How-To Guide
SAP NetWeaver
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How To... Configure CM Services in SAP NetWeaver 7.3 and up

Document History

Document Version	Description
1.0	First official release of this guide

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1 Scenario

A while ago, the Change and Transport System of ABAP (CTS) has been enhanced so that it can be used for transporting non-ABAP objects as well (enhanced CTS, also known as CTS+). In the remainder of this document, the abbreviation CTS is used for the system where the transport landscapes are configured and for the fact that CTS can also be used for non-ABAP transports.

In Change Management Service (CMS) of NWDI you have to basically perform two tasks when you configure a track: The first task can be considered as the system administration part where you setup a transport landscape for your runtime systems (AS Java). The second task is the configuration of so-called development configurations for your development cycle. Later on, you use the development configuration in the SAP NetWeaver Developer Studio (NWDS) to develop your software and the CMS to assemble and transport deployable units (SCA files – Software Component Archives). The integration with CTS is possible during the assembly step where the SCA file is attached to a CTS transport request. In this scenario, a track configuration is still needed.

With the introduction of CTS and CM Services these tasks are separated. The first task is covered by CTS, where you define your non-ABAP runtime systems and your transport route. The remaining second part – development configurations and export - is handled by CM Services. Therefore a CMS track in NWDI is not needed. With the close integration of CM Services into the mechanism of the CTS you can manage your development configurations together with your transport landscape using the CTS system.

> **Note**
>
> Of course it is still possible to use NWDI with CMS with or without CTS integration also in parallel to CM Services.
>
> Check note 1775838 ‘CMS / CM Services: What to use in which scenario?’ for details on the options and on what to use when.
> Details about CMS and CM Services, similarities and differences are explained in a blog on SCN:
> http://scn.sap.com/blogs/cms_cm_services_similarities_and_differences/2013/05/29/similarities-and-differences-in-cms-and-cm-services

With CM Services two scenarios are possible. You can transport sources or you can transport deployables. Deployables are files (SCAs or SDAs) that can be deployed to an AS Java with the help of SDM or Deploy Controller (as of SAP NetWeaver 7.10). After the deployment, the new functionality can be used on the system – no built is required on this system.

When setting up your landscape you need to decide what you would like to transport along that transport route – sources or deployables. In both cases you can choose on which level of granularity you would like to transport. For the transport of sources, you can transport source changes on a small granular level which is called Activity transport or you can transport complete software components (SCAs). For a landscape that is configured for transporting deployable units, you have the option to transport SDAs based on small source changes - the Activities - , single development components (SDAs) or complete Software components (SCAs).

The export of SDA-based activities and the transport of activities on source level are triggered directly from within the NWDS via the *Transport View* in the *Development Configuration Perspective*. When releasing an activity the system either evaluates all the runtime objects (SDAs) that belong to the activity and includes them in the transport request in CTS or the sources are exported and attached to a transport request. The file format of the attached activity-based package is called *.dip (Development Infrastructure Package) in both cases. To import the transport requests, the methods and tools of CTS are used.

Another option is to use the DI Export Service UI to export SCAs or SDAs. During the export the SCA or SDA files are attached to a CTS transport request. Imports are again done via the Transport Management System (TMS) on the CTS system.

To set up a landscape for deployable transport, a development configuration is needed only for your development system. All other systems in your landscape of runtime systems are pure deploy-targets.

In addition the transport of single Development Components (SDAs) is possible via the DI Export Service UI. But this is designed for experts only and should be used with care. You need to make sure to transport in a consistent way. When using the SDA export via the Export Service Web UI, dependencies are not taken into consideration. Only the SDA that you chose will be attached to a transport request.

If you transport deployables, only the runtime system and the CTS system are needed when executing an import. The NWDI system can be down.

Transporting sources through the system landscape requires a development configuration (with DTR workspaces and CBS buildspace) for each target system that is part of the transport route in your landscape, as well. The import process for sources triggers a rebuild within the CBS buildspace of the target system. The SDAs that are affected by the changed sources will be re-built and deployed to the target runtime system. The import is started from the import queue of your target system on the CTS system. This process is in most cases much quicker than transporting the whole software component (SCA) if there are just small changes on an upper level. But if your change is done in a very basic development component that is used by many other development components, a re-build for all the dependent development components will be done. In that case, the transport of activities might not speed up the process. A combination of both options – transporting activities and SCAs on a source level might make sense. If you decide to use the transport of sources, the NWDI system has to be available while executing the import (the sources need to be integrated, a build has to be triggered).

> **CAUTION**
>
> Keep in mind that as a consequence of the source transport, sources are available in the corresponding DTR workspaces for all systems of your landscape – even for the productive system. Therefore you should set ACLs for these workspaces to prevent an accidental source change by your developers. For more details take a look at the SAP library http://help.sap.com/saphelp_nw73/helpdata/en/c9/d94388f62c8f478eadd4d1902d7101/frameset.htm.

Take a look at chapters Landscape Options and Recommendations and Restrictions to learn more. Read these chapters carefully and decide for which option you would like to go before you configure your landscape.

With SAP NetWeaver 7.3, CM Services were further enhanced by new services: Synchronize Service and History Service. The Synchronize Service allows you to determine and resolve version differences of software components between the runtime system and what is imported into the NWDI. It replaces the upload system. This was needed in previous releases to provide the required libraries and the already existing source code to your development configuration – and therefore to the respective workspace(s) and buildspace(s) and to deploy the files if needed. The History Service provides a quick overview of running exports, exports which have been executed, running imports and synchronizations (which are shown as imports).

Moreover, the initial setup has been enhanced by providing a CTC template for the automatic configuration of CM Services.

The main purpose of this guide is to explain how to set up CM Services in SAP NetWeaver 7.3 and make your system landscape ready for the use of CM Services release if you start with CM Services on SAP NetWeaver 7.3. The required configuration steps to enable the CM Services are described step-by-step. The deployable transport is explained for a simple transport landscape and the development process is shown in a simple example. We assume that you have a basic knowledge about CTS and NWDI. Hints for setting up the source transport are given where it differs from setting up the deployable transport.

The configuration that you might have done in enhancement packages 1 or 2 for SAP NetWeaver 7.0 is still valid. There are no needs to adapt the configuration after an upgrade to SAP NetWeaver 7.3. Everything that you configured will still work. But if you would like to use the new functionality, some configuration changes might be required - especially, if you were using an upload system up to now and would now like to switch to the Synchronize Service. Refer to the chapter Using the Synchronize Service for details.

2 Background Information

Documentation about CTS in the SAP Library:
http://help.sap.com/saphelp_nw73/helpdata/en/bb/6fab6036a146baa58e42fac032ab7b/frameset.htm

Documentation about CM Services in the SAP Library:

http://help.sap.com/saphelp_nw73/helpdata/en/84/1fabea09f048c69b48d8e08de38c95/frameset.htm

Best Practice Guide for Implementing CTS (does not include CM Services): https://www.sdn.sap.com/irj/sdn/go/portal/prtroot/docs/library/uuid/10456aac-44f7-2a10-1fbe-8b7bcd7bcd58

Guides for CM Services in different releases on SCN: http://scn.sap.com/docs/DOC-8576?rid=/webcontent/uuid/c0ce1dd8-c020-2b10-d080-a1cd3e985af1#NWDI

SAP Notes:

Central SAP Note for CM Services: 1361909

Central SAP Note for CTS+: 1003674

Note 1775838 - CMS / CM Services: What to use in which scenario?

3 Prerequisites

To be able to use CM Services with the functionality described in this guide, your systems have to fulfill the following prerequisites:

- **Change and Transport System** (CTS): enhancement package 2 SP7 for SAP NetWeaver 7.0 or higher
  - SAP NetWeaver Application Server ABAP (AS ABAP) which acts as
    - Domain Controller
    - Communication System
  - SAP NetWeaver Application Server Java (AS Java) where the Deploy Web Service for target systems runs in case the deployable transport is used.
  - Has to support log-in via Single-Sign-On.

  > **Note**
  >
  > A CTS system on enhancement package 1 SP7 for SAP NetWeaver 7.0 is possible as well. With this release, there is a restriction for the length of some of the fields of the object list. More details on object lists are available in the SAP Library: http://help.sap.com/saphelp_nw70ehp2/helpdata/en/2b/acde17180f4f26a57a0c777f33d5a4/frameset.htm.

- **SAP NetWeaver Development Infrastructure** (NWDI) on SAP NetWeaver 7.3 or higher with the components
  - DTR (Design Time Repository) (Usage Type DI)
  - CBS (Component Build Service) (Usage Type DI)
  - CM Services (Usage Type AS Java)
  - Deploy Web Service for all systems where source transports are used (this includes the development system).

  > **Note**
  >
  > It is possible but not recommended to use the components DTR and CBS of NWDI on a release lower than SAP NetWeaver 7.3. For more details and restrictions see SAP Note 1361909.
  >
  > The NWDI component CMS is still part of the usage type DI installation (NWDI) but not needed or used in case your development and transport process is based on CM Services. Nevertheless you can use CMS and CM Services in parallel.
  >
  > **CM Services** are part of every AS Java installation (as of enhancement package 1 for SAP NetWeaver 7.0). The recommendation is to setup CM Services on the NWDI system.

- **SAP NetWeaver Developer Studio** (NWDS) on
  - SAP NetWeaver 7.3 or higher

- SAP NetWeaver Composition Environment 7.20
- SAP enhancement package 2 for SAP NetWeaver 7.0 or higher.
- SAP enhancement package 1 for SAP NetWeaver 7.0 SP 10
- SAP NetWeaver 7.0 SP 25

CAUTION

If you plan to develop e.g. Web Dynpro Java, Business Process Management, Business Rules Management, Composite Application Framework or Visual Composer you have to make sure that the runtime systems and the NWDS are on the same release and SP level. See SAP Note 718949 for details. You can nevertheless use the CM Services of SAP NetWeaver 7.3 even if your runtime systems are on a lower release. In that case you need an (maybe additional) SAP NetWeaver Developer Studio which supports releasing the activities in the transport view. For versions of the developer studio which support releasing activities, refer to SAP Note 1361909.

Note

Further information on using a different NWDI Release compared to Release of Runtime System is “also available in a blog on SCN
http://scn.sap.com/people/marion.schlotte/blog/2005/10/25/jdi-software-vs-jdi-content

- **System Landscape Directory** (SLD): no special requirements but make sure your SLD content is always up to date. If you need more information on how to update your SLD content, take a look at note 669669.

- **Runtime Systems**: no special requirements

CAUTION

If you plan to develop e.g. Web Dynpro Java, Business Process Management, Business Rules Management, Composite Application Framework or Visual Composer you have to make sure that the runtime systems and the NWDS are on the same release and SP level. See SAP Note 718949 for details. You can nevertheless use the CM Services of SAP NetWeaver 7.3 even if your runtime systems are on a lower release. In that case you need an (maybe additional) SAP NetWeaver Developer Studio which supports releasing the activities in the transport view. For versions of the developer studio which support releasing activities, refer to SAP Note 1361909.

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http://scn.sap.com/people/marion.schlotte/blog/2005/10/25/jdi-software-vs-jdi-content

Read the chapters Introduction and Recommendations & Restriction as well for more details.

Note

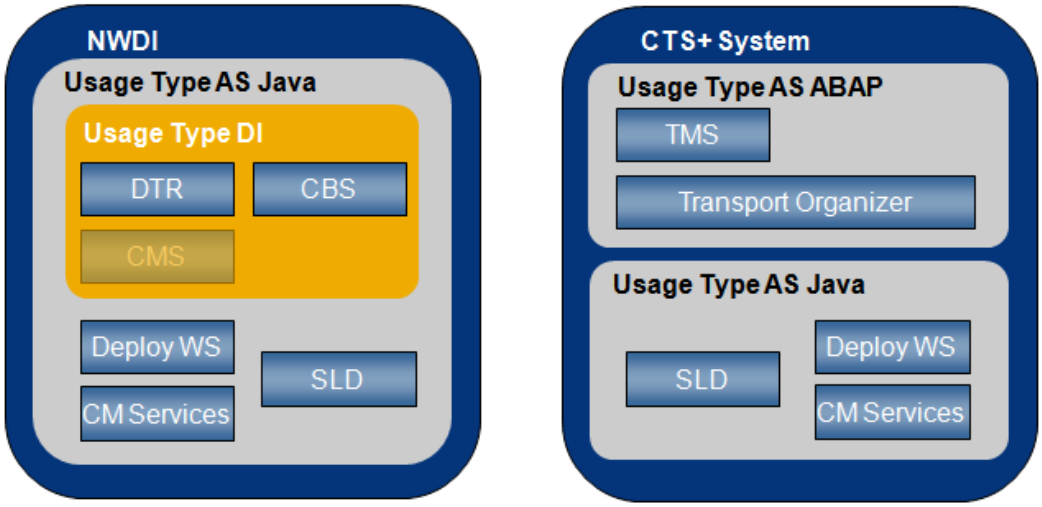
Always check the SAP Note 1361909 for updates on CM Services.

4 Introduction

Mainly two systems are relevant for configuring the CM Services. You need a system, where NWDI (DTR and CBS) is installed and one that can be used to host the transport landscape (CTS system). An SLD is

required as well to register the development configurations and to create e.g. Products and Software components.

The following figure shows an overview of the available components on your systems if both NWDI and CTS system are on SAP NetWeaver 7.3.



Before starting configuring the CM Services, you should think about the systems that you have and how you could use them. One option for the CTS system would be to use the SAP Solution Manager.

> **CAUTION**
>
> Keep in mind that the CTS system has to be on enhancement package 1 SP 7 for SAP NetWeaver 7.0 as a basis release. If you are using SAP Solution Manager for CTS, make sure that your SAP Solution Manager is using this basis release at least. The SP naming of SAP Solution Manager is different from the SAP NetWeaver Support Package level it is based on.

SAP provides CM Services as part of each AS Java. So CM Services and some other components (e.g. SLD, Deploy WS) are available on both systems (NWDI and CTS). It is up to you and depends on the scenario on which server you want to use CM Services and the Deploy Web Service. Please take a look at the chapter Recommendations & Restrictions before you start.

> **CAUTION**
>
> If you decide to transport deployables, you should use the Deploy Web Service on the CTS system for all other systems than the development system. For the development system and if you would like to transport sources via CM Services you have to use the Deploy Web Service on the same system as the CM Services - in that use case you cannot separate these two components. Take a look at the chapter Recommendations & Restrictions for details. For more Information on the Deploy Web Service, take a look at http://help.sap.com/saphelp_nw73/helpdata/en/2b/326d6274134cea8b217f24889d19c1/frameset.htm.

> **Note**
>
> If you are already using CTS for other scenarios e.g. for transporting objects in a portal landscape, you might already have configured a Deploy Web Service. This does not influence your decision on where to run the CM Services. The configuration for the Deploy Web Service in SM59 can be copied to point to another AS Java – details are described in the chapter Configure Logical Ports.

In case you have existing tracks and want to use the features of CM Services for new development landscapes, you can use CMS and CM Services in parallel. In both cases DTR is needed to store the sources. CBS will build the components and store the archives. The migration from CMS to CM Services is described in the guide ‘How To…Switch to CM Services’ at http://scn.sap.com/docs/DOC-16164. Details about CMS and CM Services, similarities and differences are explained in a blog on SCN:

http://scn.sap.com/blogs/cms_cm_services_similarities_and_differences/2013/05/29/similarities-and-differences-in-cms-and-cm-services

This guide will explain step-by-step how to set up CM Services initially, how to set up a system landscape for transports with development configurations and how to work with the newly provided features of CM Services.

The configuration steps how to set up CM Services initially are explained in chapter Initial Setup and configuration of CM Services.

In case the CM Services are already enabled in your system landscape, you need to decide which kind of landscape option (see chapter Landscape Options) you want to enable. Depending on the scenario, the system landscape configuration described in chapter System Landscape Configuration looks different.

The chapter Development and Export Process focuses on the development and release process and explains how to work with development configurations in the NWDS, how to bundle an activity for being transported via CTS and how to export a software component archive (SCA) to be attached to a CTS transport request with the DI Export Service UI.

4.1 Landscape Options

This guide is based on a landscape example with three runtime systems: a Development (DEV), a Test (TST) and a Production (PRD) System.

Depending on the transport scenario, the configuration of your system landscape looks different. The main difference is that for source transports a development configuration is needed for your source (development) system and each target system in your transport route. For a pure transport of deployables a development configuration is needed just for the source/development system.

In addition you need to decide which level of granularity you would like to use for transports along your transport route. Here are the options that you can choose from per development configuration:

1. **Source Export** – Granularity:
    a. Software Components
    b. Activities
2. **Deployable Export -** Granularity:
    a. Software Components
    b. Development Components
    c. Activities

The question that you have to ask yourself is ‘What do I like and allow to transport?’

Take the following into consideration when you think about the options

- Use deployable transport whenever possible
    - You only need a development configuration for your development system.
    - You don’t need workspaces and buildspaces on NWDI for your test and production system and therefore NWDI must not be up and running during test or production import. (if CTS Deploy Web Service is running on different server than NWDI)
    - No-one would by accident use the development configuration for the test or production system when developing
- Use source transport if you have to transport your changes individually as they were done one by one and cannot use the DC level as this would mean that several of your changes would be transported together (as they concern the same SDA).
- If you use the transport of sources with Web Dynpro, CAF, BPM, BRM etc., try to make sure that sources coming from two different source systems do not meet in one target system. This would result in conflicts that you have to solve in the target system.

> **Note**
>
> It is not recommended to use the SDA Export via the Export Service UI (option 2 b) except if you really know what you do. This option is only made for experts. You have to make sure that all dependent SDAs that were changed are part of the same transport request or were already transported.

CAUTION

In case you decide to use the source transport, you have to set up each target system with a development configuration. It is not possible to have e.g. the DEV system with a development configuration, the TST without and the PRD again with a development configuration. A so-called mixed scenario concerning development configurations is not possible and not supported!

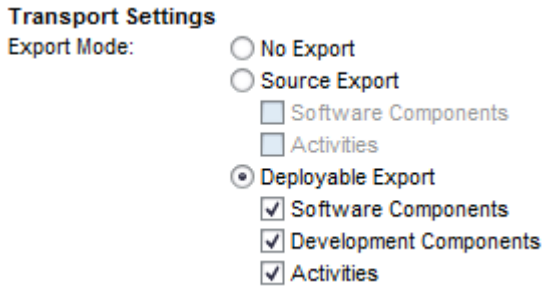
Note

Both the behavior of the CTS system when asking for a request and what happens after having attached a file depend on the transport strategy that you have configured in TMS. It is possible to let the system create requests and to make it release them automatically. Take a look at the parameters for details: http://help.sap.com/saphelp_nw73/helpdata/en/c5/d9012e437d4c318976edc9791f2ae4/frameset.htm

Let's look at the two options in more detail.

4.1.1 Deployable Export

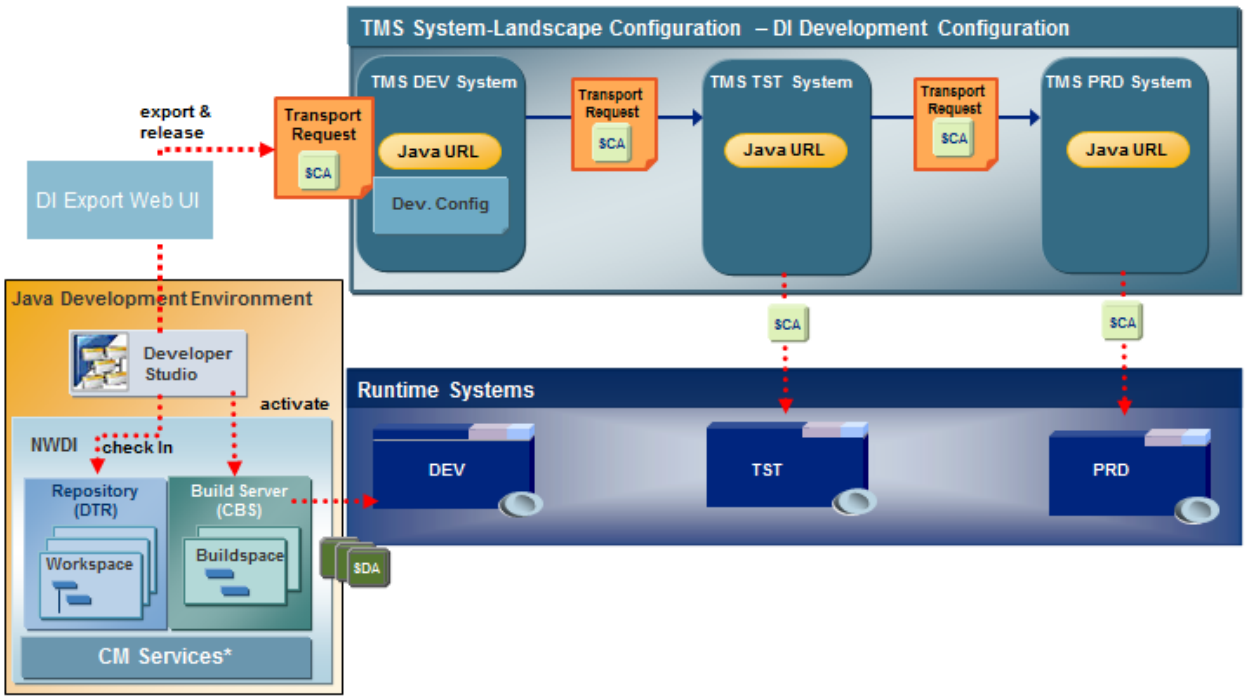
As of enhancement package 2 for SAP NetWeaver 7.0, you can configure a transport of deployables. A development configuration is only required for the development (DEV) system. All other systems in your transport route are pure deploy targets. For these systems you only have to make sure that there is the Java Deploy URL configured for the deployment. For the deployable transport three transport scenarios are possible. You have to configure the *Export Mode* in the development configuration for your development system. The figure below shows the three configuration options explained in the next chapters.



4.1.2 Deployable Export - Software Components

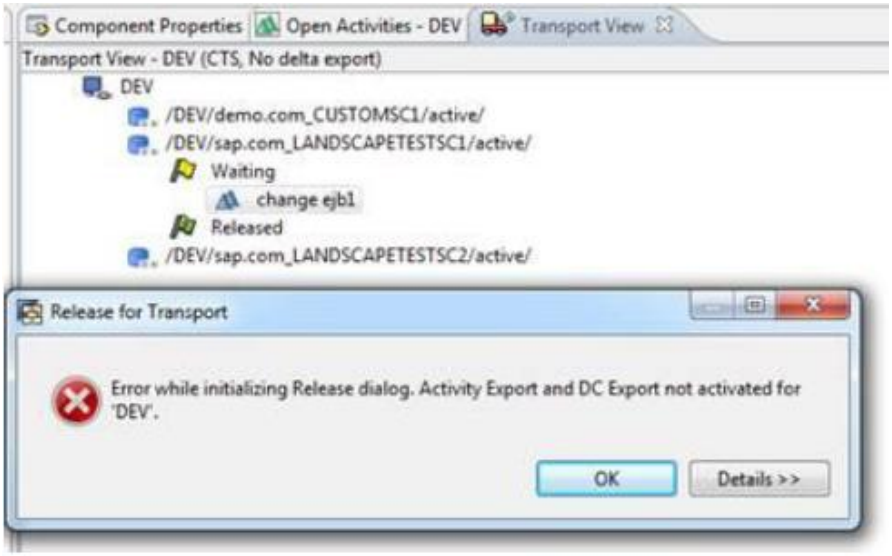
To export and attach SCAs to a transport request the DI Export Service Web UI is used. You can call this UI from the Development Configuration UI (see chapter SCA Export and Transport for more details). As a first step, you have to choose the system from which you would like to export an SCA – this is usually your source/development system. After that, you can choose SCAs from those that are marked as *to be developed* in the respective development configuration. The Export Service UI will guide you through the process of adding the SCA to a transport request. For this process, a transport request can be taken automatically from the CTS system or you can create one with the help of the Transport Organizer Web UI. Also, after having added the SCA to the request, the request can be released automatically or manually – this depends on the transport strategy that you have configured in CTS.

The process for the SCA transport is shown in the following figure:



Note

From the developer's point of view, nothing has changed. You have to import the development configuration and synchronize the sources at first. After that, you can start developing. Checking in and activating the changes is done in the same way as with CMS. You can release the activity, but in case your changes will be transported via SCA export, you don't need to do it explicitly. That means the export process will take all activated activities that are related to the software component that is being exported. For activities that are listed as 'Waiting' in the transport view of the Developer Studio, the export process triggers the automatic release.
In case the developer wants to release the activity, but the development configuration is not configured for Deployable Export, an error message as shown in the following figure will be displayed.



4.1.2.1 Deployable Export - Development Components

To export and attach SDAs to a transport request the DI Export Web UI is used. You can call this UI from the Development Configuration UI (see chapter SCA Export and Transport for details). As a first step, you have to choose the system from which you would like to export an SDA – this is usually your source/development system. After that, you can choose SDAs from those where the wrapping SCA is marked as *to be developed* in the respective development configuration. The Export Service UI will guide you through the process of adding the SDAs to a transport request. The process for the SDA transport is shown in the following figure:

> **Note**
>
> It is not recommended to use the Export of development components unless you really know what you do. This option is only made for experts. You have to make sure that all dependent SDAs that were changed are part of the same transport request or were already transported. The Export Service UI does not do this for you. There are no warnings or checks.

4.1.2.2 Deployable Export - Activities

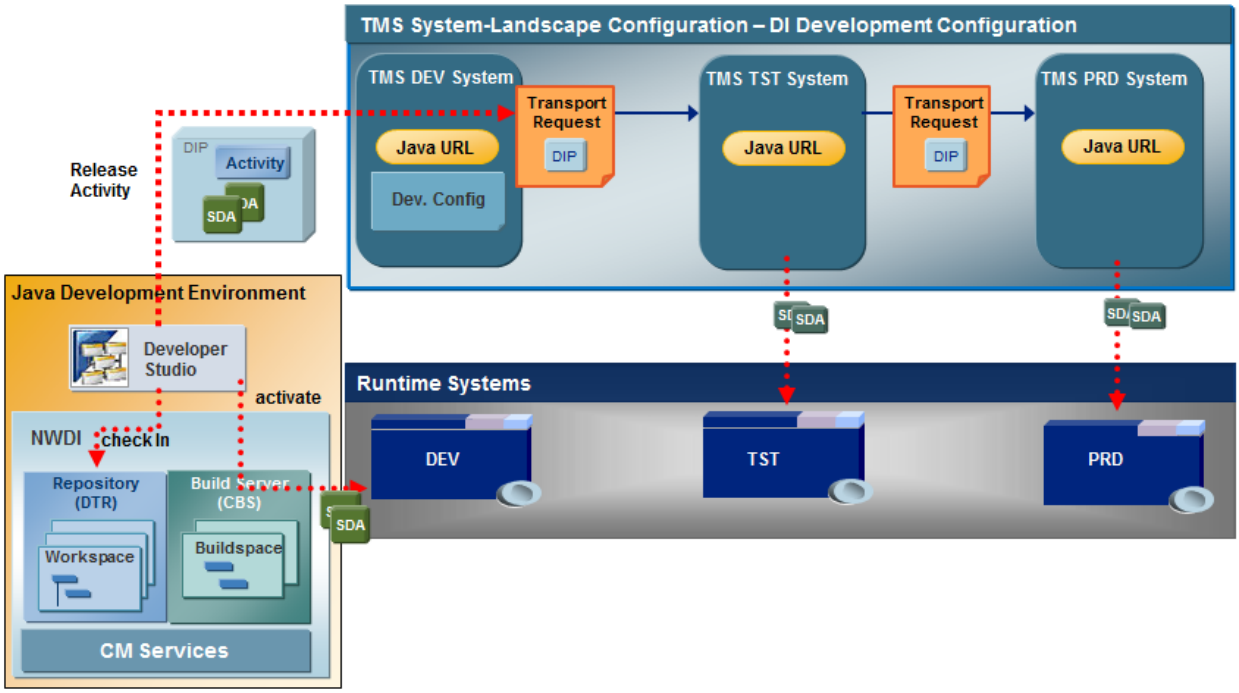
The transport of deployables based on activities is triggered by a developer from within the *Transport View* of the SAP NetWeaver Developer Studio. First the developer imports the development configuration into his SAP NetWeaver Developer Studio, develops the application, checks-in and activates the Activity. These steps remain the same – it doesn't make any difference if you are using CM Services or CMS or whether your landscape is configured for source or deployable transport. When releasing an Activity, you will find a new dialog. A transport request from CTS will be provided or you can create a new one with the help of the Transport Organizer Web UI (a Web Dynpro ABAP application that runs on the CTS system). The system evaluates all development components that are affected by your activity and the respective SDA files will be packed in a DIP-file and this will be attached to the transport request. An SDA can either become part of a DIP-file because it is directly affected by the activity that is released or because it had to be rebuilt because it depends on the changed SDA. With this, the developer has finished his work in the developer studio. As a next step, the transport request has to be released. You can do this either with the help of the Transport Organizer Web UI or in an automated way.

> **Note**
>
> SDAs as deployable units are transported and all systems along the transport route (except for the development system) are pure deploy targets without a development configuration. This is the smallest granularity for deployable transport that is based on source changes.

> **Note**
>
> It might happen that more than one DIP file is attached to your transport request even if you release just one activity. The reason for this is that one dip file contains only SDAs belonging to one software component. So if your development involves development components located in different software components, you will end up with more than one DIP.

> **Note**
>
> CBS keeps the information about rebuilt DCs for 30 days. Check SAP Note 1909778 (CM Services Release of activities to CTS+ not working) in case you expect that there are more than 30 days between activating and releasing an activity in your company.

The process for transporting deployables based on activities is shown in the following figure:

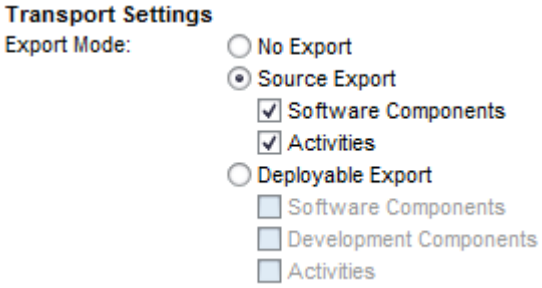


The runtime objects are deployed into the target system during an import. This ensures consistency in the target system.

4.1.3 Source Export

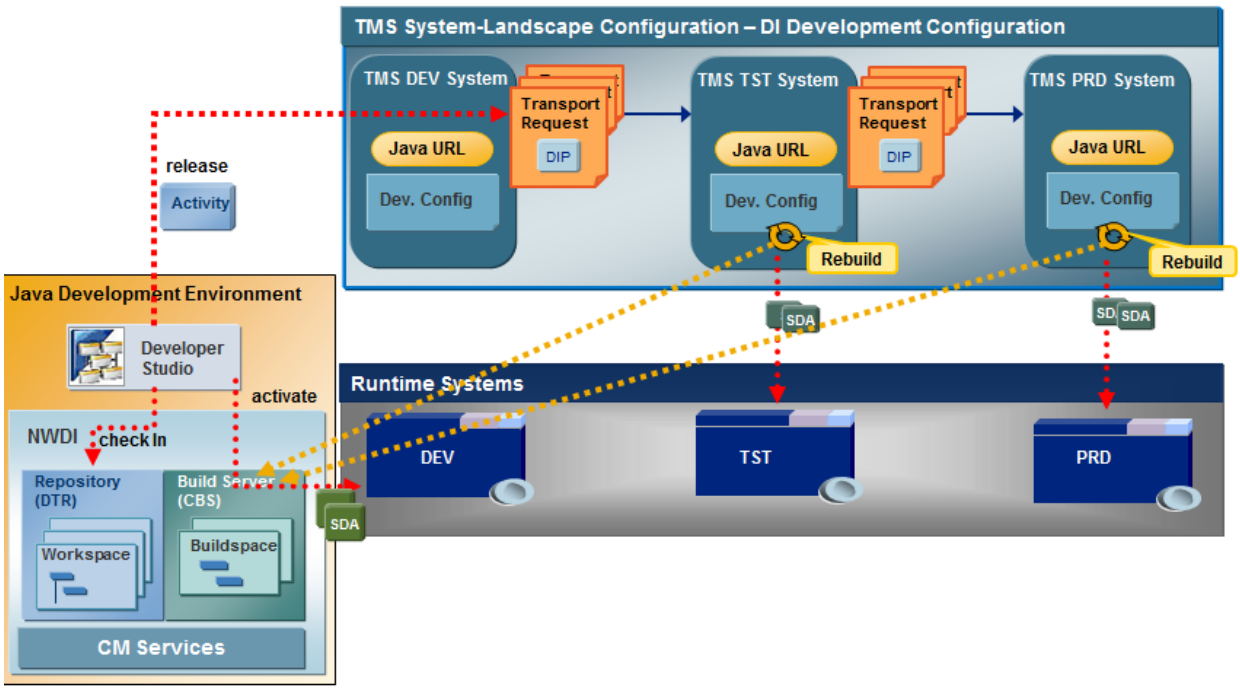
We assume the system landscape with DEV, TST and PRD is set up and configured with a development configuration for each system in the transport route. That means your landscape is configured and ready for source transport. The steps how to do so are explained in chapter System Landscape Configuration.

In a landscape like this, you can transport your source changes based on Activities or based on a complete Software Component Archive (SCA) as shown in the figure below.



4.1.3.1 Source Export - Activities

The following figure shows an overview of how the process of transporting activities works. Consider this as a logical view on the components involved in the process.

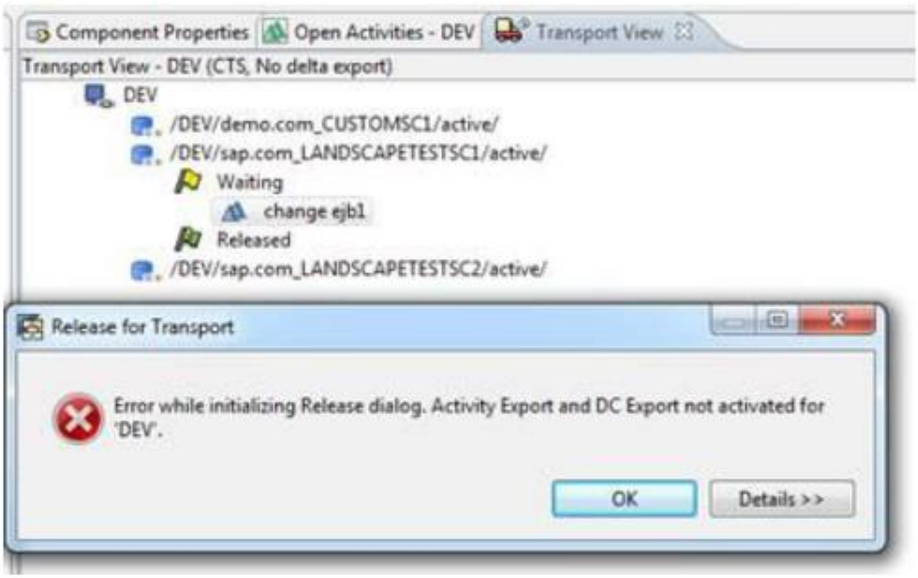


As a developer the first thing you have to do is to import the development configuration into your SAP NetWeaver Developer Studio and to synchronize the sources if you would like to change an existing application.

The first two steps (check-in and activate) after having finished your development in the NWDS remain the same – it doesn't make any difference if you are using CM Services or CMS. During the activation process the changes will be deployed to the DEV system. This hasn't changed compared to the CMS behavior. Only when releasing an activity, you will find a new dialog. A transport request from CTS will be provided or you can create a new one with the help of the Transport Organizer Web UI. A DIP-file containing the changed source files is then attached to the transport request. With this, the developer has finished his work in the developer studio. As a next step, the transport request has to be released. You can do this either by the help of the Transport Organizer Web UI or in an automated way.

Note

In case the developer wants to release the activity, but the development configuration is not configured for transporting sources an error message as shown in the following figure will be displayed.



Now, the transport request is ready for import in the next system – the TST system in our example. You can start the import via transaction STMS of the CTS system. If you do so, the sources will become part of the inactive workspaces for the TST development configuration in DTR. Then, an activation of the changes is done by CBS integrating the sources into the active workspaces. After activation, a rebuild of the changed development components and the dependent ones will be done for the TST system in CBS and new or changed applications will be deployed to the TST system. The transport request is forwarded to the queue of the PRD system. As soon as the import is started for the PRD system, the same process as for the test system will be executed – this time for the workspaces and the buildspace of the PRD system.

4.1.3.2 Source Export - Software Components

If you decide to use the SCA transport (with sources) you will use the DI Export Service UI for exporting the SCAs. The activities related to the SCA export - listed as 'Waiting' in the transport view of the NWDS - are released automatically after the export has been done. The process is explained in the chapter SCA Export and Transport.

> **Note**
>
> Please keep in mind that the usage of the DI Export Service UI is exactly the same for the SCA transport with or without sources. The sources of an SCA file will be assembled in both cases (physically or via pointer). It depends on the landscape configuration what will happen during the import process. In a source transport enabled landscape, the CM Services will trigger the DTR workspace update, CBS rebuild and deployment to the target system. In a landscape that is configured for deployable transport only, the SCA file will be deployed to the target system via the Deploy WS directly.

5 Recommendations & Restrictions

This chapter covers some recommendations and restrictions but in general you should check the CM Services central Note 1361909.

Check also SAP Note 1775838 'CMS / CM Services: What to use in which scenario?' for details on the options and on what to use when.

Based on your requirements decide if you would like to use CMS with or without CTS+ or CM Services. Take the following into consideration:

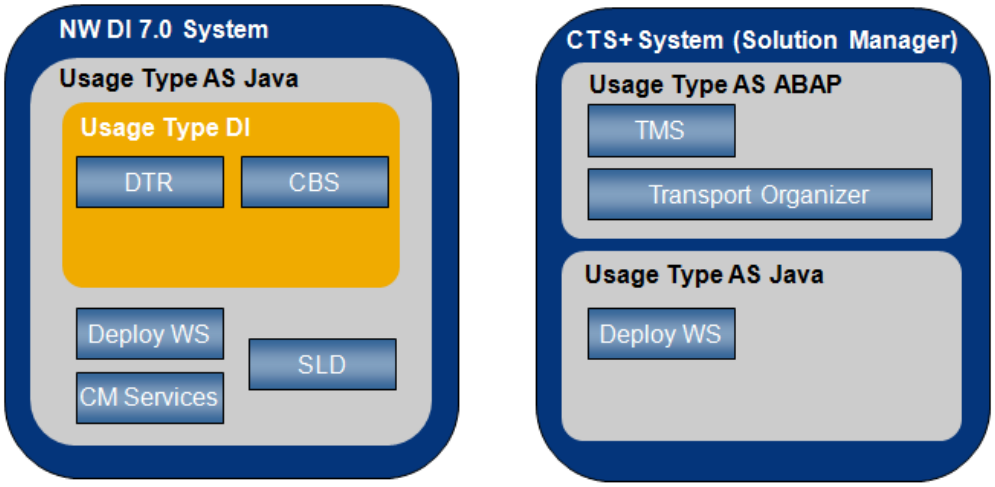
1. Use CMS without CTS+ integration in the following situations:
   - If you already know NWDI with CMS and you are fine with the process and features offered and CTS+ integration is not (yet) needed.
   - If you are new to NWDI, and you do not know neither CMS nor CM Services, and CTS+ integration is not (yet) needed
   - If transporting on SCA granularity is sufficient
2. Use CMS with CTS+ integration only in the following situations:
   - If you want to use CTS+ as the transport tool for the following reasons:
     i. CTS+ allows more flexible transport landscapes compared to CMS
     ii. Java transports need to be coupled with other transports
     iii. Integration in SAP's Change Control Process tools is required
   - If transporting on SCA granularity is sufficient
3. Use CM Services (always with CTS+) only if transporting on SCA granularity is not sufficient and you would like to perform transports on more granular level (SDA/DC) by using deployable transport.

There are some restrictions for the usage of CM Services in SAP NetWeaver 7.3 that you should take into consideration:

- CM Services require a NWDS which supports releasing the activities in the transport view. For versions of the developer studio which support releasing activities, refer to SAP Note 1361909. If you develop Web Dynpro Java, Business Process Management, Business Rules Management, Composite Application Framework or Visual Composer, the runtime system and the developer studio have to be on the same release (version / SP). If you would like to use CM Services for a runtime system which is not on a release which supports CM Services, you have to use an additional NWDS for releasing the activities.
- A non-ABAP system is represented by a three letter acronym in CTS (the SID). The name of the development configuration created in SLD via CM Services is the same three letter acronym. You cannot change this name.
- Solution for maintenance tracks described on SCN (Best Practices for NWDI: Track design for ongoing development) is not supported for CM Services. You can find the guide Landscape Setup for Ongoing Java Development with CM Services in CTS+ here on SCN which describes how to handle this topic with CM Services.
- Mixed scenarios where sources (Activities) are transported only from a DEV to TST and after that, only complete SCA files are transported to the PRD System are *not* supported.

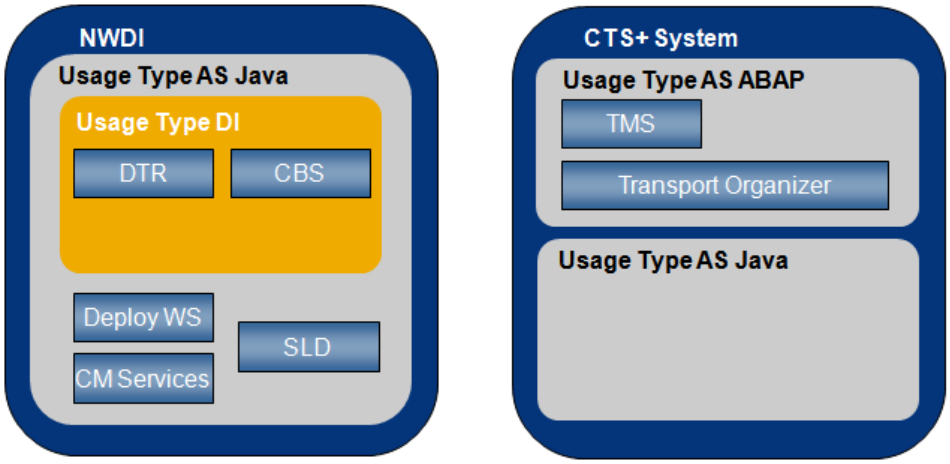
We recommend the following:

- If you would like to use the transport of deployables, you should use the Deploy Web Service on both the NWDI and the CTS system as shown in the following figure.



This configuration requires a little bit of additional effort when configuring the scenario, but later on when you use the scenario, there is one system less that has to be up and running during deployments: the Deploy Web Service on the NWDI (let's call it CTSDEPLOY_DI) is only needed during the development phase (and for importing the required archives and sources from your upload system into your development system if you do not use the Synchronize Service). If an import into TST or PRD is triggered from the TMS of your CTS system, the Deploy Web Service on the CTS system (let's call it CTSDEPLOY) will be used. The NWDI system is not needed or contacted during this step.

- If you would like to use the transport of sources, you have to use the CM Services and the Deploy Web Service on one system. We recommend that you use the NWDI for this purpose



> **CAUTION**
>
> The figure above might give the impression that you don't need an AS Java on your CTS system. For setting up CM Services for source transports as described in this guide, this is true. But if you are using or plan to use the transport of deployables or to use the CTS system for transporting e.g. Portal objects as well, you will need the Deploy WS on the CTS System. For transporting Portal objects, the recommendation is to use the Deploy Web Service on the CTS system.

- You can use any SAP NetWeaver System on SAP NetWeaver 7.31 SP 2 or up or SAP Solution Manager as CTS system. For the full functionality including the option to use CTS e.g. for SAP HANA or your own applications, the new Transport Organizer Web UI and Import Queue Web UI, you should have CTS_PLUG installed on the CTS system (CTS_PLUG is automatically part of SAP Solution Manager starting with SAP Solution Manager 7.1 SP5). For details on CTS_PLUG, refer to the SAP Library at http://help.sap.com/saphelp_ctsplug20sm71/helpdata/en/eb/0e1c7be26249e0911c5d688d3bfa06/frameset.htm

  > **CAUTION**
  >
  > Keep in mind that the CTS system has to be on enhancement package 2 for SAP NetWeaver 7.0 for the full functionality of object lists as a basis release and on enhancement package 1 SP7 for SAP NetWeaver 7.0 to be able to use the scenario at all. If you are using SAP Solution Manager for CTS, make sure that your SAP Solution Manager is using this basis release at least. The SP naming of SAP Solution Manager is different from the SAP NetWeaver Support Package level it is based on.

