SAP HANA Application Lifecycle Management

SAP HANA Product Management

May, 2014

Agenda

Overview

Model, Develop and Transport an Application

Command Line Tool

Install, Assemble and Configure an Application

Configuration

Prerequisites

Roles & Authorizations

Evolution of HALM

Summary

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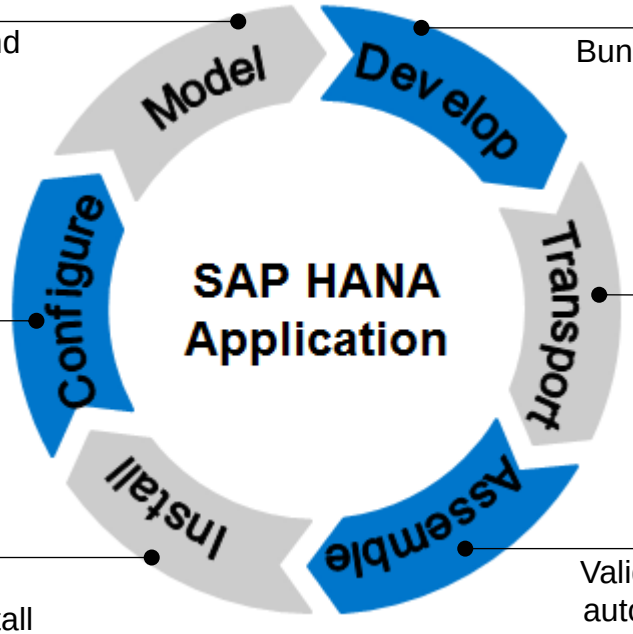
An Application's Lifecycle in SAP HANA

New / Labs Preview

Your Product Structure
Define product structure incl. delivery unit and package assignment
View and analyze dependencies for DUs

Your Application
Bundle object changes via automatic recording
Lock objects individually or for teams
Release changes when ready for transport



Your Application
Configuration
Enabl eration
ation

Labs Preview

Your Content
Products or delivery units
Based on changes or complete entities
Using CTS+ or SAP HANA native

Your Product
Download from SMP
Install /update /uninstall

Your Product
Validate and assemble your product
automatic re consistency
iently
Create patches and s
for your ap on

