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
1 Scenario
2 Prerequisites
3 Preparation
   3.1 Update SLD content
   3.2 CBS Service Properties
4 Step by Step Solution
   4.1 Track Templates and SC Dependencies
   4.2 All-in-one – Configuration Wizard
      4.2.1 Configuration Wizard in CE Server
      4.2.1.1 Result
      4.2.2 Configuration Wizard in NWDI Server
      4.2.2.1 Result
   4.3 Manual Setup
      4.3.1 Define Product and Software Component
      4.3.2 Define a new Track for CE
   4.4 Add a new Build Option
   4.5 Setting up the CE Developer Studio
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 > Technical Operations Manual > Administration of SAP NetWeaver Systems > Development Infrastructure.
## 3 Preparation

### 3.1 Update SLD content


   Download latest CRDelta<version>.zip

2. **Go to your SLD** (http://<host>:<port>/sld) – Administration – Content Import. Browse to the downloaded file and import it.

   **Note:** It might take up to 30 minutes.
### 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_HOME=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.

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

1. Open the SAP NetWeaver Administrator. Go to Configuration Management – Scenarios and start the Configuration Wizard.

2. Select the entry All Configuration Tasks in the list of all tasks.

3. Choose the task with the name Change Management Service (CMS): Create an Application Skeleton and choose Start.
   
   Note: If started once, choose Resume or Re-execute.

4. See description and details of this template.

5. During running the wizard you can choose to skip certain steps. Just open the Details area to see all steps. Checkbox Skip can be used to omit certain steps.
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.

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.
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.

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

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.
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

1. Go to the NWDI Web UI (http://<host>:<port>/devinf) – Change Management Service – Landscape Configurator. Select the tab Domain Data and press the button Update CMS. The CMS data will be synchronized with the new SLD data.

2. Create a new track for CE. Add the newly created software component as the Software Component for Development to that track. The list of required software components is automatically retrieved from the SLD.

3. Define the required runtime systems:
   - Go to Change Management Service -> Landscape Configurator -> Runtime Systems 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.
   - Save the track.
   - This feature to deploy the changes to NW CE 7.1 servers is supported since NWDI NW7.0 SPS13.

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).
   - You will find the sca files that belong to the Application Server Scenario on the file system of your CE server in the following directory: /usr/sap/<SID>/SYS/EPS/buildarchives
   - Within the note 1045906 it is described, how to find the additional sca files that are needed to

Example for a list of sca files:
implement the **Composition Tools Scenario**.

Copy the needed sca files to your CMS transport directory (<specified in the domain tab>\CMS\inbox).

<table>
<thead>
<tr>
<th>5. Go to Change Management Service → Transport Studio → Check-In tab. Select the files and check them in. Go the Development tab choose Select All and Import. Repeat the last step for the Consolidation tab. Now the track is ready for use within the Developer Studio.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="SAP NetWeaver Change Management Service - Transport Studio" /></td>
</tr>
</tbody>
</table>
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.


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.
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.