

SDN Community Contribution

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Applies To:

SAP NW04 – SAP XI 3.0 (SP12)

Summary

This is a guide explaining CMS and the steps for setting up CMS for SAP XI.

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Introduction

Change Management Service (CMS) is the java counter part of R/3' transport mechanism. CMS architecture is comparable to the classical R/3 transport in many ways. SAP maintains the same terminologies like Domain, Track, etc in CMS also. The architecture is also similar and is maintained by a dedicated CMS controller system.

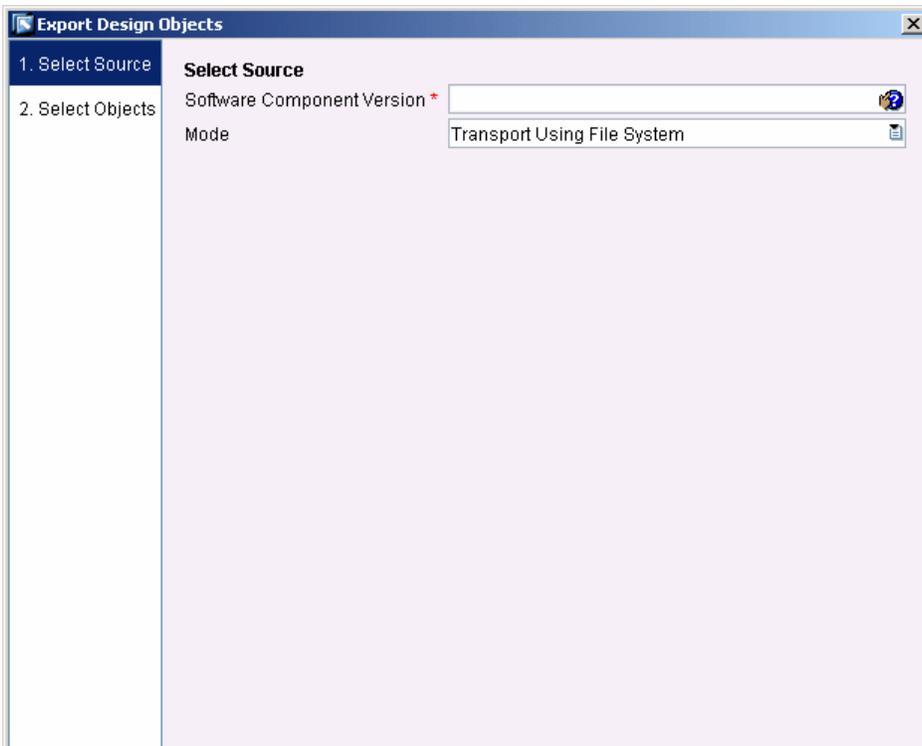
CMS/Transport is important in an enterprise landscape because of the fact that the environment will be multi-layered, like for example, Development (DEV), Quality Assurance (QA) and Production (PROD). The most common pattern for the system landscape will be DEV-QA-PROD, though in some cases systems like Integration environment, Staging, etc will be present. Whichever the chosen pattern is, no rational enterprise will allow development activities and production code in the same system. So a defined mechanism for transferring the objects is required. In SAP R/3, transport facilitates this process.

But in SAP Exchange Infrastructure (XI) the components which are dealt with are java components and their transport and deployment is not done using the classical SAP transport mechanism.

There are 2 possible options to doing the transport of the components; using File System and using CMS

Transport Using File System

This is generally done during proof-of-concept or fit-for-purpose trials. The components are exported from the Integration Builder (IB) using the *Export Design Object...* option in the *Tools* menu. The Mode has to be chosen as *Transport Using File System*. (This is the default mode available if CMS is not configured)



The files exported will be available in `\usr\sap\<SID>\SYS\global\repository_server\export` directory. The exported files have to be manually copied to the import folder in the target system and the import is done through the option *Import Design Objects...* in *Tools* menu.

The process seems to be painless and easy, but there are a lot of disadvantages.

- No defined Change Management process
- Security issues due to access to folders, particularly write access to production folders.
- Operational overhead in the production server maintenance team for importing the objects
- Bug-fixes are difficult to track and manage.

Transport Using CMS

The document will be mostly explaining the setup and usage of CMS for XI. The advantages of the transport using CMS, to list a few are

- A well defined change management process and workflow which complies to the standard organizational change management processes
- Superior access control due to usage of only SAP authorization system
- Bug-fixes can be tracked and managed using the change-list transport

Prerequisites

- SAP Exchange Infrastructure 3.0 (at SPS 12)
- XI landscape with at least 2 systems.

