, pipe1, pipe2, stru1, stru2
3. Create new groups named Pipe, Stru, SP3Dadmins, SP3Dusers, ProjectA
4. Assign users to groups as follows

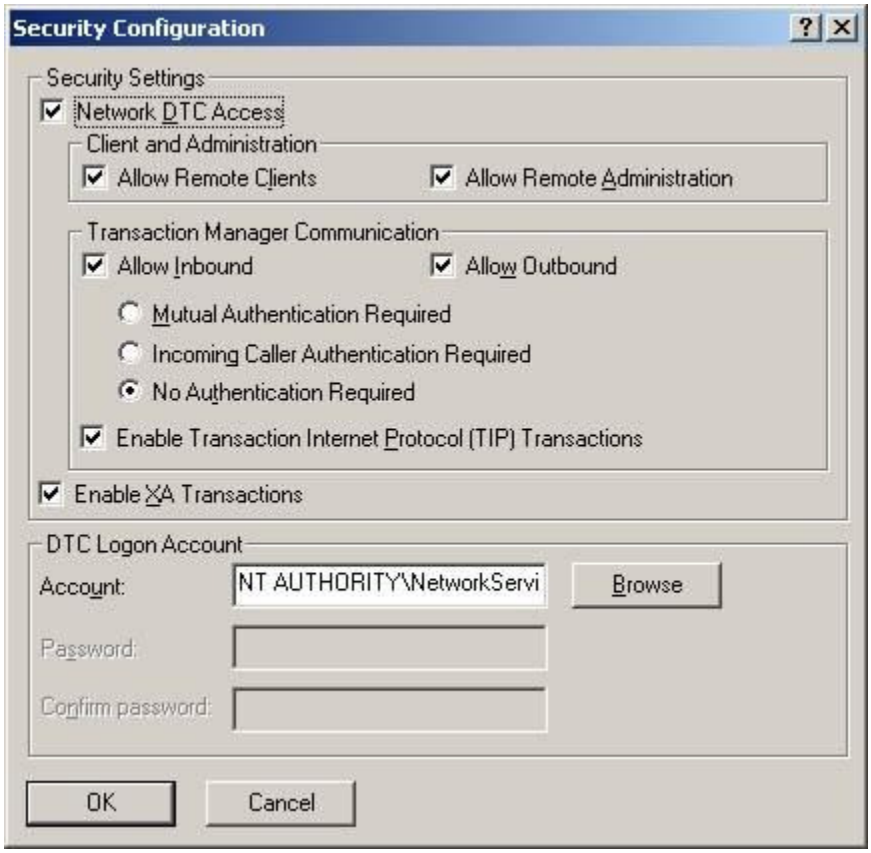
Group	**Users**
Pipe	pipe1, pipe2
Stru	stru1, stru2
SP3Dusers	pipe1, pipe2, stru1, stru2
SP3Dadmins	pipe1, stru1, administrator
ProjectA	pipe1, stru1

Install and configure database, prerequisites and SP3D

In class, a functioning database system may already be provided**. Proceed to install and configure required software following the installation guide provided with the SP3D CD.** The training workstation will be acting as a database server, reference data server and administrator workstation.

At the office, MSDTC must be configured on database server and SP3D machines as follows:

Control Panel>Admin Tools>Component Services>Computers>My Computer-Properties-MSDTC-Security Configuration:

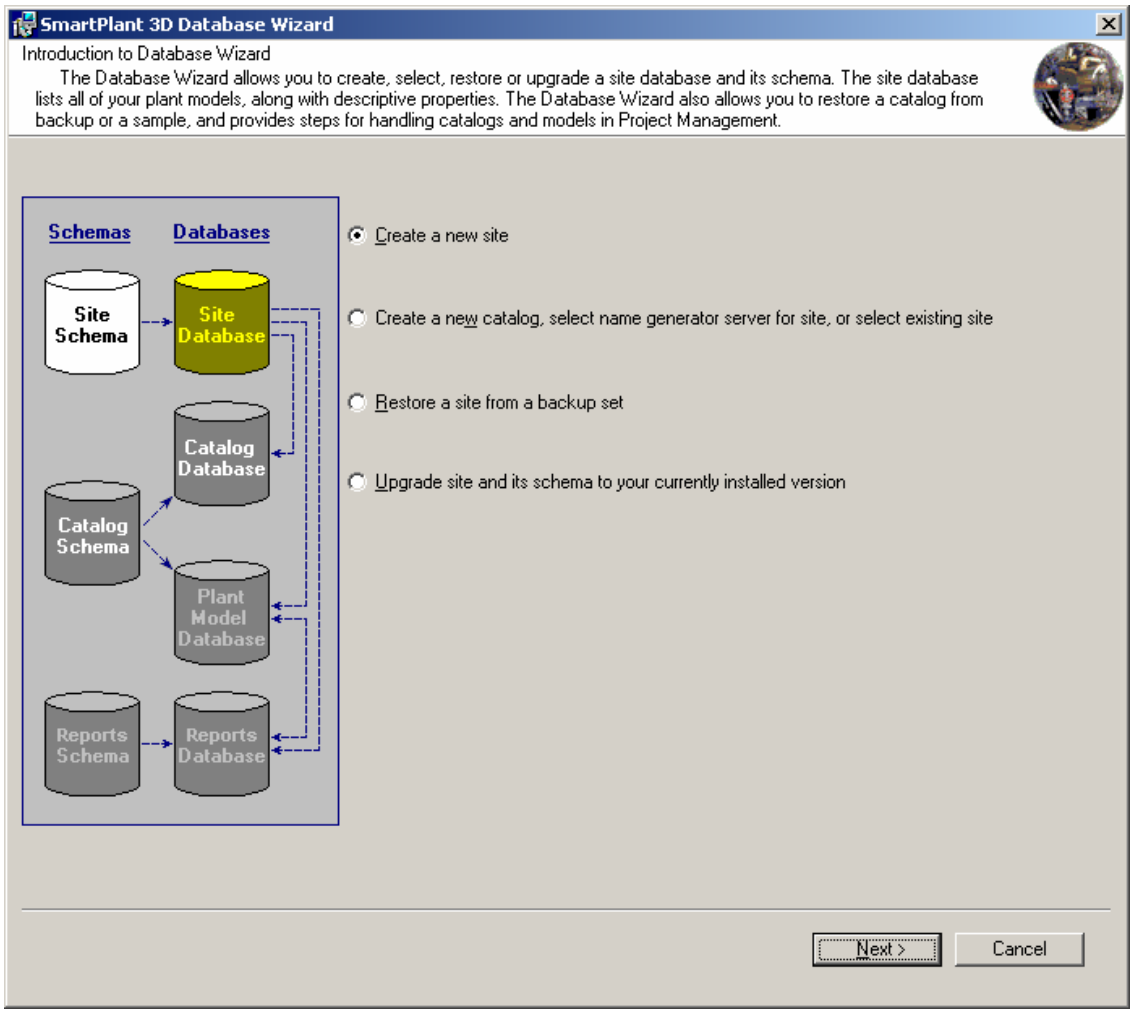


On an entirely stand-alone machine this may not be required for SP3D to function.

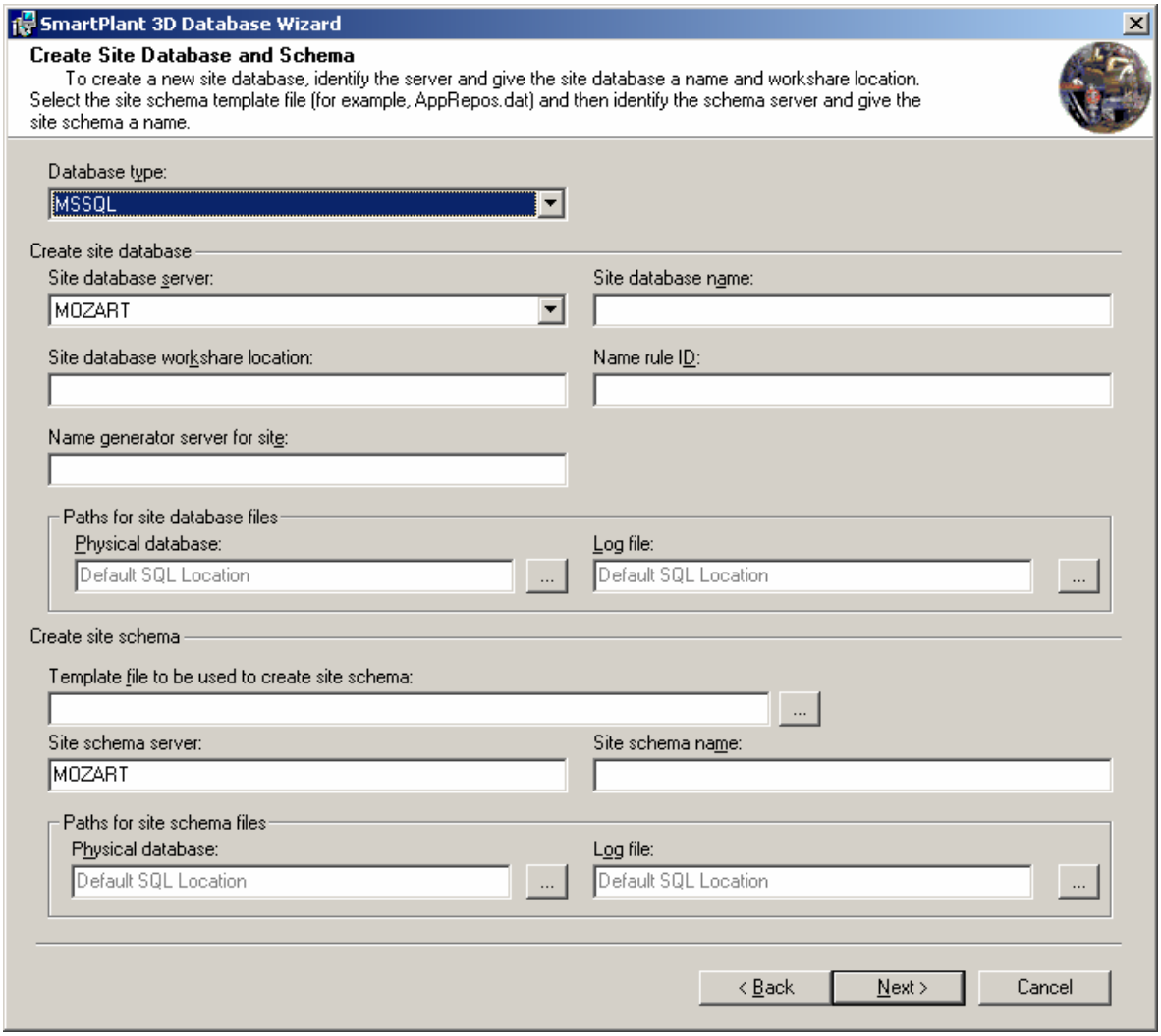
LAB 2: Create new site, catalog and plant

Create new site and catalog

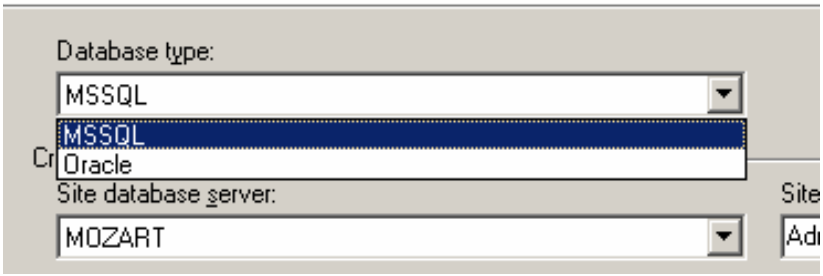
1. Start the Database Wizard using Start → Programs → Intergraph SmartPlant 3D → Database Tools → Database Wizard



2. Select the option to “Create a new site database”. Click Next.

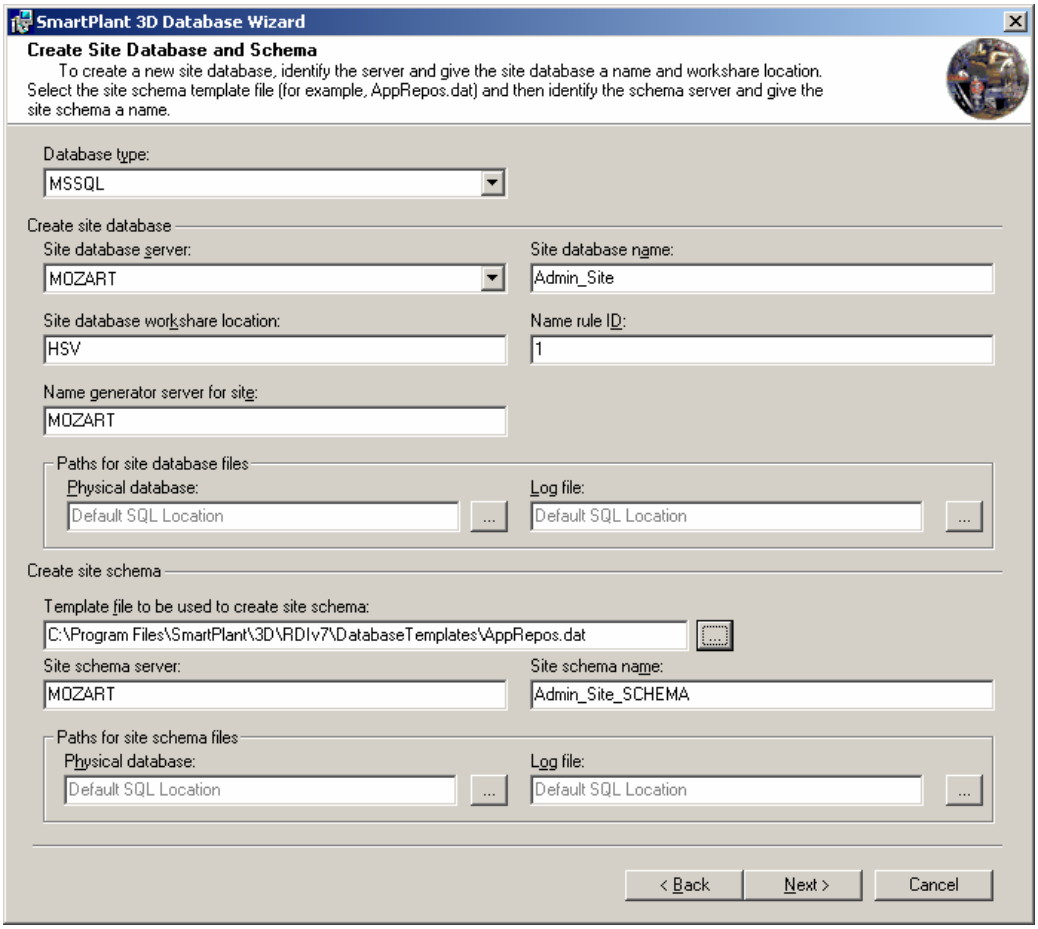


3. Select “Database type” as appropriate for your classroom setup (MSSQL/Oracle)



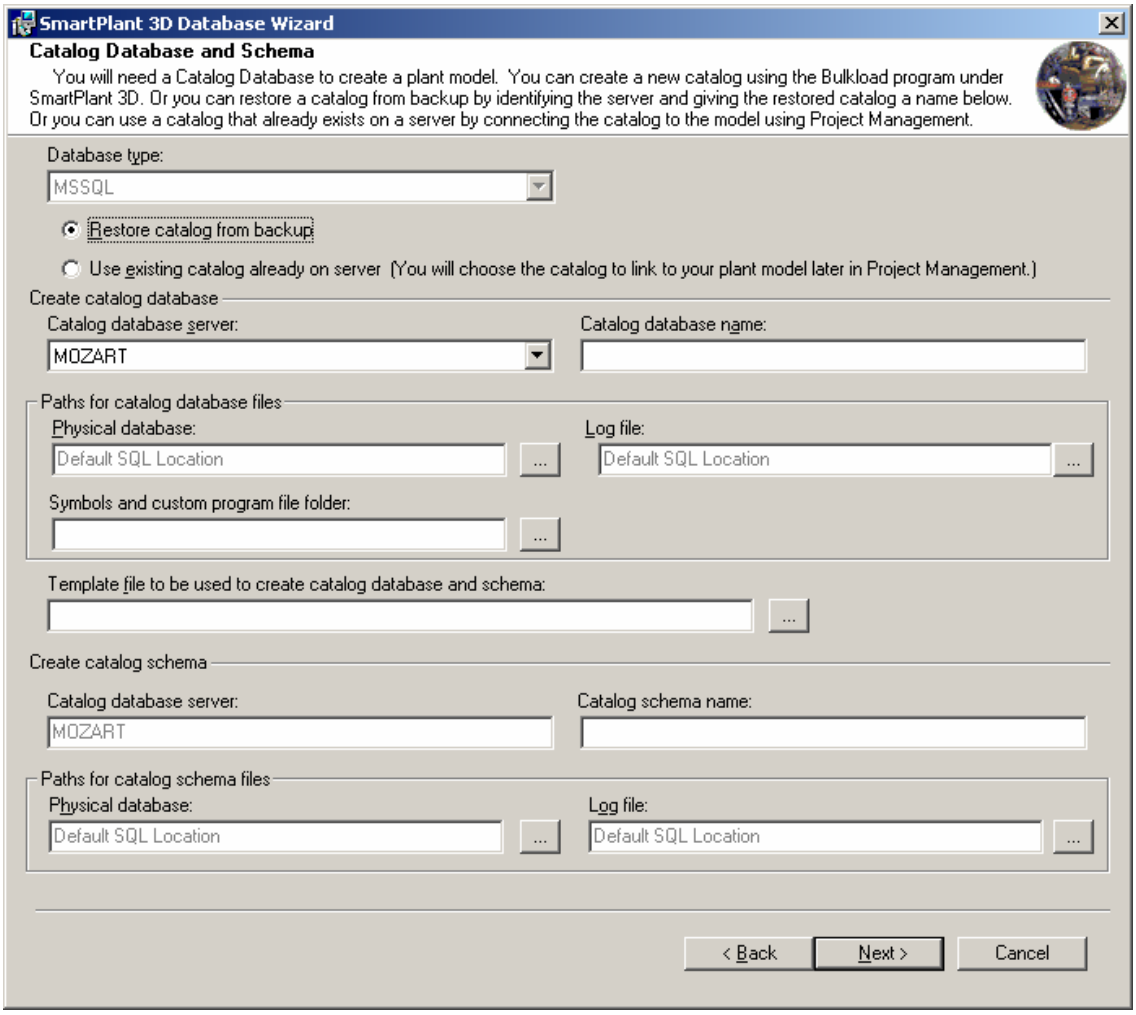
4. From the pick list, select your server name (which will be your machine name when working in stand-alone) for site database server
5. Name the site “Admin_Site”
6. Enter ‘HSV’ (or any other text value) for the Site Database Workshare location
7. In the Name Rule ID type “1”.
8. Input the Name Generator Location for Site. This identifies the machine where the Name Generator Service (NGS) COM+ application is installed. In a stand alone setup this will be the machine name of the computer you are working on.

9. Pick the … next to the Template file for site schema and pick [Server Data Install Directory]\DatabaseTemplates\AppRepos.dat (AppRepos.dmp if Oracle)

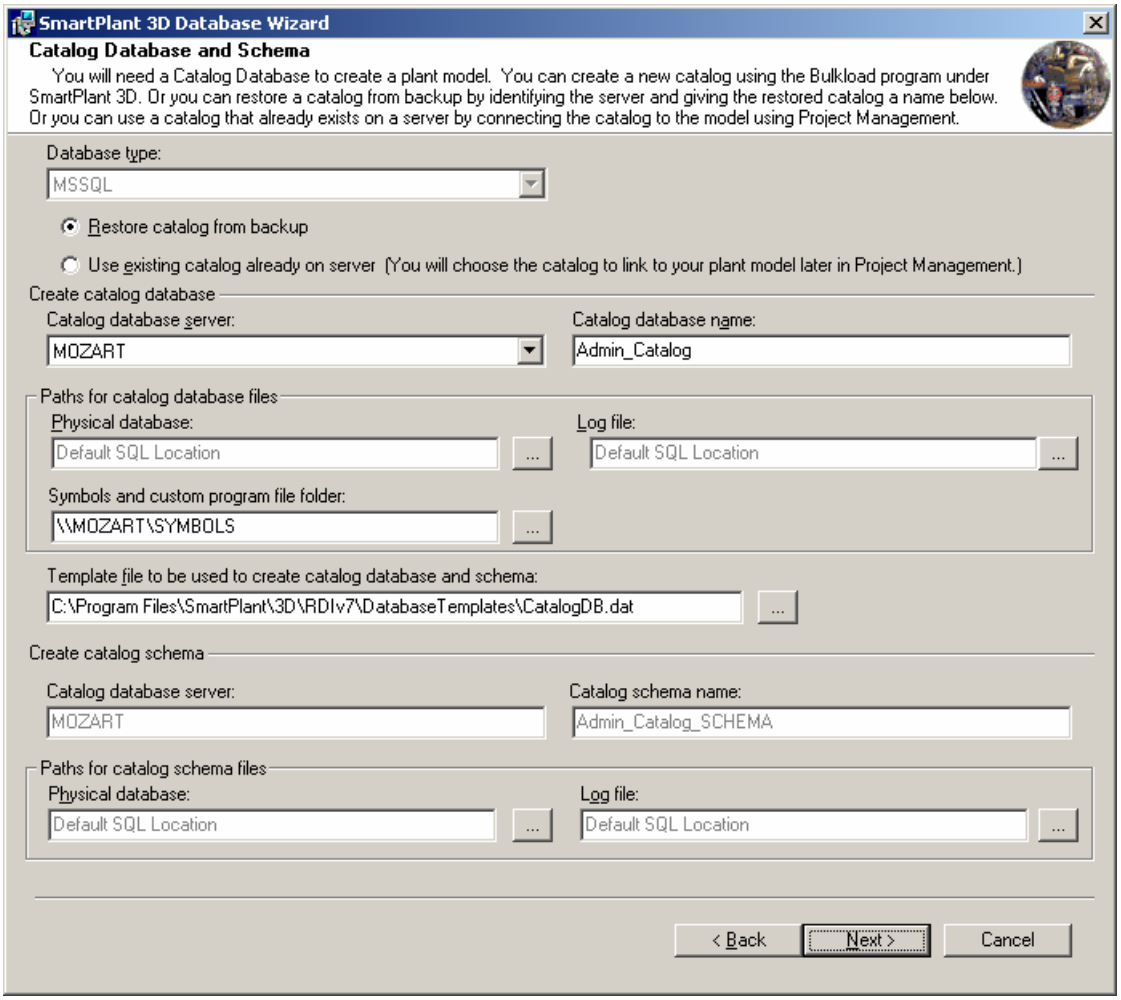


Note: Screenshot above is assuming an MSSQL setup: principle different is the "Database type:" and "Template file to be used to create site schema". For MSSQL setups the path is as it would be when read from the Server machine (direct path, not UNC). For Oracle, UNC path can be utilized.

10. Click Next

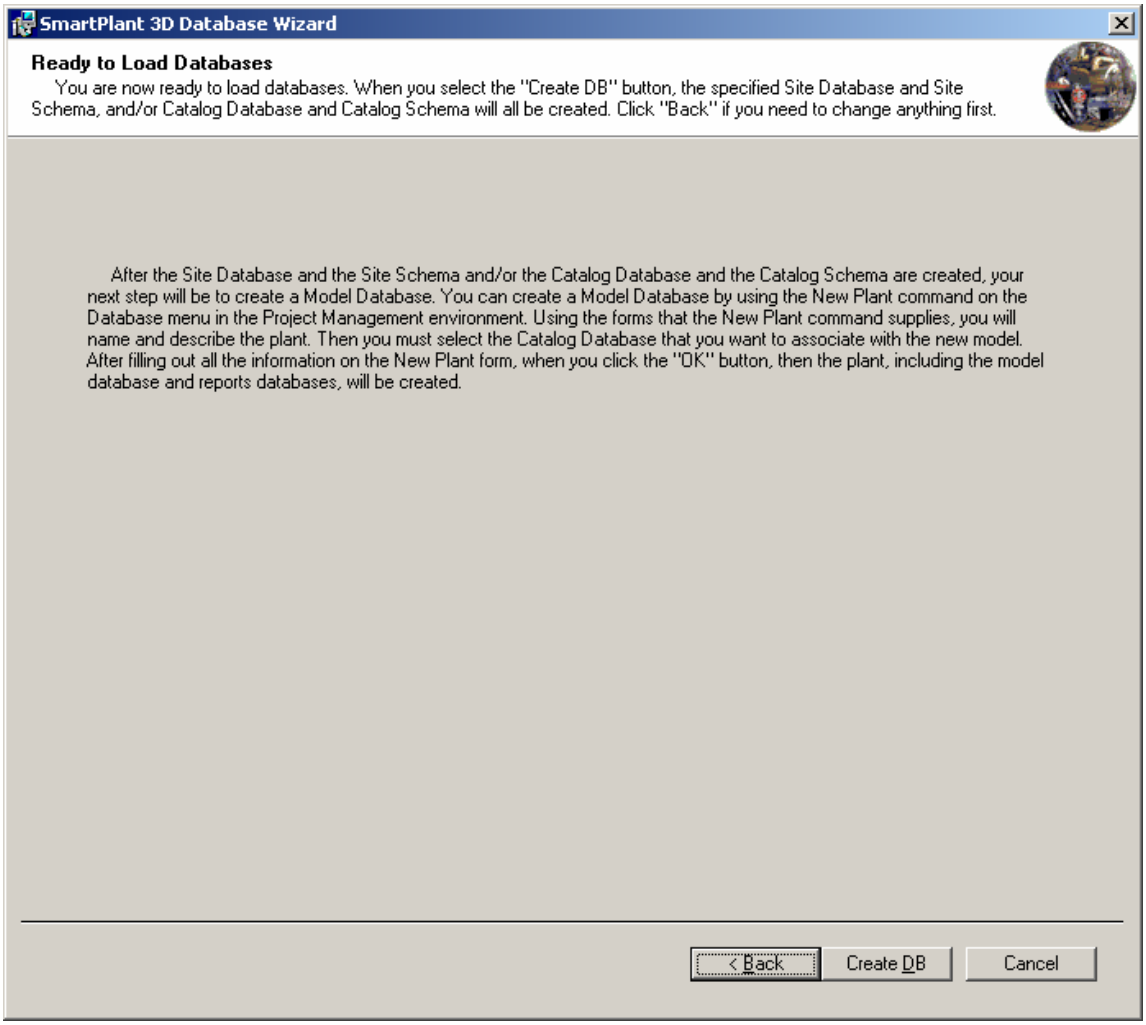


11. Select server name for catalog database server
12. Name the catalog “Admin_Catalog”
13. For the symbols and custom program files location enter \\servername\symbols (if your machine is networked or has loopback adapter installed), if not enter [Server Data Install Directory]\CatalogData\Symbols
14. Pick the … next to the Template file for catalog database schema and pick [Server Data Install Directory]\DatabaseTemplates\CatalogDB.dat (CatalogDB.dmp if Oracle)

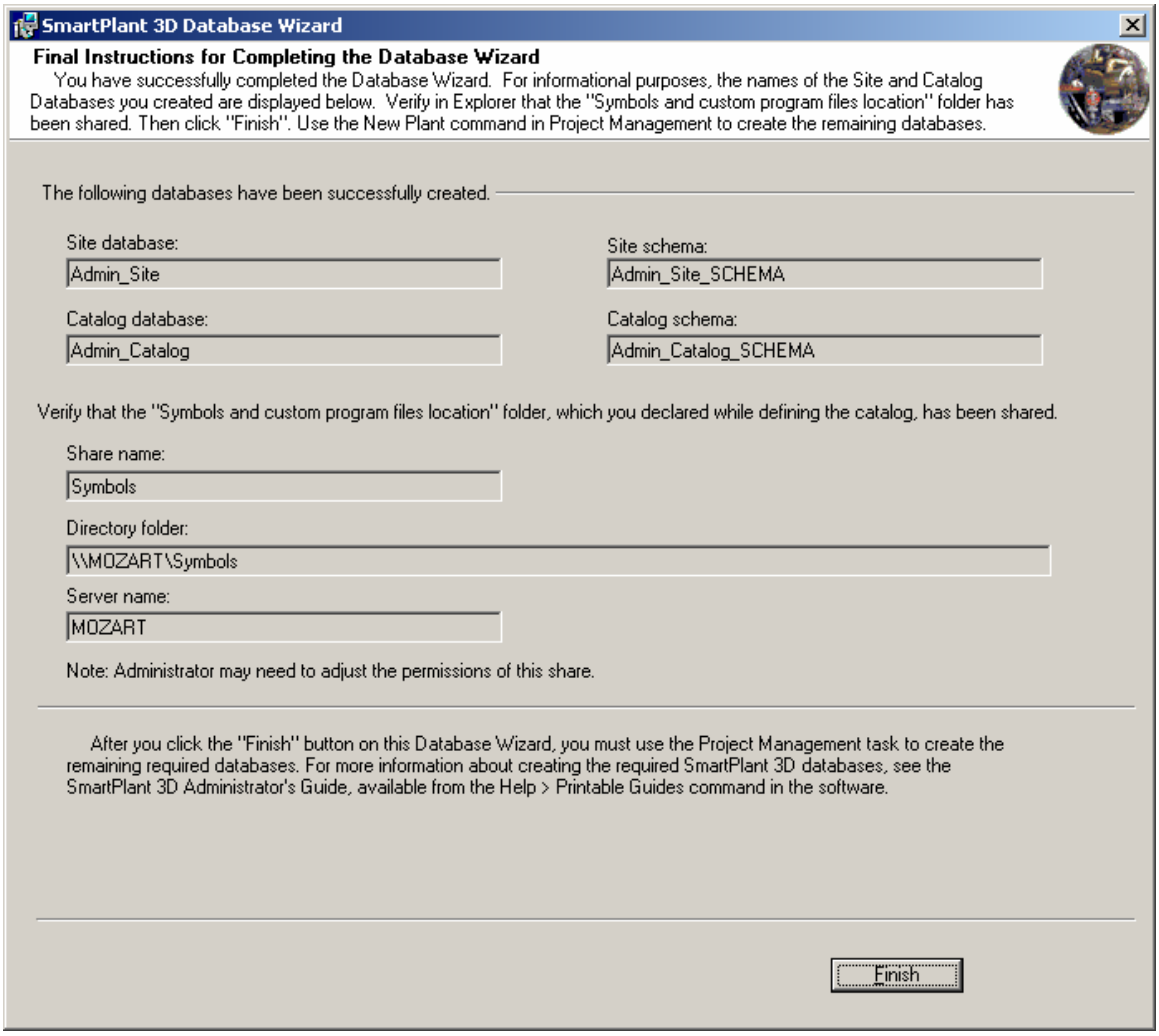


Note: Screenshot above is assuming an MSSQL setup: principle different is the "Database type:" and "Template file to be used to create site schema". For MSSQL setups the path is as it would be when read from the Server machine (direct path, not UNC). For Oracle, UNC path can be utilized.

15. Click Next

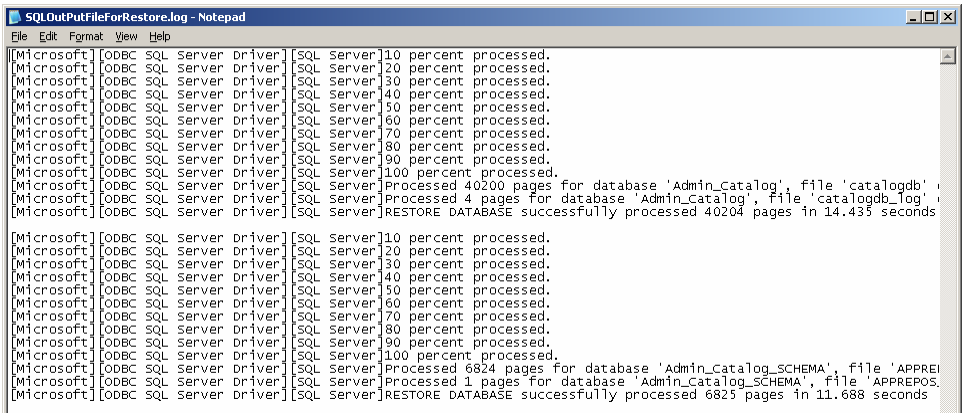


16. Click CreateDB



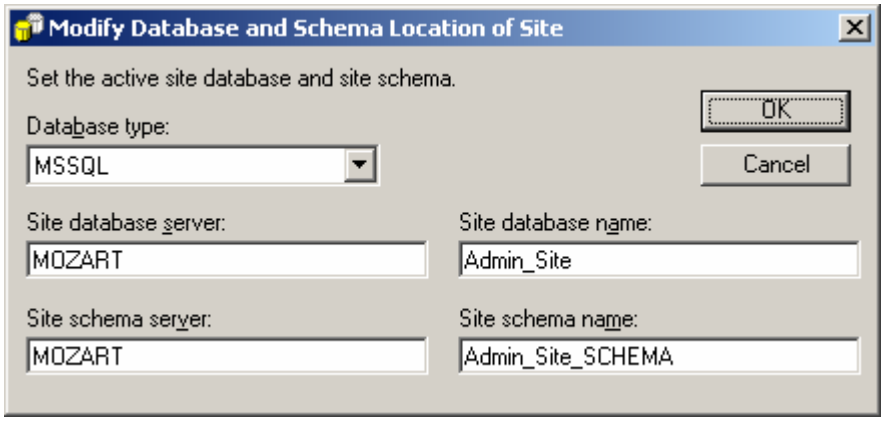
17. After process is complete, click Finish

18. Review the log file at %temp%\ SQLOutPutFileForRestore.log



Verify new site creation

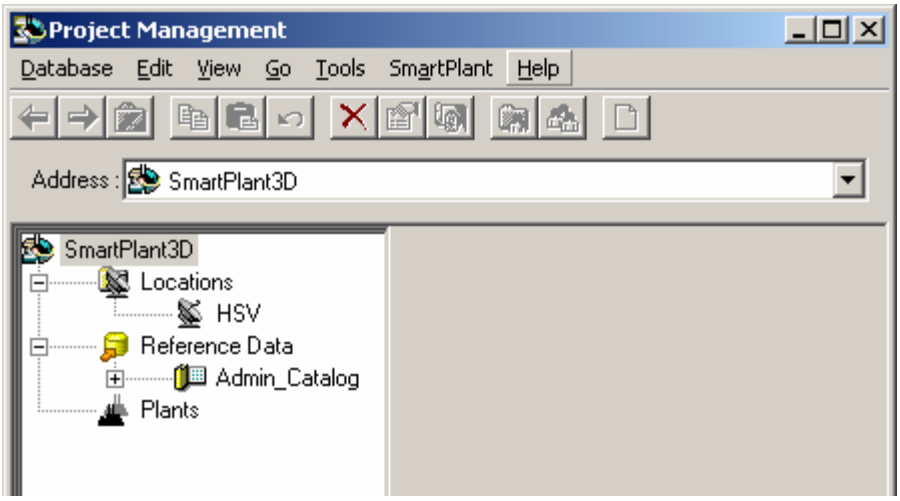
1. Start the Modify Database and Schema Location using Start → Programs → Intergraph SmartPlant 3D → Database Tools → Modify Database and Schema Location
2. The form will display the location of your Site Database and Site_Schema:



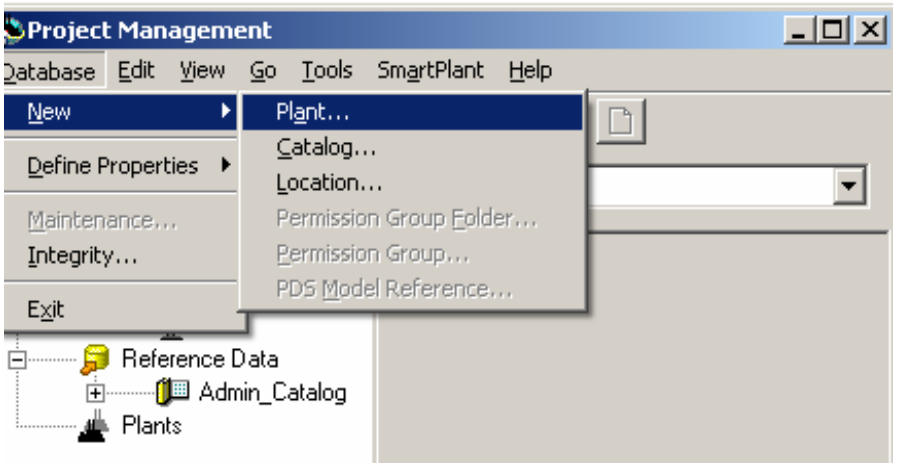
Note: This connection information can be manually entered on Client machines to allow them to connect to this Site DB and the Plants that it will manage.

Create new plant

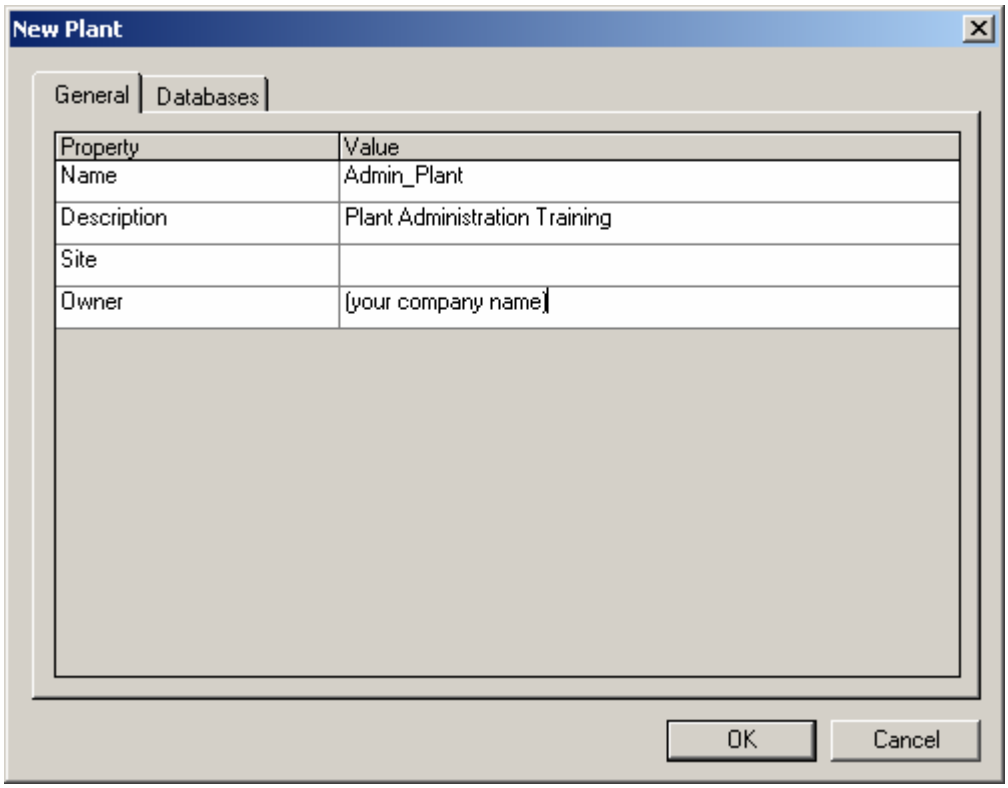
1. Enter Project management using Start → Programs → Intergraph SmartPlant 3D → Project Management



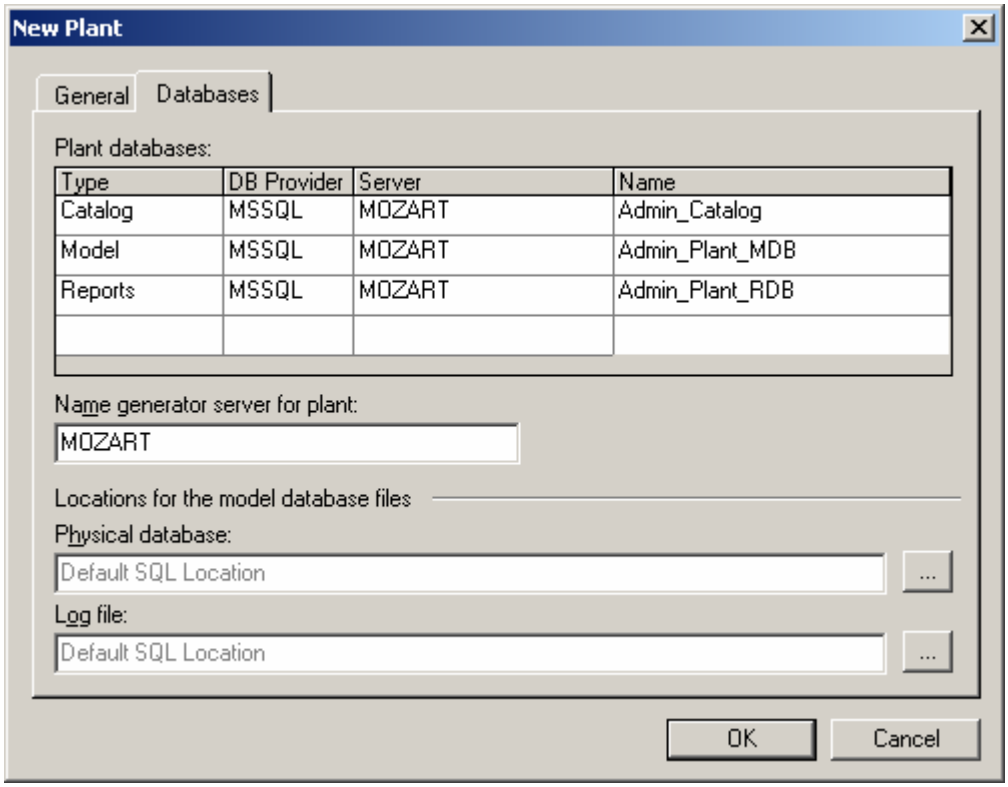
2. From the Database menu, select New → Plant…



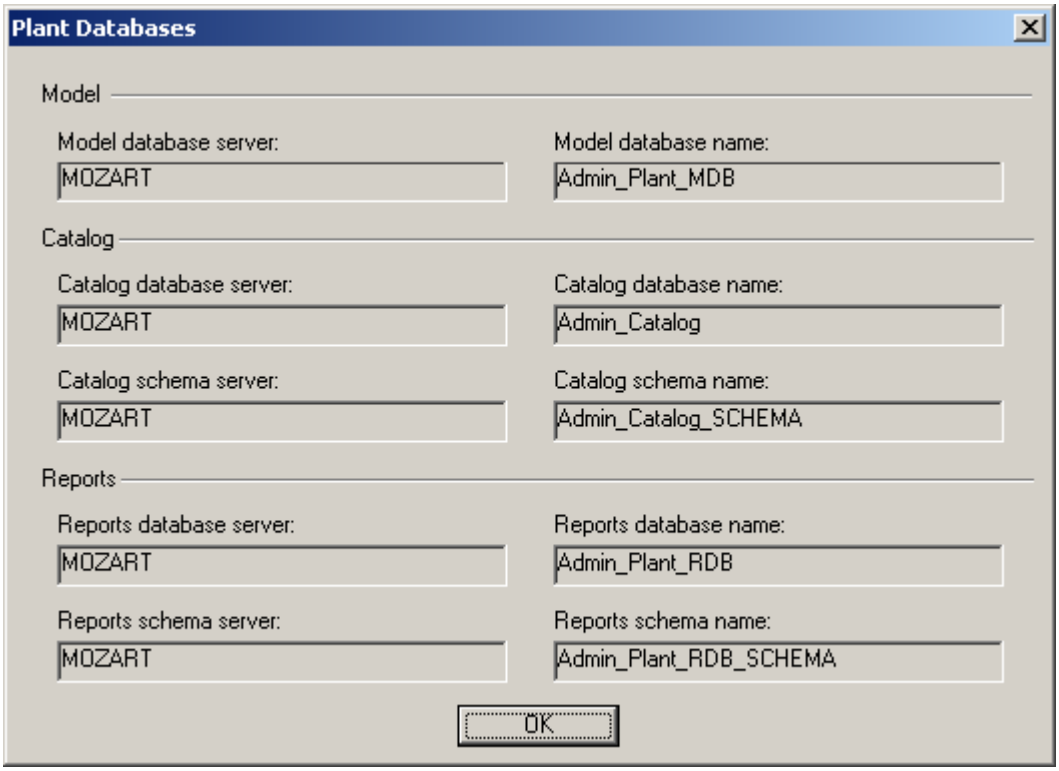
3. Fill in the General tab of the New Plant dialog, completing the General Tab first.