Labs Preview

SAP HANA Application Lifecycle Management

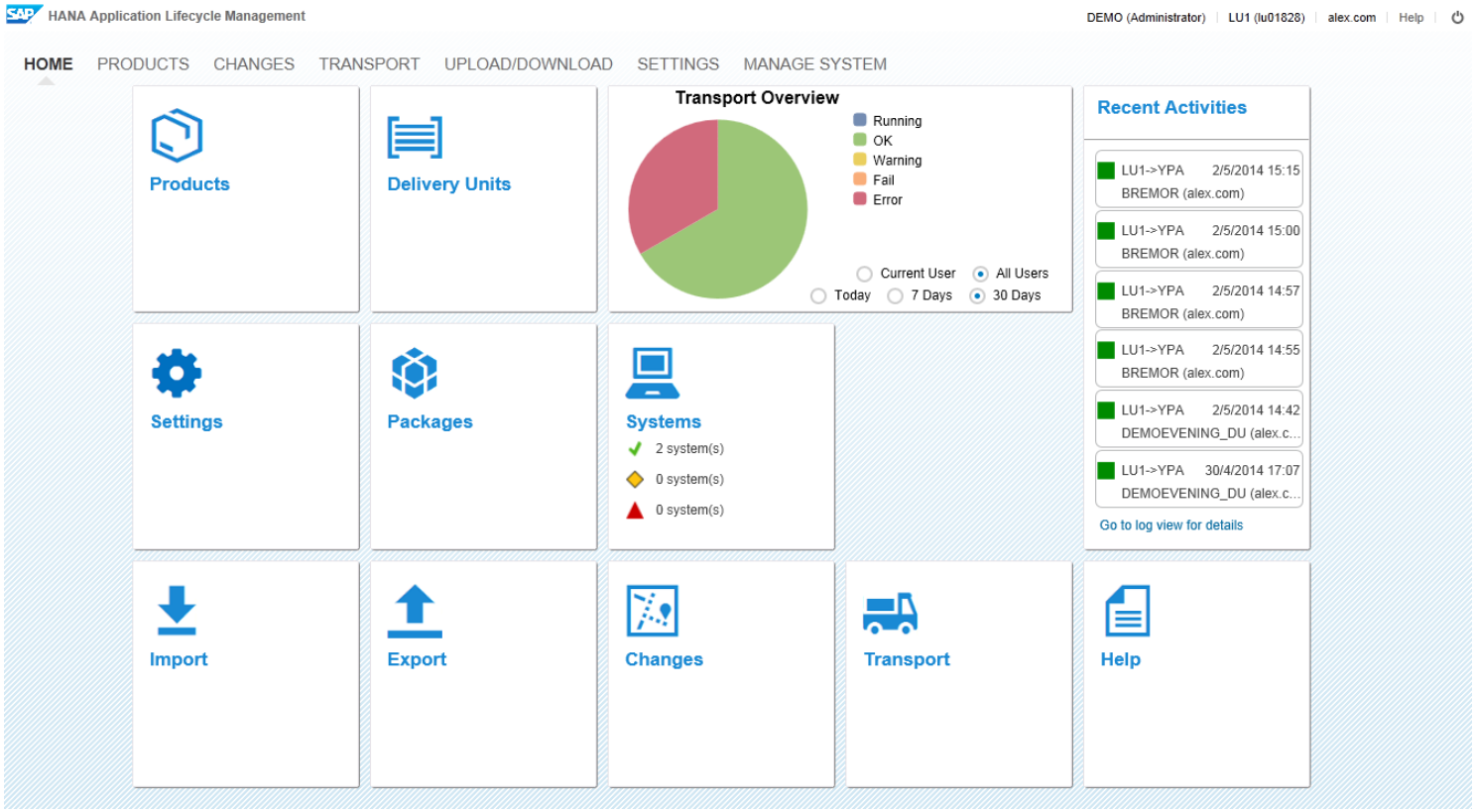
Is part of XS (SAP HANA Extended Application Services)

Is easy to use

Can be configured based on your preferences

Can be launched immediately after SAP HANA installation:
http://<*server*>:80<*instance*>/sap/hana/xs/lm

Requires role assignment (details later)