- Use the transport of deployables (either SCA or activity-based SDA transport – not direct SDA export from Export Service UI) whenever possible.
- It is not recommended to use the Activity transport (deployables or sources) if you are modifying ESS or MSS sources delivered by SAP.
- If you decide to use the Activity transport, use it in combination with the SCA transport. E.g. if you did a lot of changes to very different development components, you should transport the complete SCA instead of a lot of source files.
- Sources should only be changed in the DEV system. For the transport of sources scenario it is technically possible to access (via the respective development configuration) and to change the sources for your target systems. This is absolutely not recommended. Set DTR ACLs accordingly for the DTR workspaces of all your target systems in your transport route.

- If you already configured your NWDI and if you are using tracks in CMS for your development process, you can continue to do so. CM Services and CMS can't be used together e.g. in one transport route or track, but you could use CMS for one development project and the CM Services for another one. Both of them could use the same DTR and CBS. You only need separate development configurations and Landscapes (for CM Services configured in TMS, for CMS set up as a track in CMS or as a transport landscape in TMS).

6 Initial Setup and Configuration of CM Services

In this chapter, we assume that you start from zero – this means that neither CTS nor NWDI or SLD are configured up to now. Concerning NWDI only the Design Time Repository (DTR) and the Component Build Service (CBS) are needed in case you use the development and transport options offered by CM Services. Therefore the configuration of the Change Management Service (CMS) is not part of this guide. If you already configured your SLD, CTS system, or NWDI, take a look at the appropriate sections in this guide anyhow to find out whether your configuration fits with the one needed for CM Services.

> **Note**
>
> For the initial setup of CM Services in SAP NetWeaver 7.30, a CTC template is available that assists you in performing all configuration steps. This is a big difference to the initial setup and configuration procedure that was necessary in enhancement package1 and 2 for SAP NetWeaver 7.0 and on SAP NetWeaver Composition Environment 7.2

This chapter concentrates on the initial setup and enablement of CM Services and NWDI (including SLD). For the configuration of your system landscape see chapter System Landscape Configuration and the usage of development configurations is described in chapter Development and Export Process.

6.1 Assumptions

We assume that you are working with two dialog users: one who is a developer (nwdi_dev) and one who is an administrator (nwdi_adm). In addition, technical users are needed to establish connections etc. The dialog users are just examples. You can use other users / user IDs for sure. Make sure that the same user IDs (and in some cases passwords) are used in SLD, NWDI, CM Services and on the CTS system (ABAP) or that you have Single Sign-On in place.

> **Note**
>
> ABAP supports user IDs with a length up to 12 characters. So you should only use user-IDs with up to 12 characters in all systems.

This guide assumes that you are using the CM Services and the SLD on your NWDI system. This would mean that you use an NWDI on SAP NetWeaver 7.30 or higher. If you are not able to do so, please check the chapter Configure Users on CM Services server. Note that you would also have to make sure that the required users exist on all servers (SLD, Name Server, CBS, and DTR).

In addition, we assume that you are already using Web Dynpro ABAP on your CTS system. If this is not the case, take a look on the SAP Library to learn how to activate Web Dynpro ABAP for a certain system: http://help.sap.com/saphelp_nw73/helpdata/en/43/e86de5008b4d9ae10000000a155369/frameset.htm

For the transport request handling you will use the Web Dynpro ABAP application Transport Organizer Web UI that has to be enabled by activating the service *CTS_ORGANIZER* (*CTS_BROWSER* if you are using a CTS system on SAP NetWeaver without CTS_PLUG or SAP Solution Manager 7.01). This is done via transaction SICF. For more details please have a look at SAP Library.

http://help.sap.com/saphelp_nw73/helpdata/en/e5/998566c2174196a12b72e7c7af51e7/frameset.htm

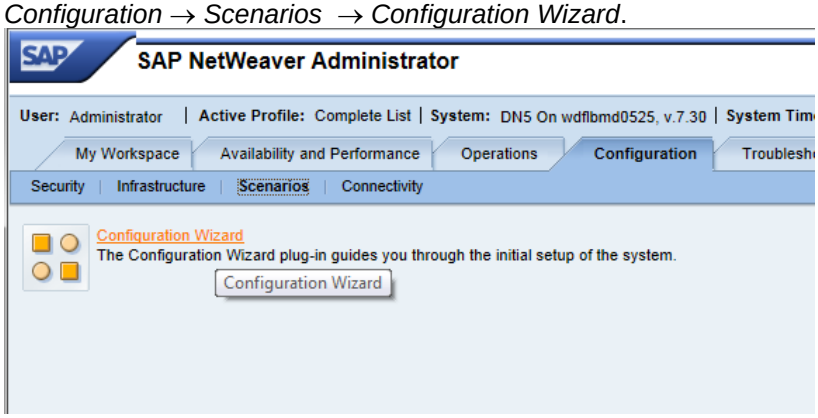
> **Note**
>
> If CTS_PLUG is installed on your CTS system (SAP NetWeaver 7.3 including enhancement package 1 SP1 and later or SAP Solution Manager 7.1), there is a new version of the Transport Organizer Web UI available (CTS_ORGANIZER in SICF) Refer to the SAP Library for details:
> http://help.sap.com/saphelp_ctsplug20sm71/helpdata/en/ac/56514c0553494fb856884ce5143dd6/frameset.htm

6.2 Configuring SLD

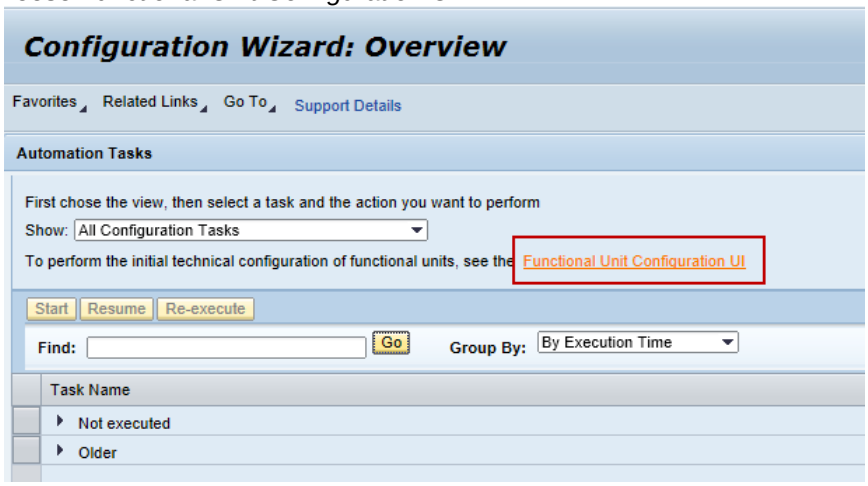
1. If you are using the SLD for the first time, you can simplify the initial configuration by executing the appropriate configuration task in the Configuration Wizard.

   > **Note**
   >
   > For more information on the configuration wizard. Refer to the SAP Library at http://help.sap.com/saphelp_nw73/helpdata/en/54/a1f02a8178468d89553a4844edf0be/frameset.htm

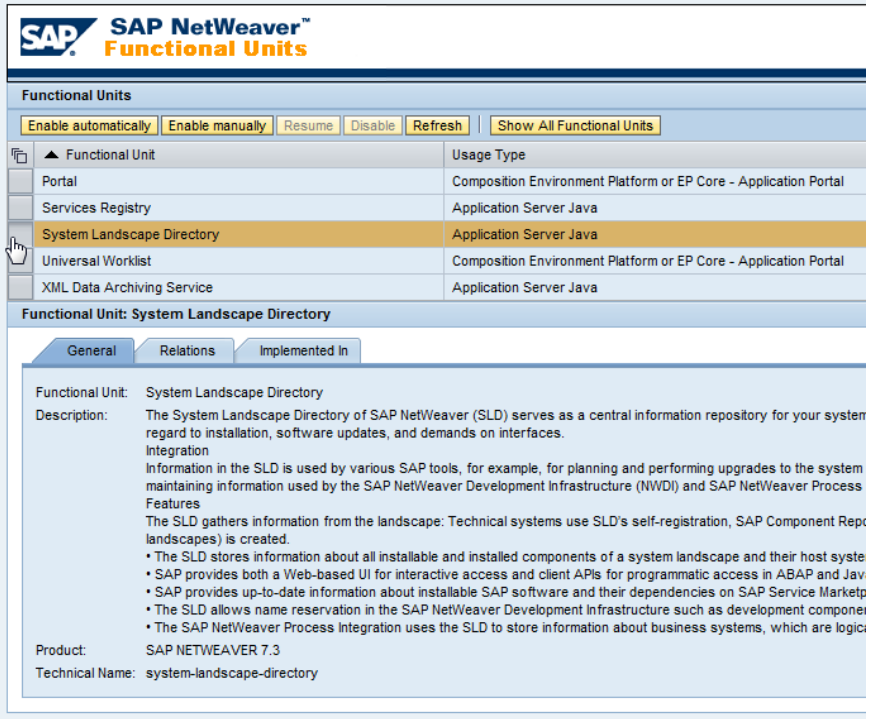
2. On your SLD system, in the SAP NetWeaver Administrator (http://<host>:<port>/nwa), choose *Configuration* → *Scenarios* → *Configuration Wizard*.



3. Choose *Functional Unit Configuration UI*.



4. Select *System Landscape Directory* and choose *Enable automatically.*



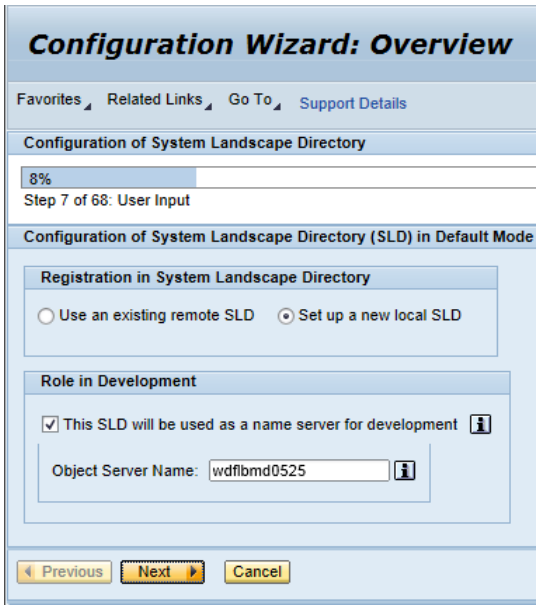
The wizard will guide you through a few steps:

1. When prompted for passwords, enter the J2EE Administrator password, and define and confirm a *Master Password* according to your policy. To continue executing the templates, choose *Next.*

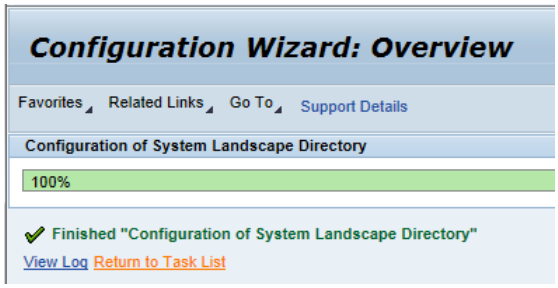
CAUTION

Remember the master password – you will need it later on.

2. In the next step, choose *Set up a new local SLD* (the guide describes a set-up from zero) Choose *This SLD will be used as a name server for development* as well and click *Next.*



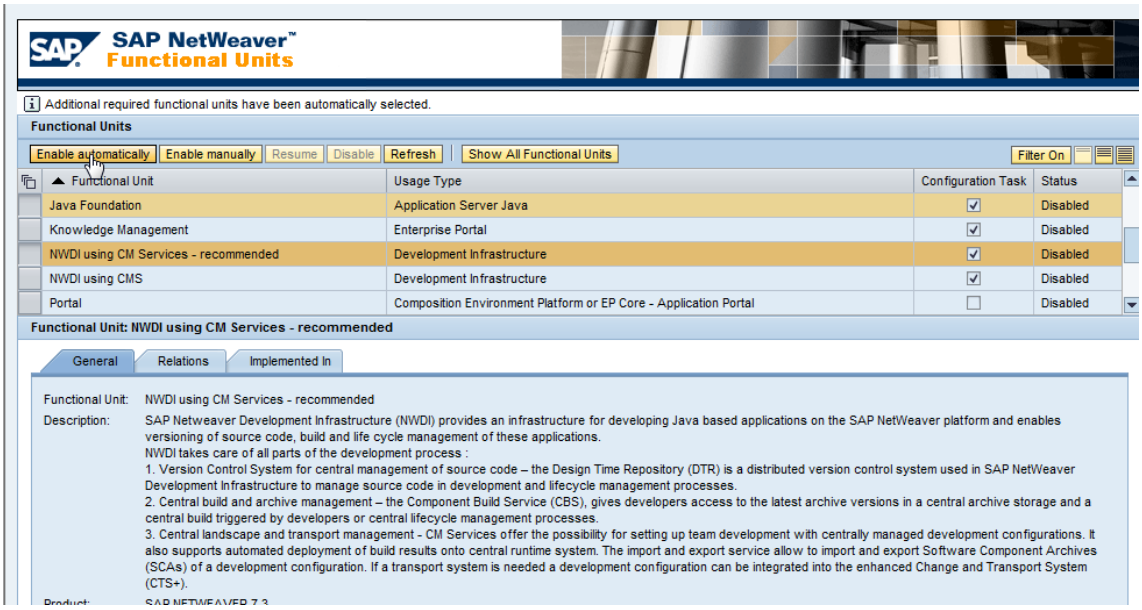
3. After the Configuration Wizard has completed the configuration of the System Landscape Directory, choose *Return to Task List*.



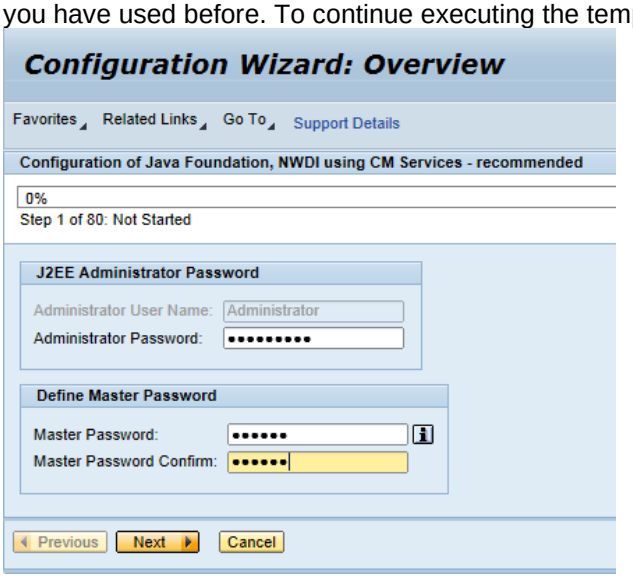
6.3 Configuring NWDI with CM Services

If you are using the NWDI for the first time, use the appropriate task in the Configuration Wizard to configure NWDI together with CM Services.

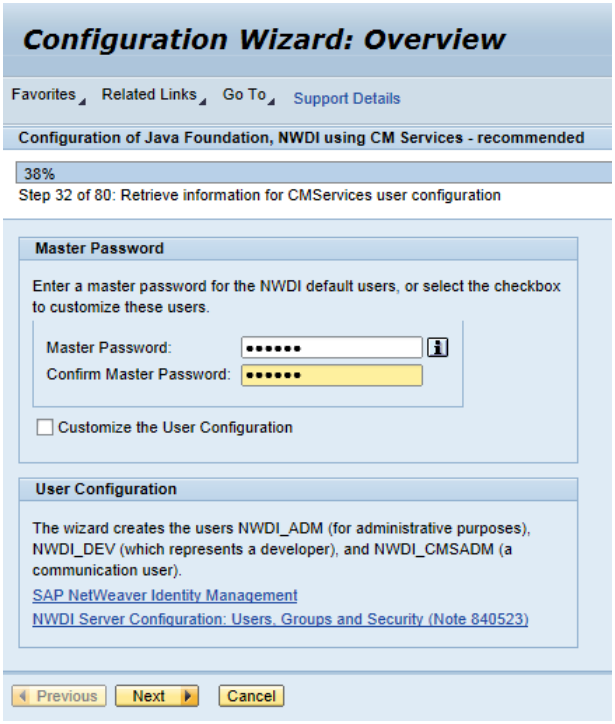
1. Select *NWDI using CM Services - recommended* and click on *Enable automatically*. We recommend that you use this option for configuring the NWDI because it automatically selects the 'Java Foundation' as well.



2. When prompted for passwords, enter the *Administrator Password*, and the *Master Password* that you have used before. To continue executing the templates, choose *Next.*



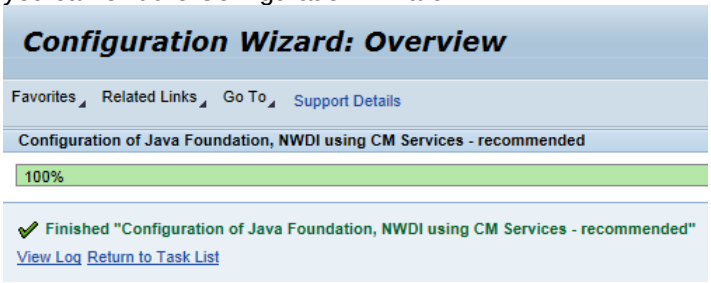
3. In the next step, the users NWDI_ADM, NWDI_DEV and NWDI_CMSADM are created. Enter a *Master Password* for these users



CAUTION

Remember the master password – you will need it later on.

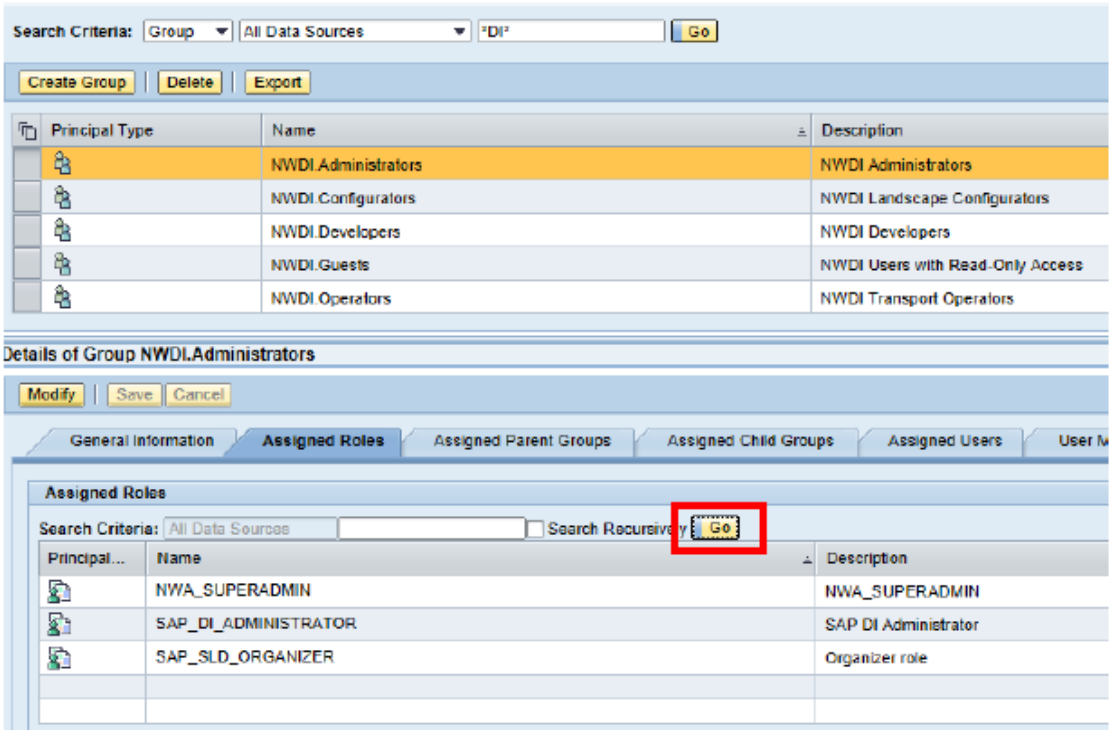
4. After the Configuration Wizard has completed the configuration of the NWDI using CM Services, you can exit the Configuration Wizard



6.4 Mapping Roles in UME

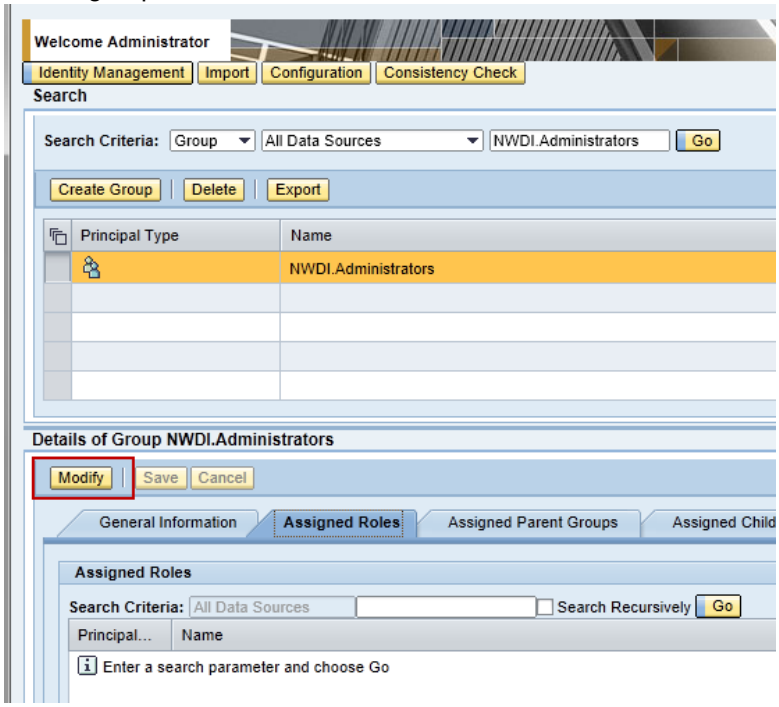
Now, you should check whether the actions and roles introduced by CM Services are assigned to the appropriate users. On your NWDI server, open the user administration and search for the group `NWDI.Administrators`. Make sure that the role `SAP_DI_ADMINISTRATOR` is assigned to this group. Check also that the role `SAP_DI_DEVELOPER` is assigned to the group `NWDI.Developers`.

To do so, you can e.g. search for all groups which do contain DI in their name. Mark then the role that you like to check and click on *Go* in the section *Details* on the tab *Assigned Roles*...

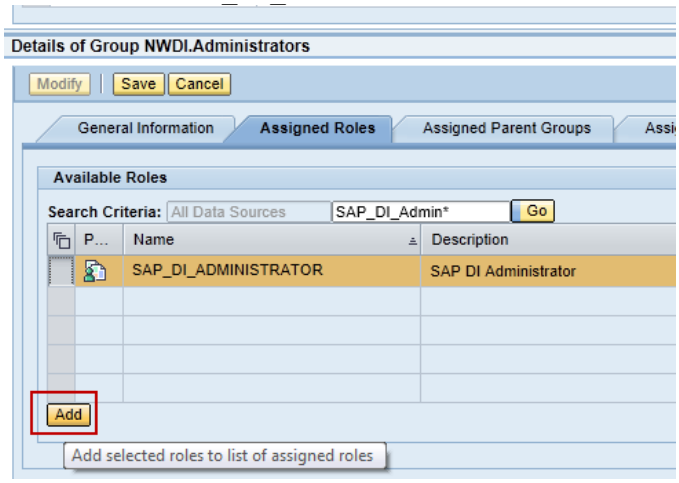


If the roles are not assigned correctly, do the following:

Open the UME of your NWDI System. Use the URL `http://<server>:<port>/useradmin`. Search for the group `NWDI.Administrators` and select it. Go to the tab *Assigned Roles*, choose *Modify*.



Search for the role `SAP_DI_ADMINISTRATOR` and *Add* it to the group.



Save your changes.

Repeat the previous steps to add the role `SAP_DI_DEVELOPER` to the group `NWDI.Developers`.

6.5 Required Connections

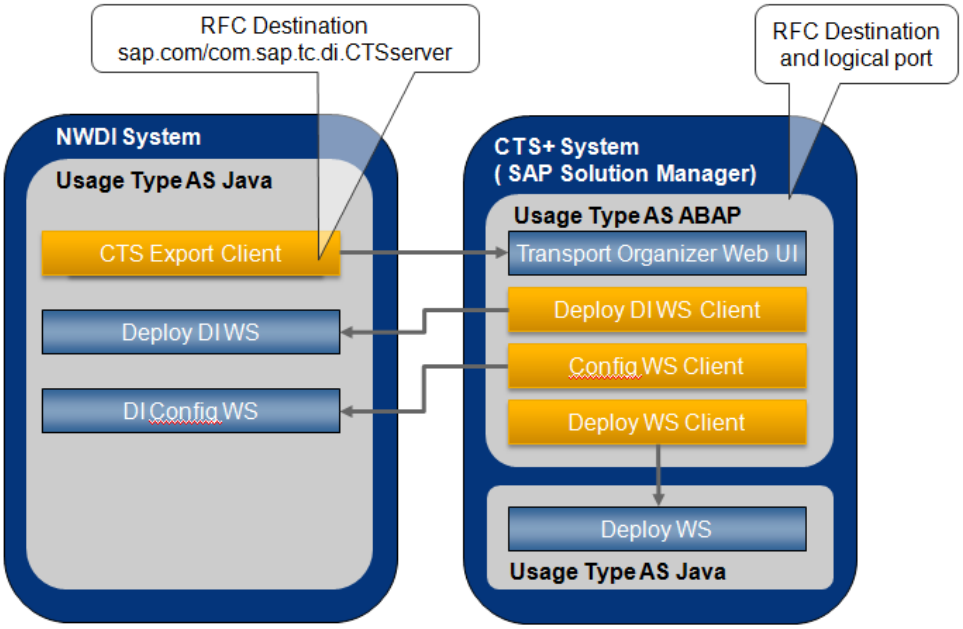
As a next step, you have to connect your NWDI system – where the CM Services run - and your CTS system. This is done via three connections.

- One connection points from the CTS system to the NWDI system. It is needed to call the Deploy Web Service and the DI Config Services. These services run on the NWDI. They are needed to create development configurations and if you would like to import a request into a system for which a development configuration has been created.
  The configuration for this connection is done on the CTS system in the transactions `LPCONFIG` and `SM59`. For this destination, you have to create a user on the NWDI which is then entered as connecting user in `SM59` (e.g. CTS_RFC).
- The second connection points from the NWDI to the CTS system, which means from Java to ABAP. This connection is created as an RFC destination (JCo Connection) on the NWDI server

and is required to be able to retrieve e.g. a transport request from CTS when exporting an activity via NWDS or using the DI Export Service UI. For this connection, the user(s) developing with NWDI (e.g. NWDI_DEV) have to be created on your CTS system.

> **Note**
>
> Each user who does changes to Java sources and would like to attach these changes to a transport request has to exist with the same ID both on the CTS system and on NWDI.

- The third connection points from the AS ABAP of your CTS system to the AS Java of your CTS system. It is used when deployables are imported e.g. into your test or productive system. It is not mandatory. Nevertheless, we recommend configuring this connection as well – it reduces the number of systems that have to be available when importing a transport request which contains deployables. This destination cannot be used when importing sources. In addition, this destination might already be configured in your system if you are already using CTS for other use cases like SAP NetWeaver Enterprise Portal or if you are using CTS in connection with CMS.



The following sections describe in detail how to configure CM Services server and the CTS system. The configuration of the different connections is part of this configuration. We will first do all the configuration parts that are required on the CM Services server and then all the configurations on the CTS Server.

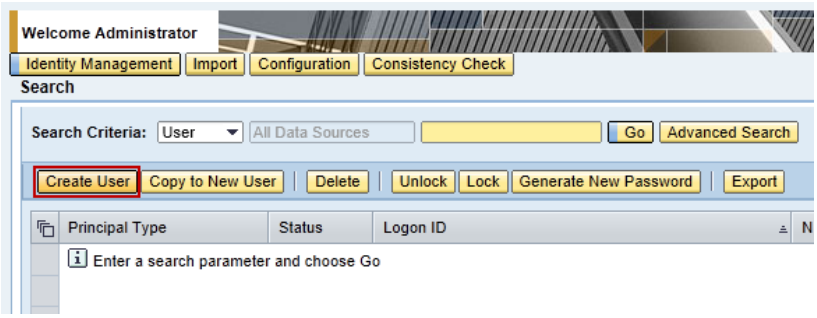
6.6 Configuring the CM Services Server

This chapter explains the basic steps for configuring the connection between the CM Services and the CTS system in short. For more information about the configuration, see the SAP Library at:
http://help.sap.com/saphelp_nw73/helpdata/en/2b/326d6274134cea8b217f24889d19c1/frameset.htm.

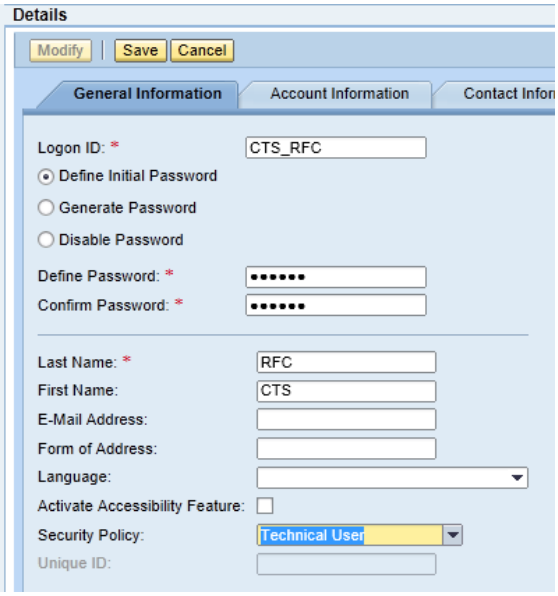
6.6.1 Creating a User for RFC Destinations from CTS System to CM Services

1. This section describes how to create a user on the CM Services server that is needed for communication between the CTS system and the CM Services. We will name this user CTS_RFC. But this is for sure only an example.
   1. Go to the user administration of your NWDI server (Error! Hyperlink reference not valid.)

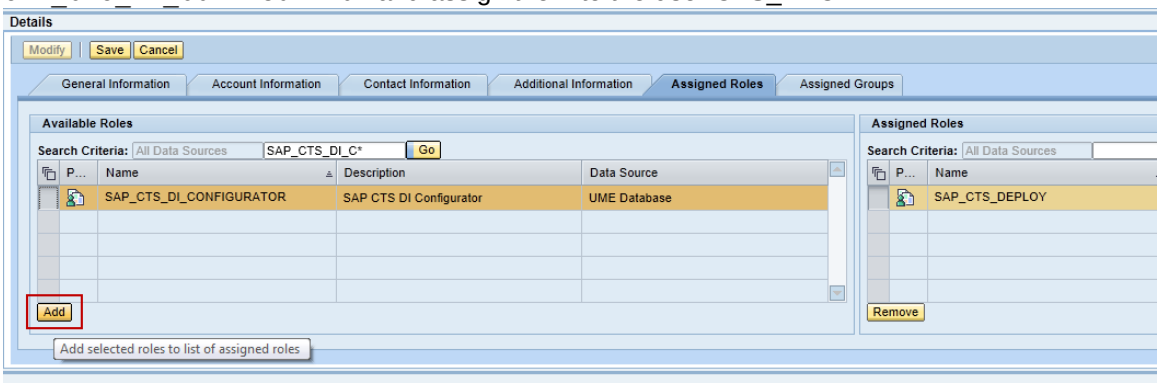
2. Choose *Create User*



3. On the following screen, enter a *Logon* ID, a real password (you won't have to change it later on) and the *Last Name* at least. Choose `Technical User` as *Security Policy*. Click *Save.*



4. On the *Assigned Roles* tab page, search for the roles `SAP_CTS_DEPLOY` and `SAP_CTS_DI_CONFIGURATOR` and assign them to the user CTS_RFC.



Note

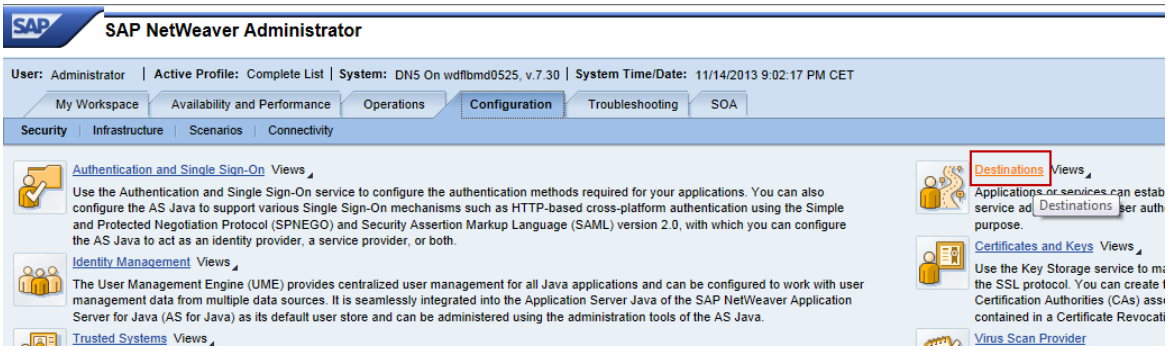
If your company policy says that you should only assign roles to groups, you can also do so in here. Create the user, create a group with the roles above and assign the user to the group. For more information refer to the SAP Library at

http://help.sap.com/saphelp_nw73/helpdata/en/4a/e06f429c789041e10000000a1550b0/frameset.htm

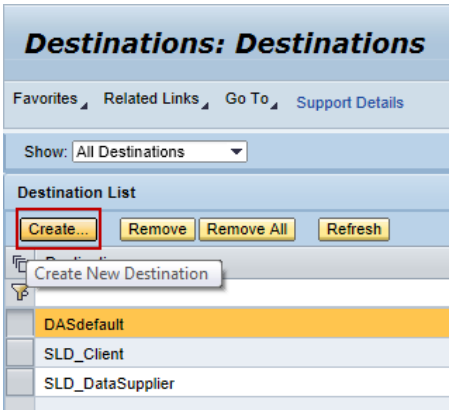
6.6.2 Creating an RFC Destination from CM Services to CTS

Now, we will create the destination which is needed on the CM Services server (the NWDI) to be able to retrieve transport requests from CTS etc.

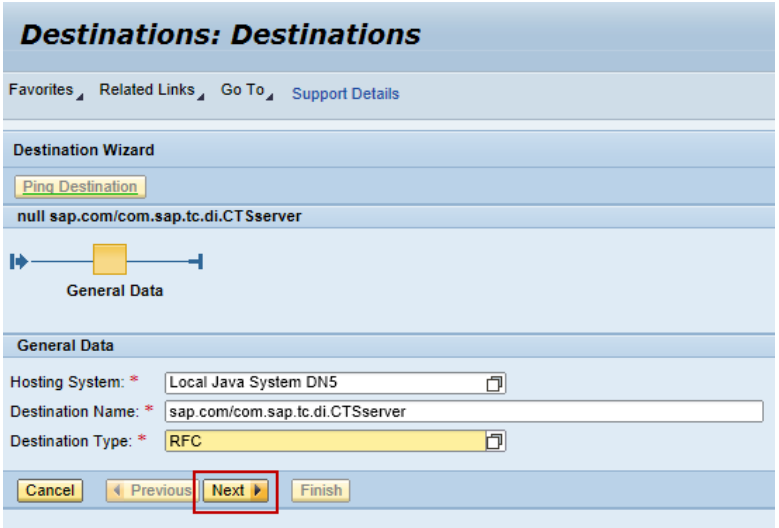
1. In the SAP NetWeaver Administrator of your CM Services system, choose *Configuration* → *Destinations.*



2. Choose *Create...*

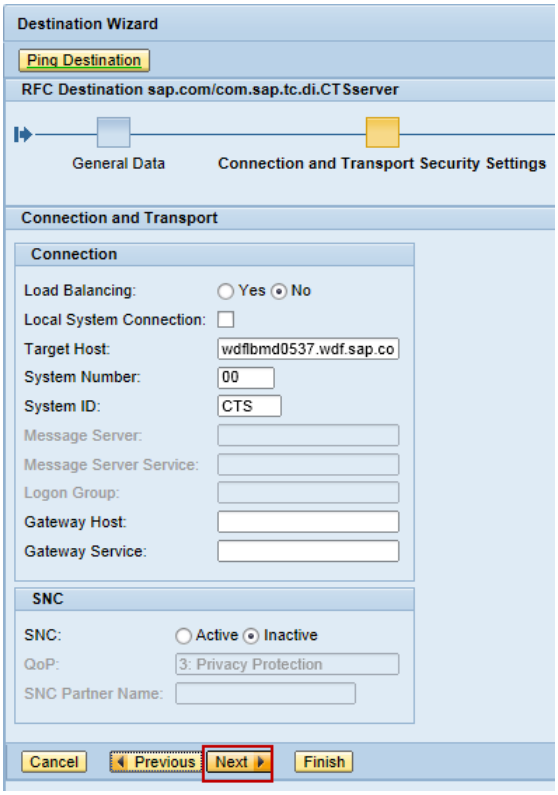


3. Choose `Local Java System <SID>` as *Hosting System*. Enter `sap.com/com.sap.tc.di.CTSserver` in the *Destination Name* field and choose *Destination Type* `RFC`. Click *Next*.



4. Enter the required data as shown in the following figure and click *Next*:
   a. Decide whether you use *Load Balancing* for your CTS system (in our example, we don't do so).
   b. *Target Host*: server name of the CTS system
   c. *System Number*: system number of the CTS system
   d. *System ID*: SID of the CTS system

Click *Next*

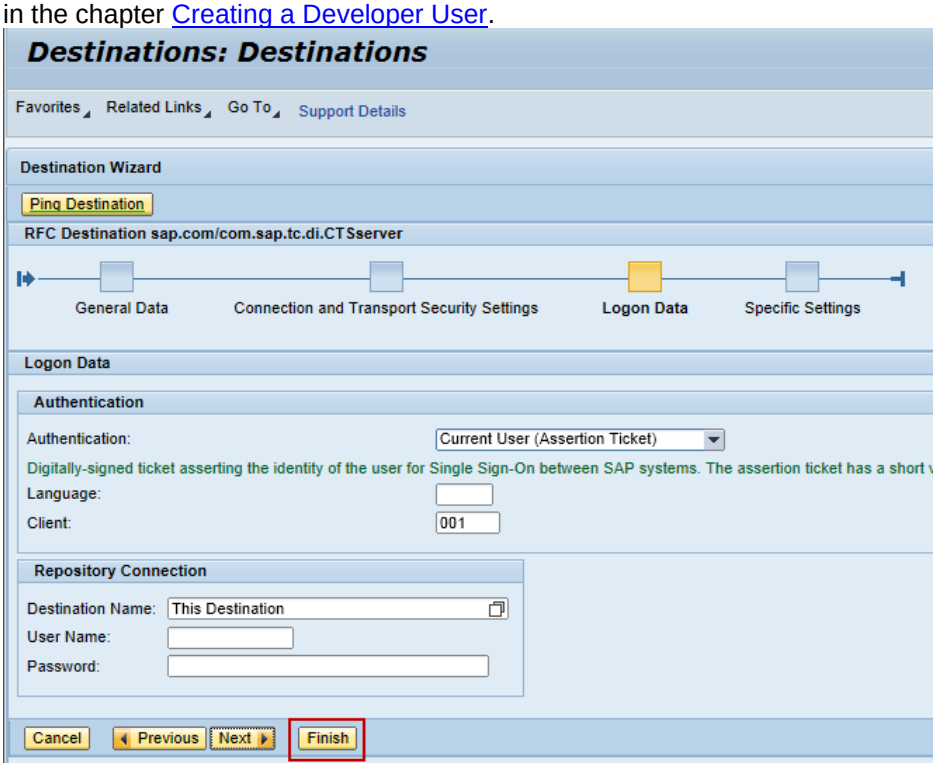


Note

We recommend that you use SNC whenever possible.

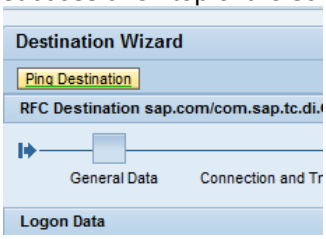
5. Enter the *Logon Data*: In the *Authentication* section, select `Current User (Assertion Ticket)` as *Authentication* for the connection to the CTS communication system.
   Client: Client in which the Transport Organizer Web UI is running (same value as used when creating the non-ABAP system on the CTS system for parameter NON_ABAP_WBO_CLIENT)
   Choose *Finish* to complete the Destination Wizard
   The permissions required for each user who should be able to use this connection are described

in the chapter Creating a Developer User.



> **Note**
>
> We recommend that you use SSO. If you cannot use SSO or want to use a dedicated service user, select the option `Configured User` and enter your preferred language, a client, and an appropriate service user and password. This configuration is not recommended. We recommend that you configure SSO between your NWDI and the CTS system. Details are available in the SAP Library at http://help.sap.com/nwsso and for details on issuing and accepting tickets, see here: http://help.sap.com/saphelp_nw73/helpdata/en/4d/a5ddc832211dcde10000000a42189c/content.htm?frameset=/en/4a/412251343f2ab1e10000000a42189c/frameset.htm.

6. Choose *Ping Destination* to test your destination. Make sure that you receive the message *Test is successful* on top of the screen.



6.7 Configuring the CTS System

This guide assumes that the system that you would like to use as CTS system is configured as domain controller. The following steps explain the additional configuration steps to set up CM Services.

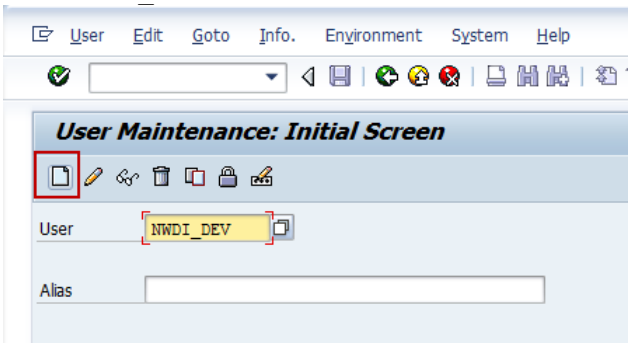
All configuration tasks on the CTS system have to be done in the client that is later used to execute the transports unless otherwise mentioned.

6.7.1 Creating a Developer User

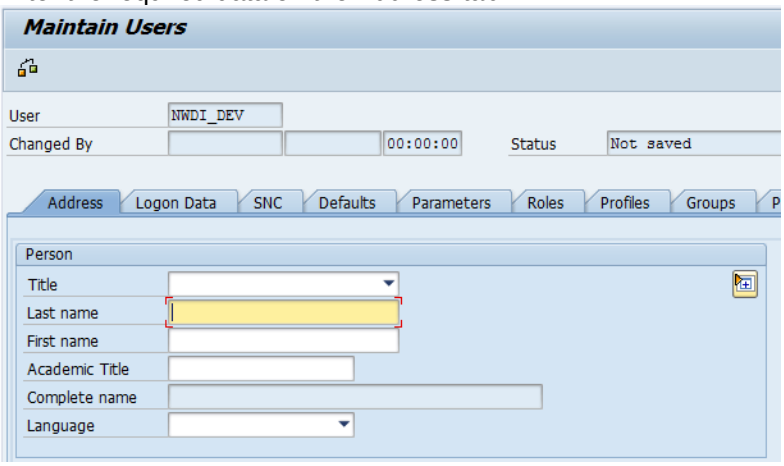
Due to the decision in Creating an RFC Destination from CM Services to CTS to use the option *Current User* (*Assertion Ticket*) the user who is logged on to the system where the CM Services run, needs special permission on the CTS system as well. Make sure that the user has been assigned the correct role on the CTS system. We assume that the user who is developing (and is therefore also logged on to

the CM Services system since the NWDI runs on this system) does not yet exist on the CTS system. So we will now create the user and assign the required permissions.

