How-to Guide
SAP NetWeaver ‘04

How To...
Transport XI
Content Using
CMS
Version 1.00 – October 2005

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SAP NetWeaver '04 Support Package Stack 13
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1 Scenario

Change Management Service (CMS) is part of SAP NetWeaver Development Infrastructure (NWDI). This service enables you to configure your transport landscape and manage the transport of objects between different systems.

Figure 1: XI Track from Development to Test Landscape

This How-to Guide describes in detail how you install the necessary additional software on an Integration Server of SAP Exchange Infrastructure (SAP XI) and how you set up the user management. SAP XI uses ABAP and Java. In this document, we refer to this as a double-stack installation, which is sometimes compared to a J2EE only installation.

2 Introduction

SAP XI has several CMS use cases. CMS is generally used to transport Java development objects. The XI Integration Server uses CMS to transport Integration Server content. When the Integration Server uses CMS to transport XI Content, no Component Build Service (CBS) or Design Time Repository (DTR) is used and can therefore be switched off. If you want to transport Integration Server content and Java developments (Java proxies or adapter modules), the CBS and DTR must be running. If you transport Java developments, you should keep in mind that deployment of Java code can destabilize the runtime environment. Therefore, it is beneficial to install CMS on a separate server, as described in SAP Note 737368 for NWDI.

In this How-to Guide, CMS is installed together with an Integration Server system in the development environment. The advantage of this approach is that you have fewer steps in user management and CMS cannot influence the runtime of a productive environment.
2.1 Implementation Considerations

2.1.1 NWDI on J2EE Standalone or with XI Double Stack

<table>
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<td>NWDI on J2EE Standalone</td>
<td>Recommended <em>(Described in CMS Online Documentation)</em></td>
</tr>
</tbody>
</table>

Figure 3: Possible Installation Options for Java Development Infrastructure (JDI)

All of the above variants are possible; each of them has different consequences for:
- Different user management implementations
- The resources used, in terms of servers and CPU usage
- Synchronization efforts of SP levels
2.1.2 NWDI for XI on XI DEV, XI CONS, or XI PROD
For some customers, it is convenient to install CMS on the XI consolidation system. The reason for this is that CMS cannot influence the performance of the productive system, and the test environment is sometimes more secure than the development environment. If you install CMS on the XI consolidation system, you must not forget to adjust the passwords for xidiruser and xirepuser. A more convenient solution might be to use the CMS service feature of an own user with the same password for all related systems. This is described in Chapter 5 of the [5] XI 3.0 Configuration Guide. If CMS is installed in the production environment, users must also be adjusted accordingly.

2.1.3 NWDI for XI on Central Administration and Monitoring Web AS
WAS for central administration and monitoring can also contain the JDI environment. The advantage of this is that administration and monitoring components are grouped together on one host. For more information, see the Best Practices for the SAP NetWeaver Landscape section of the [10] System Landscape Directory Planning Guide (Document Version 1.1, June 2005, Section 4).
The disadvantage, however, is that user management becomes more complex. See above for details.

2.2 System Landscape Directory Strategy
The preparations required differ depending on the setup of the CMS system and the System Landscape Directories (SLDs). The necessary preparations are described below.
SAP recommends that you use one SLD only. This generally involves less effort to administrate the SLD and a less error-prone transport process. Additional restrictions also apply.
One drawback of this approach, however, is that you still need to formalize the access to the SLD and the production systems. If this is not possible or if decentralized SLDs need to be used for organizational reasons, additional configuration steps are required. These additional preparation steps are outlined below.

2.2.1 Additional Preparations for Decentralized SLDs

Harmonize Products and Software Components
Check whether the target SLD already contains product and software components with the same name but a different GUID. If this is the case, delete those products and software components that have a different GUID to those in the source SLD and follow the procedure described below.
- SAP software components versions
- SAP product versions
- Custom-developed software component versions
- Custom-developed product versions
The same content patch level must be applied to SAP software component versions and SAP product versions.
For more information, see [9] How To Handle SLD and XI.
For custom-developed software component versions and custom-developed product versions, you cannot specify the GUID when you create objects. A file-based import and export procedure is therefore available.

**Replicate Technical Systems and Business Systems**

To transport business scenarios, you need to create the business system groups and transport targets mentioned below. This requires that the referenced business systems and technical systems exist in the SLD.

