Configuration Guide for CTS+
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1 About this guide

Use this guide to configure Data Services to transport objects from one system to another using SAP NetWeaver CTS (change and transport system).

This guide provides steps to configure Data Services and CTS to transport Data Services objects. Use the Data Services and SAP NetWeaver CTS documentation as additional resources.

You must be an administrator and have required CTS permissions to perform the tasks in this guide. The tasks can be performed in any order. Some of the tasks have prerequisite tasks, which we include in the instructions. We have arranged the topics in this guide in an example workflow order:

- Create the Data Services landscape
- Set up for export
- Set up for import
- Performing the entire transport

Related Information

Additional resources [page 7]
2 About Enhanced Change and Transport System (CTS+)

The CTS in SAP Solution Manager or SAP NetWeaver transports ABAP objects from source system to target system for lifecycle management. Enhanced CTS enables CTS to also transport non-ABAP objects including Data Services objects.

If you already use CTS in your Solution Manager or NetWeaver system, save time by using CTS to transport Data Services objects.

If you don’t have access to CTS through Solution Manager or NetWeaver, continue to use Object Promotion for Data Services lifecycle management.

**Note**

For more information about Data Services Object Promotion, see the Lifecycle Management section in the Administrator Guide.

Enhanced CTS is available in specific software versions. For a list of required SAP Solution Manager, SAP NetWeaver, and SAP Data Services versions, see Prerequisites [page 6].

**Terminology: CTS or enhanced CTS**

We refer to enhanced CTS, or CTS+, as the tool that transports non-ABAP objects from one system to the next. However, for simplicity in this guide, we use the term CTS to mean:

- The system where the transport landscape is configured.
- The system that transports ABAP and non-ABAP objects.

**Related Information**

Additional resources [page 7]
Using SAP Data Services with CTS+ [page 8]
3 Prerequisites

Ensure that your system setup contains the following prerequisites before you proceed with the configuration process in this guide.

- Install or upgrade to SAP Data Services 4.2 Support Package 6, Patch 1 or higher.
- Install or upgrade to the required version of SAP Solution Manager or SAP NetWeaver as listed in the following table.

Table 1: Versions

<table>
<thead>
<tr>
<th>System</th>
<th>CTS Plug-In source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP Solution Manager 7.2 and higher</td>
<td>CTS Plug-In is already contained in the standard delivery.</td>
</tr>
<tr>
<td>SAP NetWeaver 7.4 Support Package 9 and lower</td>
<td>Obtain and install the applicable support package for CTS Plug-In.</td>
</tr>
<tr>
<td>SAP NetWeaver 7.4 Support Package 10 or higher</td>
<td>CTS Plug-In is already contained in the standard delivery.</td>
</tr>
</tbody>
</table>

**Note**

With older versions of NetWeaver (7.4 Support Package 9 and lower), you must obtain and install the applicable support package that contains the CTS Plug-In. For newer versions of Solution Manager and NetWeaver, the CTS Plug-In is already contained in the standard delivery.

Additional requirements:

- Implement the applicable requirements documented in SAP Note 2236955, “CTS+ and HTTP-based Deployment Offering: Requirements”, before you use an HTTP-based deployment.
- Learn about installing or updating SAP CTS Plug-In 2.0 by reading SAP Note 1665940.
- Transport any promotion management overrides to your target systems before you transport (export or import) any objects from Data Services. (Promotion management overrides [page 38]).
## Additional resources

The SAP Help Portal contains a library of documentation about using CTS as listed in the following table.

**Table 2: Resources**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installing/Updating SAP CTS Plug-In 2.0</td>
<td><a href="http://help.sap.com/saphelp_nw74/helpdata/en/66/a77ac24d41471c96ea923d6de40a50/content.htm">SAP Note 1665940</a></td>
</tr>
<tr>
<td>Enhancement for non-ABAP systems in CTS</td>
<td><a href="http://help.sap.com/saphelp_nw74/helpdata/en/66/a77ac24d41471c96ea923d6de40a50/content.htm">SAP Note 1003674</a></td>
</tr>
<tr>
<td>Central Release Note for Software Logistics (SL) Toolset 1.0</td>
<td><a href="http://help.sap.com/saphelp_nw74/helpdata/en/66/a77ac24d41471c96ea923d6de40a50/content.htm">SAP Note 1563579</a></td>
</tr>
<tr>
<td>Security for the Enhanced Change and Transport System (CTS+)</td>
<td><a href="http://help.sap.com/saphelp_nw74/helpdata/en/66/a77ac24d41471c96ea923d6de40a50/content.htm">http://help.sap.com/saphelp_nw74/helpdata/en/66/a77ac24d41471c96ea923d6de40a50/content.htm</a></td>
</tr>
</tbody>
</table>
5 Using SAP Data Services with CTS+

You should know the following facts before you start to transport (export and import) Data Services ATL and XML files using CTS.

- Before transport, associate each job with a project in Data Services.
- Source and target repositories must use the same version of Data Services.
- The CTS system supports exporting and importing in different Business Objects Enterprise environments.
- When you choose a central repository for your source repository, choose the option *Latest Version* when you attach objects to the transport request.
- You cannot include a passphrase for exporting and importing objects.

Data Services object types

You can transport the following Data Services object types:

- Projects
- Jobs
- Workflows
- Dataflows
- File formats
- Functions
- Datastores

Additionally, you should know the following facts about every top-level Data Services object that you transport:

- All object dependents are transported except datastores. Datastores cannot be exported as part of a dependency.
- All objects and their dependents are transported in an ATL file plus generated manifest files.

