

How-to Guide E-Commerce 5.0

# How To... Create Custom Application in E-Commerce

**5.0** 

**Version 1.00 – March 2007** 

Applicable Releases: SAP E-Commerce 5.0 SAP NetWeaver '04s

Hari Ravu



<sup>©</sup> Copyright 2005 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.

IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, and Informix are trademarks or registered trademarks of IBM Corporation in the United States and/or other countries.

Oracle is a registered trademark of Oracle Corporation.

UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group.

Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C\*, World Wide Web Consortium, Massachusetts Institute of Technology.

Java is a registered trademark of Sun Microsystems, Inc.

JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

MaxDB is a trademark of MySQL AB, Sweden.

SAP, R/3, mySAP, mySAP.com, xApps, xApp, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data

contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

These materials are provided "as is" without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. SAP shall not be liable for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials.

SAP does not warrant the accuracy or completeness of the information, text, graphics, links or other items contained within these materials. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third party web pages nor provide any warranty whatsoever relating to third party web pages.

SAP NetWeaver "How-to" Guides are intended to simplify the product implementation. While specific product features and procedures typically are explained in a practical business context, it is not implied that those features and procedures are the only approach in solving a specific business problem using SAP NetWeaver. Should you wish to receive additional information, clarification or support, please refer to SAP Consulting. Any software coding and/or code lines / strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, except if such damages were caused by SAP intentionally or grossly negligent.

#### **Table of Contents**

1.	. Business Scenario	5
	Introduction	
	2.1 Topics Covered	
	2.2 Pre-requisites	
3.	Process Steps	
	3.1 Create Track	
	3.2 Configure NWDS	
	3.3 Create Custom Application	
	3.3.1 Import Development Configuration from NWDI Server	9
	3.3.2 Create Custom B2B Application	12
	3.3.3 Copy initial set of files from Standard Application to Custom Application	
	3.3.4 Adjust Context Root for New Application.	19
	3.3.5 Add a used relationship between the New DC and the Web DC	21
	3.3.6 Create project for Custom Java files	23
	3.3.7 Create project for Web Module files	24
	3.3.8 Add used relationship between Web/b2b and Shr/ext DCs	
	3.3.9 Build and Deploy Custom Application to Local Machine	27
	3.3.10 Activate and Auto-Deploy to Development Server	
	3.4 Modify Custom Application	
	3.5 Deploy to Development Server	
	3.6 Complete Developer Tasks	
4	Appendix	
	4.1 Common Issues During Project Setup and Usage	
	4.2 NWDI Notes and Blogs	34

## **Icons**

Icon	Meaning
$\triangle$	Caution
	Example
$\wp$	Note
<b>②</b>	Recommendation
	Syntax

# **Typographic Conventions**

Type Style	Description	
Example text	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options.	
	Cross-references to other documentation.	
Example text	Emphasized words or phrases in body text, titles of graphics and tables.	
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.	
Example text	Screen output. This includes file and directory names and their paths, messages, source code, names of variables and parameters as well as names of installation, upgrade and database tools.	
EXAMPLE TEXT	Keys on the keyboard, for example, function keys (such as F2) or the ENTER key.	
Example text	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.	
<example text=""></example>	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.	

#### 1. Business Scenario

A general requirement in E-Commerce 5.0 application development is to set up a custom application so that the original application is intact. This approach enables, to make comparison between standard application and custom application. This also helps to identify and isolate issues as being standard behavior or due to customizations, if and when they arise.

#### 2. Introduction

This step-by-step guide will show how to create such a custom application using E-Commerce 5.0 B2B as an example. This guide is just complementary to E-Commerce 5.0 Development and Extension Guide.



#### Topics Covered

- Create Track
  - Create NWDI Track and Development Configurations with required software components for E-Commerce 5.0 development.
- Configure NWDS
  - Configure NWDS to use the Track/Development Configuration.
  - Configure NWDS to use local J2EE.
- **Create Custom Application** 
  - o Create, deploy and test Custom Application (b2b as example).
- Modify Custom Application
  - Make minor modifications to the custom application.
  - Build and deploy on the local machine and verify custom application to see modifications.
- Deploy to Development Server
  - Check-in and activate changes to custom application.
  - Auto-deploy to development server and verify custom application to see modifications.
- Complete Development Tasks
  - Release activities to consolidation system.



## 2.2 A Pre-requisites

- NWDI setup is complete and functioning properly.
- NetWeaver Developer Workplace (NWDS + Local J2EE) is installed on a workstation.
- A user with same user id and password is created on both SLD and NWDI (if SLD and NWDI are on different servers).

## 2.3 Read This

The guide lists some issues that may be encountered during the setup and usage of this application. Please verify if they are applicable to your situation.

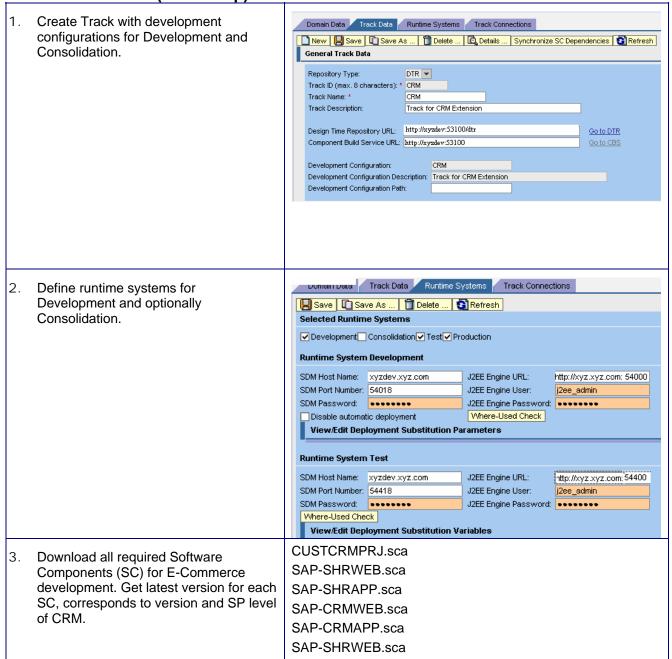
### 3. Process Steps

- Create Track
- Configure NWDS
- Create Custom Application
- Modify Custom Application
- Deploy to Development Server
- Complete Development Tasks



Estimated time to complete steps 3.2 through 3.6 is 2 hours (excluding the step 3.1 create track)

3.1 Create Track - (Basis Step)



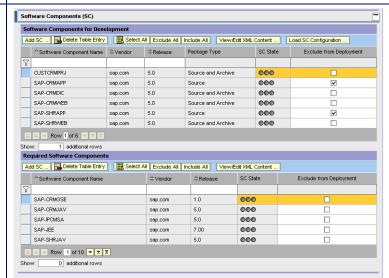
Refer E-Commerce 5.0
Development & Extension Guide.