This enables the source business system to be mapped to the target business system when a business scenario is imported. Sender system (DEV) is mapped to sender system (CONS), for example.

For technical systems, you can use either the SLD bridge or a file-based import or export procedure. You can use only the file-based import or export procedure for business systems.

For more information, see [9] *How To Handle SLD and XI*. 
3 The Step-By-Step Solution

- Deploy software
- Set up user management
- Adjust exchange profile
- Define tracks

3.1 Install CMS Components on the XI J2EE Server

Install the CMS components for XI:

- Download JDI ONLINE 6.40 SP 12 (or the latest version) and JDI OFFLINE 6.40 SP 12 (or the latest version) from SAP Service Marketplace.
- Save the Software Component Archives (SCAs) with SAP Download Manager where it can be reached using Software Delivery Manager (SDM)
- Deploy using SDM
- Stop the DTR server, which is not used by XI

1. To download the software, go to SAP Service Marketplace:

   http://service.sap.com/swdc

   SAP Support Portal → SAP Software Distribution Centre → Download → Support Packages and Patches → Entry by Application Group → SAP NetWeaver → SAP NETWEAVER → SAP NETWEAVER 04 -> Entry by Component -> Development Infrastructure

2. To add the software to your download basket, select the latest support package for JDI Online 6.40.
3. To add the software to your download basket, select JDI OFFLINE 6.40, the latest SP for JDI Offline 6.40.

4. Go to Download Basket and check your selection.

5. To download, start SAP Download Manager.

7. Once the download has completed successfully, the color changes to green.

8. Check the folder to which you downloaded the software.

Note: In this example, a Microsoft Windows operating system is used.
9. To start the SDM server, choose `StartServer.bat`.

10. To start SDM, choose `RemoteGui.bat`.

11. Log on to SDM.
12. To deploy the software, navigate to the *Deployment* tab page and choose the icon with the quick info text *Add SCA/SDA to Deployment List*.

13. Navigate to the folder where the SCAs were saved with SAP Download Manager.

14. Choose SCA `SAPDEVINF12P` and `SAPDEVINFF12`, or the latest support package.
15. Choose *Next* to continue to the next deployment step.

16. The SDM displays the SCAs that will be deployed. Choose *Next* to continue.

17. To begin deployment, choose *Start*. 
18. The SCAs contain an offline deployment. You must therefore allow SDM to stop, deploy, and start the J2EE server. Choose Yes.

Note: To activate the software, you must choose Yes.

19. During the deployment process, SDM displays the success status of the deployment.
20. When deployment has completed, choose Confirm to confirm the successful deployment.

21. The Deployment tab page in the SDM is now empty.
22. DTR does not have to be running to transport XI Content. You can therefore save resources by stopping the service. However, if DTR is running, this has no negative impact on the XI Content transport.

Start the offline Configuration Editor: /usr/sap/<SID>/JC<Instance>/j2ee/configtool/offlinecfg editor[.bat|.sh], this assumes a database is running.

Note: CBS does not start automatically.

If Java developments are also to be transported, DTR and CBS must be running.

23. In the Configuration Editor, expand the Configurations -> deploy -> sap.com/tc~dtr~enterpriseapp node.

24. Set the AppStatus property to 0 (that is, stopped).

Once the J2EE Engine is restarted, the DTR no longer starts automatically.
25. To check the deployment, log on to CMS.

Access:
CMS: Change Management Service

Note:
http://<host>.<port>/devinf/main is the address.

26. CMS for XI is up and running. You now need to maintain the user management settings.

Topics covered in this section:
- Downloading software for CMS from SAP Service Marketplace
- Deploying software using SDM
- Stopping the DTR server, which is not used by XI
3.2 Create and Maintain Users

For the transport of Integration Server content, it is a good idea to install CMS on an existing Integration Server. In this double-stack scenario, where an ABAP and J2EE stack is used, user management is different from a J2EE only installation.