5.1 About roles and permissions

Users must have the correct roles and permission assignments to perform the processes related to configuring CTS for Data Services.

Data Services required permissions

Configure export and import
- Administrators and users who are in the administrators group, have full access to configure the transportation or a shared location for export and import configuration.
- Nonadministrators can view the export and import configuration.
- Administrators and users who are in the administrators group, can modify the export and import configurations.

**Export Data Services objects with CTS**

- Users who have full access control to a repository can export any objects to a configured location for that repository.
- Users with view access to a repository cannot export objects.

**CTS requirements**

- An authorized CTS and Data Services user does not need the same user ID for both applications.
- If an authorized CTS and Data Services user does not have the same user ID for both applications, the user may need to enter applicable CTS login credentials when they access the Transport Organizer from Data Services.

**Note**

If an authorized CTS and Data Services user has SSO configured, CTS may allow access to the Transport Organizer from Data Services regardless of whether the user has the same or different user credentials.

- Authorized users should have the same authorizations as the CTS-delivered role SAP_CTS_PLUS.

**Caution**

Do not use the SAP_CTS_PLUS role directly. Instead, use it as a template and copy it to your own role using Z_*.

- Users should have the authorization to execute web services; at a minimum, the EXPORT_CTS_WS or SAP_BC_WEBSERVICE_CONSUMER roles.
- Assign the appropriate roles or permissions in the user management of Application Server ABAP of the CTS system.

### 5.2 Data Services objects to transport

Transport SAP Data Services top-level objects and their dependents from one system to another system using CTS.

Transport the following Data Services objects, and their dependents, using CTS:

- Projects
- Jobs
- Workflows
Datastores

Restriction

**Datastores** You can transport datastores and their dependents, however datastores are not exported as part of an object dependency. Additionally, for security reasons, the datastore password is not exported with a datastore. A datastore in development or test should be different from ones in production. To avoid errors, export a datastore object separate from other Data Services objects. After you import a datastore to production, an administrator must reconfigure the datastore. This behavior prevents users from overwriting existing jobs that use the datastore.
6 Create the Data Services landscape

There are several tasks to perform when you create your Data Services system landscape.

To create a Data Services landscape, do the following:

- Make Data Services a known application type in CTS and use the unique identifier BODS.

  **Note**
  
  CTS recognizes only “BODS” as the Data Services application and content.

- Configure a non-ABAP source system in CTS that represents your Data Services development system. Use a unique system identification (SID) code that consists of three alpha-numeric characters.

  **Note**
  
  Learn about creating SID codes in About unique system identification (SID) codes [page 13].

- Define a transport strategy for creating and releasing a transport request.

The system landscape in our scenario is small because it contains only three systems. The following diagram shows a Data Services system landscape that includes one source and two target systems. We assigned SID codes BD1, BT1, and BP1 to our systems. You use your own SID code system to name the systems in your landscape.

CTS can handle large landscapes that consist of many systems.

<table>
<thead>
<tr>
<th>Data Services SID</th>
<th>Description</th>
<th>Source/Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD1</td>
<td>SAP Data Services development system. Content is exported from here.</td>
<td>Source</td>
</tr>
<tr>
<td>BT1</td>
<td>SAP Data Services test system. Content is imported from CTS to the test system.</td>
<td>Target</td>
</tr>
</tbody>
</table>
### Related Information

- Configuring Data Services as an application type in CTS [page 14]
- Configuring the development system [page 15]
- Configuring the transport strategy [page 15]

### 6.1 Scenario

Model your SAP Data Services system landscape like you would any other object promotion system. To use enhanced CTS, you set up your landscape in the SAP Solution Manager or SAP NetWeaver system that contains the CTS system.

A typical Data Services landscape includes three systems: Development, test, and production.

The following diagram shows the systems that are involved in transporting Data Services objects with CTS. The diagram includes one source and one target system.
The diagram shows that there are systems from which Data Services exports objects, and other systems to which Data Services imports objects.

The TMS that you configure is not limited to one source and one target system. For example, you can have several systems in a row or more than one target system at once.

For the set-up described in this guide, you use CTS that is part of an SAP Solution Manager or SAP NetWeaver system that includes the CTS Plug-In. You export Data Services objects from Data Services Management Console. Management Console adds the content to a transport request and then sends the request to CTS. After export, you can release the transport request or set CTS to release it automatically, based on your transport strategy configuration. You then start the import process. During import, the Deploy Web Service Client sends Data Services content to the Deploy Web Service UI Client. The Deploy Web Service UI Client imports the content to the Data Services target system. CTS retrieves the import results, and you can view export and import information in Management Console history logs and in the Transport Organizer Web UI.

Related Information

Additional resources [page 7]
Create the Data Services landscape [page 11]
About unique system identification (SID) codes [page 13]

6.2 About unique system identification (SID) codes

Assign a unique system identification (SID) code to each Data Services system in your landscape.

We recommend that you create SID guidelines before you create the Data Services landscape. This ensures that the codes are unique and that your users create unique codes in the future. Consider the following SID code requirements when you create your guidelines:

- SID codes must be unique within your transport domain.
- SID codes can be shared among different applications. For example, if the applications are running on the same SAP NetWeaver Application Server JAVA instance.

Unique codes provide a clear understanding for your users when they identify transport routes in the Transport Organizer Web UI.

