



**How-to Guide  
SAP NetWeaver 7.0**

# **How To... Setup an NWDI Track for Composition Environment Developments**

**Version 2.00 – January 2008**

**Applicable Releases:  
SAP NetWeaver 7.0 SP13  
(Custom Development & Unified Life-Cycle  
Management)  
SAP NetWeaver Composition Environment 7.1 SP3**

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# 1 Scenario

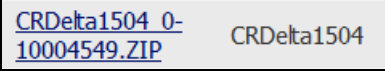
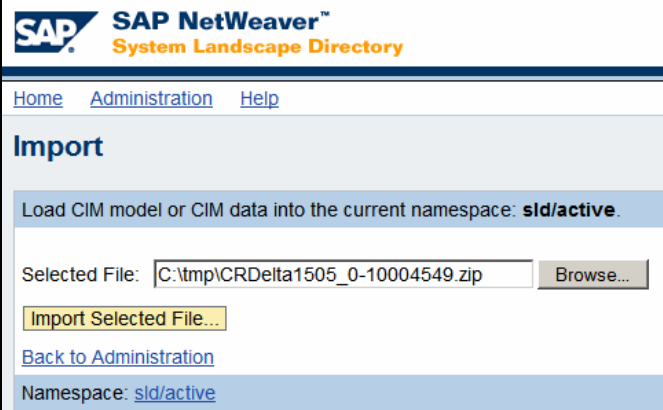
You and your team plan to develop new Composite Applications for the SAP NetWeaver Composition Environment (CE) platform. Therefore you would like to use the SAP NetWeaver Development Infrastructure (NWDI) to provide a source control, build support and software change management system. You are familiar with the track concept and usage of NWDI as you already use it for developments for NetWeaver'04 and/or NetWeaver 7.0 releases. For the new platform Composition Environment, you can reuse the existing NWDI server running on NW 7.0. If you need to setup a new NWDI server in your system landscape, please install the latest release (currently NW 7.0) and update the installation to the latest support pack level. Please have a look at <http://service.sap.com/instguidesnw70> for detailed information on the installation process.

## 2 Prerequisites

A prerequisite for implementing this guide is an installed and configured NWDI. The screenshots are based on NW 7.0 SP13. This guide will explain the delta information that is needed to setup an NWDI track for the composition environment release. The concept of the development process using NWDI is not explained within that guide, and a basic NWDI knowledge is assumed. For detailed information on how to set up and use the SAP NetWeaver Development Infrastructure, please see: [http://help.sap.com/saphelp\\_nw70/helpdata/en/index.htm](http://help.sap.com/saphelp_nw70/helpdata/en/index.htm) > Technical Operations Manual > Administration of SAP NetWeaver Systems > Development Infrastructure.

### 3 Preparation

#### 3.1 Update SLD content

<p>1. Import newest content in SLD: Go to <a href="http://service.sap.com/swdc">http://service.sap.com/swdc</a> -&gt; SAP Software Distribution Center – Download -&gt; Support Packages and Patches -&gt; Entry by Application Group -&gt; Additional Components -&gt; SAP CR Content -&gt; SAP CR CONTENT UP TO 2007 -&gt; SAP CR CONTENT UP TO 2007 -&gt; #OS independent</p> <p>Download latest CRDelta&lt;version&gt;.zip</p>	<p>Example:</p>  <p>The screenshot shows a selection of a file named 'CRDelta1504_0-10004549.ZIP' with a corresponding label 'CRDelta1504'.</p>
<p>2. Go to your SLD (<a href="http://&lt;host&gt;:&lt;port&gt;/sld">http://&lt;host&gt;:&lt;port&gt;/sld</a>) – <i>Administration – Content Import</i>. Browse to the downloaded file and import it.</p> <p><b>Note:</b> It might take up to 30 minutes.</p>	 <p>The screenshot shows the 'Import' page in the SAP NetWeaver System Landscape Directory. It includes navigation links for Home, Administration, and Help. The main heading is 'Import'. Below it, a message states: 'Load CIM model or CIM data into the current namespace: <b>slid/active</b>.' There is a 'Selected File:' field containing the path 'C:\tmp\CRDelta1505_0-10004549.zip' and a 'Browse...' button. An 'Import Selected File...' button is also present. At the bottom, there is a 'Back to Administration' link and a 'Namespace: <a href="#">slid/active</a>' label.</p>

## 3.2 CBS Service Properties

1. Change CBS Service Properties to be able to use JDK 1.5:  
Log on to the Visual Administrator tool of the SAP NetWeaver 7.0 AS Java server on which NWDI is running. Go to *Services* → *Component Build Service*.