Setting up the CMS infrastructure

Users

CMS requires both service users and dialog users for its functioning

The service users are used by the Integration builders to talk to CMS. By default the service users are XIREPUSER and XIDIRUSER. These users should be maintained with the same password in all the XI systems and in CMS. If this doesn't look possible due to security requirements, exclusive CMS users can be created.

The dialog users for CMS has to be created with specific roles.

(Refer to XI Configuration Guide for more details on this)

CMS Instance

The most important component of the CMS is the CMS instance. This is just another WAS-J2EE instance with CMS components installed. As a recommendation, we suggest to use a separate J2EE instance exclusively for CMS. This would make the landscape more manageable and give easier user maintenance, but this option comes with the overhead of running and maintaining one more instance. It is quite possible to use one of the XI J2EE instance itself for CMS.

For creating CMS Instance the following SCA files has to be deployed in the J2EE instance using SDM.

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JDI OFFLINE 6.40

These files can be found in the location:

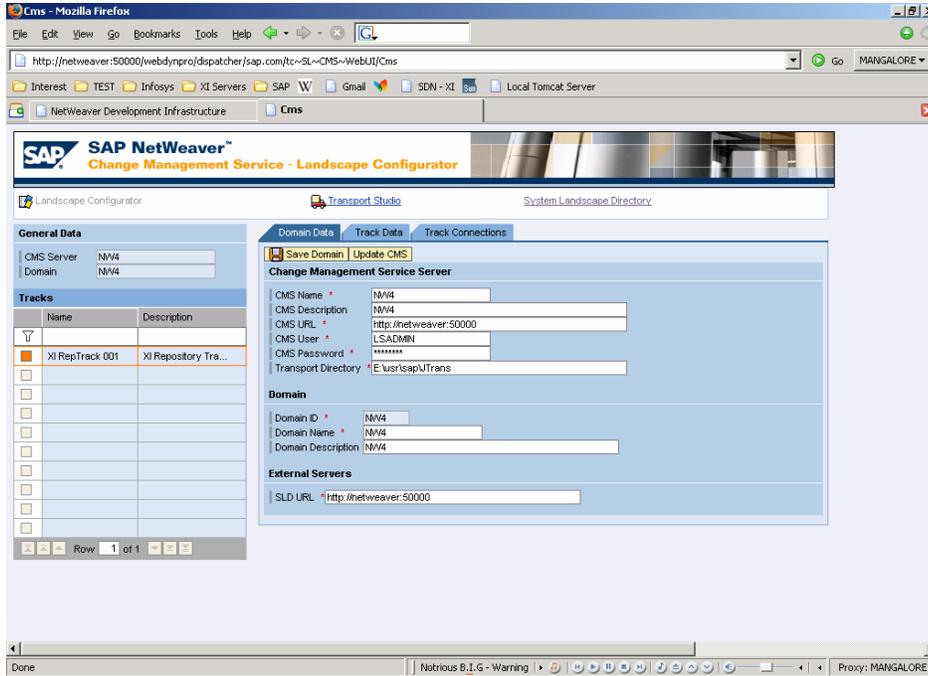
Support Packages and Patches -> SAP NetWeaver -> SAP NETWEAVER -> SAP NETWEAVER 04 -> Entry by Component -> Development Infrastructure

The installation can be verified by checking the URL, <http://<hostname>:<j2ee-port>/devinf>