6.3 CTS and Data Services Management Console

SAP Data Services Management Console Administrator contains tools to configure Data Services for CTS exporting and importing processes, and tools to view logs and history information after those processes are complete.

Access these tools in Management Console Administrator by selecting Administrator Object Promotion.
Table 4: Object Promotion tools for CTS

<table>
<thead>
<tr>
<th>Tools</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export Configuration</td>
<td>Complete the options in the CTS tab to connect to the CTS Export Web Services.</td>
</tr>
<tr>
<td>Import Configuration</td>
<td>Specify the target repository for the SAP target systems.</td>
</tr>
<tr>
<td>Promotion History</td>
<td>View information about all the completed export and import histories of Object Promotion, including CTS-related operations.</td>
</tr>
</tbody>
</table>

You can access the Transport Organizer Web UI through the Confirmation page. After you release a transport request in Management Console, a Transport Request ID link appears in the Confirmation page. Click the link to open the Transport Organizer.

**Related Information**

Configuring an HTTP destination for the target system [page 23]
Configuring the target repository in Management Console [page 22]

### 6.4 Configuring Data Services as an application type in CTS

Make Data Services known to CTS by creating Data Services as a non-ABAP application type in CTS with the unique application identifier “BODS”.

1. Log in to your CTS system Domain Controller and enter transaction code STMS.
2. In System Overview, select Extras ➤ Application Types ➤ Configure ➤
   The Change View window opens showing your current applications and associated transport domains. Check to see if the application type “BODS” is already listed. If it is not listed, continue creating a new entry.
3. Select New Entries.
4. Enter BODS for the unique ID for the application in Application Type.
   “BODS” is the unique identifier for Data Services. The system relates Data Services content and Data Services as an application with “BODS”.
5. Enter a Description. For example, SAP Data Services and CTS+ integration.
   This information is required so your users have details about the application type.
6. Enter information about how to contact your support organization in Support Details. For example, http://service.sap.com (ACH:EIM-DS) where EIM-DS is the appropriate support component.
   This information is required so your users know who to contact in case of issues.
7. Save and click Yes for the prompt to distribute the new application type through your landscape.
8. Click Back to return to the list of application types.
   The new application type BODS is now included in the list of application types.
6.5 Configuring the development system

Define your SAP Data Services development system (BD1) as a source system and activate the Transport Organizer.

1. Log in to your CTS system Domain Controller.
2. Enter transaction STMS and choose System Overview.
3. Choose SAP System > Create > Non-ABAP System.
4. Enter the SID for the development system (BD1 in our scenario) in System.
5. Provide details about the development system in Description.
6. Select Activate Transport Organizer under the Source System Settings group.
7. Select the applicable client in Client.
8. Click Save.

Related Information

Configuring the transport strategy [page 15]

6.6 Configuring the transport strategy

The transport strategy defines how a transport request is created and if the request should be automatically released or remain open after having ATL files attached to it.

Before you follow these steps, configure the development system (BD1) so that it appears in the development system list in CTS.

1. Log in to your CTS system Domain Controller.
2. Enter transaction STMS and choose System Overview.
3. Find your development system in the list and double-click it to open the Change TMS Configuration window.
4. Select the Transport Tool tab and switch to Edit mode.
5. Check the existing list for the following parameters: WBO_GET_REQ_STRATEGY and WBO_REL_REQ_STRATEGY.
   - If the parameters are in the list, make sure that the values are entered with the first letter capitalized. For example, if the value is “tagged”, change it to “Tagged”. Stop here and skip the remaining steps.
   - If the parameters are not in the list, add them by continuing with the next steps.
6. Select any row in the existing list of parameters and select the Insert Row icon.
7. Click F4 to display a list of available parameters.
8. Select the WBO_GET_REQ_STRATEGY and click the green check-mark icon.
9. Set a valid value for the parameter in the Value column. Ensure that the value is set with the first letter capitalized.
10. Add the `WBO_REL_REQ_STRATEGY` parameter in the same manner as you added the `WBO_GET_REQ_STRATEGY` parameter.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Valid values</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>WBO_GET_REQ_STRATEGY</code></td>
<td>Controls how a transport request is created.</td>
<td>Tagged, Smart, Create</td>
</tr>
<tr>
<td><code>WBO_REL_REQ_STRATEGY</code></td>
<td>Controls how a transport request is released.</td>
<td>Manual, Automatic</td>
</tr>
</tbody>
</table>

**Tip**

If you choose the following combination of values for the parameters, you can attach as many objects as you want when you transport the objects:
- `WBO_GET_REQ_STRATEGY`: Tagged or Smart
- `WBO_REL_REQ_STRATEGY`: Manual

**Related Information**

Configuring the development system [page 15]
7 Export configuration

The SAP Data Services development system exports objects by attaching them to a CTS transport request. The Data Services development system (source system) needs CTS connection information so that it can remotely connect to the CTS.

You define how to remotely connect to the CTS communication system in the Data Services development system. The correct system identification (SID) code has to be forwarded to the CTS system whenever a transport request is needed or created. CTS needs system information to create or find a transport request. The name of a transport request begins with the SID of the respective development system. The SID uniquely identifies the transport route.

To configure CTS for export you need to create and configure a binding for the Export Web Services. The binding creates the information required for your Data Services development system to communicate with CTS.