Change the two properties

- **BUILD\_TOOL\_JDK\_HOME**

(point to the JDK 1.5 directory)

- **JDK\_HOME\_PATH**

(define and add a new variable for

JDK 1.5, for example

JDK1.5.0\_HOME)

as shown in the example on the right.

Save and restart the CBS service within the Visual Administrator tool.

### Example:

```
BUILD_TOOL_JDK_HOME=c:\jdk1.5.0_07
JDK_HOME_PATH=JDK1.3.1_HOME=c:\j2sdk1
.4.2;default=d:\j2sdk1.4.2;JDK1.5.0_H
OME=c:\jdk1.5.0_07
```

## 4 Step by Step Solution

### 4.1 Track Templates and SC Dependencies

Before you start setting up an NWDI track, you need to decide which type of technology you want to develop within that track.

For NW CE 7.1 we distinguish between the following technologies:

- J2EE Application
- Web Dynpro Application
- Composite Application

Based on these technologies track templates are provided within the configuration wizard of the NetWeaver Administrator to speed up the setup process of a track. The table should give you an overview which track template you need for which type of development. If you don't want to use the configuration wizard, you can setup your software component and track manually using the described Software Component build-time dependencies.

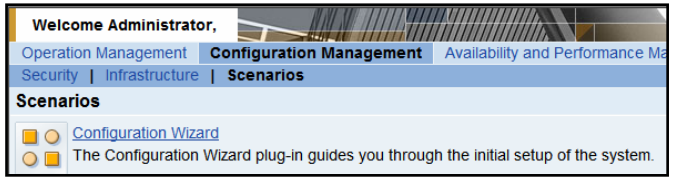
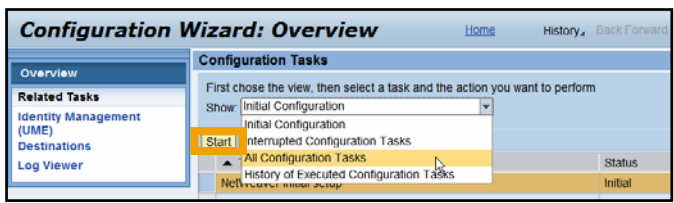
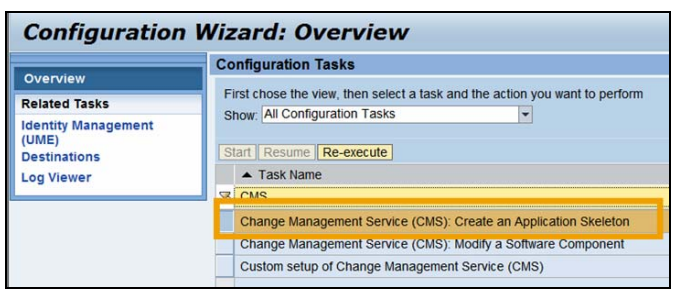
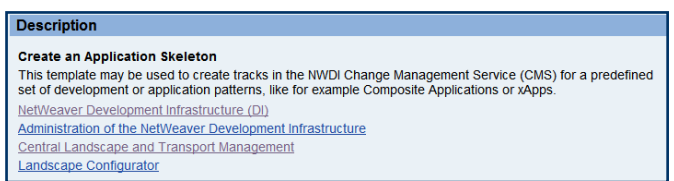
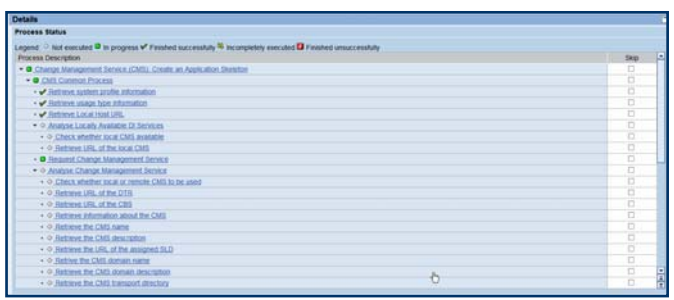
	<b>Template</b>	<b>Build-time Dependencies</b>	<b>Type of Development Components</b>
1	J2EE Application	ENGFACADE SAP_BUILDDT	Content – Guided Procedures Content – UME Permissions External Library J2EE – EJB Module J2EE – Web Module J2EE – Enterprise Application Java
2	Web Dynpro Application (=Sandbox)	ENGFACADE FRAMEWORK SAP_BUILDDT WD-RUNTIME	1 + Dictionary Web Dynpro
3	Composite Application	CAF CAF-MF ENGFACADE ENGINEAPI EP-BASIS EP-BASIS-API EP_BUILDDT ESF FRAMEWORK GP-CORE MMR_SERVER SAP_BUILDDT VCFRAMEWORK WD-RUNTIME	2 + Composite Application Enterprise Portal – Portal Application Standalone Enterprise Portal – Portal Content