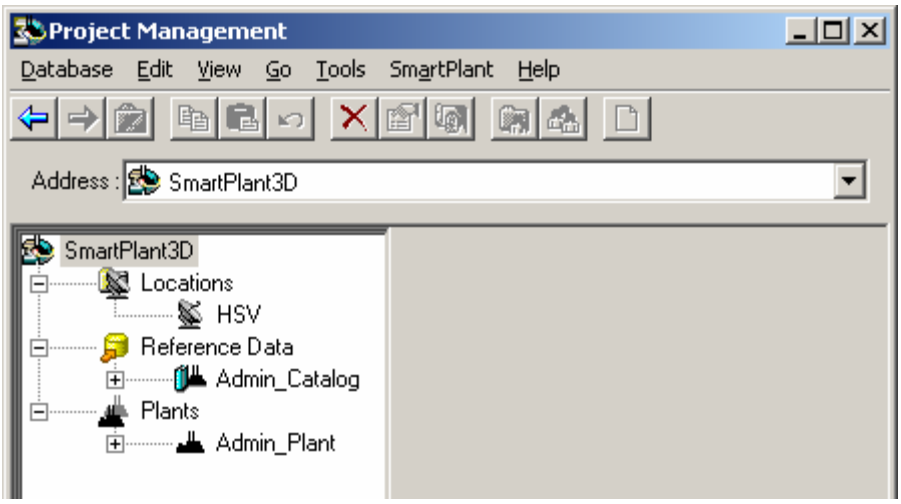
4. Complete Databases tab as follows. Complete each row providing information for the Catalog, Model, and Report Databases. Remember to identify the Name Generator machine as you did previously for the Site Database on the DB Wizard form.



5. Click OK to create the plant and then review the result pane when completed.



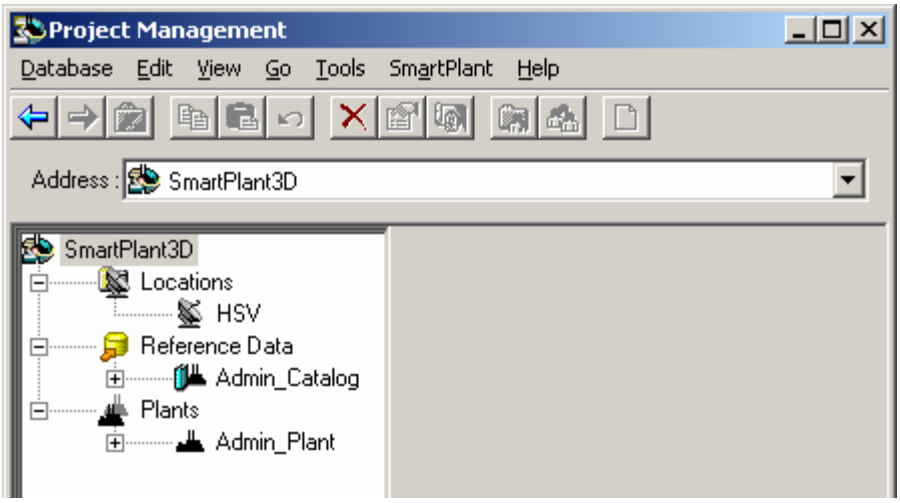
6. Review the Project Management Tree and observe the change in the Icon for the Catalog. This is a result of the Catalog being associated to a Plant database. Before, it was unassigned.



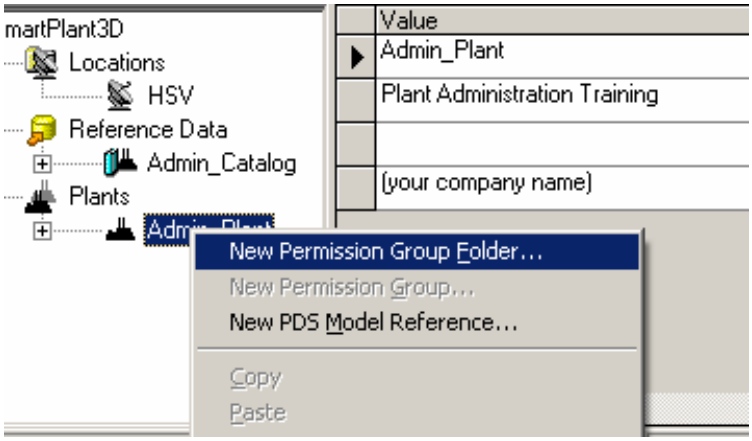
LAB 3: Create permission groups and assign permissions

Create Permission Groups

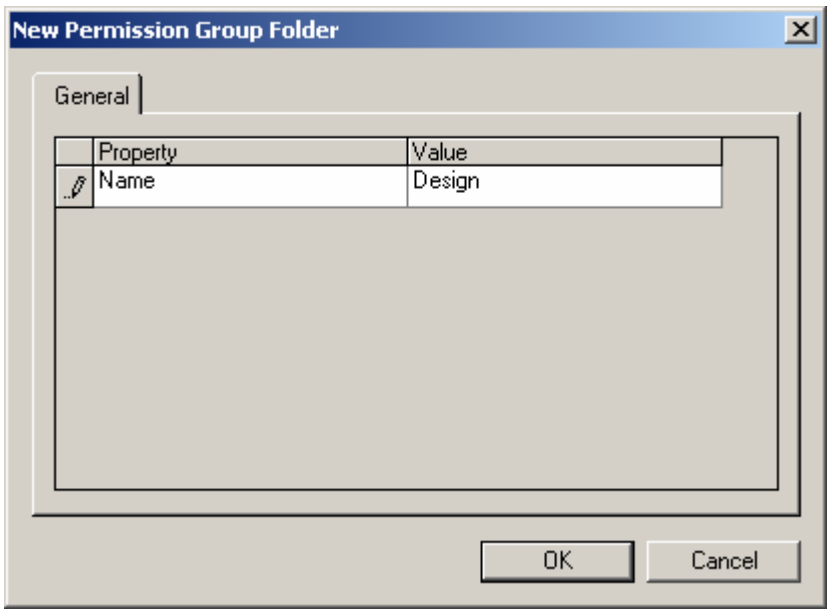
1. If required, enter Project management using Start → Programs → Intergraph SmartPlant 3D → Project Management



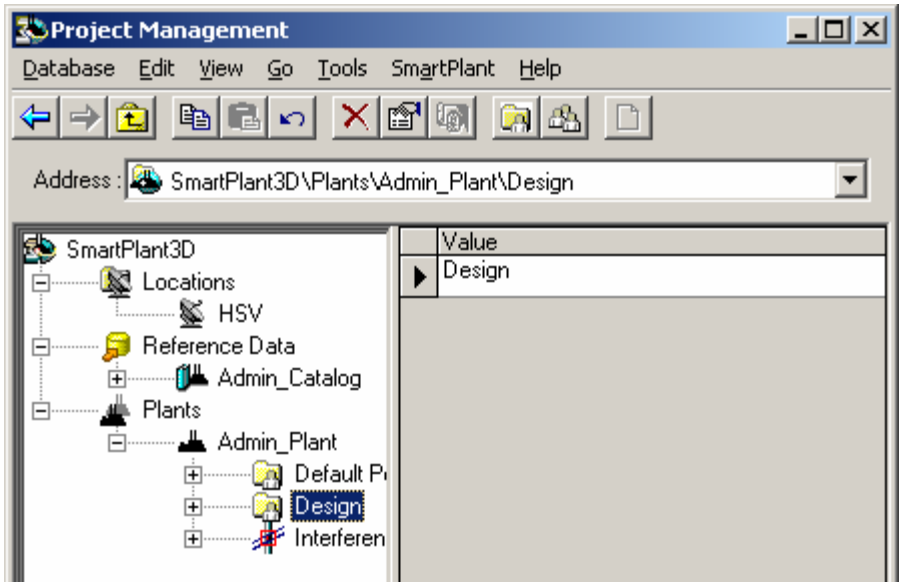
2. Select Admin_Plant
3. Right-click on “Admin Plant” and select “New Permission Group Folder…”



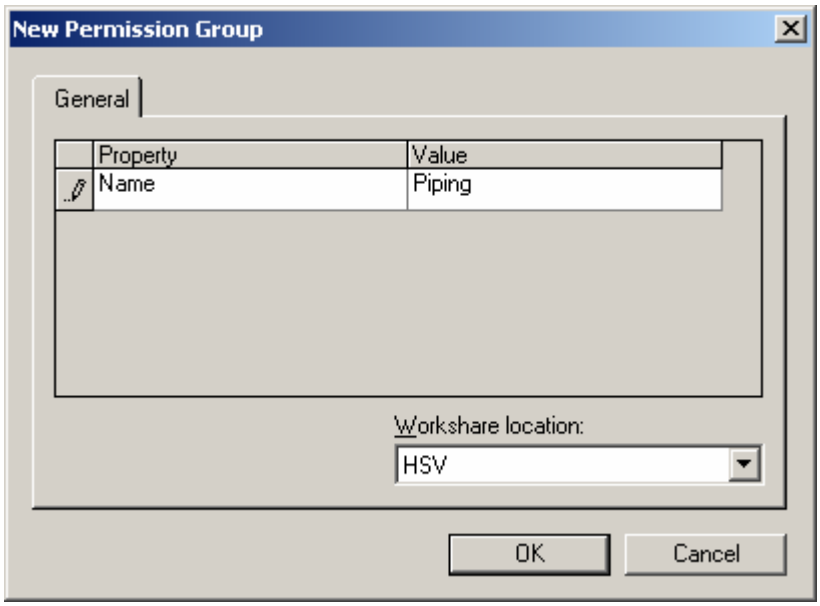
4. Name the folder ‘Design’



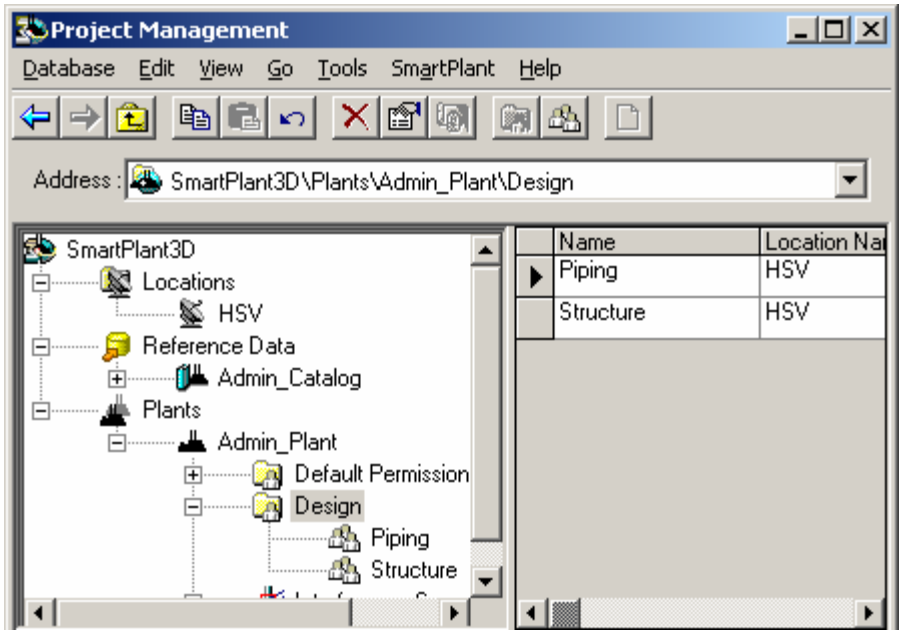
5. Expand the Tree by clicking on the + box to the left of Admin_Plant.
6. Select the folder “Design”



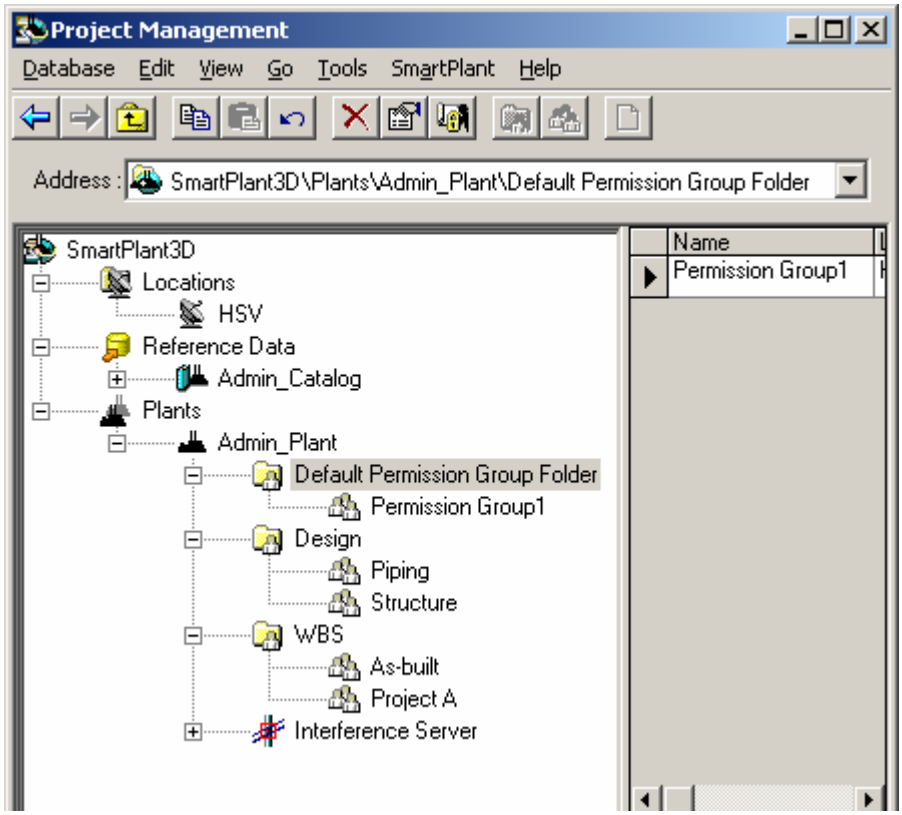
7. Right-click on “Design” and select “New Permission Group”
8. Name the group ‘Piping’



9. Click OK.
10. Create another permission group and name it ‘Structure’

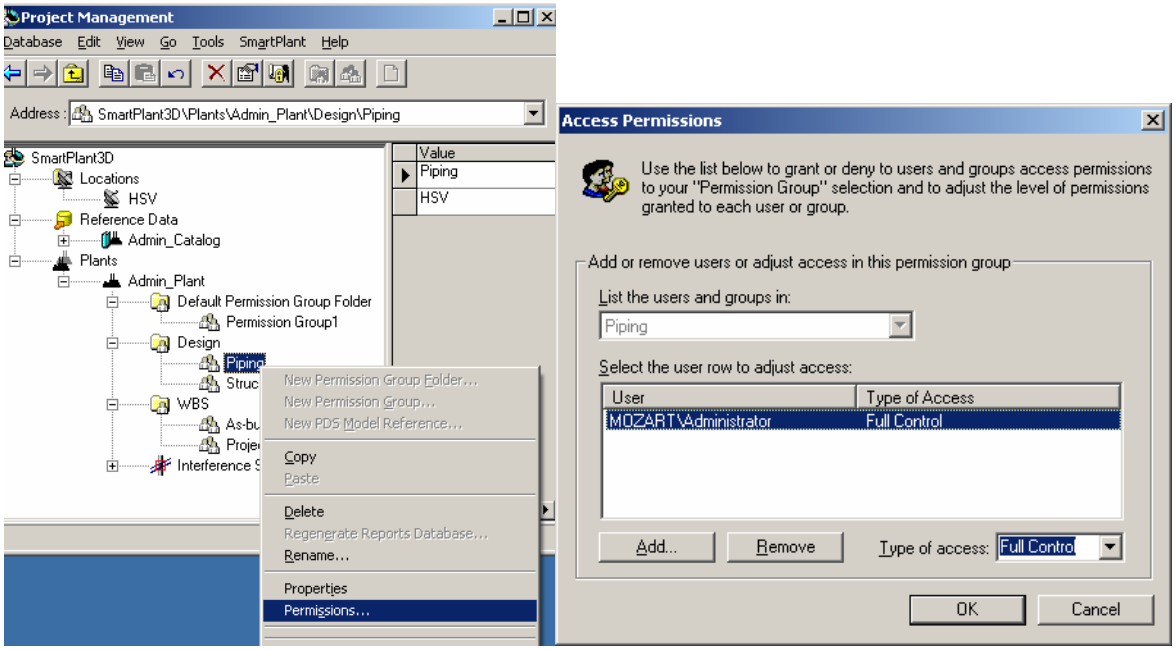


11. Similarly create the following hierarchy of permission group folder WBS and permission groups As-Built and ProjectA

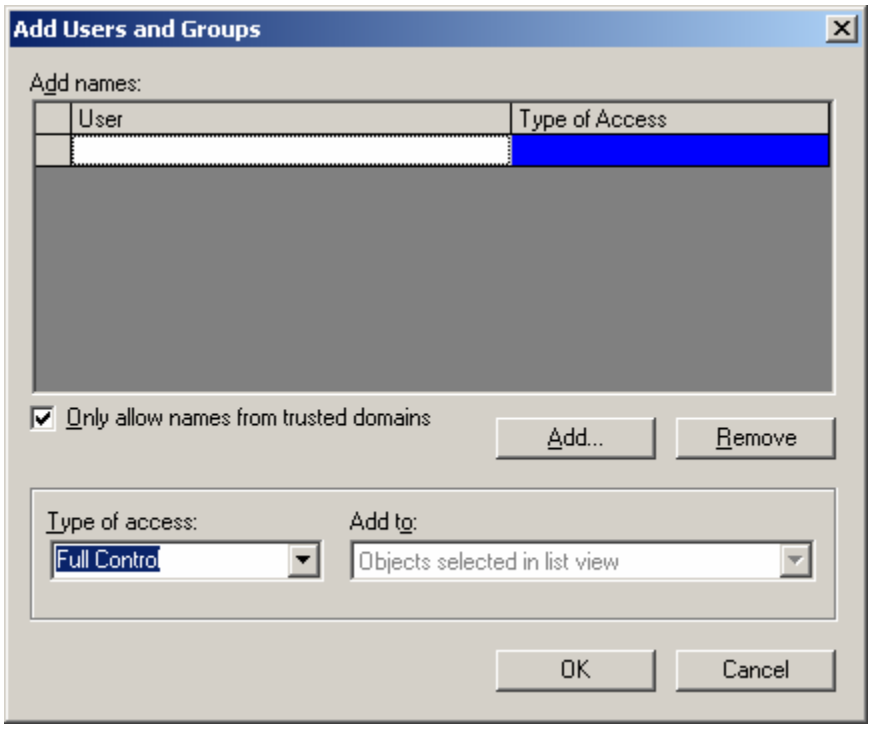


Assign permissions in Project Management

1. Select Permission group Piping
2. Right-click and select Permissions



3. Click the Add… button

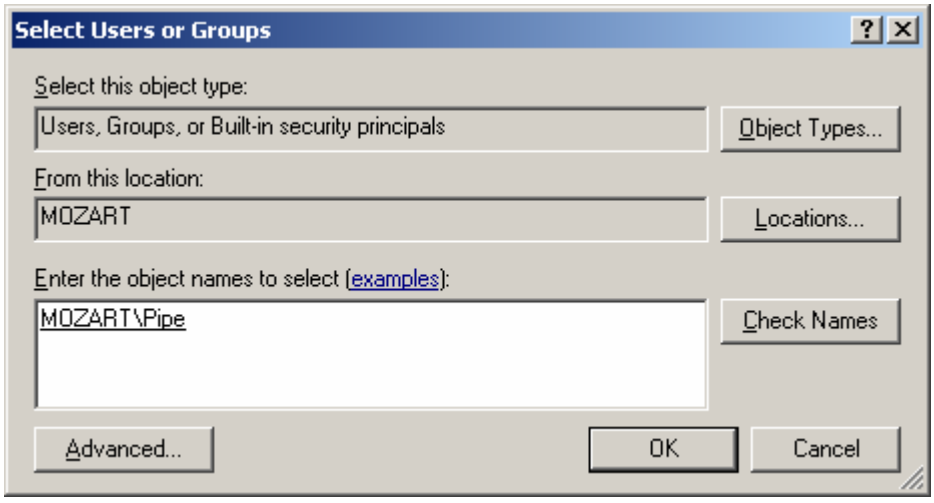


Note: This form can be operated in two modes determined by the checkbox “Only allow names from trusted domains”. If you want the form to verify the existence of the user or group on the domain controller, leave the check box selected. If you want

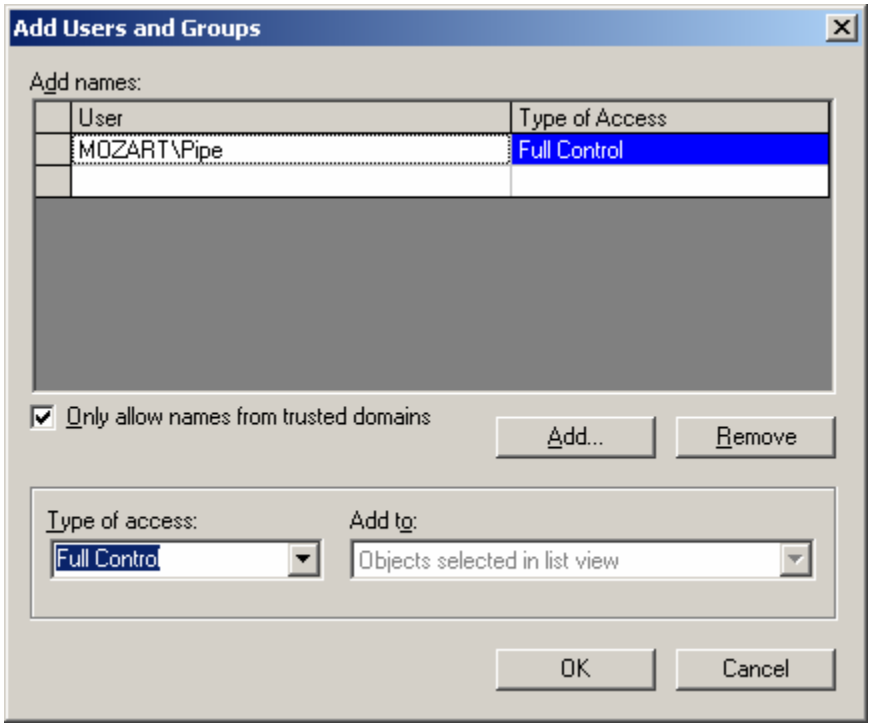
to add the user or group without domain verification, leave the box unchecked. Make this decision before keying in user names in the User block.

4. Click the Add… button

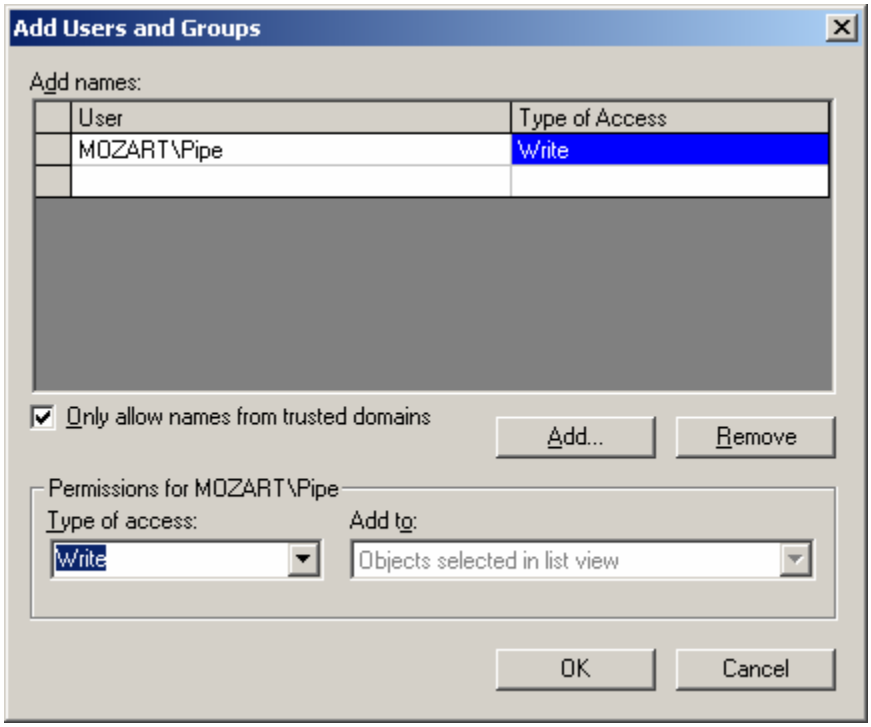
5. Use the standard user/group form for Windows to identify by domain\name the user or group you wish to add. In our case we will be selecting the user Pipe.



6. Click OK.

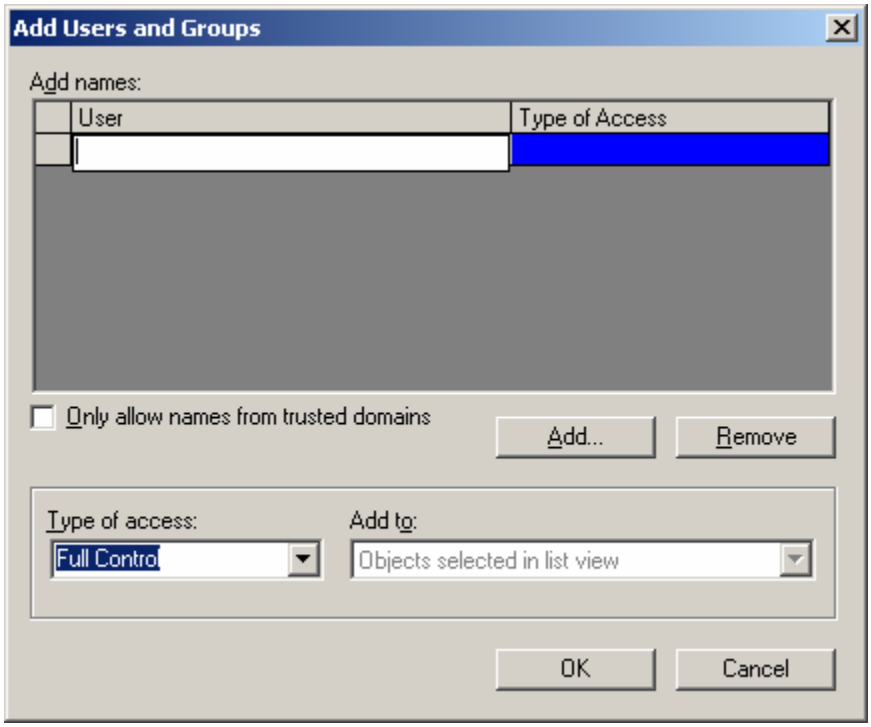


7. User the Type of access: control to change the permission to write access.



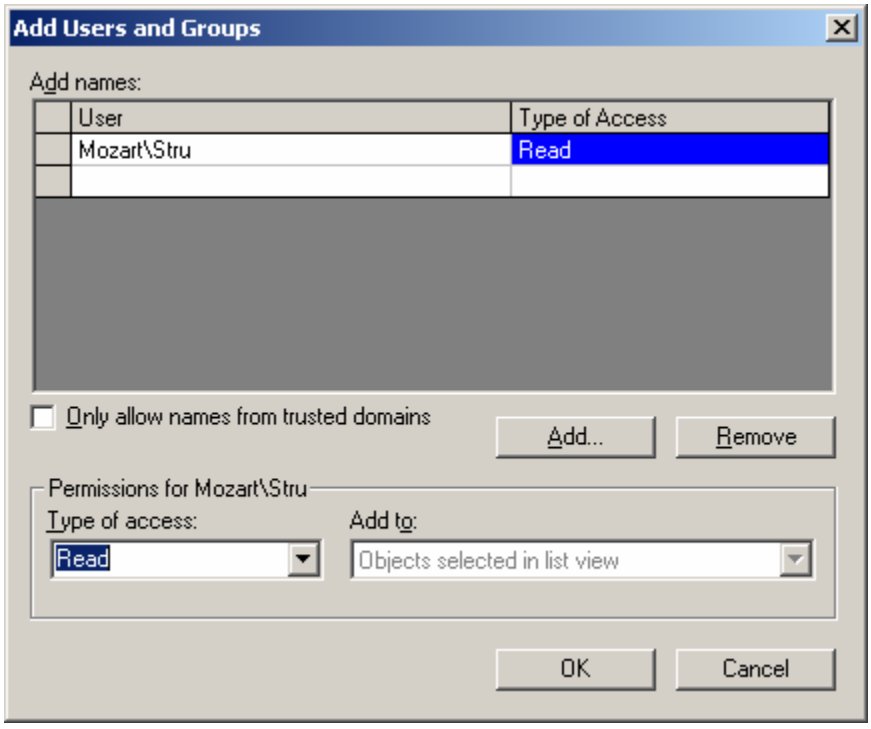
8. Click OK and review the access permissions form.

9. Use the add… button to return to the Add Users and Groups form. This time we will add a user without verify the existence on the domain.
10. Uncheck the box “Only allow names from trusted domains”



11. In the User field, key in the user Domain\Stru, in the case of this example that would be Mozart\Stru, please adjust accordingly for your setup.

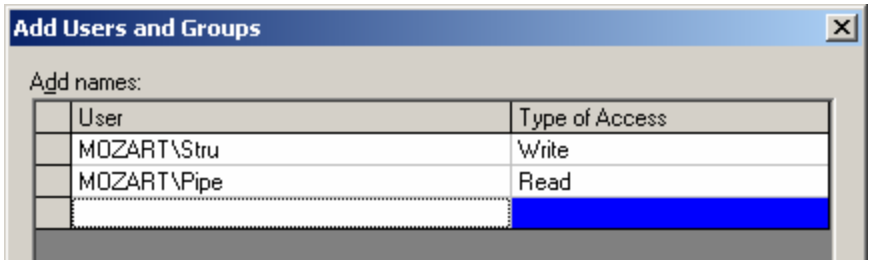
12. Select that user and set the Type of Access to Read.

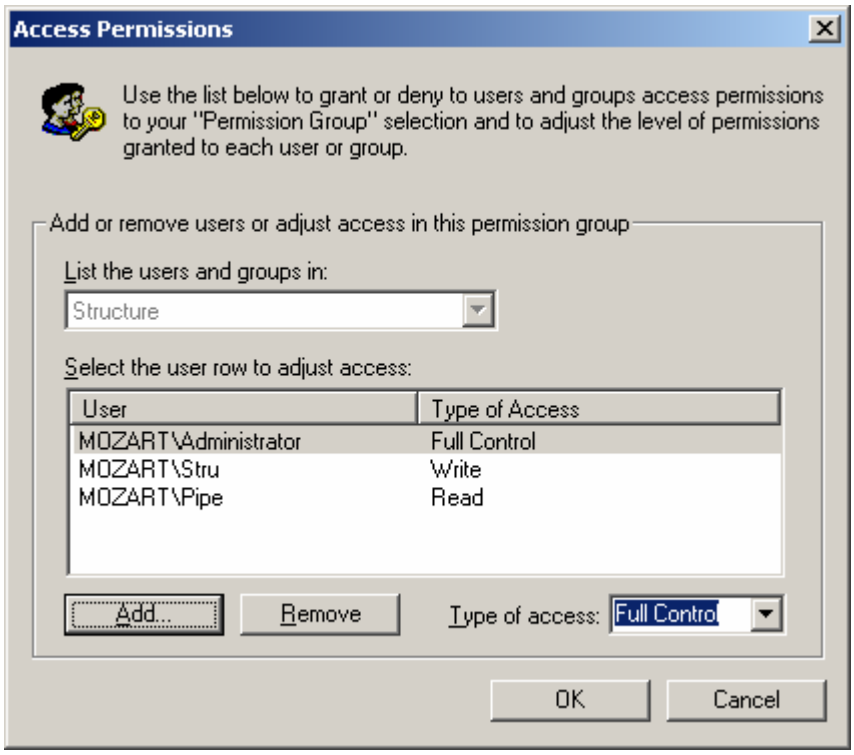


13. Click OK.

14. Review the settings.

15. Choose the option your prefer (domain verification on/off) and select the Permission Group “Structure” and assign Write to Stru and Read to Pipe groups

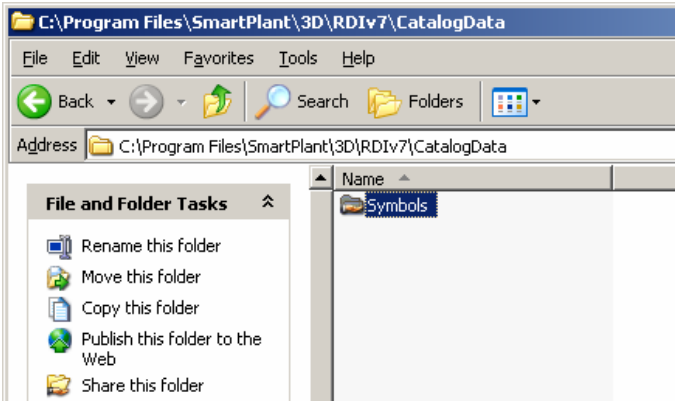




16. Choose the option you do not prefer and assign Write permissions to the ProjectA windows user group in the ProjectA SP3D permission group

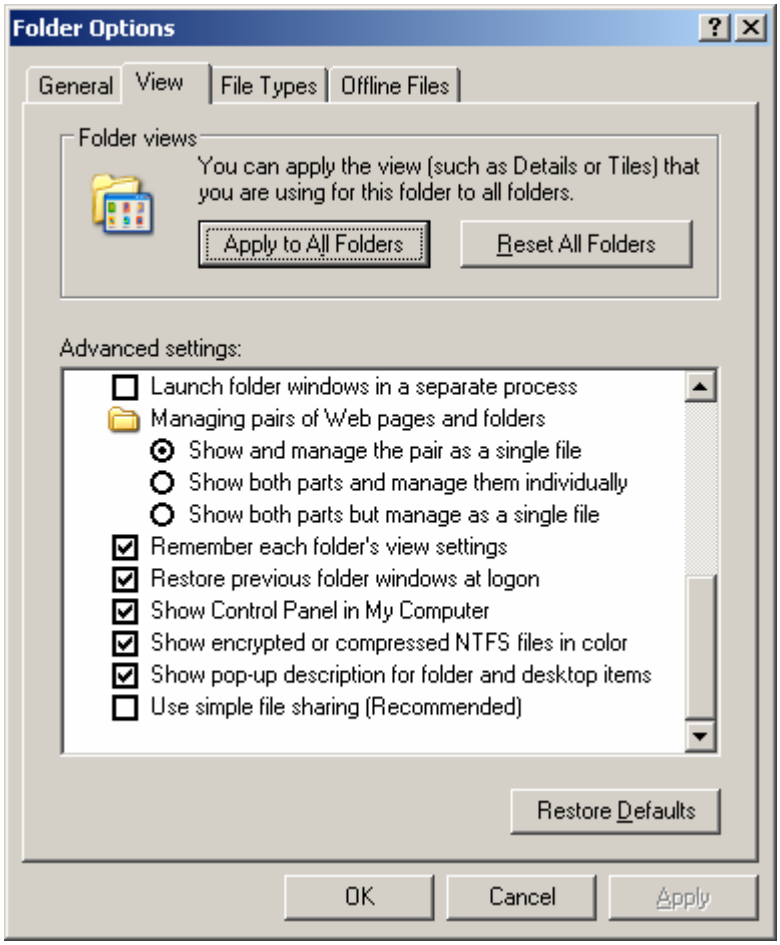
Assign permissions in the file system

1. Using Windows Explorer open the folder where the symbols share is located. This is the [Server Install Directory]\CatalogData\Symbols folder.

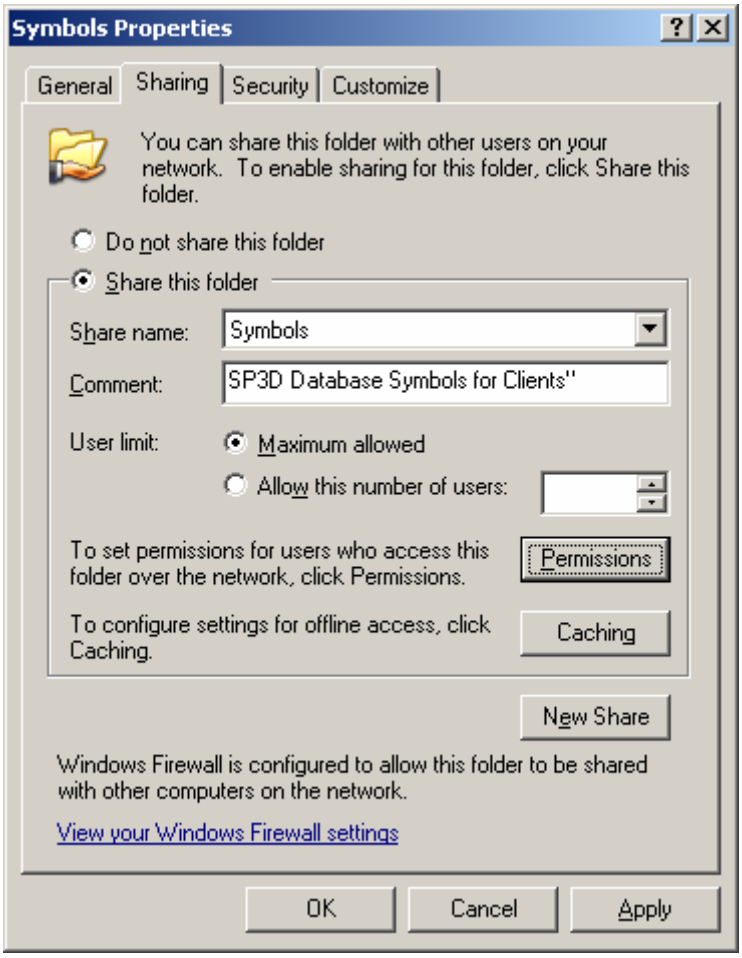


2. Modify permissions on this folder such that the SP3DUsers group has Full Control access.

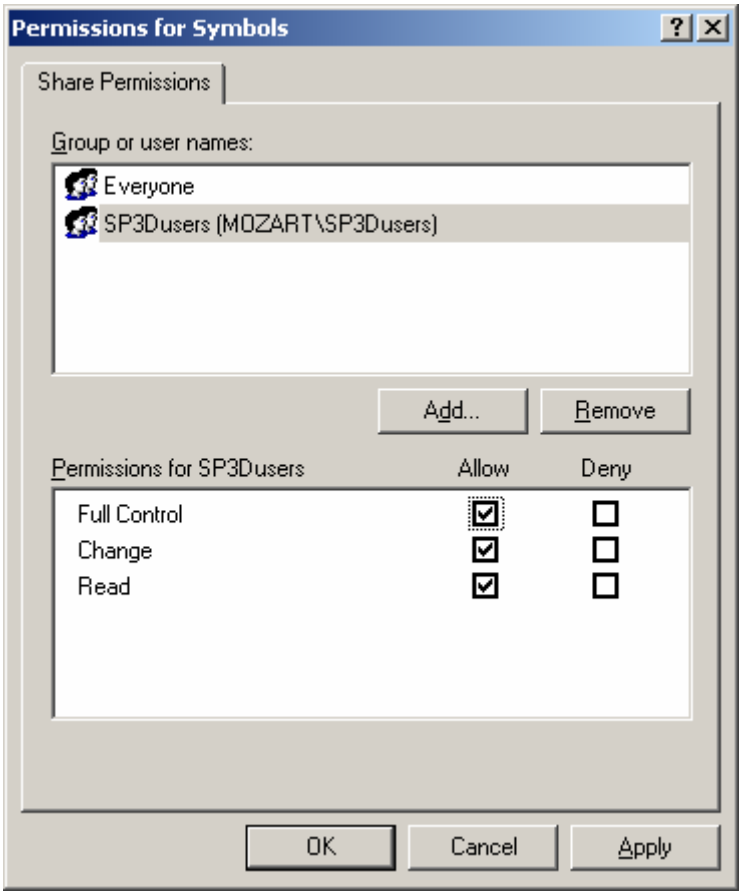
3. From the Tools menu on the Explorer window, select folder options. On the view tab, ensure that the “Use simple file sharing (recommended) is unselected.



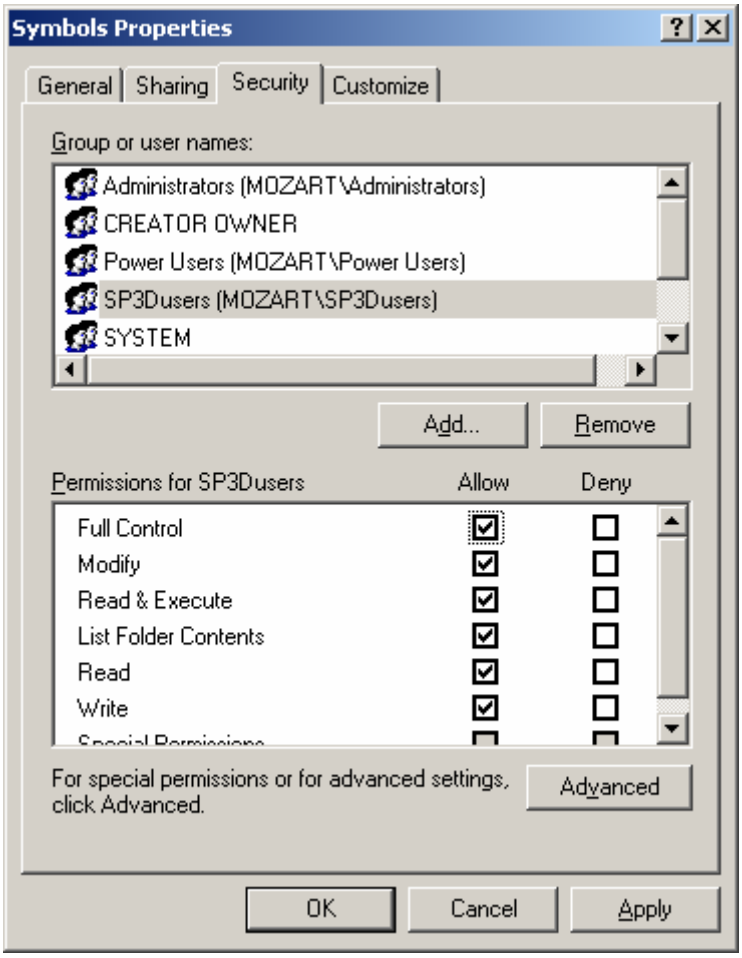
4. Click OK.
5. Right mouse on the “Symbols” folder, and click on the “Sharing” tab. Then Click Permissions.