Related Information

SAP Help Portal: Configuring a service provider

7.1 Activating and configuring CTS Export Web Service

Activate and configure the CTS Export Web Service using the SAP NetWeaver SOA Management Web tool.

i Note

The following steps take you into the SOA Manager and the Web Service Configuration page. Newer versions of SAP NetWeaver include changes to the navigation of the Web Service Configuration page, and changes to SOA Manager functions. We have documented the process of activating and configuring the CTS Export Web Service based on an older version of SAP NetWeaver. That is because you may need to use older versions to make changes to existing web service settings that you may have created using older versions.

For an updated version of these steps, and for more details, see Configuring a Service Provider on our help portal at http://help.sap.com/saphelp_nw73ehp1/helpdata/en/33/06820d9d174c2884576bd78ac5629d/frameset.htm.

The following steps are based on SOA Management in SAP NetWeaver 7.0 Enhancement Package 2, Support Package Stack 10. The SOA Management functions have changed as of SAP NetWeaver 7.02 Support Package 8 and 7.30 Support Package 3. Updated documentation for this process is available in the SAP Library documentation. For more information about the changed SOA Manager functions, see SAP Note 1575707.

1. Log in to your CTS Communication system and enter transaction code SOAMANAGER to open the SOA Manager.
Make sure that you use the CTS system that is on the Data Services development system client.

2. Enter your SAP NetWeaver log in information if required.

3. Open the Service Administration tab and click the Web Service Configuration link.

4. Enter search criteria for the Export Web Service EXPORT_CTS_WS.

   The Search Results lists the service definitions for EXPORT_CTS_WS.

5. Select the EXPORT_CTS_WS row and click Apply Selection to open the Details of Service Definition pane.

6. Open the Configurations tab.

   All of the services and bindings for the EXPORT_CTS_WS service appear in a table.

7. To edit an existing binding, select the binding row and click Edit. To create a new binding, click Create.

   The Configuration of Web Service pane opens.

8. Open the Provider Security tab.

9. Set the options that are applicable to your security requirements.

10. Open the Transport Settings tab and set the options in the Transport Binding group that are based on your requirements.

    **Note**
    
    For easier service access, we recommend that you also define the binding alias using Alternative Access URL. To ensure unique alternative access URLs we recommend that you add the client in which you are logged on to the alias.

11. Click Save.

    **Note**
    
    If you encounter problems when using the web service, find error details in the Application Log using transaction SLG1 for object CTSPLUS. To view the logs, log on to the system in the client that hosts the Export Web Service.

### Related Information

- Connecting Data Services to CTS Export Web Service [page 18]
- Configuring the transport strategy [page 15]

### 7.2 Connecting Data Services to CTS Export Web Service

Connect SAP Data Services to the CTS Export Web Service so that Data Services can export objects from the repository to the CTS system.

To perform these steps, you should have the authorizations of the roles SAP_CTS_PLUS and SAP_BC_WEBSERVICE_CONSUMER or similar.
Data Services Management Console works as a Web Service client. Management Console consumes the upload (export) of ATL or XML files from the Data Services development system repository to the CTS system.

CTS provides standard SOAP Web Services for integrating CTS with various consumers. The SOAP Web Service runs on the application server (AS) ABAP stack.

1. Log in to Management Console and open Administrator.
2. Select \Administrator \Object Promotion \Export Configuration \.
3. Open the CTS tab and click Add.

The CTS Configuration tab opens.

4. Complete the following options in the Enter CTS General configuration information below group.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>CTS configuration name</td>
</tr>
<tr>
<td>Host</td>
<td>CTS system to which you want to connect</td>
</tr>
<tr>
<td>Port</td>
<td>CTS system port number</td>
</tr>
<tr>
<td>System ID</td>
<td>System identification (SID) code</td>
</tr>
<tr>
<td>Path Prefix</td>
<td>WSDL prefix of Web Services</td>
</tr>
</tbody>
</table>

5. In the Enter authentication configuration information below group, select Yes or No for Use SSL protocol.
6. Select the Authentication Type that is configured in CTS from the dropdown list.
7. Enter the related CTS User Name and Password.
8. Optional. Complete the options in the Enter proxy configuration information below group for CTS.
9. Select a repository from the Available Repositories list and click the right arrow to add it to the Associated Repositories list.

For exporting, you can choose local and central repositories from the list as applicable. You may select more than one repository to associate with this configuration.

10. Click Test.

The software verifies the following during testing:
- CTS server information
- CTS authentication
- CTS proxy authentication if completed
- Associated repositories are available and active

11. Click Save after “Test Connection is Successful” appears at the top of the window. This may take a few seconds.

The configuration that you just added appears in the CTS tab in the Export Configuration node.

**Related Information**

Activating and configuring CTS Export Web Service [page 17]
7.3 Activate services in Transport Organizer

CTS provides the Transport Organizer for managing transport requests, obtaining details about transport requests, and attaching objects to transport requests.

To use the Transport Organizer Web UI, activate the Internet Communication Framework (ICF) services using transaction SICF.

The following diagram shows the Transport Organizer in the CTS system.