## 4.2 All-in-one – Configuration Wizard

You can use the configuration wizard to setup NWDI tracks for all kind of developments in NW 7.0 and NW CE 7.1. There are two options how to perform and run the configuration wizard – start it:

- on the CE Server – tasks will be performed remotely via HTTP connection (4.2.1)
- directly on the application server on which the NWDI is installed (4.2.2)

### 4.2.1 Configuration Wizard in CE Server

<p>1. Open the SAP NetWeaver Administrator. Go to <i>Configuration Management – Scenarios</i> and start the <i>Configuration Wizard</i>.</p>	 <p>Welcome Administrator, Configuration Management Availability and Performance Management Security   Infrastructure   Scenarios Scenarios Configuration Wizard The Configuration Wizard plug-in guides you through the initial setup of the system.</p>
<p>2. Select the entry <i>All Configuration Tasks</i> in the list of all tasks.</p>	 <p>Configuration Wizard: Overview Home History Back Forward Overview Configuration Tasks First chose the view, then select a task and the action you want to perform Show: Initial Configuration Initial Configuration Interrupted Configuration Tasks All Configuration Tasks History of Executed Configuration Tasks Status Initial</p>
<p>3. Choose the task with the name <i>Change Management Service (CMS): Create an Application Skeleton</i> and choose <i>Start</i>.</p> <p>Note: If started once, choose <i>Resume</i> or <i>Re-execute</i>.</p>	 <p>Configuration Wizard: Overview Overview Configuration Tasks First chose the view, then select a task and the action you want to perform Show: All Configuration Tasks Start Resume Re-execute Task Name CMS Change Management Service (CMS): Create an Application Skeleton Change Management Service (CMS): Modify a Software Component Custom setup of Change Management Service (CMS)</p>
<p>4. See description and details of this template.</p>	 <p>Description Create an Application Skeleton This template may be used to create tracks in the NWDI Change Management Service (CMS) for a predefined set of development or application patterns, like for example Composite Applications or xApps. <a href="#">NetWeaver Development Infrastructure (DI)</a> <a href="#">Administration of the NetWeaver Development Infrastructure</a> <a href="#">Central Landscape and Transport Management</a> <a href="#">Landscape Configurator</a></p>
<p>5. During running the wizard you can choose to skip certain steps. Just open the <i>Details</i> area to see all steps. Checkbox <i>Skip</i> can be used to omit certain steps.</p>	 <p>Details Process Status Legend: Not executed In progress Finished successfully Incompletely executed Finished unsuccessfully Process Description Change Management Service (CMS): Create an Application Skeleton CMS Custom Process Retrieve system profile information Retrieve package type information Retrieve Local Host URL Retrieve Locally Available DI Services Check whether local CMS instance Retrieve URL of the local CMS Retrieve Change Management Service Analyze Change Management Service Check whether local or remote CMS to be used Retrieve URL of the DTF Retrieve URL of the CDS Retrieve information about the CMS Retrieve the CMS name Retrieve the CMS description Retrieve the URL of the assigned SLD Retrieve the CMS domain name Retrieve the CMS domain description Retrieve the CMS transport directory</p>



6. Enter the CMS URL of your NWDI server, the *NWDI\_CMSADM* user ID and the password. Choose *Next*.

7. In the next step enter a track name and a description for the new track. Furthermore you need to choose a track template that defines the software component dependencies within your track.

Enter the DTR and CBS URL.

8. Here is a screenshot of the track template list. For 7.1 you can choose from

- J2EE Application
- Web Dynpro Application
- Composite Application
- Sandbox

For more information see 4.1.

9. Specify the transport directory of your CMS NWDI server.

Optionally, you can choose to upload the needed software component archives via HTTP from your CE server to the NWDI CMS server. See step 10.

Choose Next.

**Change Management Service (CMS): Create an Application Skeleton**

61%

Step25/39: Request information about Track and Software Component

**Development Track**

Specify the details of the track to be used for the creation of an application skeleton, and choose the type of application.