**Note:** For more information about using CMS on a J2EE only installation, see the CMS documentation.

The following section describes the double-stack user management settings required when CMS is running on the Integration Server in the development environment. See Figure 2. The description we provide starts with ABAP user management and is followed by the maintenance in J2EE User Management Engine (UME). You proceed as follows:

- Create the service user LSADMIN using transaction SU01.
- Assign the ABAP roles SAP_XI_CMS_SERV_USER and SAP_SLD_ORGANIZER to the LSADMIN service user.
- Create the ABAP role SAP_CMS_ADMINISTRATOR and assign this role to the ABAP dialog user(s) responsible for CMS administration.
- In UME, create the role CMSDeveloper with the actions CMS.Display and CMS.Export.
- In UME, create the role CMSAdministrator with the action CMS.Administrate.
- In UME, assign the users representing “xirepuser” and “xidiruser” to the role CMSDeveloper.
- In UME, assign the group SAP_CMS_ADMINISTRATOR to the role CMSAdministrator.
- Log on to CMS with the ABAP dialog user responsible for CMS administration.
- Maintain the CMS service user (LSADMIN) for the domain.

<table>
<thead>
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<th>Task</th>
<th>XI Dev With CMS</th>
<th>XI Test</th>
<th>XI Prod</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create the service user LSADMIN in TA using transaction SU01.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Assign the ABAP roles SAP_XI_CMS_SERV_USER and SAP_SLD_ORGANIZER to the LSADMIN service user.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Create the ABAP role SAP_CMS_ADMINISTRATOR and assign this role to the ABAP dialog user(s) responsible for CMS administration.</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>In UME, create the role CMSDeveloper with the action CMS.Display and CMS.Export.</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>In UME, create the role CMSAdministrator with the action CMS.Administrate.</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>In UME, assign the group SAP_CMS_ADMINISTRATOR to the role CMSAdministrator</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Log on to CMS with the ABAP dialog user responsible for CMS administration.</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Maintain the CMS service user (LSADMIN) for the domain.</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Figure 4: Overview of User Management Tasks in Different Systems**
3.2.1 Special Cases

3.2.1.1 SLD on a Standalone J2EE Engine

If you have installed the SLD on a standalone J2EE Engine (and not on an SAP Web AS with XI), you have to perform the following steps:

Use the J2EE Visual Administrator and open the component `sap-com/com.sap.lcr*sld`.

Add the CMS user (for example, LSADMIN) to the security role LcrInstance WriterAll or to the group SAP_SLD_ORGANIZER.

3.2.1.2 Defining CMS Communication Users in XI (Optional)

You only need to define CMS communication users in XI if you do not install CMS on the XI server of the development system, and if you do not want to use xirepuser and xidiruser. (This step is not required in the example provided in this How-to Guide.)

Different XI systems often use different Integration Builder service users and passwords to communicate with CMS. If you want each of these systems to use the same service user name and password to communicate with CMS, but you do not want to modify the service users for each system, you can specify dedicated service users for CMS communication. To do so, use the following parameters in the exchange profile:

- `com.sap.aii.repository.serviceuser.name.cms`
- `com.sap.aii.repository.serviceuser.pwd.cms`
- `com.sap.aii.directory.serviceuser.name.cms`
- `com.sap.aii.directory.serviceuser.pwd.cms`

These service users must exist in every connected DEV, CONS and PROD XI system.

Let us start with a simple case:

27. Create the service user LSADMIN on each of your integration server clients.

Call transaction SU01.

Note:
This technical user is used for the transport of XI Content on the CMS tracks.

Note:
This user must have the same password in all systems.
28. To assign the ABAP roles SAP_XI_CMS_SERV_USER and SAP_SLD_ORGANIZER to the service user LSADMIN, choose Roles.

29. Regenerate the authorization profile and perform a user comparison for the role SAP_SLD_ORGANIZER.
30. In transaction PFCG, create the ABAP role **SAP_CMS_ADMINISTRATOR**.

31. Assign the role to the ABAP dialog user(s) responsible for CMS administration. In our example, this is the dialog user **XIRIG**. Choose *Change user*.

32. Add the single role name **SAP_CMS_Administrator** or use the F4 help.
33. Select the *Single Roles* tab page and select the role.

34. Choose *Enter* and then *Save* to save your changes.

35. Navigate to the *User Management* area of the SAP J2EE Engine of your CMS system and define the following roles and actions:

   Role *CMSDeveloper* with actions *CMS.Display* and *CMS.Export*. 
36. To add the actions *CMS.Display* and *CMS.Export* to the *CMSDeveloper* role, add these actions and choose *Save*.

37. The result is as in the example provided here.

38. To create the UME role *CMSAdministrator*, enter the name and choose *Create*.
39. Add the action `CMS.Administrate` to `CMSAdministrator` and choose `Save`.

40. Assign users to the `CMSDeveloper` role.

41. To add users, choose the plus sign (+).
42. To search for XIDIRUSER and XIREPUSER, enter xi* in the User ID field and use the search help.