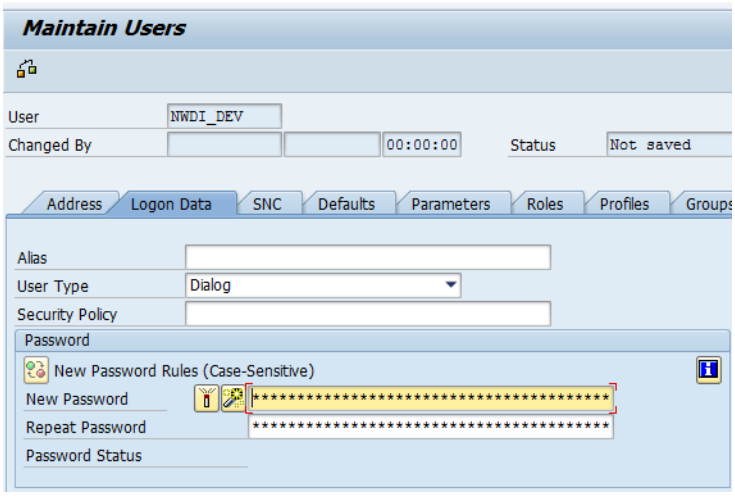
1. Log on to your CTS system and open transaction `SU01`.
2. Enter `NWDI_DEV` as *User* and click on *create*.



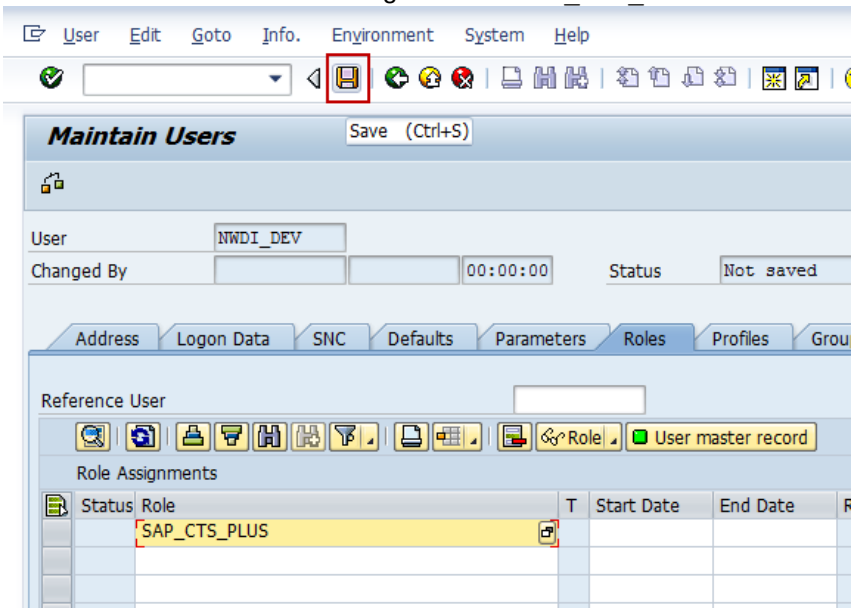
3. Enter the required data on the *Address* tab



4. Switch to the *Logon Data* tab. Enter a *New Password* and the same password for *Repeat Password*.



5. Switch to the *Roles* tab and assign the role `SAP_CTS_PLUS`. *Save* the user.



> **Note**
>
> In older releases the role SAP_CTS_PLUS may not be complete. If you run into permission issues when working with the user, check that the role is complete. Details are available in the chapter Checking Role SAP_CTS_PLUS

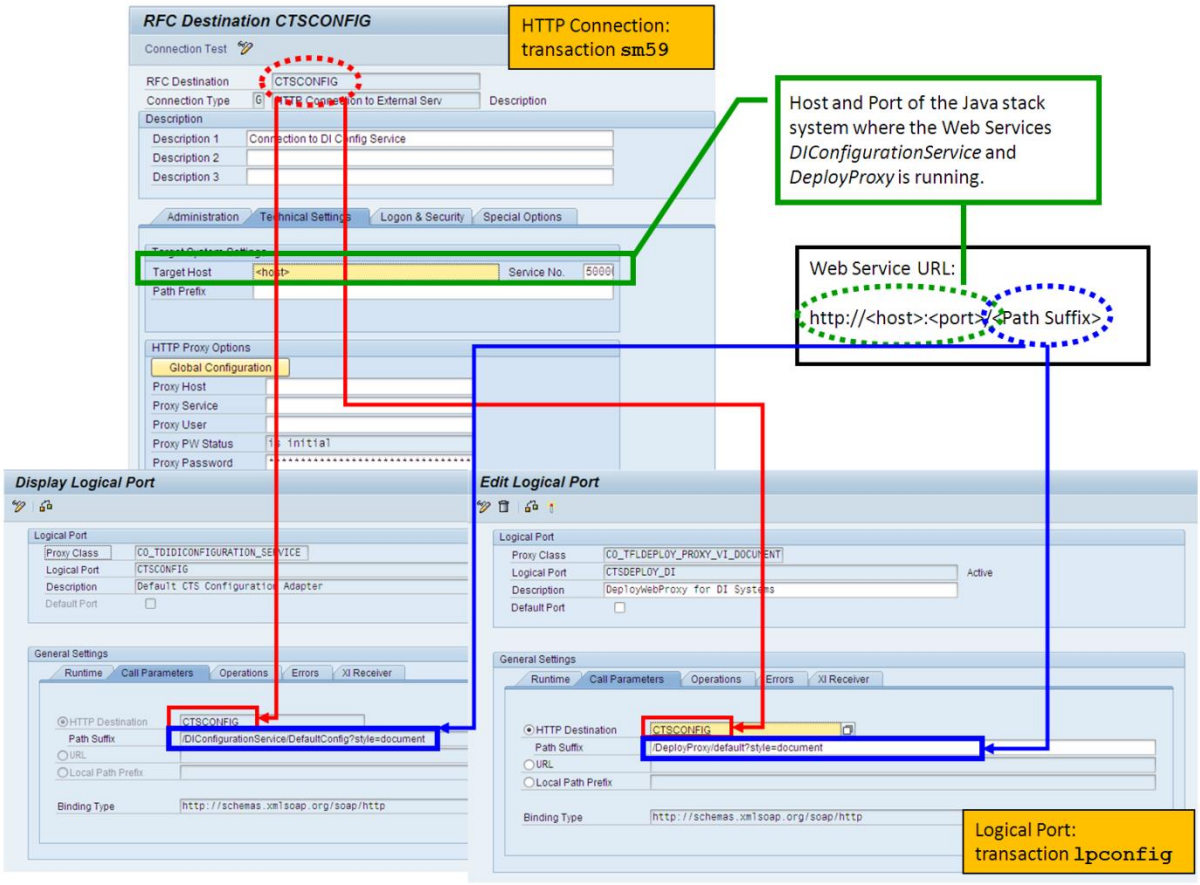
6. Repeat the previous steps for every user who is developing in Java and has to attach changes to a transport request (be it from within the developer studio or the export service). The users are required on the CTS system e.g. to get a transport request when exporting. You can use the user IDs of your developers. Make sure that you use IDs which allow to be used in SSO mode. Remember that ABAP supports user IDs with a length of up to 12 characters. NWDI_DEV is used as an example in this guide.

> **Note**
>
> If the users already exist on the CTS system, make sure that they have sufficient permissions – assign the role SAP_CTS_PLUS to them.

7. Log on to your CTS system with the user `NWDI_DEV` in order to change the initial password.

6.7.2 Configuring RFC Destination and Logical Ports

Have a look at the figure below. It illustrates how logical ports and destinations are connected. The logical ports (CTSCONFIG and CTSDEPLOY_DI) use the same RFC destination (CTSCONFIG). Furthermore the user CTS_RFC which was created on the CM Services server (see chapter Creating User for RFC Destinations from CTS System to CM Services) is used for the RFC connection from CTS to the CM Services system.



Note

The Deploy Web Service (CTSDEPLOY) e.g. for your portal transports can be hosted on a different server. For the portal, the Deploy Web Service usually runs on the AS Java of your SAP Solution Manager. For CM Services the CTS Deploy Web Service on the CM Services server has to be used in case you use the source transports and for the development system for the transport of sources and deployables (see Introduction, systems, where parameter *DI_System* is set to TRUE (needs to be in upper case)). For the test and productive systems, you need the RFC connection CTSDEPLOY as well. In this case, the RFC connection CTSDEPLOY that might already be in use for transporting portal content can be used as well. If you are not using CTS for any other use case on your SAP Solution Manager up to now, take a look at step 5 of this chapter to learn how to configure CTSDEPLOY.

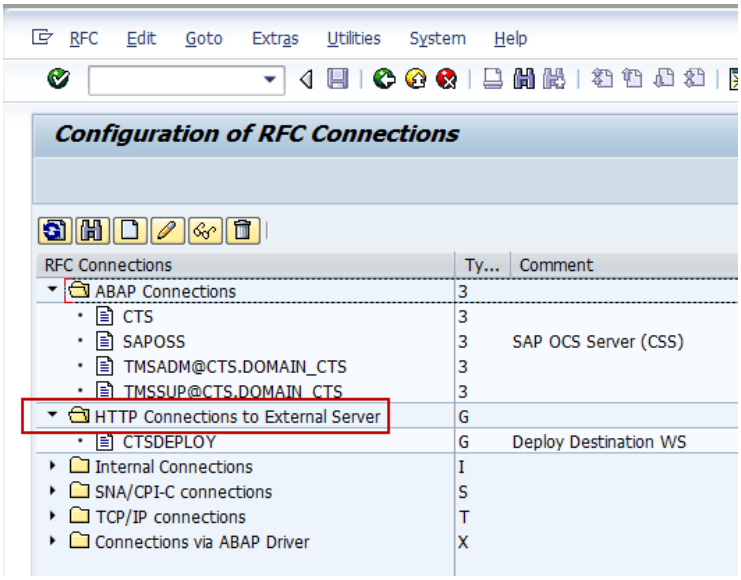
6.7.2.1 Configure RFC Destinations

An RFC destination is needed for the communication between the CTS system and the CM Services system: `CTSCONFIG`. The required user `CTS_RFC` for this RFC connection with special permission on the CM Services system has already been created in step Creating User for RFC Destinations from CTS System to CM Services.

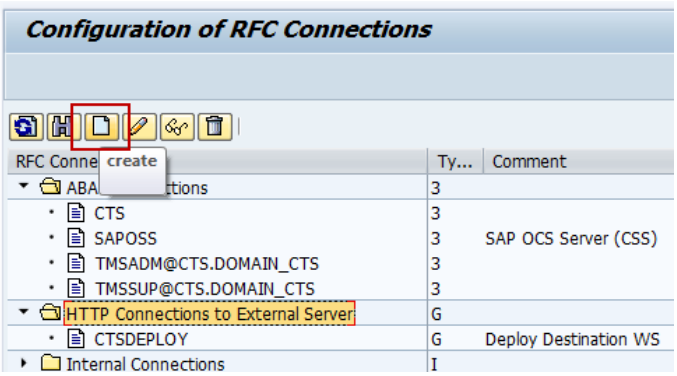
Proceed as follows to create the RFC destination:

1. Log on to the client of your CTS system that you are using for transports (=where the Transport Organizer Web UI runs). Open transaction `SM59` and open the *HTTP Connections to External*

Server section. Check whether the connection `CTSCONFIG` is already available.



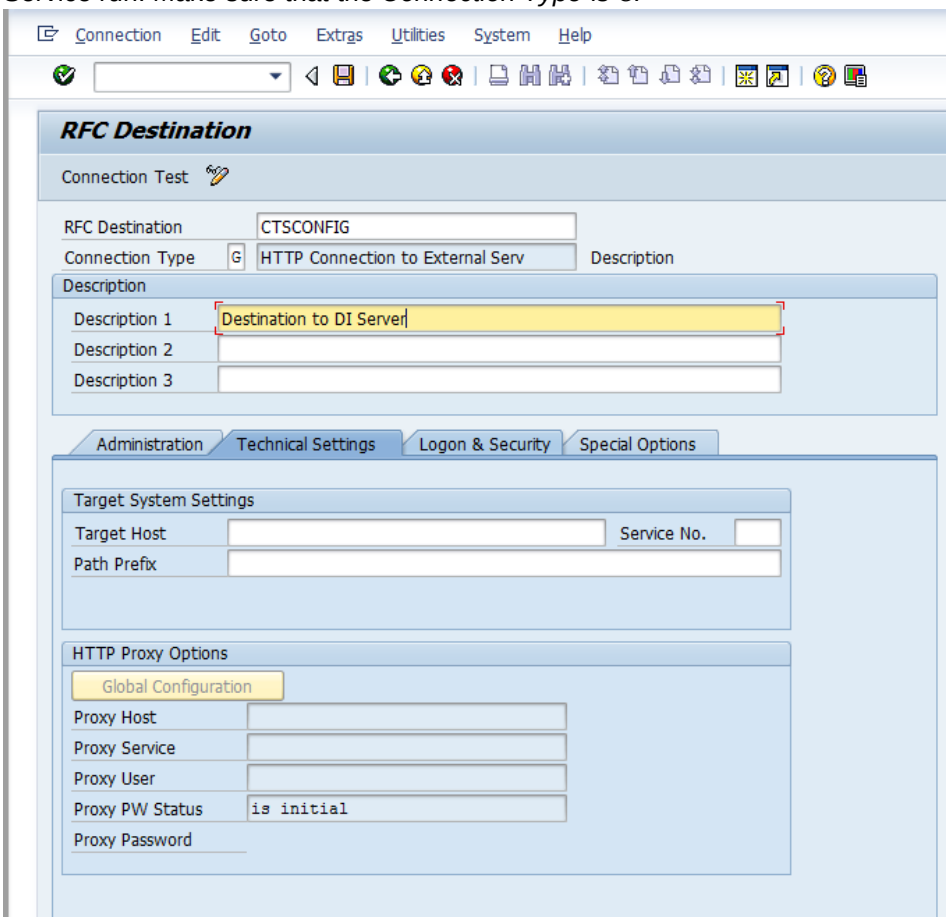
2. Click on *Create* if `CTSCONFIG` does not yet exist.



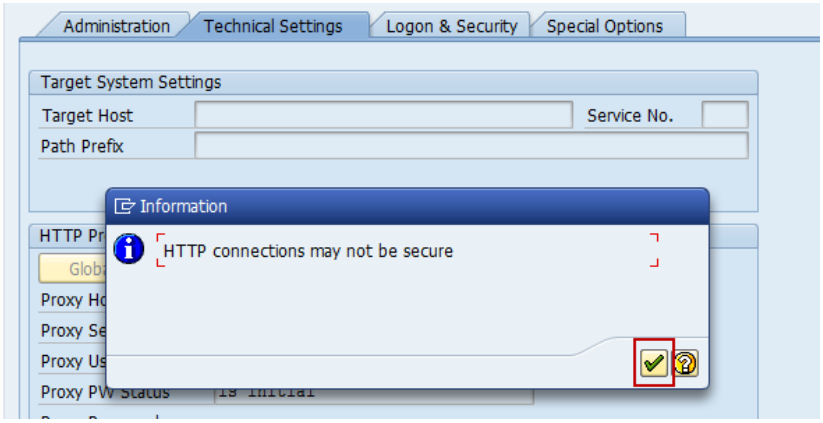
If the connection already exists, take a look at the following steps as well to make sure that the configuration is done as needed for this setup. If this is not the case, then you have to create an additional destination with a different name and use this destination for the configuration of the CM Services

3. Enter `CTSCONFIG` as *RFC Destination*, a *Description*, the *Target Host* (your NWDI/CM Services server), and as *Service No* the port of your server where the CM Services and the Deploy Web

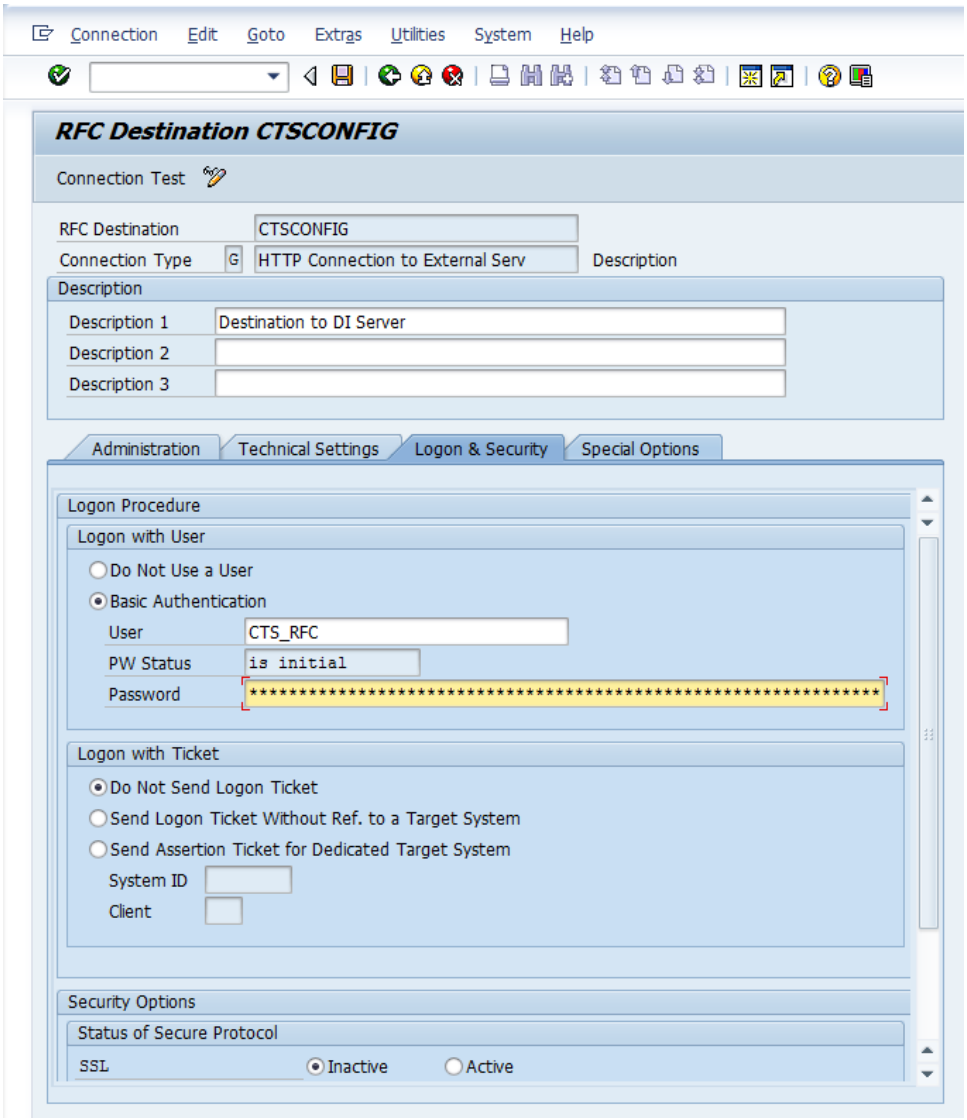
Service run. Make sure that the *Connection Type* is `G`.



4. Go to the *Logon & Security* tab. Click on *Continue* to confirm that you know that http connections can be insecure



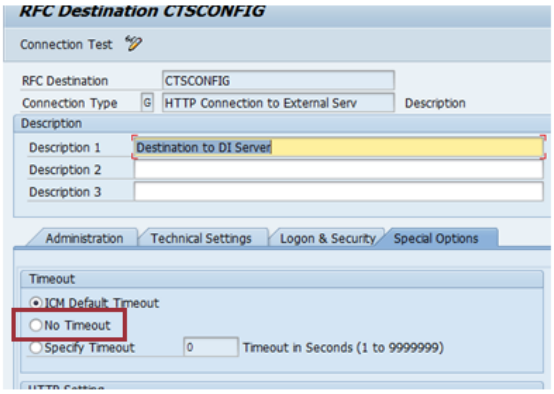
Select *Basic Authentication* and enter the user and the password that you have specified in Creating User for RFC Destinations from CTS System to CM Services (`CTS_RFC` in our example).



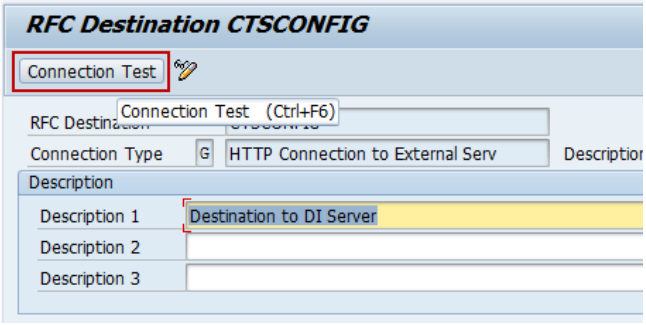
Note

We recommend that you use SSL whenever possible.

5. Go to the *Special Options* tab page and select *No Timeout*.

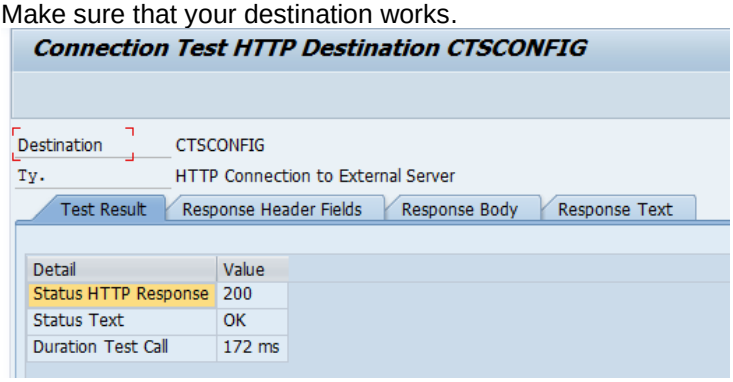


6. Choose *Connection Test*.

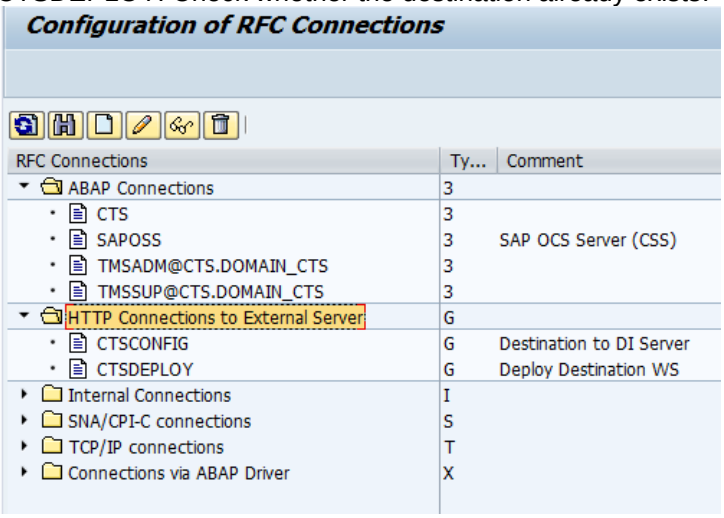


> **Note**
>
> The connection test only tests the connection to the server without using the specified user and password.

7. Make sure that your destination works.



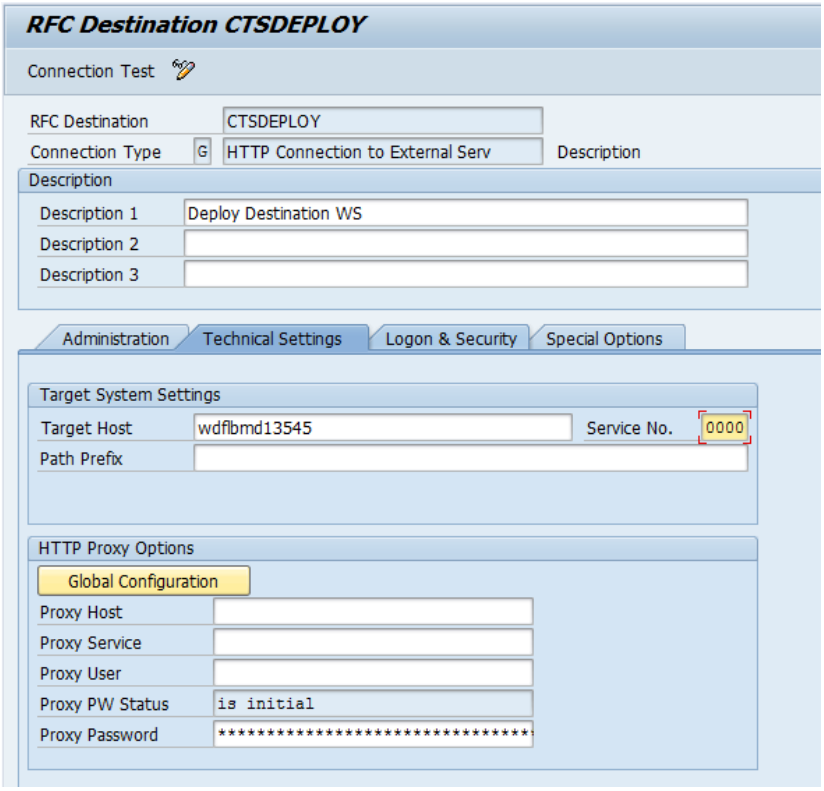
8. To transport deployables you have to configure an RFC destination pointing from the AS ABAP of your CTS system to the AS Java of your CTS system as well. This destination should be called CTSDEPLOY. Check whether the destination already exists.



> **Note**
>
> This destination is also needed if you transport e.g. portal content via CTS+. If you already do so (and use the same CTS system for this purpose) the destination should already exist.

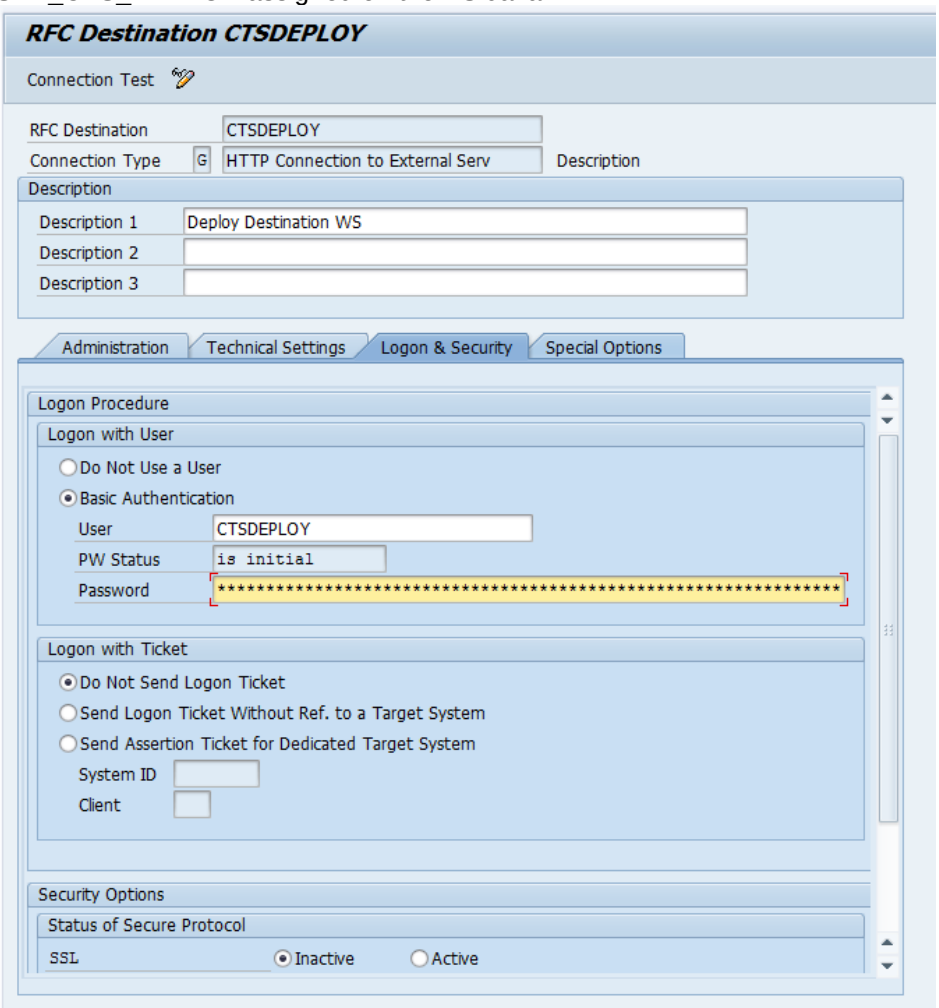
9. If the destination does not exist, create it. Enter `CTSDEPLOY` as *RFC Destination*, a *Description*, the *Target Host* (AS Java of your CTS system), and as *Service No* the port of the AS Java that is

used for the CTS system. Make sure that the *Connection Type* is `G`.



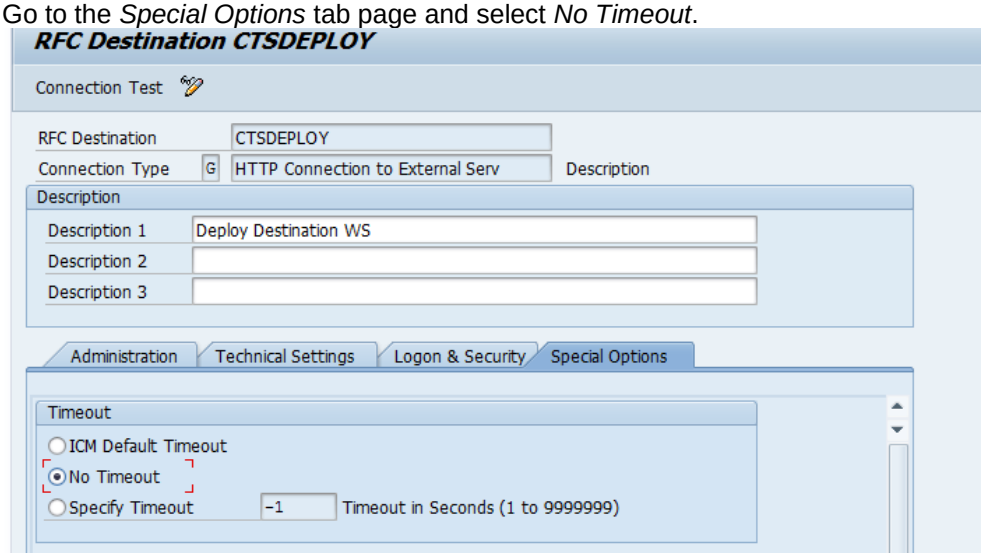
10. Go to the *Logon & Security* tab. Click on *Continue* to confirm that you know that http connections can be insecure.

11. Select *Basic Authentication* and enter a user and the password. The user should have the role SAP_CTS_DEPLOY assigned on the AS Java.



> **Note**
>
> If your system is configured accordingly, use SSL (select *Active* for *SSL* in the section *Security Options*). If SSL is not yet configured we recommend that you do so.

12. Go to the *Special Options* tab page and select *No Timeout*.



13. Test your connection.

6.7.2.2 Configure Logical Ports

Two logical ports are needed for the communication between the CTS system and the CM Services system: CTSCONFIG and CTSDEPLOY_DI. One logical port is required for the communication between the AS Java and the AS ABAP of your CTS system: CTSDEPLOY.

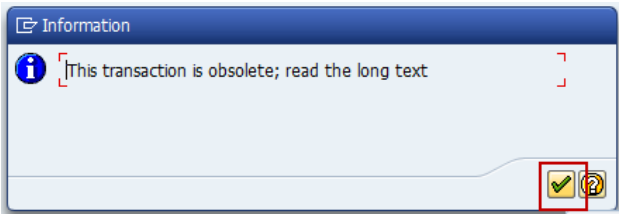
CTSDEPLOY_DI is needed to reach the Deploy Web Service on the NWDI system to manage the import of sources (import into NWDI and following automatic deployment to the development runtime system). The Deploy Web Service on the AS Java of your CTS system cannot be used in this case.
One Logical Port CTSDEPLOY is needed for the communication between the AS ABAP and the AS Java of your CTS system. This port is needed if you want to use the transport of deployables. If you decide to use the transport of sources, this port is not needed. Nevertheless, SAP delivers this port by SAP by default and you should not delete it as you might need it for other transports on your SAP Solution Manager - e.g. portal content.

If you use deployable transport, you do not need the port CTSDEPLOY_DI. It is only needed if you plan to execute imports into your development system (e.g. because you manually add a transport request to the queue).

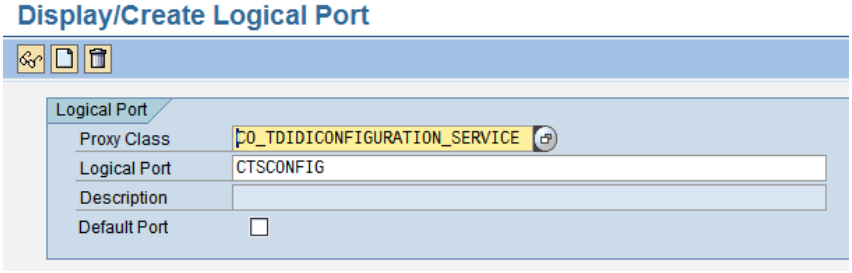
Check whether they are available and active on your CTS system. If not create them as described in this chapter. The logical ports CTSDEPLOY and CTSCONFIG are delivered by SAP and should be available on your system. Only for some older releases it is possible that they are not available.

At first, we are going to check whether the logical port CTSCONFIG is available

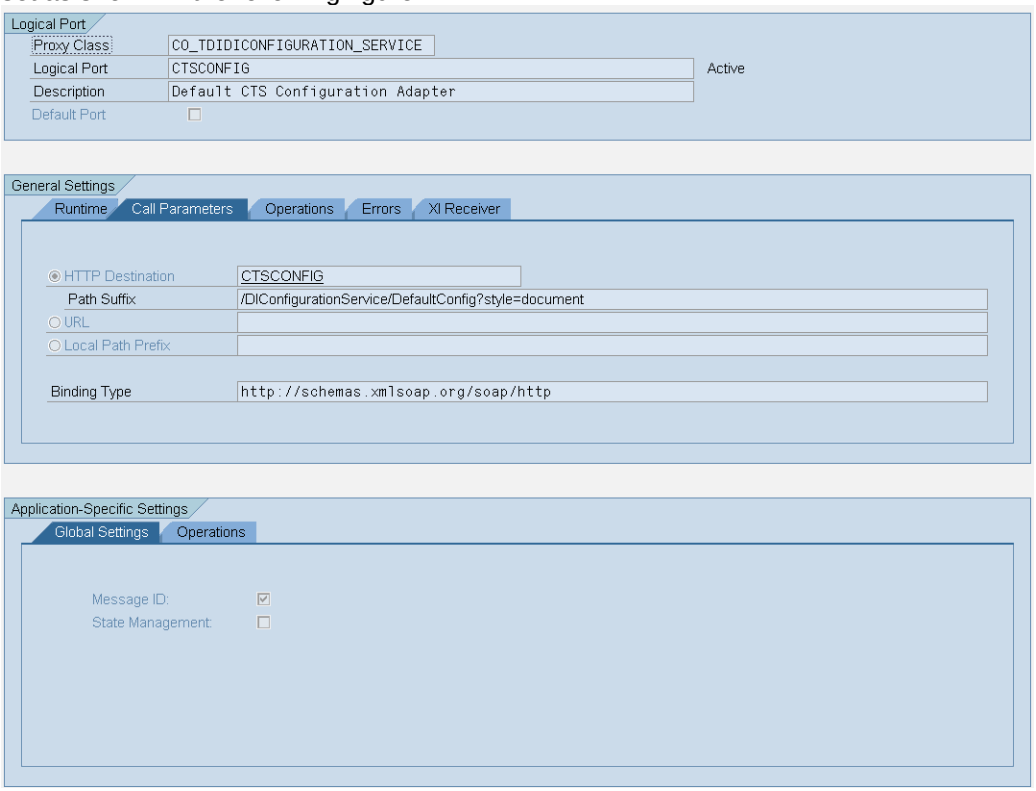
1. Log on to your CTS system in client 000 and call transaction `LPCONFIG`. Confirm the pop-up message that the transaction is obsolete. Click *Continue*. For this purpose, you have to use transaction `LPCONFIG`.



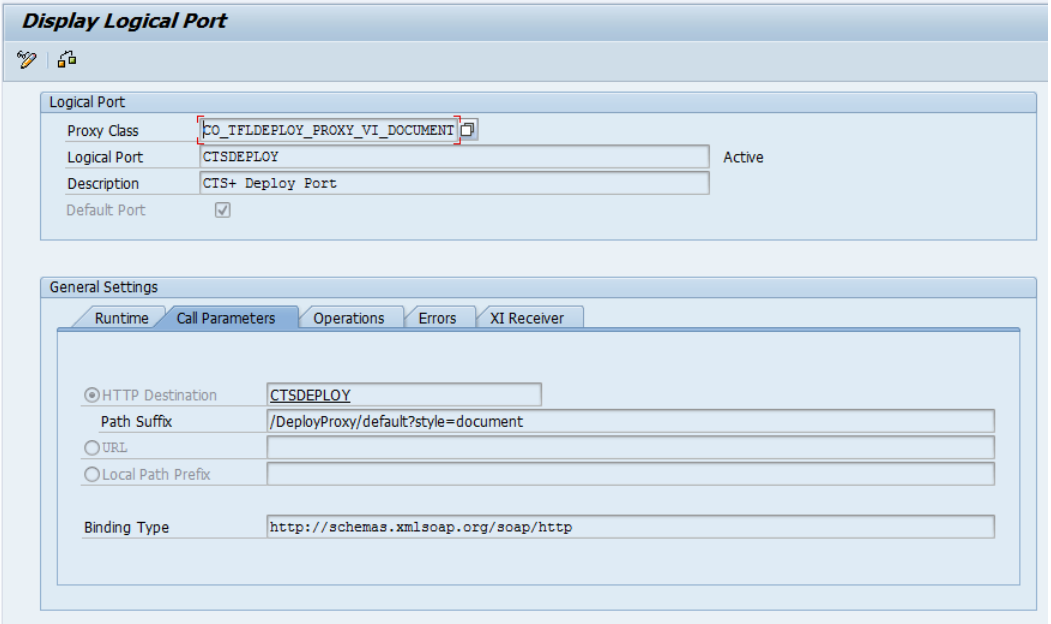
2. Enter `CO_TDIDICONFIGURATION_SERVICE` as *Proxy Class* and `CTSCONFIG` as *Logical Port*. Make sure that the option *Default Port* is not set.



3. Click on *Display*. Check that the logical port exists, that it is active and that the parameters are set as shown in the following figure.



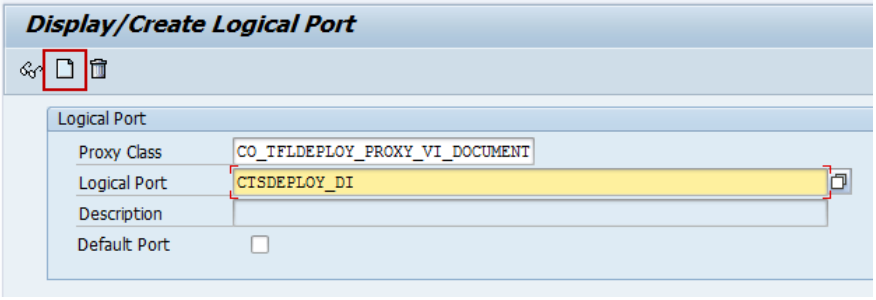
4. The logical port CTSDEPLOY should be configured with the values shown in the following figure. It should be the *Default Port* and it has to be active.



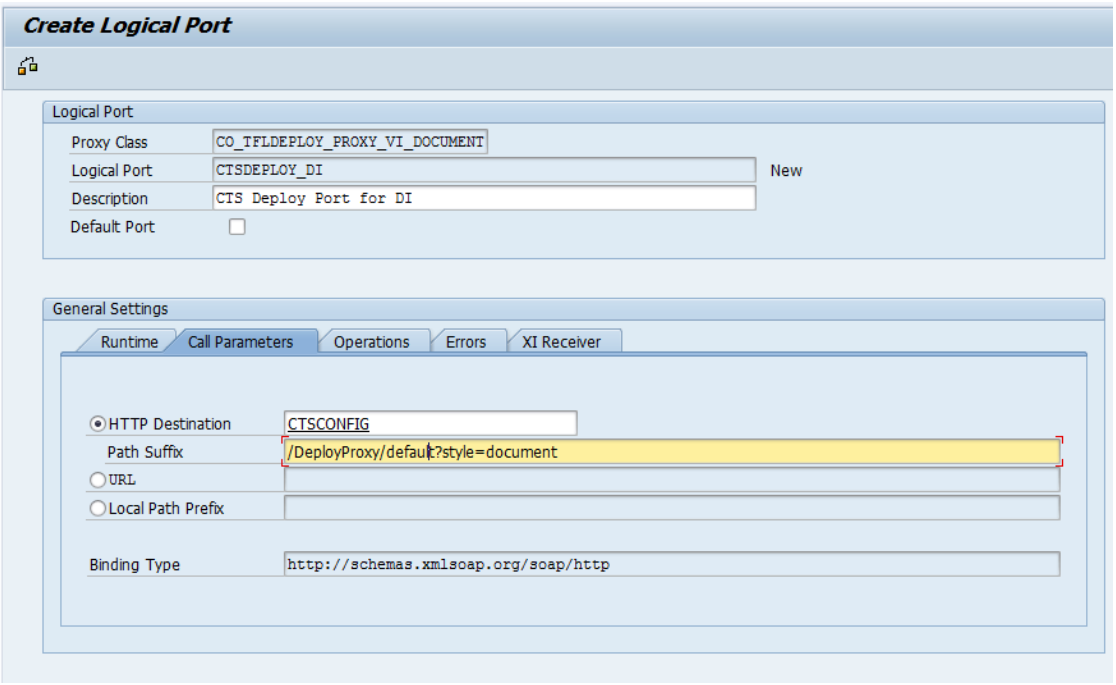
To create the logical port CTSDEPLOY_DI, if one of the ports does not exist, or if the parameters are not set correctly, proceed as follows:

1. Set the system change option of the client 000 to *Modifiable*. For more details on that see http://help.sap.com/saphelp_nw73/helpdata/en/2b/326d6274134cea8b217f24889d19c1/frameset.htm

2. Enter the *Proxy Class* `CO_TFLDEPLOY_PROXY_VI_DOCUMENT` and the *Logical Port* `CTSDEPLOY_DI`. Click on *Create*.

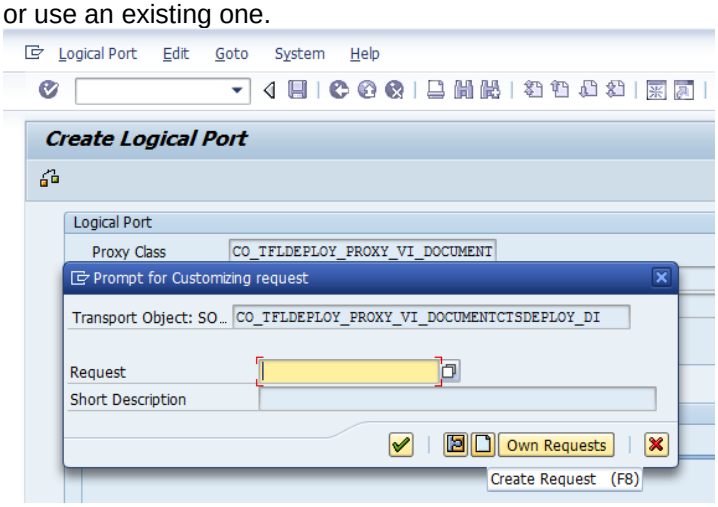


3. Enter a *Description*. Enter CTSCONFIG as *HTTP Destination* and `/DeployProxy/default?style=document` as *Path Suffix*



> **Note**
>
> It is correct and it is the intended setup that this logical port also uses the http destination CTSCONFIG since it also requires a connection to the CM Services system.

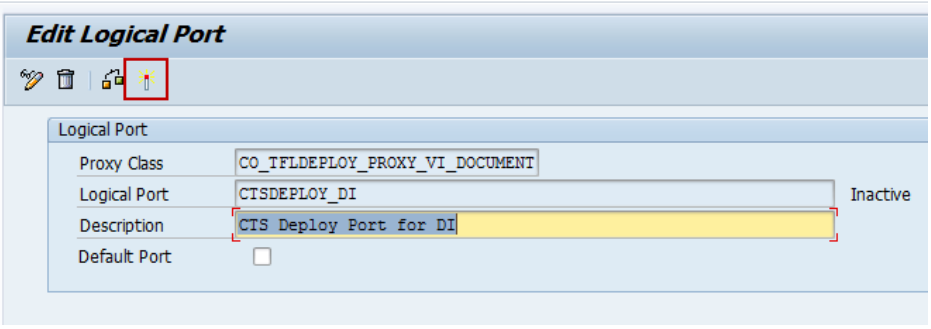
4. Save your logical port. You will be asked for a transport request. You can either create a new one or use an existing one.