Content lifecycle management in SAP HANA

Managing “content” in SAP HANA

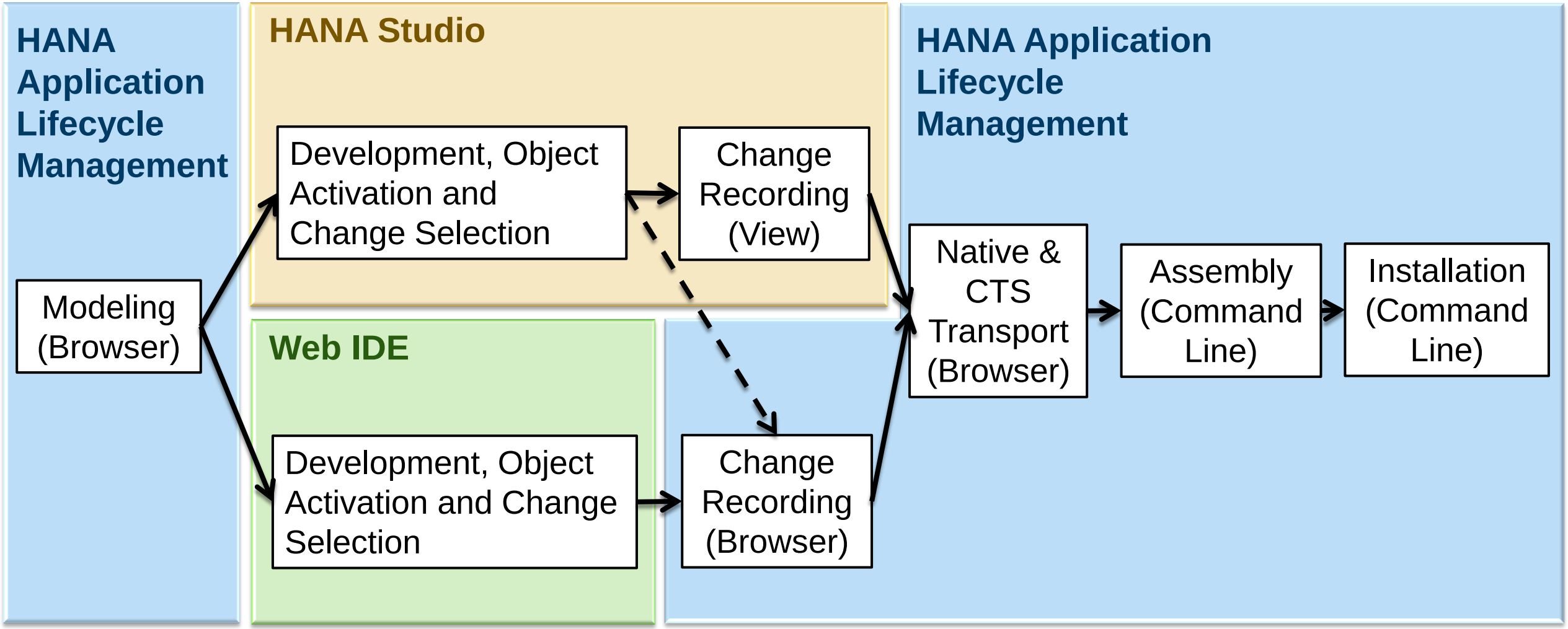
SAP HANA content defined:

- Not part of the core SAP HANA DB installation itself
- Is delivered by SAP as part of SAP HANA optimized solutions
- Is created in SAP HANA-based development projects (partner, customer)
- Sometimes called “objects” or “artifacts”

Content comprises all kinds of objects, for example:

- Schemas and table definitions defined as HANA Content
- Attribute views, analytic views and calculation views
- Procedures and privileges
- SQLScript, JavaScript and HTML
- Roles and permissions