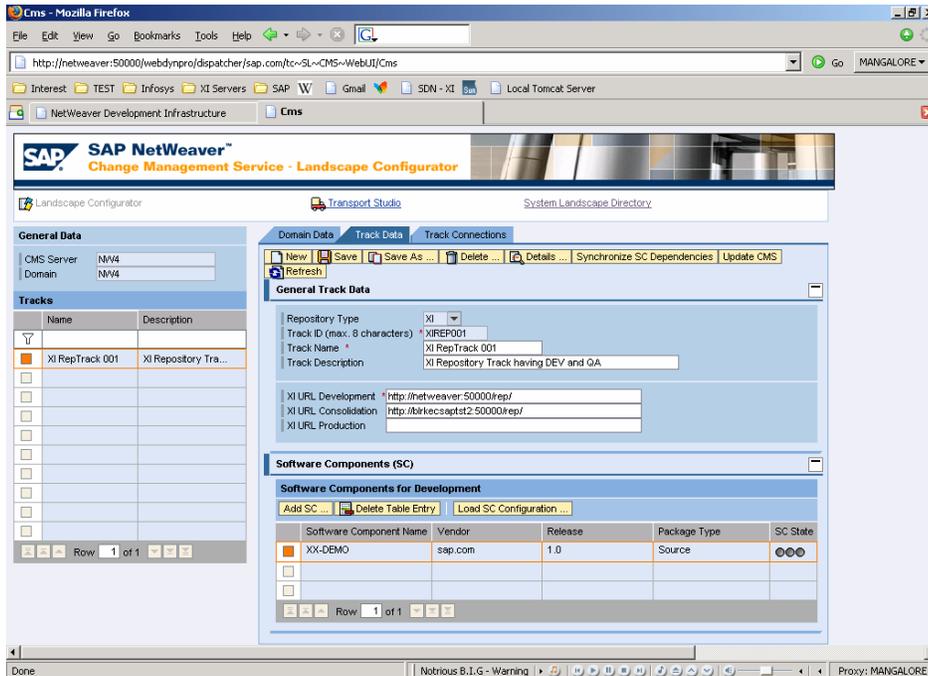
Once installation is completed CMS Domain and track has to be defined. Currently CMS supports only one Domain per instance.

- Access the CMS Screen by clicking Change Management Service in the Development Infrastructure page (<http://<hostname>:<j2ee-port>/devinf>).
- Login with the admin user for CMS.
- Define the domain and tracks. Tracks are to be decided based on the landscape for which you are configuring the CMS for. This can be related to the Transports Routes in R/3. For each track one or more SCV can be added.

Domain Screen



Track Screen



System Landscape Directory

SLD is one of the most important components which will define the process of the Change Management in the Landscape. The selection of the SLD strategy in the XI landscape will affect the CMS process.

As a recommendation, we suggest a single SLD for the entire XI landscape. A deviation from this would result in having ad-hoc SLD synchronization mechanisms to be introduced into the CMS process.

Integration Builders

Integration builders are installed with the default setting as CMS off. A couple of exchange profile parameters have to be created/changed for enabling CMS.

Integration Repository

```
com.sap.aii.ibrep.core.cms.enableCITransport=true
```

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

Add *com.sap.aii.ibrep.core.cms.** to *com.sap.aii.ib.client.properties*

Integration Directory

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

Add *com.sap.aii.ibdir.core.cms.** to *com.sap.aii.ib.client.properties*

Along with these set the parameter *com.sap.aii.ibdir.core.cms.enableCITransport* to *true*, for enabling change-list transports.

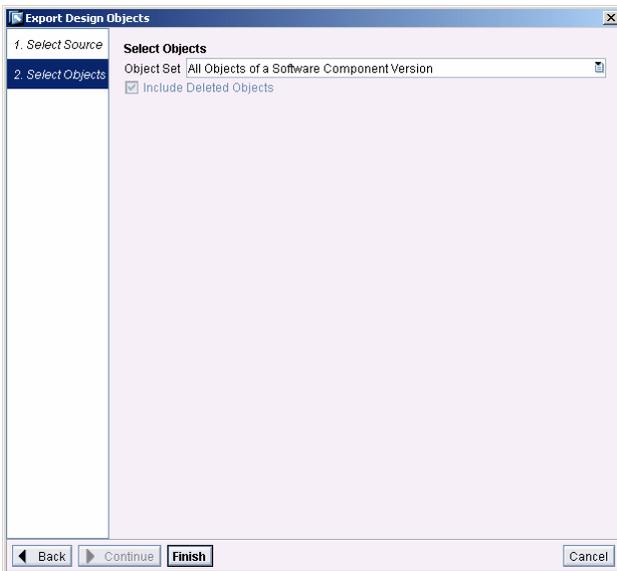
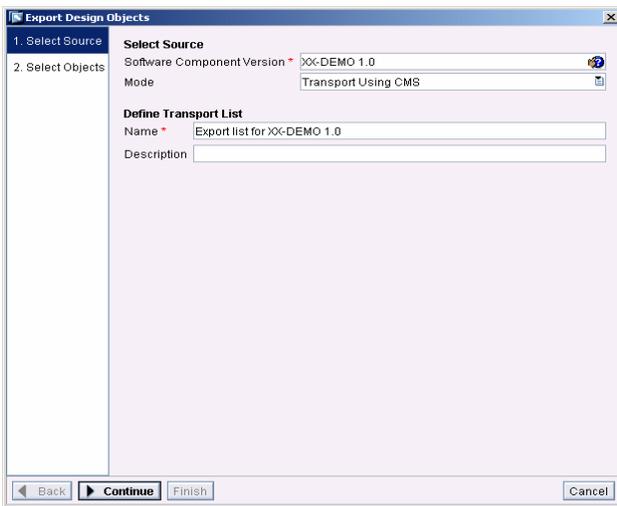
Using CMS – Step-by-Step

Let us take the case of exporting a SCV from DEV to QA system.