Note

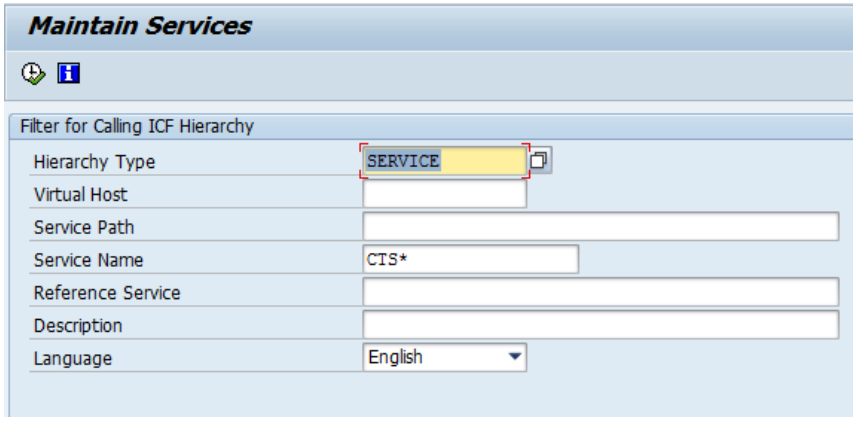
In most cases, this change is not going to be transported. So choose a transport request which does not contain any objects that require a transport to another system.

5. Activate the logical port.



6.7.3 Activate Services in SICF

Several Web Dynpro ABAP applications are needed to be able to use CTS. Make sure that they are activated, or activate them if they are not active. To do so, open transaction `SICF` in the client where you also configure your system landscapes in TMS, and search for services where the name starts with CTS.



For more details refer to the SAP Library at
http://help.sap.com/saphelp_nw73/helpdata/en/e5/998566c2174196a12b72e7c7af51e7/frameset.htm

6.7.3.1 Transport Organizer Web UI

The Transport Organizer Web UI is needed to manage the transport requests for non-ABAP systems. You can create transport requests, assign files, release requests etc. To be able to use the Web Dynpro ABAP application Transport Organizer Web UI you need to make sure that - depending on the release of your CTS system - the service *CTS_BROWSER* or CTS_ORGANIZER is active. For more details on the Transport Organizer Web UI, refer to the SAP Library at
http://help.sap.com/saphelp_nw73/helpdata/en/b5/6d03660d3745938cd46d6f5f9cef2e/content.htm

Note

If CTS_PLUG is installed on your CTS system (SAP NetWeaver 7.31SP1 and later or SAP Solution Manager 7.1), CTS_ORGANIZER will automatically be used whenever you click a link provided inside applications to manage transport requests. There is no configuration option for one or the other version of the Transport Organizer Web UI. So activate the service that fits to your system.
With CTS_PLUG, there is also the Import Queue Web UI available. You can use it to manage imports for your system via a Web UI. More information on the Import Queue Web UI is available in the SAP Library at

http://help.sap.com/saphelp_ctsplug20sm71/helpdata/en/4b/b9a1222f504ef2aa523caf6d22d1c9/content.htm
More information on the CTS Plug-in, features and installation prerequisites is also available in the SAP Library at
http://help.sap.com/saphelp_ctsplug20sm71/helpdata/en/eb/0e1c7be26249e0911c5d688d3bfa06/content.htm?frameset=/en/4b/b9a1222f504ef2aa523caf6d22d1c9/frameset.htm

6.7.3.2 Object List Browser

To be able to use the Object List Browser to see the content of an attached dip (Development Infrastructure Package) file you need to activate the Web service `CTS_OBJECTLIST_BROWSER`.

7 System Landscape Configuration

Assuming that your CTS system and NWDI with CM Services are enabled, the following chapter describes how to set up your transport and development configuration landscape.


Example

In this guide, we will use three runtime systems as a sample landscape. We will have a development system (DEV), a test system (TST) and a production system (PRD). So we need to setup a non-ABAP DEV, TST and PRD system in TMS of your CTS system. For each system, you have to decide if a development configuration is needed and if the system is a source and/or target system. In addition the transport routes have to be created accordingly.

When creating a development configuration for a system, DTR workspaces and CBS buildspace are created automatically. But initially they are empty! Therefore you have to fill these buildspaces (and workspaces) with the required libraries (compared to the CMS Check-In and import to development). In CM Services this is done with the help of the *Synchronize Service*.

In our example, we will use the deployable transport. For this scenario, the following configurations are required:

Systems

DEV: non-ABAP source and target system with development configuration
TST: non-ABAP target system
PRD: non-ABAP target system

Transport Routes:

DEV → TST: Consolidation Route
TST → PRD: Delivery Route

If you plan to transport sources, the following configuration is required:

Systems:

DEV: non-ABAP source and target system with development configuration
TST: non-ABAP target system with development configuration
PRD: non-ABAP target system with development configuration

Transport Routes:

DEV → TST: Consolidation Route
TST → PRD: Delivery Route

CAUTION

The following scenario is **not** recommended: Configure the TST system as source system to be able to create a transport request, export and attach an SCA file (compared to the CONS System in a CMS track) and then transport it to the PROD system.

Independent of the transport scenario (source or deployable transport) the following configuration parts have to be done in any case:

1. Create a non-ABAP DEV system with development configuration (source system)
2. Use the Synchronize Service to provide the required libraries to the DEV system / the respective workspaces and buildspace

So we are now starting with executing these two steps.

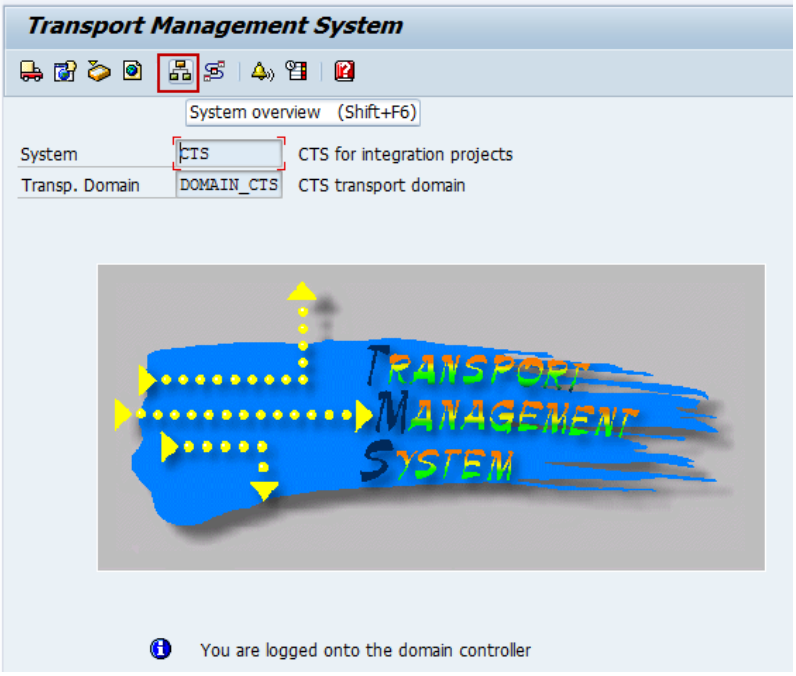
7.1 Creating a Non-ABAP System with Development Configuration

This chapter describes how to configure the development system (DEV), which is a source (to be able to create a transport request and attach .dip or .sca files) and target system (for the deployment during the activation process triggered in NWDS) with a development configuration. This is true for all use cases using CM Services.

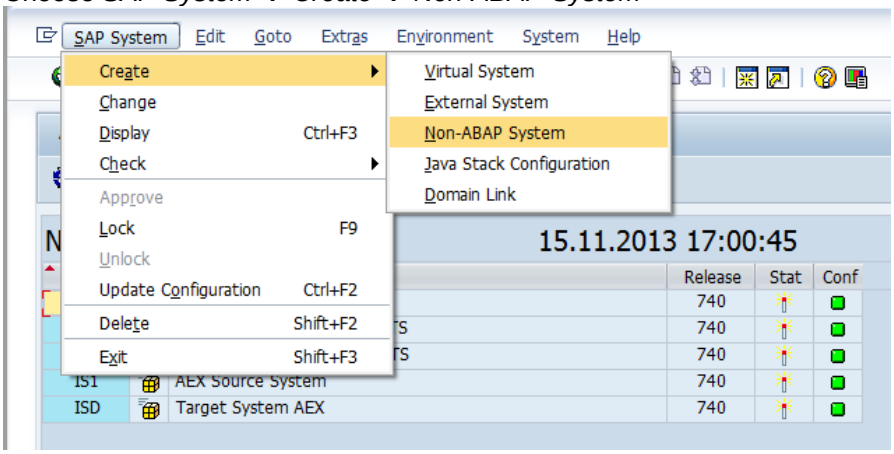
CAUTION

Do not create a non-ABAP system for your NWDI. The transport route consists of the runtime systems.

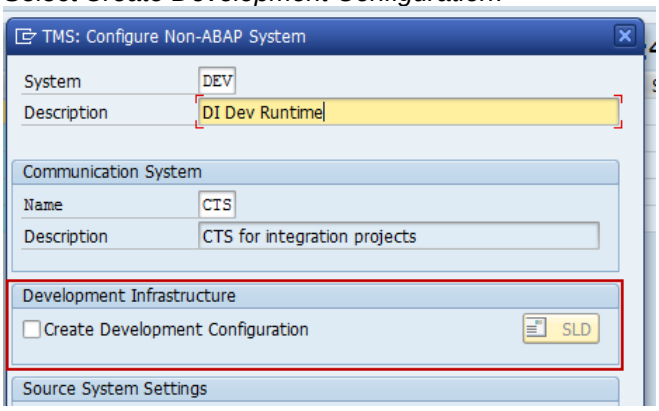
1. On your CTS system (domain controller), call transaction `STMS` and click on *System Overview*.



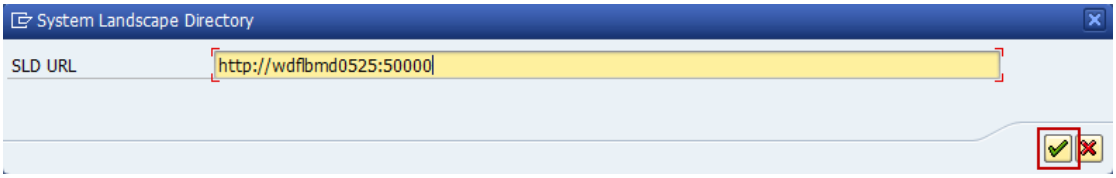
2. Choose *SAP System* → *Create* → *Non-ABAP-System*



3. Enter the SID in the field *System*. In our example, we enter DEV. Enter a *Description* as well. Enter your CTS system as *Communication System*: (the system where you configured the logical ports and the RFC Destinations – `CTSCONFIG` etc).
Select *Create Development Configuration*.



4. If this is the first system with a development configuration that you create, now, a pop-up will be shown where you have to enter the *SLD URL*. Enter the URL to the SLD that you have configured during the NWDI setup (see chapter Configuring NWDI with CM Services). Click on *Continue*.

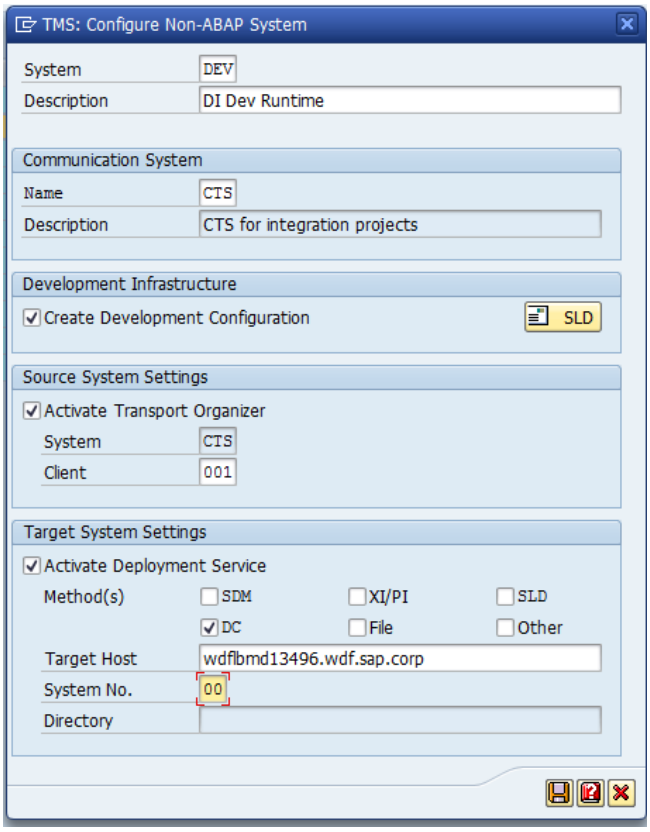


Recommendation

Use https whenever possible.

5. Choose *Activate Transport Organizer* and make sure that the correct client is set.
Choose *Activate Deployment Service* and choose *SDM* or *DC* (depending on the release of your runtime system).
Enter the *Target Host* and the *System No* of your development runtime system.

Click *Save*.



> **Note**
>
> For all runtime systems which are on SAP NetWeaver 7.1 or later, use *DC* (=Deploy Controller) as *Method*. For lower releases SDM is used for deployments.

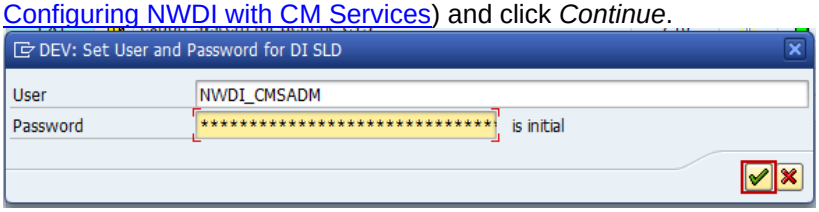
> **Note**
>
> This configuration is different from what you might know when using CTS, for example, for the portal. The development system has to have both configurations, source and target system. The target system is needed to deploy your applications to this runtime during the activation step using NWDS/NWDI containing e.g. the required libraries.

6. For deployments to the runtime system, a user with appropriate permissions is needed. In the dialog box *<SID>: Set User and Password for Deployment SDM/DC* enter a user who has permissions to execute deployments on the development runtime system.

> **Note**
>
> For runtime systems with SDM (SAP NetWeaver AS Java 7.0 and enhancement packages) use SDM as a user and the SDM password. As of SAP NetWeaver AS Java 7.1 the Deploy Controller is used for deployments. In this case, enter a user with deploy permission and the appropriate password.

7. If this is the first DI system that you create, you will now be asked to enter a user and password for the SLD. Enter the master password that you defined when setting up the NWDI (see chapter

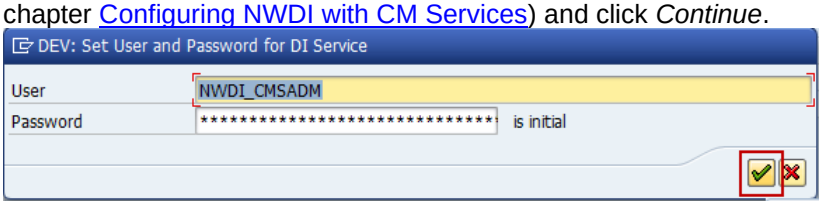
Configuring NWDI with CM Services) and click *Continue*.



> **Note**
>
> If you set up your NWDI to be used with another (already existing) SLD, you have to enter a user and password for this SLD.

> **Note**
>
> You can use only one SLD per CTS system – therefore you are only asked for an SLD URL and a user / password when creating your first DI system.

8. If this is the first DI system that you create, you are now required to enter a user and a password for the CM Services. Enter the master password that you defined when you set up the NWDI (see chapter Configuring NWDI with CM Services) and click *Continue*.

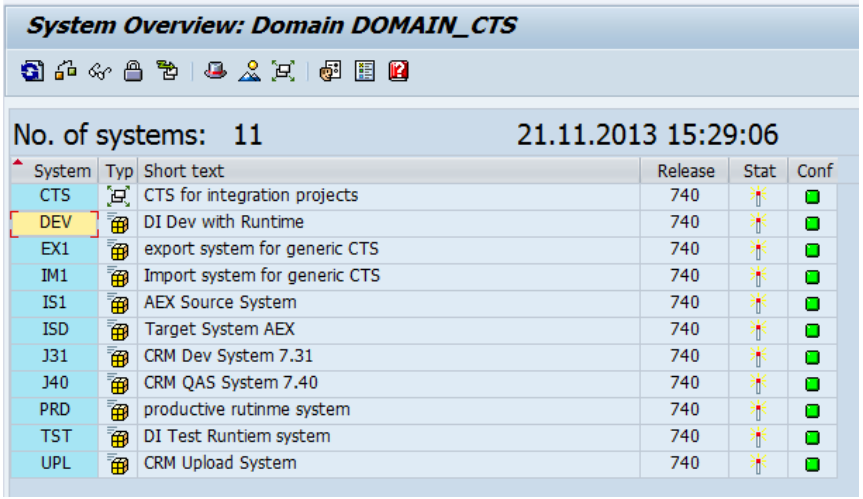


> **Note**
>
> If you do not use CM Services on the system where DTR / CBS run, you have to create the user that you like to use in here on the CM Services system as well.

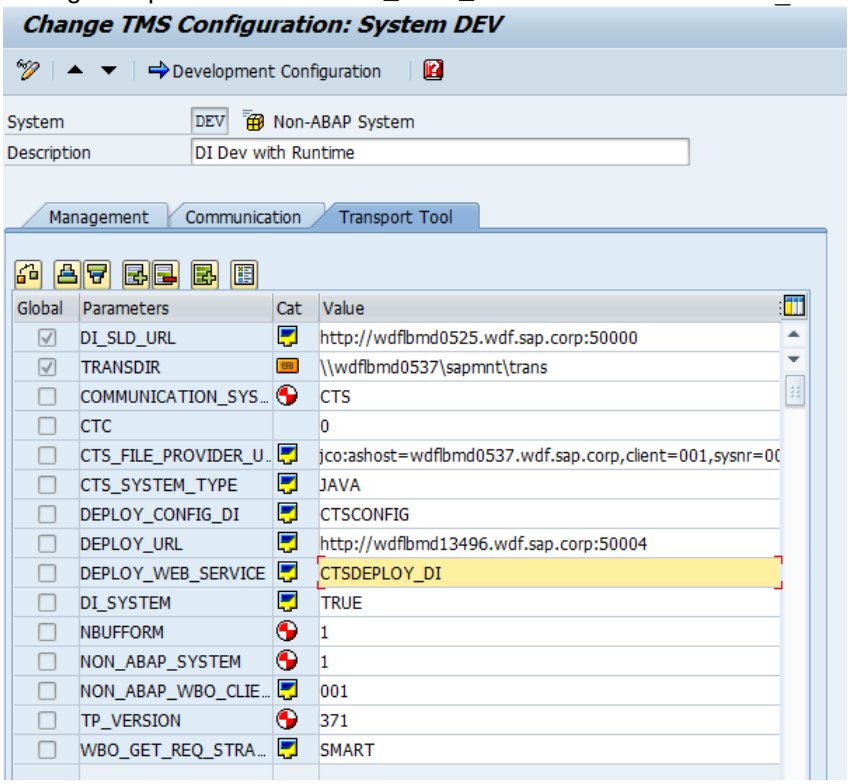
9. After you saved the DEV system in TMS, a browser window showing the *Development Infrastructure. Development Configuration Management* opens automatically. This UI runs on the CM Services server. If you do not have single sign-on in place, you have to log on at first. Use the user NWDI_ADM with the master password that you set when configuring the NWDI (see chapter Configuring NWDI with CM Services). We will continue with the configuration in this UI after adapting some parameters for the system DEV in TMS.

7.1.1 Adapting TMS parameters

1. Double-click on the system DEV in the *System Overview.*



2. Change the parameter *DEPLOY_WEB_SERVICE* to `CTSDEPLOY_DI`.

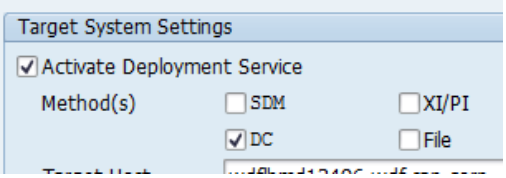


Note

This change is required for every system where the parameter DI_SYSTEM is set to TRUE (in upper case).

Note

If you are using a release below SAP NetWeaver 7.0 including enhancement package 2 on your CTS system and you were not able to choose between SDM and DC (only one option was available), you also have to change the port for *DEPLOY_URL* from 5xx18 to 5xx04 if your runtime system is on a release that uses the deploy controller for deployments.



3. In addition you can define that the AS Java gets the files from the AS ABAP (the Transport directory) when executing an import:
   - You can use a mount directory or a shared directory – the parameter DEPLOY_DATA_SHARE which is used by default.
   - You can alternatively explicitly set a SAP Java Connector connection (JCo connection), with the parameter CTS_FILE_PROVIDER_URI. For the JCo connection you need to set the *File Provider User* and *Password*. In the TMS Configuration of your system choose *Goto → File Provider User/Password*. The users that are entered in the destinations CTSDEPLOY and CTSCONFIG in SM59 have to have the permission Destination_Service_Write_Permission on the CM Services system in addition to the role SAP_CTS_DEPLOY. We recommend that you create a separate role containing this action and assign this role to the user that is used when the CTS system connects to the CM Services system. For more information, refer to SAP Note 1492665 and in the SAP Library at http://help.sap.com/saphelp_nw73/helpdata/en/81/5bb741b48d4c6ea8c94b534144ba3a/content.htm.

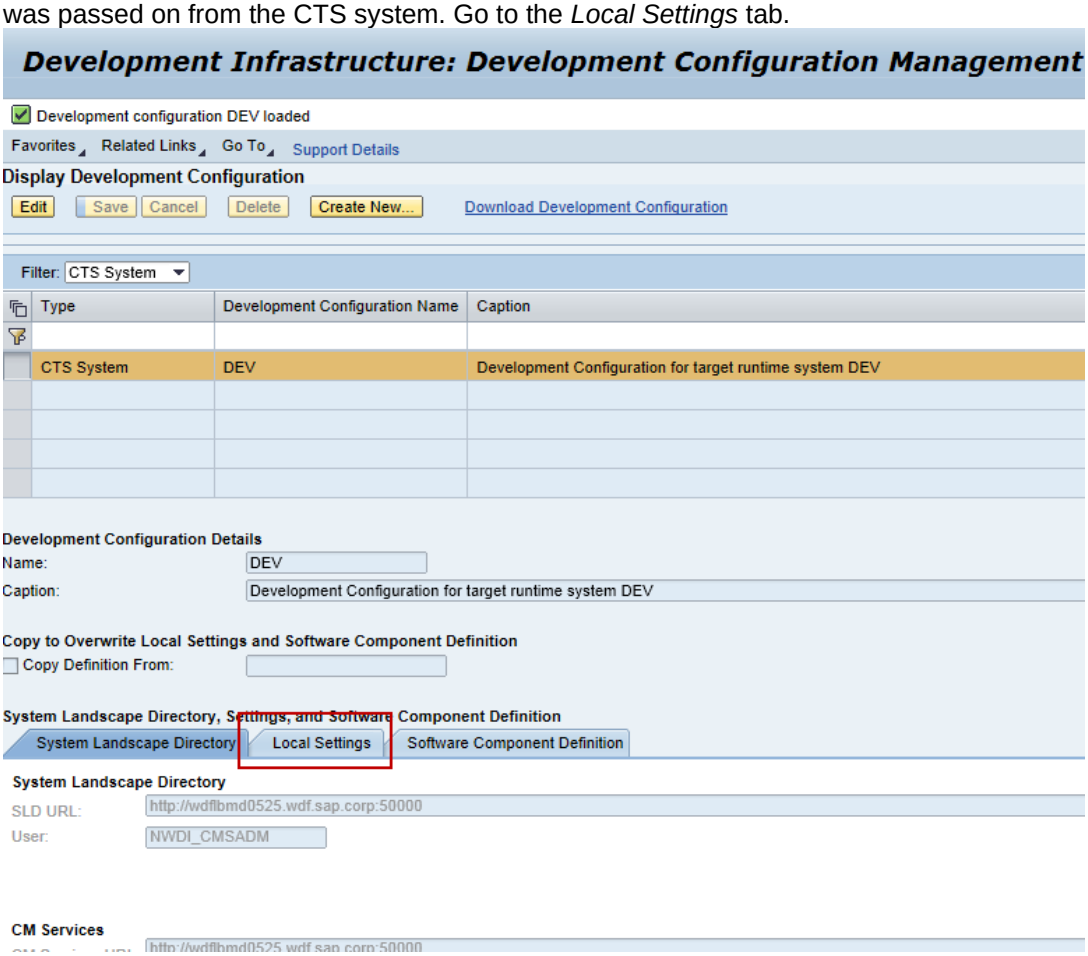
> **Note**
>
> You have to delete the `DEPLOY_DATA_SHARE` parameter to be able to use the `CTS_FILE_PROVIDER_URI` parameter. Otherwise the system tries to access the Deploy Data share.

> **Note**
>
> For details on the CTS_FILE_PROVIDER_URI parameter, the possible values and permissions required refer to SAP Note 1492665.

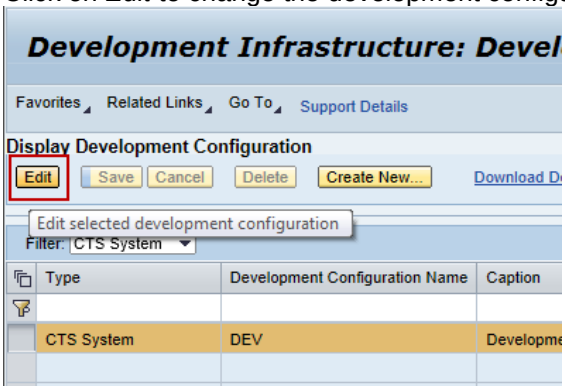
7.1.2 Configuring the Development Configuration

Now you can start configuring the development configuration. You do this in the Development Configuration UI that opened in the browser when saving the non-ABAP system.

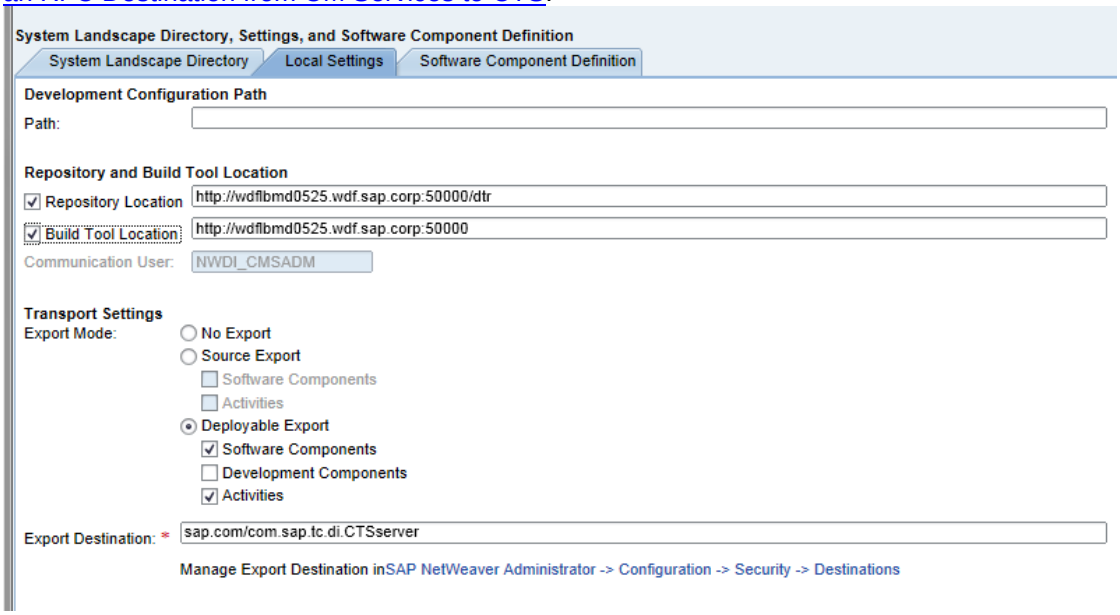
1. What you can see on the *System Landscape Directory* tab should be ok since the information was passed on from the CTS system. Go to the *Local Settings* tab.



2. Click on *Edit* to change the development configuration.



3. Set the options *Repository Location* and *Build Tool Location*. This will automatically add the respective paths.
   Define the *Transport Settings*. In our example, we are going to use the *Deployable Export* with the options to transport *Software Components* and *Activities*. More details can be found in the chapter Landscape Options.
   Make sure that the *Export Destination* shown in here is the one that you created in step Creating an RFC Destination from CM Services to CTS.

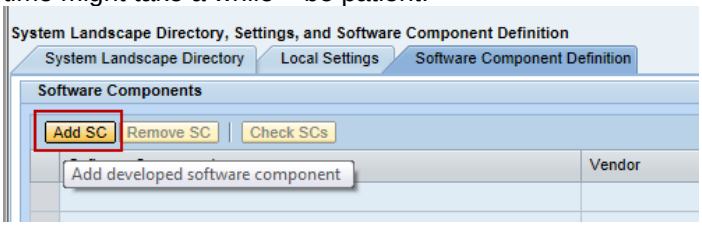


> **Note**
>
> If you have to connect one NWDI to more than one CTS system, you can also define more than one destination. We recommend that you add the SID of the CTS system to the name so that you know what the different destinations are made for (e.g. *sap.com/com.sap.tc.di.CTSserver_CTS*). Refer to the chapter Creating an RFC Destination from CM Services to CTS for creating a destination.

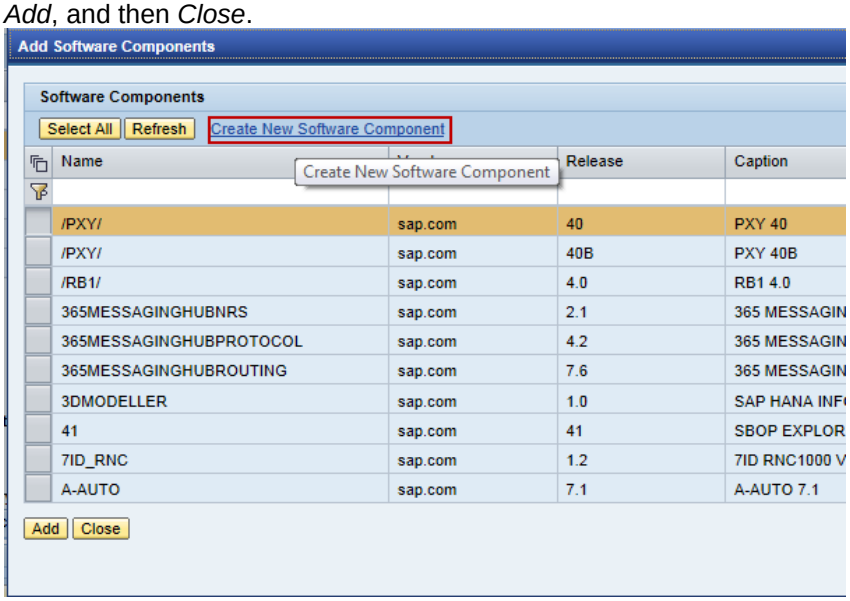
> **Note**
>
> Execute the next step “Software Component Definition” before saving these settings. The DTR and CBS URLs will be deleted if no software components are added for the development configuration.

4. Click on the *Software Component Definition.* You can now add the SCs that you would like to develop in this development configuration. To do so, click on *Add SC*. All available software components are read from SLD and are provided in a list. Retrieving the list from SLD for the first

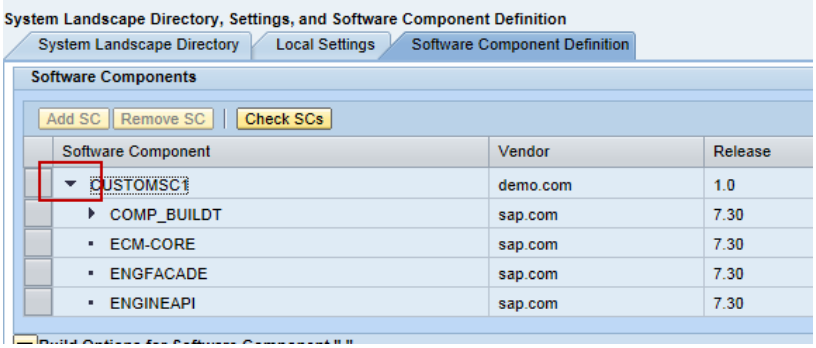
time might take a while – be patient.



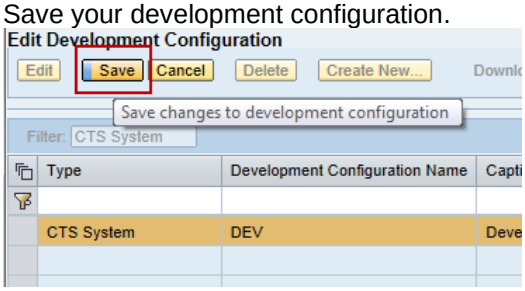
5. On the dialog box, you can choose from the existing SCs or create a new one. Refer to the chapter Creating a new SC for details if you would like to create a new SC. Filter the list according to the SCs you want to add to the development configuration, select them, and choose *Add*, and then *Close*.



6. To view the dependencies of the SCVs, click on the triangle at the beginning of a row.



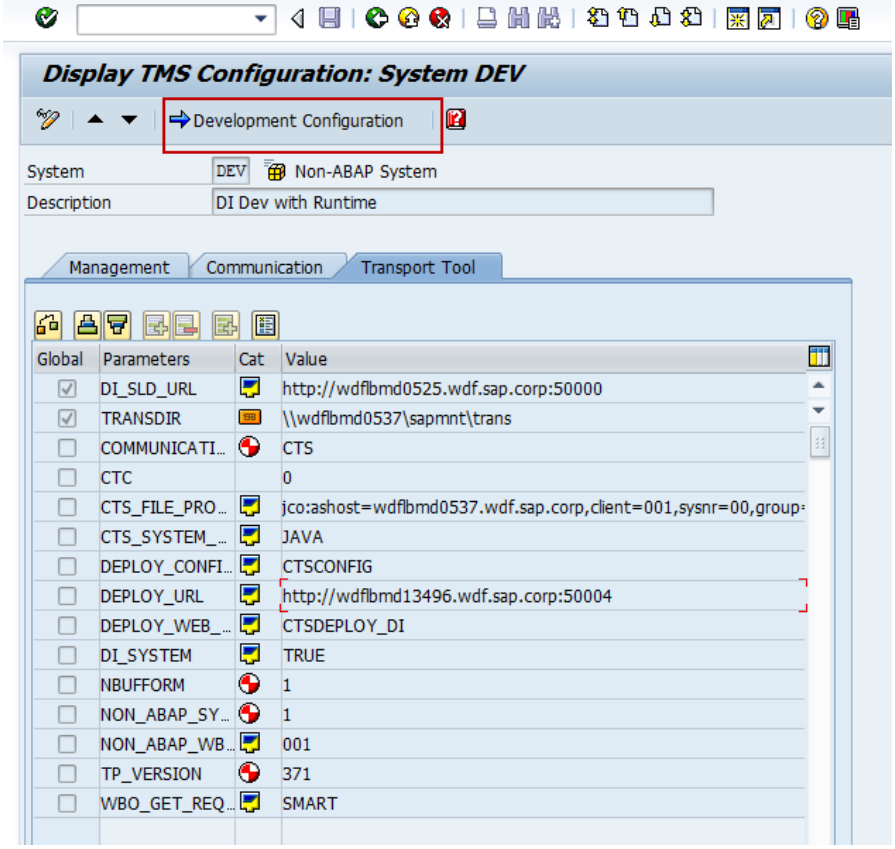
7. Save your development configuration.



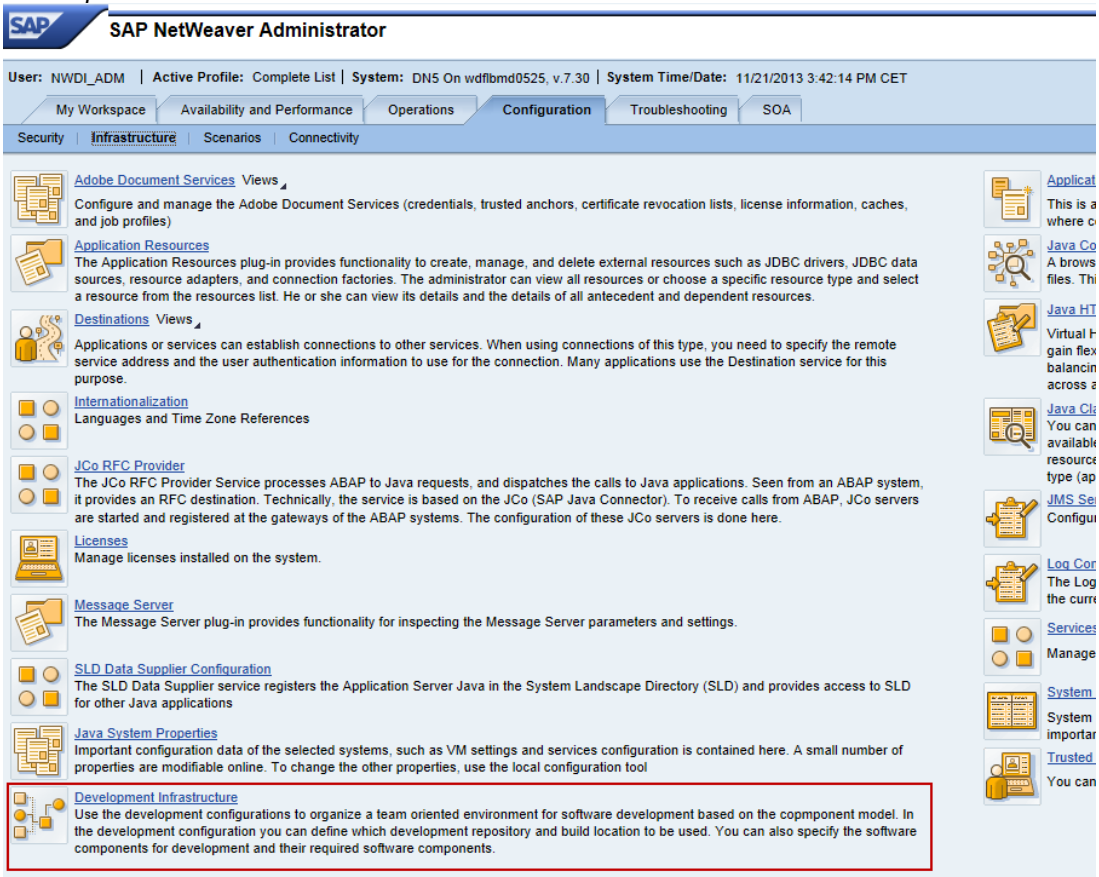
8. Now the development system configuration is ready. But before you can start working with the development configuration as described in chapter Development and Export Process the required libraries need to be imported with the help of the Synchronize Service. The following chapter describes how to do this.

> **Note**
>
> If you closed the Development Configuration UI at some point during the configuration, you can always open it again from within TMS or NWA.

Go to the details of your system in TMS and click on *Development Configuration*.



In the SAP NetWeaver Administrator on your NWDI go to *Configuration* → *Infrastructure* → *Development Infrastructure*.



7.1.3 Get the required Software Component Archives

To be able to develop an application for AS Java you need to import some basic libraries (required Software Component Archives) into CBS. You might also want to import SCs that you developed in the past into DTR. The Synchronize Service is used to manage these tasks. The Synchronize Service allows you to compare software component versions on the runtime system with what is imported into the NWDI If necessary you can adapt the development environment. It is no longer necessary to use an upload system and to create transport requests manually as you might have done in older CM Services versions.

In our example, we will use the Synchronize Service to bring the SCAs required / to be developed to the system DEV (the respective workspace and buildspace on NWDI). As we will transport deployables, we only need the sources in the development system.

For more information on the required SCAs for each release, you can check SAP Notes 1465468, 1463541 and 1457908.

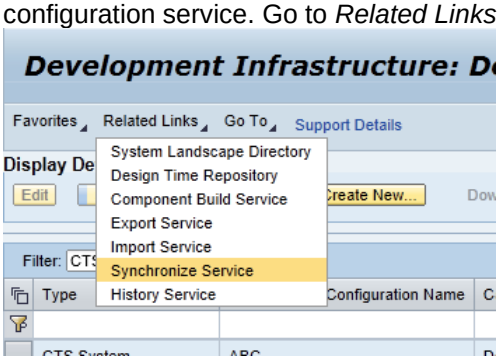
> **Note**
>
> If you use the transport of sources, the libraries must be available in all buildspaces in CBS. Therefore, you must execute the Synchronize Service for any system (development configuration) that is part of your system landscape.

To synchronize your NWDI with the runtime system concerning the SCAs required / to be developed, proceed as follows:

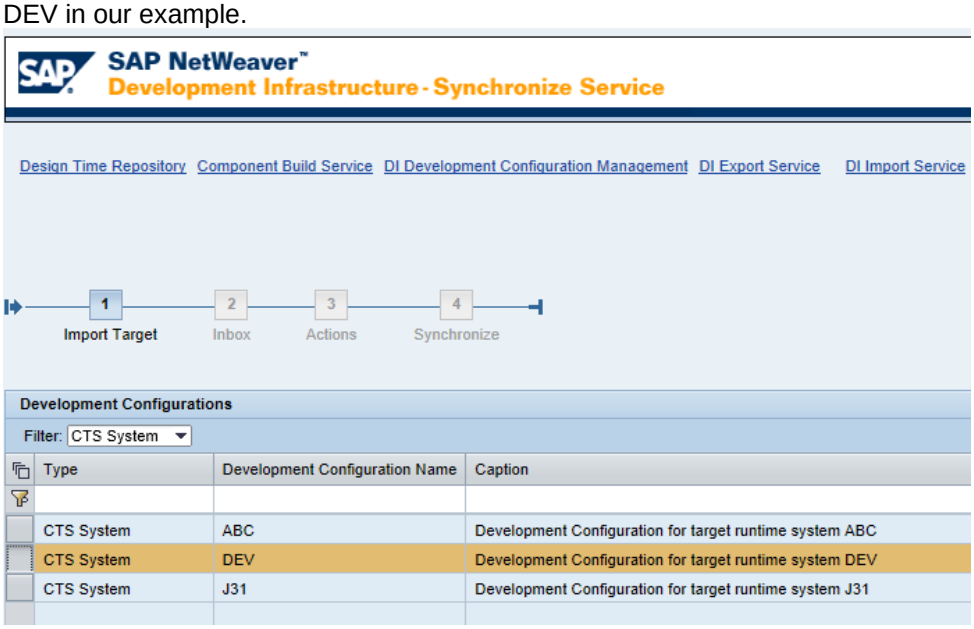
1. Make sure that all required SCAs that you need are available – those that are delivered by SAP and on which your development depends and those that you would like to develop. Copy them to a folder on your NWDI.

   > **Note**
   >
   > You can get the SCAs delivered by SAP from the Installation / upgrade folder of your runtime system.

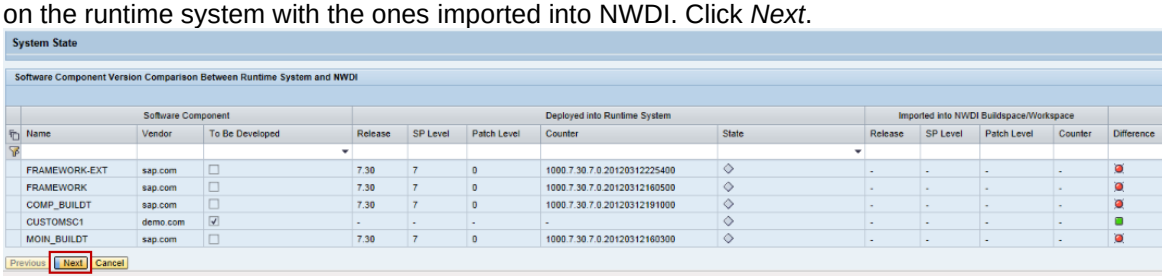
2. Start the Synchronize Service. You can do so using the related links in the development configuration service. Go to *Related Links* → *Synchronize Service*.