43. Select XIDIRUSER and XIREPUSER and choose Select to assign these users to the role.

44. The result is as in the example provided.
45. Assign the UME group SAP_CMS_ADMINISTRATOR to the UME role CMSAdministrator.

46. Search for the group by choosing the plus sign (+).

47. Enter the search name SAP_CMS_ADMINISTRATOR.
48. Choose Select to select the group SAP_CMS_ADMINISTRATOR.

49. Log on to CMS.
   Access: CMS: Change Management Service
   Note: http://<host>:<port>/devinf/main is the address.

50. Log on using the dialog user with the admin role SAP_CMS_ADMINISTRATOR for CMS administration. In our example, we use XIRIG.
51. Maintain the CMS service user (LSADMIN) for the domain and choose Save Domain.

Note: Do not forget to change the password in ABAP before you use it for the first time in CMS.

Topics covered in this section:
- Creating and maintaining the LSADMIN service user for the CMS domain.
- Assigning XIDIRUSER and XIREPUSER to CMSDeveloper to technically transfer XI objects from the XI Integration Repository and XI Integration Directory to CMS tracks.
- Creating the single role SAP_CMS_ADMINISTRATOR and assigning it to the dialog user (XIRIG) that maintains CMS.

3.3 Maintain Exchange Profile
To be able to transport Integration Server content using CMS you have to maintain some parameters in the exchange profile for Integration Repository or the Integration Directory.

52. To access the exchange profile, call the following URL:

http://<host>:<port>/exchangeProfile/index.html
53. To use CMS for Integration Directory objects, set the following parameter in your development and consolidation system:

```
com.sap.aii.ibdir.core.cms.enableTransportWizard=true
```

When this parameter is set, the CMS transport is provided by the export wizard.

To use CMS for Integration Directory objects, set the following parameter in your development and consolidation systems:

```
com.sap.aii.ibdir.core.cms.enableClTransport=true
```

When this parameter is set, the option to transport change lists using CMS is displayed on the user interface.

To use CMS for Integration Repository objects, set the following parameters in your development and consolidation systems:

```
com.sap.aii.ibrep.core.cms.enableClTransport=true
com.sap.aii.ibrep.core.cms.enableTransportWizard=true
```

**Note**: Do not change these parameters in production systems. They are redundant in production systems since you only use them to import content.

54. In addition, add the following value to `com.sap.aii.ib.client.properties`:

- `com.sap.aii.ibrep.core.cms.*` for the Integration Repository
- `com.sap.aii.ibdir.core.cms.*` for the Integration Directory

**Note**: Do not replace existing values; add the new value to the existing values.

**Note**: These settings specify that the CMS transport entries are transferred from the server to the web client front end.
55. Note:
Refresh the exchange profile parameters.
Either refresh all properties on the administration section of the SAP Exchange Infrastructure start page or restart the J2EE.

56. Navigate to the Administration section of the SAP Exchange Infrastructure start page.

57. To reload the exchange profile settings, choose Refresh.

The next time you open the Integration Builder, the option to transport using CMS is available.

3.4 General SLD Preparations

3.4.1 Create Business System Groups
Business system groups need to be created for the development, consolidation, and production environment.

For more information, see [12] How to Configure Groups and Transport Targets in the SLD.

3.4.2 Create Transport Targets for the Business System
The translation of the business system (DEV) to the business system (QAS) takes place in the Integration Directory into which the business scenario is imported.

For more information, see [12] How to Configure Groups and Transport Targets in the SLD.
3.5 Maintain Transport Tracks

Change Management Service (CMS) is part of SAP NetWeaver Java Development Infrastructure (NWDI). This service enables you to configure your transport landscape and manage the transport of objects between different systems.

Figure 5: XI Track for a 3-System XI Landscape

The following section describes how to create a CMS domain and how to create XI tracks for XI Integration Repository and XI Integration Directory objects. It also describes how to transport Integration Repository objects and Integration Directory objects. The step-by-step solution focuses on a 3-system landscape, which is typical of many customer landscapes.

You can also have additional track setups such as a 2-system and a 4-system landscape; these are mentioned in the appendix.

**Note:**
Make sure that the GUIDs of the software component versions are the same in both the source and target systems. You can avoid different GUIDs by using one SLD.