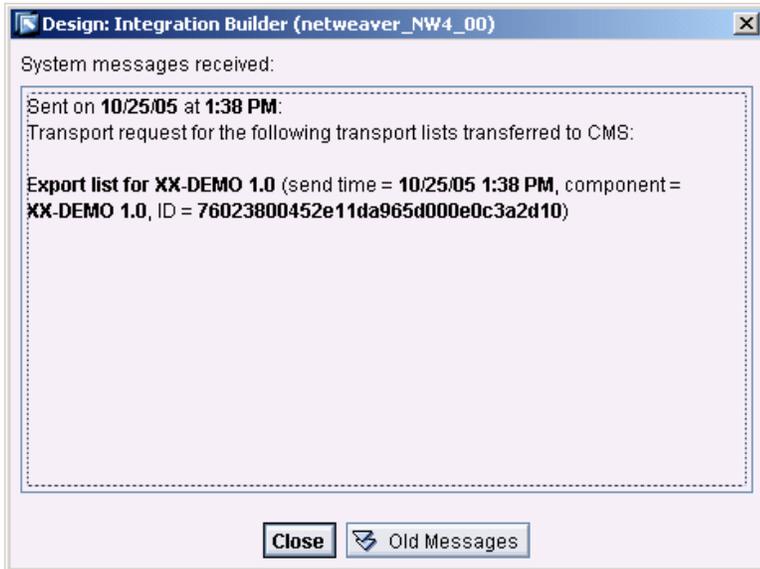
After the development is completed, the steps depicted below in screenshots and text are to be done in sequence

Exporting the SCV

Once the settings for the Integration Builders explained above are done, the *Export Design Objects...* provide option to use CMS in the drop-down.

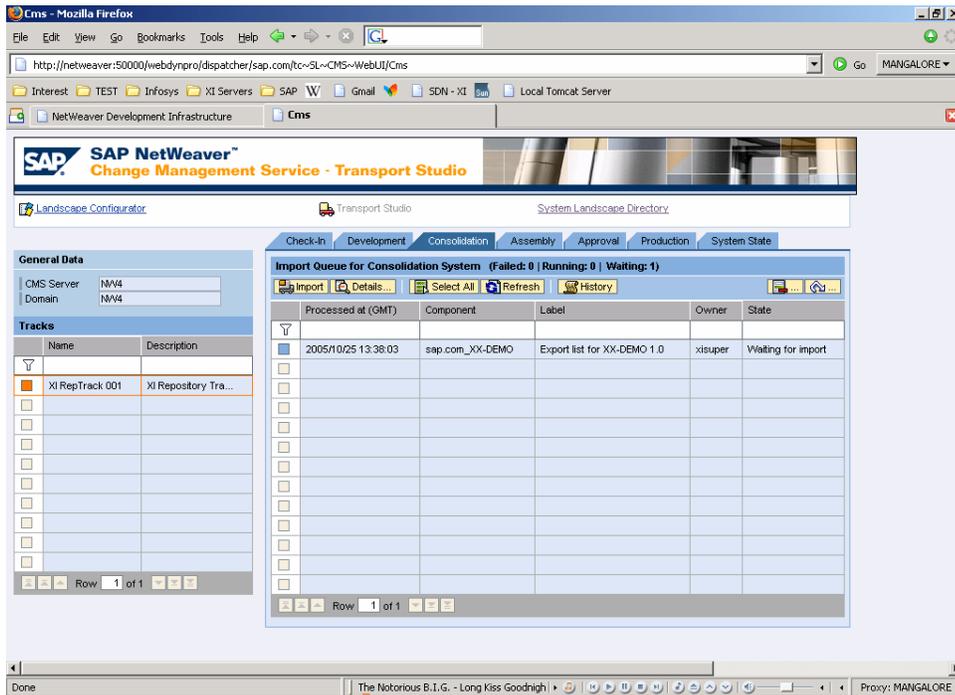


The export should give you a message like the one below. It might take a while for this message to come. Just wait!