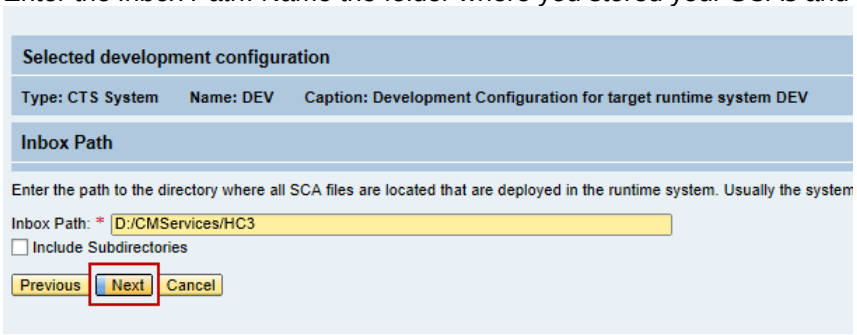
3. A new window showing the Synchronize Service opens. Select your development configuration – DEV in our example.



4. In the *System State* table, you can compare the versions of the SCs that are currently available on the runtime system with the ones imported into NWDI. Click *Next*.

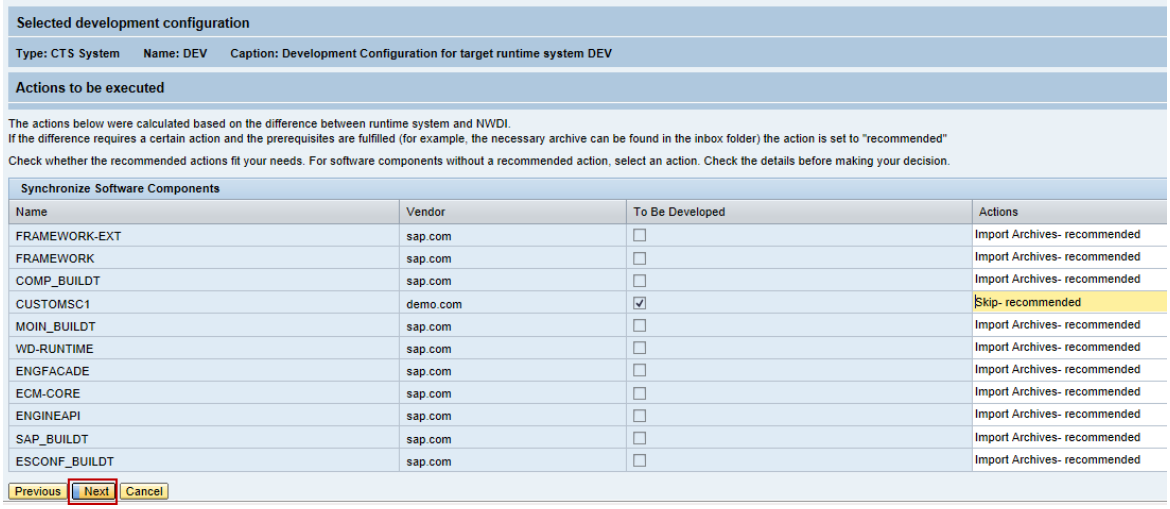


5. Enter the *Inbox Path*. Name the folder where you stored your SCAs and click *Next*.

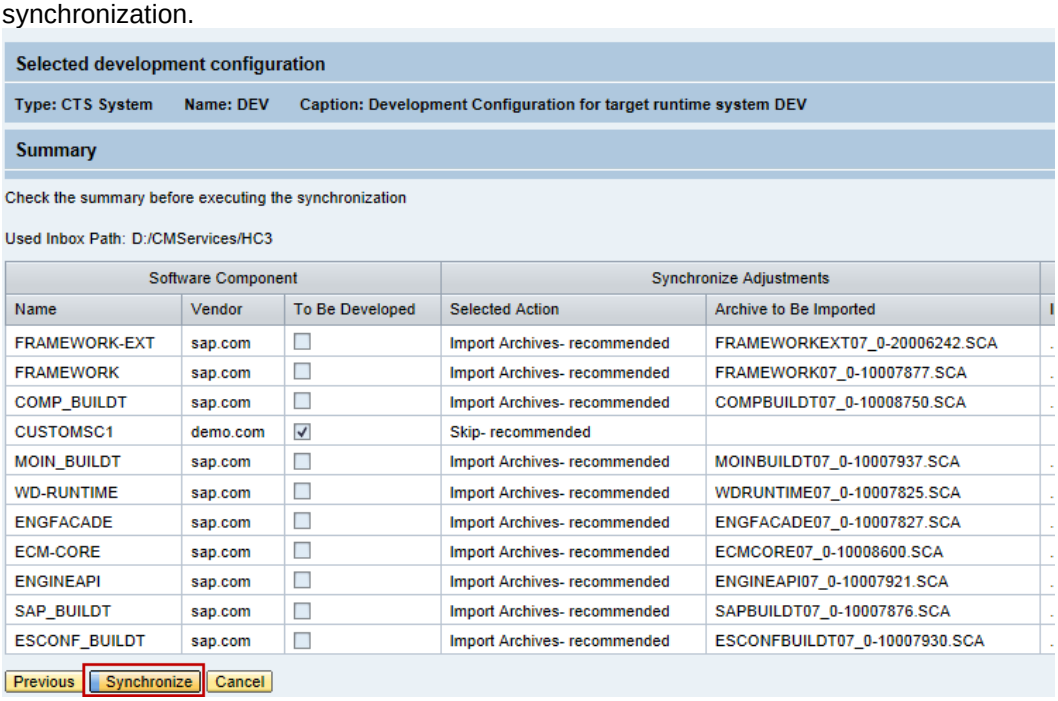


6. Check the *Synchronize Software Components* table. For every SCA, you will find a recommended action in the *Actions* column. For those that you copied to the folder that you named in the previous step, the recommended action will in most cases be to *Import Archives*. For SCAs where there is no SCA available in the inbox, the recommended action will be to *Skip*

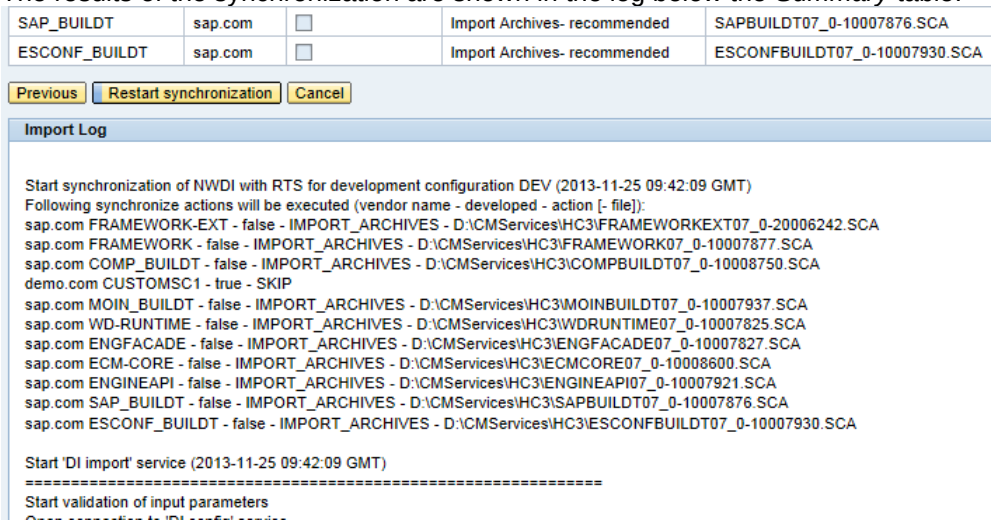
the import for this SC. You can change the action if needed. Click *Next*.



7. On the next screen, you will see a summary. Check this and then click *Synchronize* to start the synchronization.

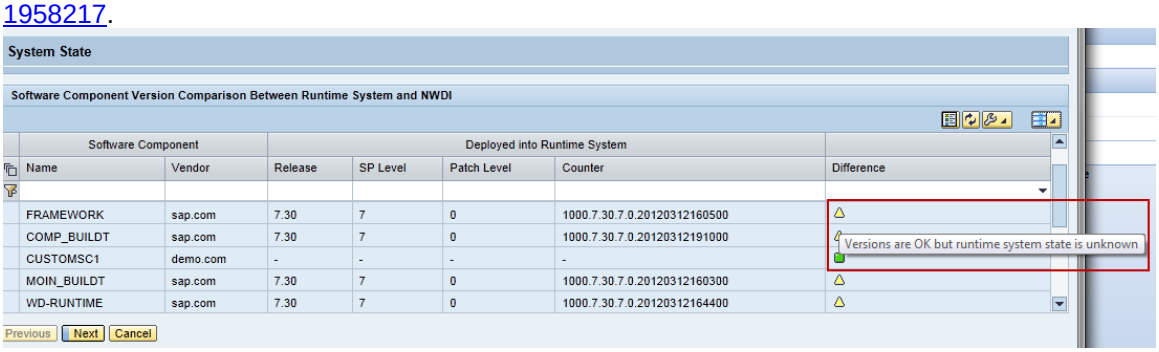


8. The results of the synchronization are shown in the log below the *Summary* table.



> **Note**
>
> If you would like to check the log at another point in time or if you closed the Synchronize Service, you can always use the History Service to check the logs.

9. If you now restart the Synchronize Service, you should see that the version in NWDI and in the runtime system is now the same. You can ignore the warning shown in last column of the *System State* table that the status of the runtime system is unknown. This is fixed with SAP Note 1958217.



7.2 Creating Target Systems

The configuration that was described in the previous chapters is needed for both landscape scenarios - source and deployable transport. The configuration of the target systems depends on the scenario that you have chosen. In the following chapters, the deployable transport is described in detail. You will find notes in those steps where the configuration for the source transport differs.

In this chapter, we will configure the landscape in a way that you can export deployable units from the development system and import them into the test and production system which are pure deployable targets. This means that none of the target systems has a development configuration and NWDI must not be up and running during import. For the transport of deployables three transport options are possible as explained in the chapter Deployable Export. For the development configuration you select the radio button *Deployable Export* as Export Mode in the Development Configuration Service UI and choose which granularity you would like to enable for your transport landscape. We have seen this in the chapter Configuring the Development Configuration. All other systems along your transport route have to be configured as pure target systems with a Java Deploy URL which is explained in more detail below.

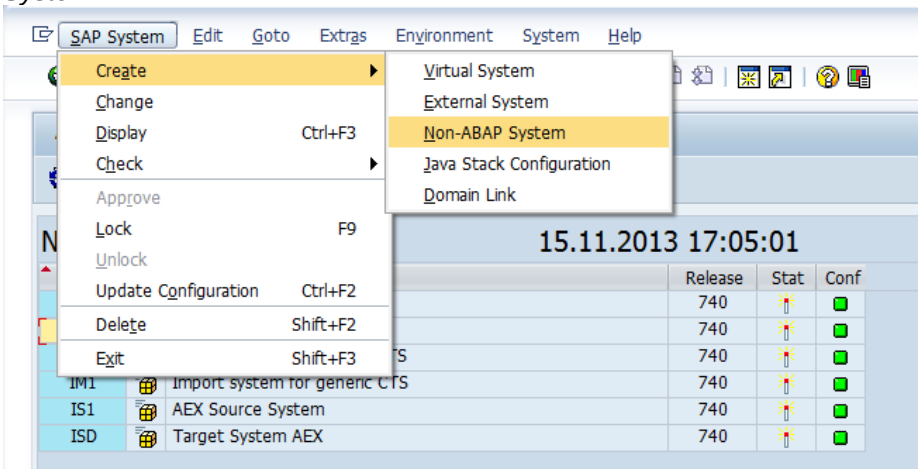
> **CAUTION**
>
> A landscape that is configured for deployable transport cannot be used for source transport. There are no workspaces and buildspace available to manage the sources on the target systems.

A development configuration is needed for the development system only. It does not matter which option of transporting deployables you selected.

> **Note**
>
> If you decide to use the transport of sources, you need a development configuration for each system.

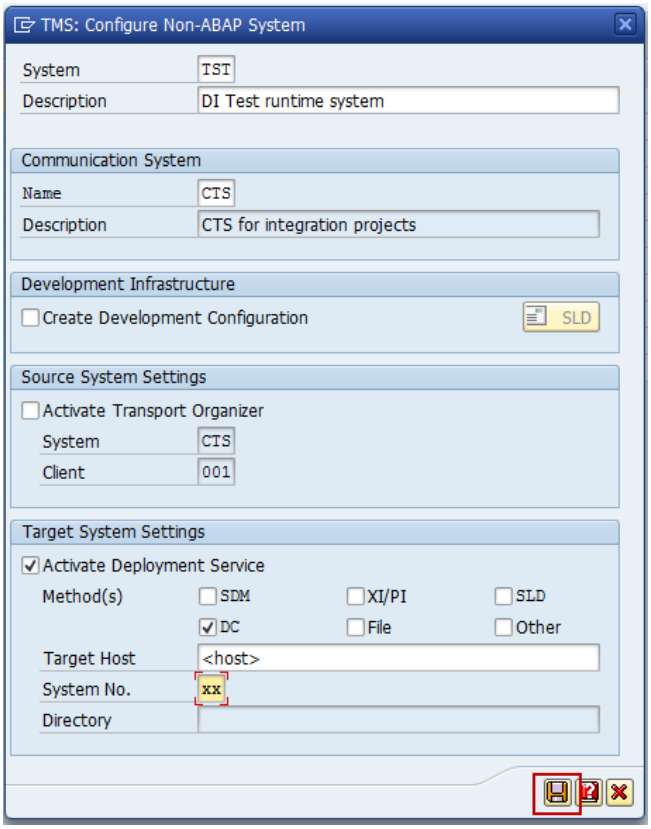
Proceed as follows to create a target system:

1. In the *System Overview* in transaction STMS choose *SAP System* → *Create* → *Non-ABAP System.*



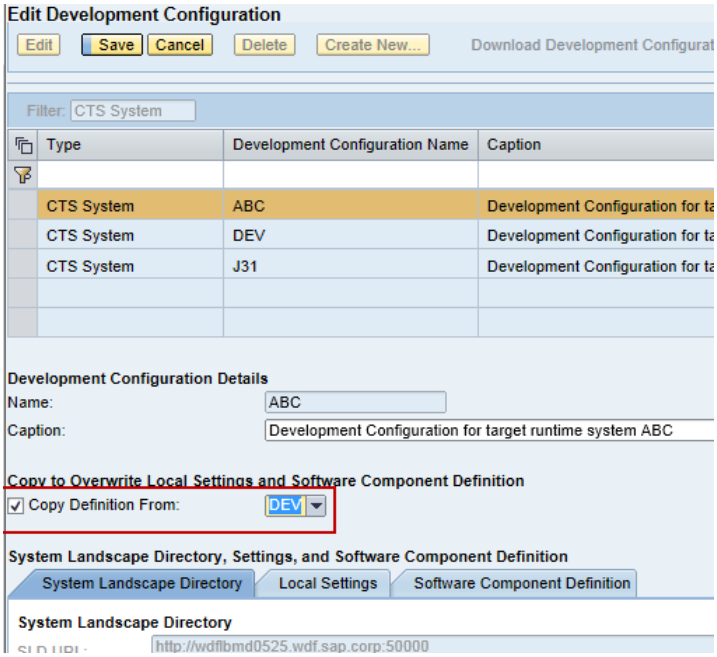
2. Fill in the following fields:
   - *System*: SID of your test system
   - *Description*
   - Select *Activate deployment Service* and choose the appropriate *Method*. Enter the *Target Host* and the *System No.*

   Click on *Save.*



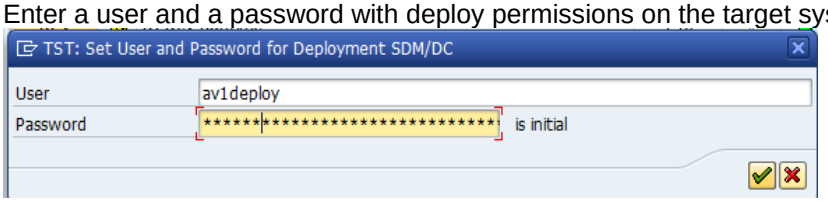
Note

If you are setting up a landscape for source transport, choose *Create Development Configuration* as well. In this case, the DI Configuration Service will be shown automatically after you finished the configuration for this system. Configure the development configuration in the same way as you did for your development system (see chapter Configuring the Development Configuration).
You can use the option *Copy Definition From* to configure the development configuration. Choose your development system as source.



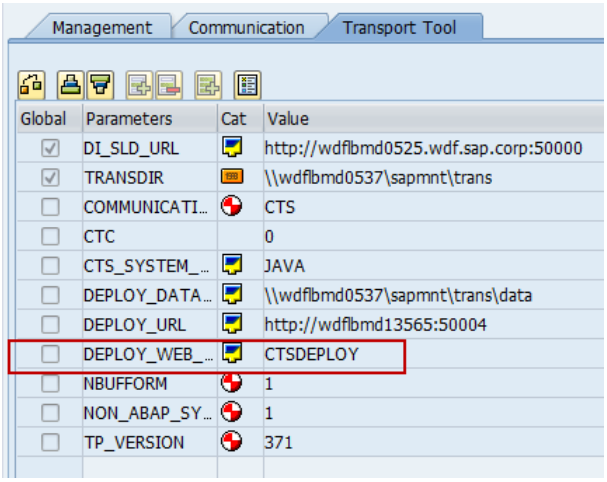
Use ACLs to make sure users do not accidentally change sources on the test or productive system. Refer to the SAP Library at http://help.sap.com/saphelp_nw73/helpdata/en/21/53882f3fee0243b6c774e26ebed880/frameset.htm for details.

3. Enter a user and a password with deploy permissions on the target system.

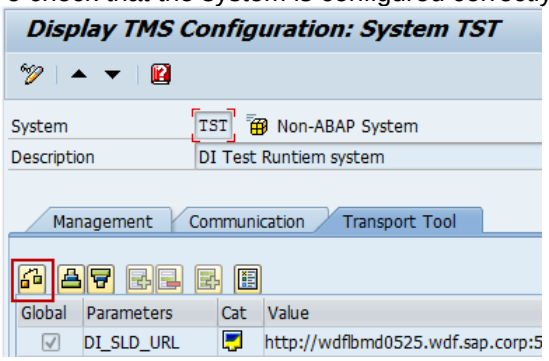


Note

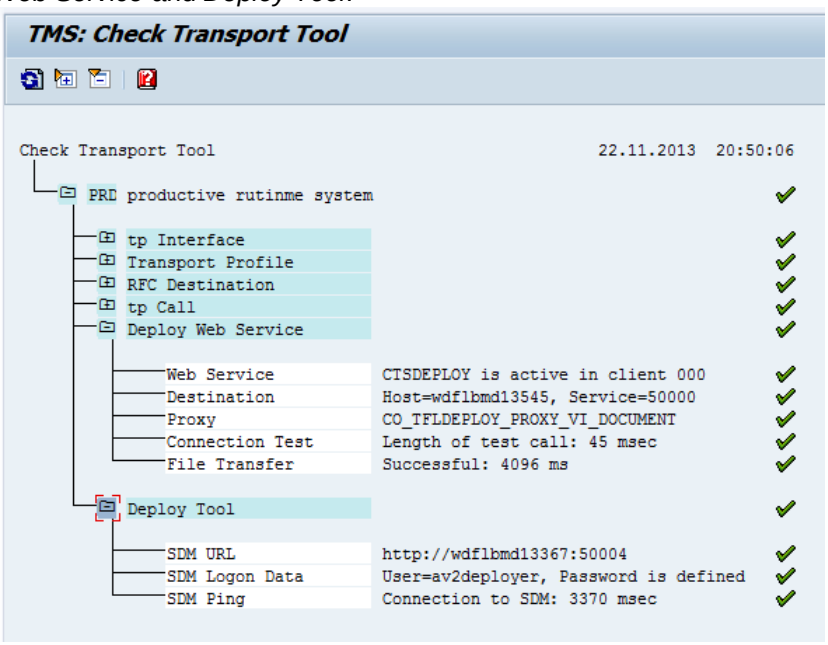
For the parameter *DEPLOY_WEB_*SERVICE, the value `CTSDEPLOY` is automatically entered for each system. This is fine if you transport deployables. If you want to use the source transport, you have to change this to `CTSDEPLOY_DI`.



4. To check that the system is configured correctly, click on the button *Transp. Tool:*



In the result, all the checks should show a green check mark – especially in the sections *Deploy Web Service* and *Deploy Tool*.

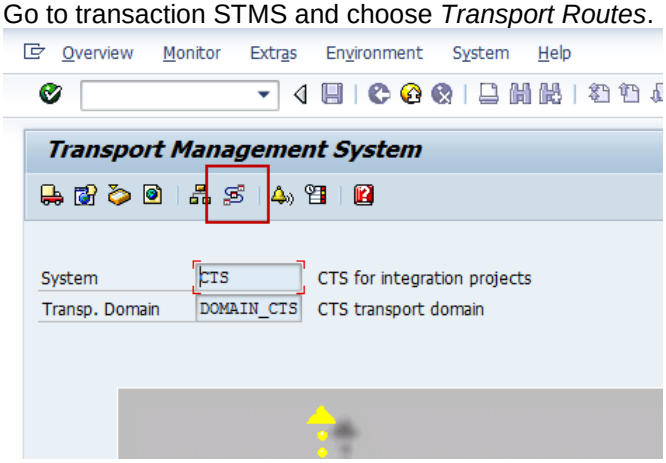


5. Repeat the previous steps for all other target system that you want to use for the landscape. You are not limited to a three-system landscape. All the options for designing landscapes that are offered by TMS (more than one target system at a time, groups etc.) are available for non-ABAP landscapes as well.

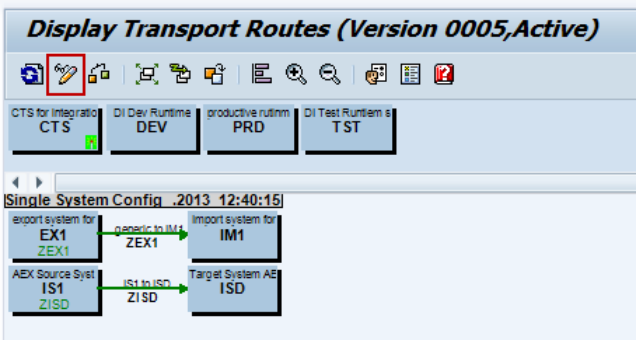
7.3 Creating Transport Routes

The systems that are part of the landscape of the Java runtime systems are now known in CTS. In the next step, we have to connect them via transport routes. This configuration is also done in transaction STMS. For the configuration of transport routes, it doesn't matter whether you transport sources or deployables.

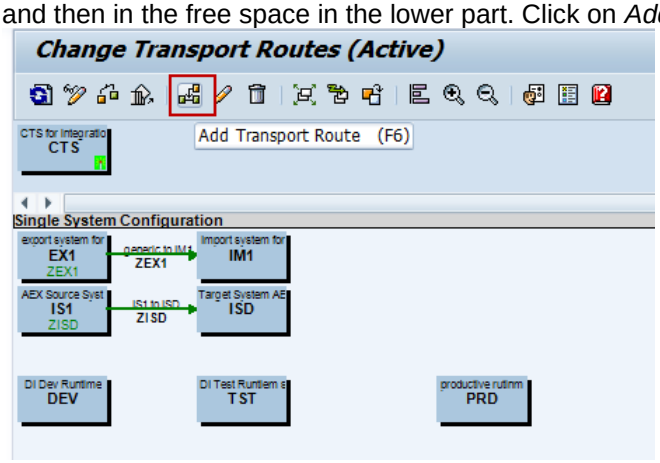
1. Go to transaction STMS and choose *Transport Routes*.



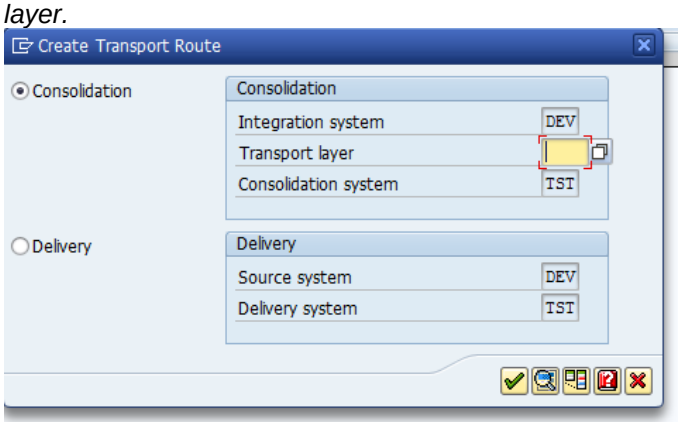
2. Switch to *Change* mode.



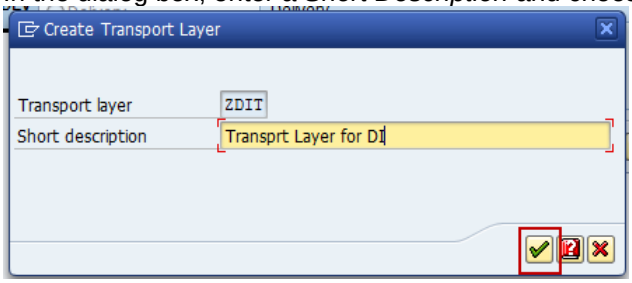
3. Move the systems DEV, TST and PRD to the lower part. To do so, first click on the system itself and then in the free space in the lower part. Click on *Add Transport Route:*



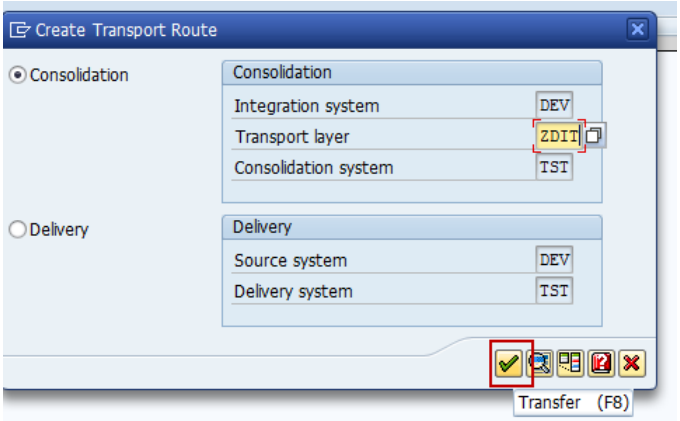
4. Draw a line from DEV to TST. In the dialog box, choose *Consolidation*, and enter a *Transport layer.*



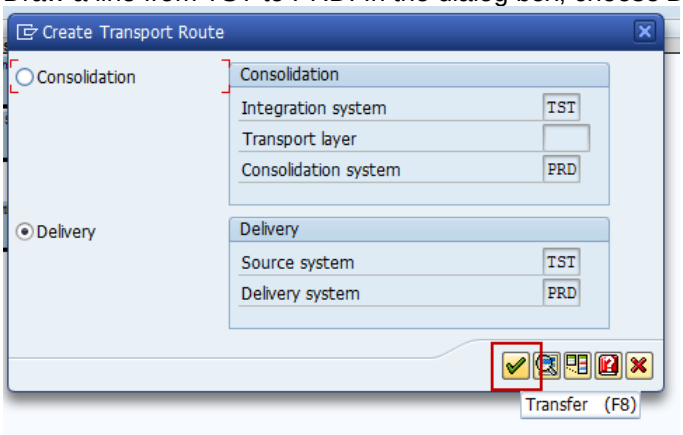
5. In the dialog box, enter a *Short Description* and choose *Transfer*.



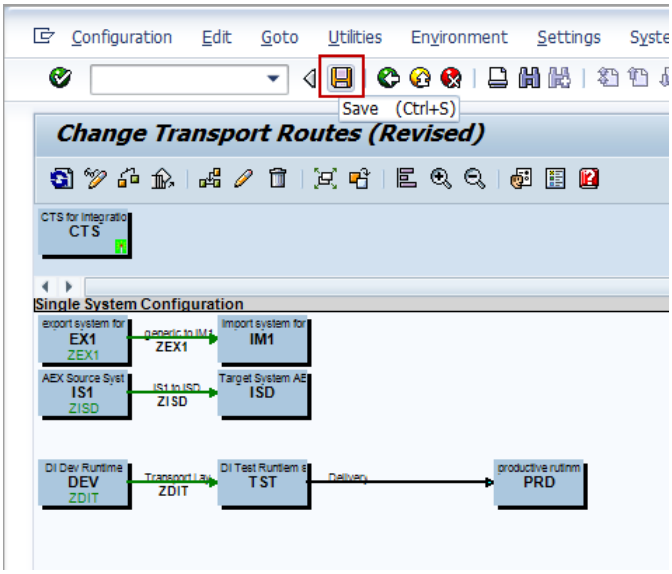
6. Choose *Transfer*.



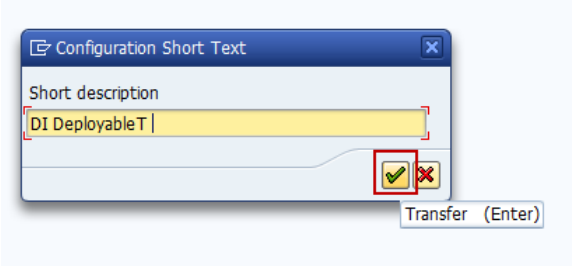
7. Draw a line from TST to PRD. In the dialog box, choose *Delivery* and click again on *Transfer.*



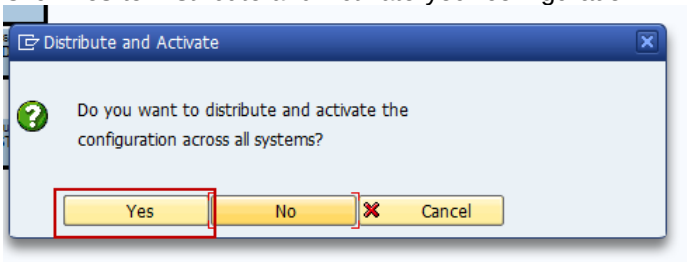
8. Click on *Save.*



9. In the dialog box, enter a *Short description* and click on *Transfer.*



10. Click *Yes* to *Distribute and Activate* your configuration.



The configuration part is now finished. You can start working with the development configuration.

8 Development and Export Process

2. In this chapter you can find out how to work with a development configuration that you created above using the SAP NetWeaver Developer Studio (NWDS). Furthermore the release process is explained. You can learn how an activity is released if CTS+ is in use. The SDA(s) involved will be added to a transport request in the format of a DIP (Development Infrastructure package) file. Last but not least the SCA export process with the DI Export Service UI is explained.

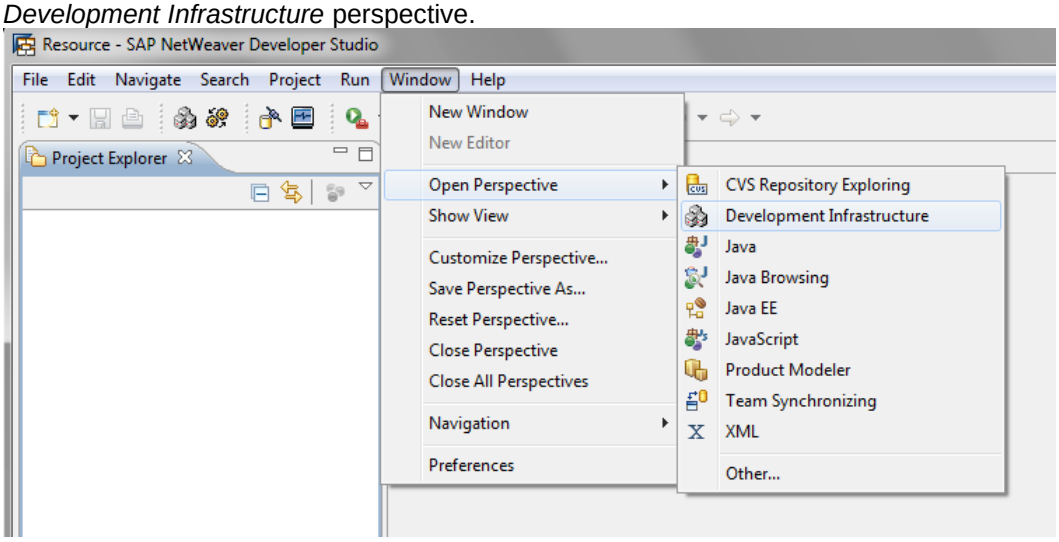
> **Note**
>
> If you plan to develop Web Dynpro Java, you have to make sure that the runtime systems and the NWDS are on the same release and SP level. See SAP Note 718949 for details. You can nevertheless use the CM Services of SAP NetWeaver 7.3 even if your runtime systems are on a lower release. In that case you need an (maybe additional) SAP NetWeaver Developer Studio which supports releasing the activities in the transport view. For versions of the developer studio which support releasing activities, refer to SAP Note 1361909.

3.

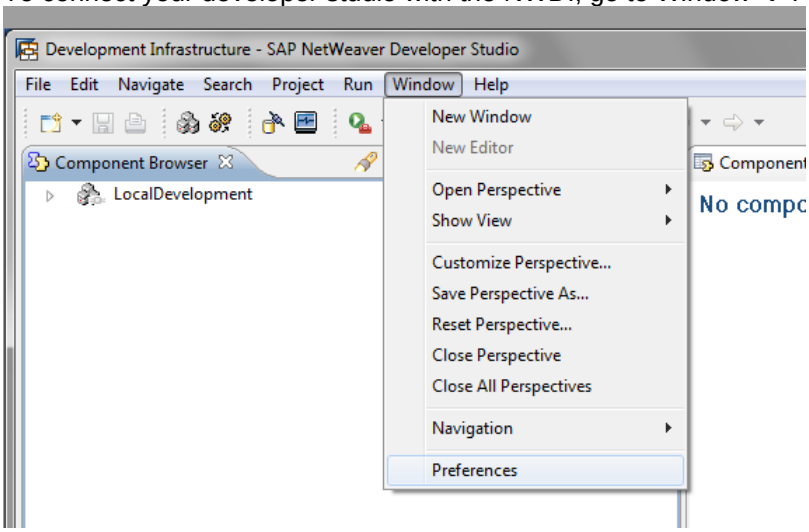
8.1 Import Development Configuration

4. This chapter explains how to import a development configuration into your developer studio.

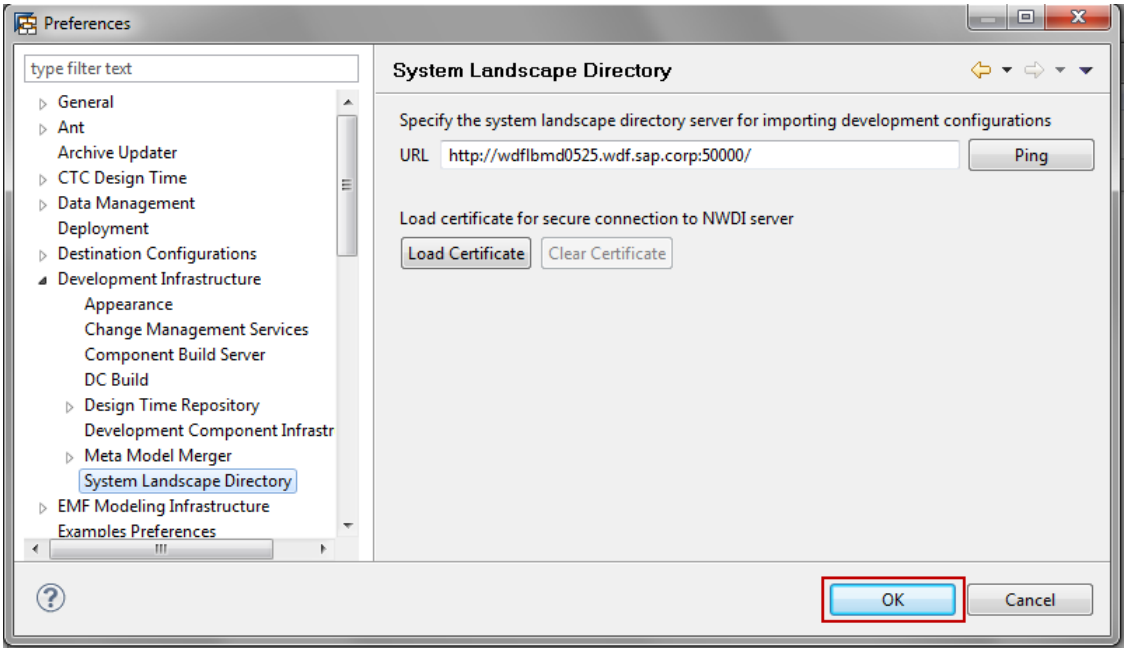
1. Open your SAP NetWeaver Developer Studio. Go to *Window* → *Open Perspective* and open the *Development Infrastructure* perspective.



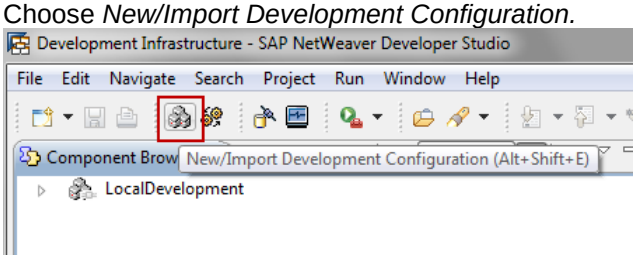
2. To connect your developer studio with the NWDI, go to *Window* → *Preferences.*



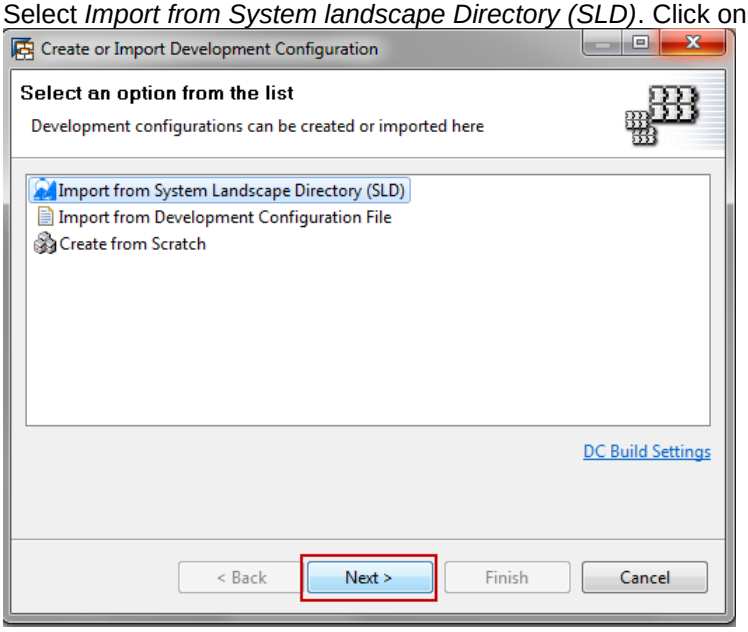
3. Go to *Development Infrastructure* → *System Landscape Directory*. Enter the *URL* of your SLD and click on *OK*.



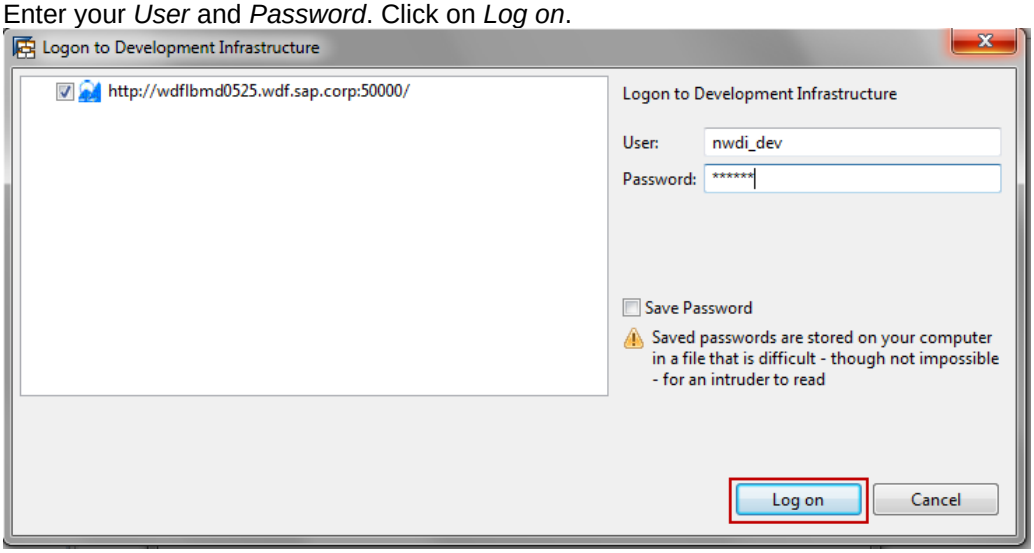
4. Choose *New/Import Development Configuration.*



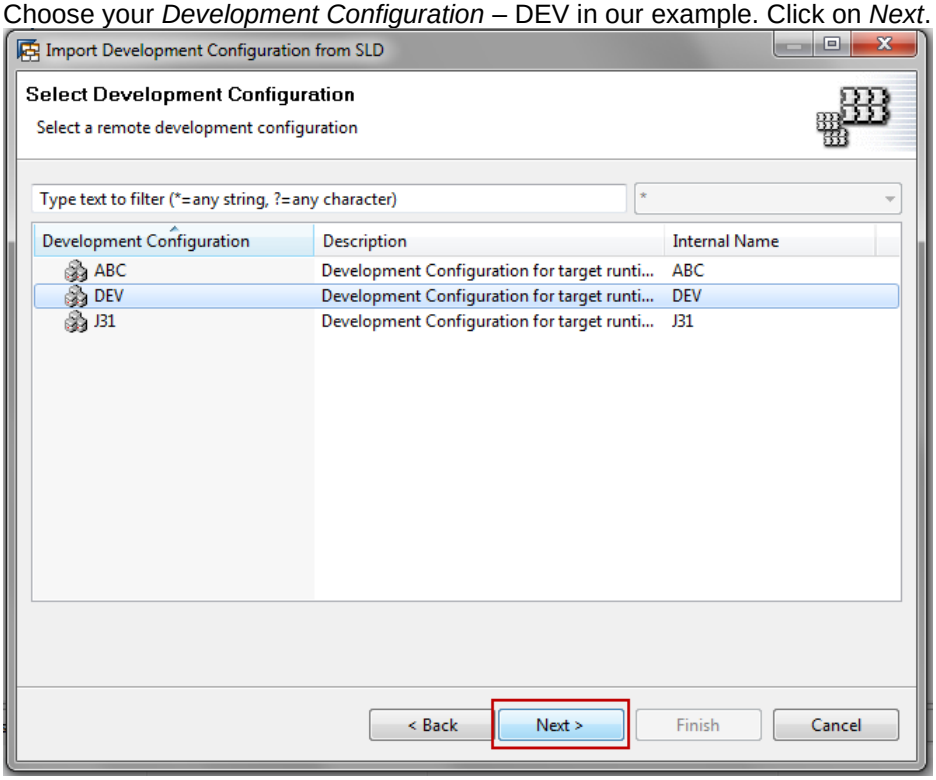
5. Select *Import from System landscape Directory (SLD)*. Click on *Next*.



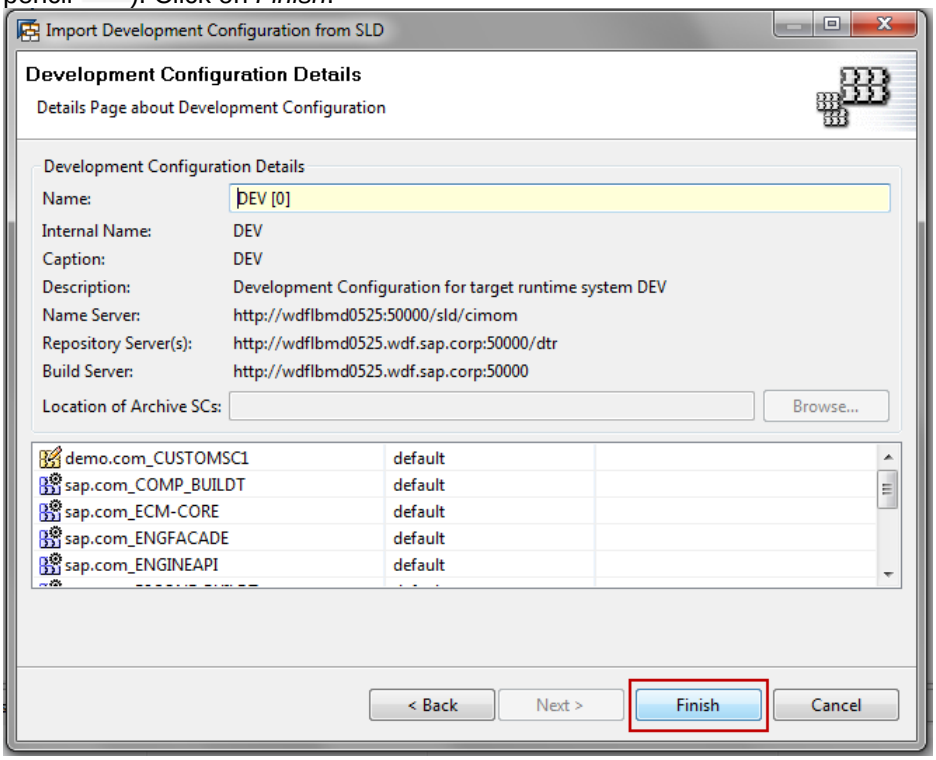
6. Enter your *User* and *Password*. Click on *Log on*.