Example of XI Content Transport Tracks

**The Step-By-Step Solution:**
- Install CMS
- Make preparations in the SLD
- Create the transport domain
- Create the track for Integration Repository objects
- Create the track for Integration Directory objects
- Transport Integration Repository objects
- Transport Integration Directory objects
3.6 Create a Domain
You can currently create only one domain in CMS.

1. Start CMS using the web dynpro page:
   Enter the user ID and password for the CMS administrator, in this case XIRIG.
   Choose Log on.

2. Click Landscape Configurator.
3. Enter the details for the CMS server.
   - CMS Name (domain ID)
   - CMS URL: http://<host>:<J2EE Engine http port>
   - The CMS user must have the same name and password in all systems in the transport landscape.

Enter the details for the domain and for the URL of the external SLD server. http://<host>:<J2EE Engine http port>

Choose Save Domain to save your changes.

Note:
To avoid naming conflicts with CMS domains from software vendors (such as SAP), use domain IDs with three characters only. Note that the LSADMIN user must exist in the whole system landscape and must have the same password (case sensitive).

4. Check the status at the bottom of the page. Scroll down the page, if necessary.
3.7 Create Track for Integration Repository Objects

Depending on your requirements, create tracks for the Integration Repository objects.

In this example, the tracks are grouped by systems, such as the ERP System, for example.
All software components that are used and that belong to one system are assigned to one track.

1. Switch to the Track Data tab page.

Choose New and create a track with Repository Type XI.

If necessary, choose Update CMS to synchronize any software components that were created in the SLD after CMS was last synchronized.

If you have a 2-system landscape, enter values for XI URL Development and XI URL Consolidation only. Leave XI URL Production blank.

The URL has the format: http://<host>:<J2EE Engine http port>/rep

2. Add the software component version to the track.

Make sure that you enter the correct release.

Note:
You can either create a separate track for each software component version, or group together software component versions that should be transported together.
3. Choose Save and check the status message at the bottom of the page.

4. If the dialog provided in this example is displayed, check whether the software component version is already included in another track. It is not recommended to include the same software component version in more than once track, other than in a track connection scenario.

If you use software components in multiple systems, proceed as follows to avoid the disadvantages described above:

a) Delete the software component from the original tracks.

b) Create an individual track for the software component version that is currently used in different tracks.

If this message is still displayed, you can ignore it.
3.8 Create Track for Integration Directory Objects

Only one track is used to transport Integration Directory objects.

1. Switch to the **Track Data** tab page. Choose **New** and create a track of **Repository Type XI**.

If necessary, choose **Update CMS** to synchronize software components that were created in the SLD with CMS.

If you have a 2-system landscape, enter values for **XI URL Development** and **XI URL Consolidation** only. Leave **XI URL Production** blank.

The URL has the format: http(s)://<host>:<J2EE Engine http port>/dir

2. Add the software component version to the track. Make sure that you enter the correct XI release.

3. Choose **Save** and check the status message at the bottom of the page.
3.9 Transport Integration Repository Objects

1. Log on to the Integration Builder start page.

   The URL is http://<host>:<J2EE Engine http port>/rep.

   Click Integration Repository.

2. Log on to the Integration Repository with the CMS administrator, in this example user XIRIG.

3. Select the software component version you want to transport.

   In the context menu, choose Export.
4. Select Transport using CMS as the transport mode.

Note:
It is important that you give the transport list a meaningful name so that you can distinguish between the different transports later.

Choose Continue.

5. **Option 1: Export All Objects of a Software Component Version using export lists.**

Select all objects of a software component version.

Choose Finish.

6. After the export is completed, the status message shown in the following example is displayed.

Choose Close.

This creates a *.pra file in the directory `<NWDI Transport directory>\CMS\archives`. 
7. CMS automatically sends an asynchronous acknowledgement message of the export to the Integration Repository.

You can manually display the message by choosing Tools → Display System Messages.

8. The following screenshot shows an example of a successful acknowledgement from CMS.

9. **Option 2: Export individual objects using change lists.**

   Create a change list and give it a meaningful name.

   Choose Create.
10. Drag and drop your objects to this change list.

   Note:
   Press SHIFT to select multiple objects simultaneously.

11. In the context menu, choose **Activate**.

12. Choose **Activate**.
13. Check whether the change list was activated without errors.

14. The status of the change list now changes from Open to Transportable.

15. Select the change list and in the context menu, choose Release for Transport.
16. Choose *Send*.

17. The following status message is displayed.

18. The following graphic shows an example of a successful acknowledgement from CMS.
You perform the following steps in CMS.