SAP-SHRAPP.sca
SAP-CRMDIC.sca
sap.com~STRUTS.sca
sap.com~SAP-IPCMSA.sca
sap.com~SAP-CRMJAV.sca
sap.com~SAP-SHRJAV.sca
TEALEAF.sca

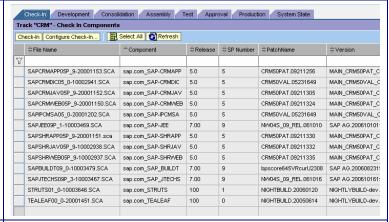
4. Add all these SCs to the Track.

Set SHRAPP and CRMAPP to "exclude from deployment".

This ensures the standard applications b2b, b2c etc., which are part of SHRAPP are not deployed (overwritten) when custom application is built and deployed. Standard applications are already deployed as part of installation process.



5. Check-in all components for the Track.



6. Import all components to Development.

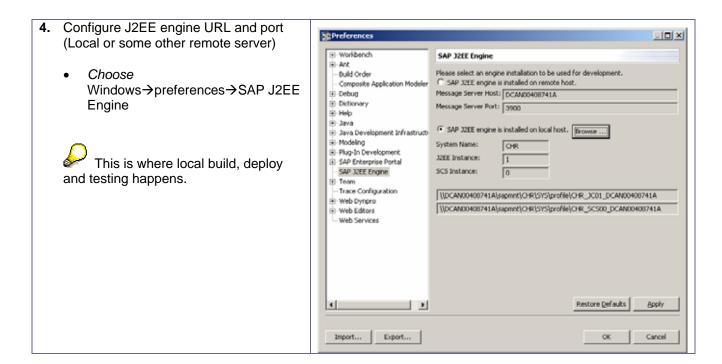
Import process takes eight or more hours to complete. It has been observed that importing one component at a time ensures the process is complete.

Selecting all SCs at once takes quite longer and process may be aborted.



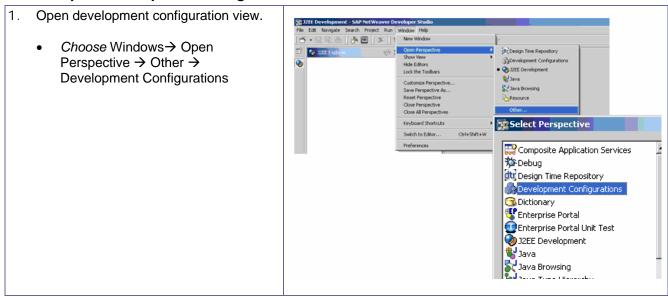
#### **3.2 Configure NWDS.** Use a workstation where NWDS is setup.

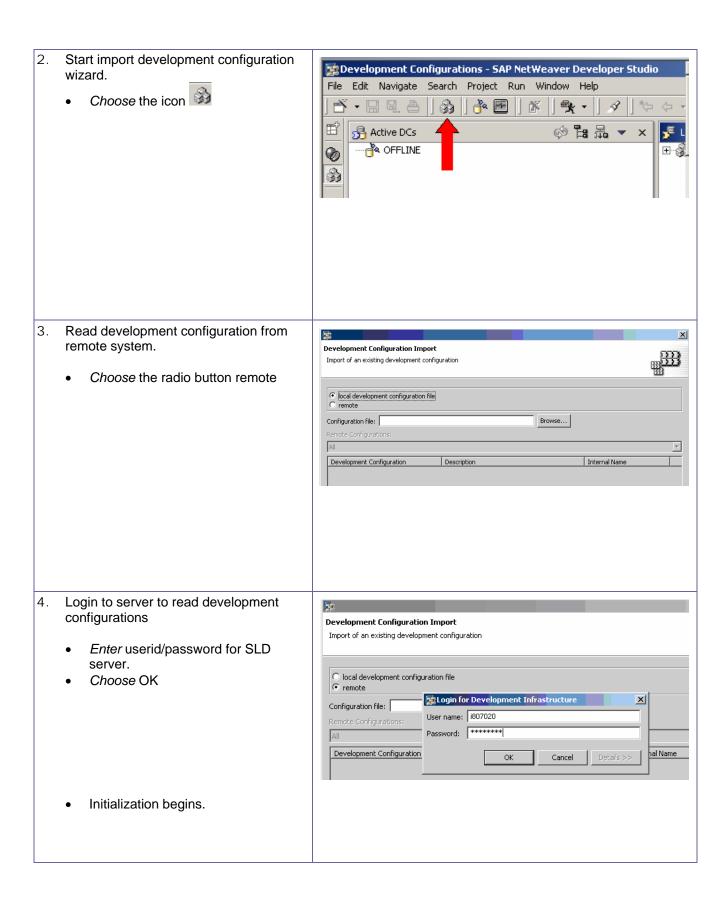
1. Configure SLD URL Preferences Start NWDS. Development Configuration Pool Workbench Choose Specify the landscape directory server to be used by the development configuration import wizard to get development configurations. Composite Application Modeler Windows → preferences → Java URL: http://xyzdev.xyz.com:54000 DDIC Preferences Debug
 Dictionary Development Ping server Infrastructure → Development + Help Specify the location of the development configurations root folder to be used by the development configuration import wizard. Location must be an absolute Path You should not change root, if the root contains some installed configurations. + Java Configuration URL: Enter URL:Port for SLD MI Development Root folder: C:\Documents and Settings\SAP Consultant\.dtc Mobile Web Dynpro Offline Modeling server Plug-In Development - SAP Enterprise Portal - SAP J2EE Engine ± Team Trace Configuration Web Services 2. Verify SLD connection Ring Server Choose Ping Server button. Ping was successful. As you are not logged in yet, you URL;http://xyzdev.xyz.com:54000 will see a warning: user authentication is Warning:User authentication is not checked in offline mode. not checked in offline mode. Specify the location of the development configurations root folder to be used 3. Specify local folder where Development by the development configuration import wizard. Location must be an absolute Path. You should not change root, if the root contains some installed configurations. Configuration is saved. Root folder: C:\Documents and Settings\SAP Consultant\.dtc Browse... Root Folder: Accept default (unless you want to specify some other folder). This is the location where all files from server (DTR) are downloaded to. When you edit a file, you are modifying this local copy. And when you build and deploy for local testing, the files are read from this location.