6. Modify share permissions such that the SP3DUsers group has Full Control access.

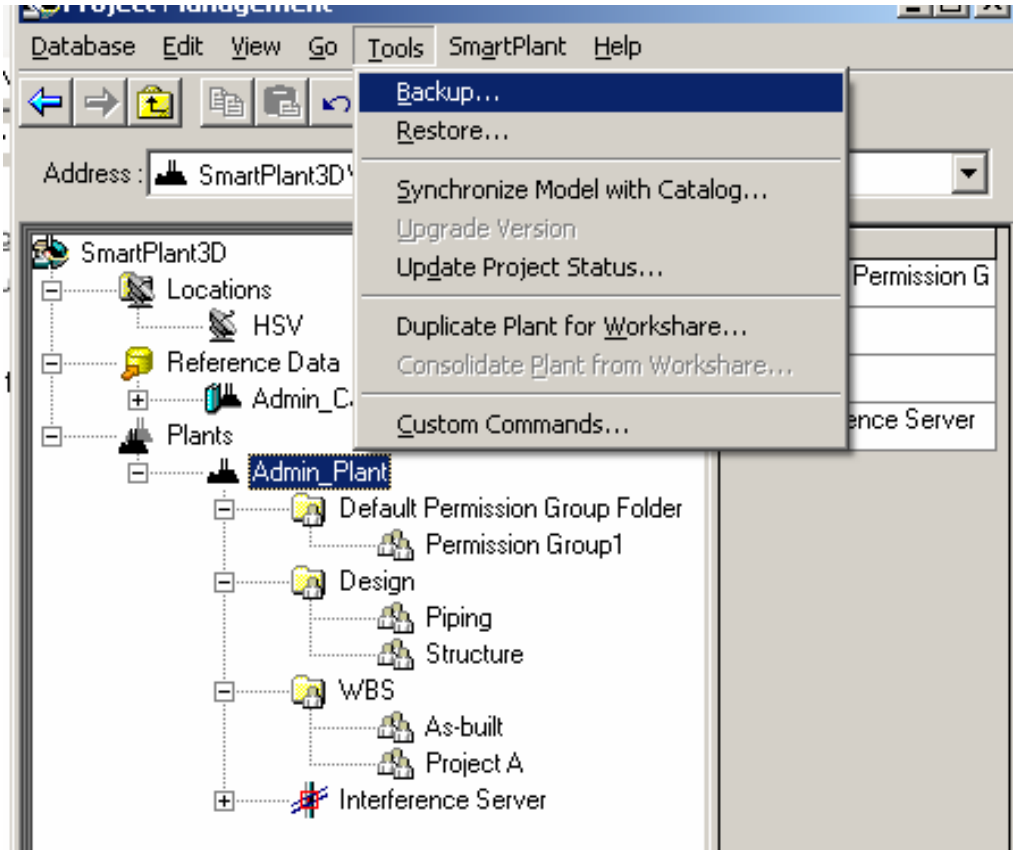


7. Modify the security permissions such that the SP3DUsers group has Full Control.

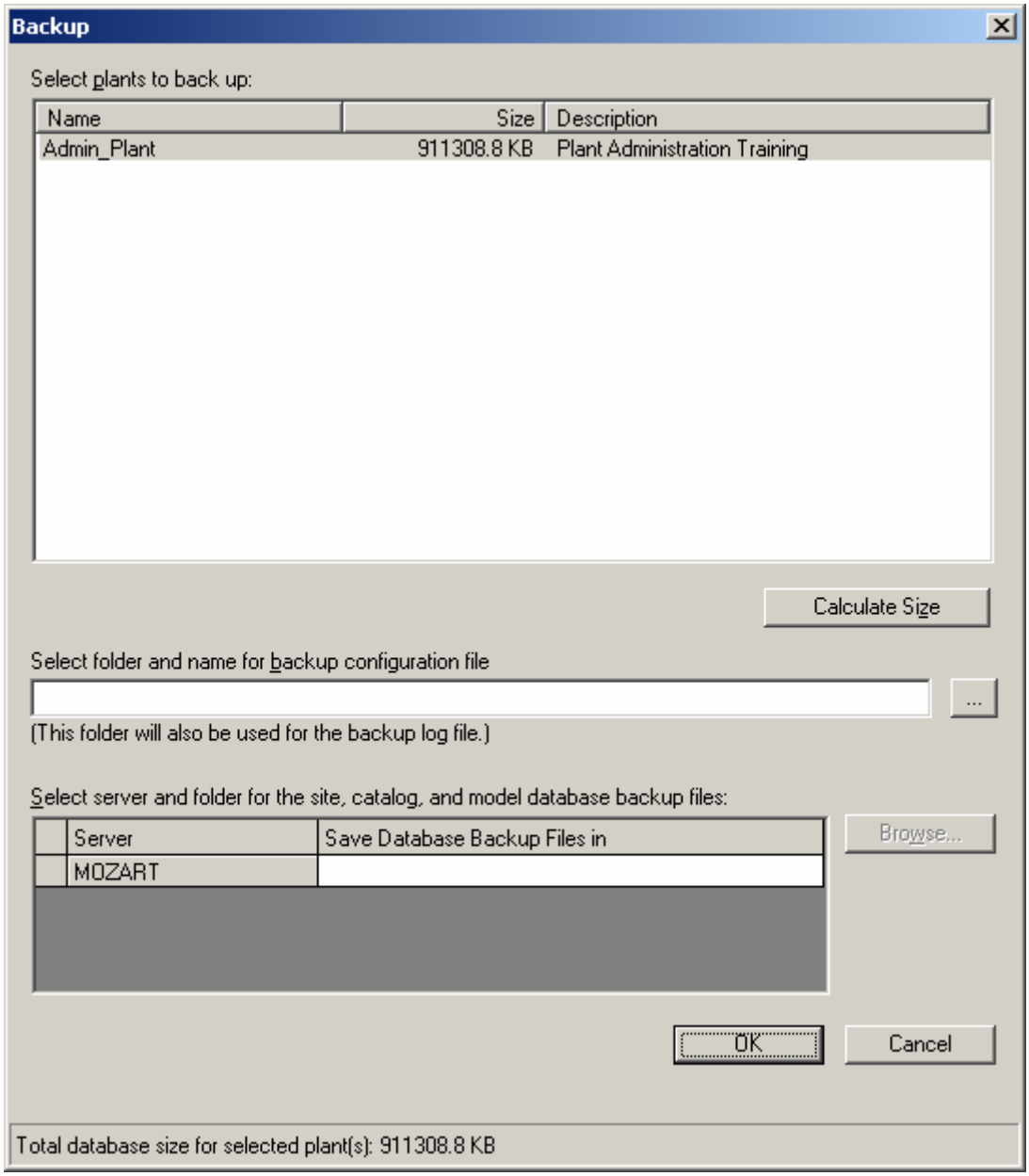

Symbols Properties
General
Sharing
Security
Customize
Group or user names:
Administrators (MOZART\Administrators)
CREATOR OWNER
Power Users (MOZART\Power Users)
SP3Dusers (MOZART\SP3Dusers)
SYSTEM
Add...
Remove
Permissions for SP3Dusers
Allow
Deny
Full Control
Modify
Read & Execute
List Folder Contents
Read
Write
For special permissions or for advanced settings, click Advanced.
Advanced
OK
Cancel
Apply

LAB 4 Simple Backup

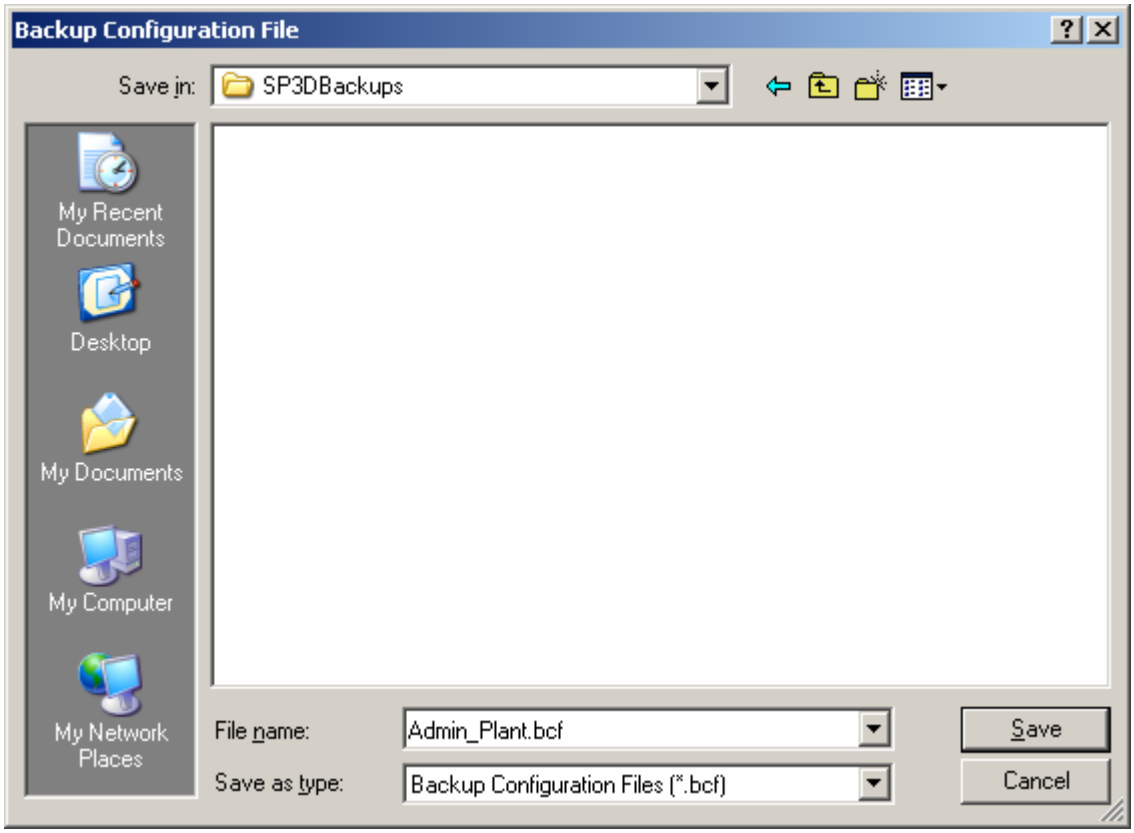
1. Start Project Management.
2. From the Tools menu, select Backup.



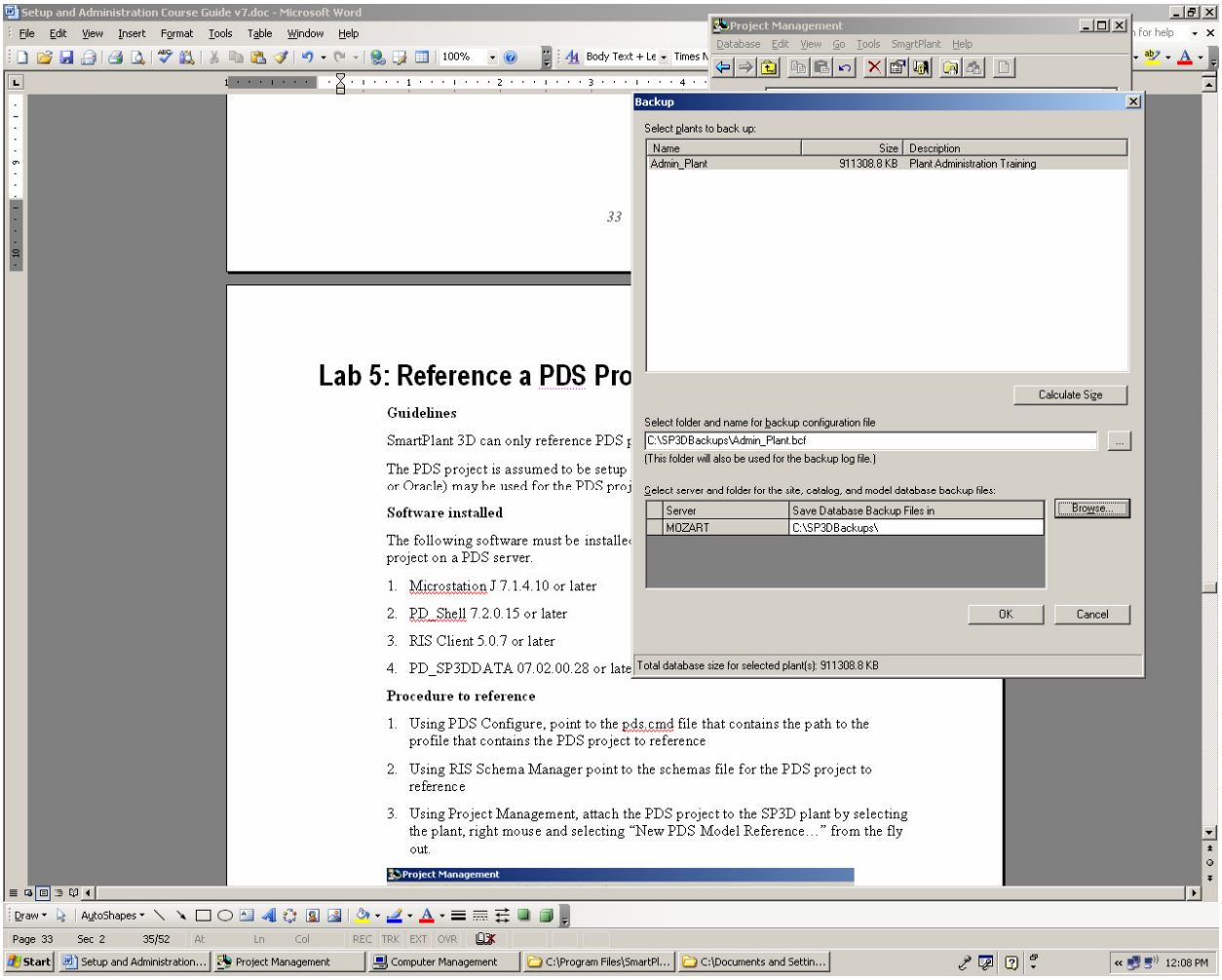
3. On the form that appears, use the Calculate Size button to determine the size of the backup:



4. Click the ellipse button for the Select folder and name for backup configuration file and then create a folder on a drive that has sufficient space to hold the backup. Name the folder SP3DBackups

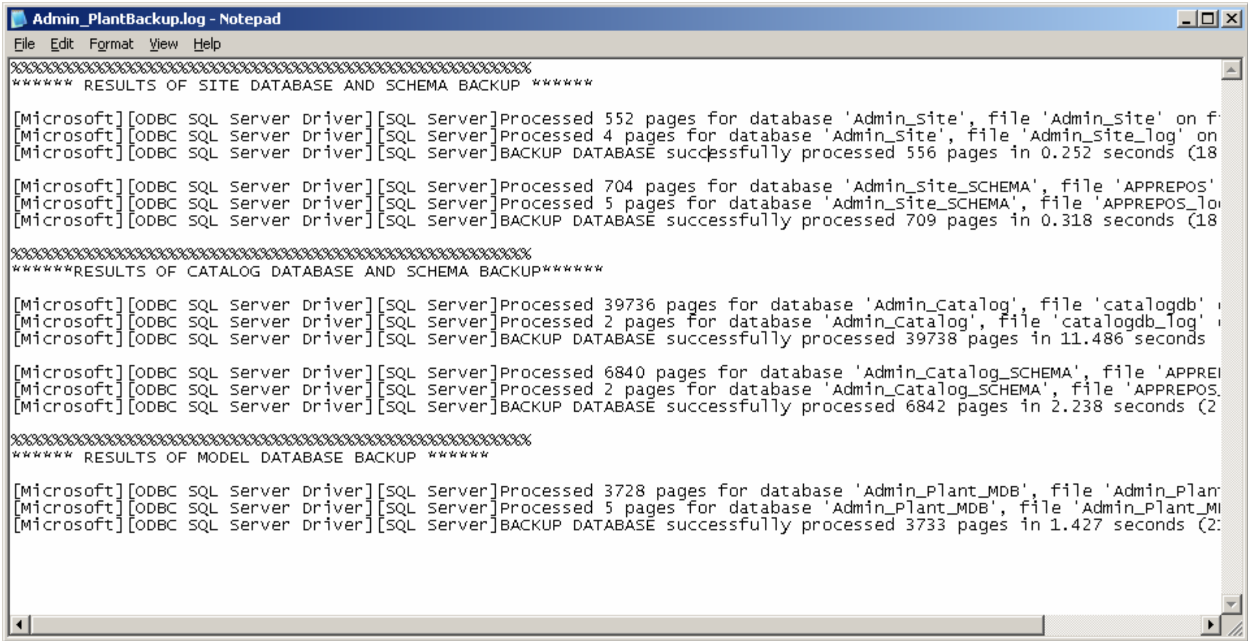


5. Click Save.
6. Return to the form and use the browse button to determine a location to store the database file backups. If possible, try to place the bcf and the database files together during the backup procedure.



7. Click "OK" and allow the backup to complete.

8. Review the log file (generally errors will come in the backup log file if there is insufficient disk space):



Admin_PlantBackup.log - Notepad

File Edit Format View Help

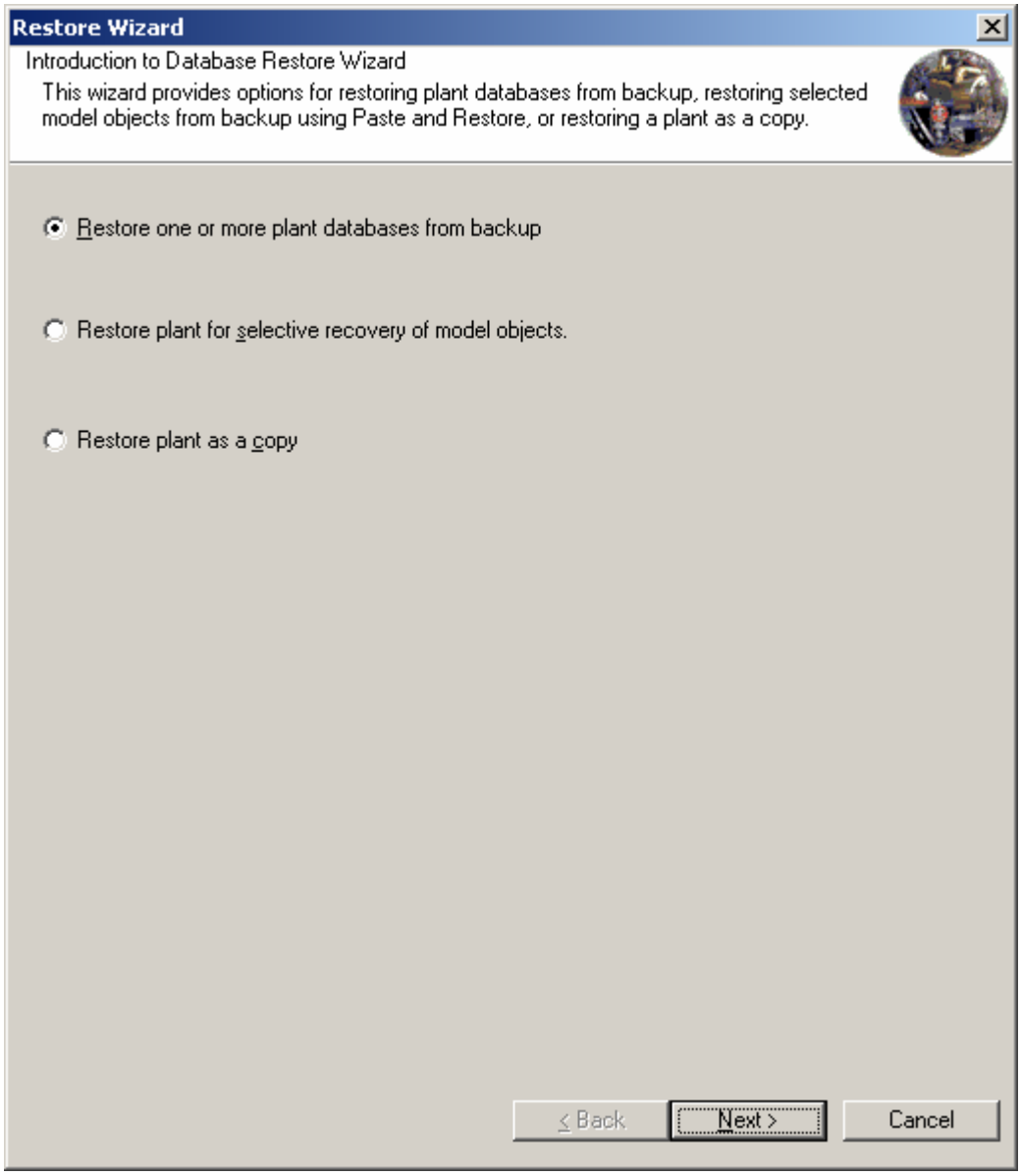
```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
****** RESULTS OF SITE DATABASE AND SCHEMA BACKUP ******

[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 552 pages for database 'Admin_Site', file 'Admin_Site' on f
[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 4 pages for database 'Admin_Site', file 'Admin_Site_log' on
[Microsoft][ODBC SQL Server Driver][SQL Server]BACKUP DATABASE successfully processed 556 pages in 0.252 seconds (18

[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 704 pages for database 'Admin_Site_SCHEMA', file 'APPREPOS'
[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 5 pages for database 'Admin_Site_SCHEMA', file 'APPREPOS_lo
[Microsoft][ODBC SQL Server Driver][SQL Server]BACKUP DATABASE successfully processed 709 pages in 0.318 seconds (18

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
******RESULTS OF CATALOG DATABASE AND SCHEMA BACKUP******

[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 39736 pages for database 'Admin_Catalog', file 'catalogdb'
[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 2 pages for database 'Admin_Catalog', file 'catalogdb_log'
[Microsoft][ODBC SQL Server Driver][SQL Server]BACKUP DATABASE successfully processed 39738 pages in 11.486 seconds

[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 6840 pages for database 'Admin_Catalog_SCHEMA', file 'APPRE
[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 2 pages for database 'Admin_Catalog_SCHEMA', file 'APPREPOS_
[Microsoft][ODBC SQL Server Driver][SQL Server]BACKUP DATABASE successfully processed 6842 pages in 2.238 seconds (2

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
****** RESULTS OF MODEL DATABASE BACKUP ******

[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 3728 pages for database 'Admin_Plant_MDB', file 'Admin_Plan
[Microsoft][ODBC SQL Server Driver][SQL Server]Processed 5 pages for database 'Admin_Plant_MDB', file 'Admin_Plant_M
[Microsoft][ODBC SQL Server Driver][SQL Server]BACKUP DATABASE successfully processed 3733 pages in 1.427 seconds (2
```

9. Click the X or Cancel button on the Backup form to return to Project Management.

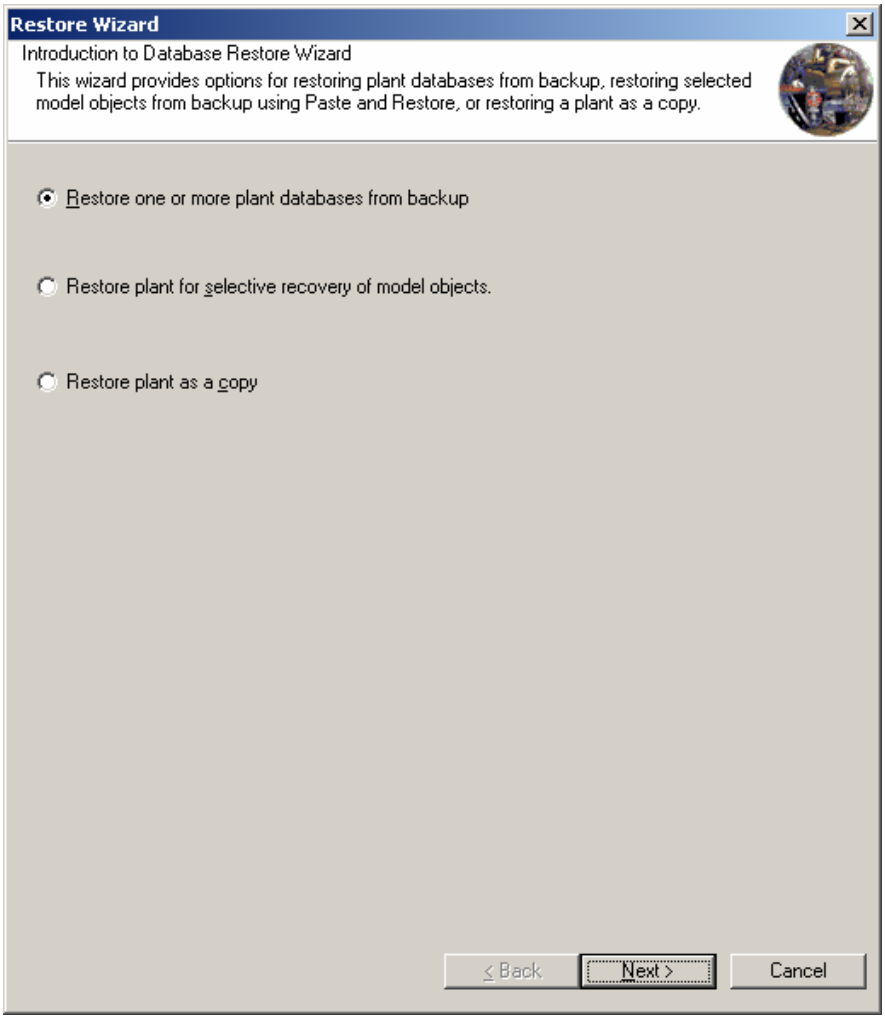
LAB 5 Restoring a Plant Database (Restore Option 1):

Note: Option 1 is "Restore one or more Plant Database from Backup" The intent of this command is to restore a Plant that already exists (or has pointers) in the current Site Database. This would generally happen when the production model has a need to be rolled back to a previous date or, immediately after restoring a backup of the Site Database onto a new server. In the latter case, only the pointer in the Site would be present and we would want to follow that action by restoring the Model and Catalog onto that server as well.

1. Start project management
2. From the Tools menu select Restore…

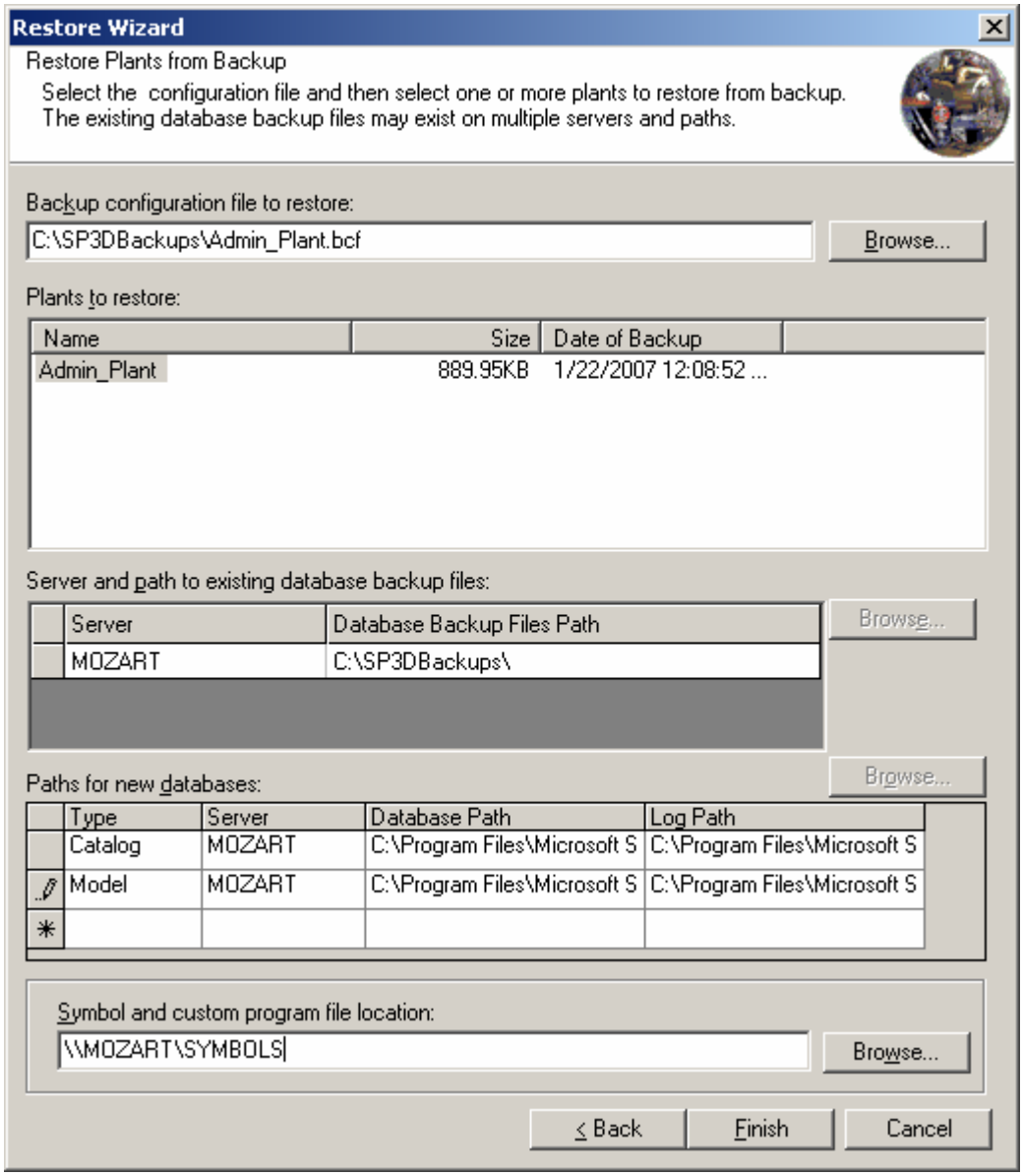


3. Choose the option Restore one or more plant databases from backup. This will restore OVER THE EXISTING plant database. It will only work if the plant already exists in the Site and Site_Schema.



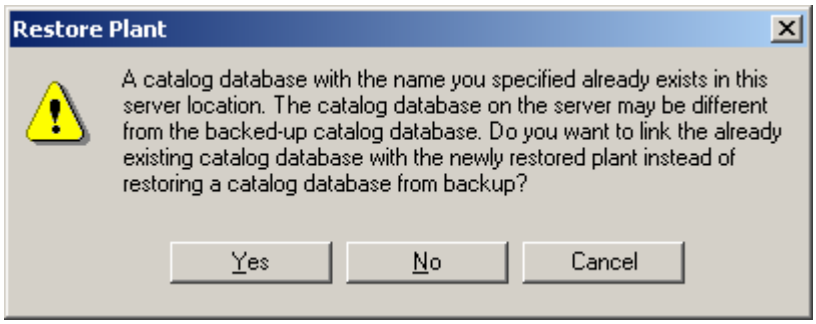
4. Click Next>

5. Complete the form as depicted below by identifying the BCF, Backup file path, identifying the Catalog and Model names/locations, and Symbol share path:

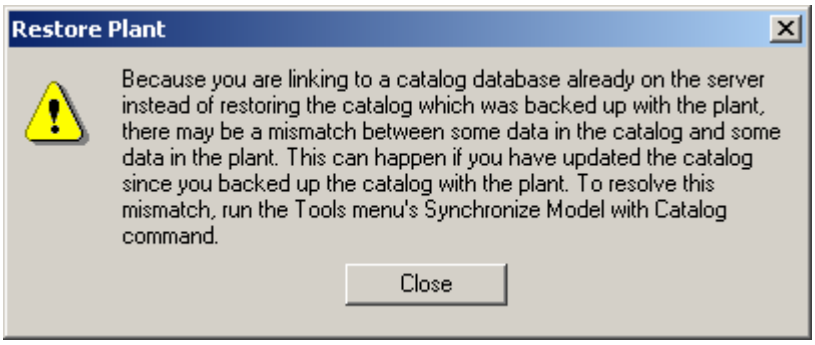


6. Click Finish

7. Because the Catalog already exists, you have two options in this mode of Restoration. You can either leave the existing Catalog in place (not replace it) or overwrite it from the backup.

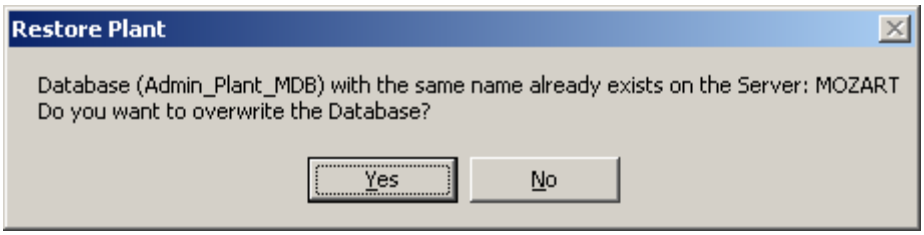


8. Because we have not made any changes to the Catalog the logical choice would be to select Yes and leave the existing Catalog intact. Select Yes. An additional warning message will be displayed.

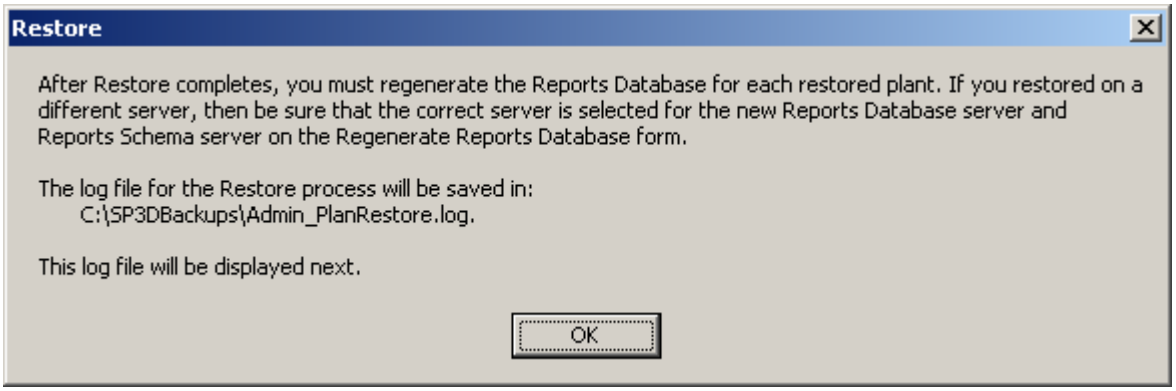


9. Click the Close button (we will not be required to run Synchronize at this time because the Catalog has not changed).

10. An Additional confirmation form will be displayed because you are overwriting the Model Database:



11. Click Yes.



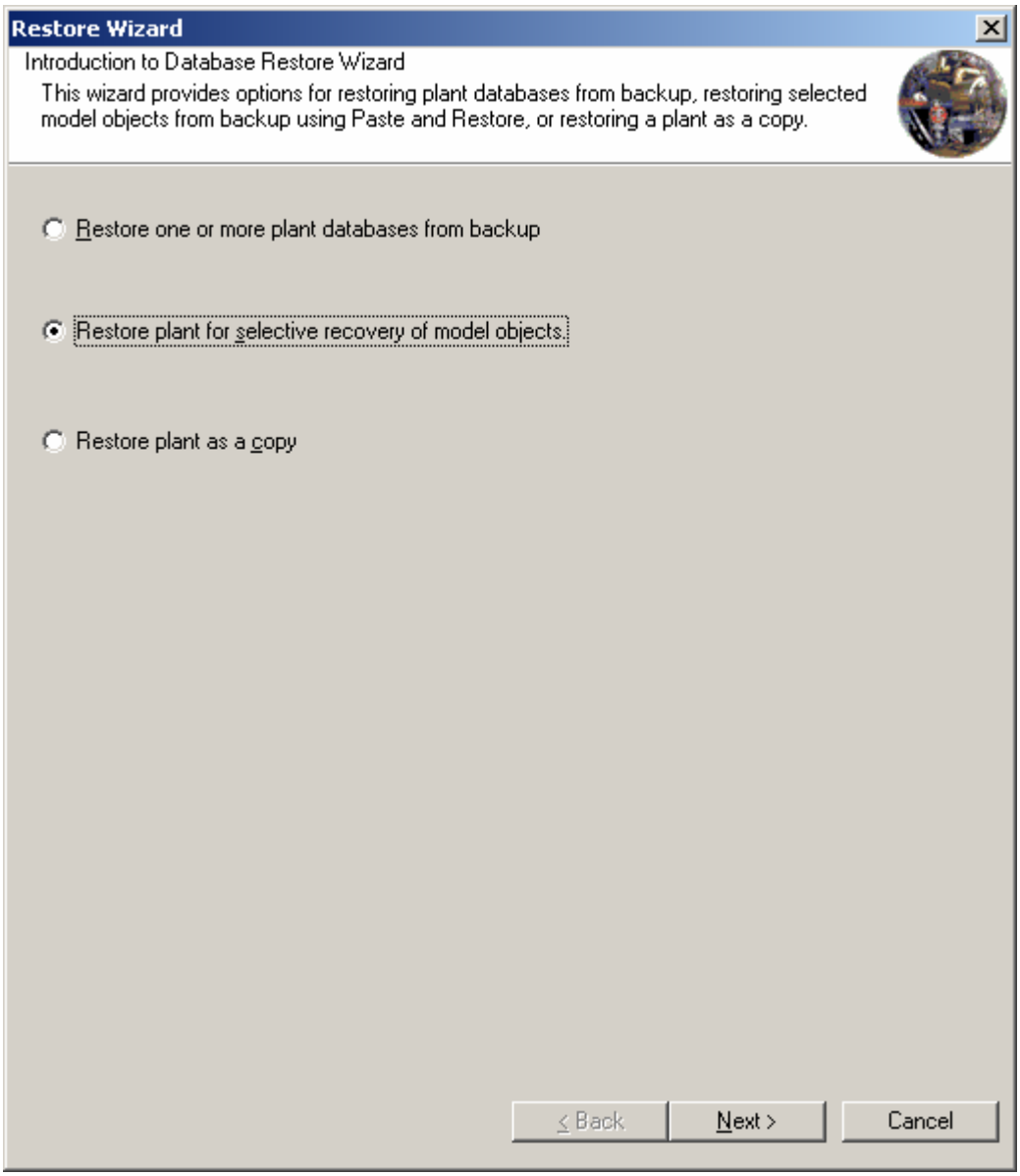
12. When the restore is complete, Click OK and review the log file. Because we only restored the model, the log file will only contain information regarding the model restoration and not the catalog. Click Close on the Restore form to return to Project Management.

13. Repeat this process described in steps 1-12 but this time choose to restore over the Catalog Database.

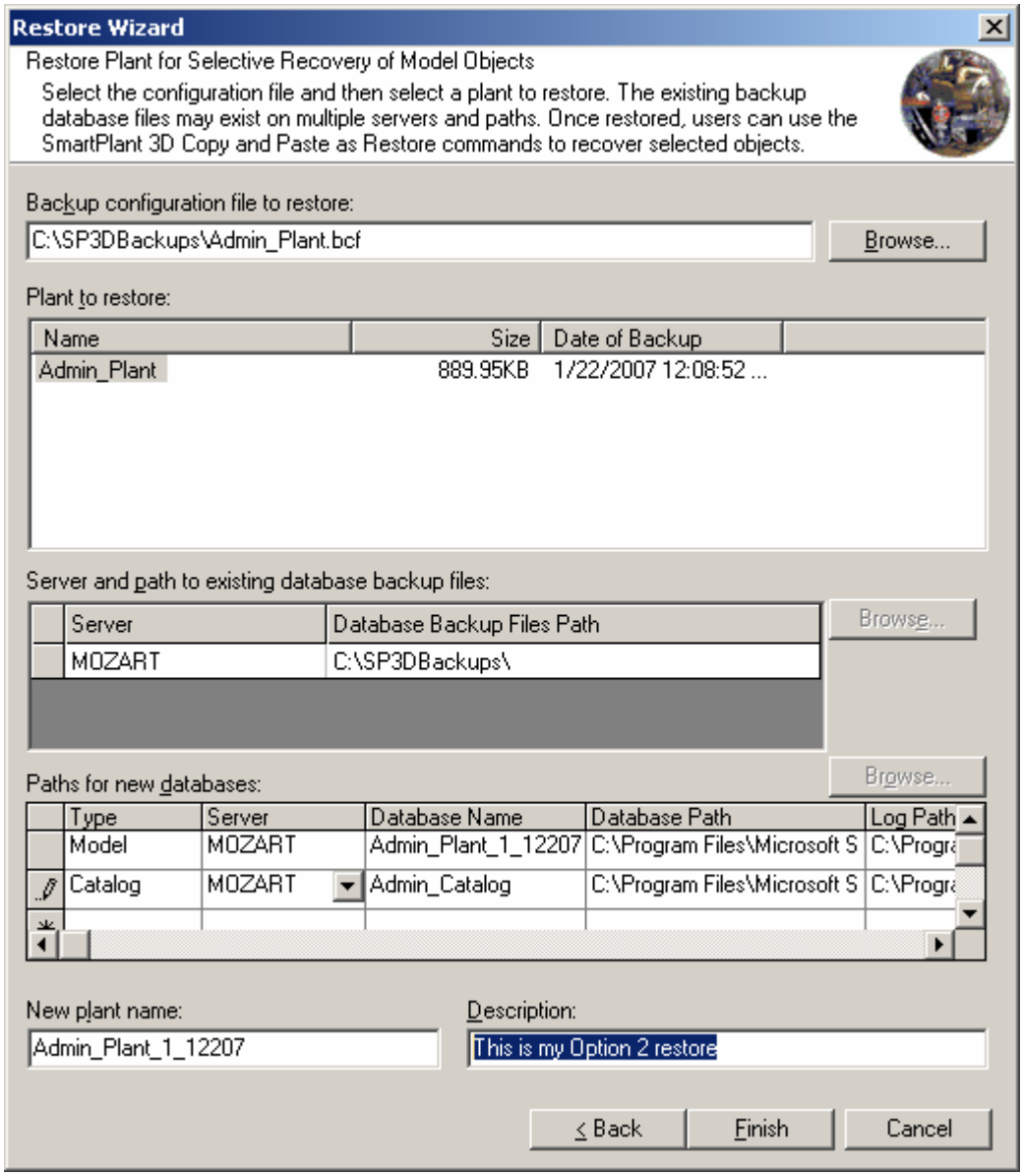
LAB 6 Restoring a Plant Database (Restore Option 2):

Note: Restore Option 2 is "Restore plant for selective recovery of model objects" The intent with this command is to restore a Model database into a Site database where a current version of the model already exists. The restored Model (which would represent old data) would exist in the Site database in parallel to the current Model and would share the same Catalog. Users could then open two sessions, one pointed to the restored Model and one pointed to the current Model, and select items from the restored model to Copy and then "Paste Restore" into the current model. Doing this type of workflow allows for selective recovery of work from previous versions of the same model.