CMS Name:

Domain Name:

Track Name:  ⓘ

Description:

Track Template:  ⓘ

DTR URL:  ⓘ

CBS URL:  ⓘ

**Software Component Archives**

In order to setup the track the template is going to register and import Software Component Archives (SCAs) that provide the necessary sources or build archives for the Software Components in this track.

CMS Host:

Transport Directory:  ⓘ

The CMS supports the upload of SCAs via HTTP connections. Select the checkbox if you want to upload SCAs from a local directory to the CMS.

Upload Software Component Archives

Previous | Next | Cancel

10. When choosing *Upload Software Component Archives* you were asked to specify a local upload directory from where the build archives can be uploaded via HTTP to the NWDI CMS server.

The CMS supports the upload of SCAs via HTTP connections. Select the checkbox if you want to upload SCAs from a local directory to the CMS.

Upload Software Component Archives

Upload Host:

Upload Directory:  ⓘ

11. During the next step you will specify the name, vendor and version of the Software Component you want to develop. Optionally you can assign the Software Component to an existing Product – choose *Attach Software Component to a Product*.

Alternatively you may attach the Software Component to a Product at a later time in the SLD manually.

Note that the Product name is case-sensitive.

Choose *Next*.

**Change Management Service (CMS): Create an Application Skeleton**

61%  
Step25/39: Request information about Track and Software Component

**Software Component**

Specify the name, vendor and version of the Software Component you want to develop in this track. Optionally you may assign the component to an existing Product.

[Software Components](#)  
[Components Development with the NWDI](#)

Name: DEMOCESP3 ⓘ  
Vendor: demo.org ⓘ  
Release: 1.0

Attach Software Component to a Product

◀ Previous Next ▶ Cancel

Attach Software Component to a Product

Product Name: MyProduct ⓘ  
Product Version: 1.0

12. After confirming the last step with *Next* the wizard runs unattended and requires no further input.

**Change Management Service (CMS): Create an Application Skeleton**

61%  
Step25/39: Request information about Track and Software Component

**Confirmation**

The template now starts the creation of tracks, registering of new software components and the import of Software Component Archives into the Change Management Server. **The process runs unattended. No further input is required.** Depending on the number and size of archives this process may take a considerable amount of time. You may monitor the progress and result in the CMS WebUI. Copy the following link to your browser and log on with a suitable NWDI administrator user.  
<http://pdf2317:50000/webdynpro/dispatcher/sap.com/tc~SL~CMS~WebUI/Cms>

◀ Previous Next ▶ Cancel

#### 4.2.1.1 Result

- A new Software Component is created in SLD with the correct build-time dependencies according to the chosen track template.
- NWDI CMS Update is performed.
- A new track is created with the new software component for development.
- Optional: The required build archives are uploaded via HTTP from the CE server directory to the CMS transport directory.
- Optional: The required Software Components are checked in and imported into the track.

The screenshot shows the SAP SLD interface. On the left, a table lists tracks with columns for ID, Name, and Description. The table contains several entries, including 'CO001' (Track for lecture), 'CE350' (CE350 CAF develop), 'LON024' (Track for Technical), 'LON027' (Track for Technical), 'SAND00X' (Sandboxes for Learn), and 'SAND00Z' (CE Sandboxes Track).

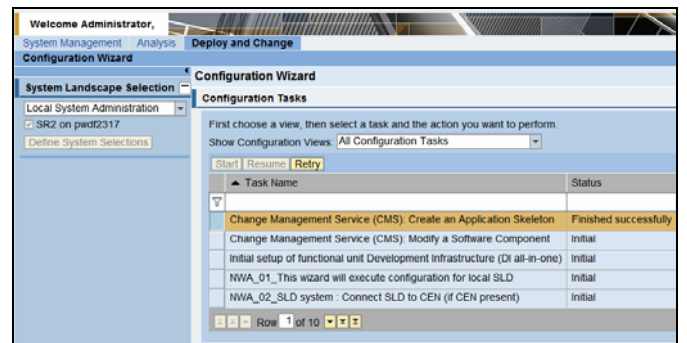
On the right, the 'General Track Data' configuration screen is shown. It includes fields for Track Template (DTR), Track Name (CO001), Track Description (Track for lecture CO001 SAP Technical 2007), Design Time Repository URL, Component Build Service URL, Development Configuration (CO001), and Development Configuration Description (Track for lecture CO001 SAP Technical 2007). Below this, the 'Software Components (SC)' section shows a table of developed software components:

Software Component Name	Vendor	Release	Status	Package Type
CO001_SC	example.org	1.0	000	Source and Arch
EMOFACADE	sap.com	7.10	000	
SAP_BULOT	sap.com	7.10	000	

## 4.2.2 Configuration Wizard in NWDI Server

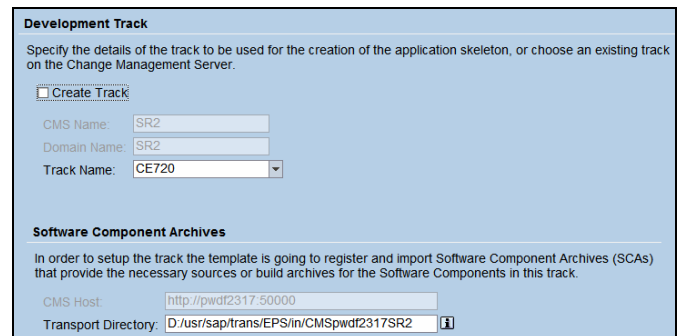
1. Open the SAP NetWeaver Administrator. Go to Deploy and Change. Choose All Configuration Tasks and select the task with the name *Change Management Service (CMS): Create an Application Skeleton*.

Proceed as described in 4.1.1.



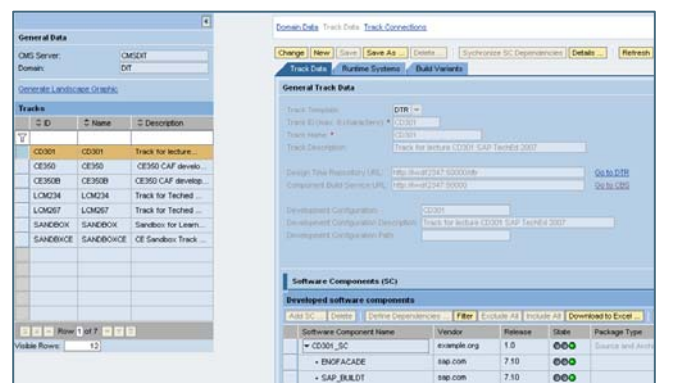
2. The only difference is that the track creation is optional. You can choose from the list of existing tracks to create a new Software Component and add it to the existing track.

Furthermore the upload of build archives via HTTP connection from the CE server to the NWDI server is not needed in that use case, as the build archive SCA files are needed within the CMS transport directory.



### 4.2.2.1 Result

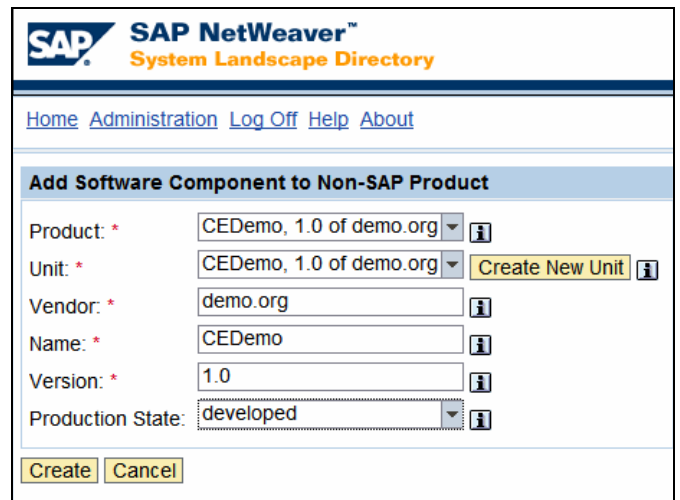
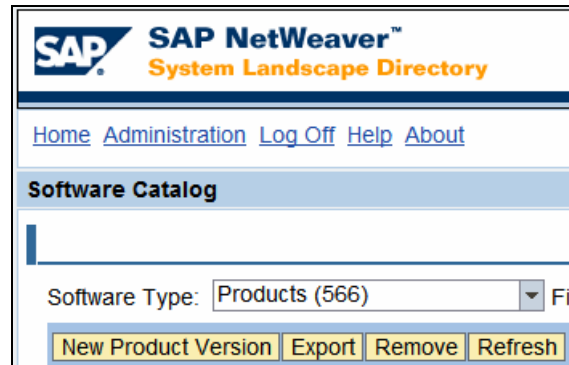
- A new Software Component is created in SLD with the correct build-time dependencies according to the chosen track template.
- NWDI CMS Update is performed.
- Optional: a new track is created with the new software component for development.
- Optional: The required Software Components are checked in and imported into the track.