19. Click *Transport Studio* to continue with the import in the consolidation system, in this case, XIQ.

20. Select the track IR.ERP in the left-hand column.

   Switch to the *Consolidation* tab page.

   A list of the transports with the status *Waiting for Import*, that is, the transports to be imported into the test XI system, is displayed.

   Select an individual or all transport requests and choose *Import*.

21. If the import is successful, the status changes to *Import finished*.

   This entry disappears as soon as you choose *Refresh* to refresh the page.
22. Optional:

Log on to the Integration Repository of the consolidation system to check the result.

In the menu, choose **Tools → Find Transports**.

23. Optional:

Define your search criteria for the import.

The search result shows that the software component was imported successfully.

No further activities are necessary in the Integration Repository of the consolidation system.

24. Switch to the **Assembly** tab page.
25. Select the *Keep Current Support Package Number* option and choose *Assemble.*

26. If the assembly step is successful, the status *Assembled* is displayed.

   This entry disappears as soon as you choose *Refresh* to refresh the page.

27. Switch to the *Approval* tab page.

   On the *Approval* tab page, the assembled change list with the status *Waiting for approval* is displayed.

   You can either *Confirm* or *Reject* the change list.

   If you reject the change list, it cannot be further processed and must be exported from the development system again.
28. Once the change list is confirmed, the status *Approved* is displayed.

This entry disappears as soon as you choose *Refresh* to refresh the page.

29. Switch to the *Production* tab page.

Choose *Import*.

30. Once the import completes successfully, the status *Import finished* is displayed.

This entry disappears as soon as you choose *Refresh* to refresh the page.

Optional:
Log on to the production system to see the imported objects as described above.
3.10 Transport Integration Directory Objects

You perform the following steps in the development XI system.

1. Log on to the Integration Builder start page.
   The URL is http://<host>:<J2EE Engine http port>//rep.
   Click Integration Directory.

2. Switch to the Change Lists tab page.
   Create a change list.

   Note:
   It is important that you give the transport list a meaningful name so that you can distinguish between the different transports later.

3. Move the objects from one change list to a newly created change list.
   To do this, select the object and drag and drop it to the new change list.

   Note:
   To keep a clear overview of your change lists, merge as many objects as possible into one change list before you activate it.
To transport the whole change list with the latest objects for another release, select the export list and choose *Release for Transport Again* from the context menu.

4. The result is as shown in the following screenshot:
5. Activate your change list.

6. Switch to the Business Scenarios tab page.

In the context menu, choose Export.
7. A transport list with the standard name Export list is created.

8. Enter a meaningful name and choose Continue.

9. **Option A: Export all objects of the business scenario.**
   Keep the default value All Objects of a Scenario for Object Set.
   Choose OK.
10. **Option B: Transport change lists.**

Change **Object Set** to **Individual Objects**.

Choose **Add Objects from Change Lists**.

Select the change list(s) you want to export.

Choose **OK**.

**Note:**
This function works as a template. The latest versions of the objects included will be added to the transport.

11. **Choose Finish.**

If **Finish** is grayed out, click 1. **Select Mode** on the left side; then click 2. **Select Objects** again. The **Finish** button is then displayed as shown in the example provided.
12. Once the export is completed successful, the following status message is displayed.

Choose Close.

This creates a *.pra file in the directory: <XI Transport directory>\CMS\archives

13. CMS automatically sends an asynchronous acknowledgement message of the export to the Integration Directory.

You can manually display the message by choosing Tools → Display System Messages.

14. The following screenshot shows an example of a successful message from CMS.
You perform the following steps in the CMS system.

15. Click **Landscape Configurator**.

   Select the track for the Integration Directory objects, in this case **ID.ALL**.

16. Switch to the **Consolidation** tab page.

   The status is **Waiting for Import**.

   Select one or more change lists. To select multiple change lists simultaneously, press SHIFT + CTRL.

   Choose **Import**.

   During the import, several checks are performed, such as:

   - Whether the business systems exist in the SLD
   - Whether the business systems are assigned to a transport group in the SLD
   - Whether the business systems are assigned to a transport target in the SLD
   - Whether objects are part of other change lists

   **Note:**
   Keep in mind that the order in which you import the objects is important.
17. Once the import is completed successfully, the status *Import finished* is displayed.