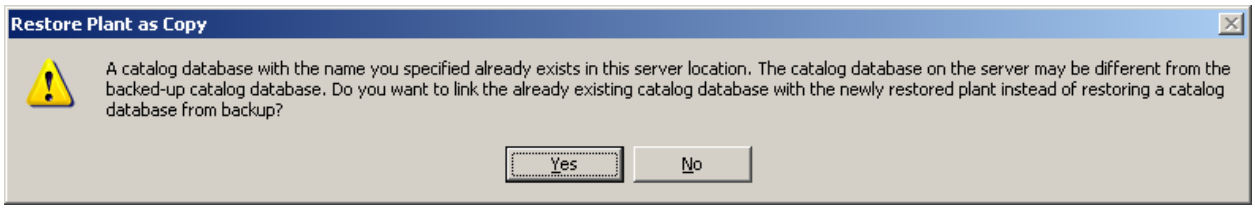
1. Start Project Management if it is not already started.
2. Use the Tools → Restore… command



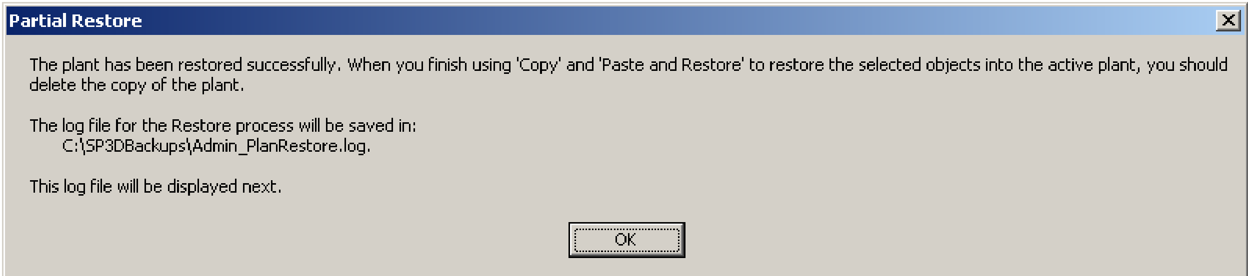
3. Select the option “Restore plant for selective recovery of model objects”
4. Click Next>
5. Complete the form providing information for the BCF file location, the backup file path, and the Model and Catalog name/location after restore:



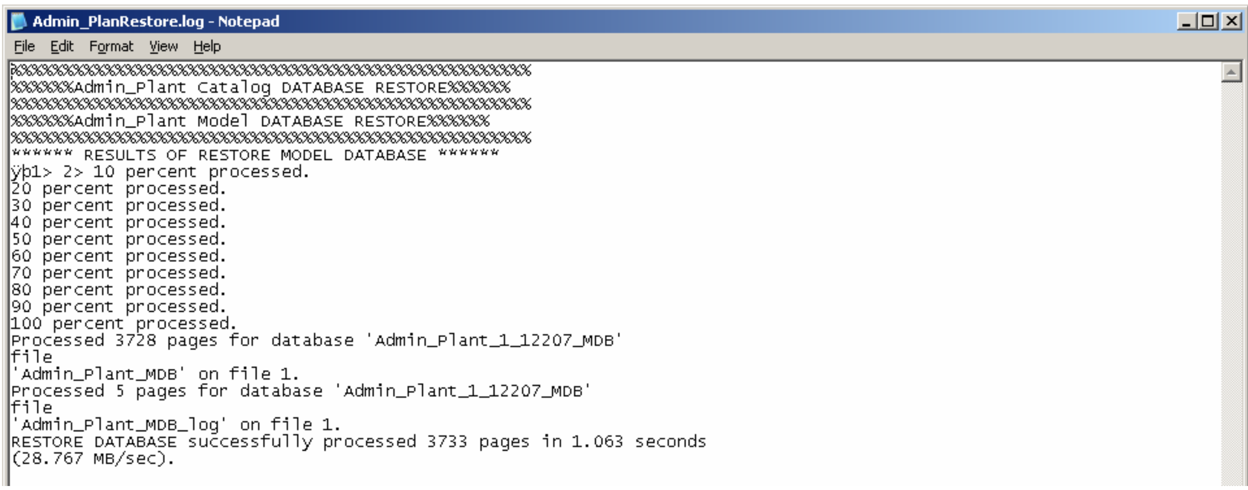
6. Note that the new plant name should contain the date (1-22-2007 in the screenshot above). Provide a description that is meaningful to you.
7. Click Finish



8. Indicate that you would like to link to the existing Catalog by selecting Yes.

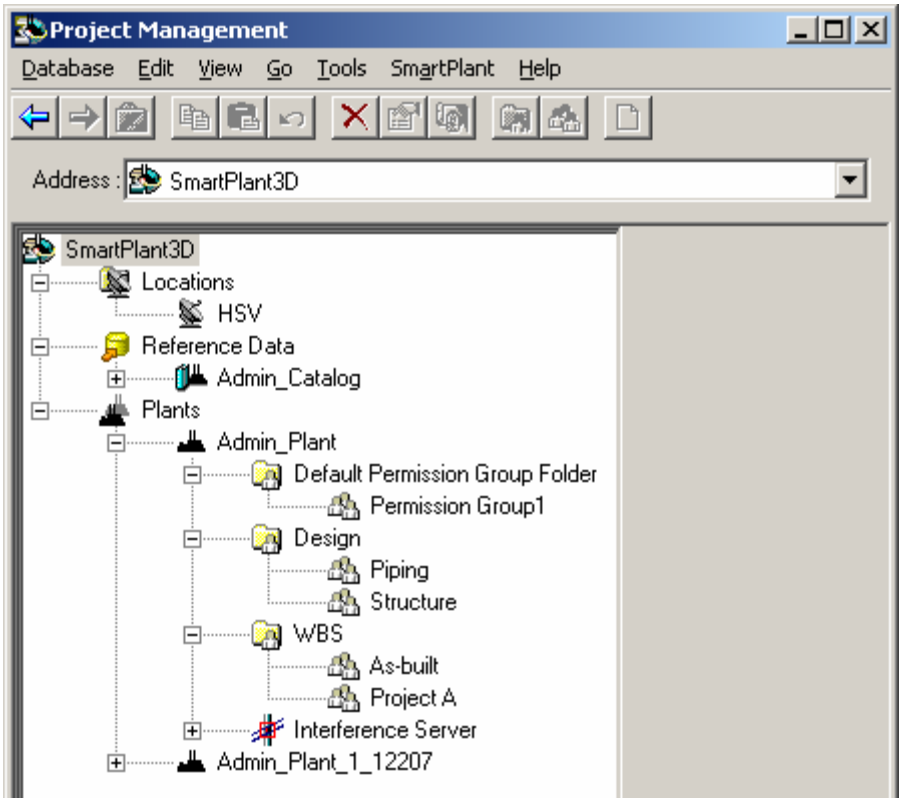


9. Click OK and once again you will want to review the log file:



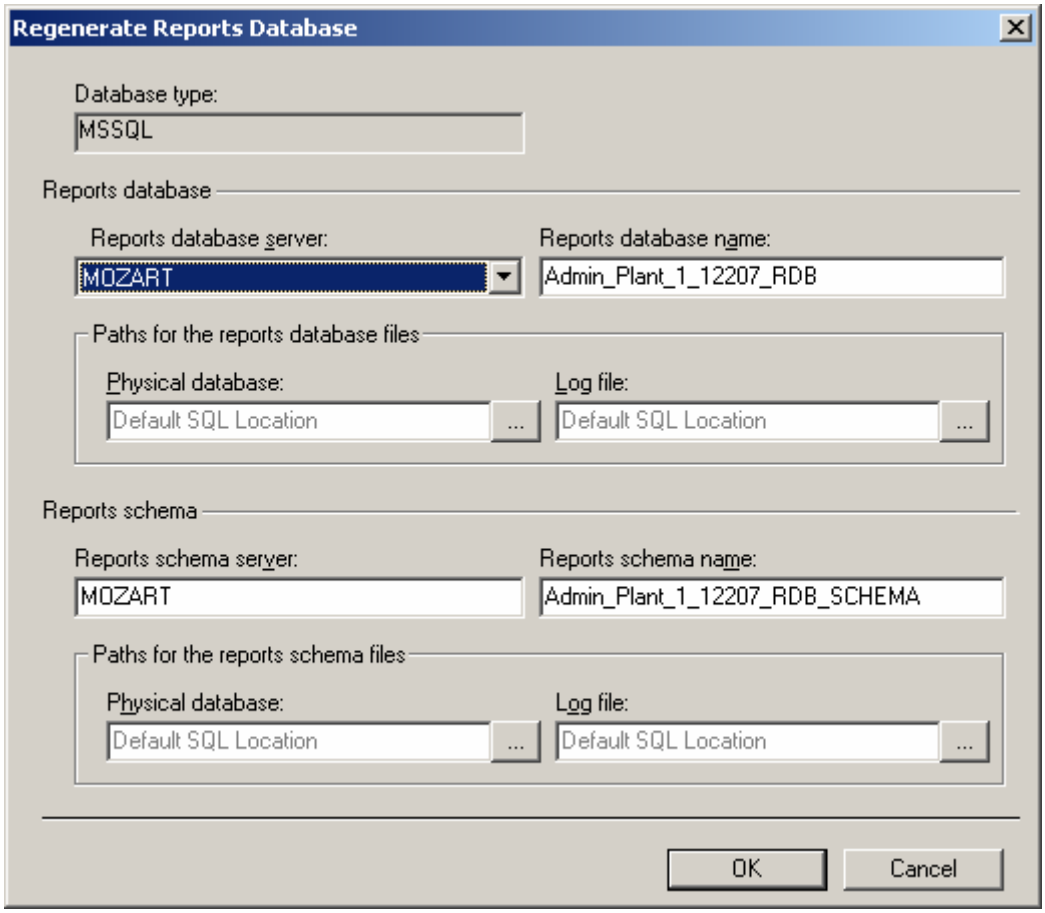
10. Close the Restore Wizard form.

11. Review the Project Management Tree and observe that there now exists two plants that share the same Catalog:



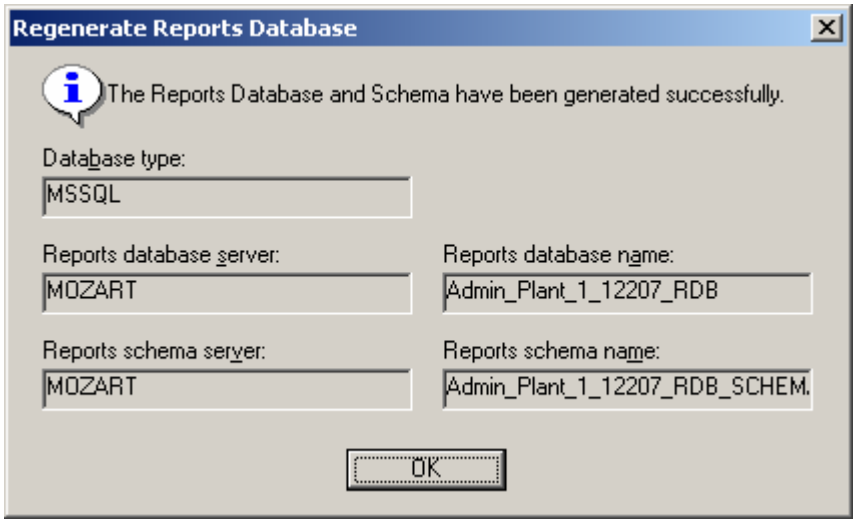
12. Typically, you would follow this type of operation by restricting access to permission groups in the restored Plant. As an exercise, use the skills you have learned to set user access to read for all groups and users except yourself on the Restored Plant.

13. Right mouse on the newly restored plant and select Regenerate Report database (as the restored plant is currently making use of the pre-existing Report database for the current plant).



14. Click OK and allow the report database to regenerate.

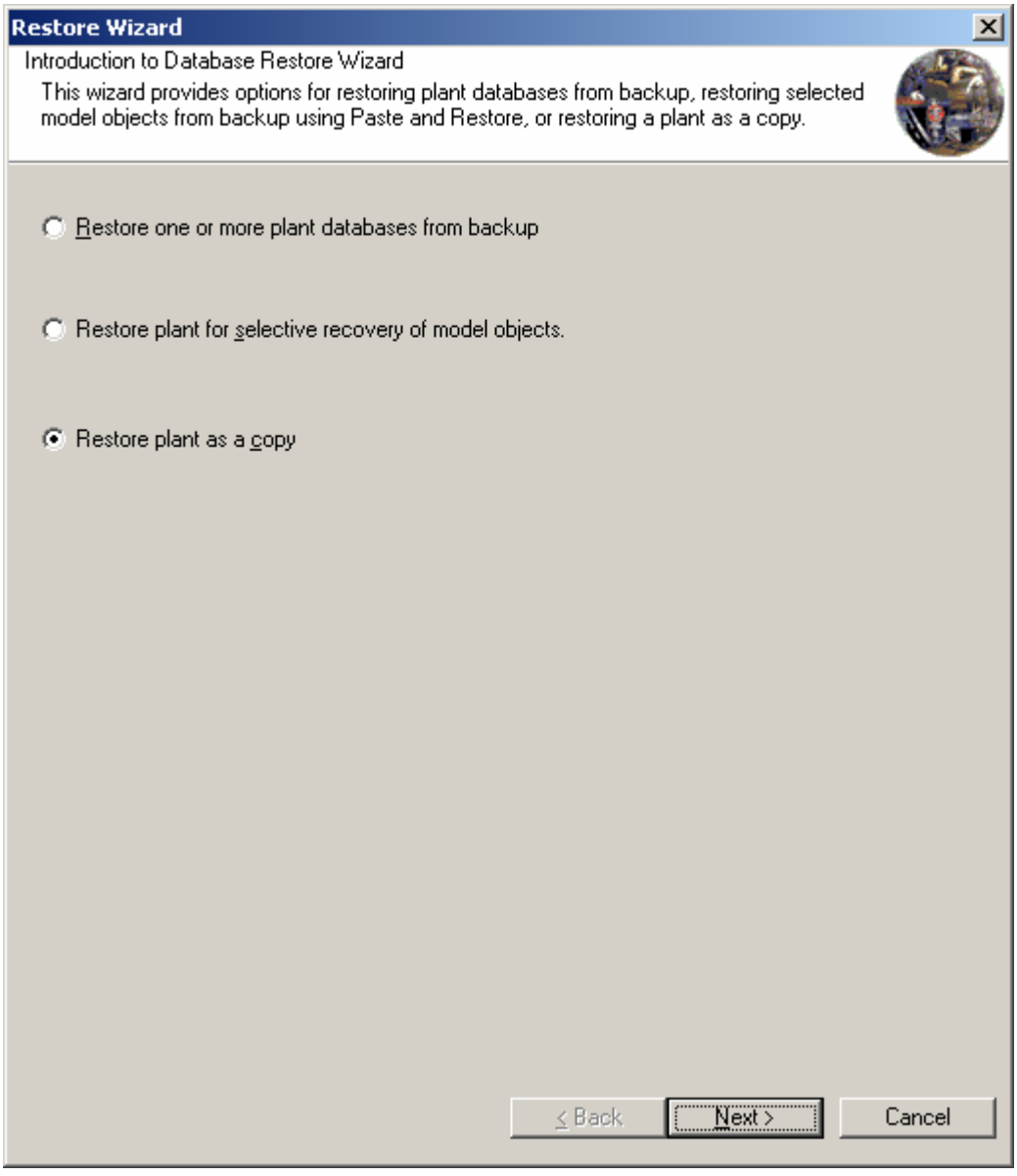
15. The database can now be utilized for “Paste Restore” operations had this been a live project.



LAB 7 Restoring a Plant Database (Restore Option 3):

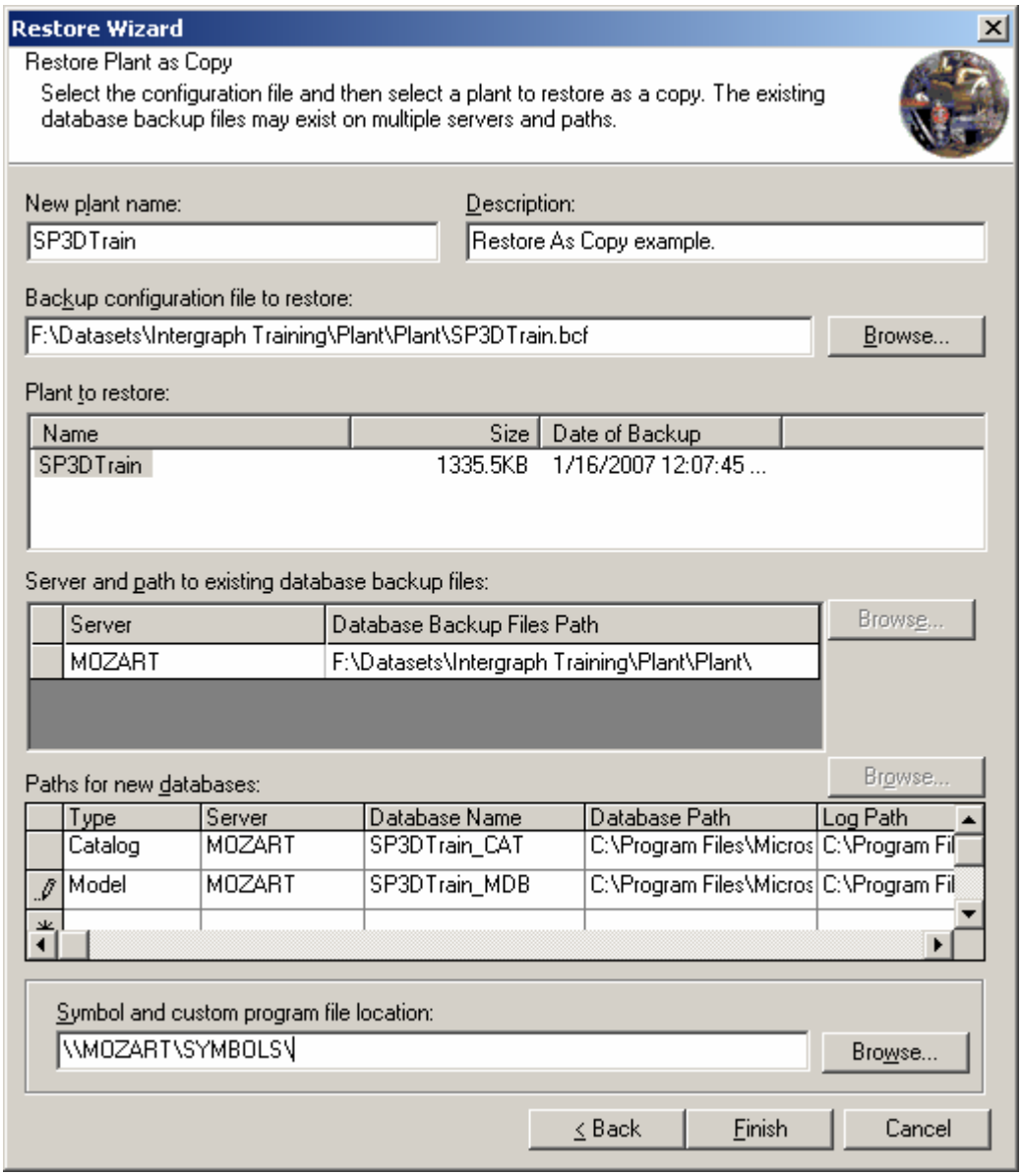
Note: Option 3 is represented by the restore option "Restore Plant as Copy" This method is generally used to restore a plant that does not exist in the current Site database set, or to duplicate a Plant (by use of a backup) in the same Site database set. Unlike Option 1, Option 3 does not require an instance of the same Plant to exist in the Site database.

1. Start Project Management
2. From the Tools → Restore command select the third option as captured below:



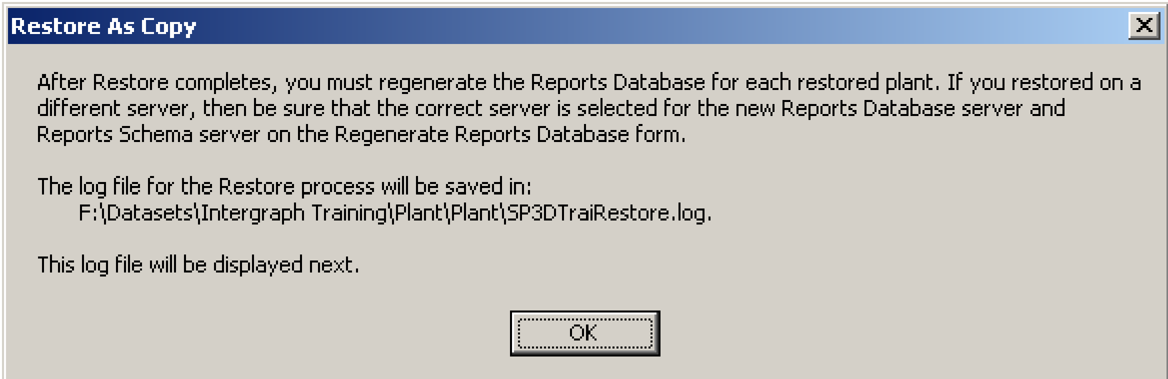
Note: Your instructor will provide you location of the Training Model bcf and backup files before you continue on to step 3.

3. The form works much the same way as it has before for Option 1 and Option 2. Complete the form as depicted below by keying in a New plant name, locating the bcf and backup files; choosing the Catalog name, and the Model name.

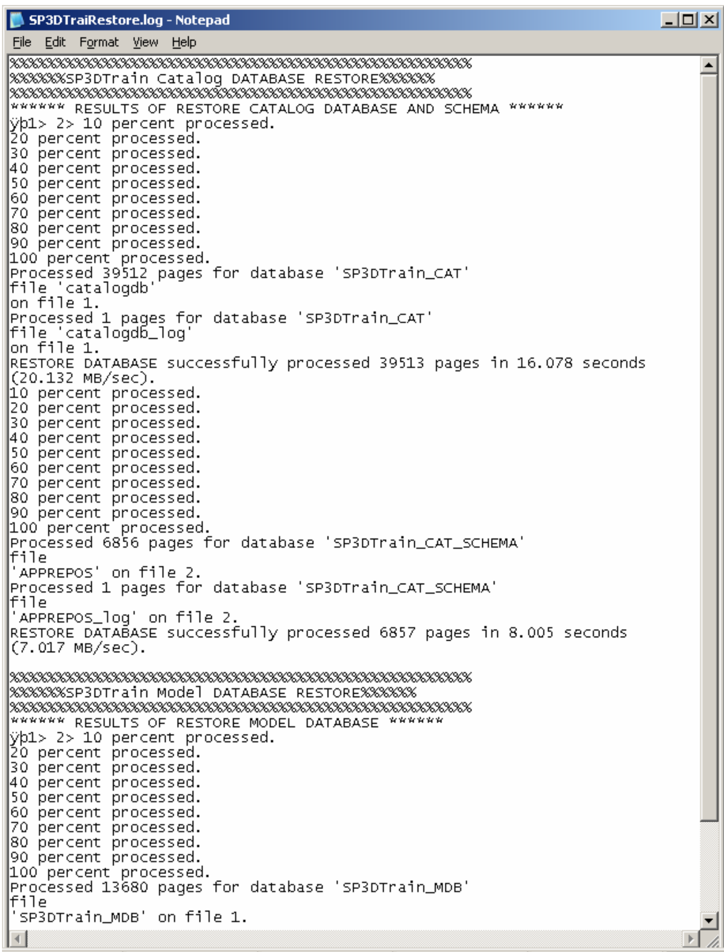


4. Click Finish.

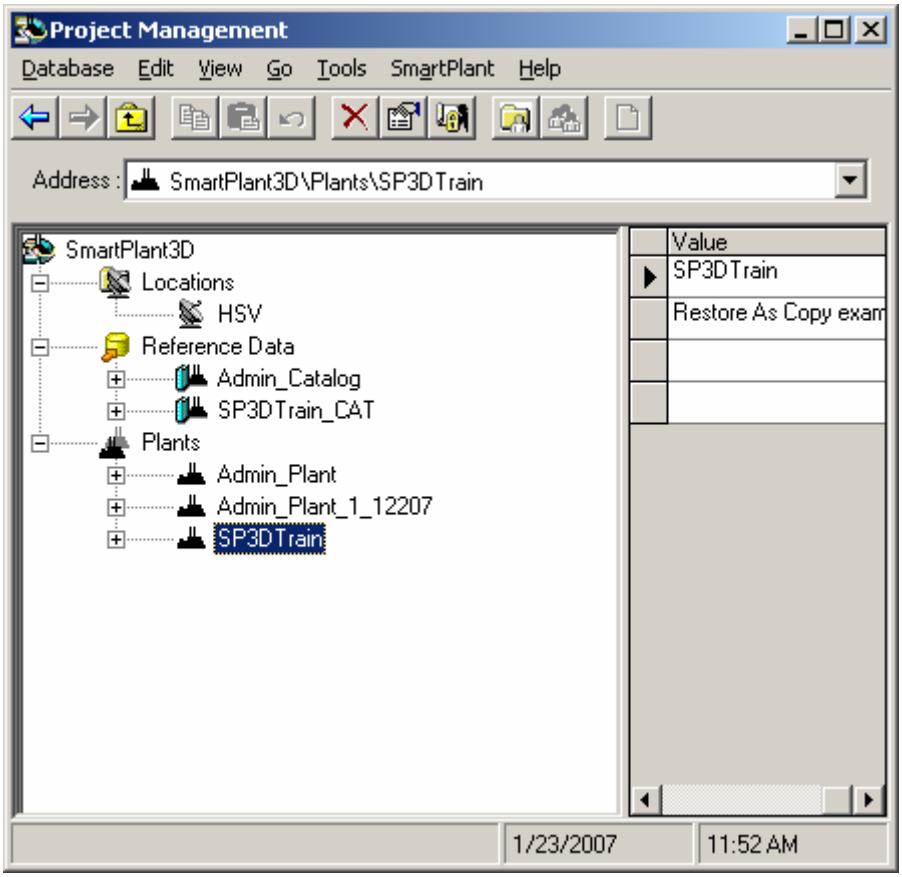
Note: You will not be prompted to link to existing catalog (as this is a separate unique catalog) and you will not be prompted to restore over an existing model (as one does not yet exist on your server).



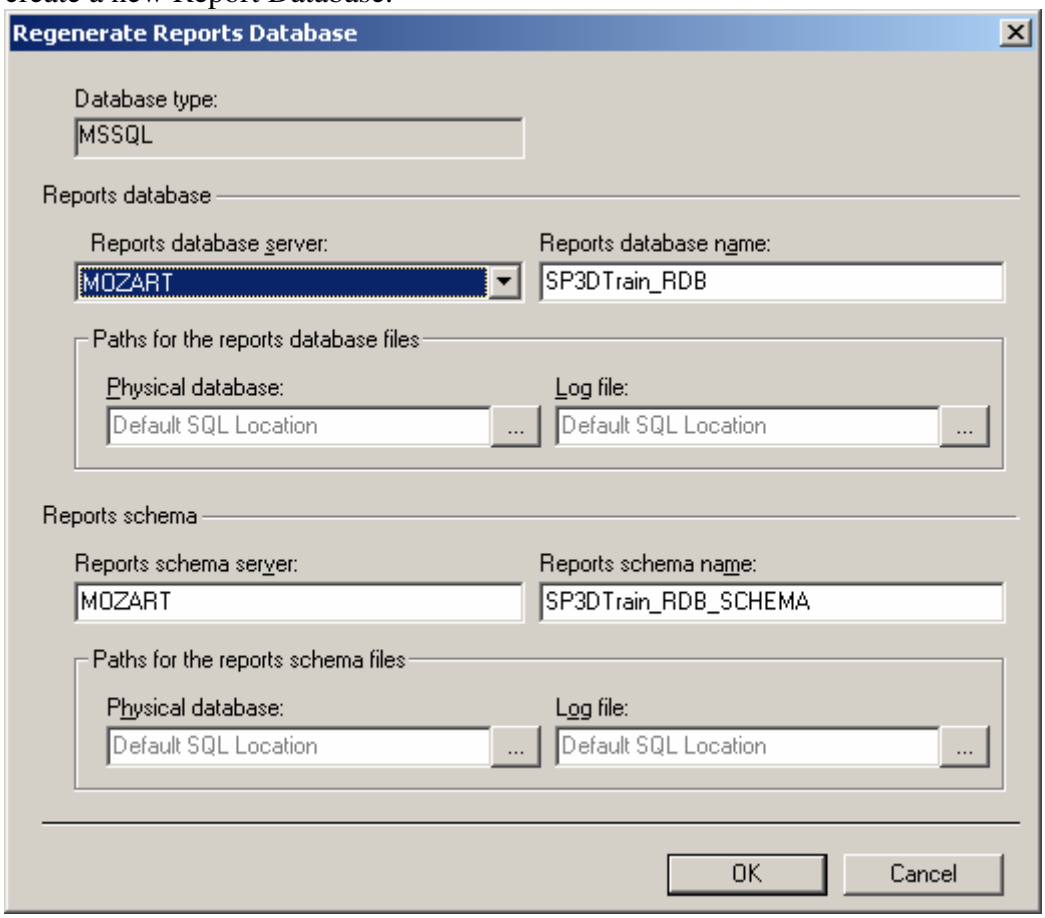
5. Review the log file as you have previous done



6. Close the Restore form when completed.


Project Management
Database Edit View Go Tools SmartPlant Help
Address : SmartPlant3D\Plants\SP3DTrain
SmartPlant3D
Locations
HSV
Reference Data
Admin_Catalog
SP3DTrain_CAT
Plants
Admin_Plant
Admin_Plant_1_12207
SP3DTrain
Value
SP3DTrain
Restore As Copy exam
1/23/2007
11:52 AM

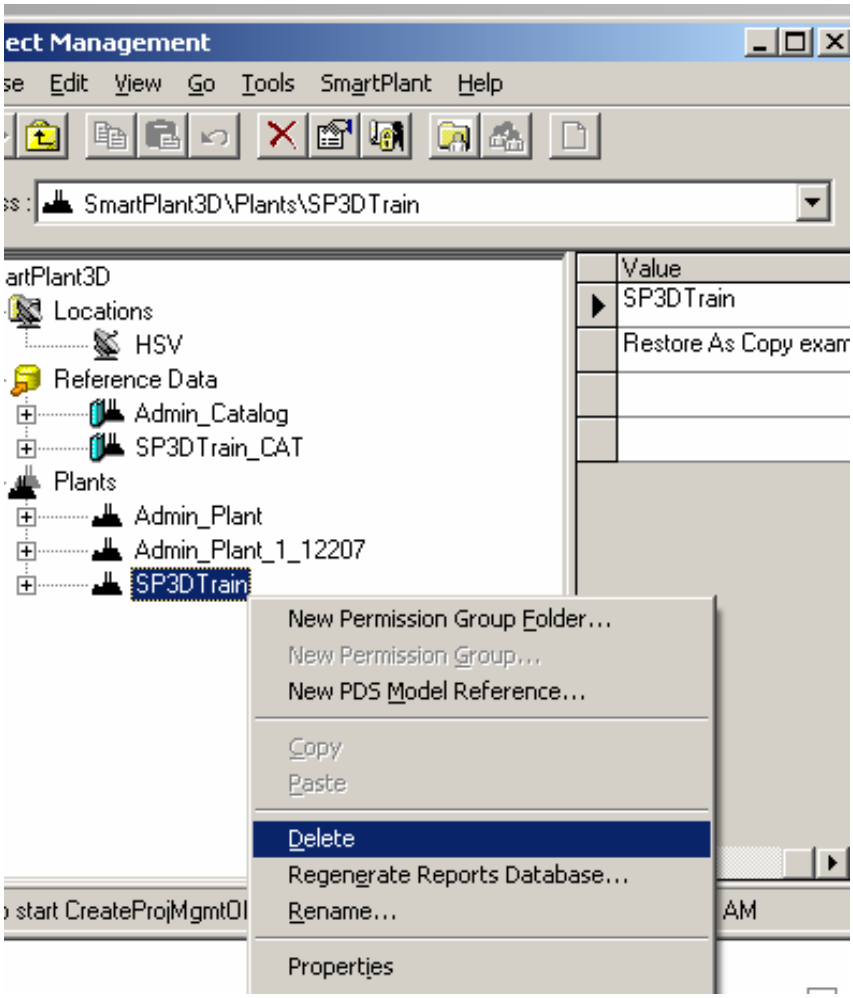
7. Note that there now exists two catalogs and three models. Right mouse on the Plant and create a new Report Database.



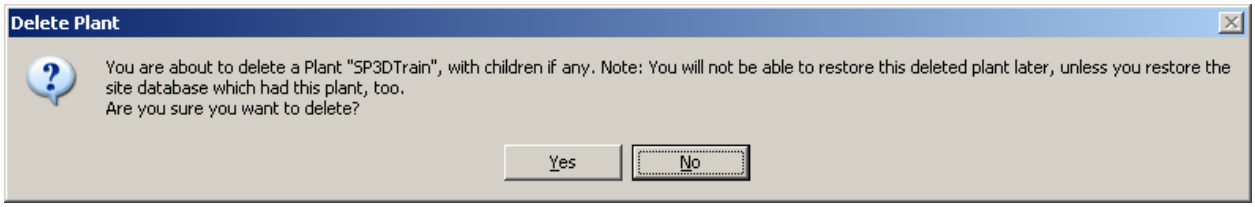
8. Click OK.

LAB 8 Deleting a Plant

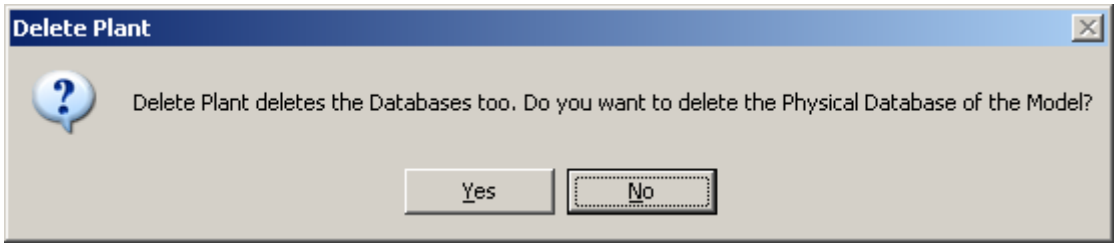
1. Start Project Management.
2. Right mouse on the SP3DTrain Plant and select Delete.



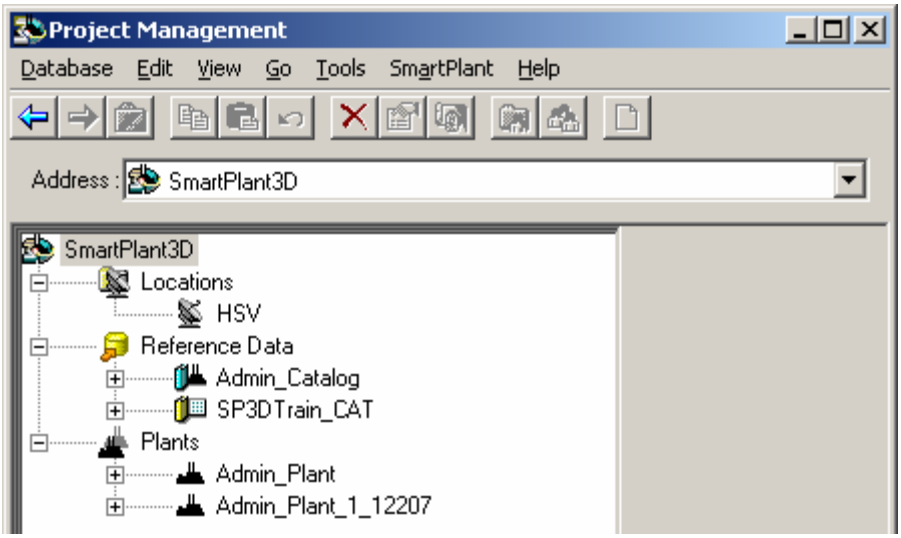
3. The following form will display, select Yes on it.



4. Select Yes on the following form to delete the physical database:



5. Note that the Plant has been removed but the Catalog still remains.

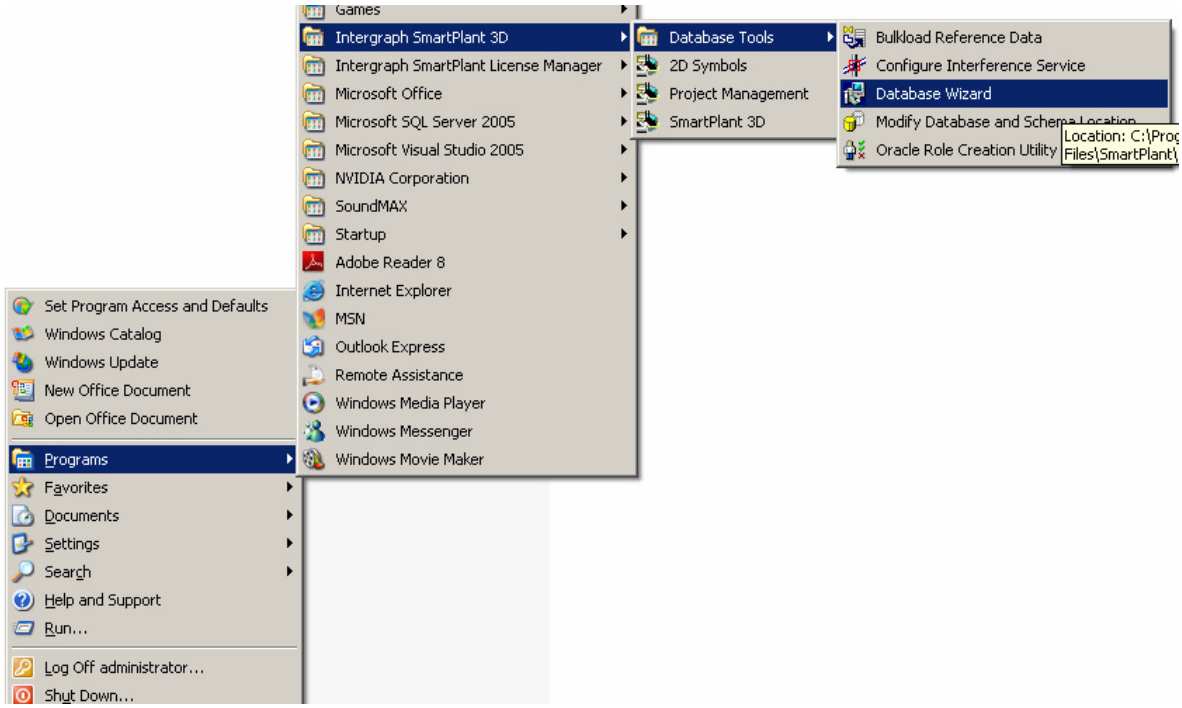


Note that the SP3DTrain_Cat database still remains; it can be used with a future Plant by running the Database → Plant command.

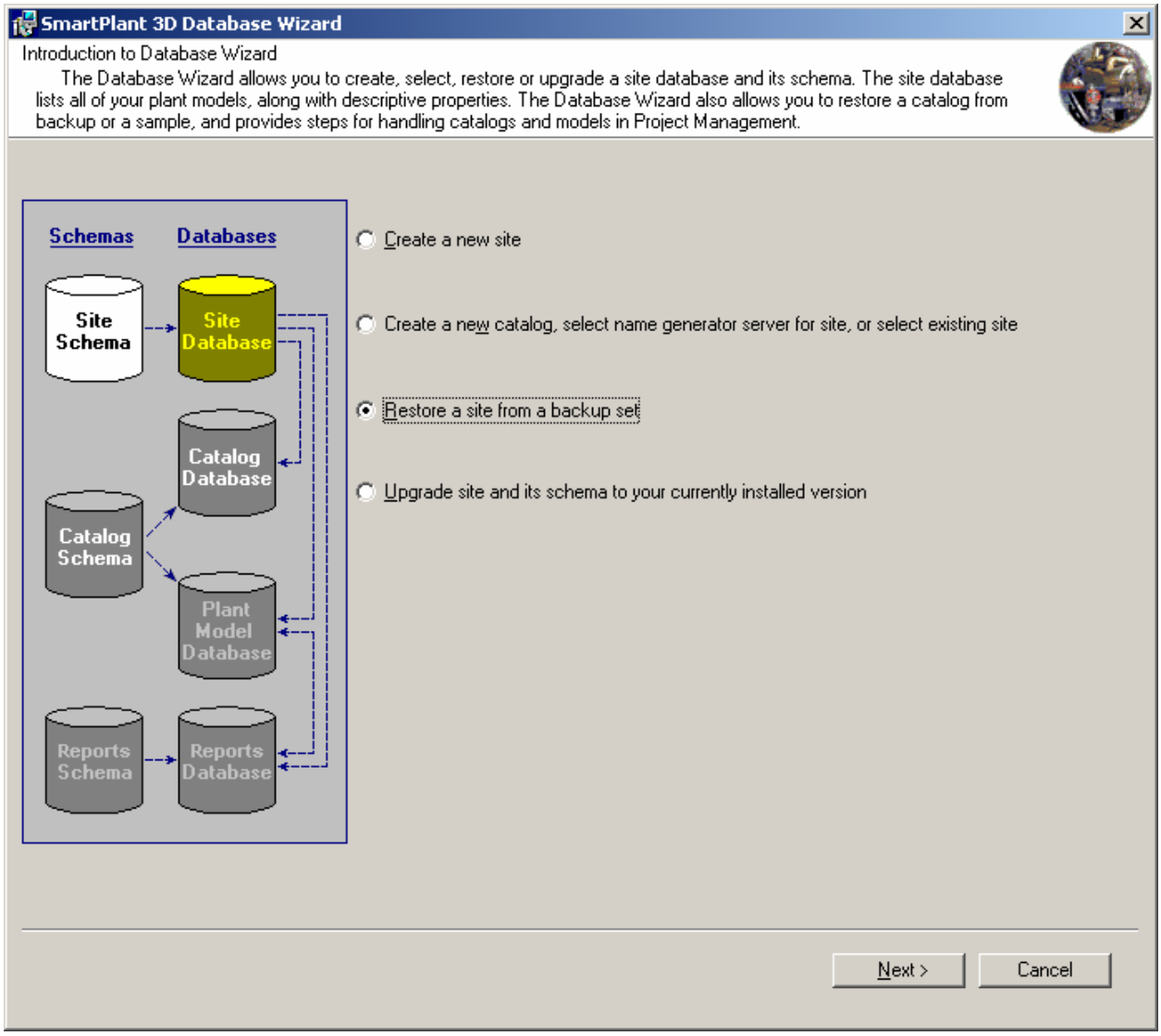
6. Open MSSQL Server or Oracle tools (depending on your setup) and delete all databases that you have made up to this point. Your instructor will help you with this task.