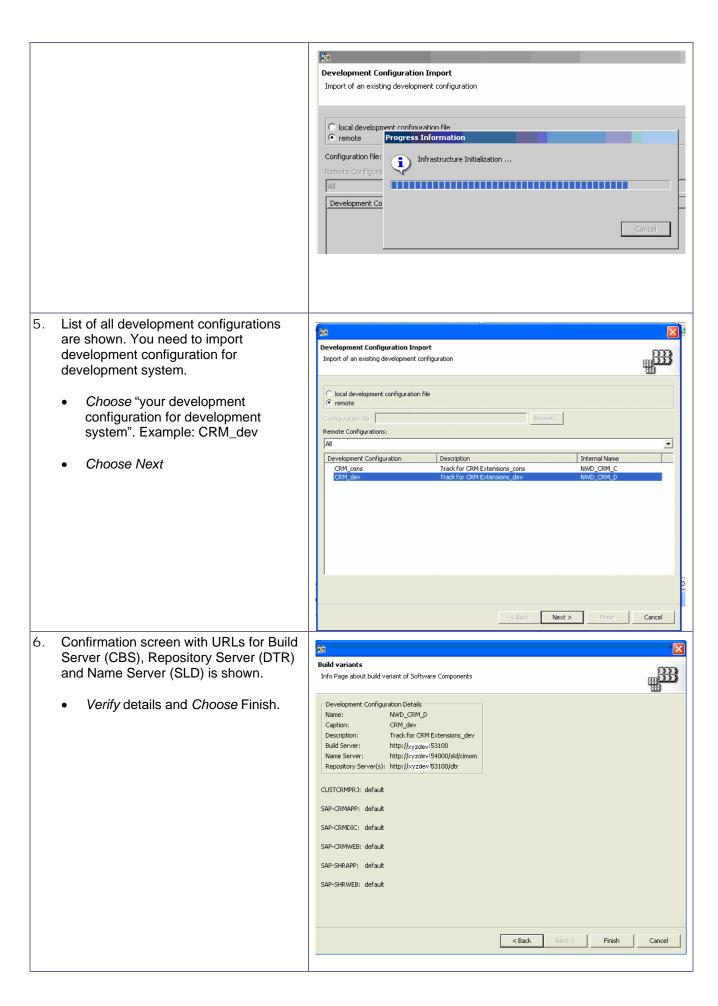


#### 3.3 Create Custom Application

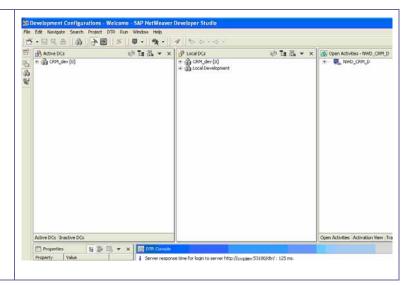
#### 3.3.1 Import Development Configuration from NWDI Server





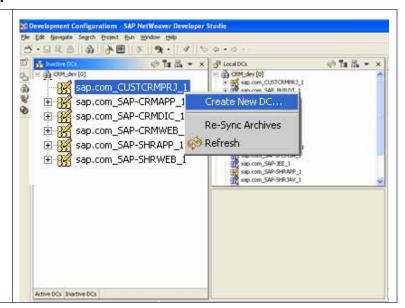


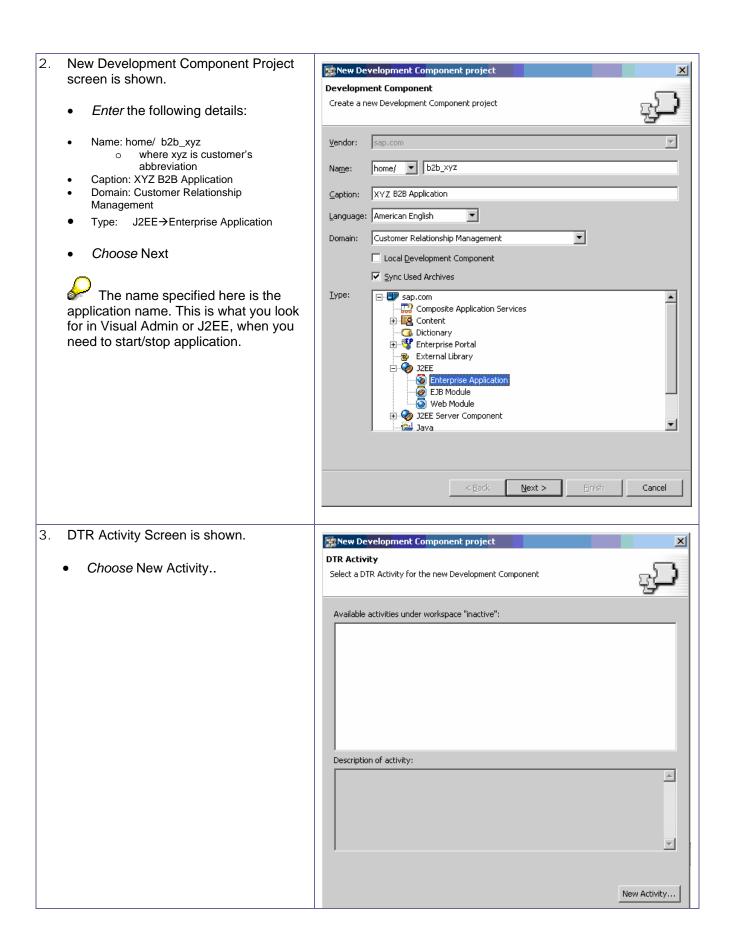
- 7. Process completes and development configuration is shown on the screen.
  - Example CRM\_dev[0]

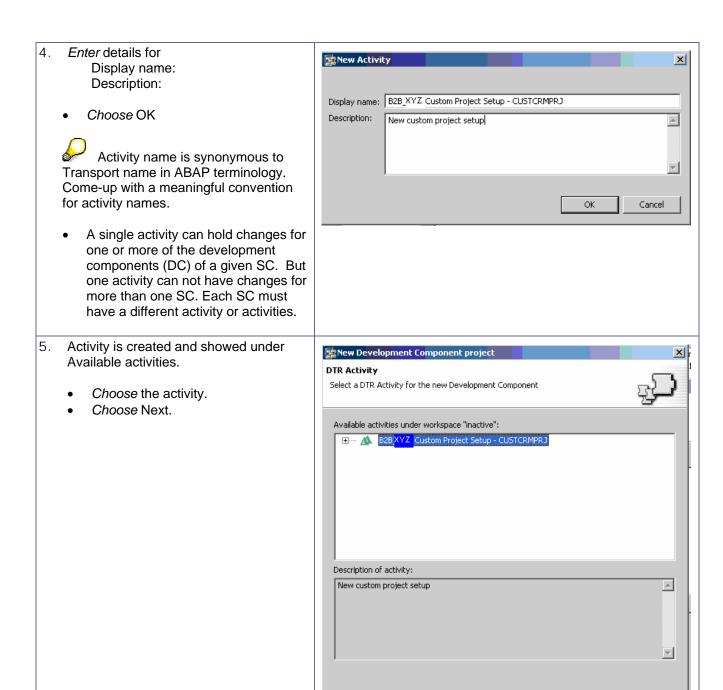


#### 3.3.2 Create Custom B2B Application

- 1. From development configuration view.
  - Choose Inactive DCs tab (Lower Left)
  - Expand [+] CRM\_dev[0]
  - Right click on sap.com\_CUSTCRMPRJ\_1 → Choose Create new DC





