Synchronizing Objects in Source and Target Repositories
Overview
You can use labels, queries, and dynamic deployment groups to synchronize folders in source and target repositories.
A label is a versioning object that you can associate with any versioned object or group of versioned objects in a repository. You use an object query to search for versioned objects in the repository that meet specified conditions. When you run a query, the repository returns results based on those conditions. A deployment group is a versioning object that allows you to group versioned objects for deployment to a different repository. A dynamic deployment group uses queries to identify objects to group for deployment. For more information about labels, queries, and deployment groups, see the PowerCenter Repository Guide.

These team-based development tools can be used together to synchronize folders in different repositories. For example, you have a source repository named SRC_REP and a target repository named TARG_REP1. You want to deploy objects from Folder1 in the source repository to Folder1 in the target repository.

You copy Folder1 to the target repository. However, after the initial deployment, you want to ensure that modifications you make to objects in the source repository are reproduced in the objects in the target repository.

To do this, you label all the objects in the source folder after the initial deployment to the folder in the target repository. Each time you update and save an object in the source folder, a new version of the object is saved and the version number is incremented by one. The label is applied to the specific version of the object you deployed. Therefore, once you update the deployed object in the source repository, the latest version of the object does not have the label applied.

To locate the updated objects, you create a query to search for all versions of objects that do not use the specified label. You will then associate the query with a dynamic deployment group. The dynamic deployment group uses the query to locate and group objects for deployment. Finally, you apply the label to versions of objects as you deploy them so that you do not deploy these objects to the target repository again.

Note: This method is more accurate than if you were to run folder compare between the two folders in different repositories. New or modified objects in the source repository will be easily found by querying for objects that do not have the label. Using folder compare simply checks the names of the newest checked-in objects. You will not be able to tell if the most current version of an object has been deployed or not based solely upon the name of the object.

Using Labels and Deployment Groups to Identify and Deploy Objects
You can use labels and dynamic deployment groups to maintain synchronized folders.
To synchronize folders, complete the following tasks:

1. Apply the label to deployed objects in the source repository after you initially copy folders to the target repository.
2. Create a query to identify objects that have not been deployed.
3. Associate the query with a dynamic deployment group and deploy the objects to the target repository.
4. Apply the label to the deployed objects, so that the next time you run the query, it can locate objects in the folder that have been updated since the last deployment.

Step 1. Apply a Label to Deployed Objects in the source repository
To maintain synchronization between folders in source and target repositories, use labels to track the objects you deploy. To use labels to track deployed objects, complete the following steps:

1. Create a label to apply to the objects you deployed.
2. Apply the label to the objects after the initial deployment and before you modify any object.

Later, you can apply this label to objects as you deploy them to the target repositories. For more information about creating and applying labels, see the Repository Guide.

To create a label and apply it to the deployed objects in the source repository:

1. Create a label to associate each object with the source folder and repository as well as the target folder and repository. Identifying the target folder and repository can be useful if you deploy objects to multiple repositories.
For example, you can create a label name similar to the following:
SRC_REP_Folder1_TO_TARG_REP1_Folder1_Deployed
The label associates the object with the source repository and folder as well as the target repository and folder. It also identifies the objects as deployed.

2. Apply the label to all deployed objects in a selected folder using the Label Wizard in the Repository Manager.

3. Select the Move Label option when you apply labels. This allows you to move the label from one version of an object to another.

4. Select Label all children when you apply labels. This ensures that the label is applied to non-reusable child objects.

When you create the query to identify objects to deploy, you also need to add a parameter to locate dependent child objects.

**Step 2. Create a Query to Identify Objects to Deploy**

After you label the objects you initially deployed, you create a query to identify the objects that do not use the label.

To create a query to identify objects to deploy:

1. Create a query to locate the objects you need to deploy.
   Use a naming convention to indicate the source folder and repository as well as the target folder and repository.
   For example, the following query indicates the source and target repositories:
   QRY_SRC_REP_Folder1_TO_TARG_REP1_Folder1
2. Use the following parameters in each query to specify objects for deployment:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folder is equal to Folder1.</td>
<td>Specifies the folder in the source repository that you want to synchronize.</td>
</tr>
<tr>
<td>Label is not equal to SRC_REP_Folder1_TO_TARG_REP1_Folder1_Deployed.</td>
<td>Allows you to determine which objects do not use the specified label.</td>
</tr>
<tr>
<td>Latest status is equal to Latest checked in.</td>
<td>Allows you to fetch the most recent version of objects. If you do not specify that you want the latest version of the object, you might deploy earlier versions of the object.</td>
</tr>
<tr>
<td>Reusable status is one of Non-reusable, Reusable.</td>
<td>Specifies that a query must include reusable and non-reusable objects. By default, queries only return objects that are reusable.</td>
</tr>
<tr>
<td>Version status is one of Deleted, Not deleted.</td>
<td>Specifies that a query must include deleted and non-deleted objects. By default, queries only return objects that are not deleted.</td>
</tr>
</tbody>
</table>

**Note:** Verify that any dependencies you selected when you applied the label match the dependencies you select in the query. For example, if you selected child dependencies when applying the label, you must specify both reusable and non-reusable objects in your query to ensure that the query returns non-reusable child objects.

**Step 3. Associate the Query with a Dynamic Deployment Group and Deploy Objects**

After you create a query for the repository and folder pairing, you associate the query with a dynamic deployment group.

When you create a dynamic deployment group, you associate a query with the deployment group. When you run the dynamic deployment, the Repository Agent uses the query to identify objects for deployment. Each object that meets the criteria specified in the query is deployed to the target repository.

**To associate a query with a dynamic deployment group:**

1. Create a dynamic deployment group.
   Use a naming convention to indicate the source and target folder and repository combination. The following example shows a deployment group used to deploy objects from Folder1 in the SRC_REP repository to Folder1 in the TARG_REP1 repository: Deploy_SRC_REP_Folder1_TO_TARG_REP1_Folder1
2. Associate the query with the dynamic deployment group.
   For example, you associate the query, QRY_SRC_REP_Folder1_TO_TARG_REP1_Folder1 with the deployment group, Deploy_SRC_REP_Folder1_TO_TARG_REP1_Folder1.

   When you copy the dynamic deployment group, the Repository Agent uses the criteria in the query to select objects for deployment. It then deploys the objects to the target repository.

3. Use the Copy Wizard to deploy objects to the target repository.
   For more information about how to deploy objects to target repositories, see the PowerCenter Repository Guide.

**Step 4: Apply the Label to Objects for Each Deployment**

To maintain synchronization, you must apply the label to objects in the source folder and repository each time you run a dynamic deployment. This ensures that you deploy new objects or modified objects the next time you run a deployment group.

When you deploy objects to the target repository, apply the deployment label to deployed objects from the Copy Wizard Group Deployment dialog box. This ensures that you apply the label to all deployed objects so that the next time you run the query to locate modified objects, it can locate updated objects. For more information about copying deployment groups, see the PowerCenter Repository Guide.

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