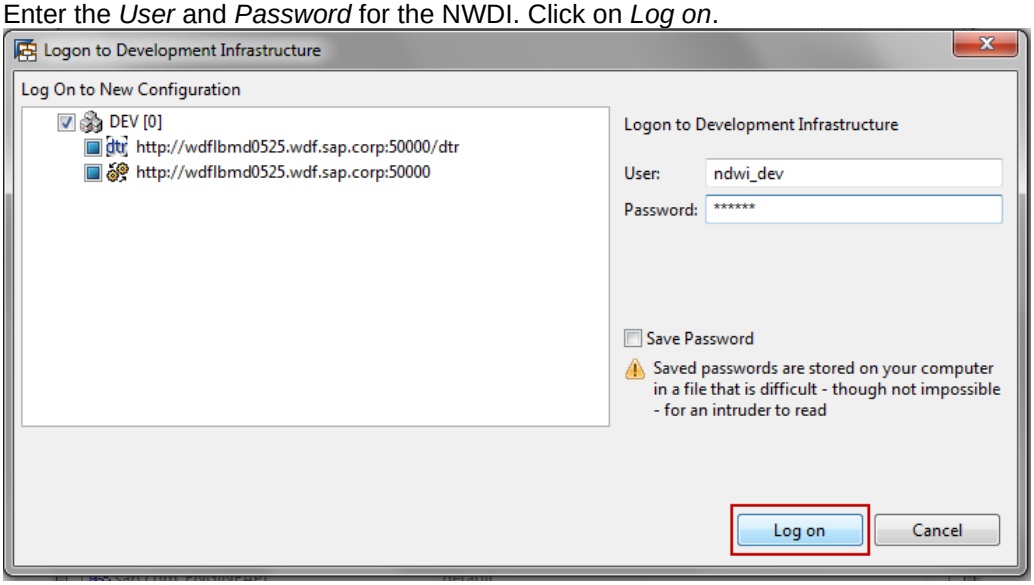
7. Choose your *Development Configuration* – DEV in our example. Click on *Next*.



8. You will see details of this development configuration. It might be worth checking that the SCAs that you want to develop are shown as to be developed (indicated by the yellow icon with the pencil). Click on *Finish*.



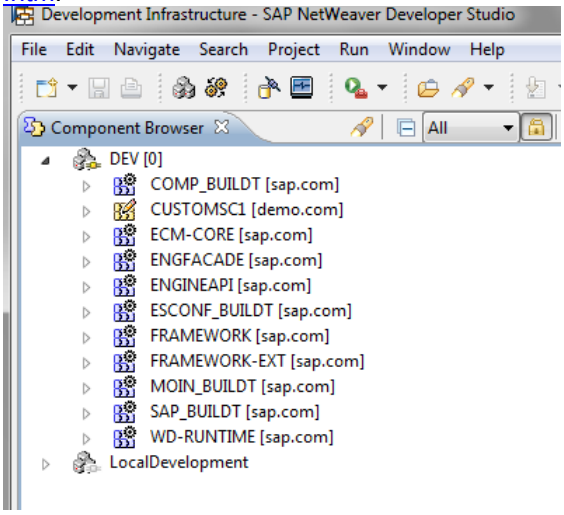
9. Enter the *User* and *Password* for the NWDI. Click on *Log on*.



Note

The *User* is case-sensitive in here.

10. In the *Component Browser*, you can now see the SCAs (and sub-components). For more information on development configurations, refer to the SAP Library at http://help.sap.com/saphelp_nw73/helpdata/en/49/2aae589c1a1903e10000000a42189c/frameset.htm.



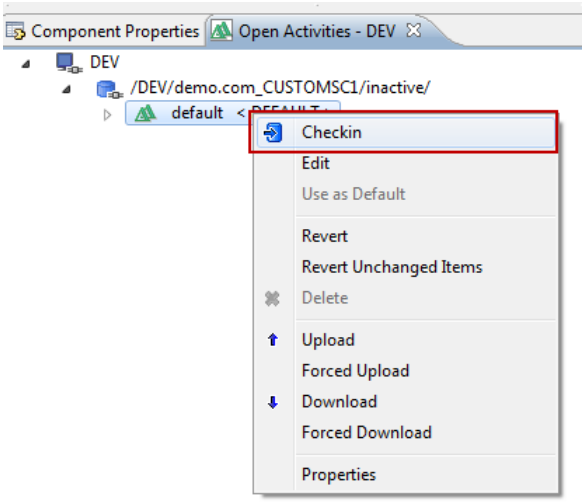
5. Before an activity can be released for transport, it has to be checked in and activated. These steps remain the same compared to a development configuration managed by CMS. The next chapter will explain the behavior of the release process for deployable transport.

8.2 Release Activity

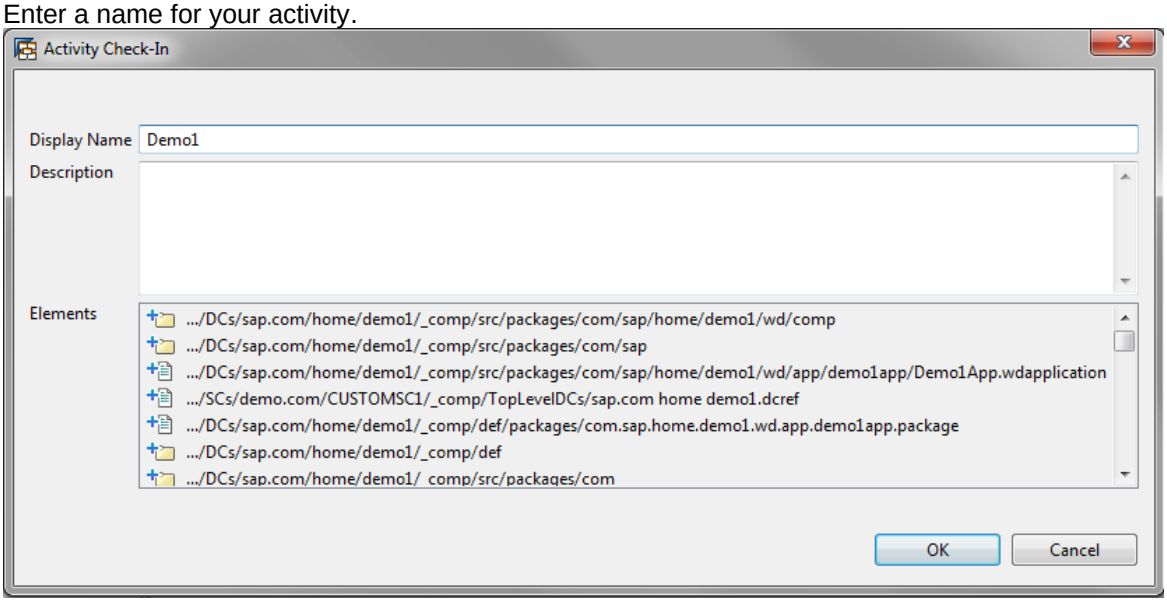
If you want to transport your changes based on an activity, the development configuration needs to be configured in that way (see chapter Landscape Options). Here the two options are possible: Activity transport on source or deployable level. For the developer it makes no difference in the handling of the tools. He will recognize the kind of transport in the window title of the transport view and in the following release dialog.
To release an activity and attach it to a transport request, proceed as follows:

1. As soon as you finished your development, check in the activity as a first step. This step is the same if you use CTS+ or not. In the *Open Activities* View, right-click on your activity and choose

Checkin.

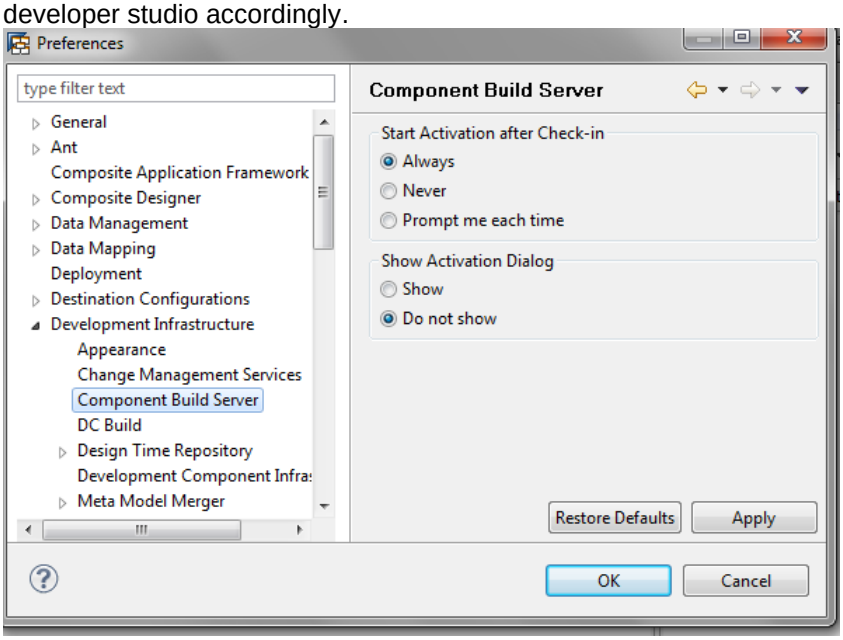


2. Enter a name for your activity.

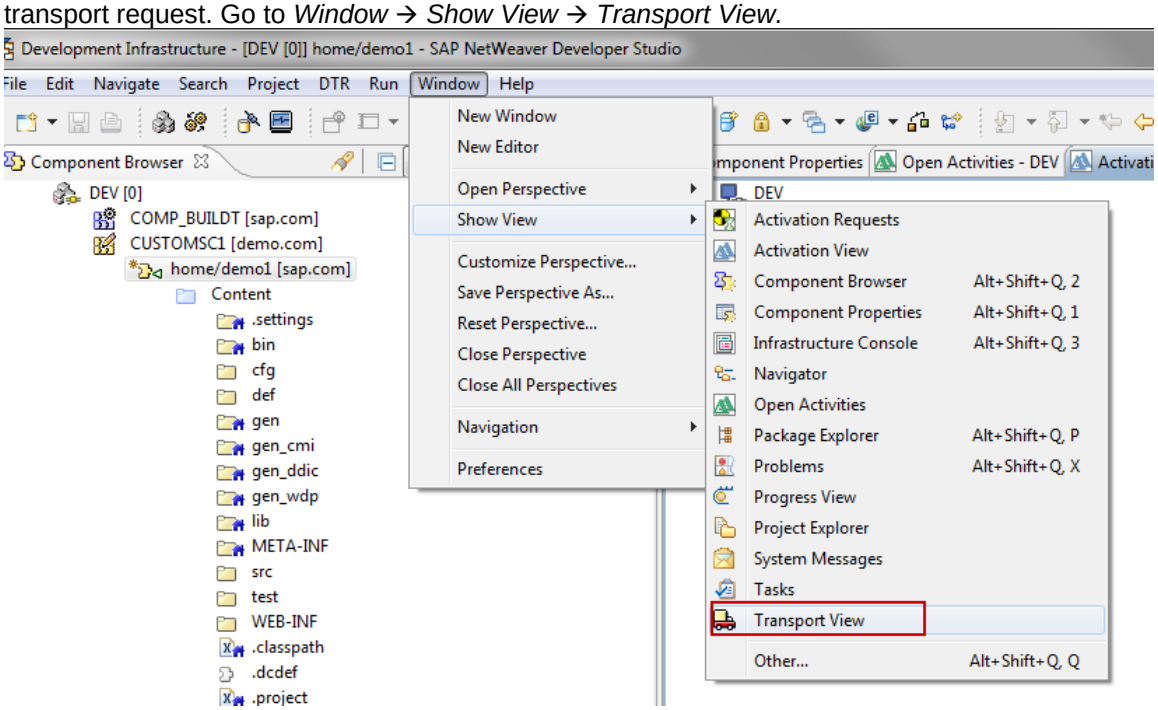


Note

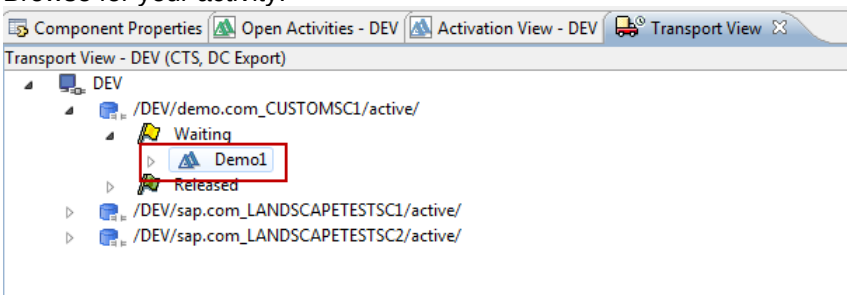
Checking in the activity will also automatically activate it by default.
You can configure this behavior. If you want to activate changes manually, configure your developer studio accordingly.



3. As soon as the activation is finished, you need the *Transport* View to attach the activity to a transport request. Go to *Window* → *Show View* → *Transport View.*



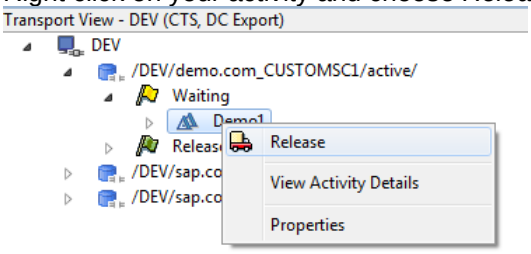
4. Browse for your activity.



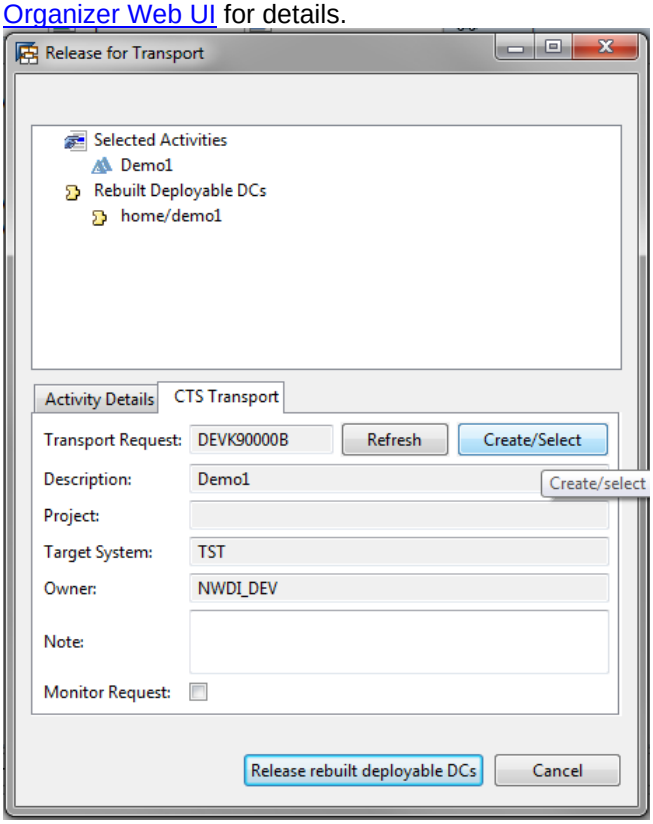
Note

If the activity that you just checked-in / activated is not shown under *Waiting*, check in the *Activation Requests View* whether the activation is still running or whether it failed.

5. Right click on your activity and choose *Release.*



6. In the dialog box, you can see the transport request that is currently marked as default for your user. If you would like to check details for this request or use a different one, click on the button *Create/Select*. This will open the Transport Organizer. Refer to the chapter Using the Transport Organizer Web UI for details.



If you changed anything in the Transport Organizer Web UI, always click *Refresh* in here before you continue. Only if you follow this procedure, the changes done in the Transport Organizer Web UI will be taken into account in the further release process. This is especially important if you changed the default request.

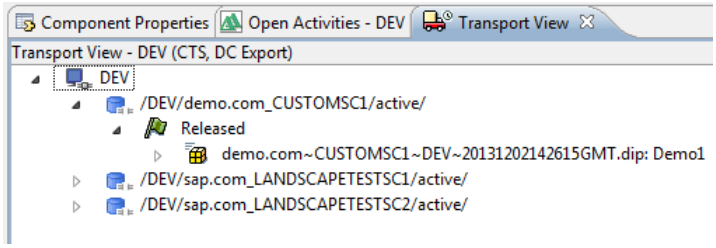
Recommendation

You can use one transport request to attach several DIPs (activities). This is one option to work with a transport request during your development phase. If you use several transport requests which contain changes for the same coding (the same SDAs), you should release a transport request soon after having attached something. If you attach the same content with different changes to more than one transport request and mix the order of releasing the requests so that it does not fit with the order in which the changes were done, you can create what is called “overtakers” when executing imports. This means that not the latest changes will be the active ones in the target systems.

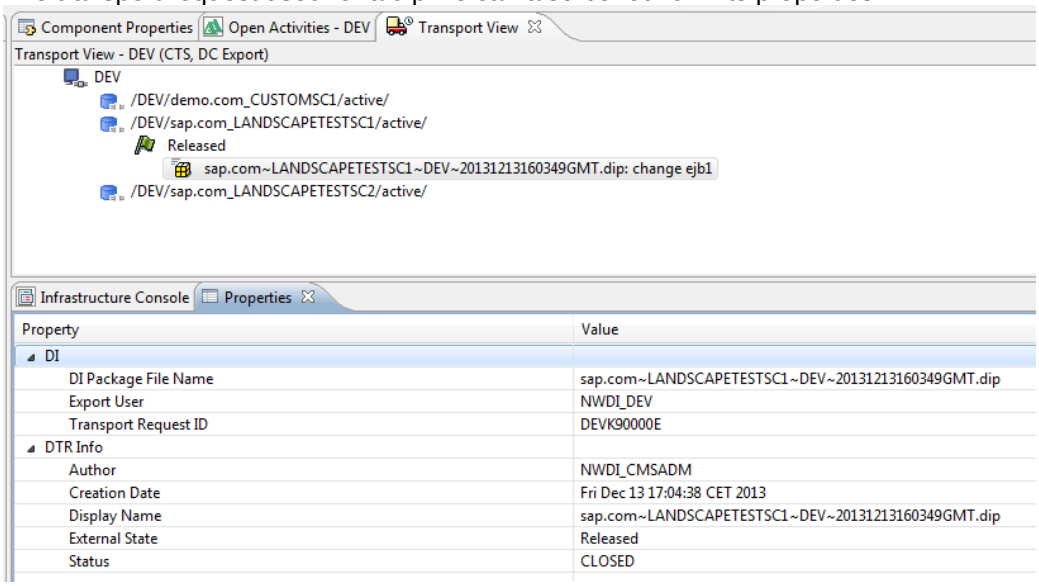
7. Click on *Release rebuilt deployable* DCs if the request is the one that you would like to use. You can also set the option *Monitor Request*. This will open the Transport Organizer after the activity

has been attached to the transport request. You can then e.g. release your transport request or check that the activity was attached to the transport request.

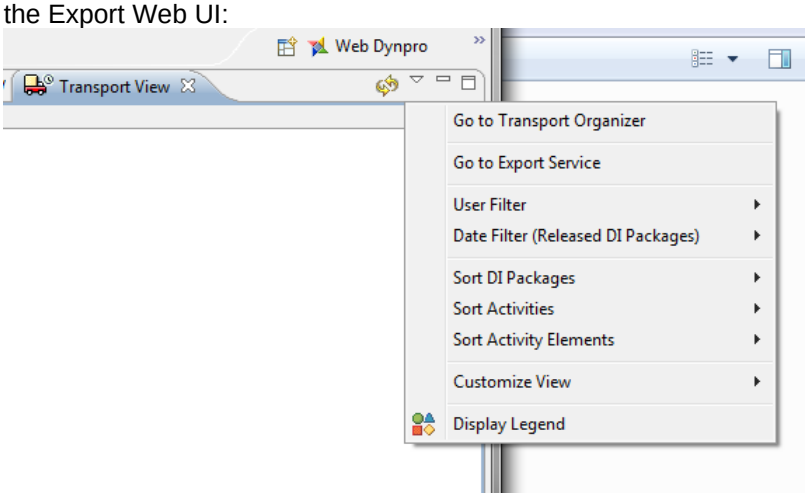
8. After having released the activity, it should be visible in the section *Released* in the *Transport View*.



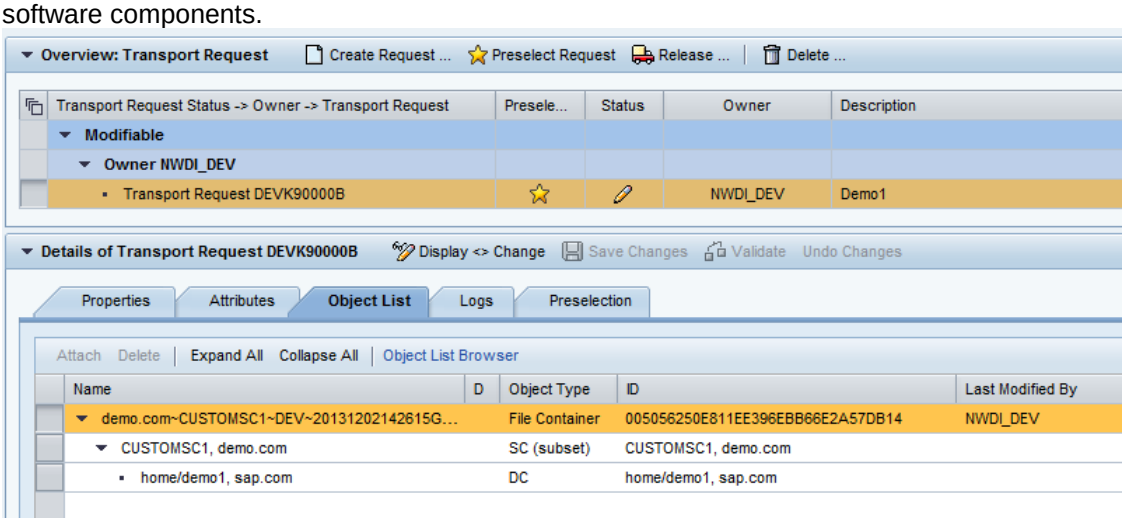
The transport request used for a dip file can also be found in its properties:



> **Note**
>
> You can use the icon *View Menu* in the Transport View to call the Transport Organizer or the Export Web UI:



9. You can also check the *Object List* in the *Transport Organizer* to check what has been attached to the transport request.
   The number of DIP files that are attached to the transport request reflects the number of affected software components.

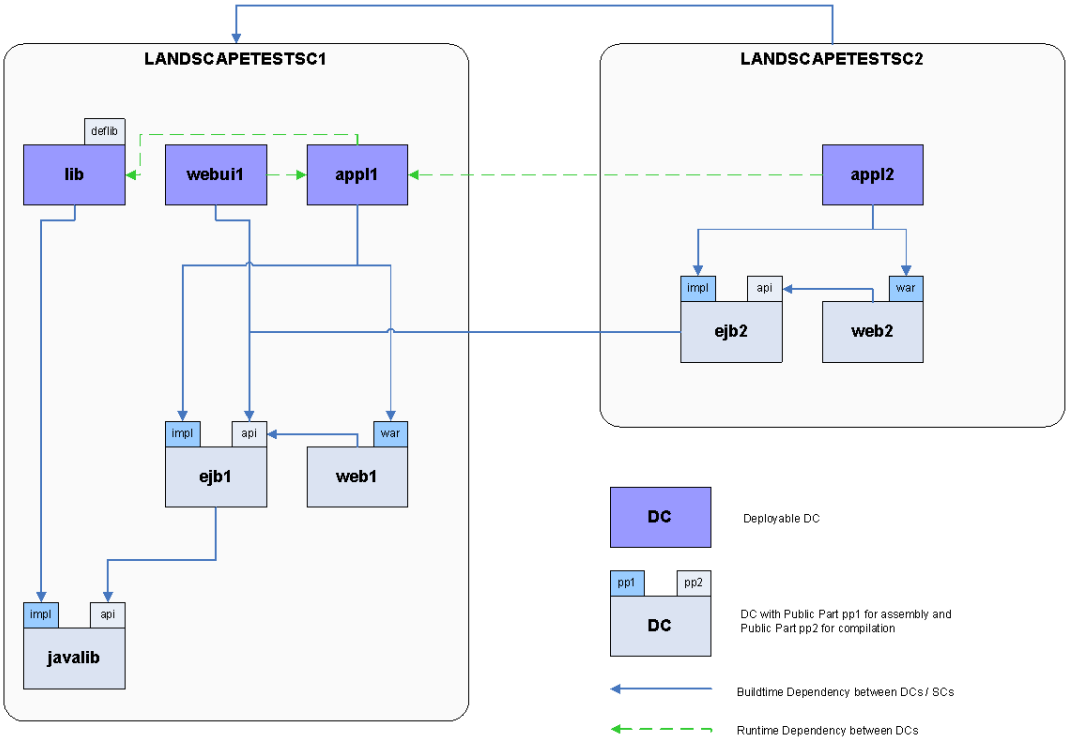


10. Depending on the transport strategy that was configured in TMS, you can now add additional files to the transport request or release it in the Transport Organizer Web UI and then import it into your target systems. For details on importing transport requests, refer to the chapter Importing a Transport Request. For details on the transport strategy, refer to the SAP Library at http://help.sap.com/saphelp_nw73/helpdata/en/c5/d9012e437d4c318976edc9791f2ae4/content.htm.

8.3 Complex Example

To explain the advantages of the new activity-based SDA transport the following application example is used: There are two software components *LANDSCAPETESTSC1* and *LANDSCAPETESTSC2* with several Development Components and dependencies between them. In the example in the precious chapter the Development Component demo 1 was changed. A simple change was done; there were no dependent DCs involved.

We will now take a look at a more complex example to show how dependencies are taken into consideration when releasing an activity.

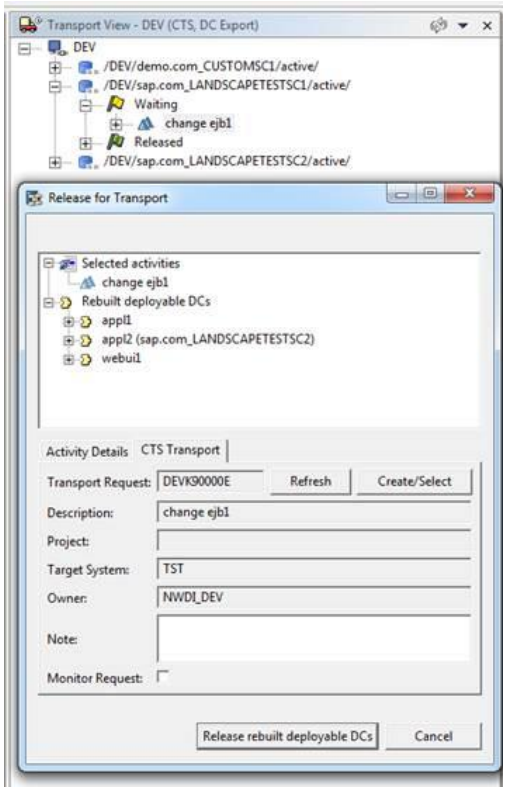


In the figure above, you can see two SCs. LANDSCAPETESTSC1 and LANDSCAPETESTSC2. LANDSCAPETESTSC1 contains the deployables lib, webui1 and appl1. LANDSCAPETESTSC2 contains the deployable appl2.
LANDSCAPETESTSC1 has dependencies to LANDSCAPETESTSC1. During build time, ejb1 of LANDSCAPETESTSC1 is used by ejb2 of LANDSCAPETESTSC2 as you can see in the picture above. The result of this is that at runtime, appl2 uses appl1. The same is valid for webui1 which also uses ejb1.

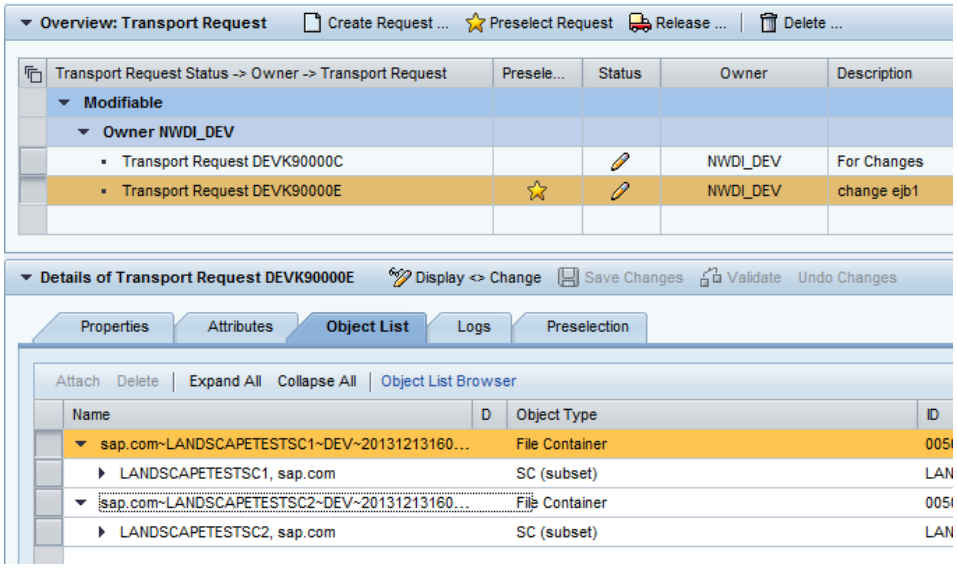
In the following example, a change to ejb1 will be done. As ejb1 is used by ejb2, ejb2 has to be rebuilt as well. Same is valid for webui1. As a result, the deployables app1, appl2 and webui1 have to be transported as these three deployables had to be rebuilt because of the change done to ejb1.

So how does the process look like? The Development Component ejb1 is changed. When the respective activity is activated, CBS will rebuild all affected DCs as explained before. Then during release CM Services calculates the rebuilt DCs (SDAs) and packs them into DIP-files which are attached to the transport request.

As you can see in the pop-up screen ‚Release for Transport (shown in the following figure), the two Development Components appl1 and webui1 of Software component LANDSCAPETESTSC1 and the Development Component appl2 of Software component LANDSCAPETESTSC2 were rebuilt automatically to ensure a consistent state.



In the Transport Organizer Web UI you will find two dip files in the Object List tab – one for each rebuilt SCA. One dip file contains apll1 and webui1 of LANDSCAPETESTSC1 and the other dip-file contains appl2 of LANDSCAPETESTSC2.



8.4 SCA Export and Transport

Before starting to use the export service, you should have setup a landscape on your CTS system which contains all the systems where you would like to import the SCAs. The SCA export and transport is possible for both landscape configurations – source and deployable transport – if you set this option when configuring the development configuration.

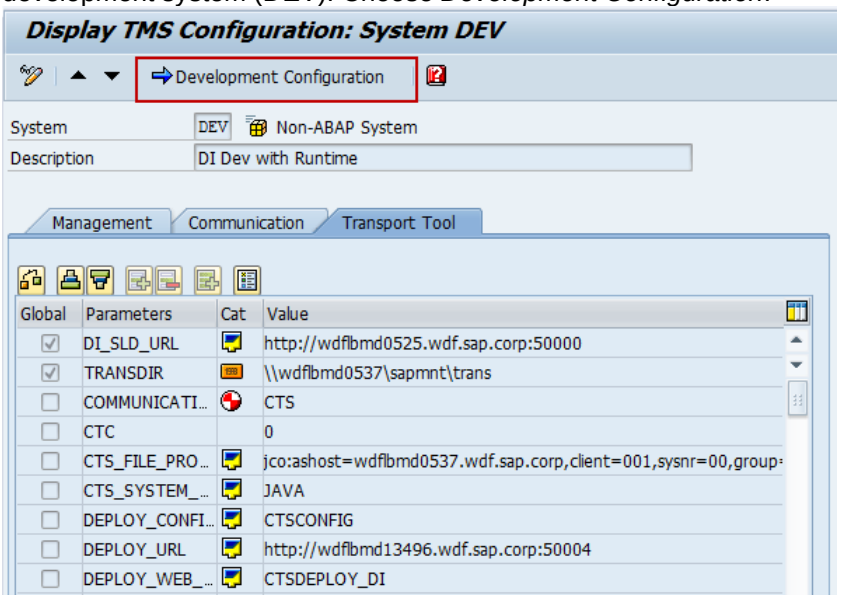
> **Note**
>
> You can add the option to allow SCA exports in addition later on by simply changing the development configuration (adding this option). You can also remove it. But you cannot switch from deployable to source transport (or vice versa) by simply changing this option in the development configuration – target systems are configured in a different way for source and deployable transport and would need to be changed as well.

The way how to use the DI Export Service UI does not differ for source and deployable transport. The exported SCA always contains the sources, but the sources will only be used in a landscape that is configured for source transport.

> **Note**
>
> The export process will take all activated activities into consideration that are related to the SCA export. For activities that are listed as 'Waiting' in the *Transport View* of the Developer Studio, the export process triggers the automatic release. It will not release open activities.

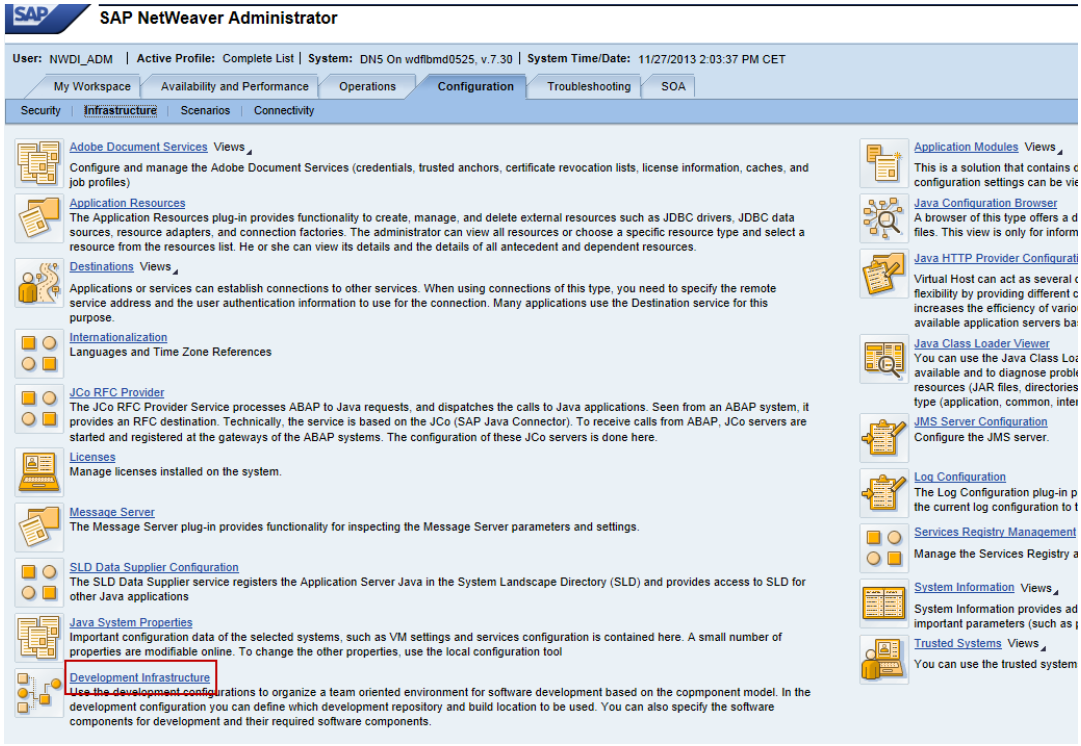
Do the following to export and attach SCAs or SDAs to a transport request in TMS via the Export Service UI:

1. Execute the following step a or b to open the DI Export Service UI
   a. On your CTS system, call transaction STMS. In the *System Overview*, double-click your development system (DEV). Choose *Development Configuration*.

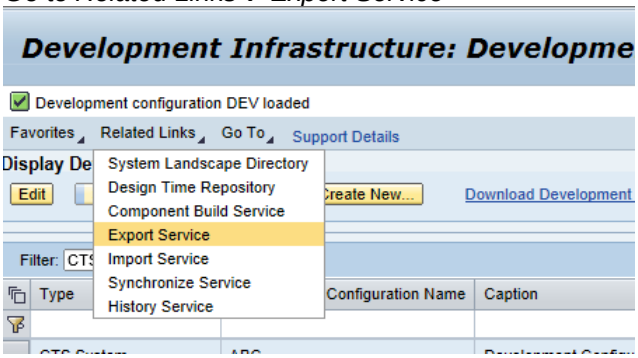


   Log on with the user NWDI_ADM.
   b. Open the NWA on your CM Services System (should be the NWDI). Log on with the user NWDI_ADM. Go to *Configuration* → *Infrastructure* and choose *Development*

Infrastructure.



2. Go to *Related Links→ Export Service*

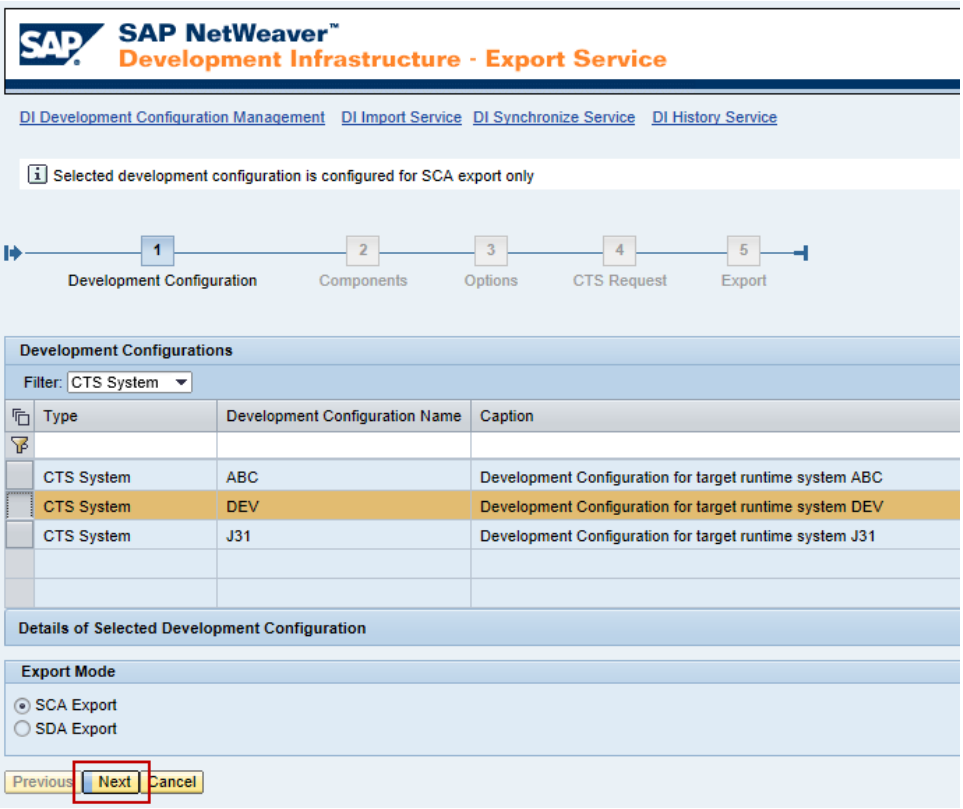


Note

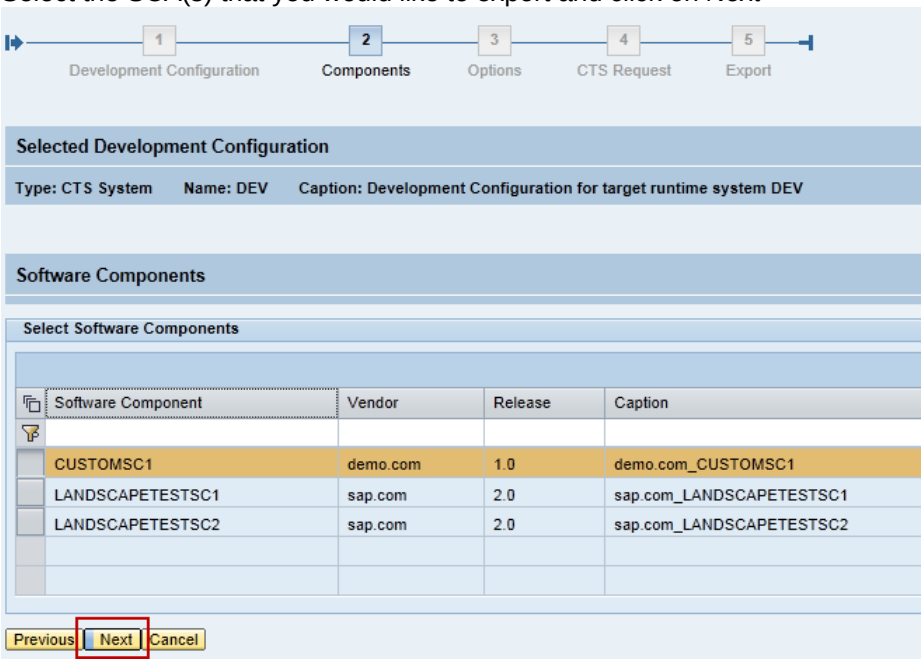
You can also use the menu in the transport view of your developer studio to open the Export Web UI.

You can also create a favorite in your browser for the URL http://<host>:<port>/webdynpro/dispatcher/sap.com/tc~di~cts~config~webui/Export

3. Select your development configuration, decide whether you would like to use the *SCA Export* and click on *Next*.

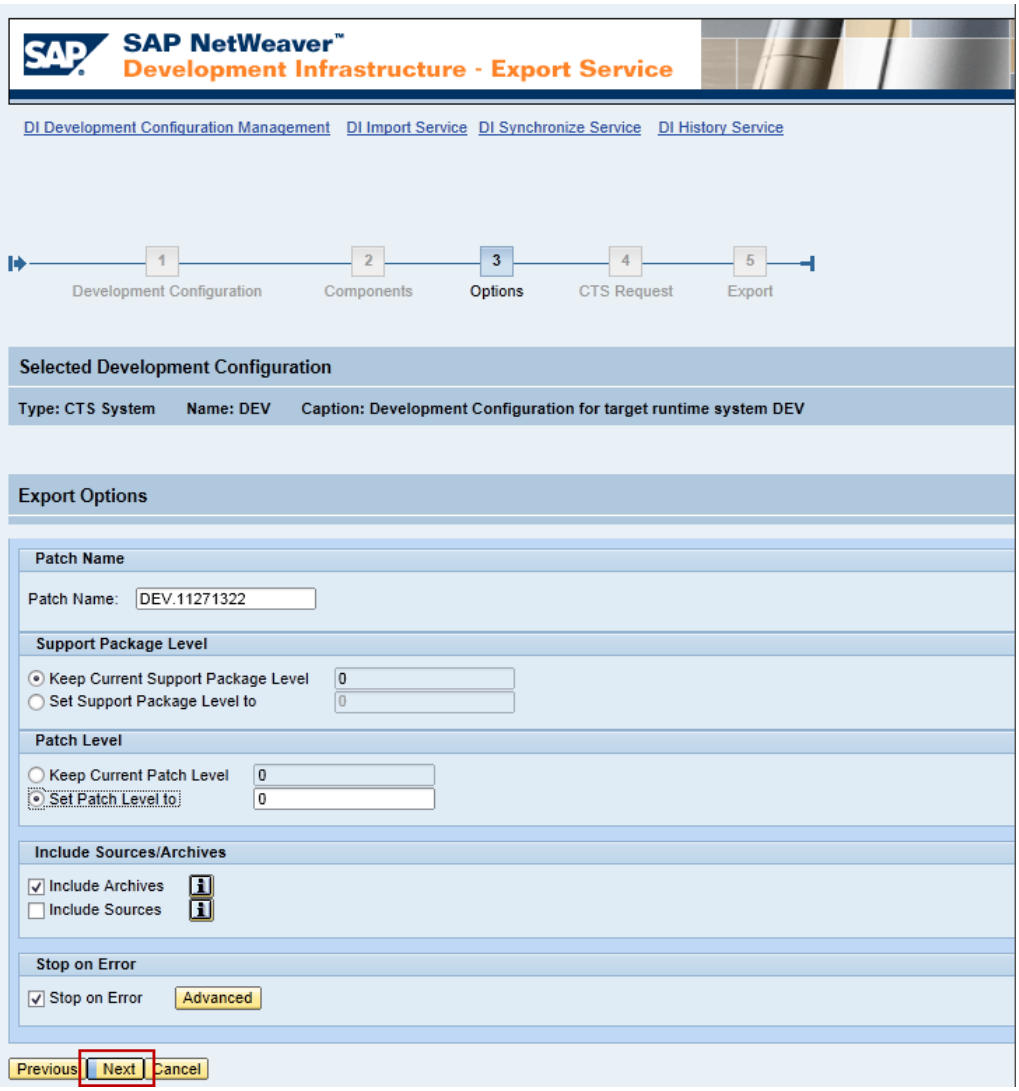


4. Select the SCA(s) that you would like to export and click on *Next*



> **Note**
>
> You can also select more than one SCA by holding the CTRL-key while selecting.