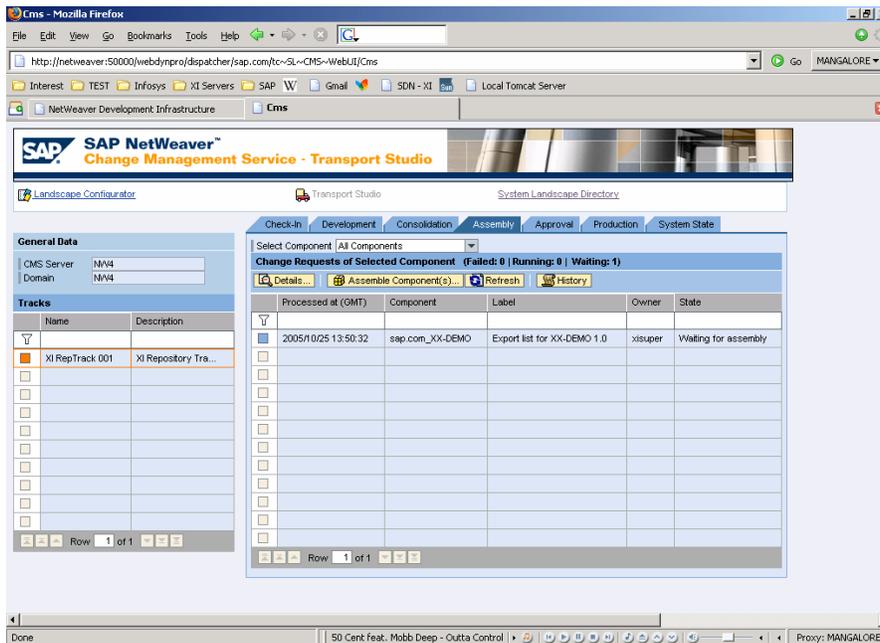
Transport Studio

Once the export is done the SCV will appear in the consolidation tab in Transport Studio

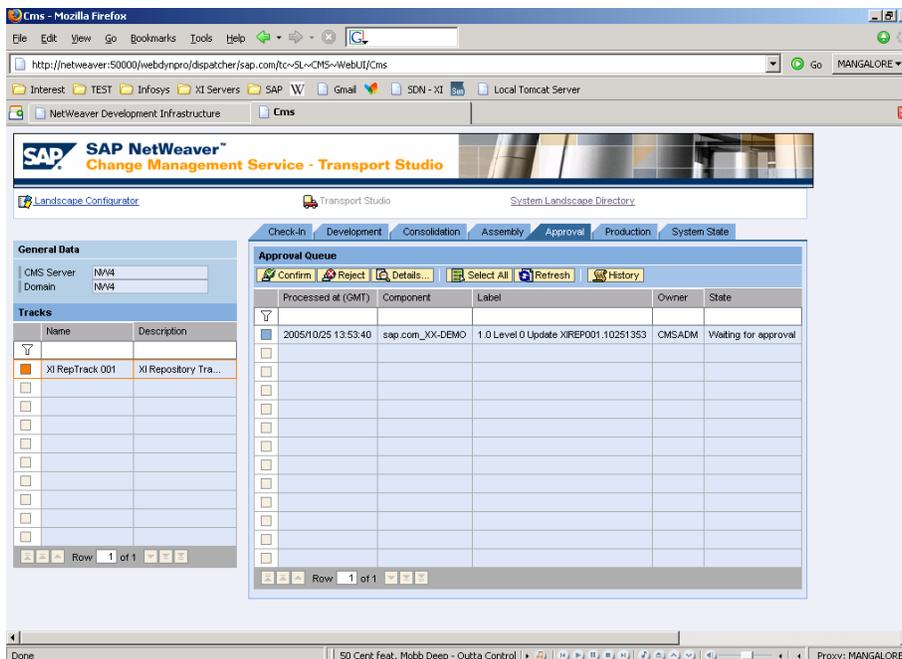


Select the SCV and click import. This action will

- Import the SCV into the Consolidation (QA) system.
- Move the SCV from the *Consolidation* tab to *Assembly* tab.