![Activation Diagram]

Activate the following ICF services:

Table 6:

<table>
<thead>
<tr>
<th>ICF service</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS_ORGANIZER</td>
<td>Enables you to run and use the Transport Organizer Web UI application.</td>
</tr>
<tr>
<td>CTS_OBJECTLIST_BROWSER</td>
<td>Enables you to use the Object List Browser to see a list of objects attached to a transport request.</td>
</tr>
</tbody>
</table>

**Note**

The Transport Organizer Web UI is an ABAP Web Dynpro application. Web Dynpro may update the Transport Organizer Web UI from time to time without our knowledge. Therefore, refer to the help portal for the most recent instructions to activate the ICF services. [http://help.sap.com/saphelp_nw74/helpdata/en/e5/998566c2174196a12b72e7c7af51e7/frameset.htm](http://help.sap.com/saphelp_nw74/helpdata/en/e5/998566c2174196a12b72e7c7af51e7/frameset.htm)
Restriction

Initially, all of the ICF services in CTS are inactive for security reasons. If you have already installed and have been using CTS, the required services may or may not be activated. You might receive error messages when you test the service after activation. If so, read the error messages carefully and activate the services named in the error messages. For more information about this issue, see SAP Note 517484.
8   Target repositories for import systems

Set up a target repository and an HTTP destination for each SAP Data Services target system that you create in your system landscape.

The target repository is the location where CTS sends the Data Services objects to be imported. CTS uses the repository’s HTTP address to import the objects into the Data Services target system securely.

In our scenario, we set up a specific repository for the BT1 (test) and BP1 (production) Data Services systems.

When you designate the target repository in Management Console, the software automatically generates a path prefix for the repository. You need the path prefix value to create an HTTP destination for the repository.

The following diagram shows an HTTP connection between the CTS system and a Data Services target system.

8.1   Configuring the target repository in Management Console

Set up a specific repository for each target system in your landscape.

1. Log in to Data Services Management Console Administrator.
2. Select Administrator ➔ Object Promotion ➔ Import Configuration ➔ in the file tree on the left.
3. Open the CTS tab and select Add.
   The CTS Configuration tab opens.
4. Select a repository from the Repository dropdown list under Choose the repository for .ATL import.
The list includes only local repositories for importing ATL and XML files.

5. Click Save.

The repository that you just added appears in the CTS tab.

**Remember**

*Path Prefix.* Copy the path prefix listed with the repository in the CTS tab. Enter the path prefix when you configure the HTTP destination in CTS. The path prefix indicates the location of the repository. For example: /DataServices/im/slp/\<generated_folder_name>/ds.

**Related Information**

[Configuring an HTTP destination for the target system](page 23)

### 8.2 Configuring an HTTP destination for the target system

Create an HTTP destination on the CTS system for every SAP Data Services target system.

You need the path prefix value to complete these steps. Management Console generates the path prefix when you configure the target repository.

1. Log in to the CTS (Communication) system and enter transaction SM59 to open the **Configuration of RFC Connections** window.

2. Click the **HTTP Connections to External Server** node to highlight it and click the **Create** icon.

   The **RFC Destination** window opens showing the **Connection Type** as **HTTP Connection to External Server**.

3. Enter a name for the remote function call destination in **RFC Destination**. In our scenario, we enter **BT1_DESTINATION** for the SAP Data Services test system, and **BP1_DESTINATION** for the production system.

   **Tip**

   The system automatically converts the name into upper case when you save the destination. Therefore, when you define the target system later in this guide, enter it in upper case.

4. Open the **Technical Settings** tab and enter the details of the target system as listed in the following table.

   **Table 7:**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Host</td>
<td>Host name of your Data Services target system.</td>
</tr>
<tr>
<td>Service No</td>
<td>HTTP or HTTPS port number.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Path Prefix</strong></td>
<td>Path prefix value from Management Console for the target repository. For example, /DataServices/im/slp/ &lt;generated_folder_name&gt;/ds.</td>
</tr>
</tbody>
</table>

**Note**

Obtain the path prefix from the steps in Configuring the target repository in Management Console [page 22].

5. Open the Logon & Security tab and configure the logon to the Data Services target system as applicable.

The user information that you enter here must be for a user who has the authorization to process SAP Data Services imported content. Only Data Services users with Administrator or Administrator group rights have authorization.

**Note**

This user name and password becomes the default for this target system when the content import process is started in your CTS system.

6. Click Test to test the connection. After a successful test connection, click Save.
9 Configuring the import systems

Define SAP Data Services test and production systems as import (target) systems in the “BODS” application where you defined your Data Services development system.

The test and production systems in our scenario (BT1 and BP1) are the import (target) systems. The test system receives changes from the development system (BD1). The production system also receives changes from the test system (BT1) after all tests are satisfactory. Therefore, set both the test and production systems as target systems.

1. Log in to your CTS system (Domain Controller).
2. Enter transaction “STMS” and choose System Overview.
3. Choose SAP System Create Non-ABAP System.
4. Provide details about the non-ABAP system in Description.
5. Select Activate Deployment Service in the Target System Settings group.
6. Select Other for Method(s).

Ensure that all of the other options for methods are not checked.
7. Select the Save icon. Select Yes for the message asking to distribute the configuration immediately.
8. Select New Entries in the Change View window to define the deployment method for your system.
9. In the New Entries: Details of Added Entries window, perform the following steps:
   a. Put your cursor in the Application ID field, press F4, and select BODS.
      “BODS” is the application type that you defined when you created your Data Services landscape in Configuring Data Services as an application type in CTS [page 14].
   b. Select HTTP-based Deployment (application-specific) from the Deploy method dropdown list.
   c. Enter the HTTP destination.
      The HTTP value is the same as the value that you configured for this system when you configured an HTTP destination in Configuring an HTTP destination for the target system [page 23]. Remember to enter the destination in all capital letters.
10. Click the Save icon. Select Yes for the message asking to distribute the configuration immediately.