LAB 9 Restoring a Site Database from Backup

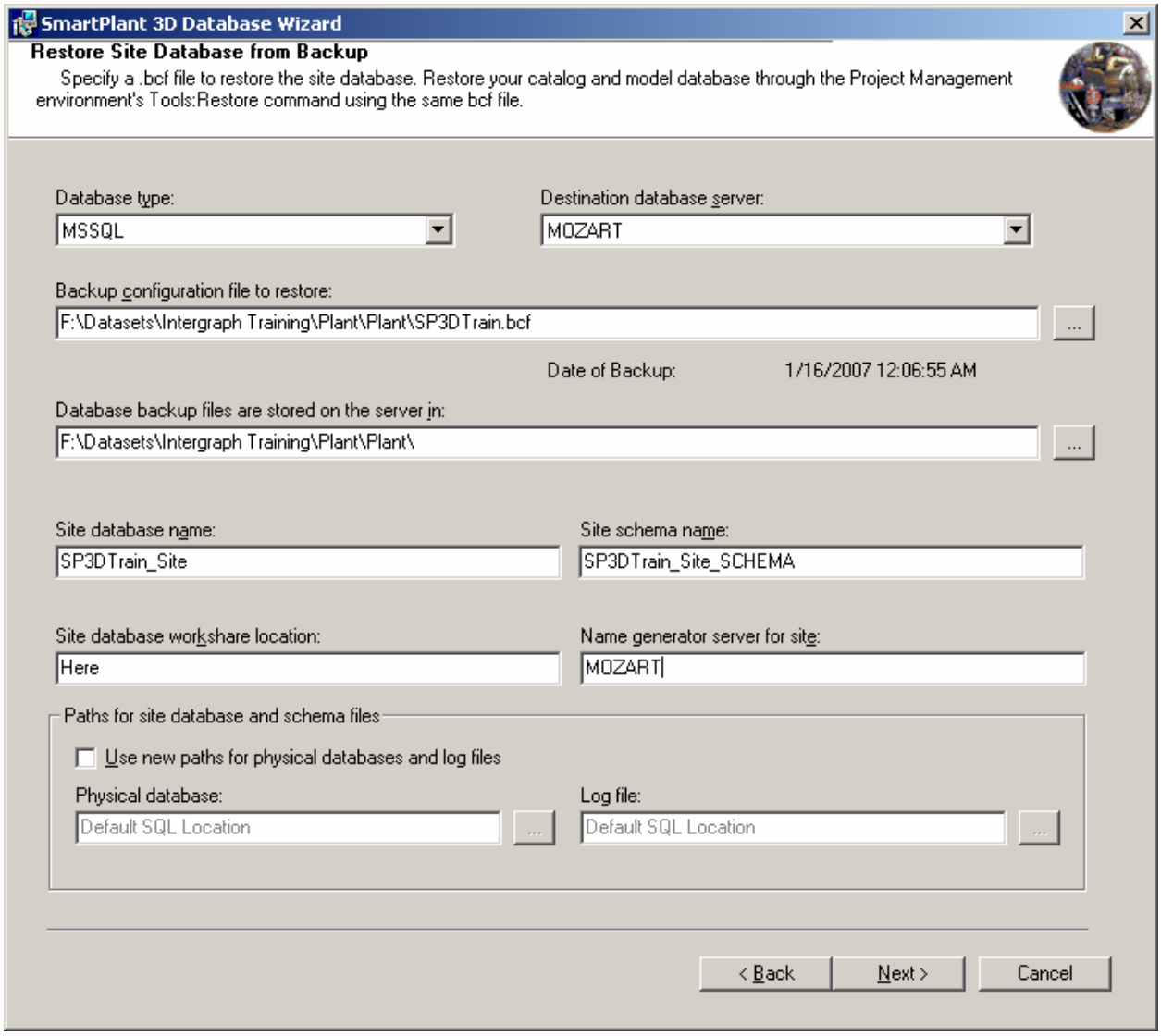
1. Start the DB Wizard from the Start Menu:



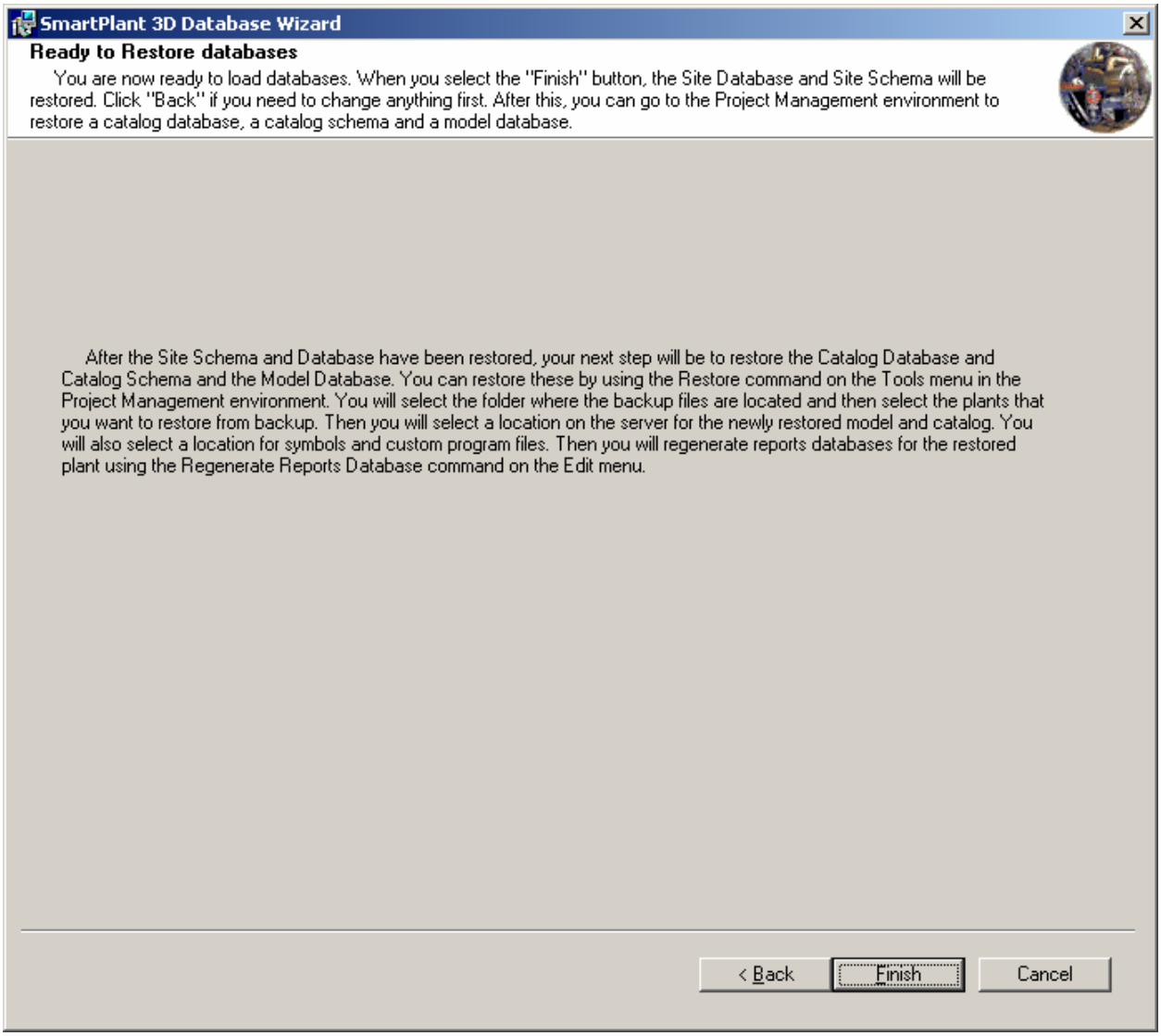
2. Select the option "Restore a site database from a backup set"


SmartPlant 3D Database Wizard
Introduction to Database Wizard
The Database Wizard allows you to create, select, restore or upgrade a site database and its schema. The site database lists all of your plant models, along with descriptive properties. The Database Wizard also allows you to restore a catalog from backup or a sample, and provides steps for handling catalogs and models in Project Management.
Schemas
Databases
Site Schema
Site Database
Catalog Database
Catalog Schema
Plant Model Database
Reports Schema
Reports Database
Create a new site
Create a new catalog, select name generator server for site, or select existing site
Restore a site from a backup set
Upgrade site and its schema to your currently installed version
Next >
Cancel

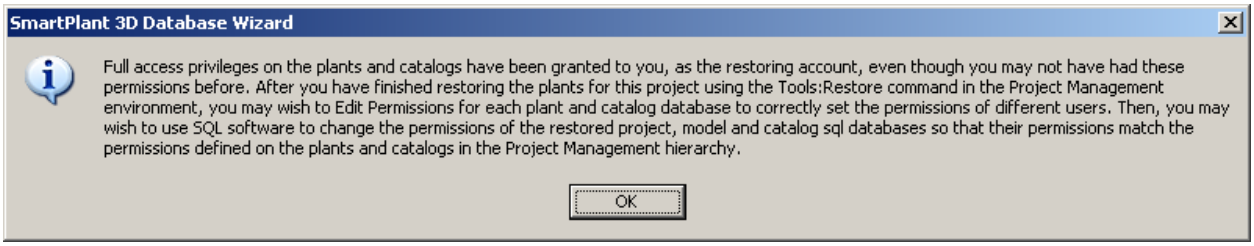
3. Click Next>



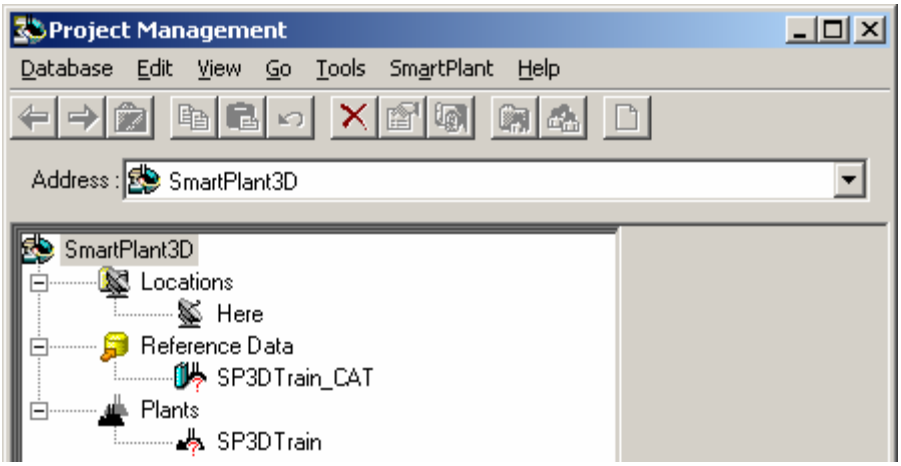
4. Complete the form as depicted above. [The Instructor will provide you with the backup file and any additional information about the location of the file.]



5. Click Finish



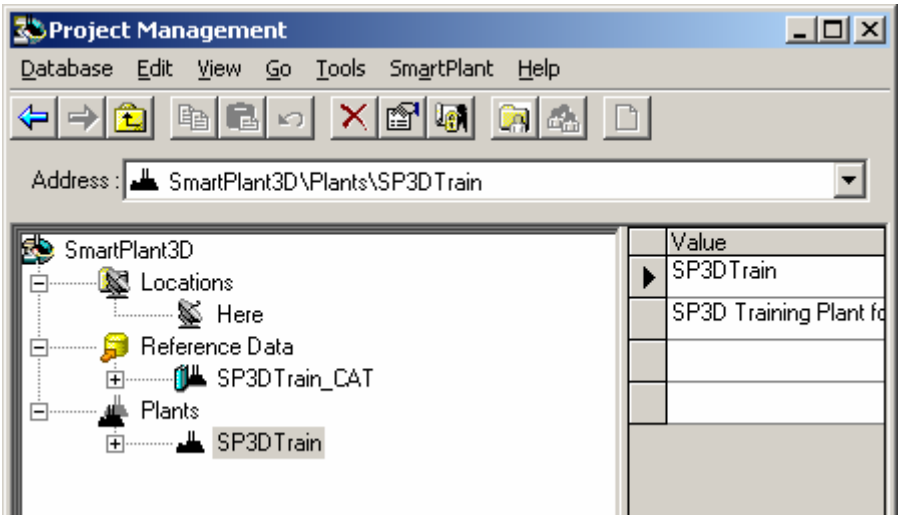
6. Click OK.
7. Then click Close.
8. Start Project Management.



9. The Site database still contains pointers for the Catalog and the SP3DTrain Plant but the databases are absent from the server.

10. Use the “Restore one of more Plant databases from Backup” command (Restore Option 1) that we covered earlier in the document to Restore the Model and Catalog and then proceed with regenerating the Report Database.

11. When done Project Management should show the following:



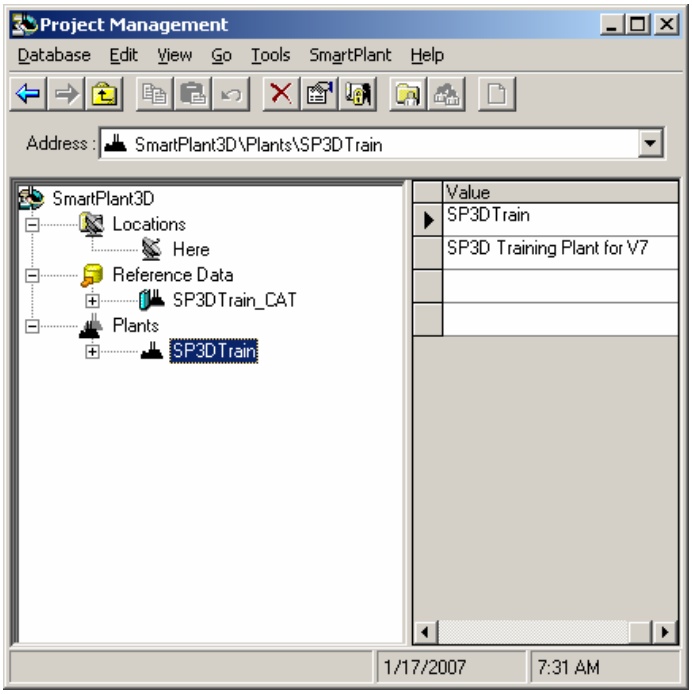
LAB 10: Calculate Size on Backups

Objectives

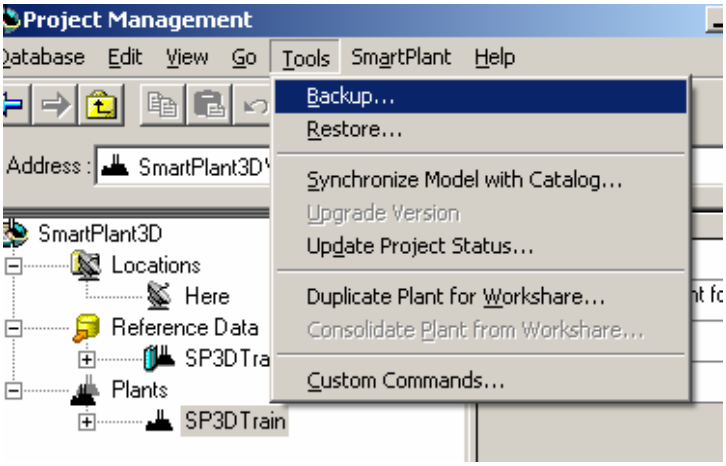
After completing this lab, you will be able to:

- Calculate the size of individual and multi-plant backups before taking the actual backup.

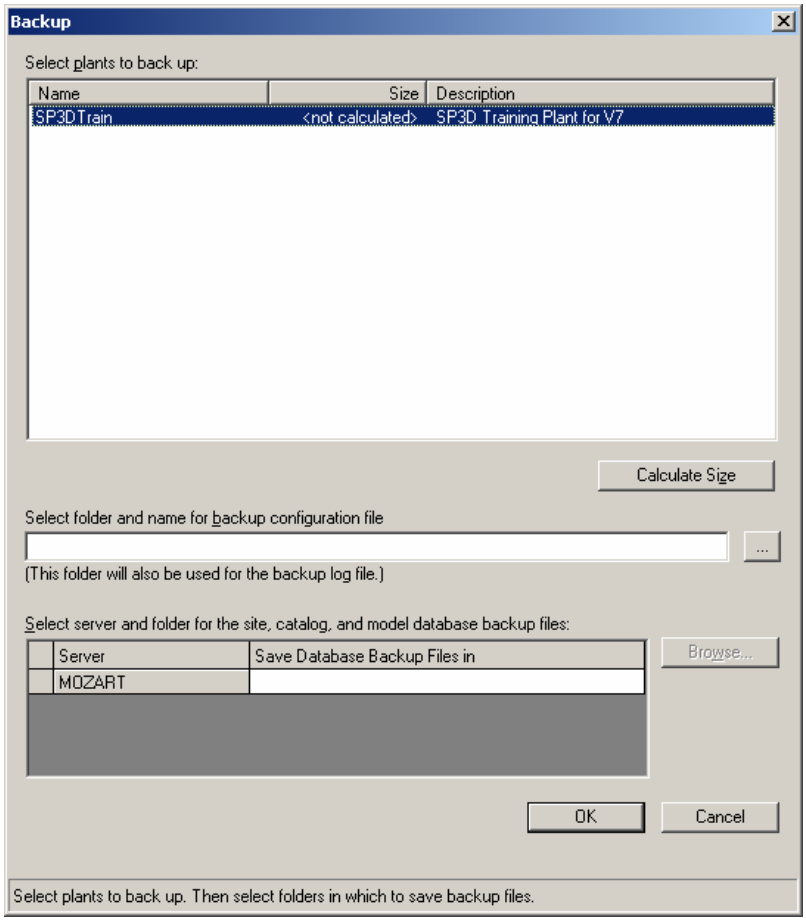
1. Start Project Management exposing the Training Plant:



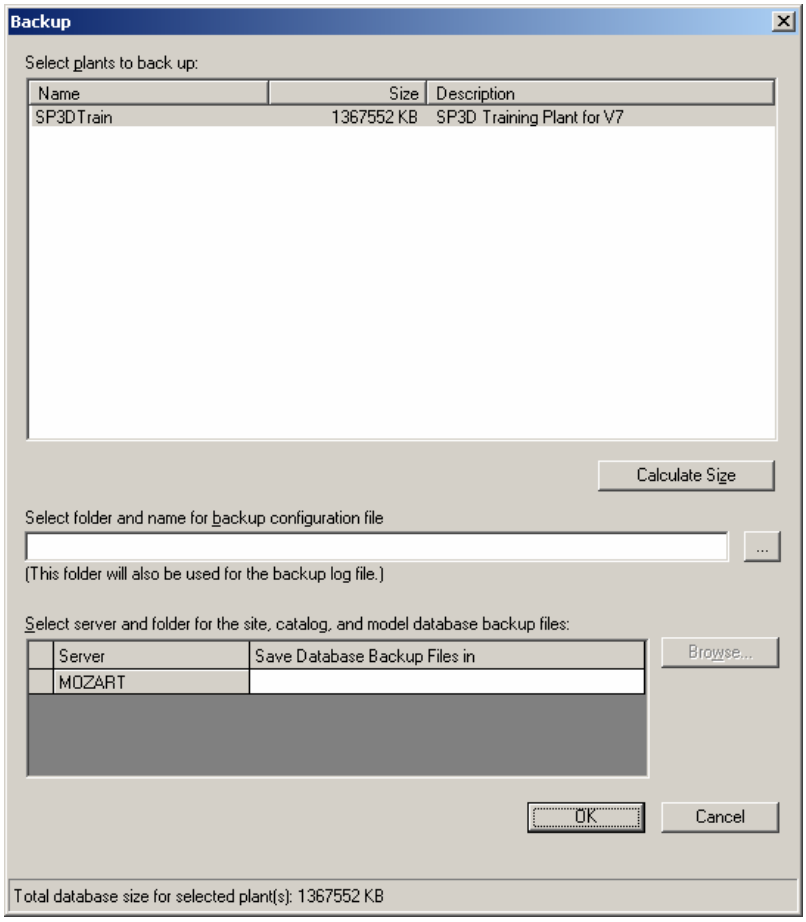
2. From the "Tools" menu select "Backup…"



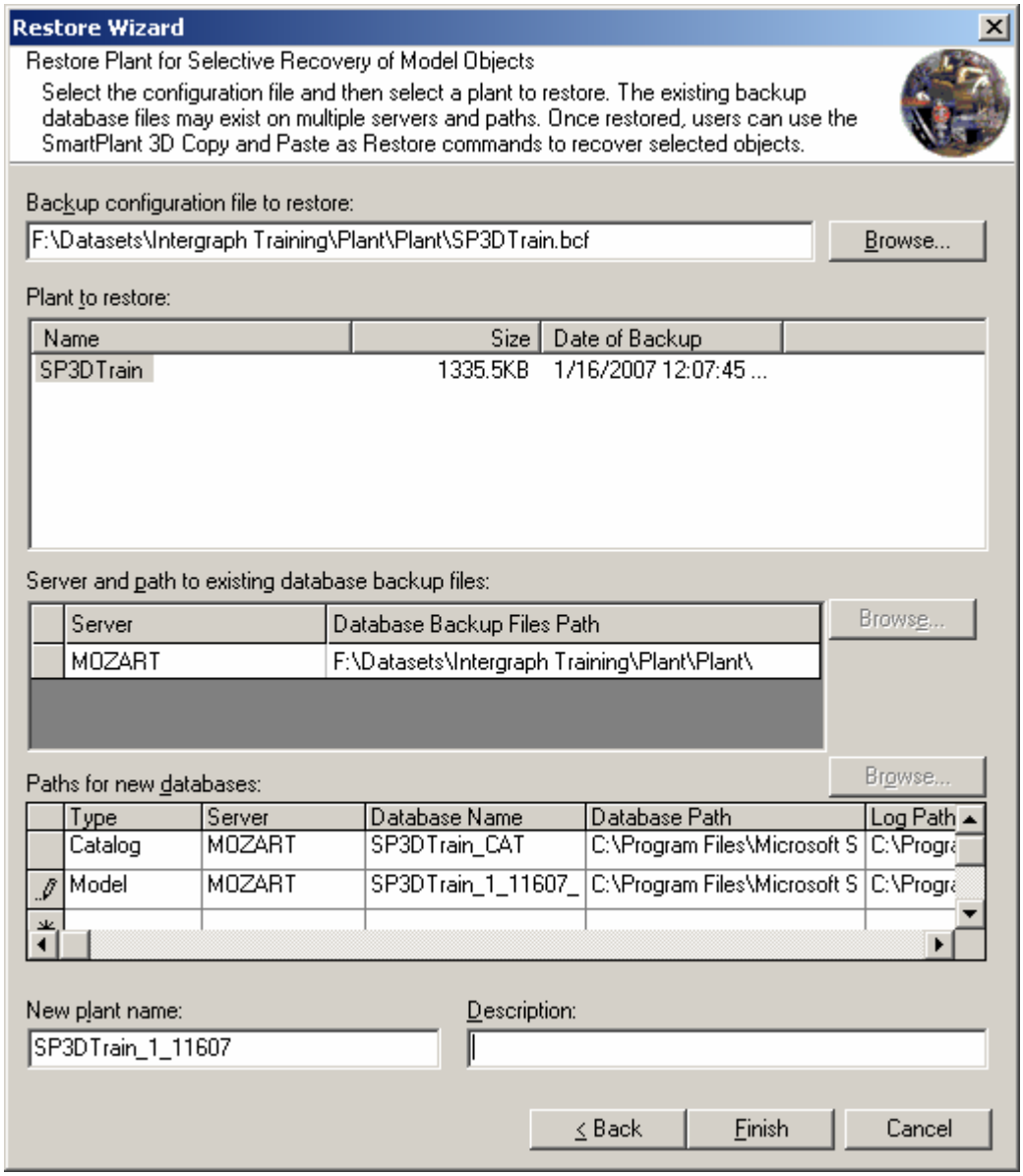
3. Note that initially the size displayed in the column is "<not calculated>"



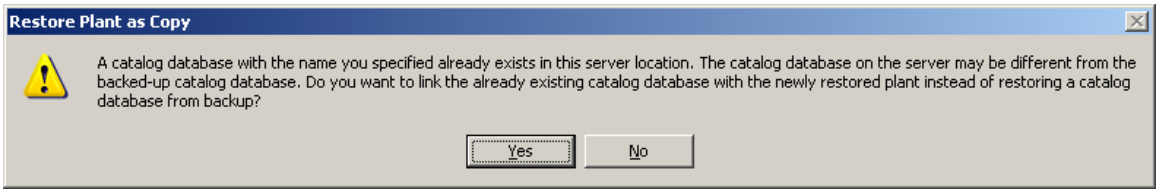
4. Use the “Calculate Size” button to update the size estimate



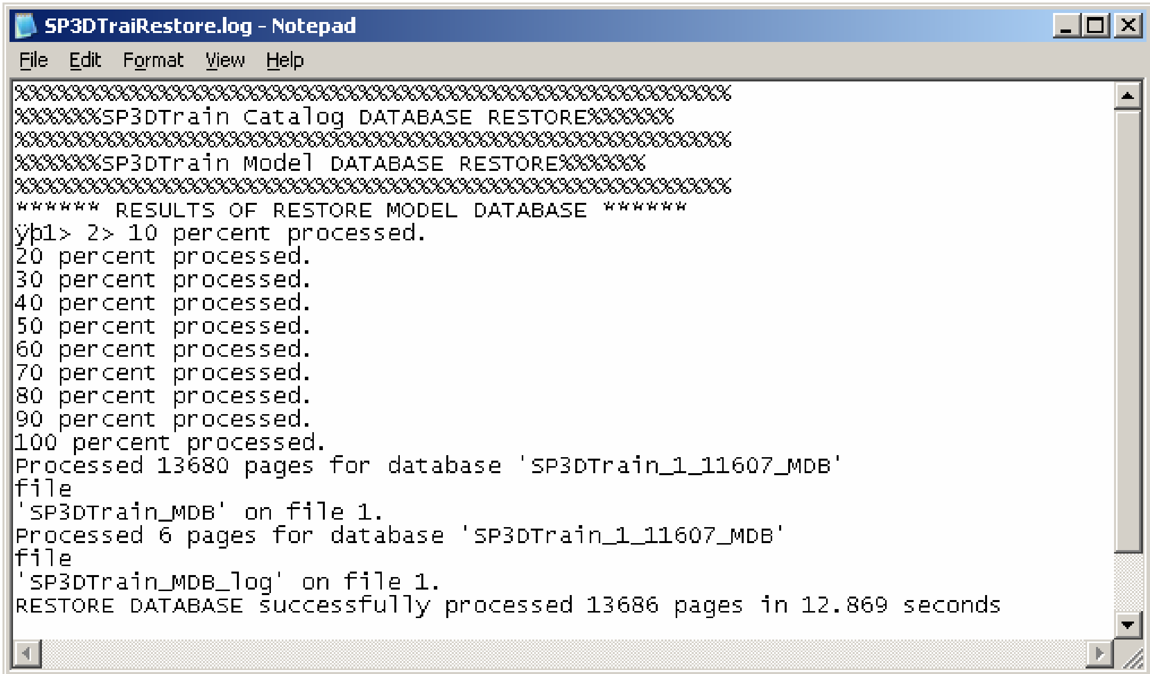
5. Cancel the form.
6. Use the Tools→ Restore command, choosing "Restore Plant for Selective Recovery of Model Objects" to restore a copy of the Training Plant but reuse the same Catalog.



7. Click Finish.



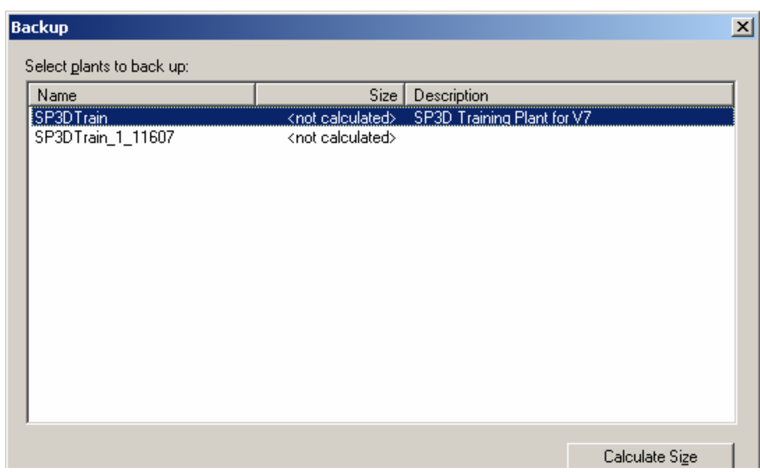
8. Select Yes (we wish to reuse the same catalog).
9. Review the restoration log for success:



10. And then close the Restore form.

11. Note the existence of the 2nd plant with the date stamp. If we were going to go on and use this 2nd Plant we would want to regenerate the Report Database, but for now let us return to the Backup form:

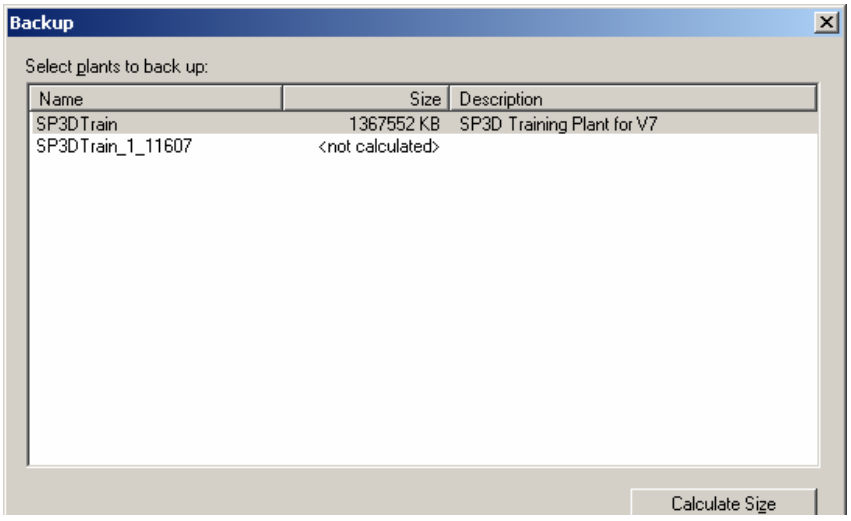
12. Note that two entries now exist:



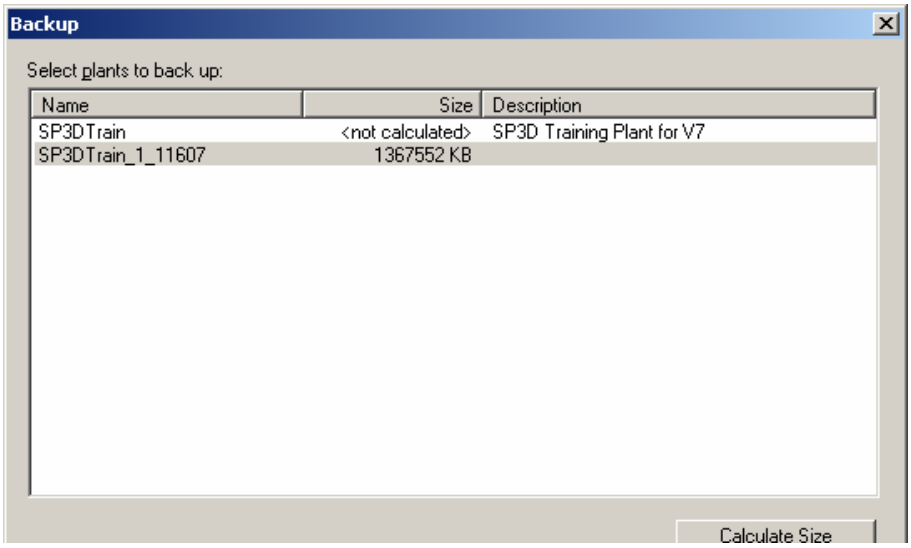
13. Recall that there are three possible options here, Backup Plant 1, Backup Plant 2, or a multi-plant backup of both 1 and 2. Since these two plants share the same catalog, in a Multi-plant backup you would see the Catalog only being counted once, but in any individual plant backup the Catalog gets counted 1 time as well.

14. Perform the following operations:

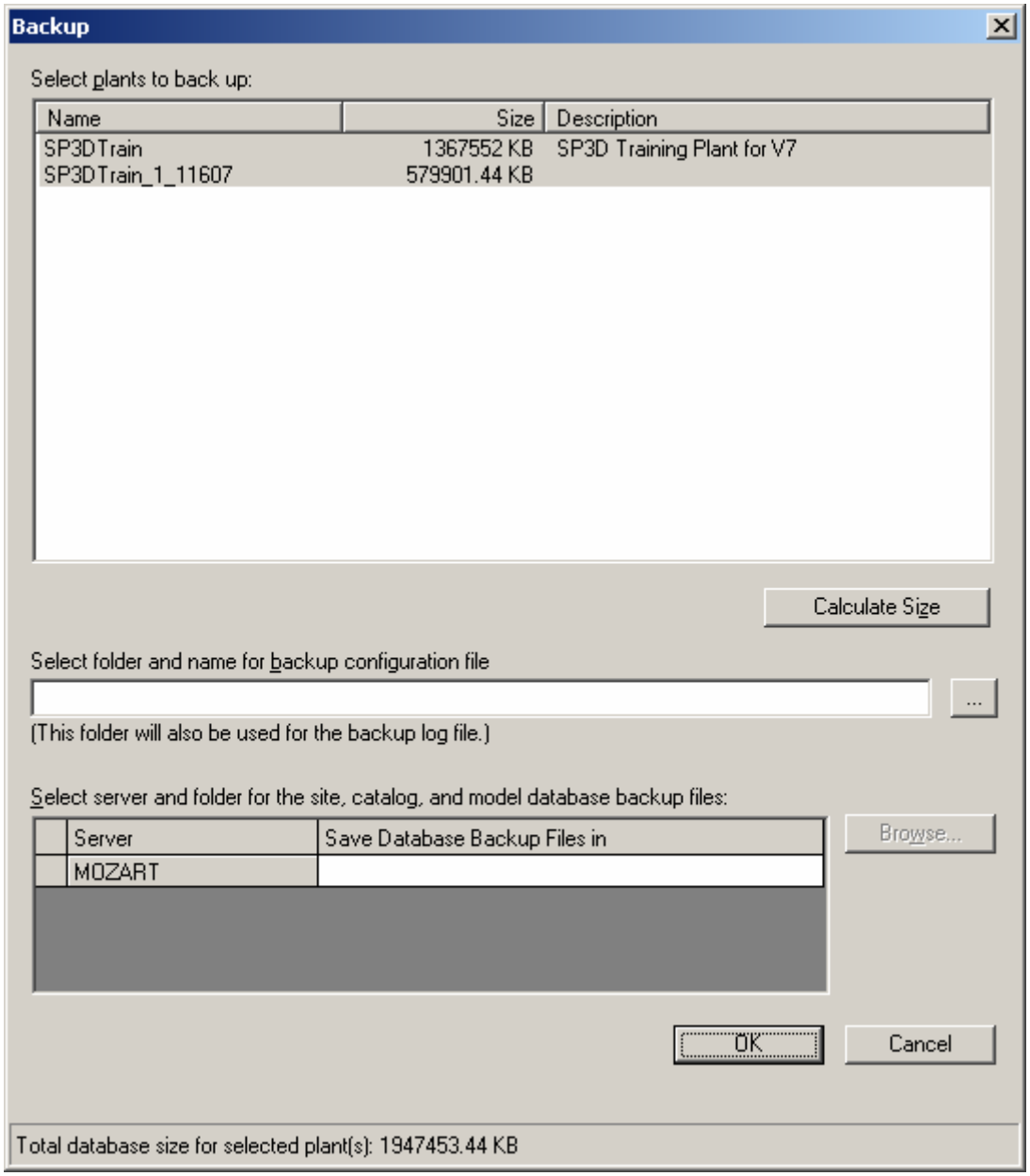
15. Select the first plant in the list and then click Calculate Size:



16. Select the 2nd plant in the list and then click Calculate Size:



17. Select both plants (hold ctrl and click both or use SHFT to select stop and start of a list), and note the reconciliation of the shared Catalog DB in the calculated sizes:



LAB 11: Synch Model w/ Catalog and View Generation

Objectives

After completing this lab, you will be able to:

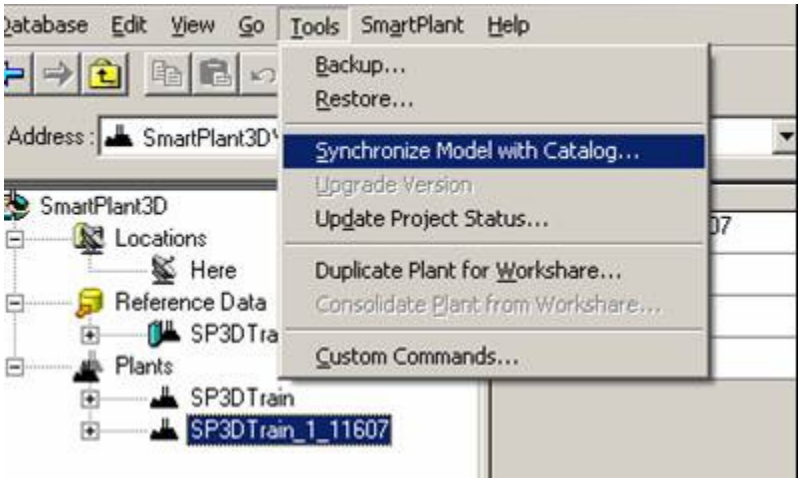
- Actively choose whether to Synchronize the Model with Catalog or Run the View Generator on the Model, or both... from within Project Management.

Notes:

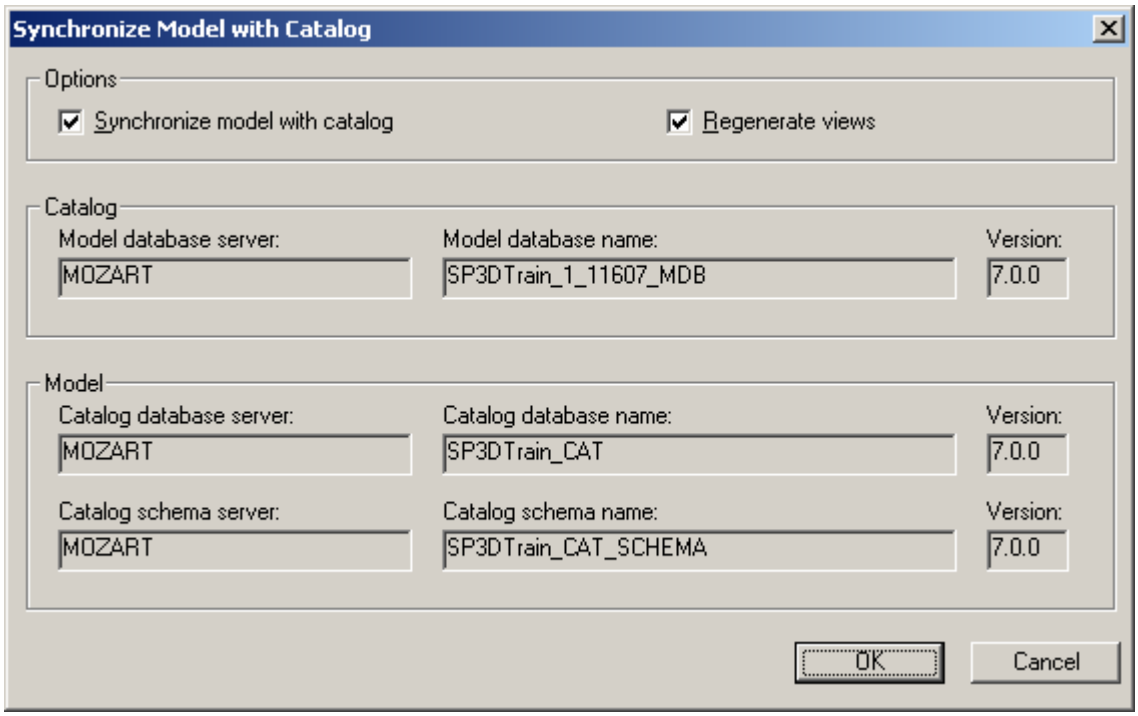
Let us play out the scenario that the Catalog had changed significantly since the backup we just restored was taken. In this scenario we would perhaps run the Synchronize Model with Catalog command on the 2nd model to try and push down those changes and to bring the part definitions inline with the live/current database.

Likely, after the restore you would then go onto Regenerate the Report Database and would be presented with a message saying that some views failed to generate, this would be one indication of where you would use the view generator feature in this command.

1. In Project Management select the plant in the tree that you wish to Synchronize, and then from the Tools menu select Synchronize Model with Catalog.



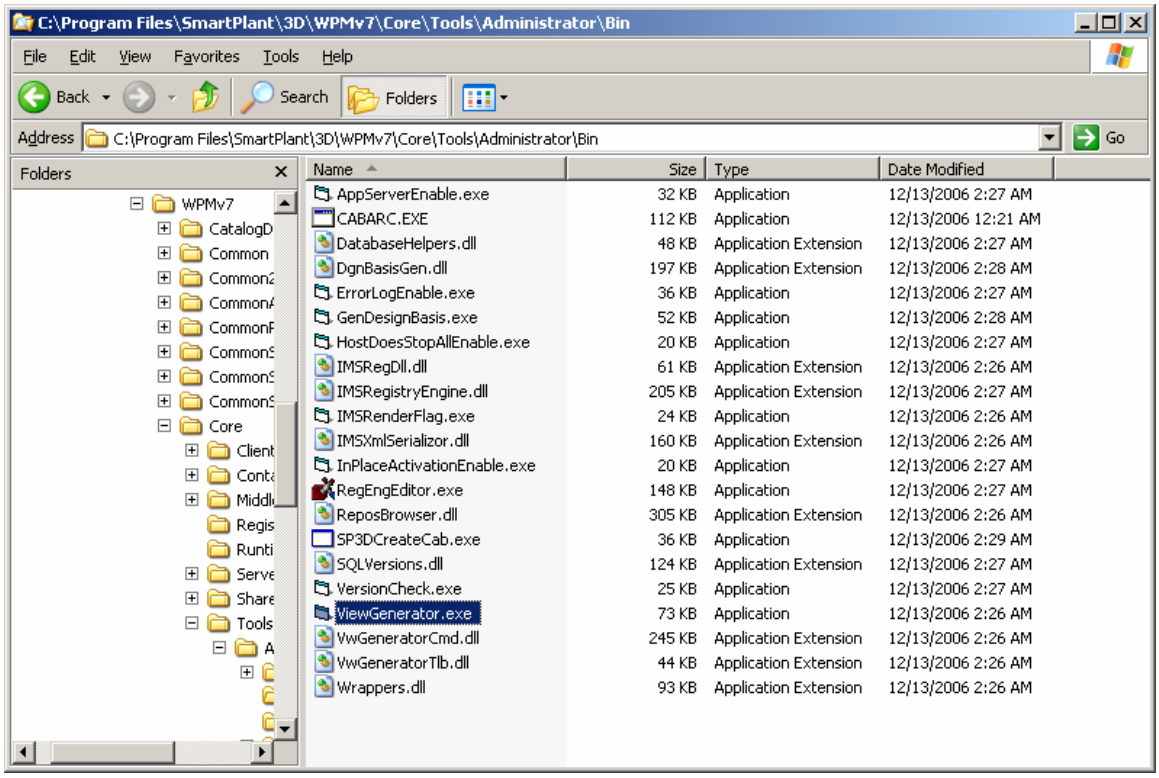
2. Note the existence of two check boxes:



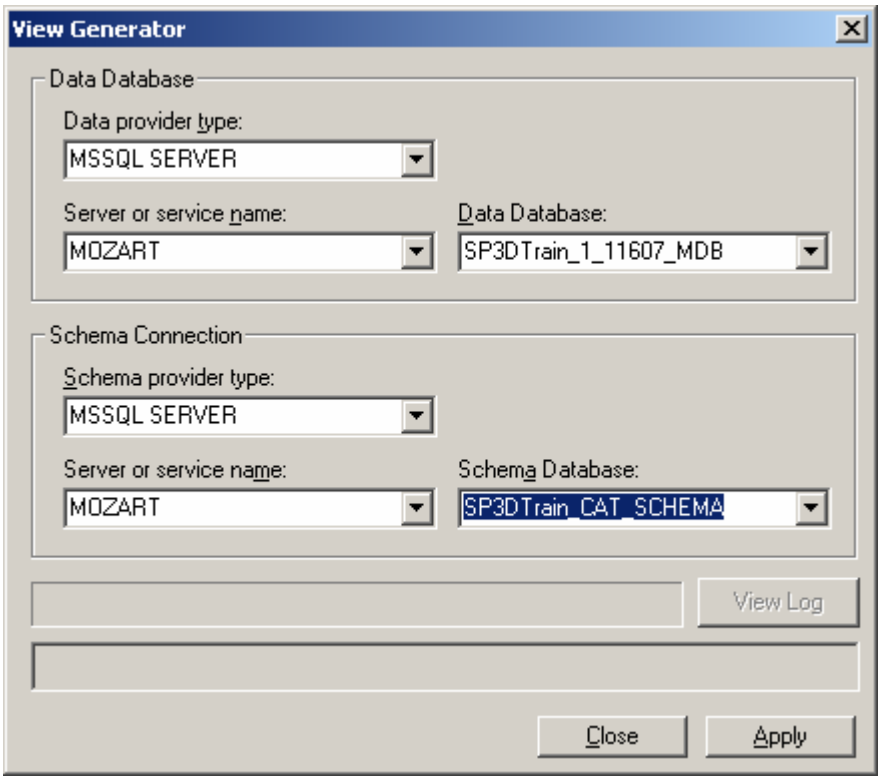
3. Not all Catalog changes require a true synchronization of the data. Perhaps we have added an entirely new part class to the Catalog that did not previously exist, or even a new Interface that did not previously exists. The views associated with this data would perhaps be missing from this restored model, or perhaps columns on prior views would be different.

4. You can actively select the action you want the command to do by selecting the check boxes according to your intent.

Recall that previously users had to manually run the view generator on the Model by executing the exe and completing the form identifying the Model and the Catalog_Schema.