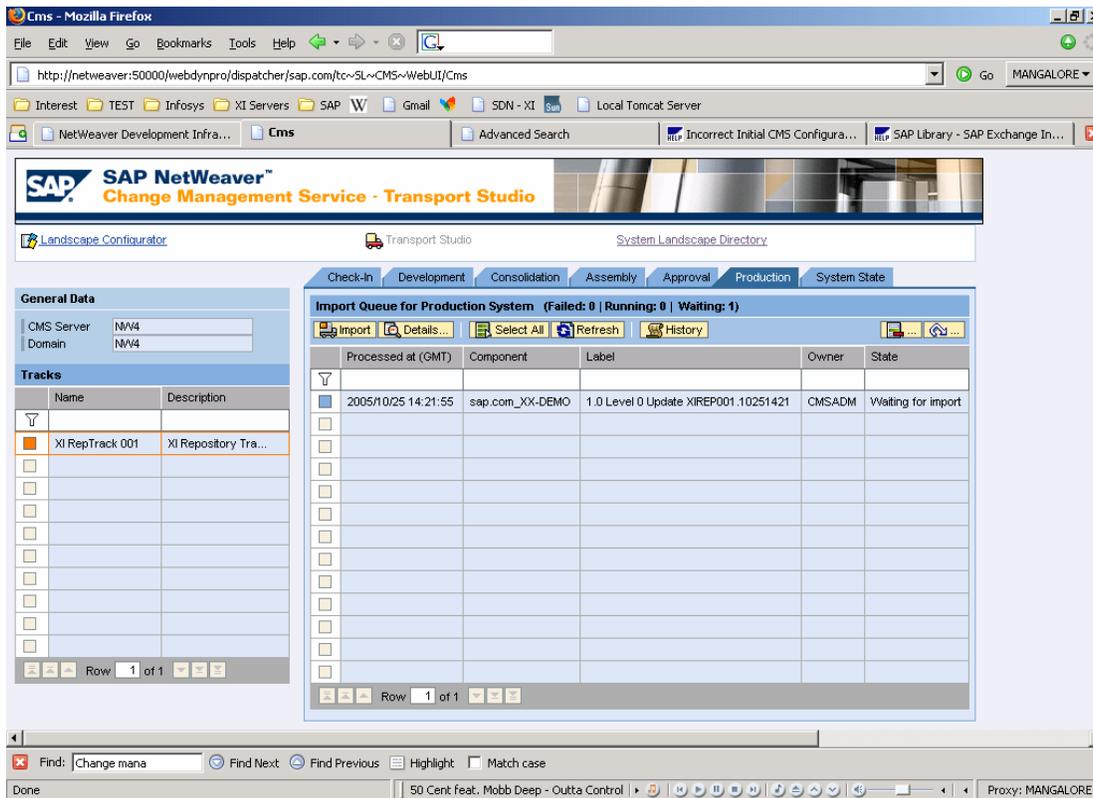


Select the SCV and click *Assemble Components*. This action will create a Support Package and will move the entry to *Approval* tab.



At this point the approver can either *approve* the import to production or *reject*.

When *approved* the SCV will move from *Approval* tab to *Production* tab.



Once rejected, the SCV is removed from the queue and cannot be approved again.

Integration directory objects

Integration Directory objects is also transferred in a similar way. Since there are no SCV defined in integration directory, while defining the tracks a standard SCV, *SAP-INTDIR 3.0* is used. All the transport from Integration Directory will be using this SCV.

Transport Target Definition

Since the business system name in DEV, QA and PRD are different in the landscape; the integration directory configuration defined in DEV will be invalid for QA or PRD. To avoid this situation Transport Targets are used. By defining transport targets, the referred business systems are changed automatically and the configuration will remain valid.

Naming convention

Only the business system can be changed while doing the transport. None of the other components can be changed. This fact should be taken care while defining the naming convention for the objects. For e.g. if the communication channel name is given as cc_JDBC_HRSystem_DEV, the DEV in the name will be carried forward till production. So special care has to be taken, for not including any environment specific details in the object names except in the business system name.

Communication Channel Parameters

Since the communication channel parameters are not valid across environments some of the parameters are not transported. After the transport the user with SAP_XI_CONFIGURATOR role has to manually enter it in QA and PRD. This is a one time job, since the next time when the object is imported again; the values are retained (not overwritten). This would also mean, any change in the PRD communication channel configuration has to be done directly in PRD, there's no point in changing in DEV and transporting.

Author Bio



Kannan Kailas is a certified XI Technical Consultant at Infosys Technologies Limited, India. He is a part of the XI frameworks definition guild in Infosys and has greatly contributed to Monitoring, alerting and other technical frameworks. His areas of expertise include EAI Solution development in SeeBeyond, Tibco and XI, J2EE and ABAP.