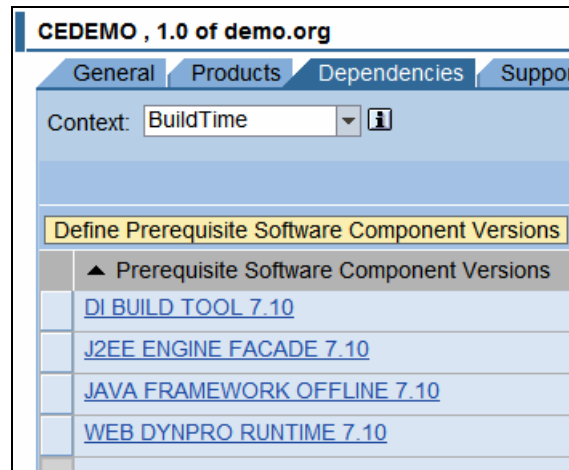
## 4.3 Manual Setup

### 4.3.1 Define Product and Software Component

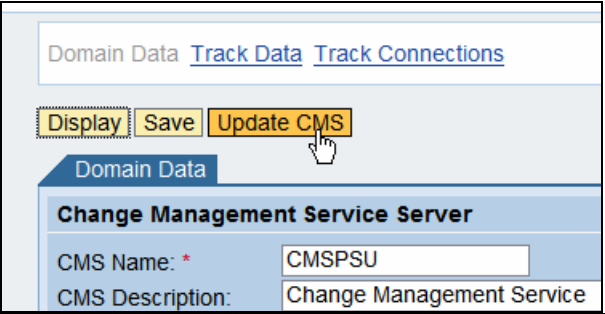
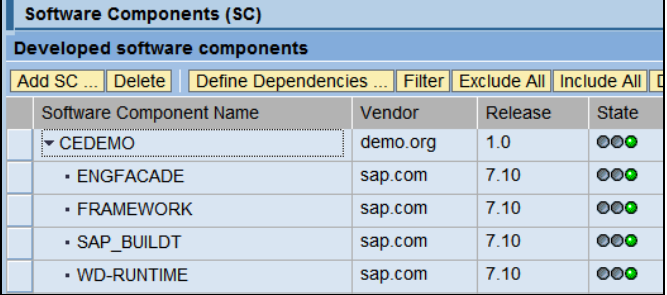
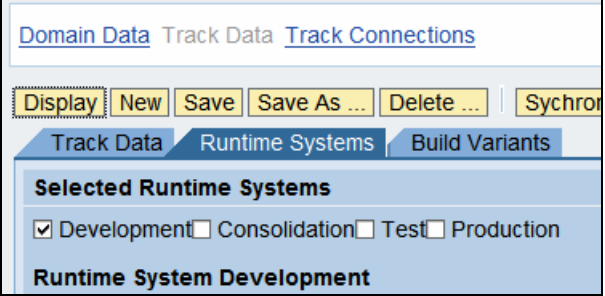
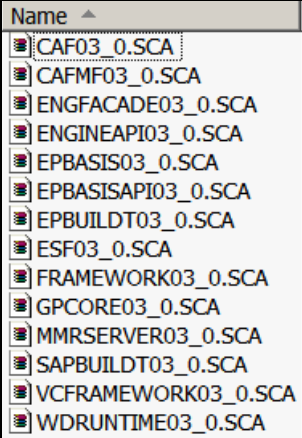
1. Define Product & Software Component: Within the SLD UI – Go to *Home – Products*. Define a New Product Version by selecting the button. Within the next wizard step, define a name, vendor and version number. Define a Software Unit and then at least one Software Component.

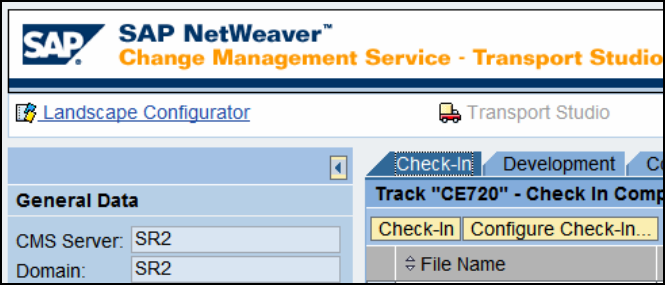


2. Define dependencies for the newly created software component. Select the tab *Dependencies* and choose the button *Define Prerequisite Software Component Versions* for every SC dependency. Please see the list of SC dependencies in 4.1.