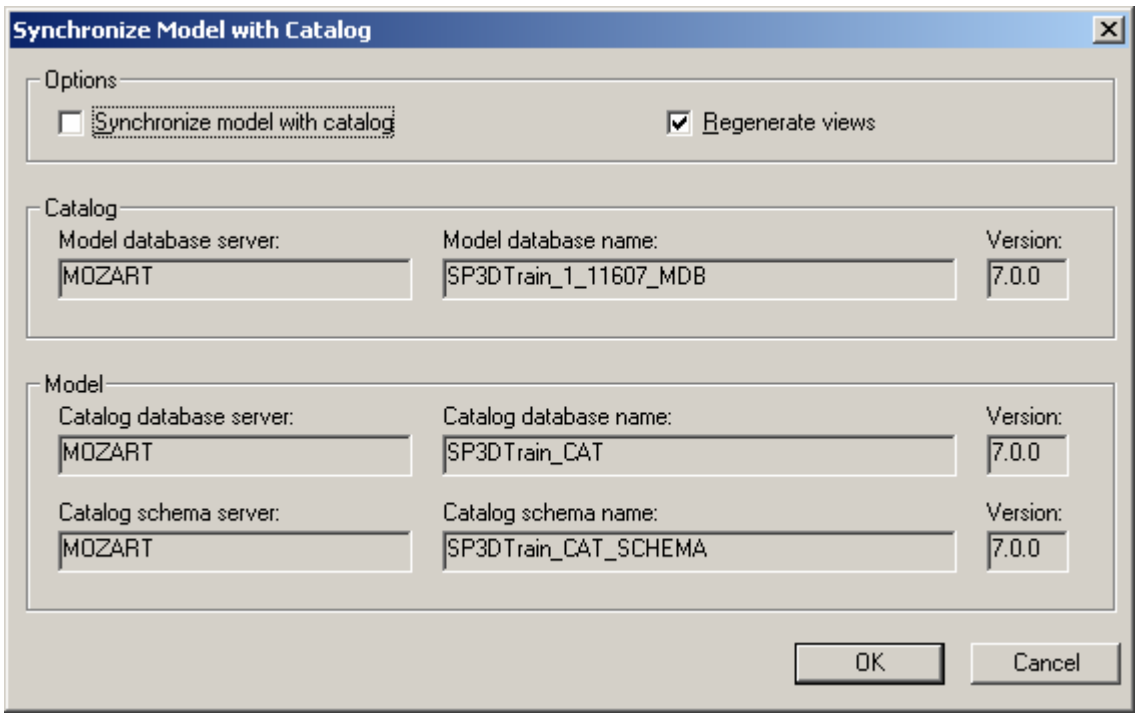


This method was prone to user error

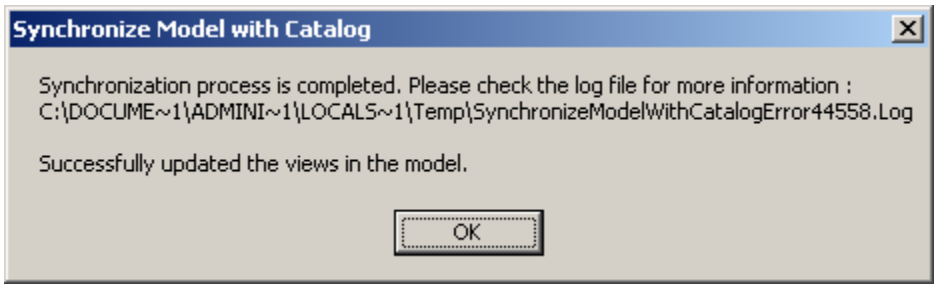


5. Uncheck the Synchronize Model with Catalog action on the and then allow the command to run.

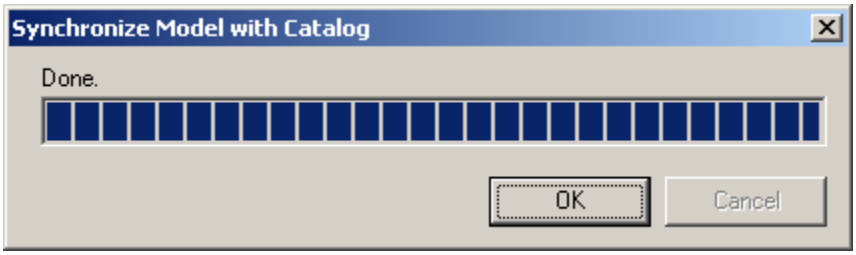
6. Again, in a production or test environment you would then follow this action by regenerating the report database.



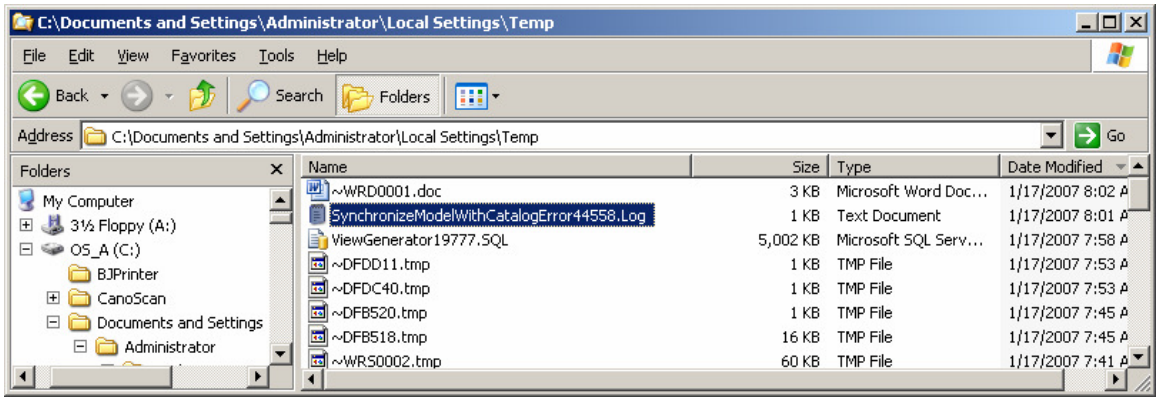
7. Click OK and allow it to run to completion.



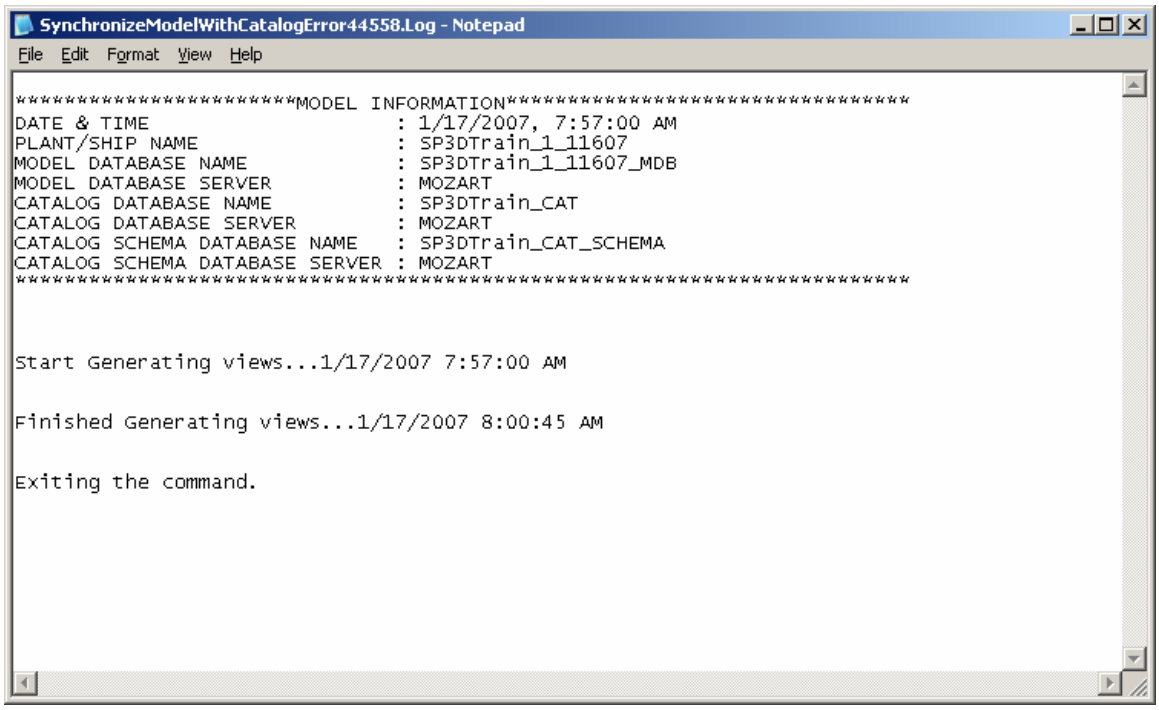
8. Click OK



9. Click OK
10. Go review the log file:



Because we only regenerated the views on the model, the log will only contain notes to that effect:



LAB 12: New Catalog Command

Objectives

After completing this lab, you will be able to:

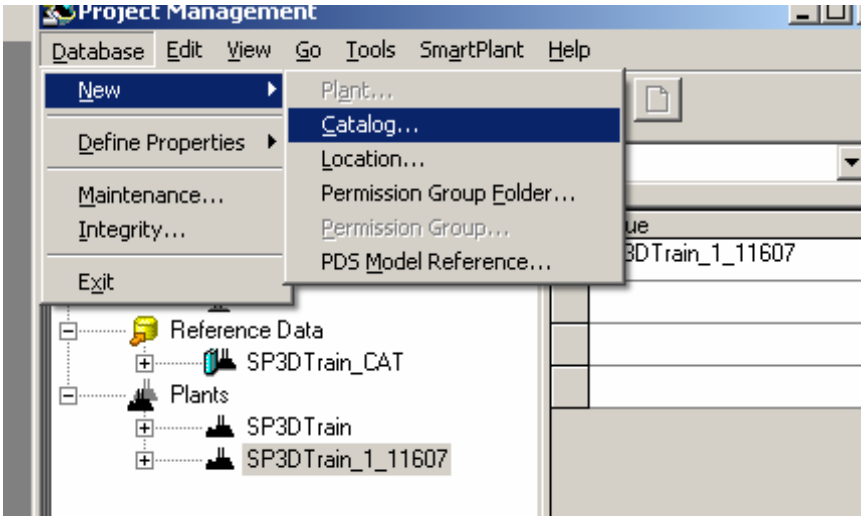
- Create a new Catalog from within Project Management.

Notes:

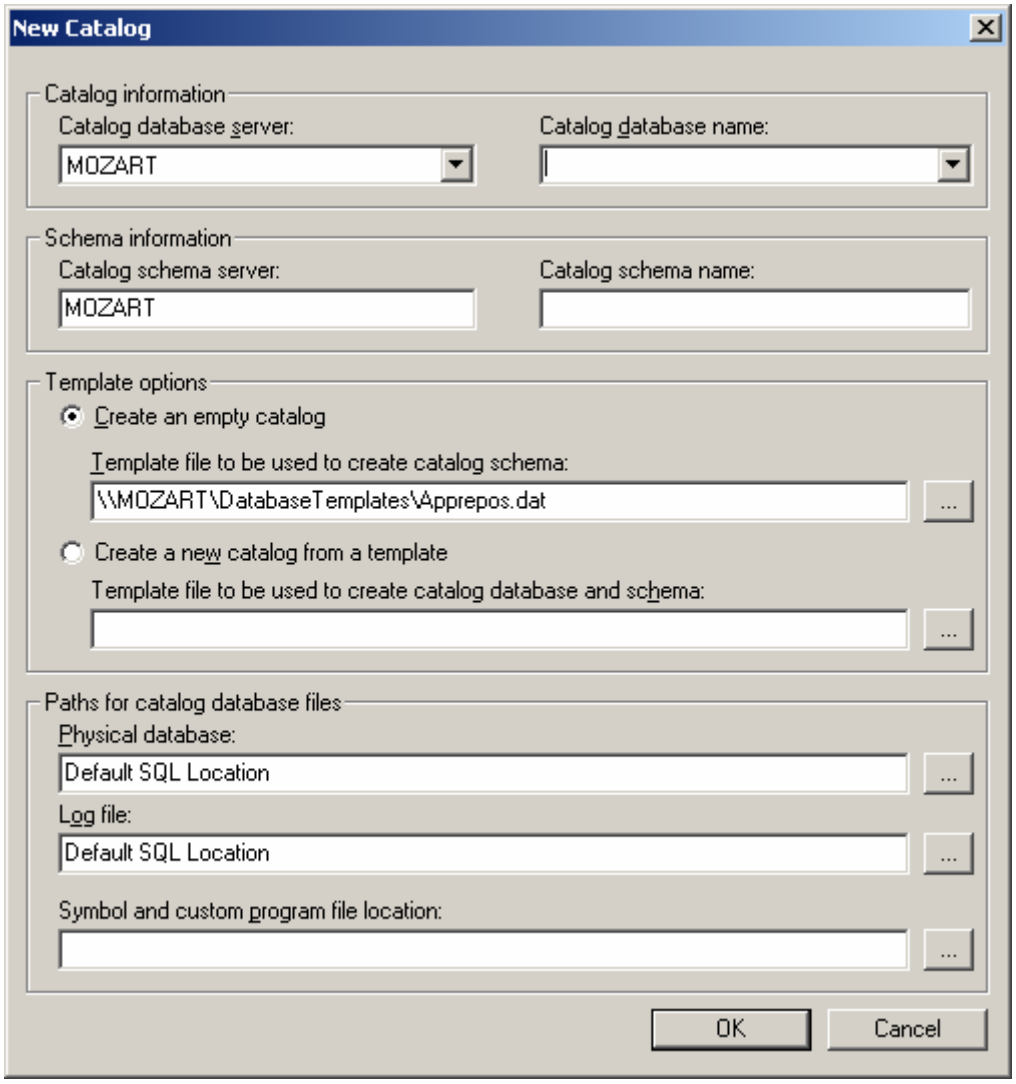
The New Catalog command allows you to create a new empty catalog without performing a backup load. You will then be able to bulkload to this database at will, but you cannot use the Catalog Task to change anything in it unless you also make a Plant based off of the newly created Catalog.

In Workshare configurations this command is only available for use at the Host.

1. Start Project Management and from the Database→New menu select “Catalog…”

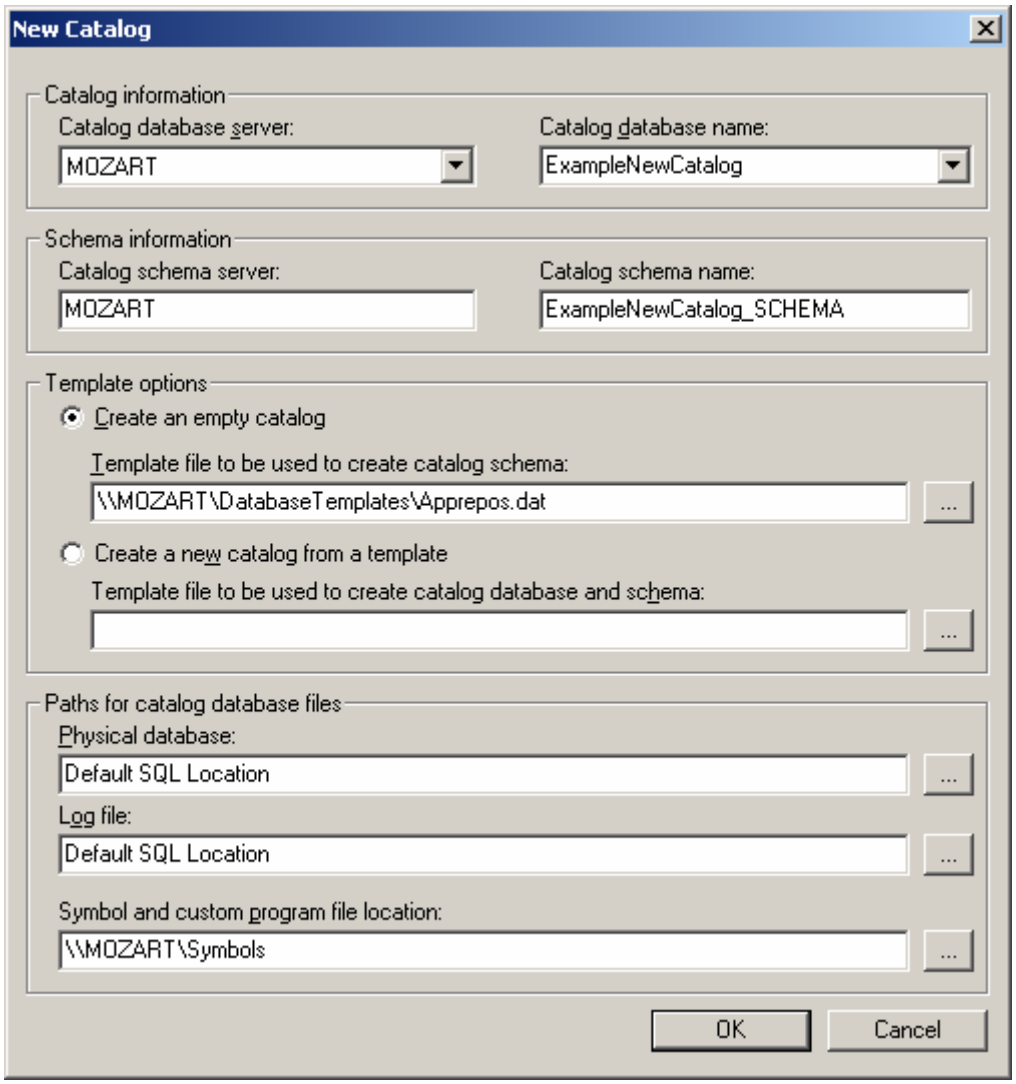


2. The form will appear and you can go ahead and select your server:

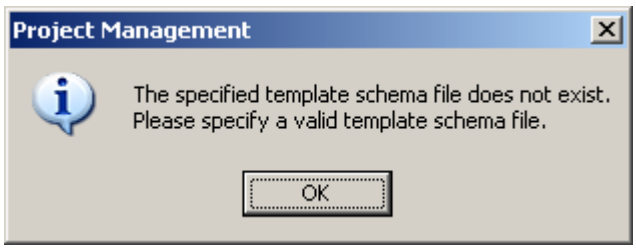


Note that some information is filled in for you if possible. If the Apprepose.dat is not at this location, or you wish to use another custom starting template you can specify that in the middle of the form.

3. From the "Catalog database name:" drop-down select <new database>, and then type over that value with something appropriate such as the text string below. Also go ahead and specify the symbol share path:

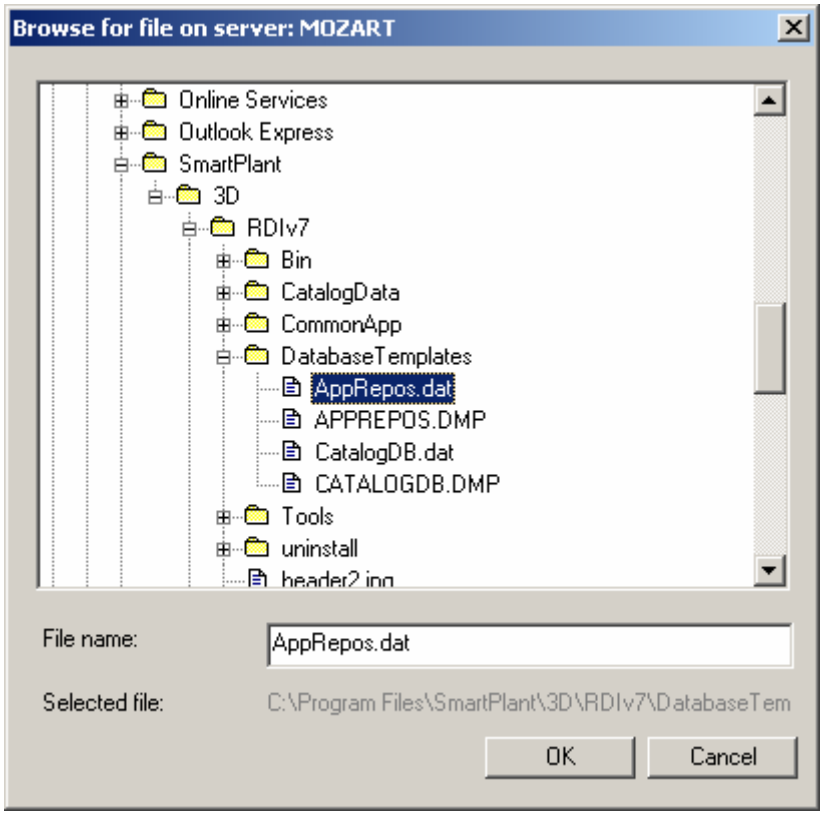


4. When you have completed the form, click OK

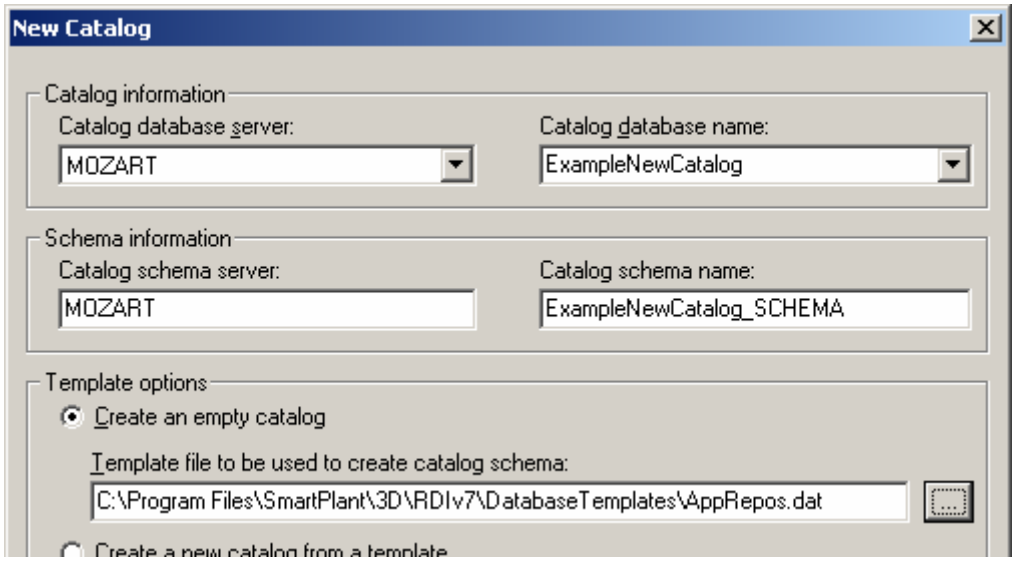


Note that we are using MSSQL and the UNC path cannot be utilized.

5. Click OK and then use the ellipse button to specify the location of Apprepos.dat on the server:



6. Click OK.



7. Review the form and Click OK.

LAB 13: Database Maintenance

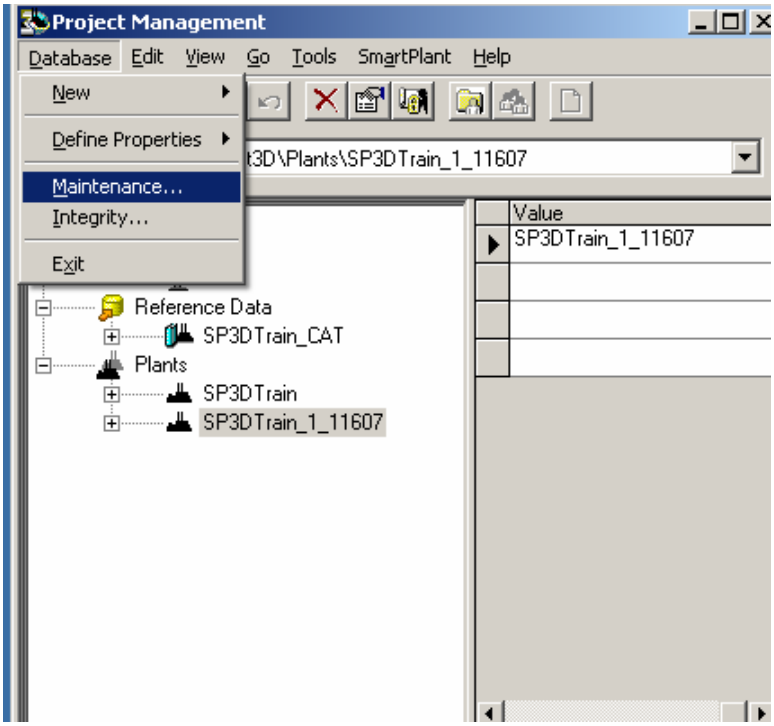
Objectives

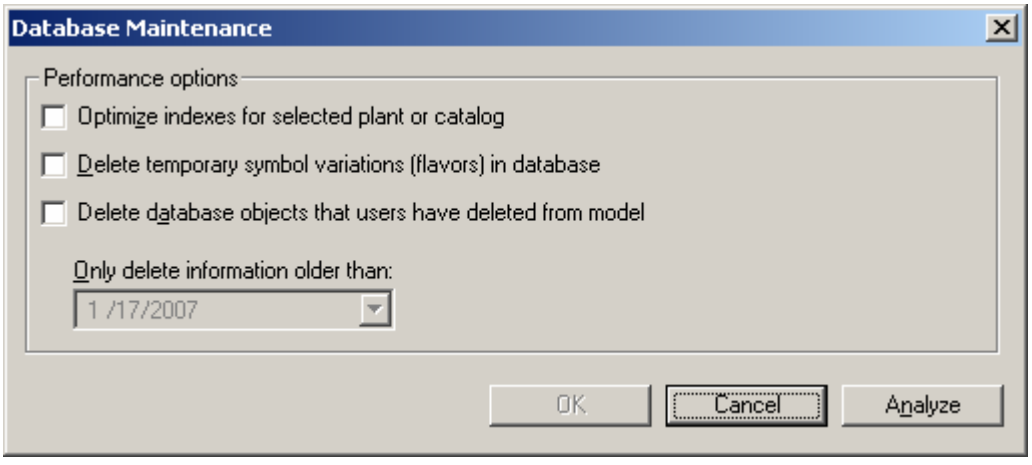
After completing this lab, you will be able to:

- Access the Maintenance form to perform optimization and cleaning on the database.

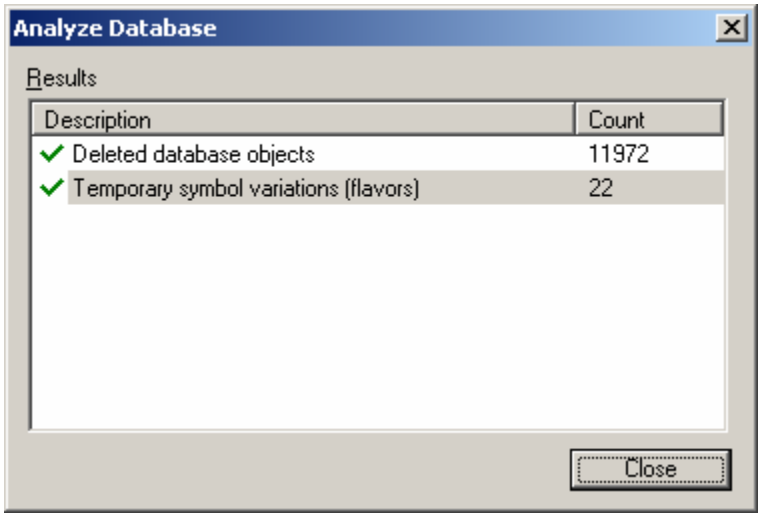
Note: This is an enhancement to the delivered software that allows users to purge temporary data and perform tasks such as optimizing indexes.

1. Start Project Management and select “Maintenance” from the Database menu:

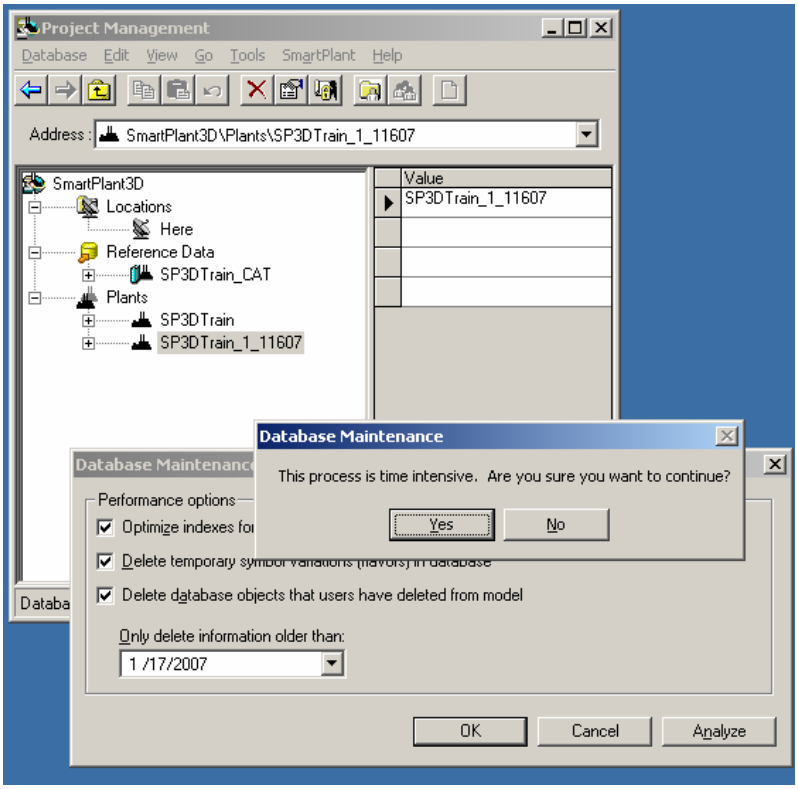




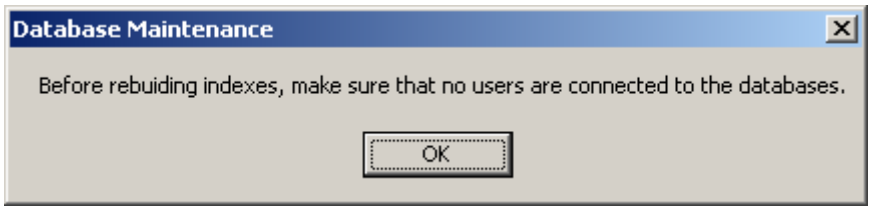
2. Place checkboxes in the three locations and then click on the Analyze button to understand the need:



3. If you wish to proceed with running the command, then click Close on the Analyze form and then click OK on the previous form.



4. Click Yes, thus acknowledging that it may take awhile.



5. Note the warning message and then review the server to ensure that all users followed directions and disconnected from the server before hitting OK.
6. Once it is complete you can close the form by using the X or the Cancel button.

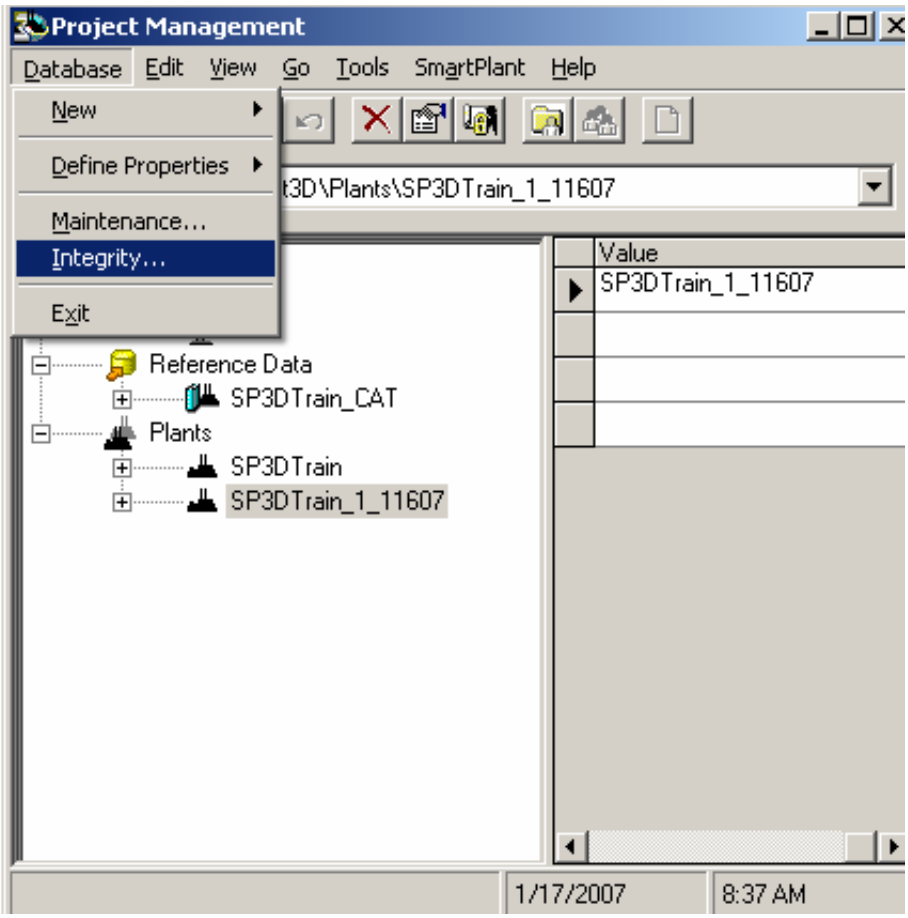
LAB 14: Database Integrity

Objectives

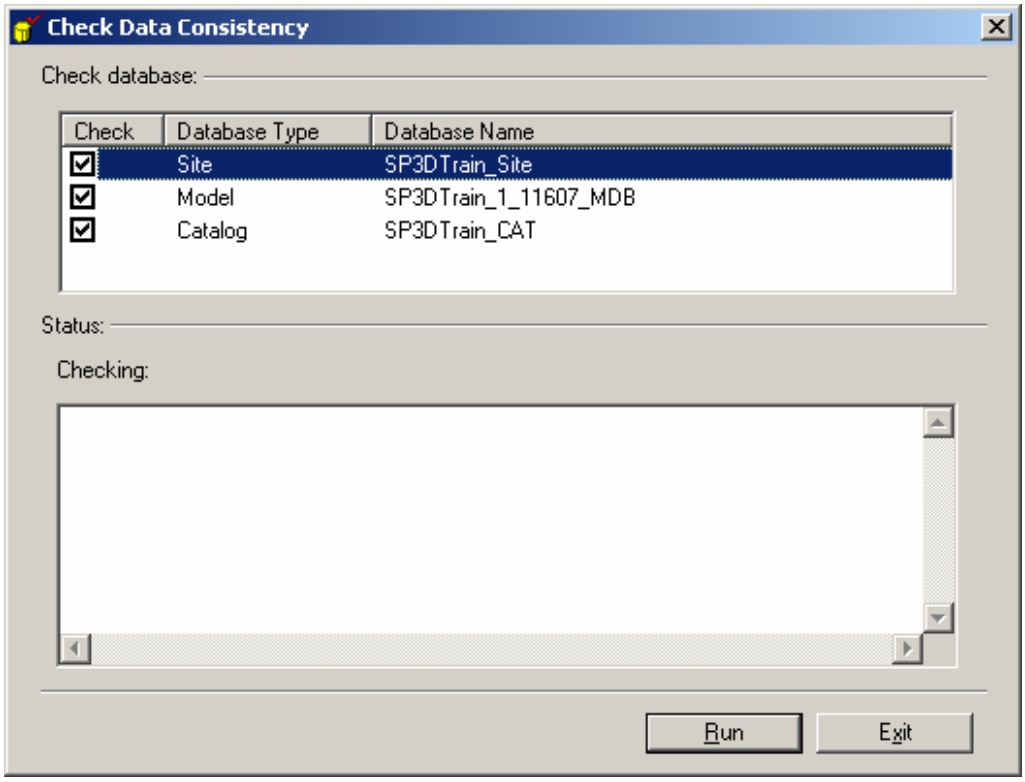
After completing this lab, you will be able to:

- Run the Database Integrity scripts without using a custom command.

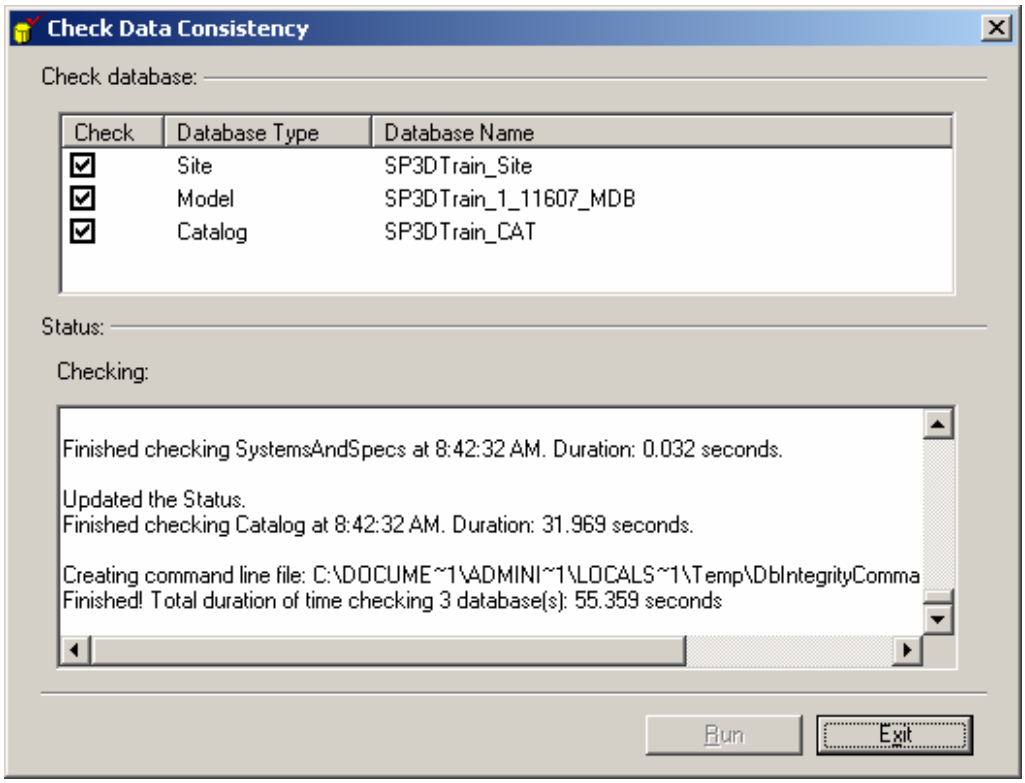
1. Select the Plant you wish to run Integrity checking on, and then activate the Integrity… command from the Database menu.



2. This command was previously only accessible via a custom command add operation. Because of the frequency of use and the need to run the command as part of regular maintenance, it has been added to the Menu, otherwise, the operation of the scripts and form remain the same:



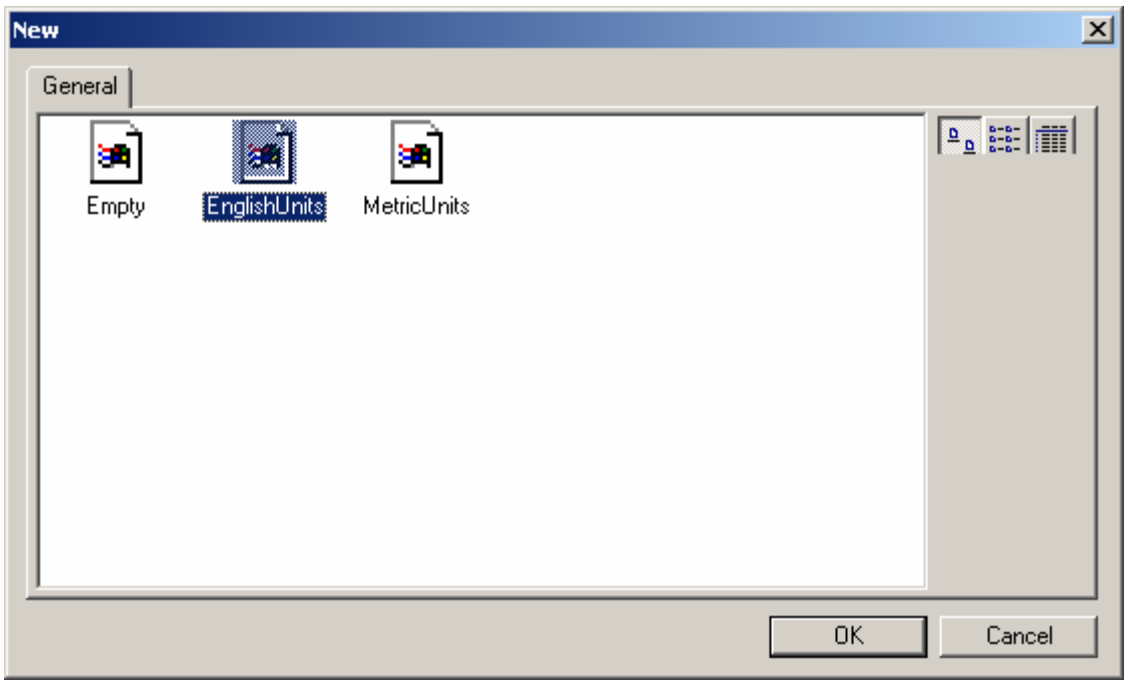
3. Place check boxes in the database fields for any database you wish to check, and then select RUN.



4. Review all the scripts that were executed to make sure there were no catastrophic failures and then click Exit.

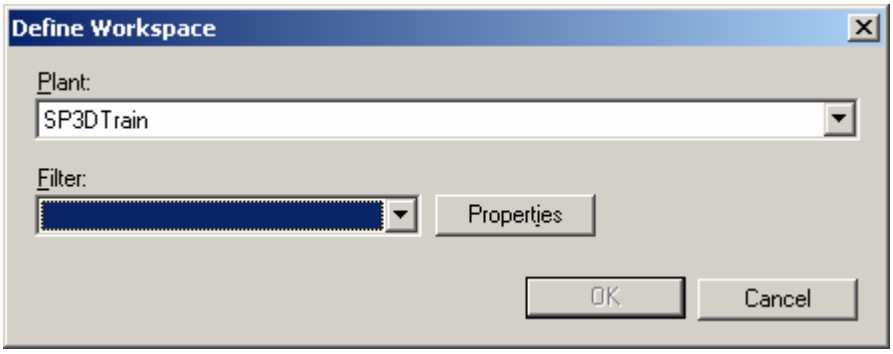
Note: You will still need to use the custom command SP3DCleanDatabaseCmd.CCheckObj to perform the clean procedure and example of how to access this form in the even that there were items to be cleaned follows.