5. On the next screen, you can set some options. Set them according to your needs and click on *Next*.

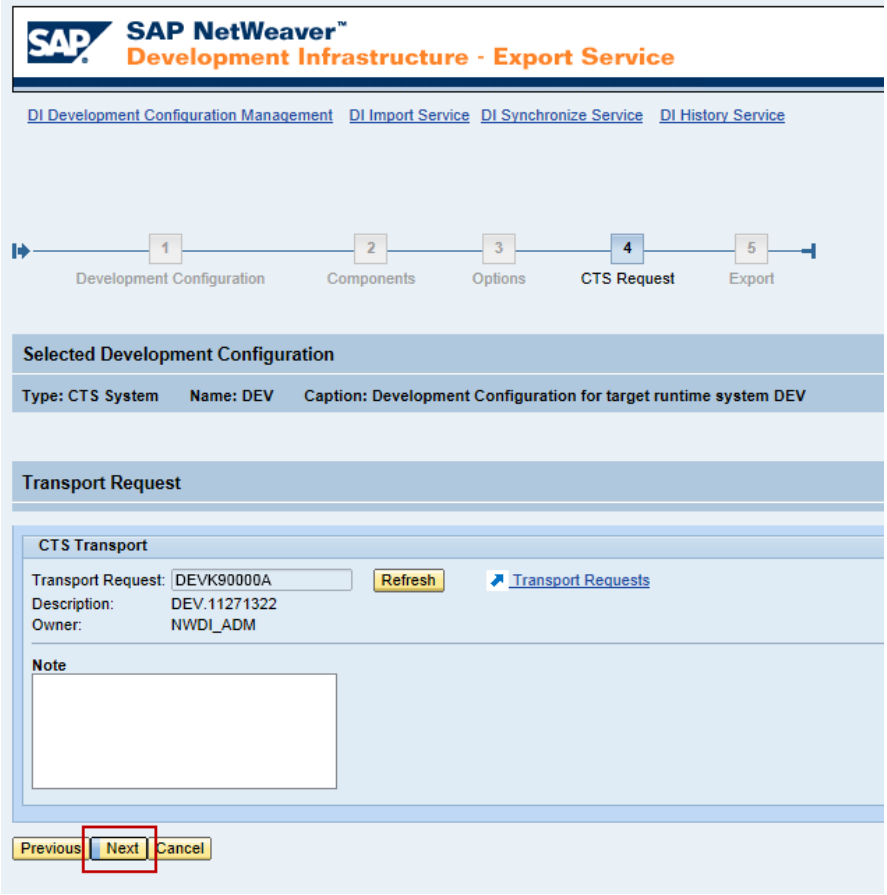


If you have selected export mode *SCA Export* and the SCAs to be exported are not in the SAP namespace, you can define a *Patch Name* for your export, a *Support Package Level* and the *Patch Level*.
You can decide whether sources and archives should be included and set some options in case of an error. If you decide not to include sources, then only pointers to DTR will be included. This reduces the export time and the size of your SCA significantly. We recommend performing your exports without including sources as long as the target system of your transport is located within your company.
The flag "*Include Archives*" is needed to add the build and deployable archives into the SCA file. This is needed in case your landscape is configured for deployable transport. If you include sources, the full content of the corresponding workspaces is physically exported. This is only required or recommended in case you have to export sources (e.g. for a backup) or if your source DTR is not available during import time into another DTR.

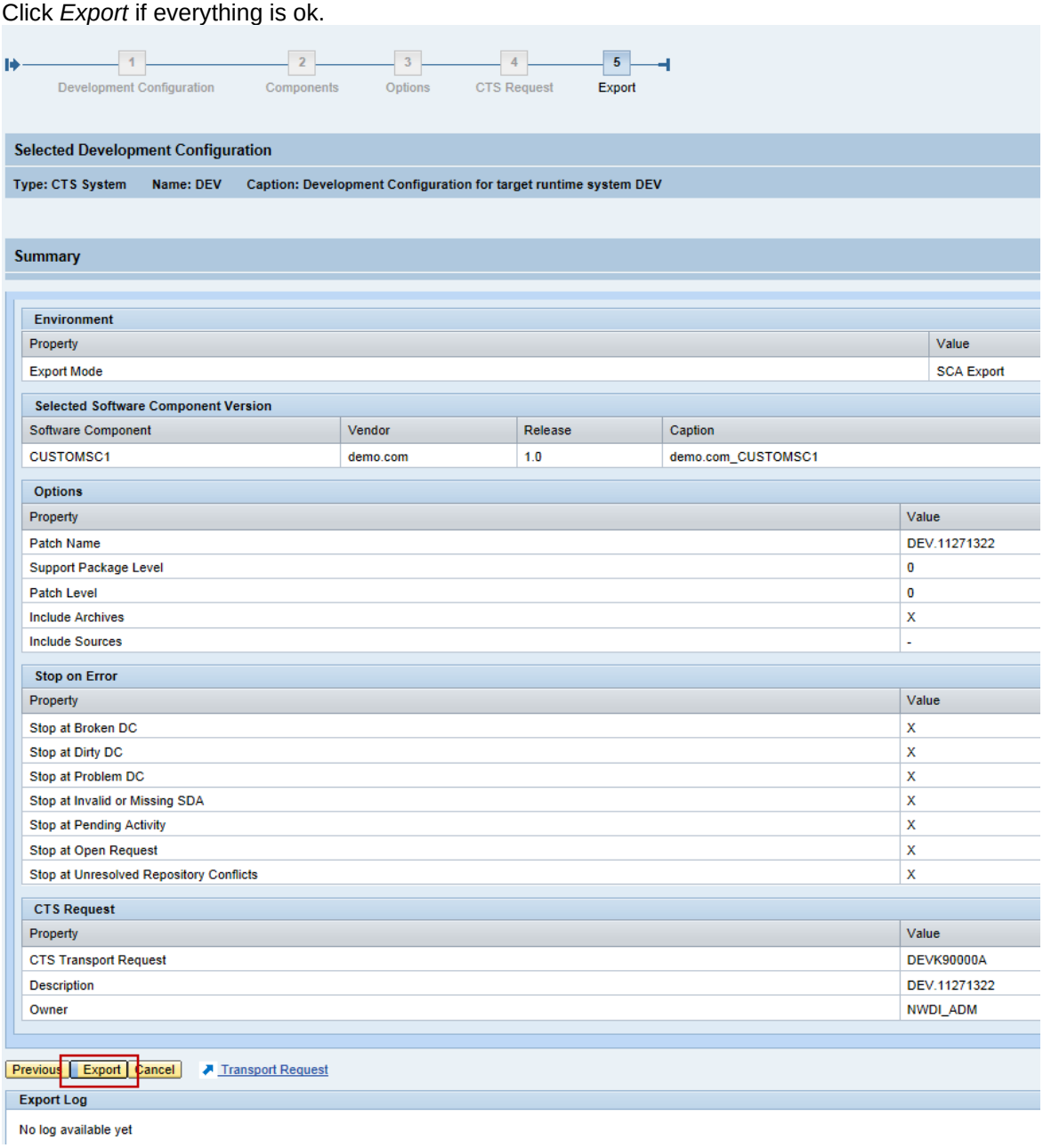
> **Note**
>
> If you decide to set the *Support Package Level*, the *Patch Level* is automatically set to 0. You cannot change this.

6. The next screen shows the transport request to which your SCA will be attached if there is a default request available for your user or if the system in TMS is configured to create on automatically. If there is no default request available or if you would like to change the one that is currently shown, you can use the link *Transport Requests* to open the Transport Organizer Web UI. By the help of this UI, you can create e.g. new requests or make another one your default request. If you changed anything in the Transport Organizer Web UI, always click *Refresh* in the Export Web UI before you continue. Only if you follow this procedure, the changes done in the

Transport Organizer Web UI will be taken into account in the further process in the Export Web UI. This is especially important if you changed the default request.
If you want to, you can add a note that will be added to the documentation of the transport request.
Click *Next* as soon as everything is correct concerning the transport request.



7. On the next screen, you can see a summary of the settings that you did in the previous steps. Click *Export* if everything is ok.



8. Depending on the transport strategy that was configured in TMS, you can now add additional files to the transport request or release it in the Transport Organizer Web UI and then import it into your target systems. For details on importing transport requests, refer to the chapter Importing a Transport Request. For details on the transport strategy, refer to the SAP Library at http://help.sap.com/saphelp_nw73/helpdata/en/c5/d9012e437d4c318976edc9791f2ae4/content.htm

   ➡ Recommendation

   You can use one transport request to attach several SCAs. This is one option: work with the same transport request for your development phase. If you create several requests which contain different versions of the same SCA, should release a transport request soon after having attached something. If you attach the same SCA to more than one transport request and mix the order of releasing the requests so that it does not fit with the order the SCAs were created, you can create what is called overtakers when executing imports. This means that not the latest changes will be the active ones.

9. After the export has finished successfully, the export log is shown in the section *Export Log*.

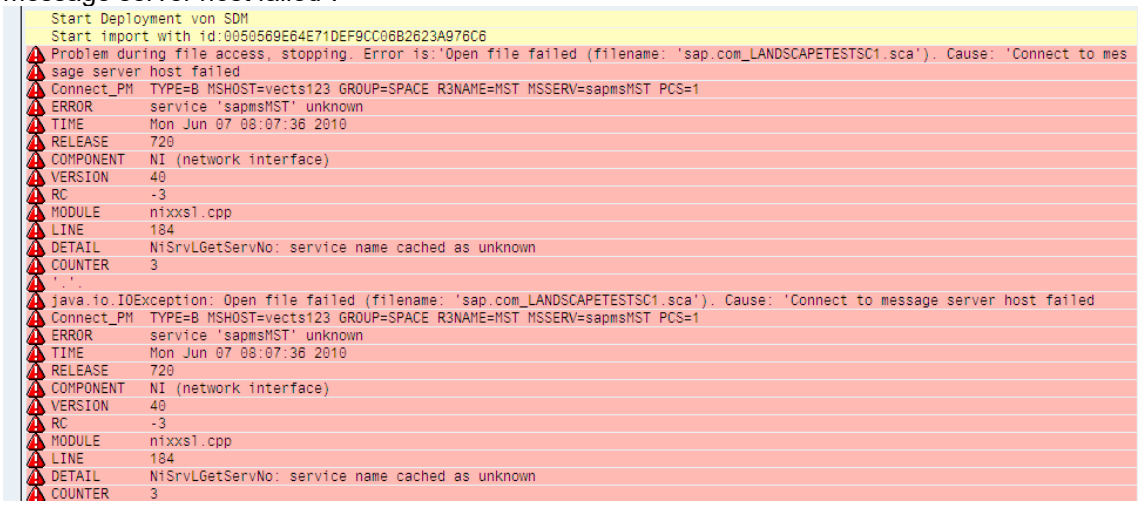
> **Note**
>
> You can also use the Export Service UI to attach SDA(s) to a transport request. The process is very similar – with the exception of setting versions and patch level – this only exists on SCA level.
> SDA is only possible in case of deployable export and only if you set this option when configuring the development configuration.

> **CAUTION**
>
> The SDA export is only made for experts. Only the SDAs that you choose will be attached to the transport request. There are no dependencies taken into consideration. There is therefore a risk that you break the target system when importing the request in the target system if dependent SDAs that were also changed are missing in the import. The version that is currently active in CBS is attached to the transport request.

9 Troubleshooting

9.1 Error during Import / Deployment (RC 12)

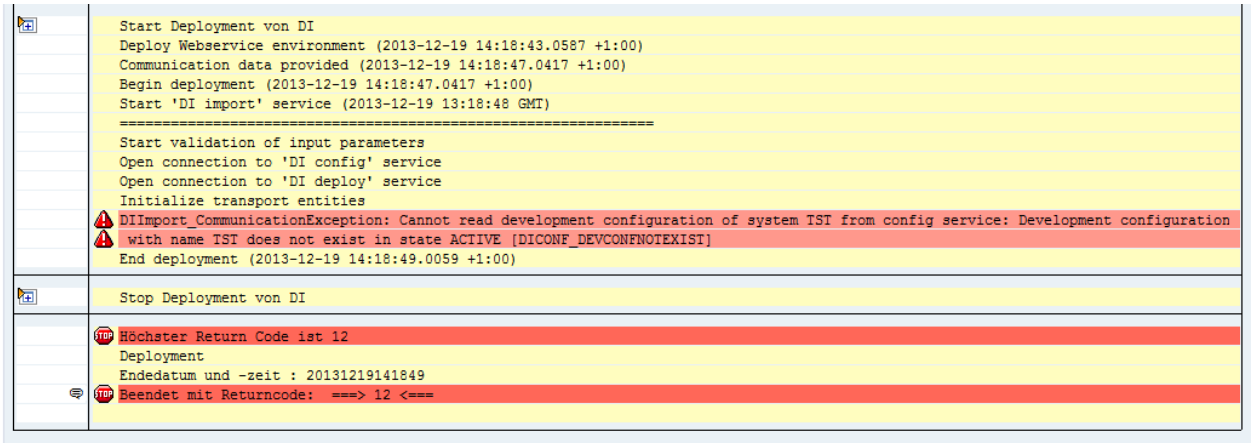
1. The import into the target system stops with return code 12 and error message “Connect to message server host failed”.



Reason:
The parameter CTS_FILE_PROVIDER_URI is in use and the communication system (CTS ABAP stack) is not maintained on the system where your Deploy Service is running (here: NWDI server).
Solution:

- On your Java stack system where the Deploy Service is running go to C:\WINDOWS\system32\drivers\etc and open the file Services with an editor (for example, Word pad).
- Check if the sapms<SID> entry exist and if the port is correct. If not, correct them. For more information, see SAP Note 1155884.
- Restart the import.

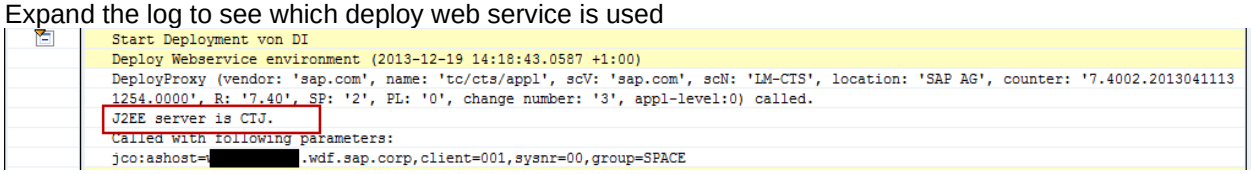
The import into the target system stops with return code 12 and error message
“DIImport_CommunicationException: Cannot read development configuration of system…”.



Reason

Wrong Deploy Web Service is in use – you would like to use source transport but forgot to change the Deploy Web Service to CTSDEPLOY_DI which points to your NWDI.

Expand the log to see which deploy web service is used



In here, you should see your NWDI server (in our example, CTJ is the AS Java of the CTS system, the NWDI is named DN5 and this is expected to be used in here for source transports)

Solution

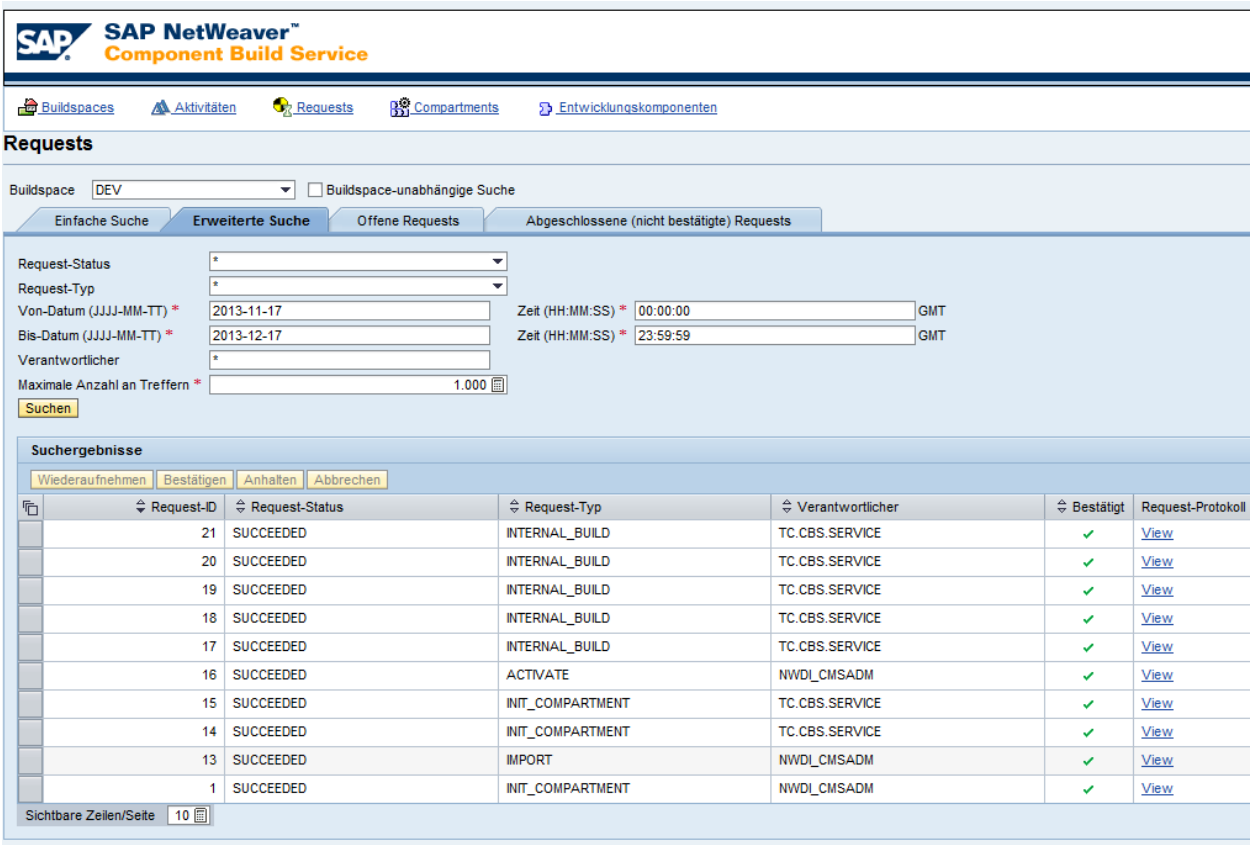
Change the parameter DEPLOY_WEB_SERVICE in TMS to CTSDEPLOY_DI. Check also SAP Note 1453836

9.2 Import seems to run forever

In case your import of the transport request into the target system seems to run forever and your Target System has a DI Configuration, you should check the following:

Open the History Service and check the current status of your import. If the import stopped at the step 'Build Server Import', check if CBS is started and works properly. Open the CBS Web UI via http://<host>:<port>/webdynpro/dispatcher/sap.com/tc.CBS.WebUI/WebUI. Choose *Requests*, select the *From Date* and *To Date* for your Buildspace accordingly to search (*Search* button) for all Requests since the CBS was installed and initially configured. You should see at least an entry with the Request Type INIT_COMPARTMENT and the Request State SUCCEEDED. In case the Request State is set to QUEUED you should check the parameter *idleStart*.

To do so, open the NetWeaver Administrator on your NWDI (http://<host>:<port>/nwa) and go to *Configuration* → *Infrastructure* → *Java System Properties*. Select your node and open the tab *Services*. Choose *Component Build Service* → *Modify IdleStart*.



9.3 Activity cannot be released

When you try to release an activity in the developer studio, you receive an error message: ‘No successful activation request found for activity…’

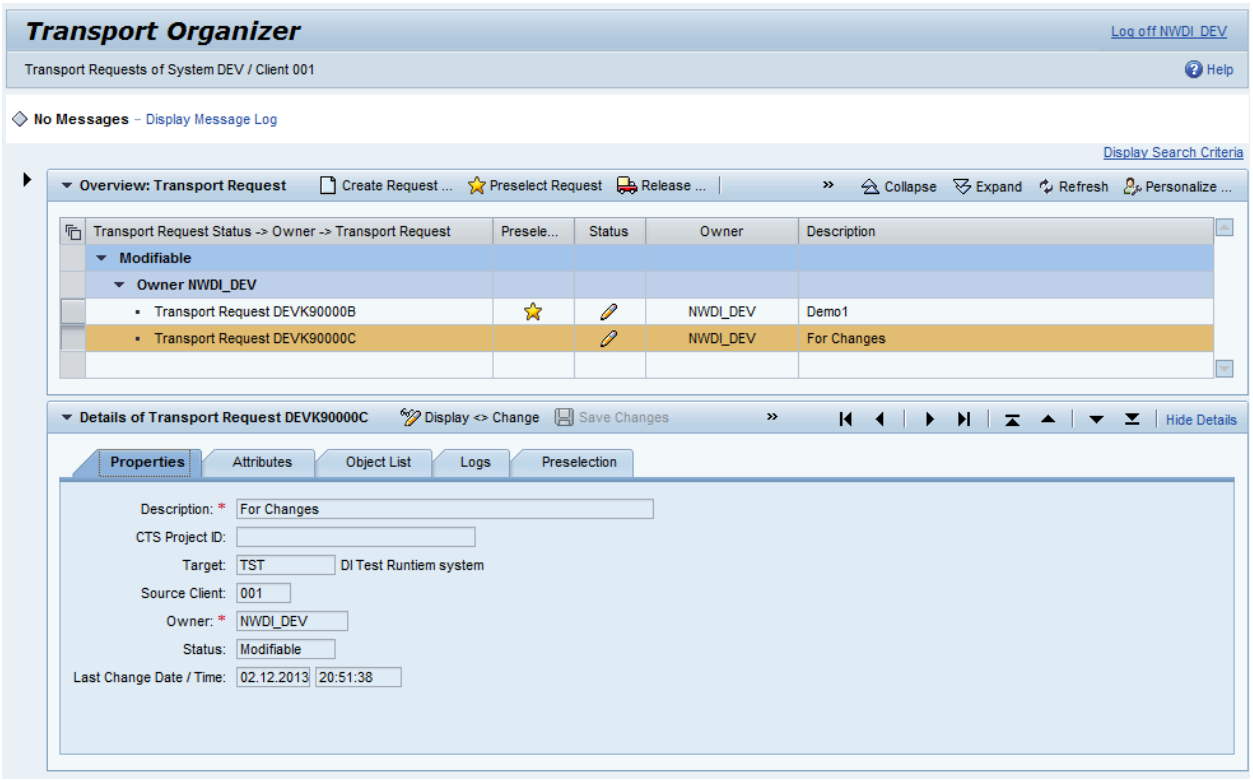
Refer to SAP Note1909778 for possible reasons and solutions.

10 Appendix

10.1 Using the Transport Organizer Web UI

The Transport Organizer Web UI is made for creating, changing or releasing transport requests on the CTS+ system. Depending on the release of your CTS+ system and whether CTS_PLUG is installed or not, you can find different versions of this UI. If you would like to use the new Transport Organizer, you have to use a CTS+ system with CTS plug-in 2.0 on SAP Solution Manager 7.1, SAP NetWeaver 7.31 or 7.4.

The Transport Organizer Web UI delivered with CTS Plug-in 2.0 looks like shown in the following figure:

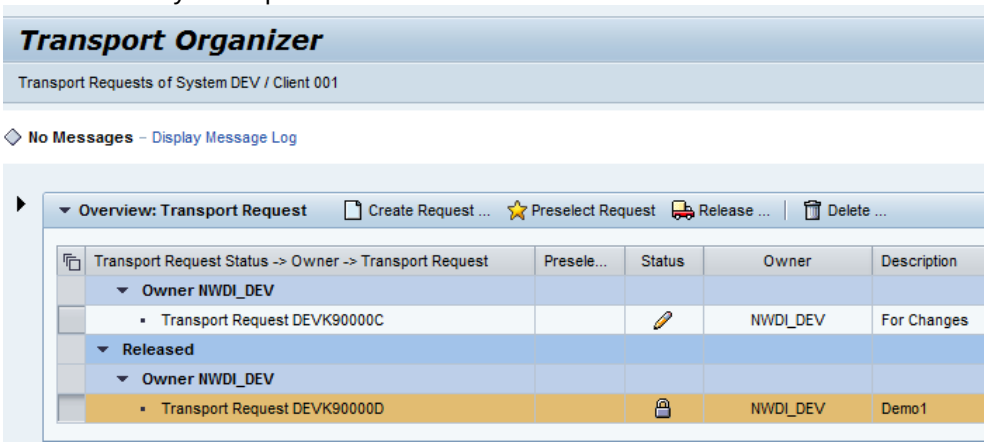


More information is available in the SAP Library at http://help.sap.com/saphelp_ctsplug20sm71/helpdata/en/df/7a1d1a4f0d4805b46c61a0d53cb4c7/content.htm

10.2 Importing a Transport Request

After you have exported your activities, you might want to import the changes into the test system (TST).

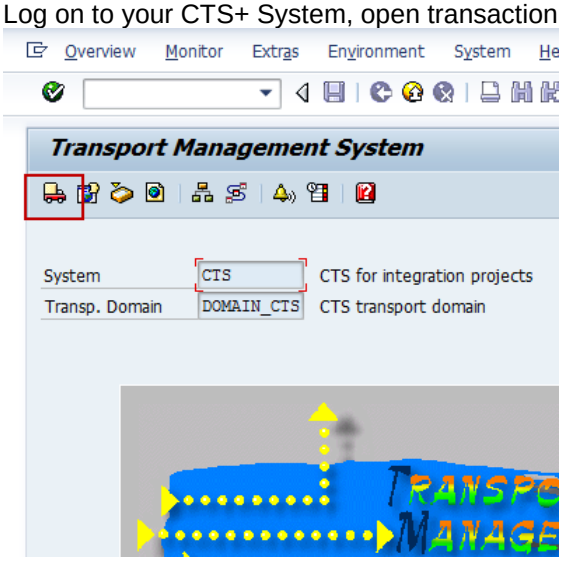
Before you can do so, you have to release the transport request. This is done in the Transport Organizer Web UI. Mark your request and click on *Release*.



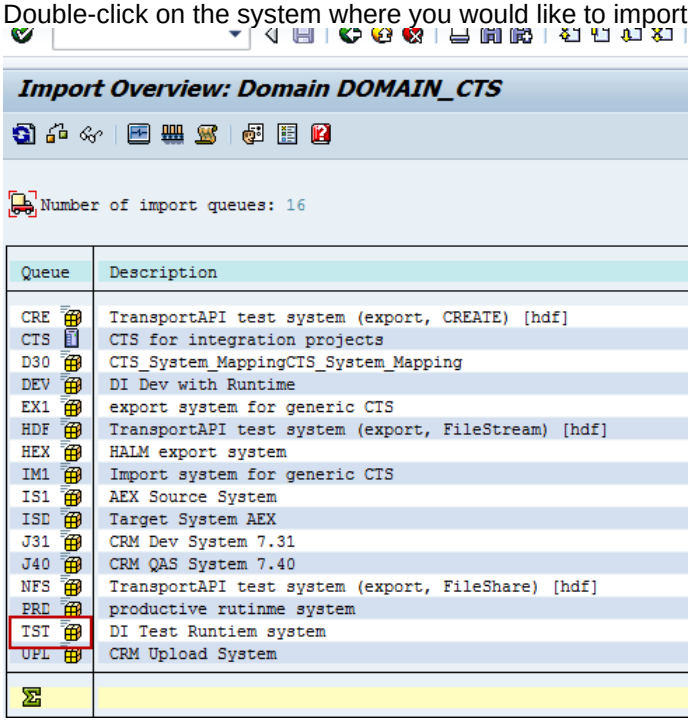
> **Note**
>
> Depending on your configuration, it might also be that the request is released automatically after something was attached. If this is the case in your landscape configuration, you can skip this step. Nevertheless, you can use the Transport Organizer Web UI to make sure that your activity (the respective SDA) is attached to the transport request and that it was released.

To import the transport request into the system TST do the following:

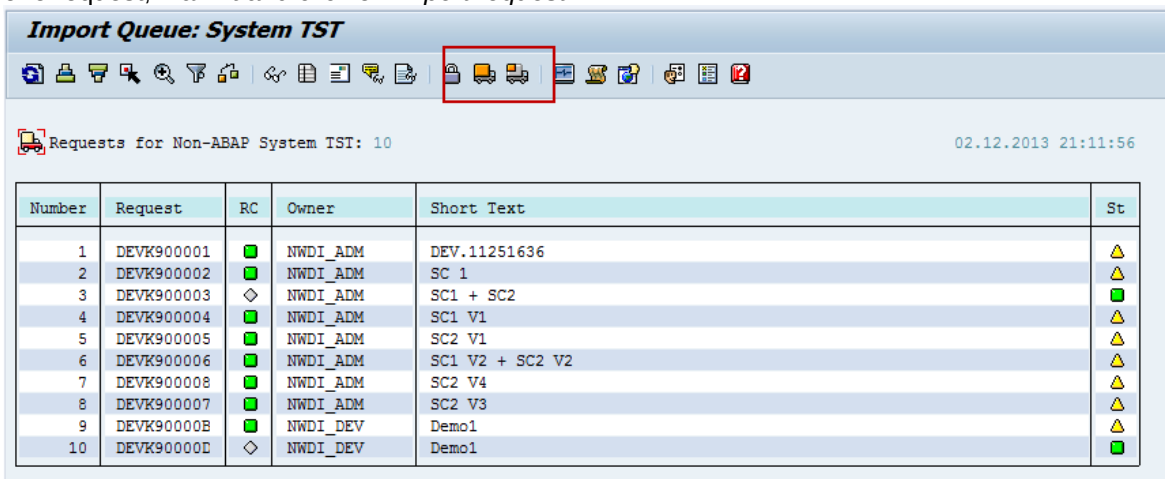
1. Log on to your CTS+ System, open transaction STMS and click on *Import Overview*



2. Double-click on the system where you would like to import a request



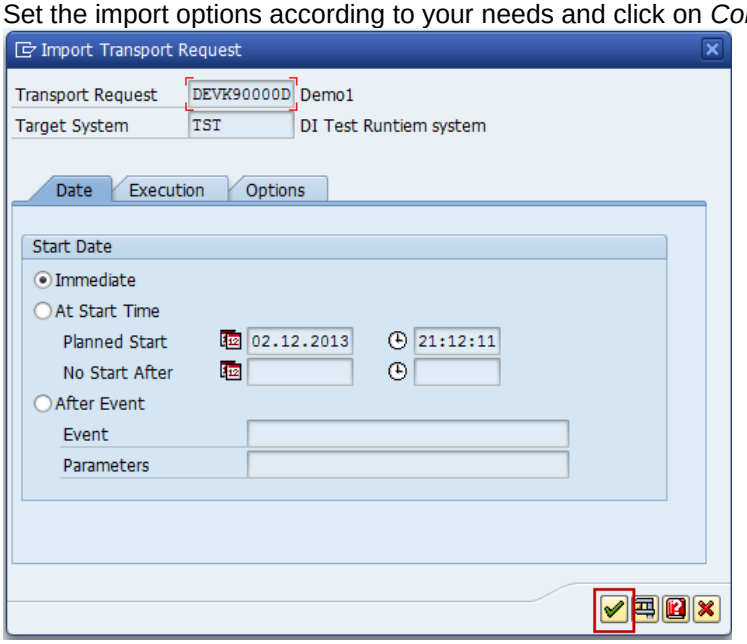
3. You can now either import all requests that are in the queue or import a single request. To import one request, mark it and click on *Import request*



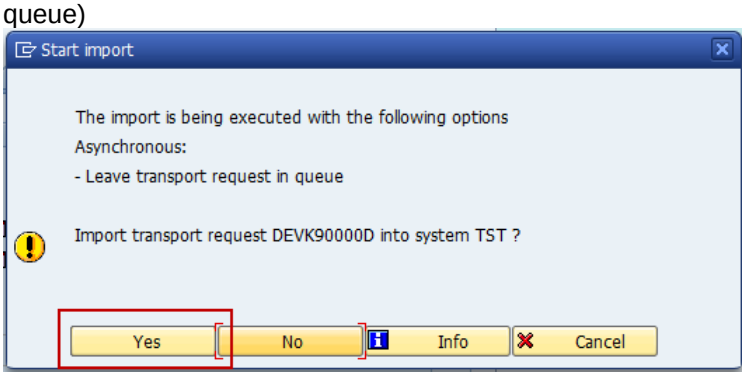
Note

If the request that you just released is not visible, click on *Refresh*.

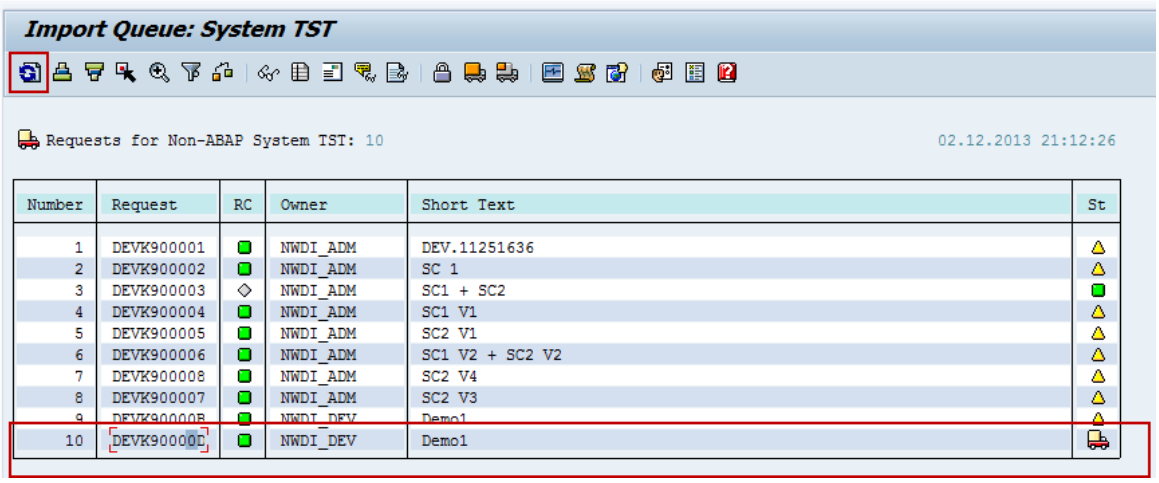
4. Set the import options according to your needs and click on *Continue*



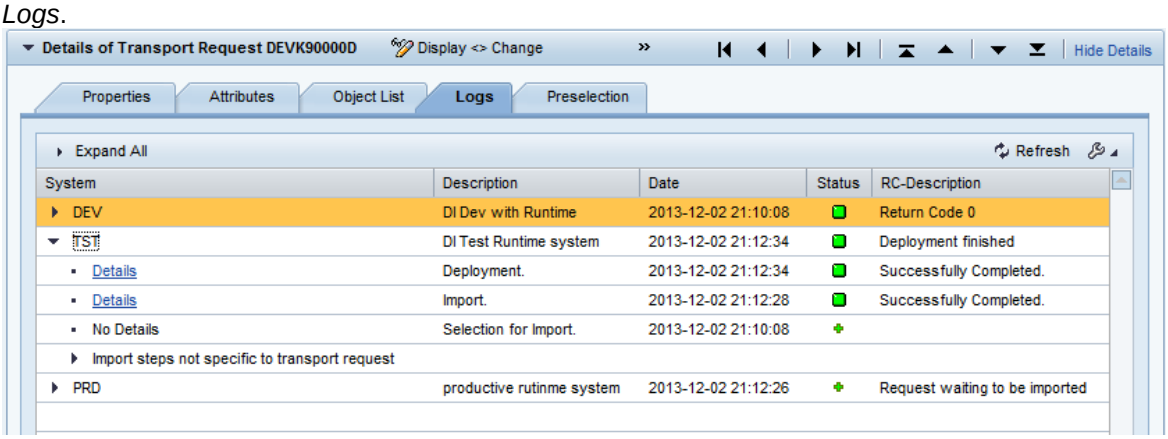
5. Confirm that you would like to leave the request in the queue (only if you import not the complete queue)



6. Click on *Refresh* until the import is finished. The column *RC* should show a green square.



7. You can also check the status for a certain request in the Transport Organizer Web UI on the tab *Logs*.



10.3 Extending the Landscape

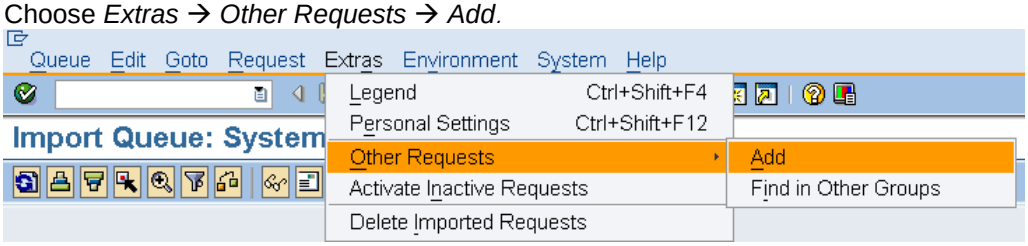
In this chapter, we will give you some insights on how to extend the landscape that you configured before. What is covered in here is adding e.g. an additional test system. The procedure described in here cannot be used for adding a new development system. Exchanging the development system (the SID in TMS) would mean that the transport requests in CTS will get a different naming etc. Existing transport requests that were not released cannot be used any more. So we do not recommend exchanging the development system.

In case you need to extend your landscape, you have to make sure to import previous transport requests. For a system landscape that is enabled for source transport (= target systems with development configurations) it is essential to make sure that the required libraries are also imported into NWDI for the new system (buildspace). Use the Synchronize Service to do so.

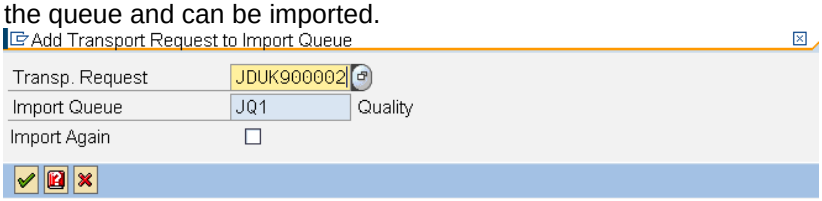
After having extended the landscape, you should make sure that you add all transport requests to the new system that were already imported into the following system or that you create a new transport request on the development system which contains the SCA(s) that you develop and transport this request through the complete landscape. This would make sure that you have a consistent state of your application available in all systems involved.

We assume you created your new non-ABAP target system with or without development configuration as described before. In addition the required transport routes are available. The next steps explain how to import transport requests (that have been already transported) to this new target system. For all upcoming transports this new target system will be delivered via the regular transport route.

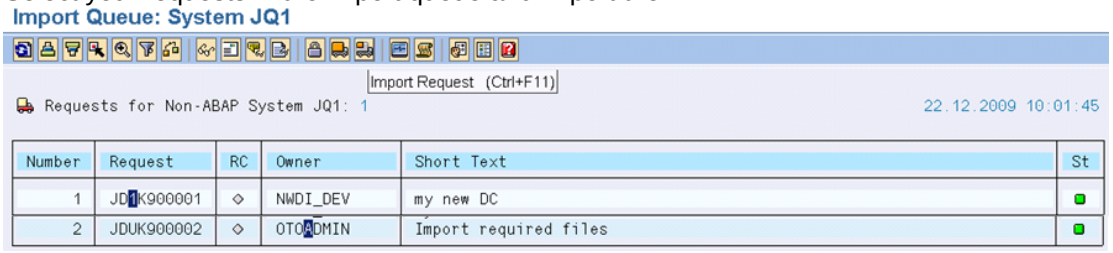
1. On your CTS system, call transaction STMS. In the *System Overview*, select the system to which you want to add a transport request
2. Choose *Extras → Other Requests → Add.*



3. Enter the transport request with the required files and choose *Ok*. The request has been added to the queue and can be imported.



4. Select your requests in the import queue and import them



5. Repeat these steps for all new systems in your landscape

10.4 Configure Users on CM Services server

If you would like to run the CM Services on a server where no NWDI component is used so far, you can execute the functional unit *CM Services*. In case the users NWDI_CMSADM, NWDI_ADM and NWDI_DEV already exist, the FUN will ask you whether you would like to overwrite the password. Make sure that the same password as on the NWDI system is used.

For more information on configuring the NWDI, refer to the SAP Library at http://help.sap.com/saphelp_nw73/helpdata/en/b4/d347306670474e8ef8771ef989922e/content.htm?frameset=/en/53/75b3407e73c57fe10000000a1550b0/frameset.htm

> **Note**
>
> If you decide to do the configuration manually and use other users than the ones that the FUN would create, you have to make sure that they exist both on the NWDI system and on the CM Services server.

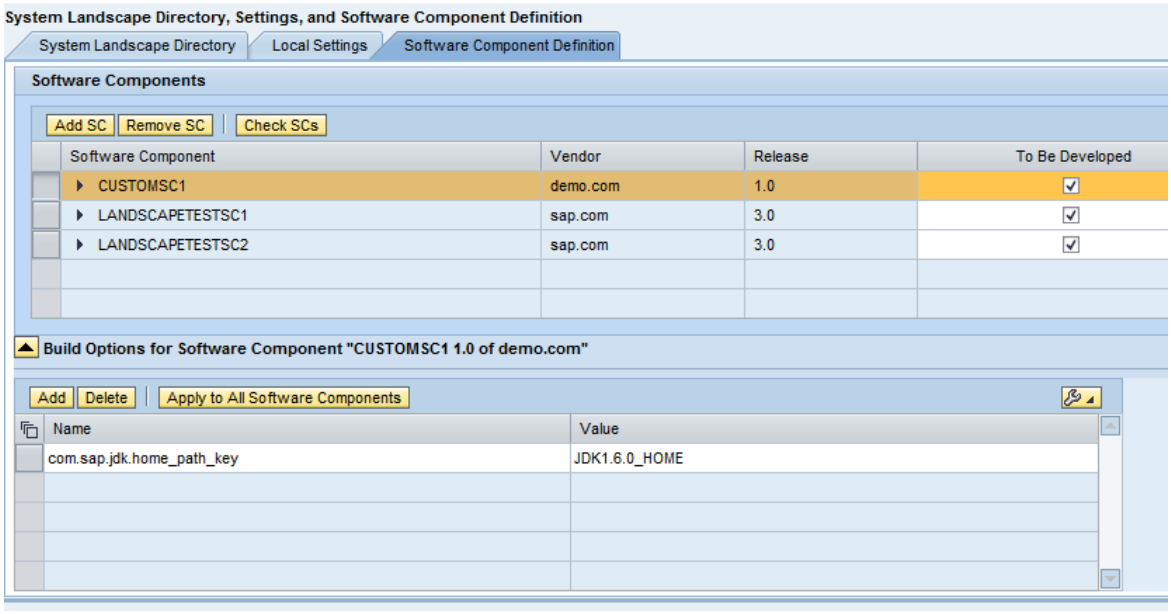
10.5 Using Build Options

If you would like to use your NWDI to develop java applications for more than one SAP NetWeaver release, you can use Build Options to do so.