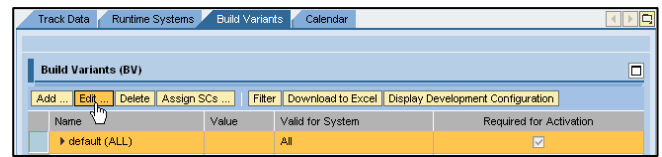
### 4.3.2 Define a new Track for CE

<p>1. Go to the NWDI Web UI (<a href="http://&lt;host&gt;:&lt;port&gt;/devinf">http://&lt;host&gt;:&lt;port&gt;/devinf</a>) – <i>Change Management Service – Landscape Configurator</i>. Select the tab <i>Domain Data</i> and press the button <i>Update CMS</i>. The CMS data will be synchronized with the new SLD data.</p>																									
<p>2. Create a new track for CE. Add the newly created software component as the <i>Software Component for Development</i> to that track. The list of required software components is automatically retrieved from the SLD.</p>	 <table border="1"> <thead> <tr> <th>Software Component Name</th> <th>Vendor</th> <th>Release</th> <th>State</th> </tr> </thead> <tbody> <tr> <td>CEDEMO</td> <td>demo.org</td> <td>1.0</td> <td>●●●</td> </tr> <tr> <td>• ENGFACADE</td> <td>sap.com</td> <td>7.10</td> <td>●●●</td> </tr> <tr> <td>• FRAMEWORK</td> <td>sap.com</td> <td>7.10</td> <td>●●●</td> </tr> <tr> <td>• SAP_BUILD</td> <td>sap.com</td> <td>7.10</td> <td>●●●</td> </tr> <tr> <td>• WD-RUNTIME</td> <td>sap.com</td> <td>7.10</td> <td>●●●</td> </tr> </tbody> </table>	Software Component Name	Vendor	Release	State	CEDEMO	demo.org	1.0	●●●	• ENGFACADE	sap.com	7.10	●●●	• FRAMEWORK	sap.com	7.10	●●●	• SAP_BUILD	sap.com	7.10	●●●	• WD-RUNTIME	sap.com	7.10	●●●
Software Component Name	Vendor	Release	State																						
CEDEMO	demo.org	1.0	●●●																						
• ENGFACADE	sap.com	7.10	●●●																						
• FRAMEWORK	sap.com	7.10	●●●																						
• SAP_BUILD	sap.com	7.10	●●●																						
• WD-RUNTIME	sap.com	7.10	●●●																						
<p>3. Define the required runtime systems: Go to <i>Change Management Service -&gt; Landscape Configurator -&gt; Runtime Systems</i> tab. Select the state (Development, Consolidation, Test or Production) for which you want to define a runtime system. Specify the connection data for the CE runtime system.</p> <p>Save the track.</p>	 <p>This feature to deploy the changes to NW CE 7.1 servers is supported since NWDI NW7.0 SPS13.</p>																								
<p>4. Check in and import the required SCA files to fill the CBS buildspace: Copy the needed sca files according to your SC dependencies (see 4.1).</p> <p>You will find the sca files that belong to the <i>Application Server Scenario</i> on the file system of your CE server in the following directory:  <code>\usr\sap\&lt;SID&gt;\SYS\EPS\buildarchives</code></p> <p>Within the note <a href="#">1045906</a> it is described, how to find the additional sca files that are needed to</p>	<p>Example for a list of sca files:</p> 																								

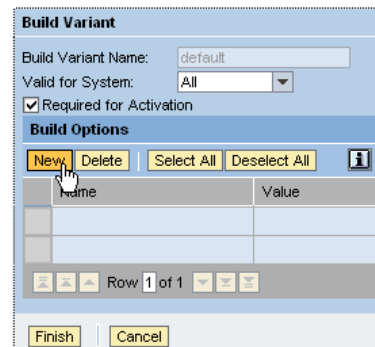
<p>implement the <i>Composition Tools Scenario</i>.</p> <p>Copy the needed sca files to your CMS transport directory (&lt;specified in the domain tab&gt;\CMS\inbox).</p>	
<p>5. Go to <i>Change Management Service</i> → <i>Transport Studio</i> → <i>Check-In</i> tab. Select the files and check them in. Go the <i>Development</i> tab choose <i>Select All</i> and <i>Import</i>. Repeat the last step for the <i>Consolidation</i> tab.</p> <p>Now the track is ready for use within the Developer Studio.</p>	

## 4.4 Add a new Build Option

1. Go to the CMS – *Landscape Configurator*. Select the newly created track. Choose the tab *Build Variants* and choose *Change* and then *Edit*.