5. Start SmartPlant 3D and pick the English Session template:

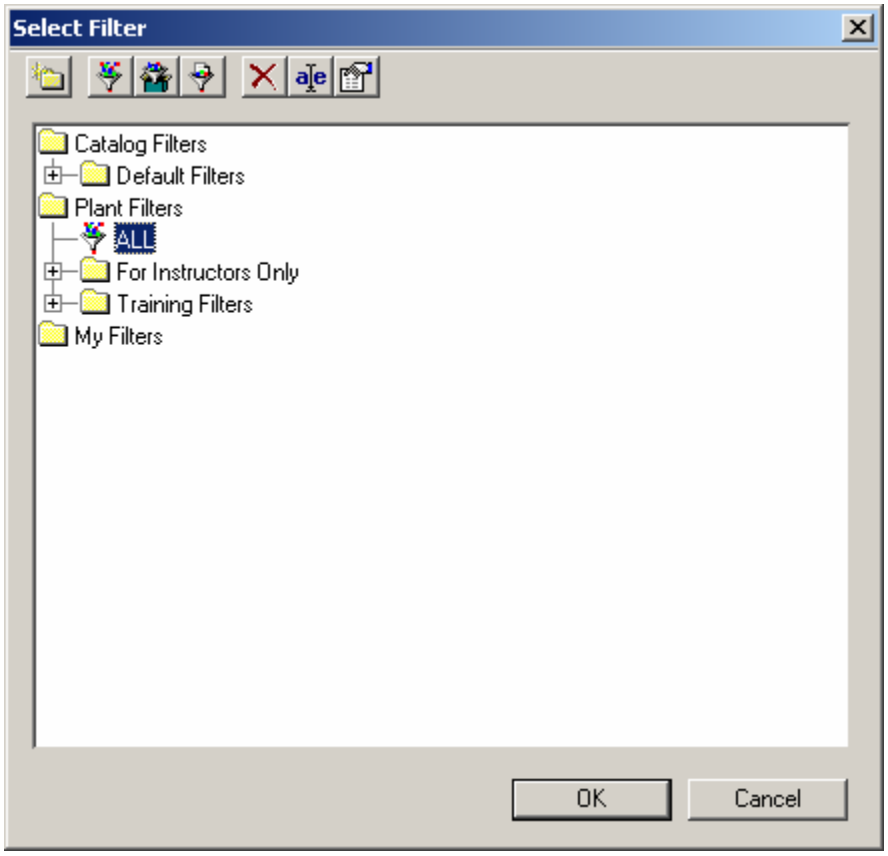


6. Click OK

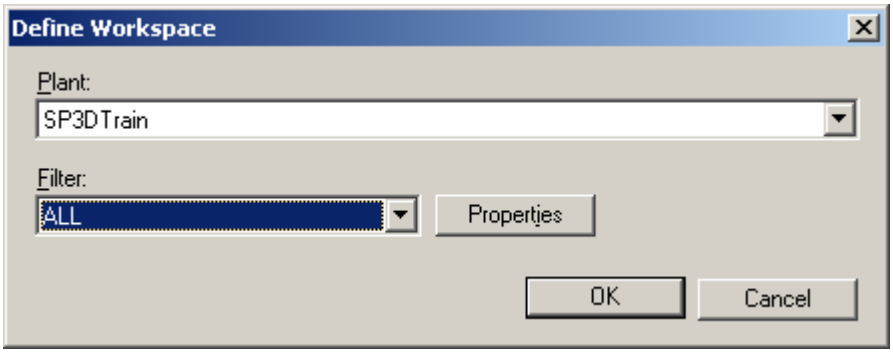
7. Use File → Define Workspace to pick the SP3DTrain plant:



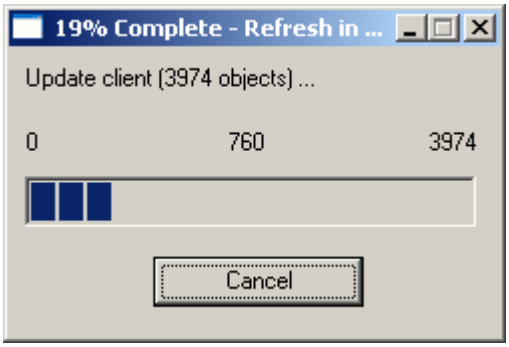
8. From the Filter drop down select “More..” and then pick the ALL filter



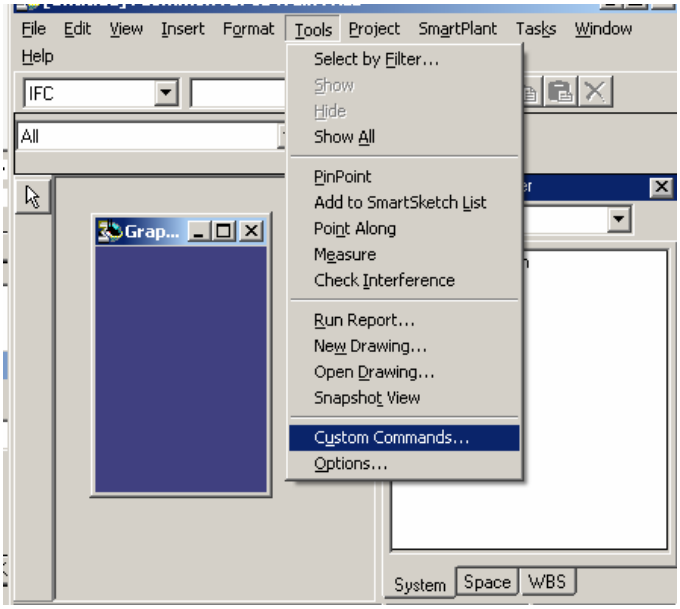
9. Click OK



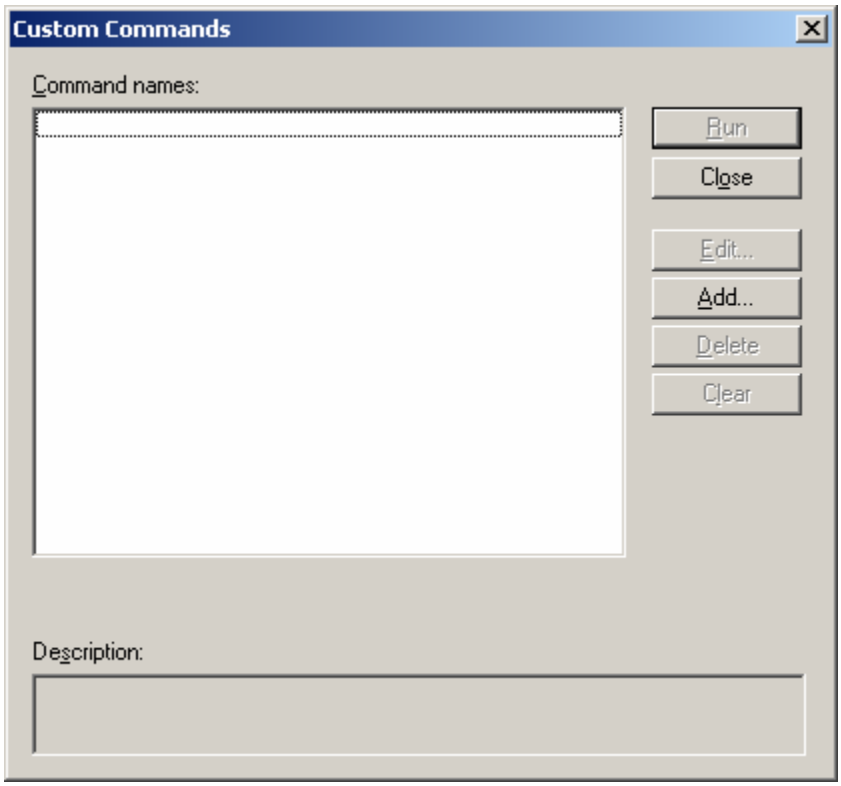
10. Click OK on the Define Workspace form and allow the Refresh to complete.



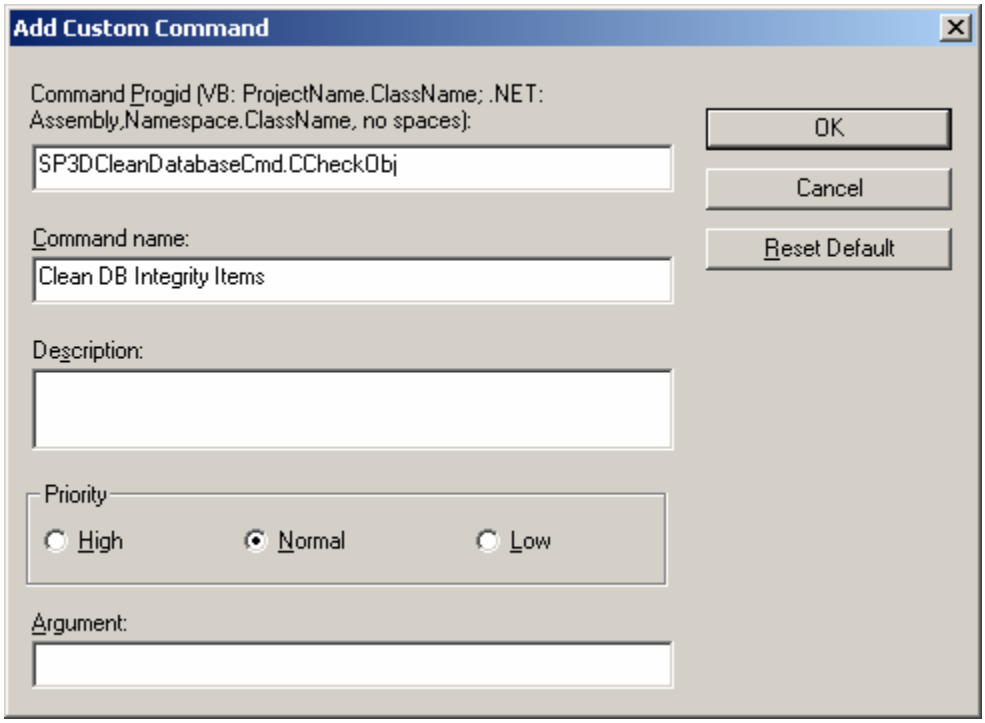
11. From the Tools menu select Custom Command….



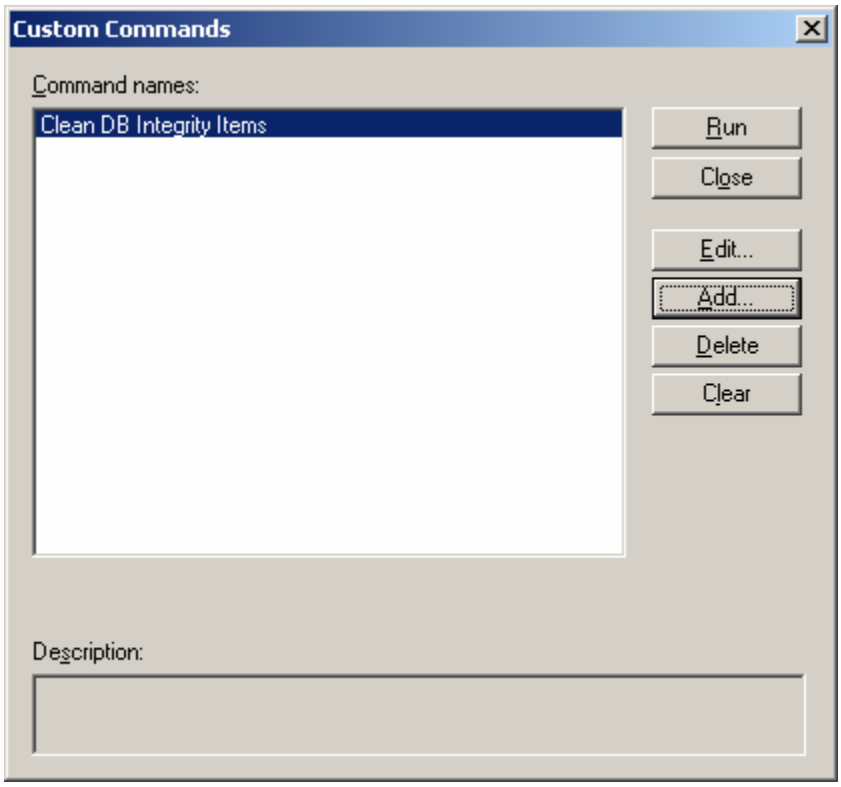
12. The following form will be displayed:



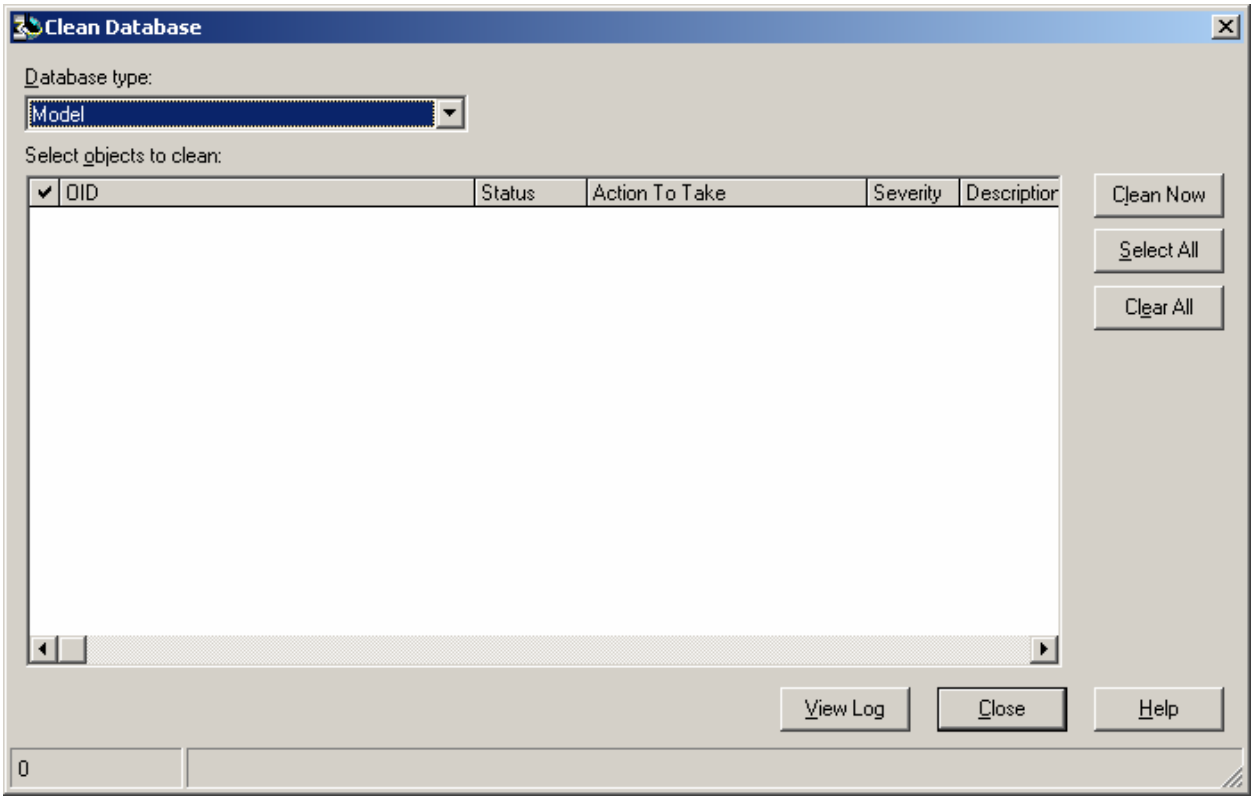
13. Click on the Add… button



14. Click OK after completing the form as depicted above.



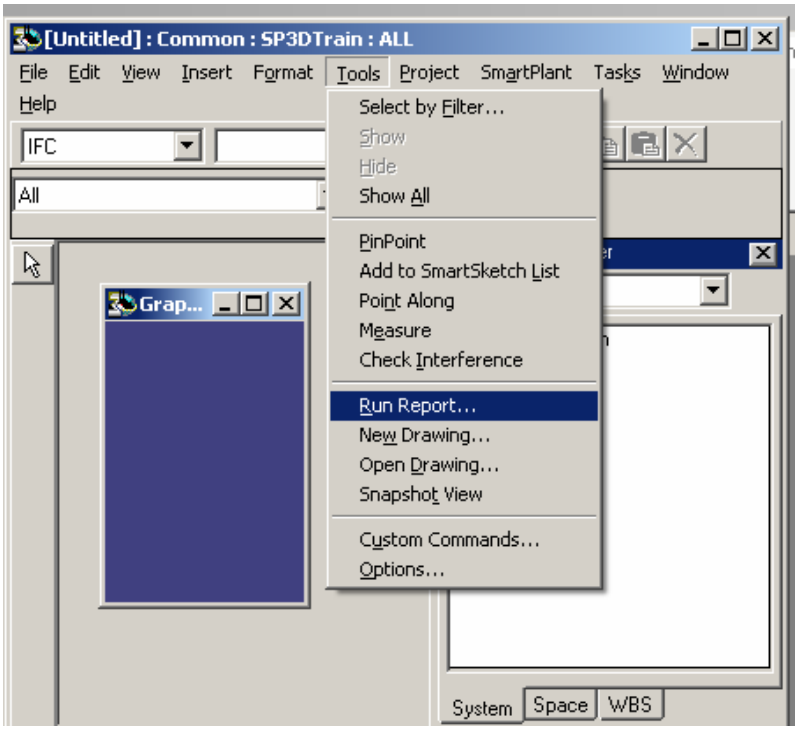
15. Click the Run command.



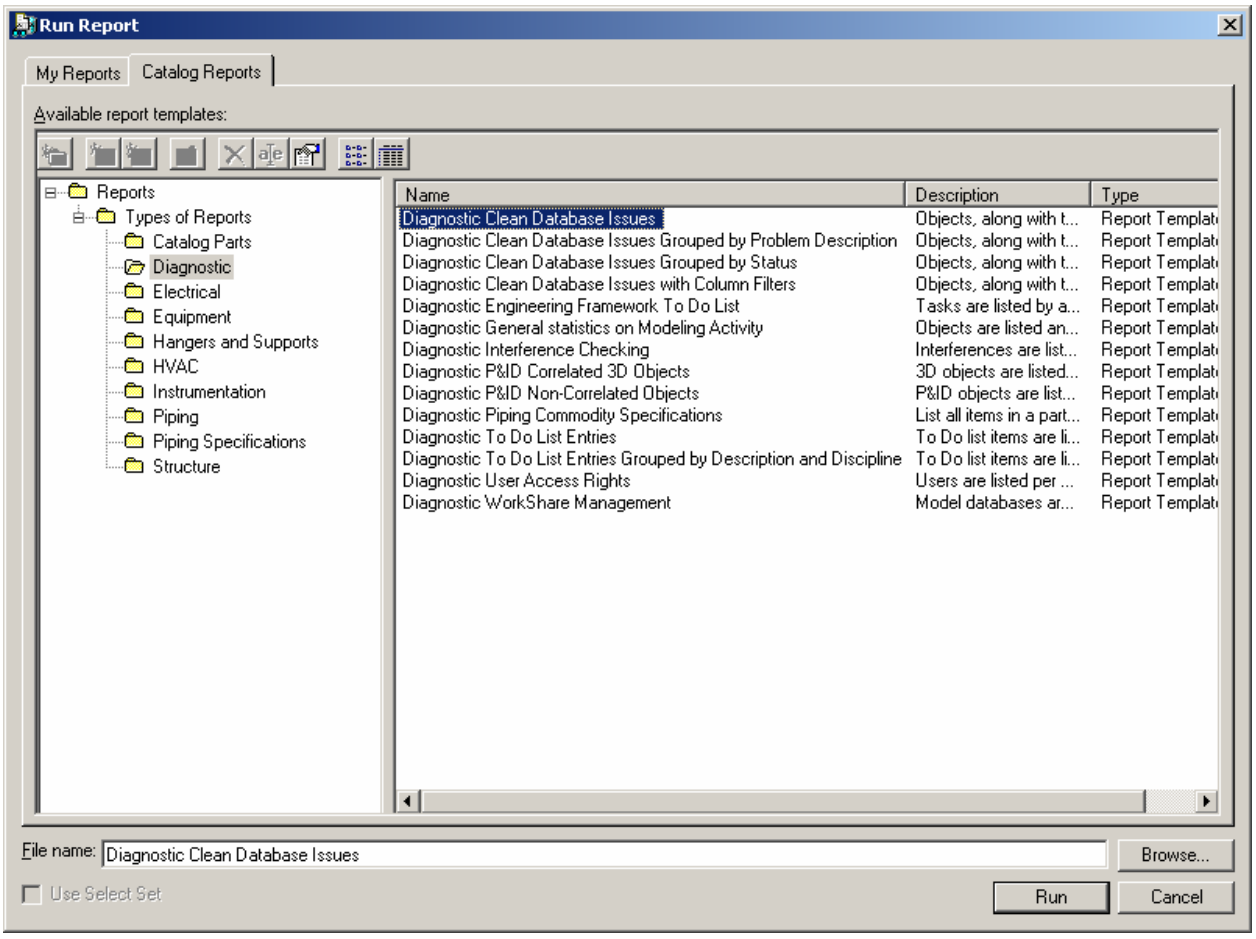
16. In general, you will use the Form to select any items that appear and then perform a Clean Now operation. Refer to the DBIntegrity help files (located in C:\Program Files\Common Files\Intergraph for more detailed information on specific issues).

17. Close the command and the Custom commands window.

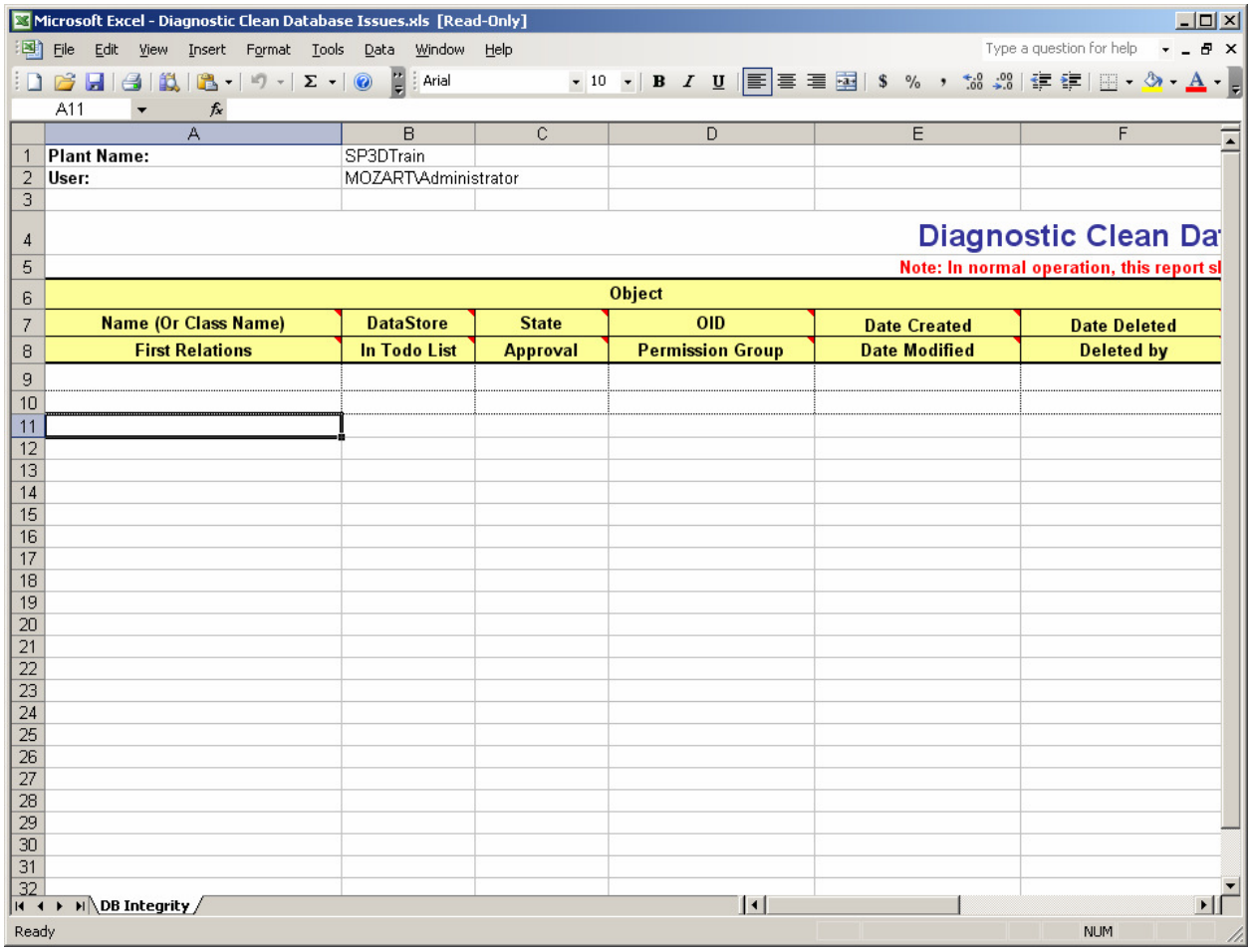
18. From the Tools menu select Run Reports.



19. We will now run a report for the DBIntegrity items. This report could be executed both before and after the Clean command is executed. From the Catalog tab, select the report depicted below and execute it. If there had been any problems found by the Integrity script then this report would reflect it.



20. Click the Run command and an Excel workbook will appear that contains the results of the report.



21. Close Excel when through and then Close SP3D. If prompted to save a Session file, select no.

LAB 15: Reference a PDS Project (Optional)

Guidelines

SmartPlant 3D can only reference PDS projects version 7.2 or later.

The PDS project is assumed to be setup as usual on a PDS server. Any database (SQL or Oracle) may be used for the PDS project.

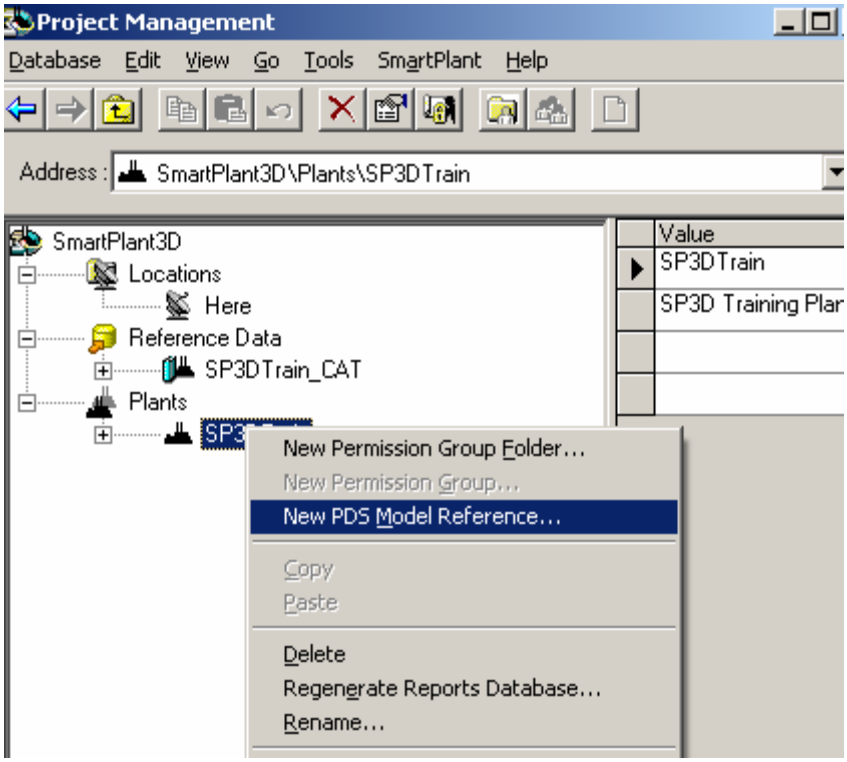
Software installed

The following software must be installed on a SP3D client that references a PDS project on a PDS server.

1. Microstation J 7.1.4.10 or later
2. PD_Shell 7.2.0.15 or later
3. RIS Client 5.0.7 or later
4. PD_SP3DDATA 07.02.00.28 or later (to match version of PDS)

Procedure to reference

1. Using PDS Configure, point to the pds.cmd file that contains the path to the profile that contains the PDS project to reference
2. Using RIS Schema Manager point to the schemas file for the PDS project to reference
3. Using Project Management, attach the PDS project to the SP3D plant by selecting the plant, right mouse and selecting “New PDS Model Reference…” from the fly out.



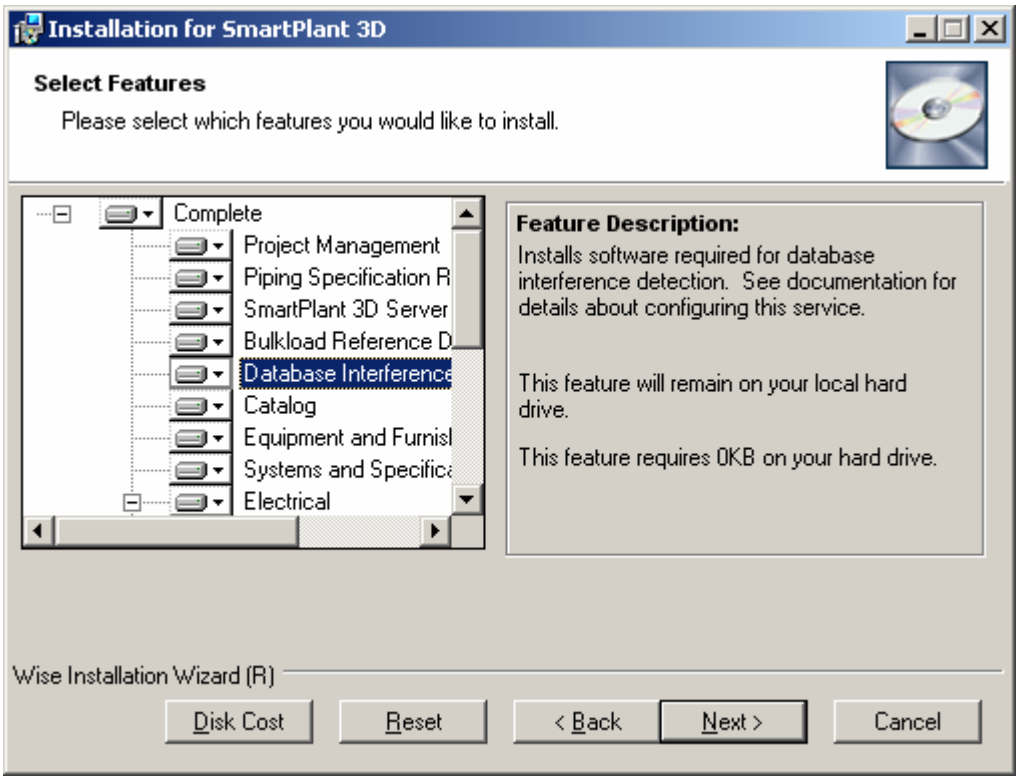
Dos and don’ts

1. Don’t de-reference a PDS project and re-reference it to the same SP3D plant. This generates a new reference string and invalidates prior filters
2. If two SP3D plants that share a catalog refer the same PDS project, de-referencing it from one plant de-references it from the other plant as well.

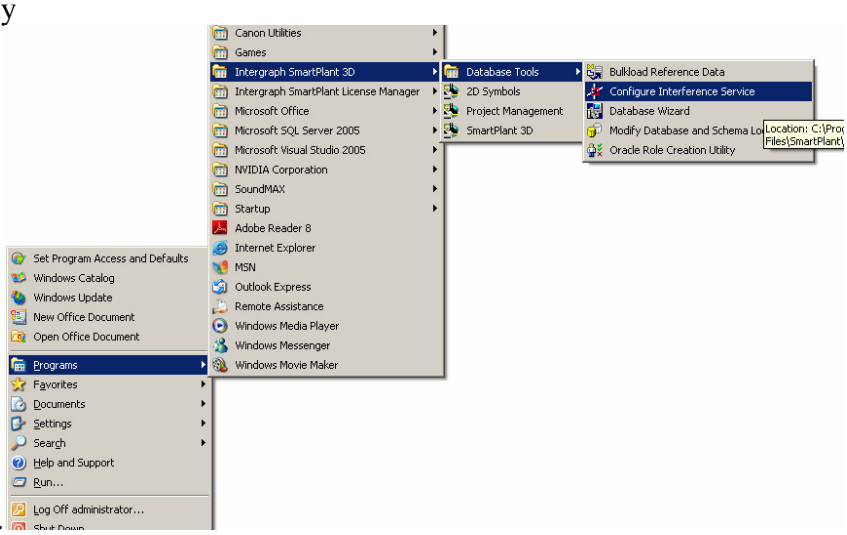
LAB 16: Interference Checking

Database Detect

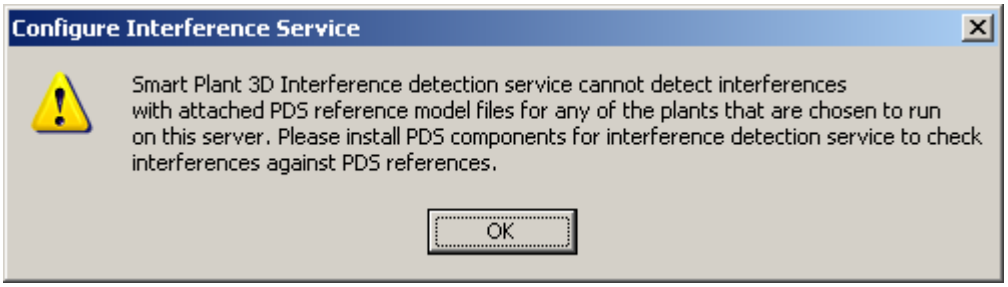
1. During the installation of the software we picked the option “Database Interference Detection Service” Thus making this workstation a potential IFC Server.

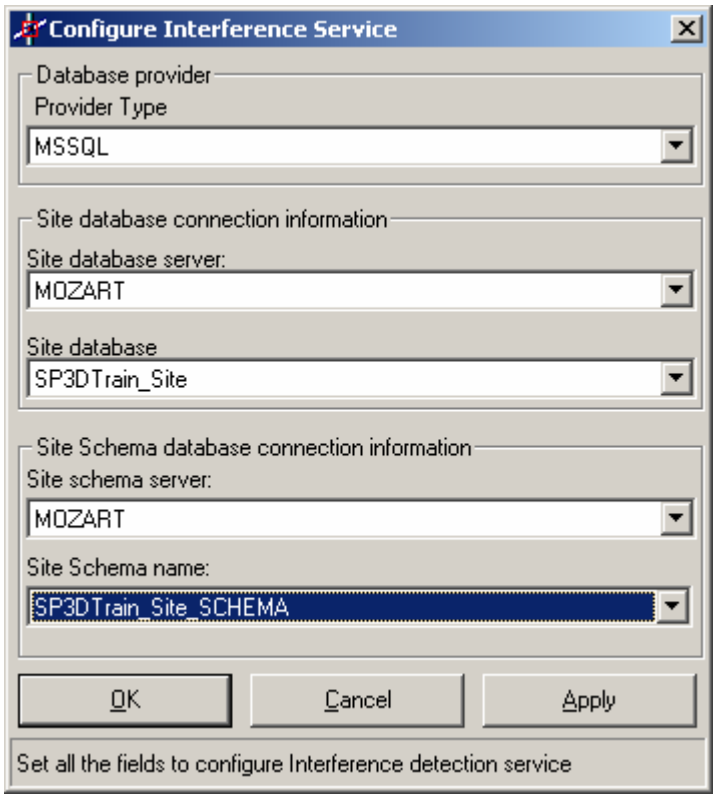


2. Click on the Configure Interference Service if the  icon is missing from your system tray command.

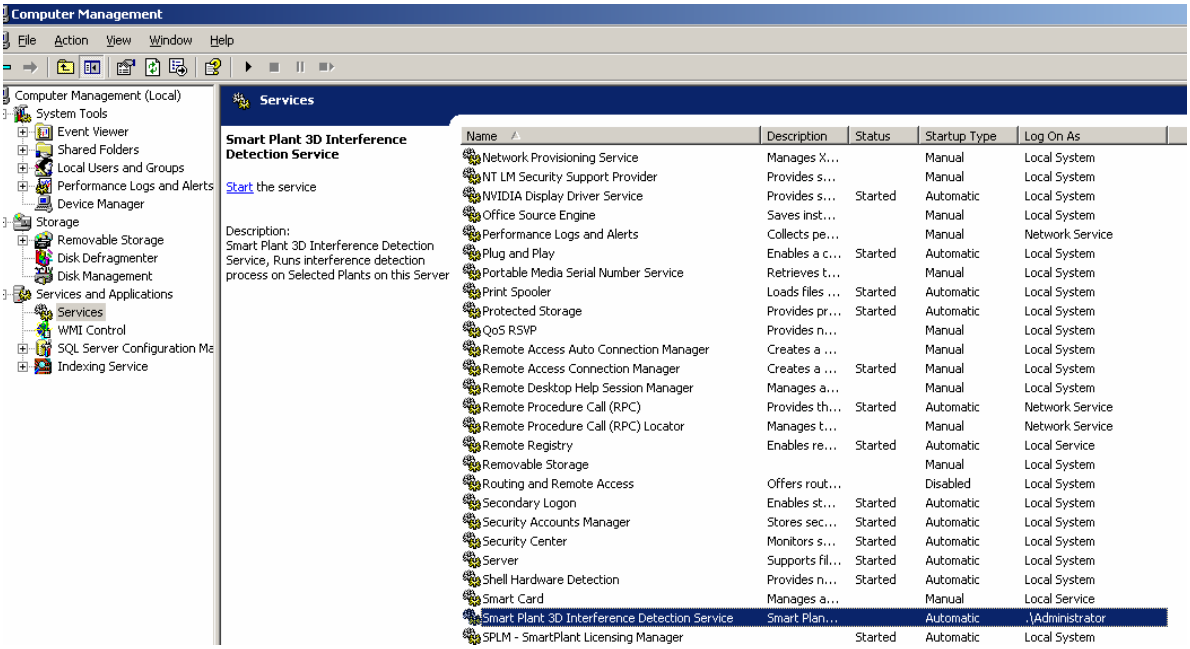


3. There will now appear an icon in your system tray: 
4. Right mouse on this icon and select “Interference Service Configuration Manager”
5. The following message may appear depending upon the configuration of your workstation, if it does, then click OK.

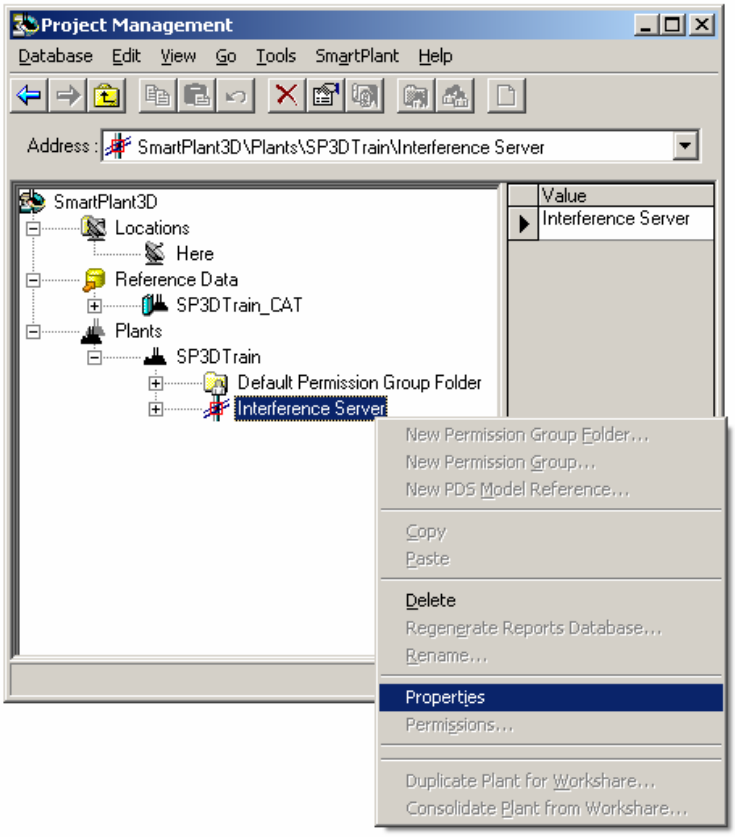


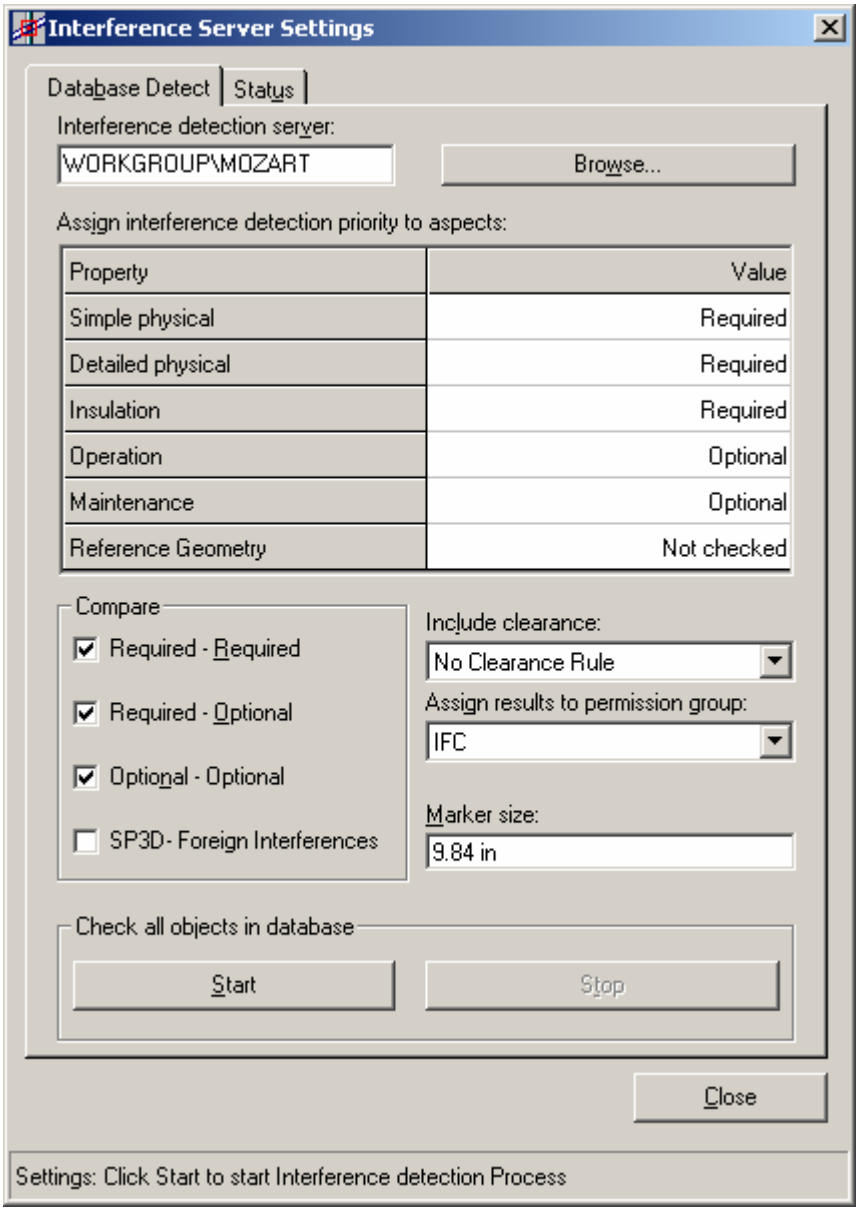
6. Complete the form as depicted below identifying the SP3DTrain_Site and SP3DTrain_Site_SCHEMA. By completing this form in this manner you are indicating that this IFC Server can process any Plant that belongs to this Site Database.
7. 

8. Click Apply.
9. This may fail if the credentials supplied to the Service have changed or are not adequate for executing this command. Open the Services branch and locate the SP3D Interference Detection Service and Start it.



10. Start Project Management, and expand the SP3DTrain plant. Right mouse on the Interference Server and select Properties.

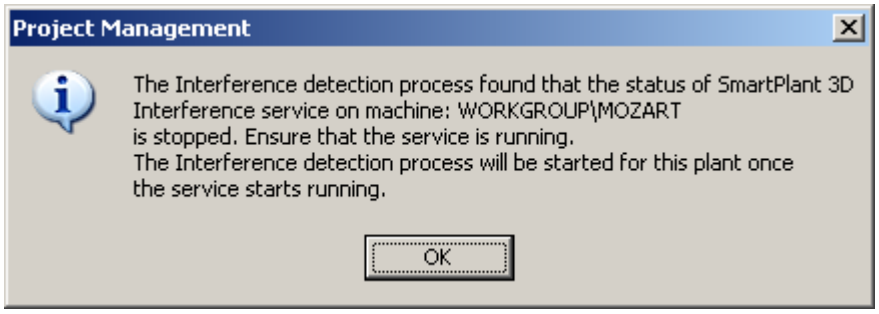




11. Complete the form as depicted above identifying the Domain where the place holder above says “Workgroup” followed by a “\” and the machine name where the IFC Service is loaded. In a production environment this form could be completed from any machine and does not need to be completed from the IFC machine.

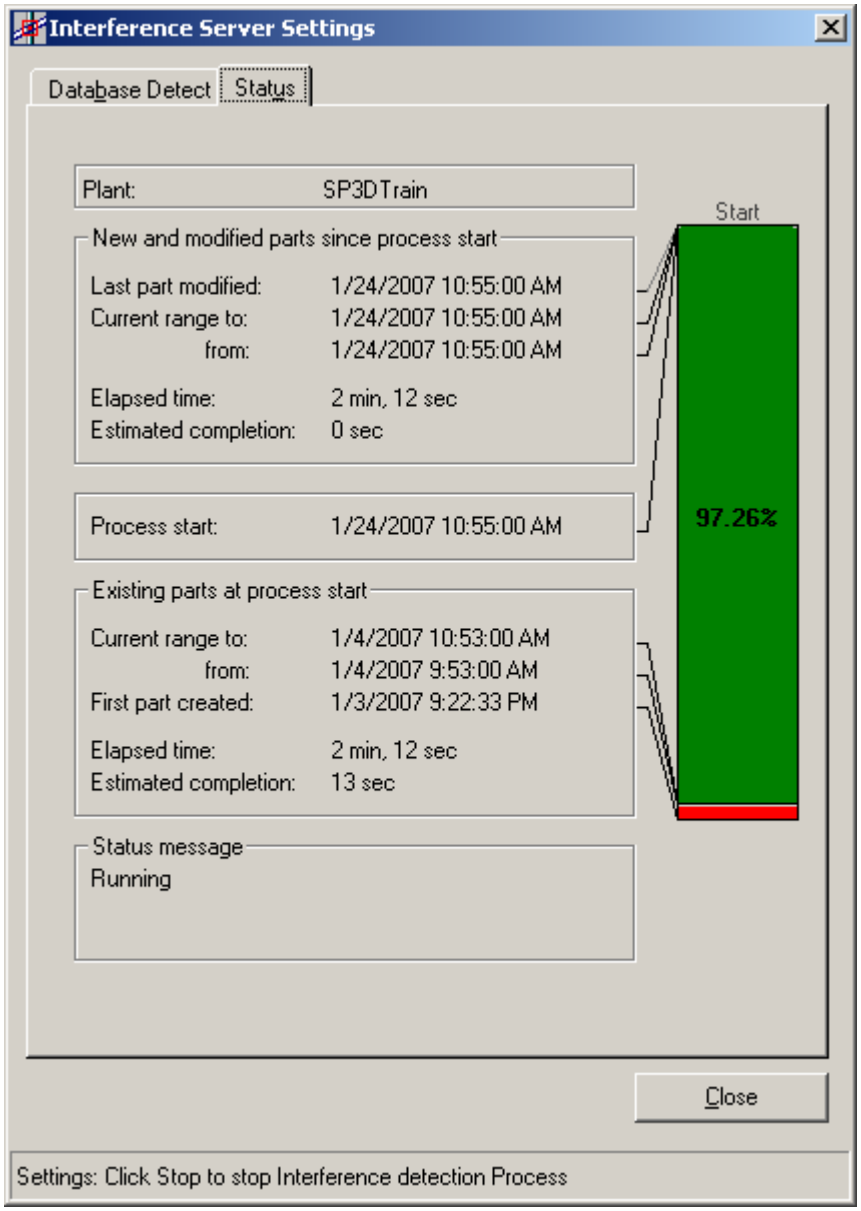
12. Click on the Start Button.