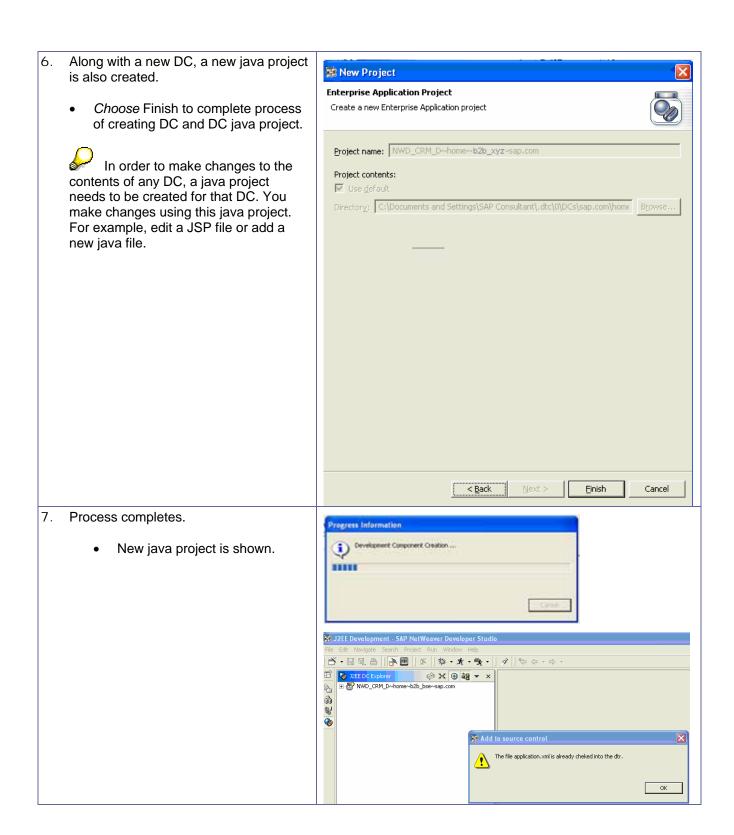


New Activity...

Cancel

< Back

Next >

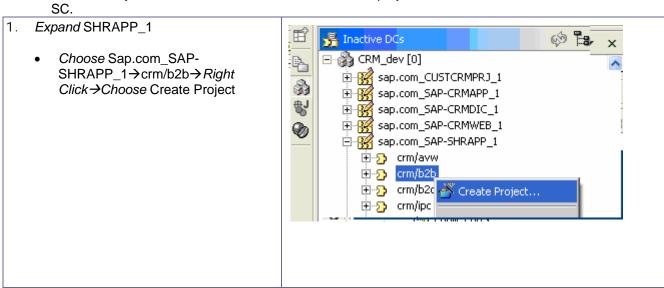


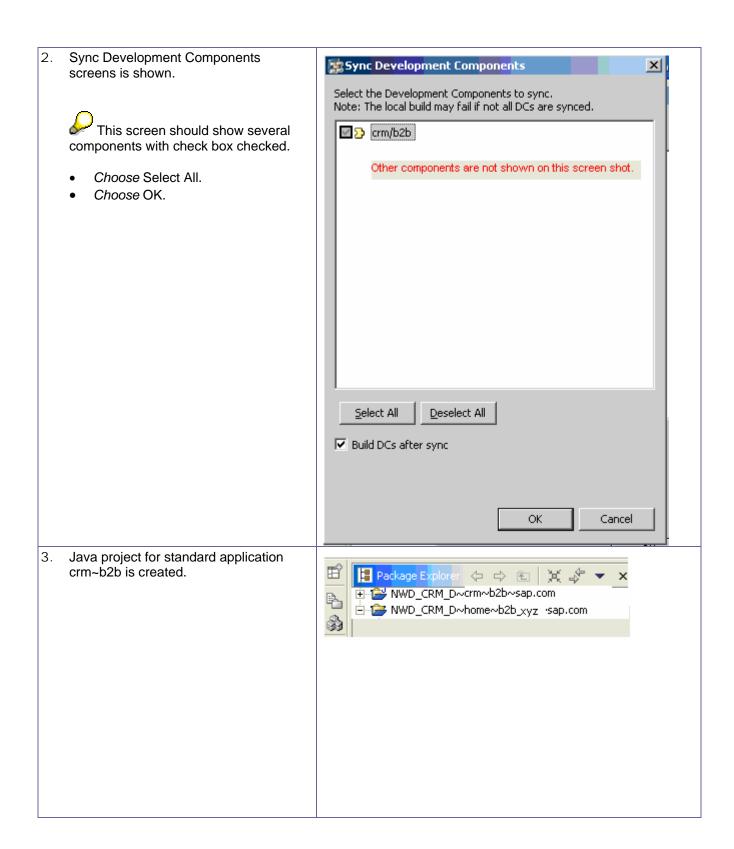
Switch back to Dev. Configuration 🥦 Development Configurations - SAP perspective. File Edit Navigate Search Project Run Choose (development · II II A | configuration view) from left 町 🔏 Inactive DCs pane. (Not the import wizard from top tool bar, both icons ⊡ - 分 CRM\_dev [0] look same). ☐ 
☐ 
☐ sap.com\_CUSTCRMPRJ\_1 3 ⊕-23 home/b2b\_XYZ Right click on CUSTCRMPRJ 粤 sap.com\_SAP-CRMAPP\_1 SC and Choose refresh. 6 Expand the tree [+] to see the new DC. If it does not show up, you may need to exit out of Dev. Studio and re-launch studio. Do not choose import