2. A popup window of the default Build Variant comes up. Choose *New*.

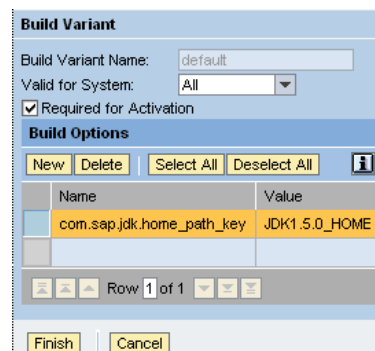


3. Add the following build option to your build variant:

Name =  
`com.sap.jdk.home_path_key`

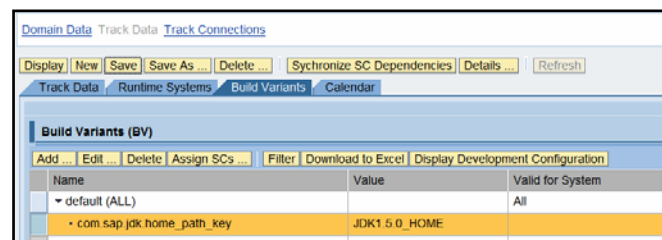
Value =  
<DEFINED JDK\_HOME\_PATH  
variable (here:JDK1.5.0\_HOME)>

Choose *Finish*.  
And save your track.



4. You can check the new build option entry in the xml file. Choose *Display Development Configuration*.

You should see an entry for the new build option  
`com.sap.jdk.home_path_key`  
that looks similar to the screenshot shown on the right side.



```

- <build-variants>
- <build-variant name="default" required-for-activation="yes">
- <build-options>
- <build-option name="com.sap.jdk.home_path_key">
- <option-value>JDK1.5.0_HOME</option-value>
</build-option>
</build-options>
- <variant-mappings>
<variant-mapping used-compartment="sap.com_CAF_1" used-variant-name="default" />

```

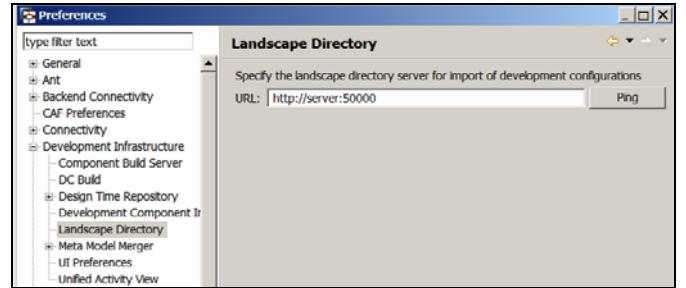


## 4.5 Setting up the CE Developer Studio


1. Setup CE Developer Studio for NWDI usage.

Go to *Window – Preferences – Development Infrastructure – Landscape Directory*.

Specify the URL of the landscape directory (**http://<SLD server host>:<port>**) that is configured for the NWDI server (Note: SLD Server is specified in the domain data tab of the Change Management Service).



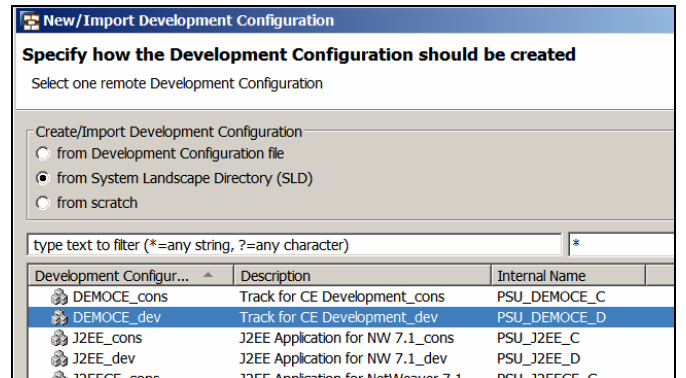
2. Now the developer can import the new development configuration into his CE IDE.

Select the  icon to start the wizard for importing development configurations.

Choose *from System Landscape Directory (SLD)*.

Select the appropriate development configuration (\*\_dev) and import it.

Develop a new application (create new DCs) within that development configuration, check it in, activate and release for transport.



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