13. If the Service was not started step 9 you may be presented with the following message:



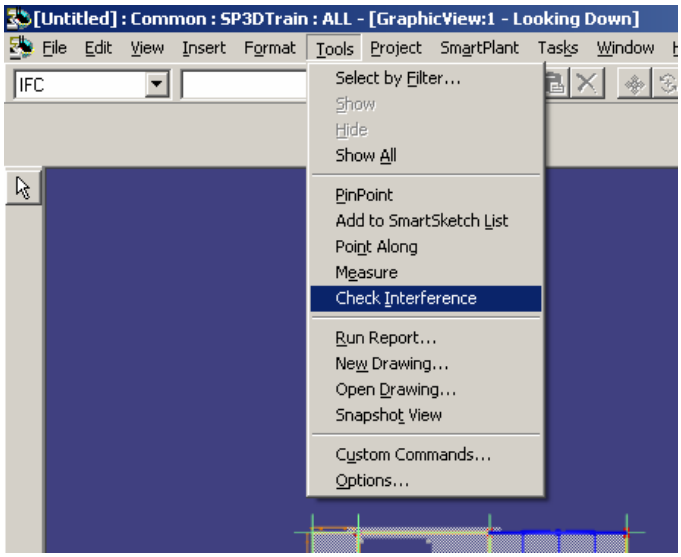
14. Close the IFC form.

15. It may take up to 4 minutes for the processing to start. When it begins to run, you can review the progress on the Status tab:

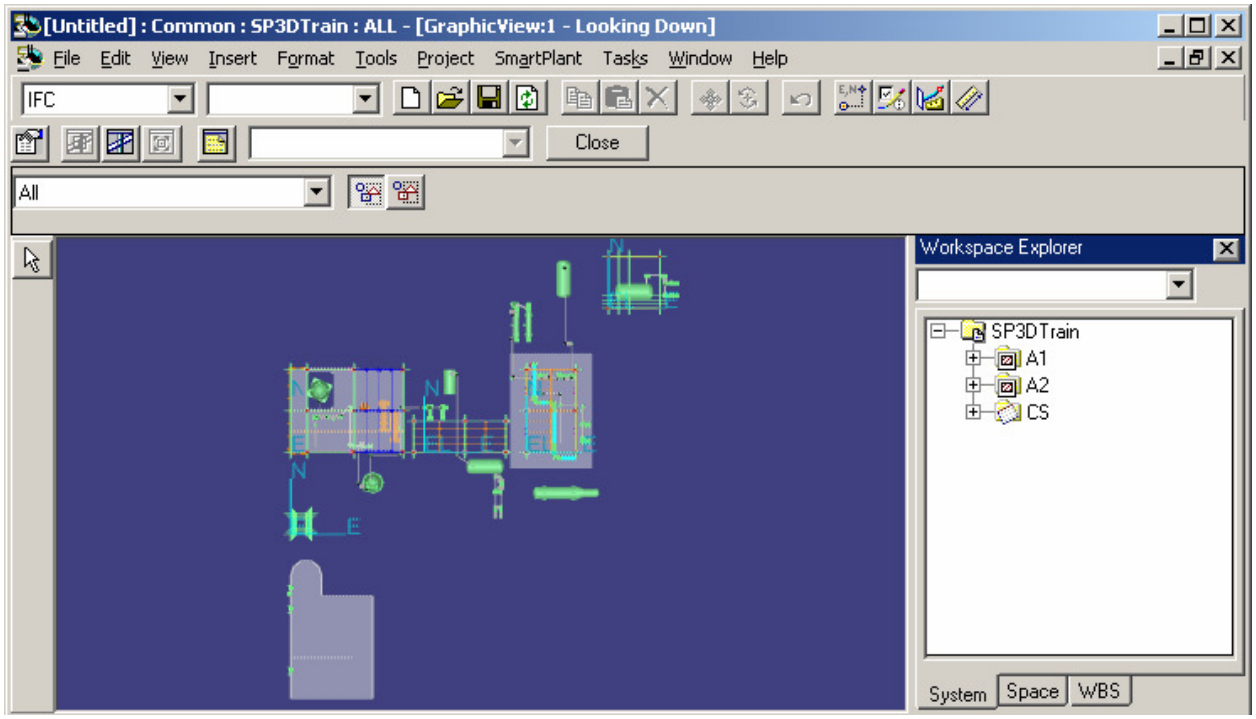


16. When the process reaches 100% start Smart Plant 3D and define the workspace with the All filter like we did in the earlier lab.

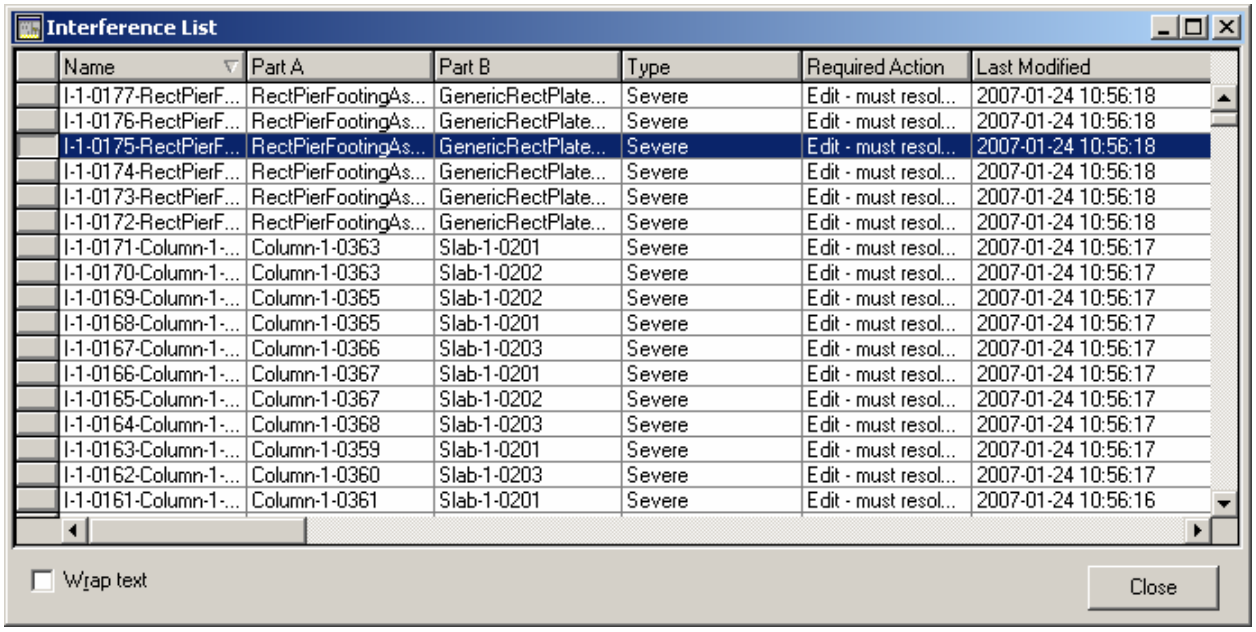
17. From the Tools menu select Check Interference



18. A new toolbar will be displayed:



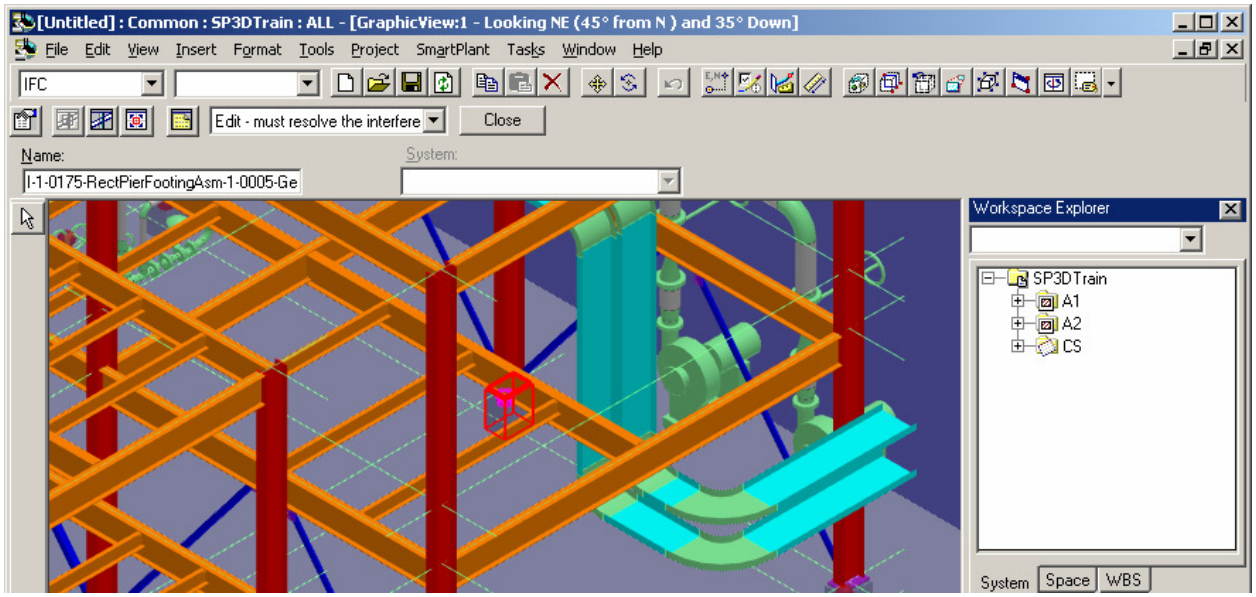
19. Click on the yellow icon to see the Interference List



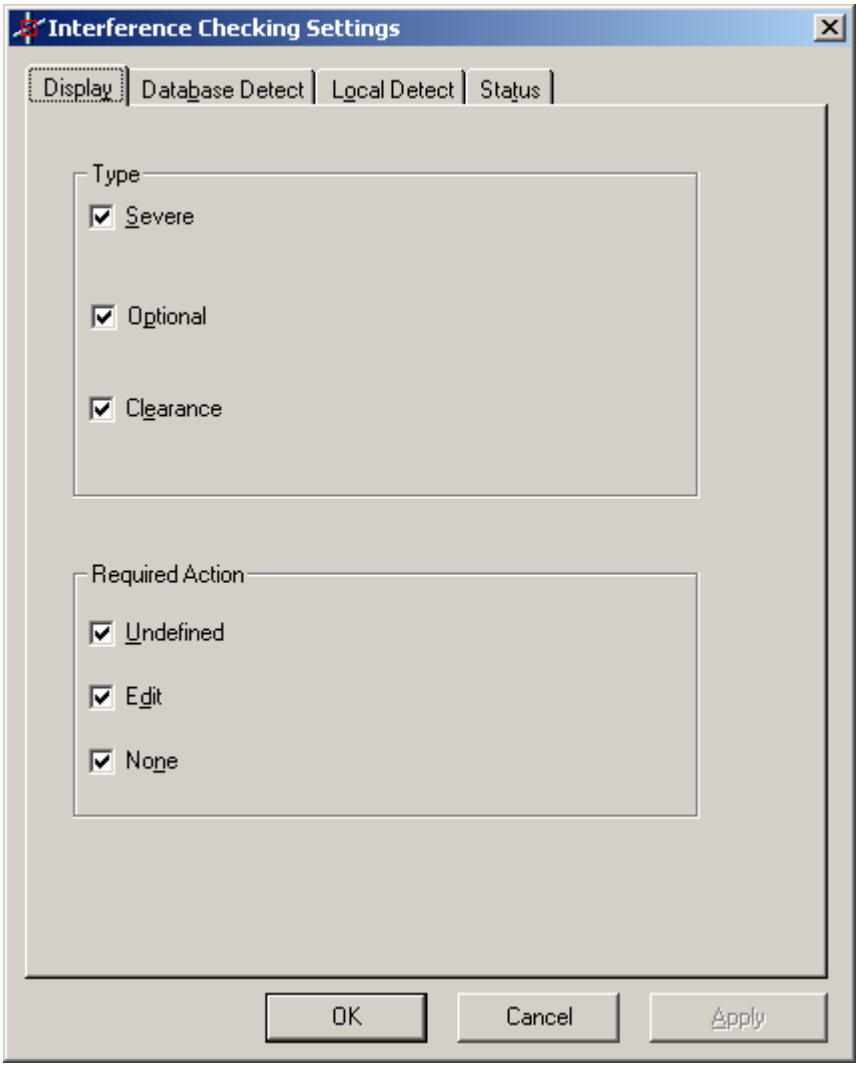
20. Selecting a row from this list will highlight the IFC object.

21. Click on the “Fit Interferences” button 

22. The graphic window will zoom you to that interference and the objects involved:

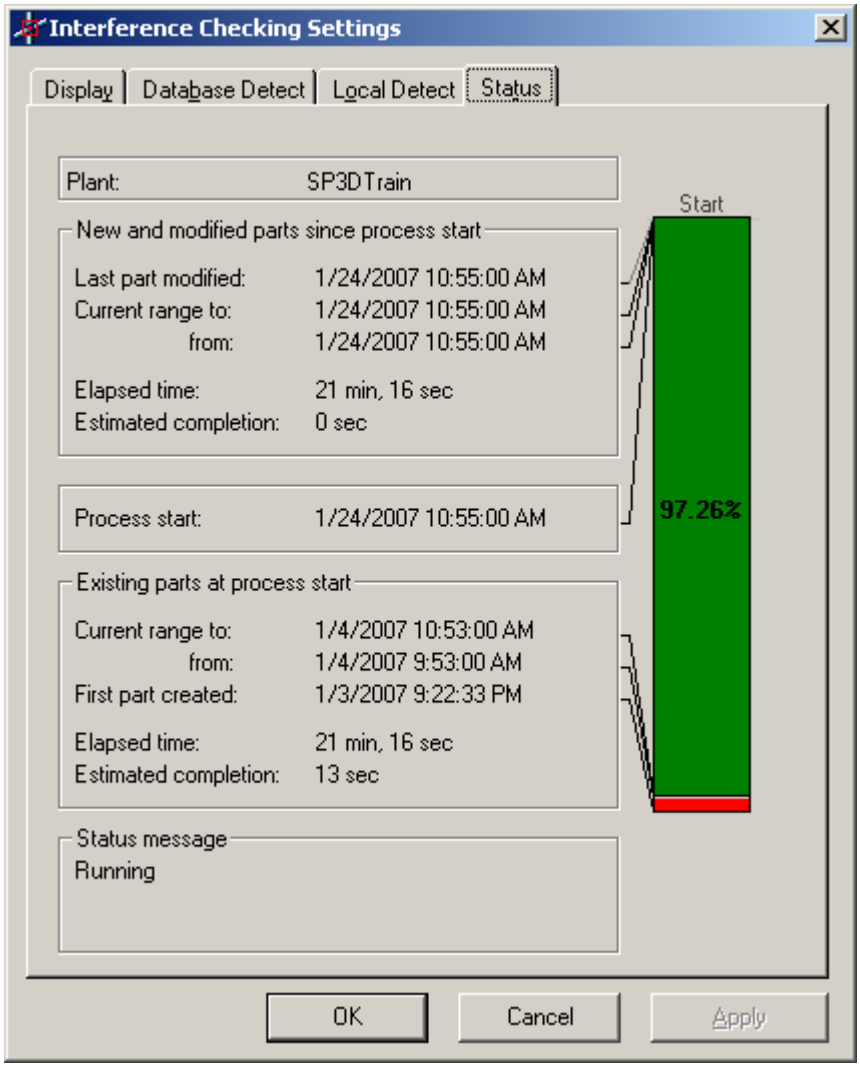


23. User can turn on/off the IFCs that are listed for them (and displayed graphically by using the Settings button to access the following form:



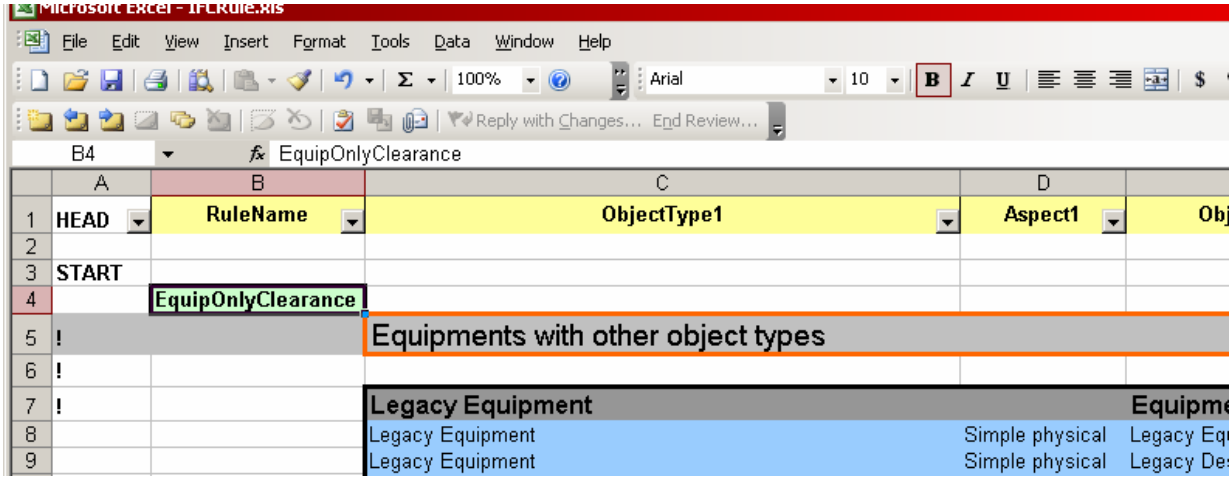
24. De-selecting the Type or Required Action combinations will hide IFCs from their view (though they will still exist in the database).

25. Users can also review the status tab and see the same information we viewed in project management regarding the progress of the IFC server.

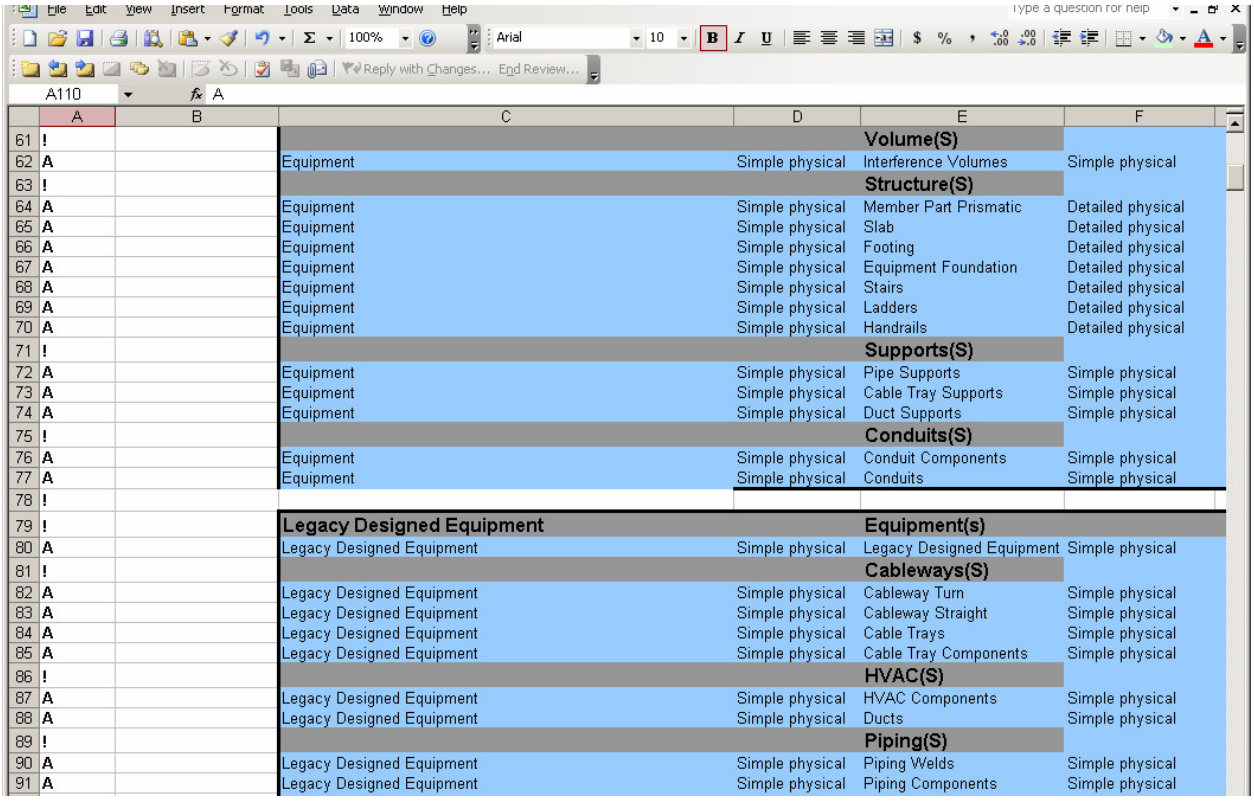


Configuring IFC Clearance Rules (Optional)

1. Open the Excel workbook “IFCRule.xls”, <SP3D Installation Folder>\CatalogData\Datafiles\
2. On the IFCClearanceRule sheet of the IFCrule workbook, highlight all rows pertaining to “Equipment with other objects types” from the Plant125 rule. This is approximately row 7 thru 114.
3. Go Edit→ Copy
4. Select the row containing Plant125 in the B column.
5. Right mouse on the Number representing that row (on the left of the Excel interface) and select Insert copied Rows.
6. Insert one additional blank row at that same location so that you can create a name for the new Clearance Rule. In the case of the screen shot below, that cell if B4. Provide the name EquipOnlyClearance for the new Clearance rule.

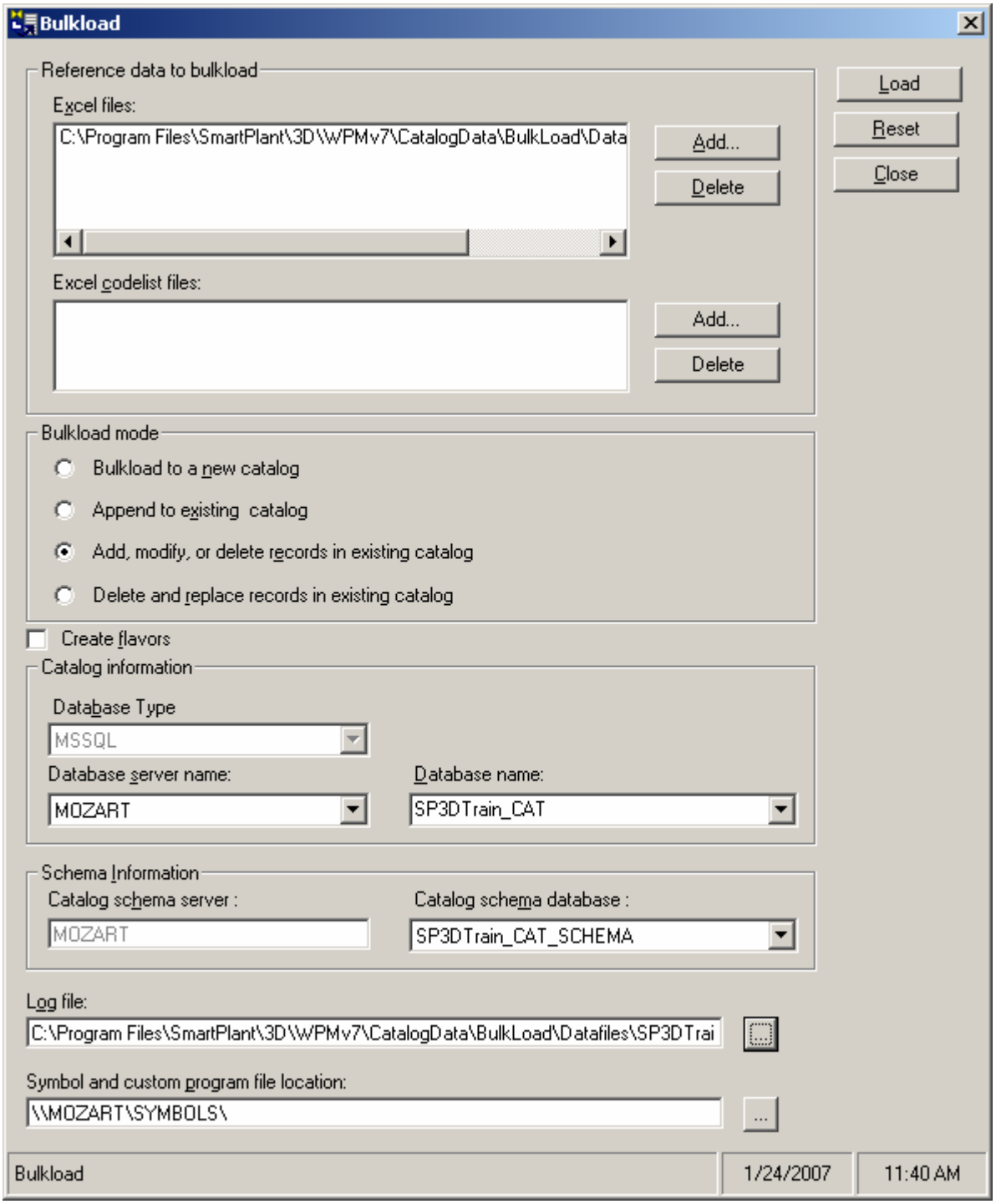


7. Scroll to column G, which is labeled Clearance.
8. Replace all values with "6 in" for the EquipOnlyClearance Rule entries. This will now create a clearance rule of 6" for equipment against all of SP3D objects.
9. In the "A" column, where the value of the A column's cell is not "!" (This is a comment mark and not processed by bulkload" place an "A" for Add so the bulkload will process the row and create the new clearance rule.



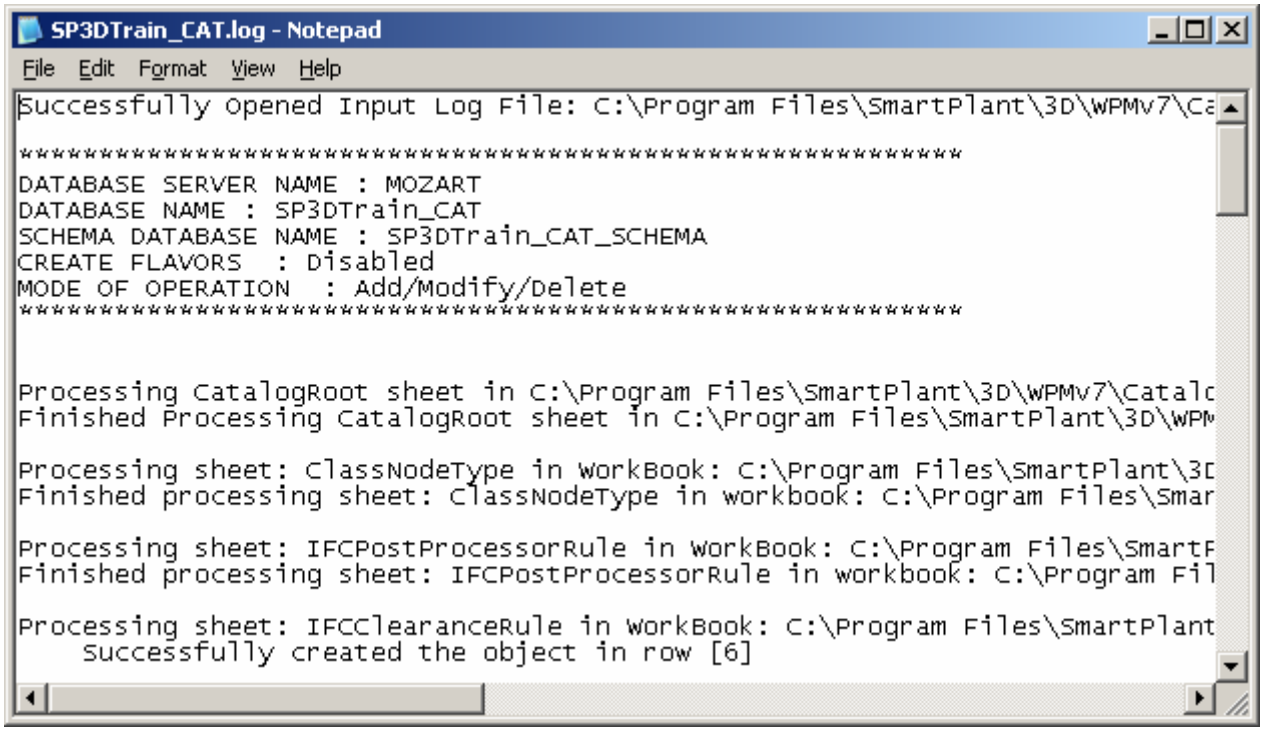
10. Save the Excel Workbook as "IFCRule_Admin.xls"
11. Start the Bulkload Utility, Start → Programs → Intergraph SmartPlant 3D → Database Tools → Bulkload Reference Data.

12. Complete the bulkload form providing the path to the Excel file "IFCRule_Admin.xls"
13. Input the Server Name, Catalog Db ("SP3DTrain_Cat") and Catalog_Schema ("SP3DTrain_Cat_Schema").
14. Set the Mode to Add/Modify/Delete.
15. Provide a path to the log file
16. Provide the Symbol Share path



17. Click Load.

18. Review the log file for any errors. Correct as necessary.

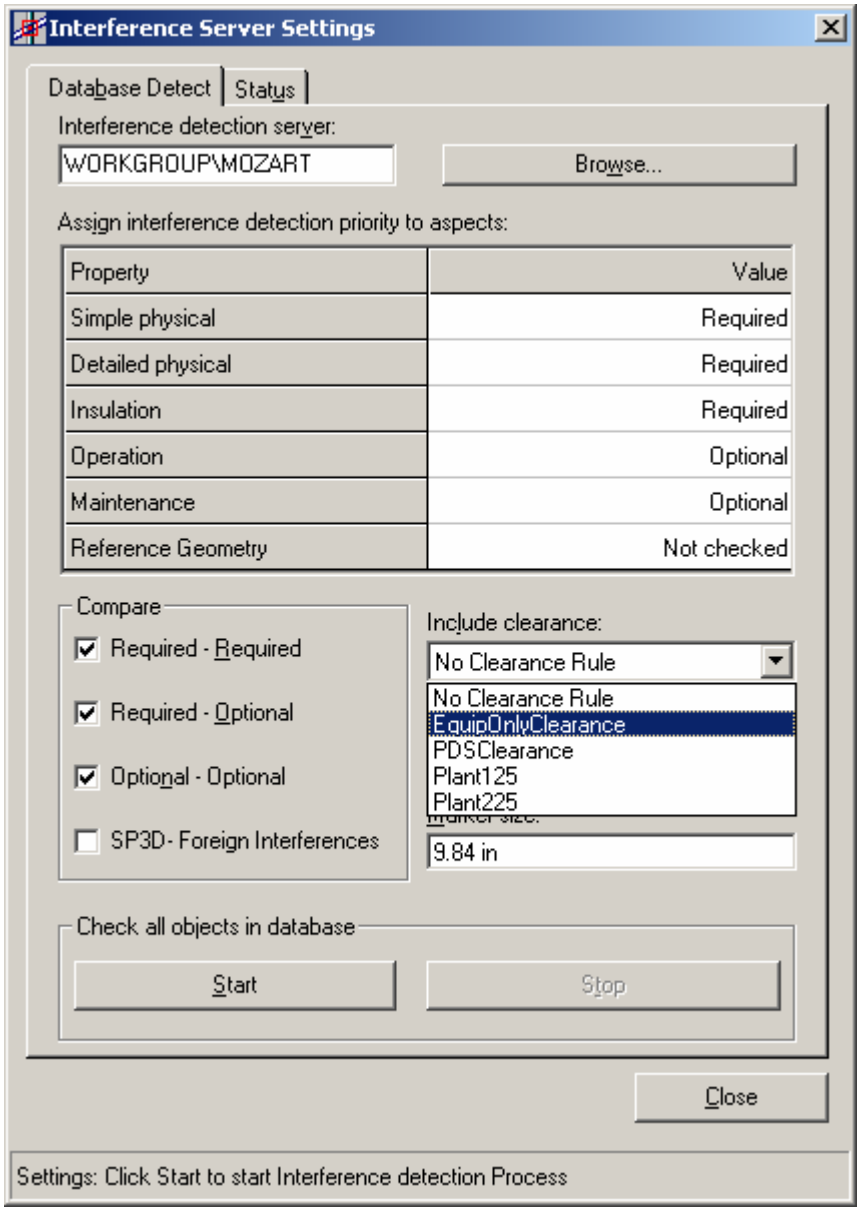


19. Start a new Project Management Session.

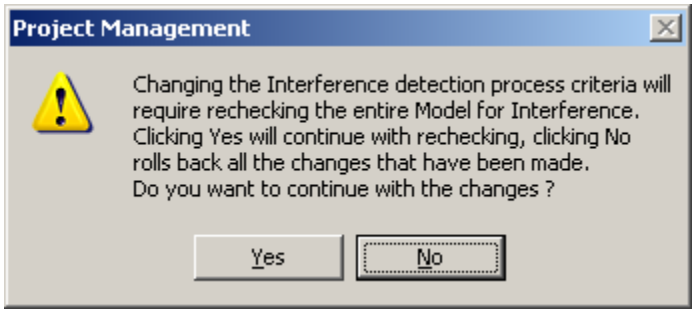
20. Expand SP3DTrain → Interference Server.

21. Right mouse on Interference Server and select Properties.

22. Click the Stop button on the Interference form.



23. Observe the existence of “EquipOnlyClearance”
24. Complete the form similar to what we did in the previous section, this time selecting the newly created “EquipOnlyClearance”
25. Click Start.
26. The following message will display and warn you, click Yes.



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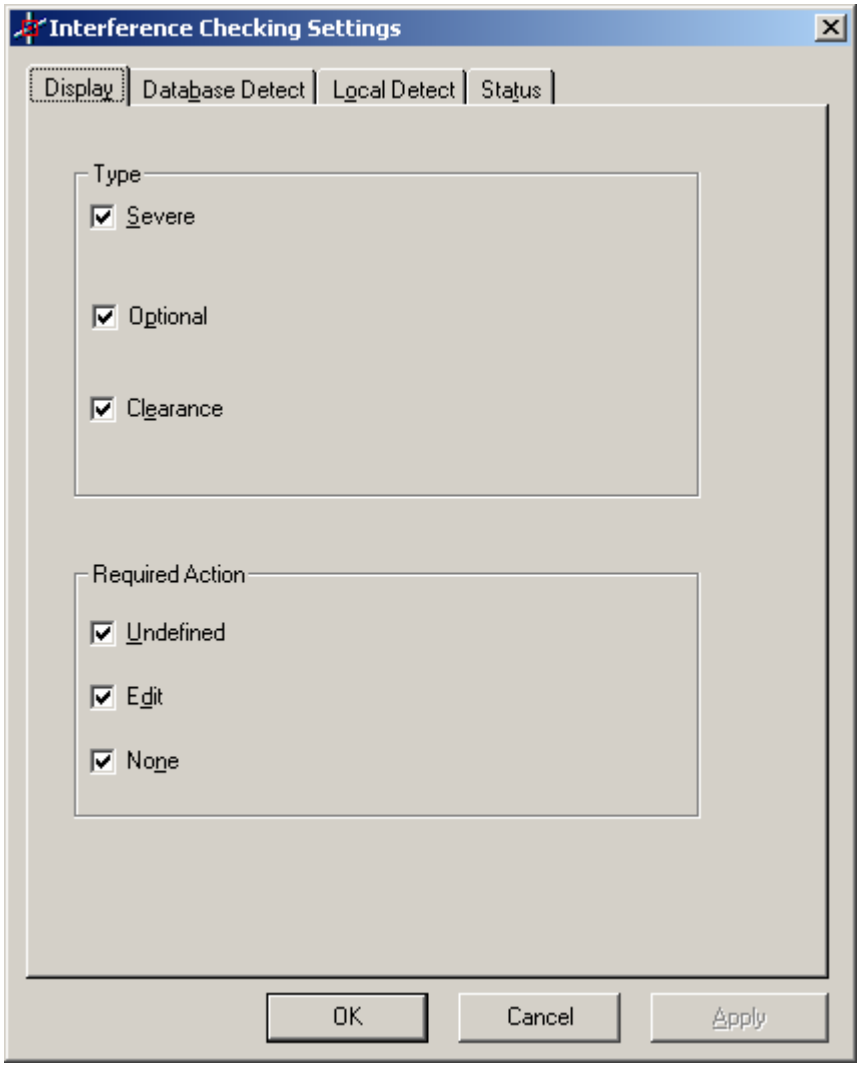
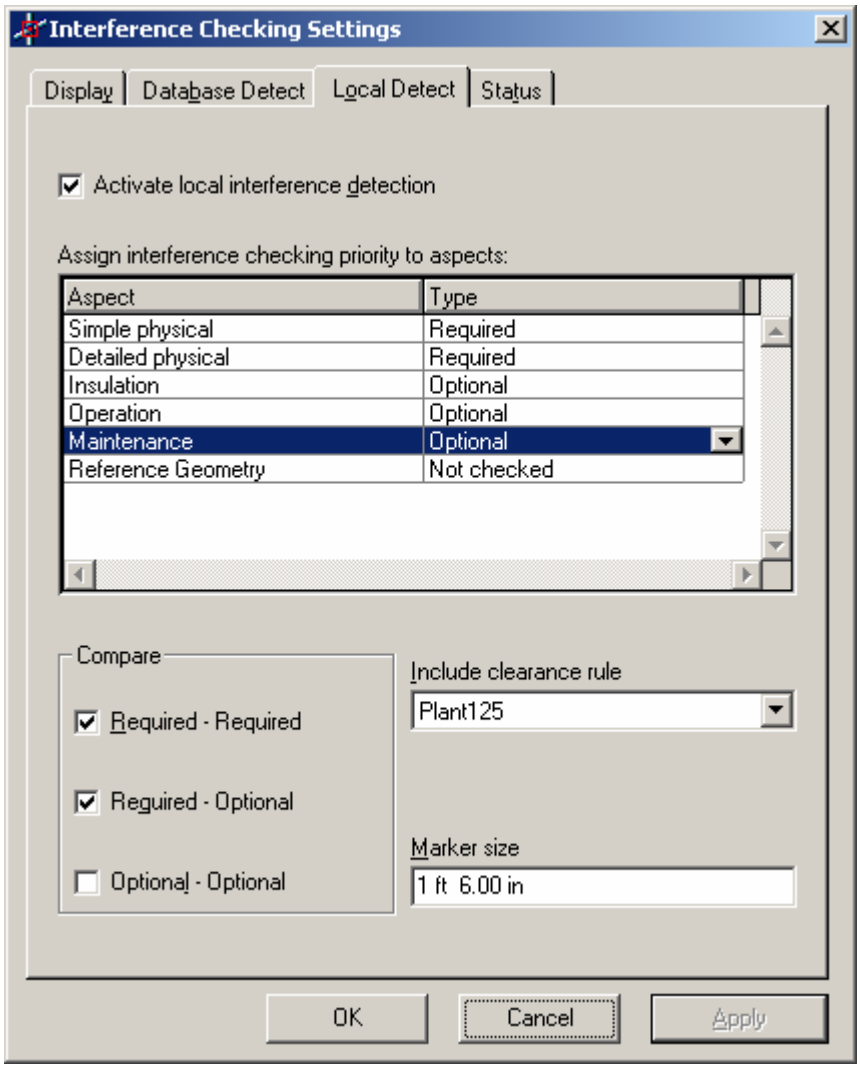
Local Detect

1. Start SmartPlant 3D (Start → Programs → Intergraph SmartPlant 3D → SmartPlant 3D)
2. Define a workspace using the “ALL” filter.
3. From the Tools menu, select Check Interference.
4. The Interference Ribbon Bar will now appear:

5. Click the left most button for IFC Settings, the following form will display:

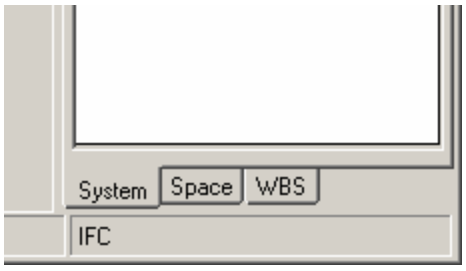


6. On the Local Detect Tab, complete the form as follows:



7. Click Apply and then OK.

8. Note that now there is an IFC entity in the bottom left of the SP3D window:



9. Save the session file as “IFC LocalDetect Example.ses”

10. Because this class is presumed to be taken before the Equipment or Piping classes, the instructor will now guide you throw some adhoc simple examples to show that the Local Detect is now working.

11. Pull up the IFC List. Note that Local Detect Entries contain only a name and no additional information.

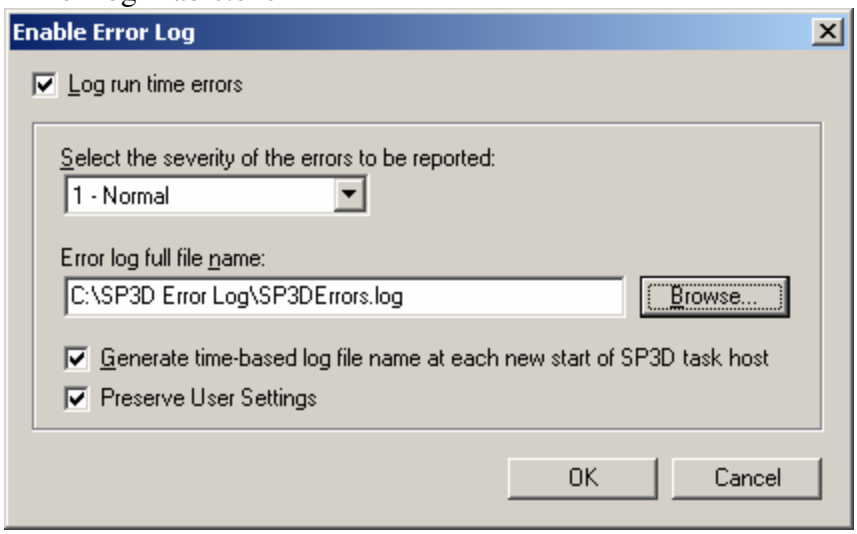
12. Click the Refresh on the workspace and note that Local Detect(s) disappear(s), while Database Detect IFC(s) (if any) remain.

LAB 17: SP3D Error Logs

SP3D General Error Log

Note: When you experience problems with SP3D often times Support personnel will request a log file. Please try to reproduce the problem with the log file option on to capture some additional information that may be useful in rectifying the problem.

1. Open a Windows Explorer window and navigate to <SP3D Installation Directory>\Core\Tools\Administrator\Bin and double click on "ErrorLogEnable.exe"



2. Ensure that the path you provide on the form is writable by all users (if it is not, then SP3D will have problems starting for these users because it will not be able to write to the specified location).
3. In General 1-Normal will usually be sufficient, but there may be times when the support person working a problem you are reporting will have you adjust this value.
4. You will need to close SmartPlant 3D and start it once again (potentially from an already saved session file) before these setting will take effect.

SP3D Drawings Error Log

1. Start RegEdit.exe
2. Traverse the registry until you reach \HKEY_Local_Machine\Software\Intergraph\Applications\Environments\Drawings\ErrorLog.
3. Locate the key named "Level" and note that the value by default should be "1" Note: This setting will capture only errors deemed fatal.
4. From time to time, you may be asked to capture more data when reporting a problem to Intergraph; you can use the following value to capture more data: 101.

Note: The error log is written to the %temp% directory and named Drawings.log