This entry disappears as soon as you choose *Refresh* to refresh the page.

18. Switch to the *Assembly* tab page.

A list containing the change lists waiting for assembly is displayed.

**Note:**
Make sure that you do not assemble the components on this tab page. This would result in a full export of the Integration Directory of the consolidation XI system.
The purpose of this tab is to inform you that you have to switch to the Integration Directory of the consolidation system to perform further activities.
An assembly and full export of the Integration Directory is used for an initial transport.

The following steps are performed in the Integration Directory of the consolidation XI system.

19. Log on to the Integration Directory using a user with the role *SAP_XI_CONFIGURATOR*.
20. Switch to the *Change Lists* tab page.

Enter LSADMIN as the user.

Ensure that the *Open* checkbox is selected.

Choose *Display*.

This displays all open change lists for the user LSADMIN.

Select the corresponding *XI 3.0 Import* change list that you want to import and in the context menu, choose *Transfer*.

**Note:**
The original name of the change list is not displayed here.

21. Choose *Apply*. 
22. Enter your user again.

In the XI 3.0 Import list, adapt the transported communication channels.

Double-click the communication channels IDOC and Proxy_Abap_rcv.

Note:
In this step, the business systems of the development environment are switched to the business systems of the consolidation environment.

23. When communication channels are imported, all system-specific information is removed.

Enter values for all the required fields for the relevant adapter type. For example, for an ABAP proxy receiver communication channel, enter the HTTP destination.

To perform a check, choose Communication Channel → Check.

Save your changes.

24. Once you have made all the relevant changes, activate the XI 3.0 Import change list.

If the activation is successful, the following message is displayed.
25. Test the imported scenario in the consolidation landscape.

If the test is successful, perform the following steps.

On the Business Scenarios tab page, select the business scenario.

In the context menu, choose Export.

26. Give the change list a meaningful name, such as the same name as the previous change list.

Choose Continue.

27. If the export is successful, the following status message is displayed.

Choose Close.

This creates a *.pra file in the directory <NWDI Transport directory>\CMS\archives.
You perform the following steps in the CMS system.

28. Switch to the Assembly tab page in CMS and choose Assemble Component(s).

29. Make sure that the Subset Assembly checkbox is selected.

   To select multiple change lists, press CTRL + SHIFT.

   Choose Assemble.

   Note:
   If you deselect Subset Assembly, a full export of the Integration Directory is done, assembling all objects in the Integration Directory. This is generally only required to fill the production Integration Directory for the first time or if there are inconsistencies in the production Integration Directory.

30. A new entry is created with the patch name shown in the screen above.

    As soon as you refresh the page by choosing Refresh, this entry is no longer displayed.
31. Switch to the Approval tab page.

The status of the assembled change list is *Waiting for approval*.

You can now either *Confirm* or *Reject* the change list.

If you reject the change list, it cannot be further processed and must be exported out of the development system again.

32. Once the change list is approved, the status *approved* is displayed.

This entry disappears as soon as you choose *Refresh* to refresh the page.

33. Switch to the Production tab page.

The change list has the status *Waiting for Import*.

Select the change list. Press CRTL + SHIFT to select multiple change lists.

Choose *Import*.

34. Once the import is completed successfully, the status *Import finished* is displayed.

This entry disappears as soon as you choose *Refresh* to refresh the page.
You perform the following steps in the Integration Directory of the production system.

35. Repeat the steps described in Steps 19 to 24.
   - Move the objects from user LSADMIN to your user.
   - Make the changes to the communication channels.
   - Monitor the interface.

3.11 Traceability of XI Transports
Depending on the use case, there are several possible methods of tracking transports in the:
   - XI Integration Builder Integration Repository and Directory (1 and 2 below)
   - CMS Transport Studio (3 below)
   - Administration of XI Integration Builder tools

**Traceability: Overview**

**How to Trace Transports?**
- Integration Builder
  - Transport Overview in Change List Tree 1
  - Transport Search 2
- CMS
  - Transport Studio 3

![Figure 6: Traceability Overview](image)
36. The following figure is an example of the transport overview in the change list tree of the Integration Builder. It displays all change lists.

37. To search for transports, choose **Tools -> Find Transports**.
38. When you choose Tools -> Find Transports, the filter criteria screen for the transport search is displayed.

39. When the search results are displayed, you can switch between two tab pages. The first tab page is the Attributes tab page, which displays the transport result attributes.