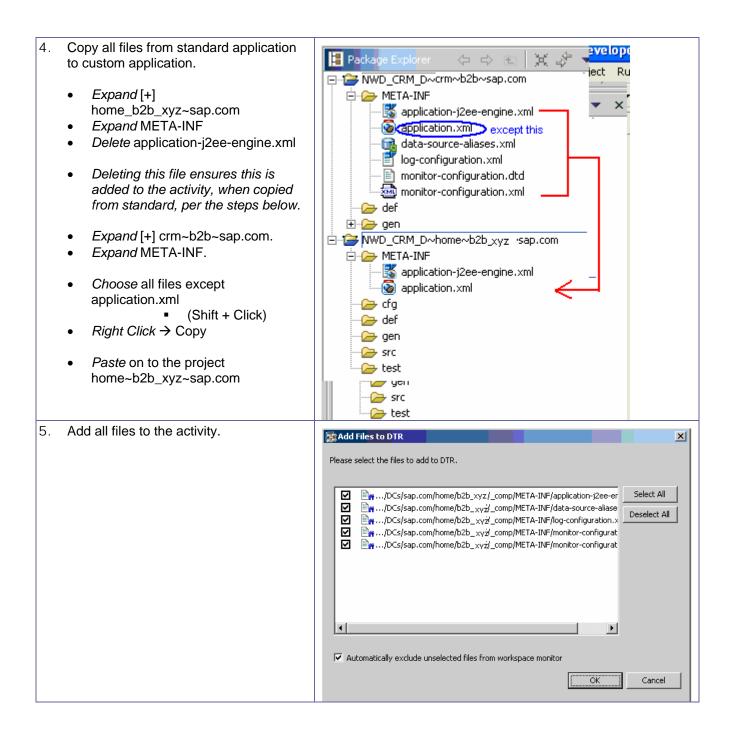
#### 3.3.3 Copy initial set of files from standard application to custom application.

wizard. Choose login , when ever you re-launch studio (NWDS). We are done with using the wizard (importing development configuration).

We need to copy files from the standard application crm~b2b to our custom application home/b2b\_xyz. In order to do this, we need to create a project for crm~b2b DC of SHRAPP SC.



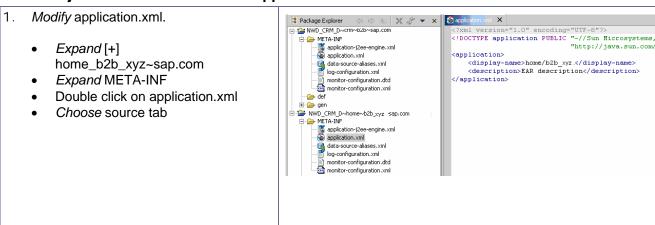




6. Choose the activity created before (in step 3.3.2.5).



#### 3.3.4 Adjust Context Root for New Application.



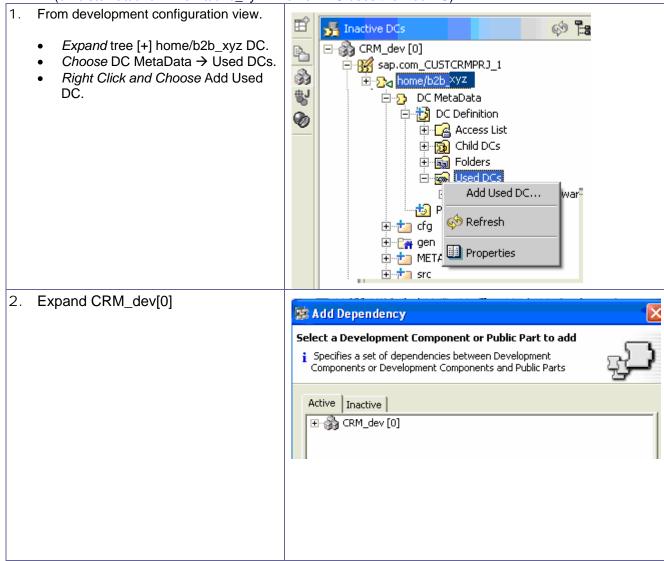
<?xml version="1.0" encoding="UTF-8"?> 2. Modify application.xml to look like <!DOCTYPE application PUBLIC "-//Sun Microsystems, Inc.//DTD J2EE Application 1.3//EN" Choose Save. "http://java.sun.com/dtd/application\_1\_3.dtd"> Original content <application> <display-name>home/b2b\_xyz</display-name> <description>EAR description</description> display-name: name of the application as </application> shown in Visual Admin, J2EE Change the content as below location of war file containing all web-uri: <application> web related code (jsp, java etc.) <display-name>home/b2b\_xyz</display-name> <description>XYZ B2B Application</description> context-root: name of root folder on the <module> server where application will be <web> deployed. This is also the URL to <web-uri>sap.com~crm~isa~web~b2b.war</web-uri> access the custom application. <context-root>b2b\_xyz</context-root> </web> Example: </module> http://xyzdev.xyz.com:50100/b2b\_xyz/b2b/init.do </application> applica Add this file to activity, if not already Show In data-s log-cor added. Open monito monito Open With Advanced Sync Right click on application.xml Remove from Client cfq **Cut** Choose DTR→Add def П Сору gen Paste src FY Edit test Delete Edit (exclusive) \_B2B Refactor If Add option is disabled, it means 🗱 Delete Lockina the file is already added to the activity, 🚈 Import... at the time creation of this custom Repository Managers Generation Resolve Conflict project. 🧰 Service, Filter and Scheduler Task Generation 🛂 Export... A View Changes Compare with Active Version Quick PAR Upload 🚸 Refresh Workspace Monitor Compare Meta Data Run Ant...

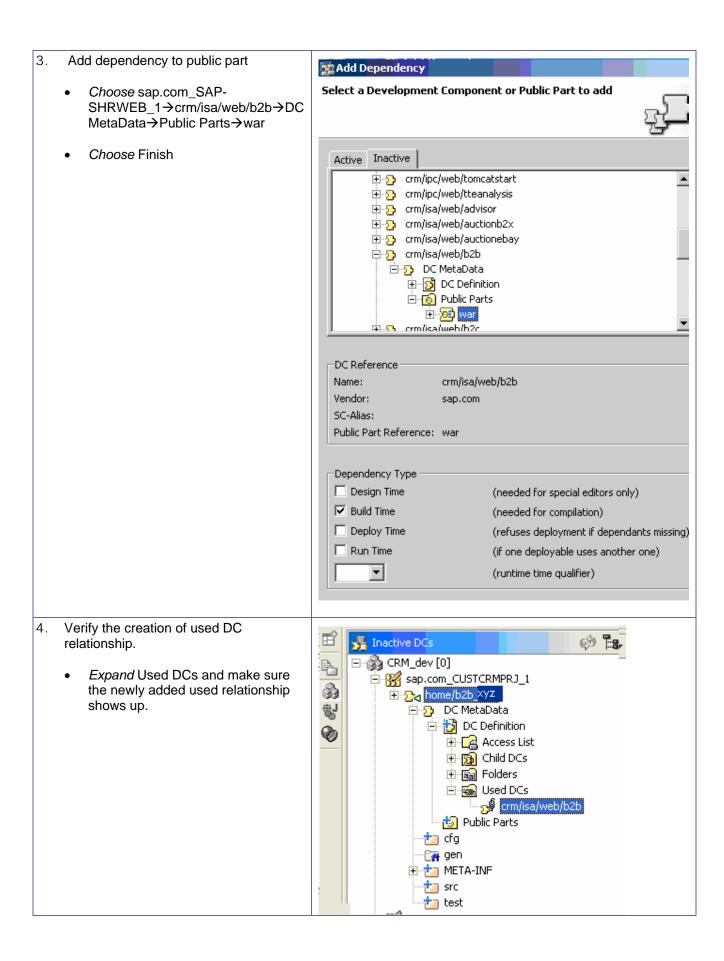
Run Javadoc Wizard...