The Display View opens showing the application types assigned to the current import system listed under CTS: System details for handling of application types. Verify that the transport domain “BODS” is listed in the Application ID column.
11. Click Back to return to the system.

You can exit the system or perform another task. For example, in our scenario, after you create BT1 as a target for the test system, you would create BP1 as a target for the production system.

Related Information

Configuring an HTTP destination for the target system [page 23]
Configuring the target repository in Management Console [page 22]
10  Transport routes

Connect all of the SAP Data Services systems that you previously created with a transport route. The transport route provides the path that your objects take through the transport process.

You create a transport route in the CTS system Domain Controller. The Transport Management System has a graphical representation of each of your systems. The systems are labeled with the SID codes that you assigned to each system. The following diagram represents the transport route for the systems in our scenario.

![Transport route diagram](image)

**Related Information**

Defining transport routes [page 27]

10.1  Defining transport routes

Define the transport routes to connect all of the systems in your Data Services landscape.

Before you can follow the steps to define your transport routes, complete the following tasks:

- Configuring the development system [page 15]
- Configuring the import systems [page 25]
- Target repositories for import systems [page 22]

**Note**

CTS can handle large landscapes that consist of many systems. The system landscape in our scenario is considered small because it contains only three systems.

For more information about transport routes, see “Configuring transport routes” on SAP help portal at [http://help.sap.com/saphelp_nw74/helpdata/en/44/b4a1df7acc11d1899e0000e829fbbd/frameset.htm](http://help.sap.com/saphelp_nw74/helpdata/en/44/b4a1df7acc11d1899e0000e829fbbd/frameset.htm).

1. Log in to your CTS system Domain Controller.
2. Enter transaction **STMS** and click the **Transport Routes** button.

   The upper row of the **Display Transport Routes** window opens showing your systems, including the Data Services systems that you just created. Notice that the systems that appear in the upper row of systems are not connected yet.
3. Click the Edit mode.
4. Click the box that represents the Data Services export system and then click the transport route work area in the lower panel of the window.
   Your Data Services export system box appears in the transport route work area in the lower panel.
5. Click the box that represents the Data Services import system from the upper row and click in the transport route work area to add it to the work area. Continue in this manner until you have added all of the systems for this transport route.
   The transport route work area contains all of the boxes that you added. The boxes are not connected yet.
6. Click the Add Transport Route.
   Your mouse pointer appears as a pencil.
7. Draw a line with your mouse from the export system to the first import system. A line appears connecting the two systems.
   The Create Transport Route window opens.
8. Select Consolidation for the first connection between the export and the import system.
   A consolidation route ensures that all transport requests that are released at the source of the transport route are automatically added to the import queue of the target system route.
9. Browse for an existing consolidation transport layer or enter a name in the Transport Layer box. The name must begin with the letter Z. For example, ZDST.
   i  Note
   This transport layer is your standard transport layer, and it is the default for any non-ABAP transport requests.
10. Select the green check mark icon at the bottom.
    The Create Transport Layer window opens showing the transport layer name in the Transport layer box.
11. Enter a brief description about the transport layer in Short Description.
    If you chose an existing transport layer, the description is already completed.
12. Select the green check mark icon at totbottom.
    The software creates the transport route and opens the Change Transport Routes window.
13. Draw a line with your mouse pointer from the first source system to the next source system in your transport route.
    The Create Transport Route window opens.
    Ensure that the correct SID code appears in the Source system box and the Delivery system box.
    A delivery route ensures that all transport requests that are imported into the source system route are automatically added to the import queue of the target system route.
15. Click the green check mark.
16. Continue connecting any remaining source systems in this manner. When you are finished, click Save.
17. Click Yes to the message verifying that you want to distribute and activate the configuration across all systems.

Your transport route appears in the transport route work area.

Related Information

Using SAP Data Services with CTS+ [page 8]
Create the Data Services landscape [page 11]
Export configuration [page 17]
Target repositories for import systems [page 22]
Configuring the import systems [page 25]
11 Exporting and attaching objects to transport request

Export Data Services object files using the Data Services Management Console Administrator. After export, add an object file to a transport request and view the result in the object list of the Transport Organizer Web UI.

1. Log in to Management Console and open the Administrator application.
2. Select Administrator ➔ Object Promotion ➔ Object Promotion.
3. In the Object Promotion tab select Export objects from the Select an object dropdown list. Click Next.
4. In the Source Repository and Object Type tab select the applicable repository from the Select Repository dropdown list.
   The repository can be a local or central repository.
5. Select the applicable object type from the Type dropdown list. Click Next.
   A tab opens that is labeled with the repository name and the object type that you chose. For example, if you chose a repository named mssql, and you chose Project for the object type, the tab is named mssql-Project.
   The tab lists all objects in the selected repository of the type you chose. For example, if you chose Project for object type, the tab lists all projects in the chosen repository. Each object has columns of information such as Version, Check-in User, Last Modified, Exported, and Description.
6. If you choose a central repository, select Latest version from the Get dropdown list.
7. Select the applicable CTS export configuration from the Export over dropdown list.
8. Click Export.

A Confirmation tab opens showing the current status.