40. The second tab page is the Transported Objects tab page, which contains the transported objects returned by the search.
41. When you choose *History* in the Transport Studio (CMS), the transport history is displayed.

42. When you choose *Details* in the Transport Studio (CMS), a page displaying transport details including links to log files is displayed.

43. You can also display the transport details for a selected transport in the Transport Studio (CMS).
44. CMS Adjustment Servlet

Use cases:

- Temporary deactivation of change list transport using CMS (quality management stops transports to clean up CMS track)
- Overview of registered tracks (support view to check whether a transport track is defined)

The URL to navigate directly to the administration section is: http://server:port/repourdir/support/admin/index.html

45. Changing the value of *Per Change List Transport* from *true* to *false* stops further transports.

This is useful if you want to prevent transports of change lists without changing track definitions in CMS.
4 Appendix

By default, CMS has a 3-system landscape: Development -> Consolidation -> Productive. Customer environments can, of course, reflect different variants. Various possible configurations are provided below.

4.1 Track Definitions Without Linked Tracks:

Figure 7: Three-System Landscape

Figure 7 shows an XI track with a three-system XI landscape, as described in the example used in the step-by-step solution.

When you create the XI track, you need to maintain the following:
- Development URL: references the XI development system
- Consolidation URL: references the XI consolidation system
- Production URL: references the XI production system

In addition, all the referenced XI systems in the track must be different.

Figure 8: Two-System Landscape

Figure 8 shows a two-system XI landscape using one development system and one production system.

When you create the XI track, you need to maintain the following:
- Development URL: references the XI development system
- Consolidation URL: references the XI production system

In addition, all the referenced XI systems in the track must be different.
4.2 Track Definition with Linked Tracks

Figure 9: Five-System Landscape

Figure 9 shows a five-system XI landscape with a central development and central consolidation system. From the central consolidation system, the XI objects are distributed to the XI system landscape B. System landscape B contains a local development system and a local production system.

Track of landscape A:
- Development URL: references the central development system
- Consolidation URL: references the central consolidation system
- Development URL: references the central production system (optional)

Track of landscape B:
- Development URL: with the local development system
- Consolidation URL: with the local production system

Track A and track B are connected using track connections. It is important that the software component versions in both tracks are the same.

In addition, all the referenced XI systems in track A and track B must be different.

With this setup, it is also possible to distribute XI objects "star-wise" into multiple XI landscapes. You can create additional tracks with additional local development and local production systems.
Figure 10: Six-System Landscape

Figure 10 shows a six-system XI landscape containing a central development and central consolidation system. From the central consolidation system, the XI objects are distributed to XI system landscape B. System landscape B contains a local development system, a local consolidation system, and a local production system.

Track of landscape A:
- Development URL: references the central development system
- Consolidation URL: references the central consolidation system
- Development URL: references the central production system (optional)

Track of landscape B:
- Development URL: references the local development system
- Consolidation URL: references the local consolidation system
- Development URL: references the local production system

Track A and track B are connected using track connections. The version of track A must correspond to the version of track B. In addition, the referenced XI systems in track A and track B must be different.

With this setup, it is also possible to distribute XI objects “star-wise” into multiple XI landscapes. You can create additional tracks with additional local development and local production systems.
4.3 Track Definitions Currently Not Supported

The following track definitions are currently not supported:

- Two-system landscape with one central development system with multiple local production systems: a DEV with multiple CONS systems
- Three-system landscape with one central development system, one central consolidation system, and multiple local production systems. A DEV, a CONS, and multiple PROD systems or subsequent tracks (see above), where the latter do not have exactly the same scenarios, but are selected depending on the scenarios of the PROD systems or subsequent tracks.
- Three-system landscape with one central development system, one central consolidation system, multiple local production systems. This variant will be possible soon. A DEV, a CONS, and subsequent tracks with only one DEV system.

If only three systems are used in a system landscape, these must be specified within a track. If you want to supply multiple productive systems, you must create at least one subsequent track with at least two different systems. You must ensure that the Integration Directories of the DEV systems of the subsequent tracks have exactly the same version as the production version system of the original track.
5 References

[1] 780297 - Troubleshooting Using CMS for XI
[2] 705541 - XI 3.0 (SP1 and higher): Importing XI Content
[9] How To Handle SLD and XI available on SAP Service Marketplace at service.sap.com/nw-howtoguides → Exchange Infrastructure