♣ Download

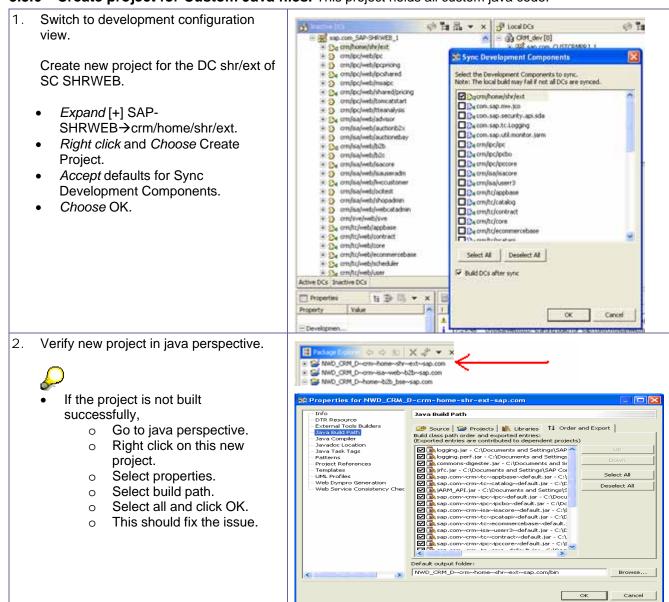
#### 3.3.5 Add a used relationship between the New DC and the Web DC

(crm/isa/web/b2b → home/b2b\_xyz. The new DC uses the web DC).





3.3.6 Create project for Custom Java files. This project holds all custom java code.



# 3.3.7 Create project for Web Module files (JSP, XML, Mimes, Resource files etc.). JSPs are modified directly in the standard source code.

1. Switch to development configuration view.

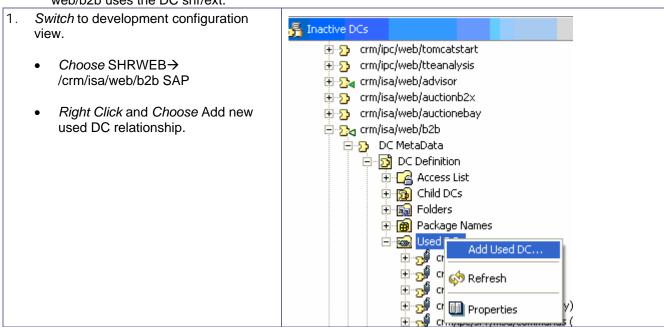
Create new project for the DC crm/isa/web/b2b of SC SHRWEB.

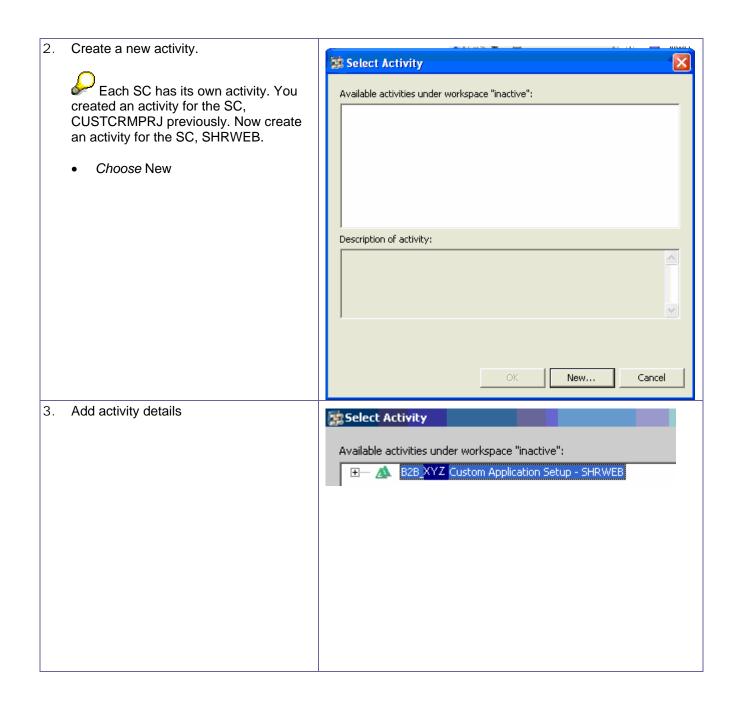
• Expand [+] SAP-SHRWEB→ crm/isa/web/b2b
• Right click and Choose Create Project.
• Accept defaults for Sync Development Components.
• Choose OK.

• A new project is created for web~b2b~sap.com

#### 3.3.8 Add used relationship between Web/b2b and Shr/ext DCs.

web/b2b uses the DC shr/ext.