<table>
<thead>
<tr>
<th>Status display</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exporting</td>
<td>Appears after you have clicked Export and persists until export completes.</td>
</tr>
<tr>
<td>Success</td>
<td>Appears when export has completed successfully.</td>
</tr>
<tr>
<td>Warning</td>
<td>Appears when there are warnings connected to the export.</td>
</tr>
<tr>
<td>Fail</td>
<td>Appears when the export failed.</td>
</tr>
</tbody>
</table>

To view details for warnings and errors, click the view log link next to the status.

9. When the export has successfully completed, a CTS Transport Request ID appears as a link that opens the Transport Organizer UI.

   You may need to enter CTS login information before the Transport Organizer opens. Whether you enter your CTS login credentials is based on how you have set up your credentials.
To view the history log file: After the transport completes, select \(\text{Object Promotion} \rightarrow \text{View History} \) and open the \textit{Exported} tab. Find the row that contains the specific export and click \textit{view log} in the \textit{Status} column to open the log file.

When you configured your transport strategy, you set the WBO\_GET\_REQ\_STRATEGY and WBO\_REL\_REQ\_STRATEGY parameters. These parameter settings determine whether CTS automatically releases transport requests or whether you manually release transport requests. Therefore, when you open the Transport Organizer, you may need to release the request manually or the request may already be released.

**Related Information**

- Configuring the transport strategy [page 15]
- Releasing transport requests [page 32]
- Transport Organizer Web UI overview [page 36]
12 Releasing transport requests

Release the transport request so that the SAP Data Services objects can be imported into the source system.

Before you can perform these steps, export Data Services objects and attach them to a transport request.

If you did not configure CTS to release transport requests automatically, manually release the transport request by following these steps.

1. In the Data Services Management Console Confirmation tab, click the CTS Transport Request ID link.
   
   The request ID appears as a link that opens the transport request in the Transport Organizer. The link appears only when the export is completed without errors. You may need to enter CTS login information before the Transport Organizer opens. Whether you enter your CTS login credentials is based on how you have set up your credentials.

   **Note**
   
   You can also obtain the transport request ID by looking at the export log file in Management Console.

   The Transport Organizer opens.

2. Select the applicable transport request in the upper pane of the Transport Organizer and click the Release icon.

   The transport request releases. After it is released, you cannot change the request and it is no longer listed in the list of modifiable requests in the Transport Organizer.

Related Information

Transport Organizer Web UI overview [page 36]
13 Importing transport requests

A released transport request is automatically added to the import queue of the target system where you can trigger the import.

Follow these steps to import your released transport requests that are listed in the import queue. For more information about performing imports using the Import Queue Web UI, visit the help portal at http://help.sap.com/saphelp_nw74/helpdata/en/4b/b9a1222f504ef2aa523caf6d22d1c9/content.htm.

**Note**

The Import Queue Web UI is integrated in the SAP NetWeaver 7.4 Support Package 10 and higher standard delivery. It is a part of CTS Plug-In 2.0 Support Package 02 (SL Toolset 1.0 SP05) or higher.

Other related topics on the help portal:
- “Importing Transport Requests with Non-ABAP Objects” at http://help.sap.com/saphelp_nw74/helpdata/en/09/ca0f3a878f46e9a5a32e666131d2ba/content.htm.
- “Starting the Import of All Requests in an Import Queue” at http://help.sap.com/saphelp_nw74/helpdata/en/df/7a4f1a40d4805b46c61a0d53cb4c7/content.htm?frameset=//en/c6/ea253715dfb808e10000009b38f889/frameset.htm&current_toc=/en/4e/1e7f9fedb4582b4a1358ce08b8145/plain.htm&node_id=189&show_children=true#jump68.

1. Log in to your CTS system and enter transaction STMS in the command field.
2. Select the **Import Overview** icon.

   The **Import Overview** window opens.
3. Double-click the target system SID code. For example, in our scenario, we double-click **BT1** or **BP1** as applicable.

   The **Import Queue** window opens listing all of the requests for the system.
4. Import the entire queue or select specific requests to import.
   - To import the entire queue, perform one of the following steps:
     1. Click the **Queue Start Import** icon.
     2. Select **Queue > Start Import**.
   - To import selected requests, perform one of the following steps after selecting the requests to import:
     1. Click the **Requests Import** icon.
     2. Select **Requests > Import**.

   The **Import Transport Request** window opens.
5. Choose applicable options on the **Import Transport Request** tabs as described in the following table.
Table 9:

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Options to specify when you want the import to start</td>
</tr>
<tr>
<td>Execution</td>
<td>Options to specify how you want the transport control program to start</td>
</tr>
<tr>
<td>Options</td>
<td>Additional options for the import</td>
</tr>
</tbody>
</table>

6. Click the green check mark icon in the lower left of the window.
7. Review your settings in the Start Import window. Click Yes to start or schedule the import.

The Import Queue window opens. The Status column indicates that the import is waiting, running, or has reached an end state. When it has reached an end state, the Return Code (RC) column displays the status. Click F5 or the Refresh icon to update the Status or RC column.

When the status in the RC column shows that the import has reached an end state, click the status icon to see a log file. Viewing the log file is especially helpful if the import was not successful.

Related Information

Deployment log-file return codes [page 34]

13.1 Deployment log-file return codes

The Import Queue window contains all applicable requests, each with a Return Code (RC) column and a Status column.

There are four return code symbols that can appear in the RC column when the import has reached an end state.