As a prerequisite, you have to prepare CBS to be able to use different jdks during the build. For details, take a look at http://help.sap.com/saphelp_nw73/helpdata/en/53/75b3407e73c57fe10000000a1550b0/frameset.htm

Starting with enhancement package 2 for SAP NetWeaver 7.0, CM Services support build options. When configuring your development configuration, you can specify which jdk should be used. This can be done by entering **`com.sap.jdk.home_path_key`** as Build Option *Name* and e.g. `JDK1.3.1_HOME` as Build Option *Value*. The *Value* has to exist in CBS in the property JDK_HOME_PATHS.

For more information on CBS Service Properties, refer to http://help.sap.com/saphelp_nw73/helpdata/en/b5/7a5e4088dc0272e10000000a155106/frameset.htm

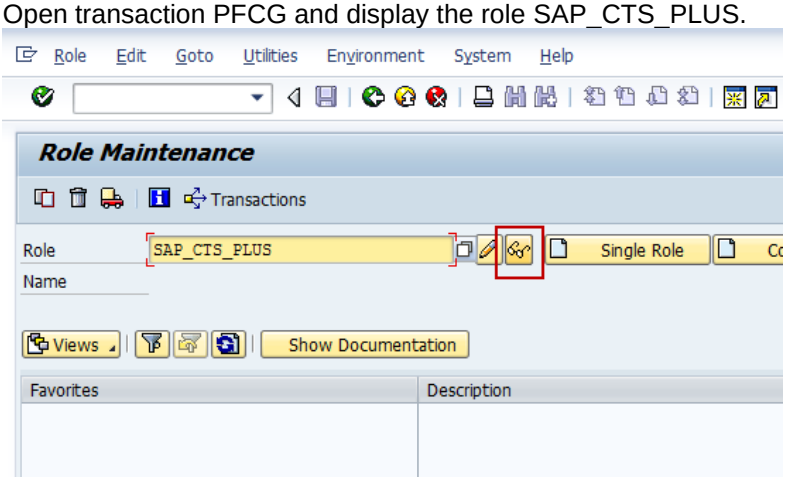


You can define additional build options. Refer to http://help.sap.com/saphelp_nw73/helpdata/en/bd/cddf4164ee6024e10000000a1550b0/frameset.htm for details.

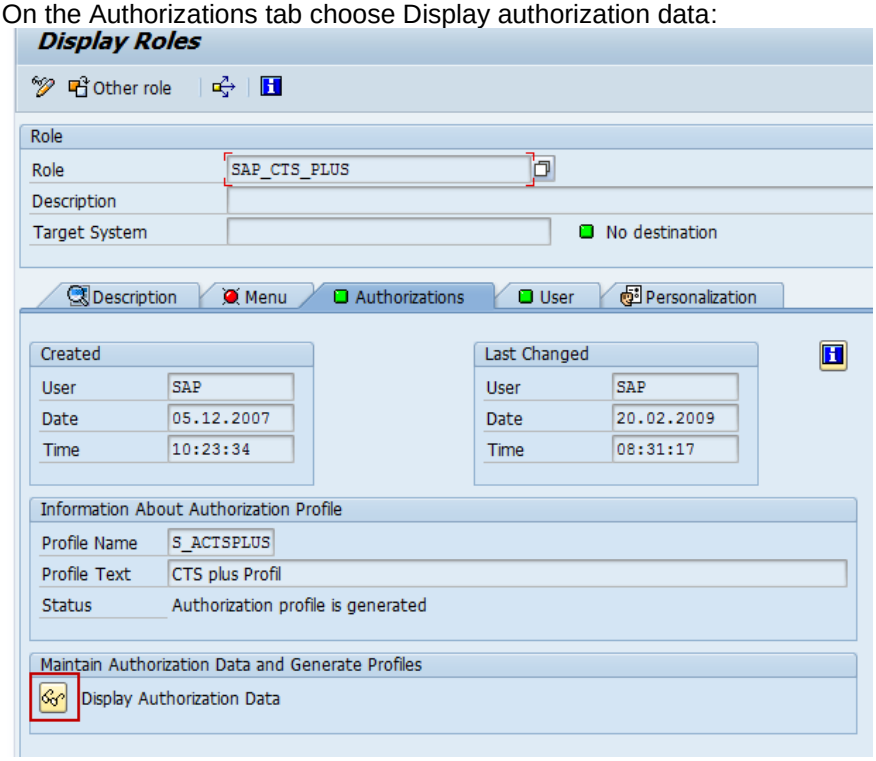
10.6 Checking Role SAP_CTS_PLUS

In older releases, it might be that some permissions are missing in the role SAP_CTS_PLUS. Do the following to fist check the role and then create one which contains the required permissions.

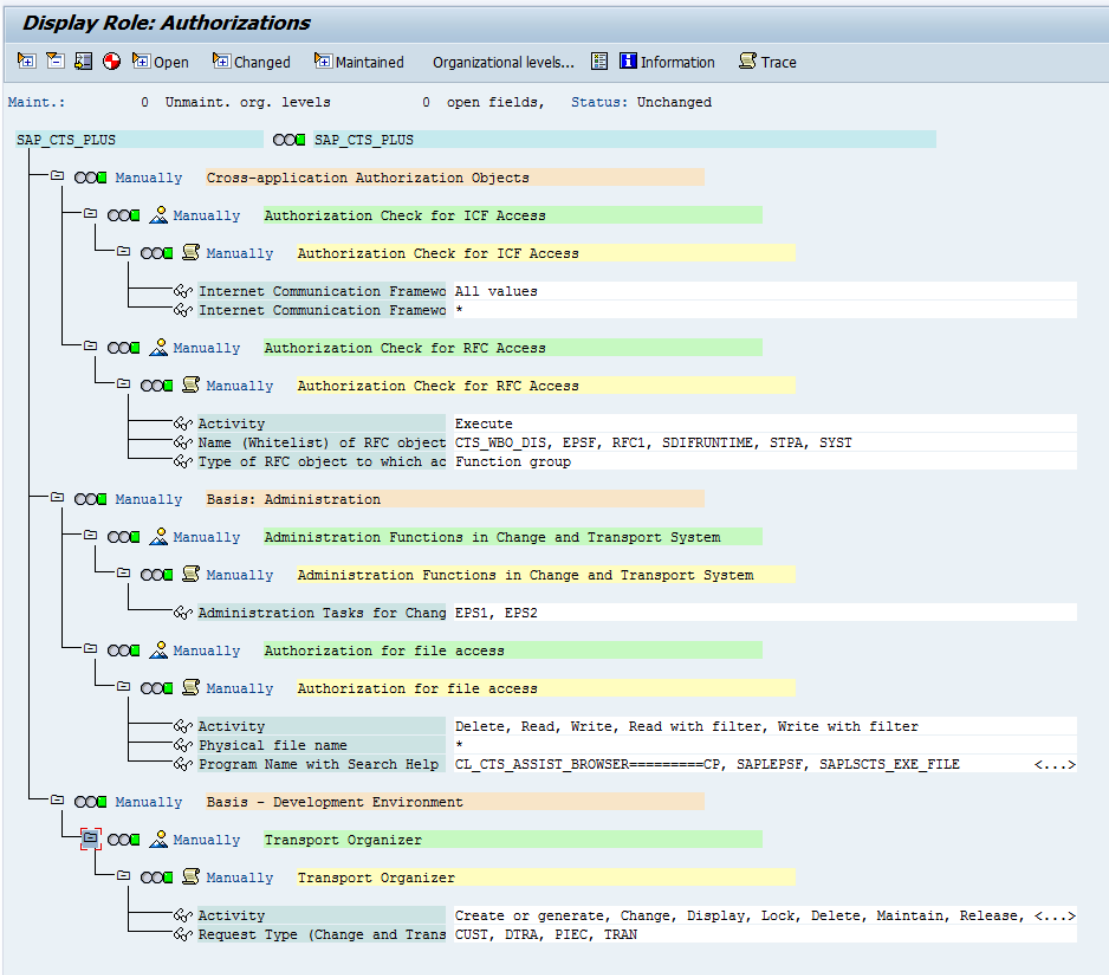
1. Open transaction PFCG and display the role SAP_CTS_PLUS.



2. On the Authorizations tab choose Display authorization data:



3. Make sure that the following permissions are available:

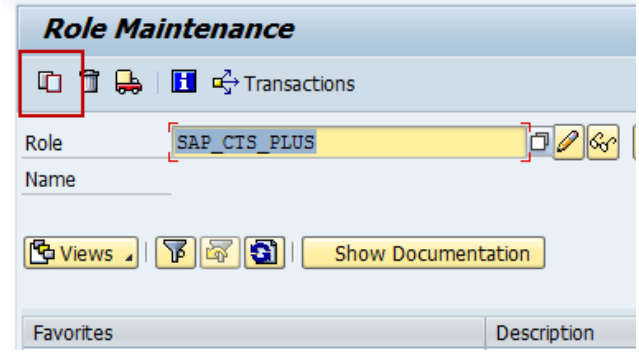


Authorization Check for ICF Access (object: S_ICF):

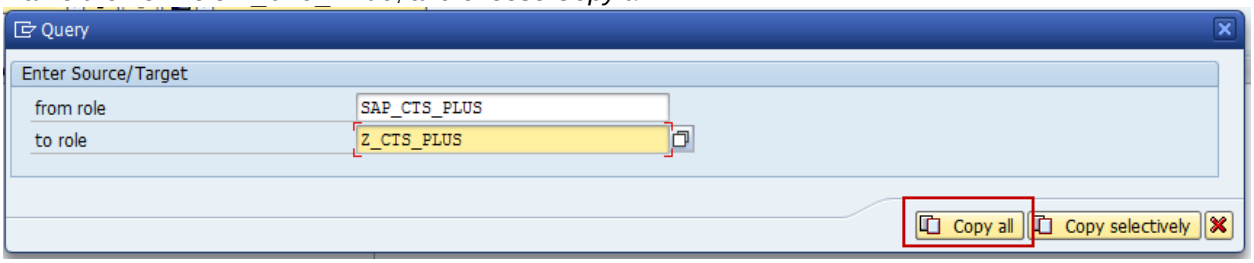
```
ICF_FIELD:  DEST, PROXY, SERVICE
ICF_VALUE:  *
```

Authorization Check for RFC Access (object: S_RFC):
RFC_NAME: CTS_WBO_DIS, EPSF, RFC1, SDIFRUNTIME, STPA, SYST
RFC_TYPE: FUGR
Administration Functions in the Change and Transport System (object: S_CTS_ADMI):
CTS_ADMFCT: EPS1, EPS2
Authorization for file access (object: S_DATASET):
ACTVT: 06, 33, 34, A6, A7
FILENAME: *
PROGRAM: CL_CTS_ASSIST_BROWSER=========CP, SAPLEPSF, SAPLSCTS_EXE_FILE, SAPLSCTS_RELEASE, SAPLSLOG, SAPLSTFI, SAPLSTPA, SAPLSTPP, SAPLSTRF, SAPLTMSM, SAPLTMST
Transport Organizer (object: S_TRANSPRT):
ACTVT: 01 (Create or generate), 02 (Change), 03 (Display), 05 (Lock), 06 (Delete), 23 (Maintain), 43 (Release), 50 (Move), 60 (Import), 65 (Reorganize), 75 (Remove), 78 (Assign), 90 (Copy)
TTYPE: CUST, DTRA, PIEC, TRAN

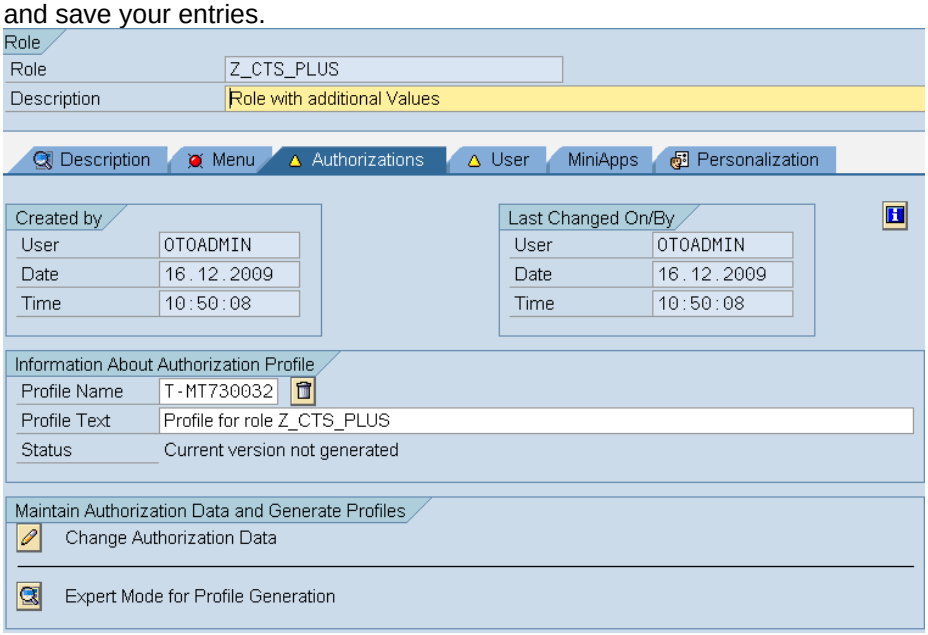
4. If not all necessary values are assigned to role SAP_CTS_PLUS, copy this role.



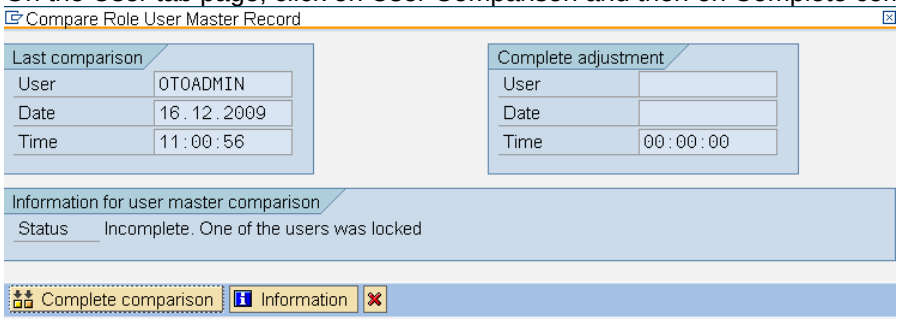
5. Name the new role Z_CTS_PLUS, and choose *Copy all*.



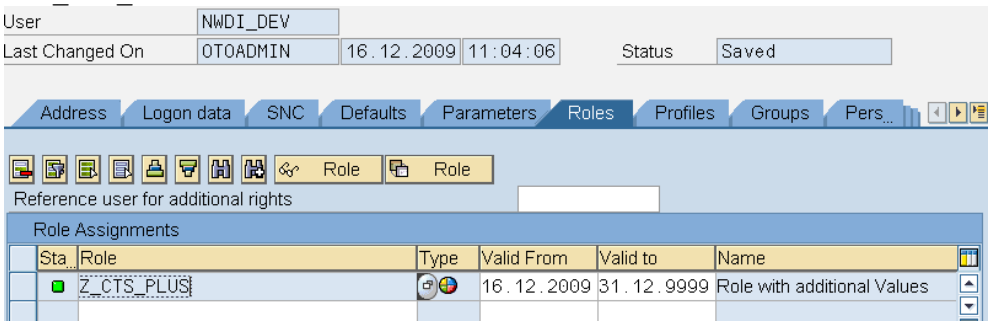
6. Enter a description and click on Propose Profile Name to get an automatically generated profile name. Save your entries.
7. Click on Change Authorization Data and assign all missing necessary values. Go one step back (F3) and save your entries.



8. On the User tab page, click on User Comparison and then on Complete comparison



9. Assign this newly created and activated role `Z_CTS_PLUS` to user `NWDI_DEV`. Remove the role `SAP_CTS_PLUS`



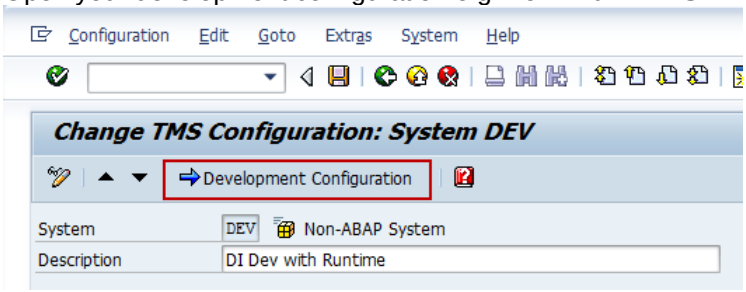
10.7 SIDs in CM Services

If the SID is already used, you can also use any 3 letter name that has not yet been used in the domain. It is not required that the runtime systems are shown in CTS by their real SID in case of CM Services – but it simplifies keeping an overview if you do so.

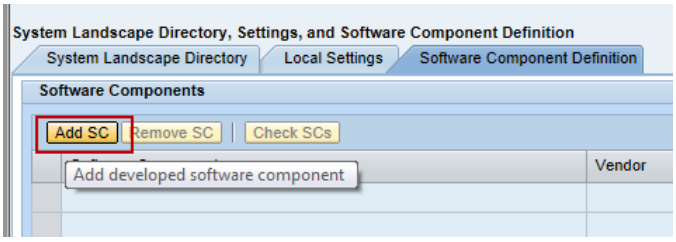
10.8 Creating a new SC

If you would like to create a new SC to develop your own functionality, you can do so from within the Development Configuration service. The following steps have to be executed:

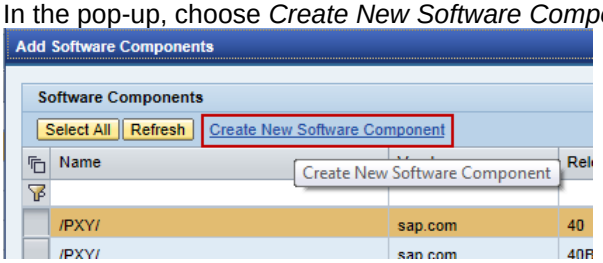
1. Open your development configuration e.g. from within TMS.



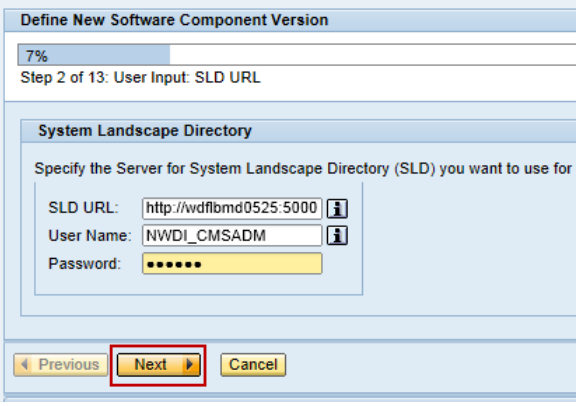
2. In the Development Configuration Service, open the *Software Component Definition* tab and click on *Add SC*



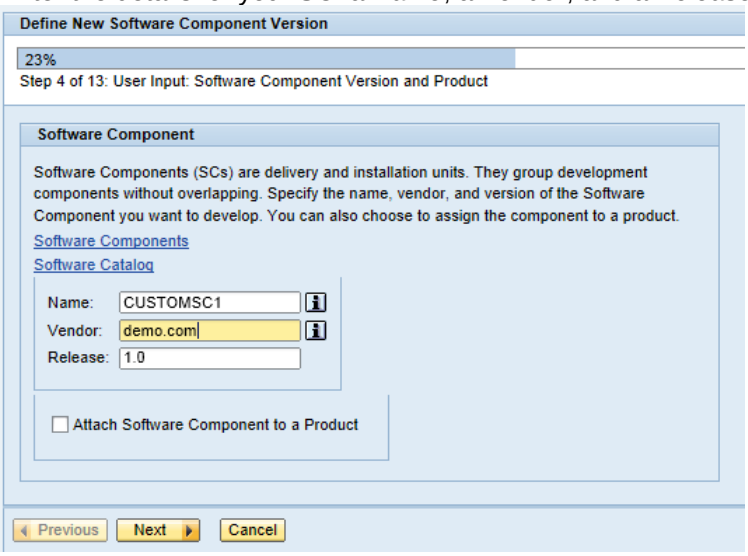
3. In the pop-up, choose *Create New Software Component*



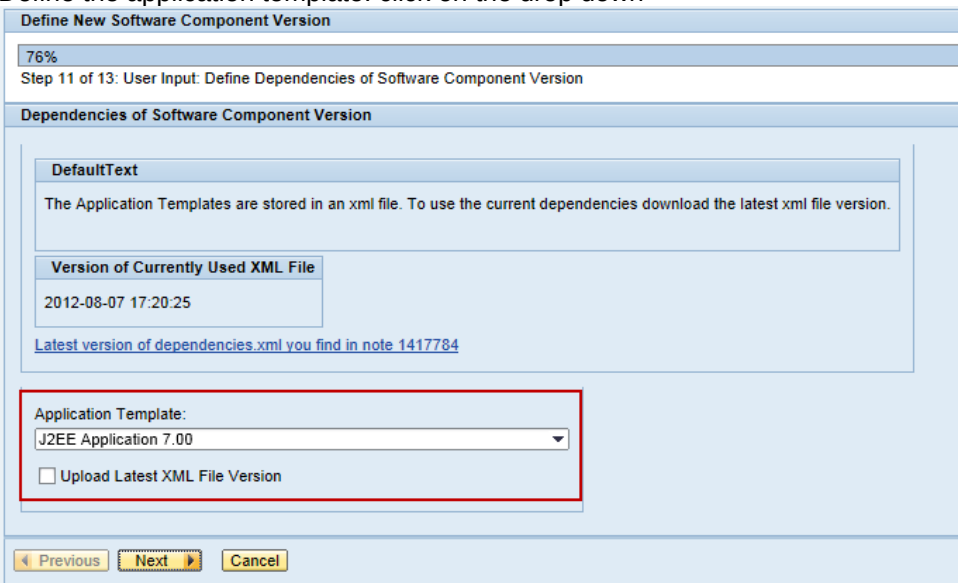
4. Enter a user and password (and the SLD URL if not automatically filled in) and click on *Next*.



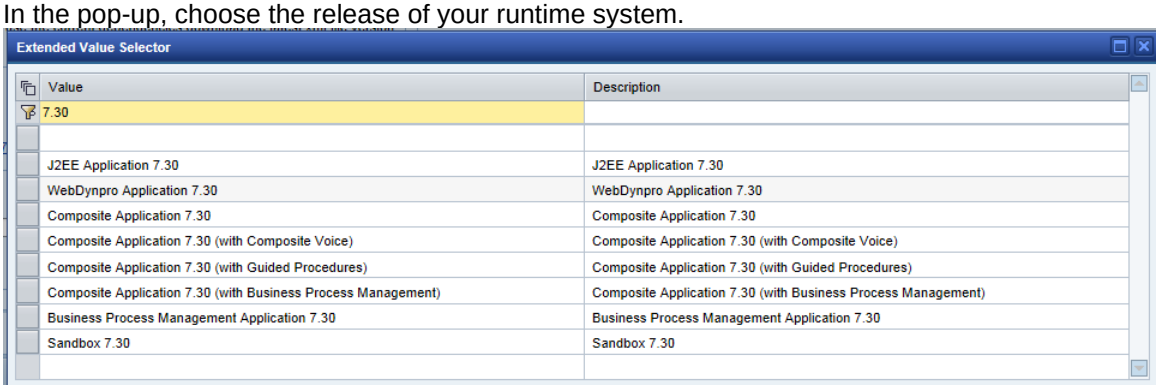
5. Enter the details for your SC: a *Name*, a *Vendor*, and a *Release*. Click on *Next*



6. Define the application template: click on the drop down



7. In the pop-up, choose the release of your runtime system.

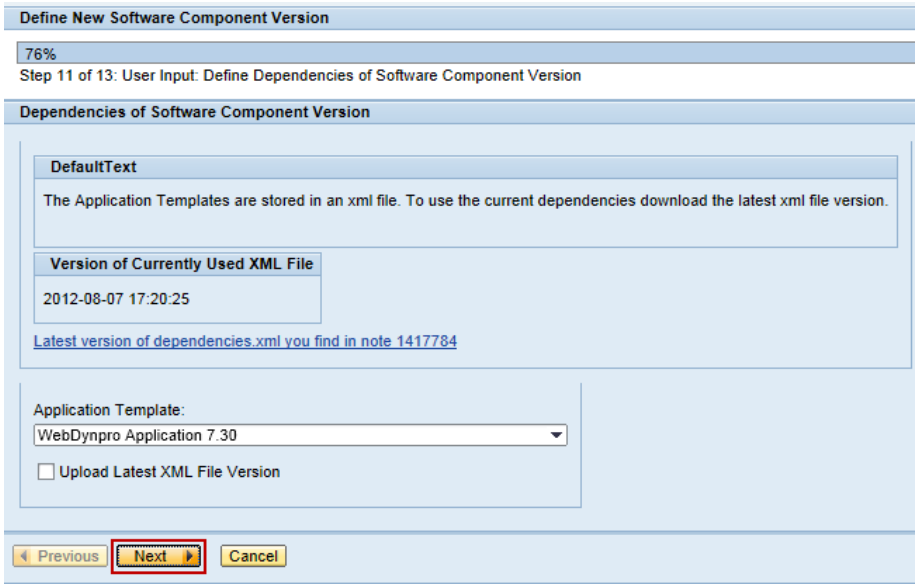


If the template for your runtime system is missing, you can also execute the wizard for creating a new SC on another AS Java of your choice – it doesn't matter whether NWDI is installed on the system or not. E.g. use AS Java you want to develop for.

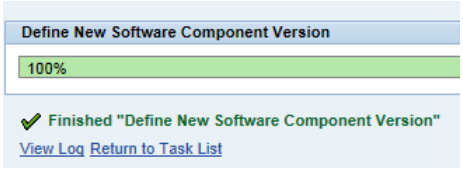
> **Note**
>
> The wizard is always started on SLD. If you would like to start it on a different server, use the URL:
> http://<server>:<port>/webdynpro/dispatcher/sap.com/tc~lm~ctc~ccl~template_installer~wd/TemplateInstaller?processPath=content/DefineSCV/processes/DIDefineNewSoftwareComponentVersion.cproc&processComponent=sap.com/tc~di~ctc~content&batchExecution=true
> or open the NetWeaver Administrator of the respective system and open *Configuration* → *Scenarios* →*-Configuration Wizard* → *Define New Software Component Version* Details are available in the SAP Library at

http://help.sap.com/saphelp_nw73/helpdata/en/02/369c8b606341a3b1d3b1e05259fcd3/frameset.htm

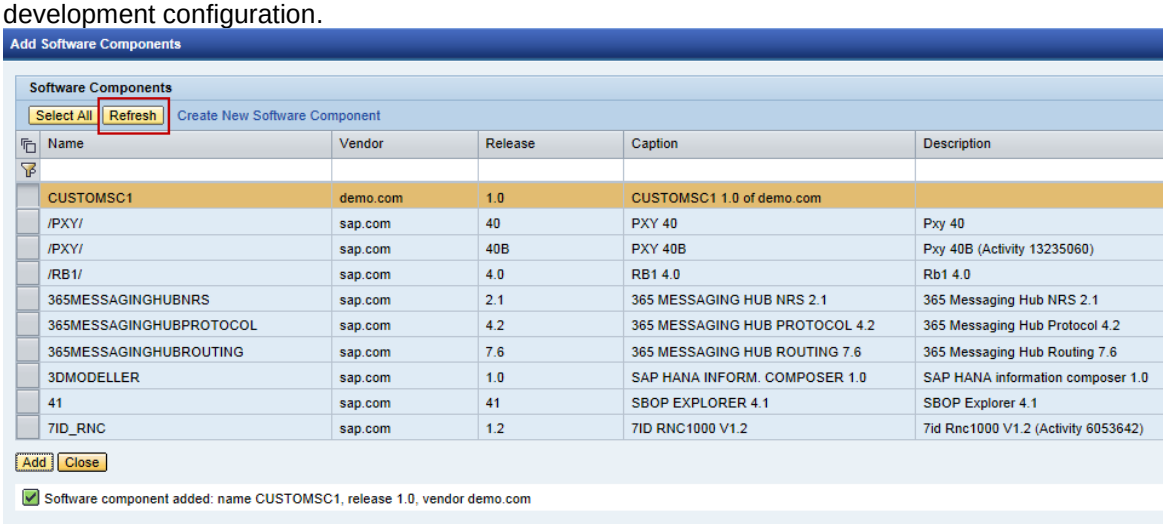
8. Click *Next*.



9. The new SC is now defined. Close the window



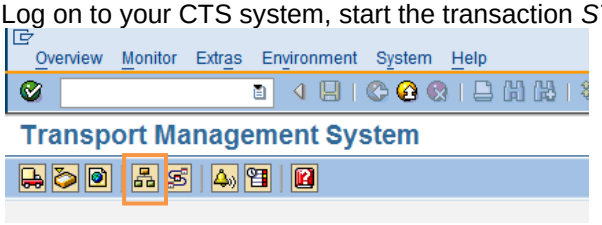
10. The list of SCs that can be added to the development configuration is now visible again. Click *Refresh* to make the SC that you just created part of the list and mark it to add it to the development configuration.



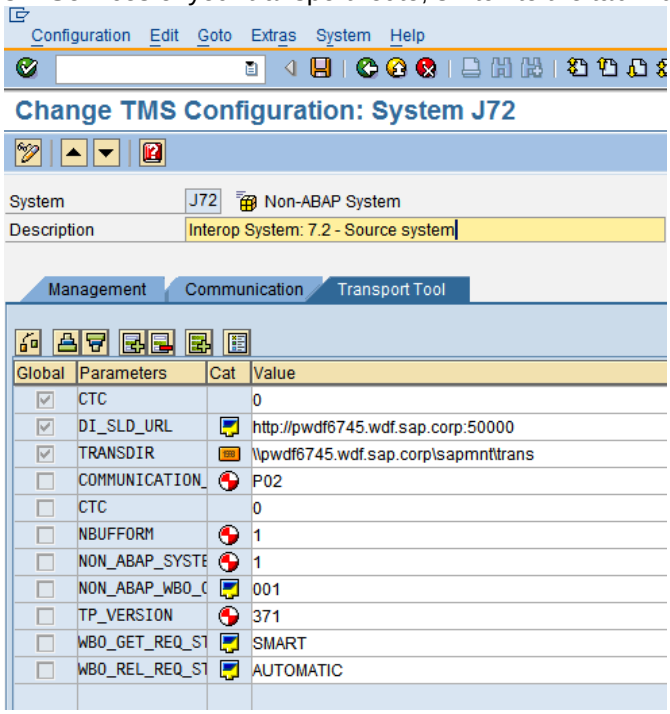
10.9 Enable existing non-ABAP system for CM Services

If you already have a non-ABAP system landscape in place for e.g. your SAP Enterprise Portal or SAP Process Integration Systems, you can easily extend this system landscape so that you can also transport your NWDI-based Java development through this landscape. There is no need to create a separate landscape based on invented SIDs in this case. Do the following to add a development configuration to your existing non-ABAP systems. Some of the following steps apply to all systems, some only to source systems and some only to target systems. You will find an appropriate remark in each step.

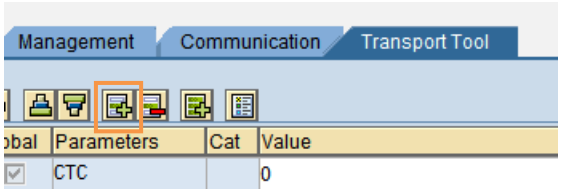
1. Log on to your CTS system, start the transaction *STMS* and go to the *System Overview*.



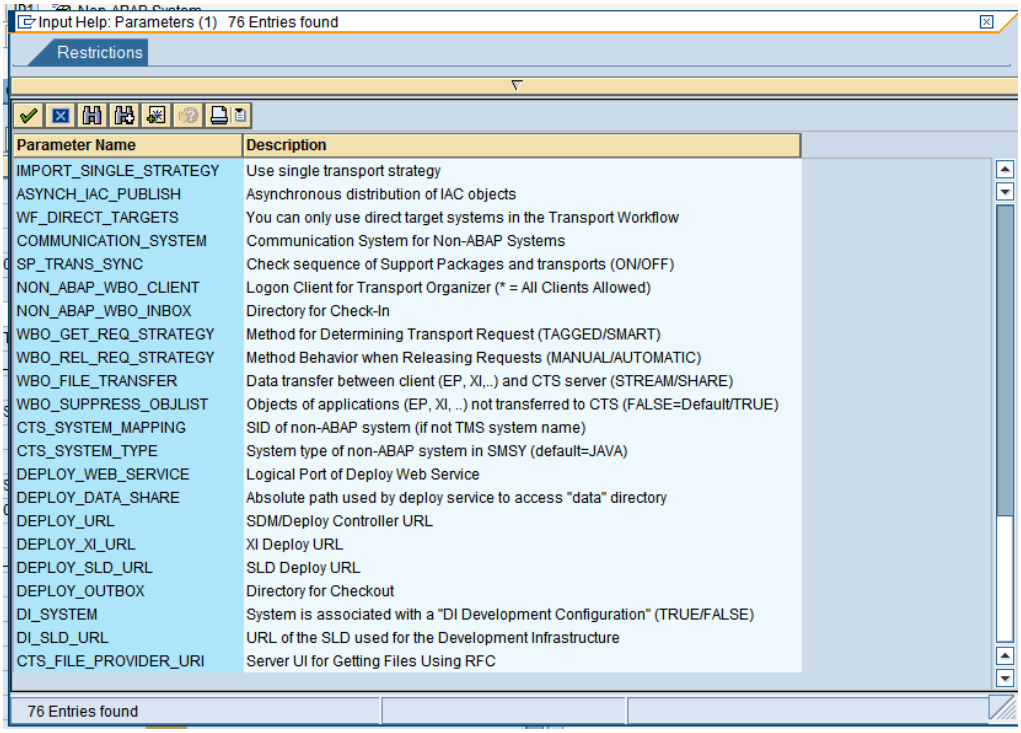
2. In the *System Overview*, double click on the system where you would like to add the option to use CM Services of your transport route, switch to the tab *Transport Tool* and switch to *Edit* mode.



3. Click on one line and then on *Insert Row*.



4. For the source system and all systems where you like to import sources: Open the F4 help in your new line and add the parameter *DI_SYSTEM.* Add `TRUE` as value.



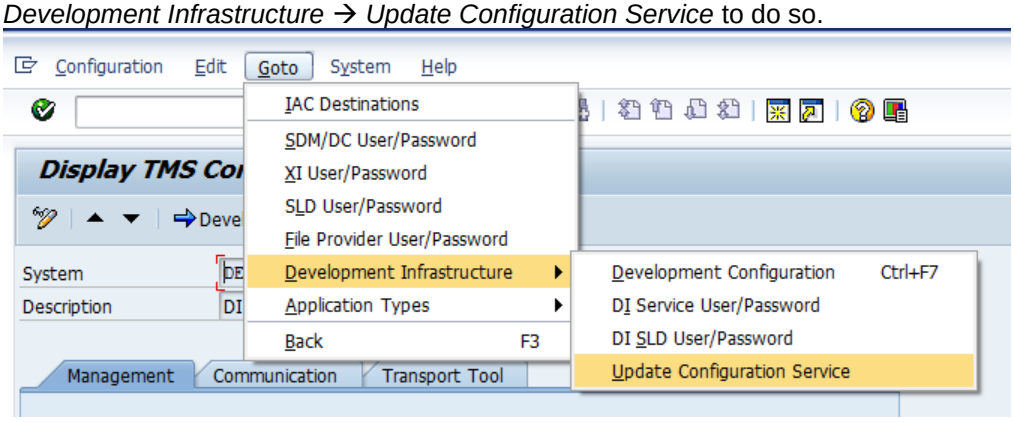
5. For the source system and all systems where you like to import sources: Repeat the two previous steps to add the parameter DI_SLD_URL. If this is the first DI-System that you create in your CTS System, add the URL of your SLD where the Development Configurations have to be stored and make sure that the parameter DI_SLD_URL is marked as Global. If you used this parameter before, it might be the case that it is already in the parameters' list of your system.

   > **CAUTION**
   >
   > The DI_SLD_URL parameter is a global parameter. It can only be defined once in your CTS system. The same SLD has to be used for all Development Configurations.

6. Configure the deploy web service as described in chapter Configuring RFC Destination and Logical Ports
7. For target systems where you would like to import sources: Repeat steps 3 and 4 to add the parameter DEPLOY_WEB_SERVICE. Use the name of the deploy web service that you created in the previous step (e.g. CTSDEPLOY_DI) as value.
   Hint: The destination, e.g. CTSDEPLOY_DI, needs to point to the server where CM Services and CTS Deploy WS are running.
8. Repeat the steps 3 and 4 to add the parameter DEPLOY_CONFIG_DI. Add the value `CTSCONFIG`.
9. For all target systems: Check if the parameter DEPLOY_URL already exists (if you extend an existing SAP Enterprise Portal landscape, this should be the case). If the parameter is not yet available, repeat step 3 and 4 to add the parameter DEPLOY_URL. Insert the deploy URL of your system as value following the schema `http://<host of target system>:<5<system number>18>` if your system is on a release below SAP NetWeaver 7.1. If you are using SAP NetWeaver 7.1 or above follow the schema `http://<host of target system>:<5<system number>04>`. Instead of using http you can also use P4 or SDM as protocol. When deployment should be done over secure P4 connection, https or P4S can be used but then also the port must be P4S port. Refer to http://help.sap.com/saphelp_nw73/helpdata/en/5d/b9fc64dd82414c90c72a8c26a9f17b/content.htm?frameset=/en/5d/b9fc64dd82414c90c72a8c26a9f17b/frameset.htm for details.
10. For all target systems: Go to the menu path *Goto → SDM/DC User/Password* and enter the password for the SDM or user and password if you are using a runtime system e.g. on SAP

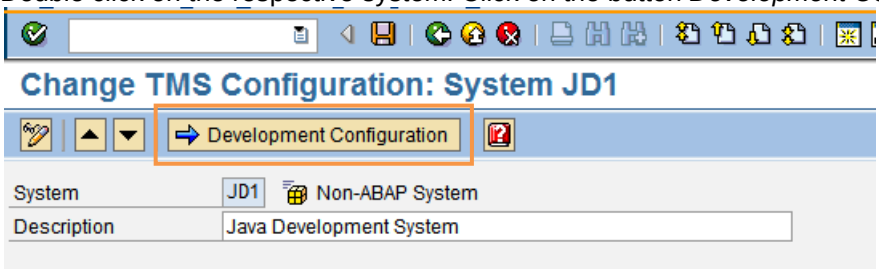
Composition Environment or SAP Process Integration or any NW AS JAVA with Release >= 7.10 where the Deploy Controller is used instead of SDM.

11. Only for the very first DI system that you create: Go to the menu path *Goto → Development Infrastructure → DI Service User/Password* and enter the user that you created when executing the appropriate steps in the guide (e.g. NWDI_CMSADM) and his password.
12. Only for the very first DI system that you create: Go to the menu path *Goto → Development Infrastructure → DI SLD User/Password* and enter the user that you created when executing the appropriate steps in the guide (e.g. NWDI_CMSADM) and his password.
13. Save your changes and distribute the configuration.
14. For all systems: update the configuration service after you did your changes. Choose *Goto → Development Infrastructure → Update Configuration Service* to do so.



(For all cases were this manual trigger is needed see SAP Note 1807994)

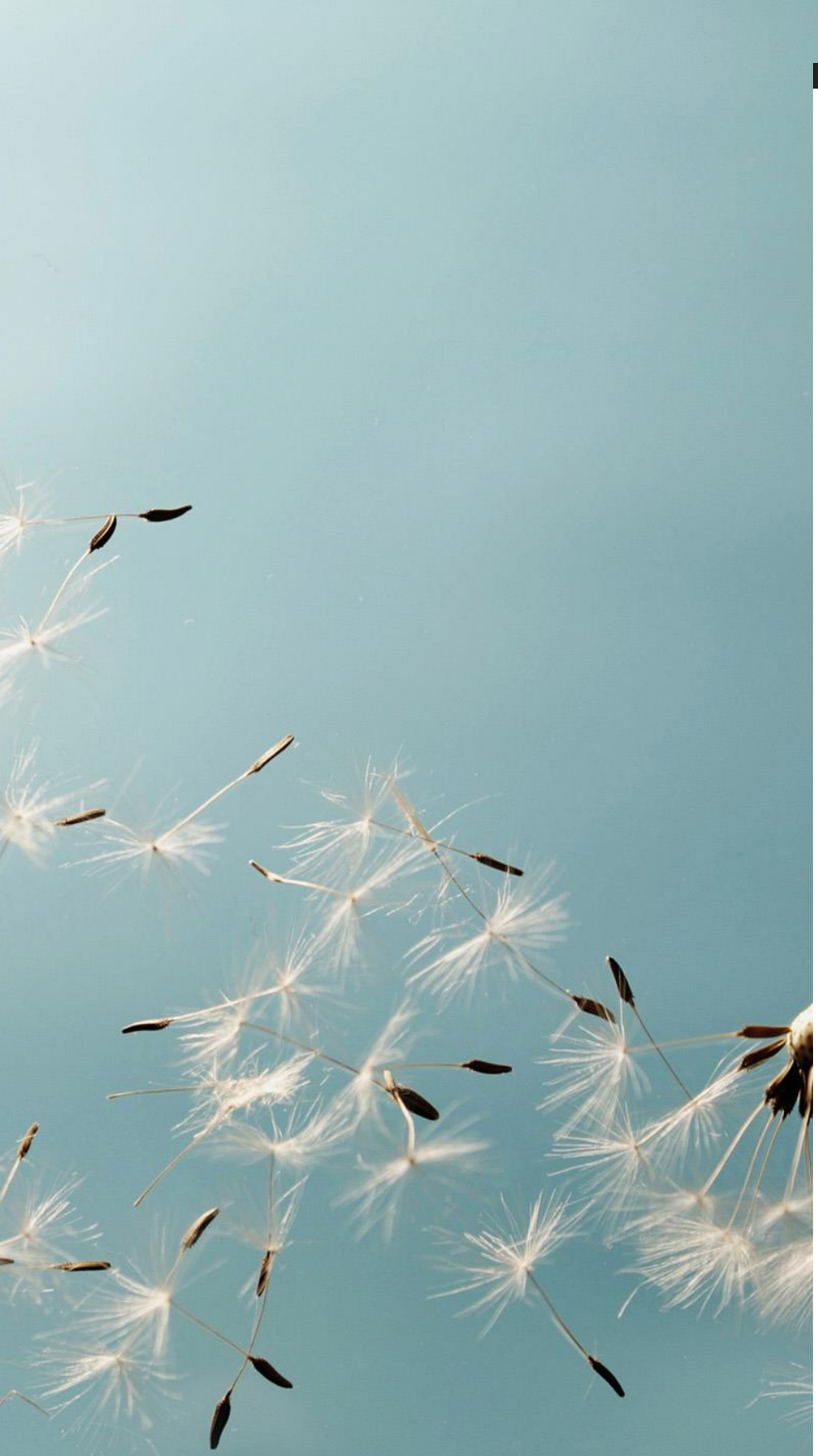
15. Adapt all the target systems of your java landscape
    - Exchange the value for DEPLOY_WEB_SERVICE for all systems where you would like to import requests containing activities/sources.
    - Add the parameter DI_SYSTEM (with the value TRUEe to every system where the activities/sources have to be imported.
16. For all systems where you need a Development Configuration: Go back to the System Overview. Double click on the respective system. Click on the button *Development Configuration*.



17. The service for maintaining your Development Configuration comes up. Maintain it as described in the guide in chapter Configuring the Development Configuration.
    If you need a development Configuration for all systems because you plan to transport sources, you can copy the development configuration that you created for your development system.
18. Repeat the previous step for all other systems where you added the parameter DI_SYSTEM=TRUE.
19. Use the Synchronize Service to provide the required SCAs to all systems where you created a development configuration.
20. Optional and only if you created development configurations for each system in your landscape: protect the workspaces of Test and Prod systems via ACLs if you would like to ensure that no-one does changes in Test or Prod directly. More information is available on the SAP Help Portal: http://help.sap.com/saphelp_nw73ehp1/helpdata/en/4c/5fbf43f8da4a3ce10000000a15822b/frameset.htm

10.10 Deleting a system with Development Configuration

Deleting the system in TMS is not enough. This will neither delete the development configuration in SLD nor the Workspaces or the Buildspace. Refer to SAP Note 1869748 for details.



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