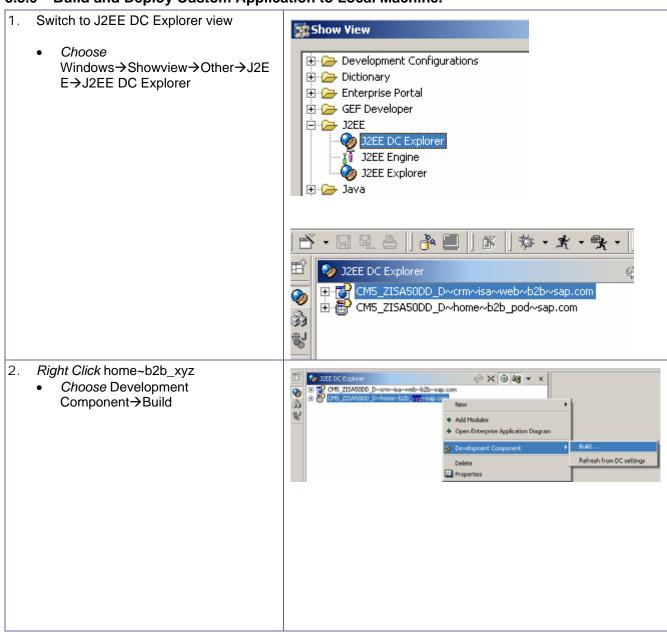


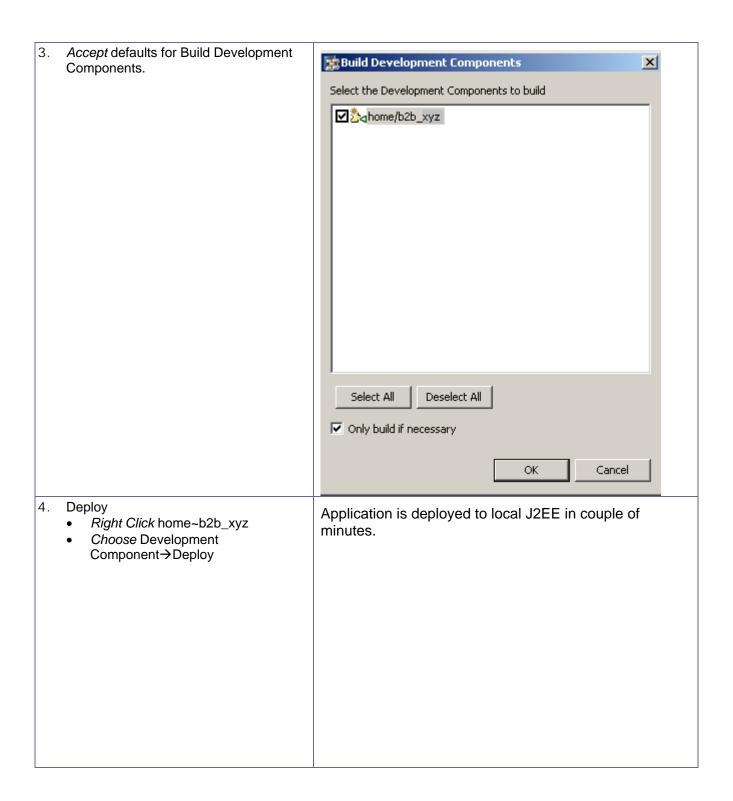
4. Choose sap.com\_SAP-Add Dependency SHRWEB\_1→crm/home/shr/ext→DC MetaData→Public Parts→assembly Select a Development Component or Public Part to add j Specifies a set of dependencies between Development Components or Development Components and Public Parts Choose Finish Verify the new Used DC Active Inactive relationship in crm/isa/web/b2b. ⊟ 😽 sap.com\_SAP-SHRWEB\_1 ▲ ☐ → Crm/home/shr/ext Ė-- DC MetaData 🚊 🔂 DC Definition 🗓 👩 Child DCs 🖹 👩 Public Parts ± 🎒 assembly 🕀 🤧 crm/ipc/web/ipc 🖶 🤼 crm/inc/web/msainc DC Reference Name: crm/home/shr/ext sap.com Vendor: SC-Alias: Public Part Reference: assembly **(1)** Dependency Type Design Time (needed for special editors only) ✓ Build Time (needed for compilation) Deploy Time (refuses deployment if dependants missing) Run Time (if one deployable uses another one)

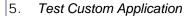
 $\blacksquare$ 

(runtime time qualifier)

#### 3.3.9 Build and Deploy Custom Application to Local Machine.



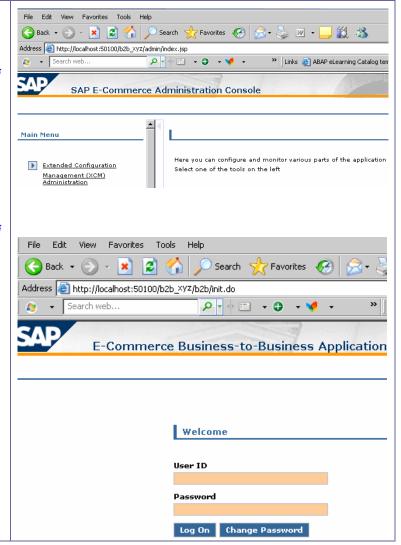




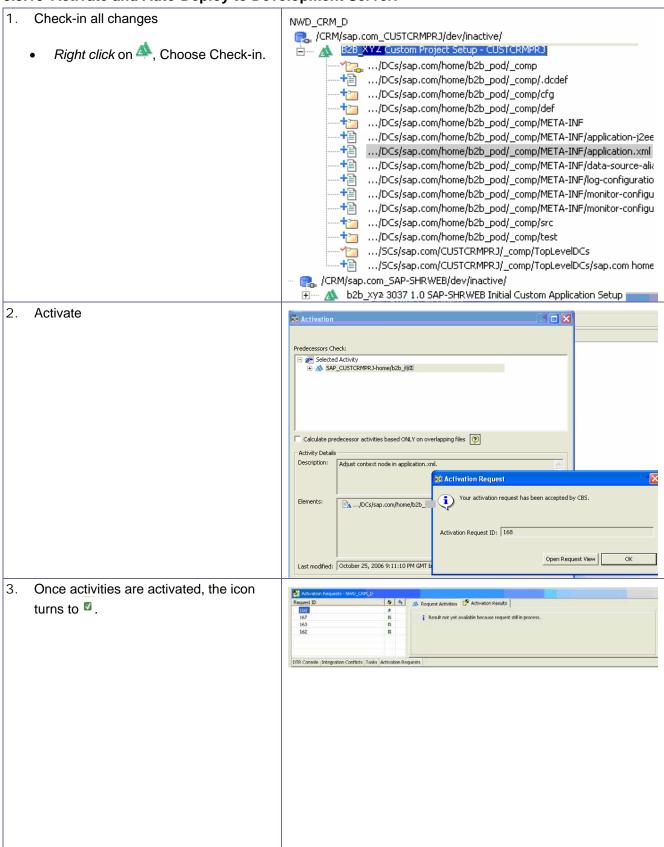
- Access URL for xcmadmin..
- Example: <u>http://localhost:50100/b2b\_xyz/adminn</u>
- Access URL for application
- Example:
- <a href="http://localhost:50100/b2b\_xyz/b2b/i">http://localhost:50100/b2b\_xyz/b2b/i</a>
   <a href="nit.do">nit.do</a>

XCM configuration must have been completed for standard b2b. By default custom b2b copies the standard b2b settings from the database.