Table 10: Import queue return codes

<table>
<thead>
<tr>
<th>RC symbol</th>
<th>RC numeric value</th>
<th>End state</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>0</td>
<td>The import has completed successfully.</td>
</tr>
<tr>
<td>❗</td>
<td>4</td>
<td>The import has completed with warnings.</td>
</tr>
<tr>
<td>❌</td>
<td>8</td>
<td>The import did not complete and has errors. A new transport is required.</td>
</tr>
<tr>
<td>❌</td>
<td>12</td>
<td>The import tool has problems. Import the existing transport request after all problems are fixed.</td>
</tr>
</tbody>
</table>
Use the return code symbols to link to more information about the import item:

- Single-click the return code symbol to see the numeric value of the return code, and detailed text for more information about the transport error.
- Double-click the return code symbol to open the Overview of Transport Logs window that contains log information.

The Overview of Transport Logs window displays the transport request ID of the transport request that you opened as a node in a file tree. Expand the transport request to see the SID of the applicable target system. Further expand the SID code to see dates and statuses for the following actions:

- Selection for Import
- Import
- Deployment

Click the icons that appear in front of the nodes in the log. For example, click the icon in front of the Deployment row to open the deployment log in the Log Display window.

**Related Information**

Transport Organizer Web UI overview [page 36]
14 Transport Organizer Web UI overview

Use the Transport Organizer Web UI to work with Data Services non-ABAP transport requests and to obtain additional information about transport requests.

After an export completes, the Confirmation tab in Management Console lists the **CTS Transport Request ID** number. The number is a link that you can click to open the Transport Organizer Web UI.

The **Transport Organizer** window is divided into two panes: Overview and Details.

**Overview pane**

This pane contains the basic settings and current activities, and a list of modifiable transport requests. The transport requests are listed by ID number.

The Overview pane also contains various options for administering your transport requests. There are several columns of information including a **Status**, **Owner**, and **Description** column. You can select the row that contains your transport request ID and click the **Release** icon in the toolbar to release the transport request.

**Details pane**

This pane contains tabs with detailed information about the transport request that you select in the **Overview** pane.

Table 11: Details pane tabs

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Properties</strong></td>
<td>Properties for the selected transport:</td>
</tr>
<tr>
<td></td>
<td>● Description</td>
</tr>
<tr>
<td></td>
<td>● CTS Project ID</td>
</tr>
<tr>
<td></td>
<td>● Target</td>
</tr>
<tr>
<td></td>
<td>● Source Client</td>
</tr>
<tr>
<td></td>
<td>● Owner</td>
</tr>
<tr>
<td></td>
<td>● Status</td>
</tr>
<tr>
<td></td>
<td>● Last Change Date/Time</td>
</tr>
<tr>
<td><strong>Attributes</strong></td>
<td>CTS attributes that are assigned to the transport request</td>
</tr>
<tr>
<td><strong>Object List</strong></td>
<td>Objects that are contained in the transport request</td>
</tr>
</tbody>
</table>
### Tab Description

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs</td>
<td>Distribution state of released transports and a link to details for each import step. For example, the status of the transport request in the system for which it is pending, released, successful, and not successful.</td>
</tr>
<tr>
<td>Preselection</td>
<td>List of users that have this transport request as their default, or preselected, transport request.</td>
</tr>
</tbody>
</table>

### Related Information

SAP Help Portal: Transport Organizer Web UI
Object List and Object List Browser [page 37]

### 14.1 Object List and Object List Browser

The **Object List** tab in the lower pane of the Transport Organizer contains a list of the objects that are a part of the exported Data Services ATL files that you attached to a transport request.

When you first open the **Object List** tab, a list of your exported objects appears with columns that contain information such as object name, type, modified date, user name, and application name. Click the down arrow to the left of the object name and click the **Details** link to view the following information:

- **Object ID**
- **Content Owner**
- **Application User**
- **CTS User**
- **Additional Information**

In the menu bar at the top of the **Object List** tab, click **Object List Browser**. The **Object List Browser** contains a **Browse** tab and a **Search** tab.

The **Browse** tab contains information about the selected transport request ID.

The **Search** tab provides various search options to find other requests. Perform wildcard searches and narrow the results by object type and modified dates. Each of the objects listed in the search results contains a link to more details.

Right-click the name of an exported object in the search results list and select **Display in Transport Organizer**. The Object List Browser opens the selected transport object in the Transport Organizer Web UI.
15 Promotion management overrides

Deploy your promotion management overrides to all of your target systems before you export and import Data Services objects.

Promotion management overrides update your database credentials based on the destination environment of all of your target systems. The override tables contain a list of all unique connection information available in the original source system. Edit the override tables with the applicable destination system values. Then, when you transport content from source to target systems, the content objects are automatically updated with the newer values. For more information, see “Using the promotion management tool” in the *Information platform services Administrator Guide* at [http://help.sap.com/bods](http://help.sap.com/bods).
16 Use ChaRM and QGM for managing transports for separate landscapes

SAP Solution Manager has the Change Request Management (ChaRM) and Quality Gate Management (QGM) tools that you can use to help you manage changes for two different landscapes.

This guide explains how to use CTS+ to manage transports in your Data Services landscape. However, you may already use CTS to manage transports in your SAP NetWeaver Business Warehouse (BW) landscape. The changes that you make to Data Services and your Data Services systems must be kept together, but you must keep them separate from the changes in NetWeaver BW. You may need more than CTS and CTS+ for managing these changes. ChaRM and QGM can help you keep changes for different systems and different transport routes separate.

For information about both tools, see “End-to-End Change Control Management” in the SAP Service Marketplace at https://service.sap.com/changecontrol.
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