You may need to stop/start the custom application.



#### 3.3.10 Activate and Auto-Deploy to Development Server.



- 4. Test application on Development Server.
  - Once all activities are activated, if auto-deploy is on (default for Track), the application is deployed to Development Server.
  - Access URL for XCM admin.
  - Example:
  - http://xyzdev.xyz.com:50100/b2b\_xy z/admin
  - Access URL for custom application
  - Example:
  - http://xyzdev.xyz.com:50100/b2b\_xy z/b2b/init.do

XCM configuration must have been completed for standard b2b. By default custom b2b copies the standard b2b settings from the database.

You may need to stop/start the custom application.

3.4 Modify Custom Application

- 1. Make a change to a JSP.
  - Launch Developer Studio.
  - Login to NWDI server
  - Switch to Java Perspective
  - Expand crm~isa~web~b2b project
  - Access webContent→b2b→welcome.jsp
  - Right click on welcome.jsp→DTR→Edit.
  - Create a new activity.
  - Add welcome.jsp to the new activity (select activity)
  - Make some html changes.
  - Example: add customer name
  - Build and deploy to local J2EE engine.
  - Test the application and verify changes on welcome page.

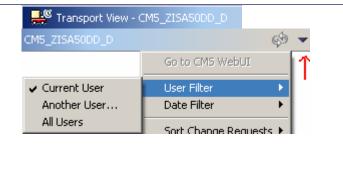
3.5 Deploy to Development Server

- 1. Move change to NWDI.
  - Check-in activity.
  - Activate activity.
  - Test changes on development server.
  - Test the application and verify changes on welcome page.

3.6 Complete Developer Tasks

- Once application is tested okay on development server, proceed with moving changes to consolidation system.
  - Launch Dev. Studio.
  - Choose activation view.
  - Choose Transport view.
  - Right click and release all activities that are ready for consolidation.

By default each user can see only their activities in the transport view. This behavior can be changed by resetting the user filter to 'All Users'.



# 4 Appendix

4.1 Common Issues During Project Setup and Usage.

	4.1 Common Issues During Project Setup and Usage.			
Issue	Description	Resolution	Comments	
Standard application is still being overwritten.	After setting up the custom application as per Development & Extension guide, once deployed, the custom app. Is overwriting the standard application.	There seems to be an issue with CMS in NW2004s sp10 and below.	The fix is supposed be available in sp 13.	
Can not login to SLD/NWDI from NWDS	When trying to setup NWDS project setup, could not login to DTR. System kept rejecting UserID/Password, when only NDI_DEVELOPER ROLE is granted to the user accounts.	Temporarily j2ee admin privileges were granted	Later we found that basis needs to do ACL configuration in order to use JDI_DEVELOPER role. After an administrator configuring these using the NWDS, the userid works fine with JDI_DEVELOPER role.	
One of the SCs in the track doesn't show any DCs.	Even though we imported all required SCs into the track, the SC, SAP~SHRWEB does not show any DCs under it.	Re-imported the latest version of this SC from service market place.		
Build process for custom app fails.	After creating custom project per extension guide, check-in and activation, the build fails.	Add correct entries in application.xml. Context root and web-uri entries need to be specified properly. The extension guide was not clear on this.	New entries should look like. <application> <display-name>home/b2b_xyz</display-name> <module> <web> <web- uri="">sap.com~crm~isa~web~b2b.war <context-root>b2b_xyz</context-root> </web-></web></module> </application>	
Custom b2b app shows XCM error.	After deploying new application, the app. Shows error message "Failed to initialize XCM". Even the b2b_xyz/admin screen just shows a blank screen with out any links or menu items to XCM configuration/administration.	Applied patch SP09-03 for all JAVA and CRM components. One of the xml files, application-j2ee-engine.xml file went missing from custom app, after deployment. Readded this file and re-deployed.	application-j2ee-engine file is lost during first deployment. This file needed to be copied again from standard b2b to custom b2b and redeploy again.	

Issue	Description	Resolution	Comments
Java Debug won't work.	After configuring java debug as per help.sap.com, the debug port does not stay up when debug process is started. The port kept dying as soon as debug is initiated.	Changed the port to 1024 from 54021.	After trying several different ways (single node, multiple server nodes) etc., finally using the standard port "1024" solved the issue. This could be related to operating system/sizing issue with AS/400.
Application-j2ee- engine.xml is not added to activity.	When application-j2ee-engine.xml is copied from standard b2b to custom b2b, the NWDS does not recognize this as a change and there by does not add to the activity.	Delete the application-j2ee-engine.xml from custom application before copying from standard app.	This ensures the file is added to the activity.

#### 4.2 NWDI Notes and Blogs

Nr	Туре	Title/Nr	Description	URL
2874	Blog	Best practice	Principles of NWDI track design	https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/2874
3390	Blog	Special track design	Extended track design for short release cycles and maintenance	https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/3390
737368	Note	Hardware requirements of NWDI	Sizing of NWDI in multiple scenarios	https://service.sap.com/sap/support/notes/737368
754143	Note	CMS remarks / restrictions	Do's and Don'ts when using the CMS	https://service.sap.com/sap/support/notes/754143
896427	Note	NWDI Admin User/Password update	Server communication problems after the reconfiguration of the NWDI admin user/password	https://service.sap.com/sap/support/notes/896427
907211	Note	CBS Build problems	CBS build problem on Unix platforms	https://service.sap.com/sap/support/notes/907211
923352	Note	Debugging of Java applications - Settings	Which settings have to be performed to setup a debuggable Java application server	https://service.sap.com/sap/support/notes/923352
935334	Note	External libs are not packed into J2EE lib	Bug with the usage of external libraries in 6.40 SP16	https://service.sap.com/sap/support/notes/935334
935475	Note	Grouping SLD instances	How to group several SLD instances	https://service.sap.com/sap/support/notes/935475
936318	Note	Separating SLD instances	How to separate SLD instances (only German)	https://service.sap.com/sap/support/notes/936318
947581	Note	Changing the workspace directories of NWDS	Changing the default settings for all NWDI relevant directories of the NWDS due to use multiple configurations, versions or for a Citrix installation	https://service.sap.com/sap/support/notes/947581
955281	Note	CMS import fails due to an internal server error in DTR	CMS import fails with an INTERNAL SERVER ERROR in the DTR server	https://service.sap.com/sap/support/notes/955281
985821	Note	DTR Import Hangs on MSSQL Database	DTR import is not proceeding on a MS SQL database	https://service.sap.com/sap/support/notes/985821