Flow of Activities: User Interfaces



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Roles & Authorizations

Evolution of HALM

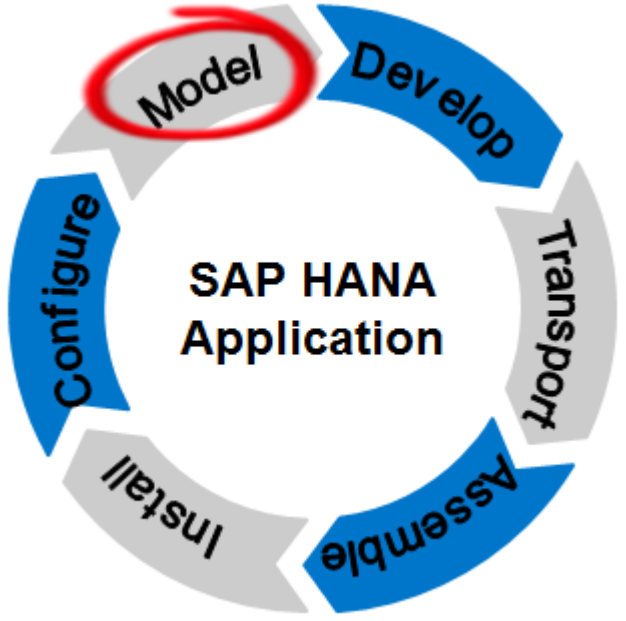
Summary

Model

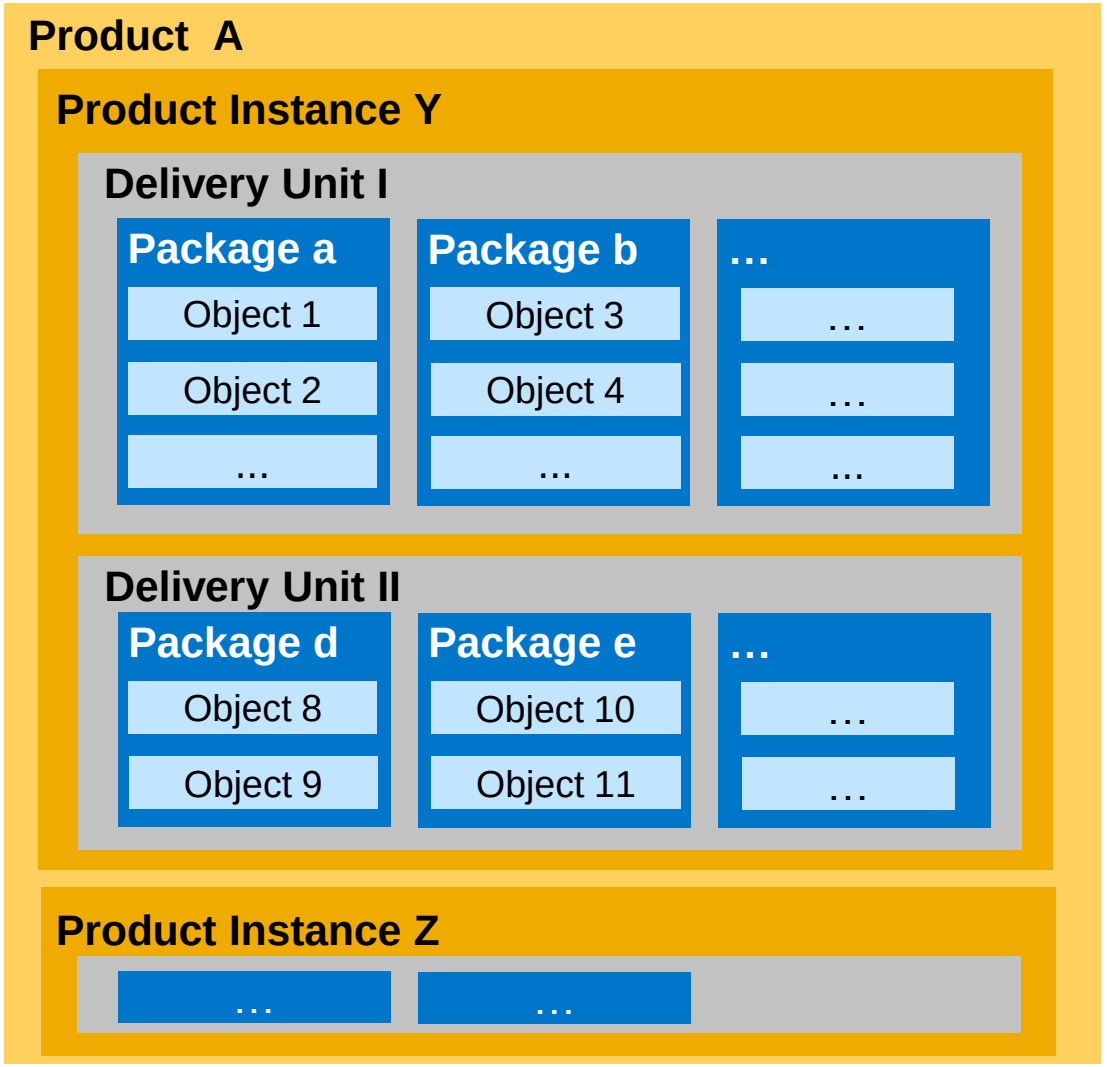
Product

Delivery Unit

Package



Introducing Delivery Units, Packages, and Development Artifacts



1 Product : **n** Product Instances : **m** Delivery Units

1 Delivery Unit : **n** Packages

1 Package : **n** Objects

---

1 Object : **1** Package

1 Package : **1** Delivery Unit

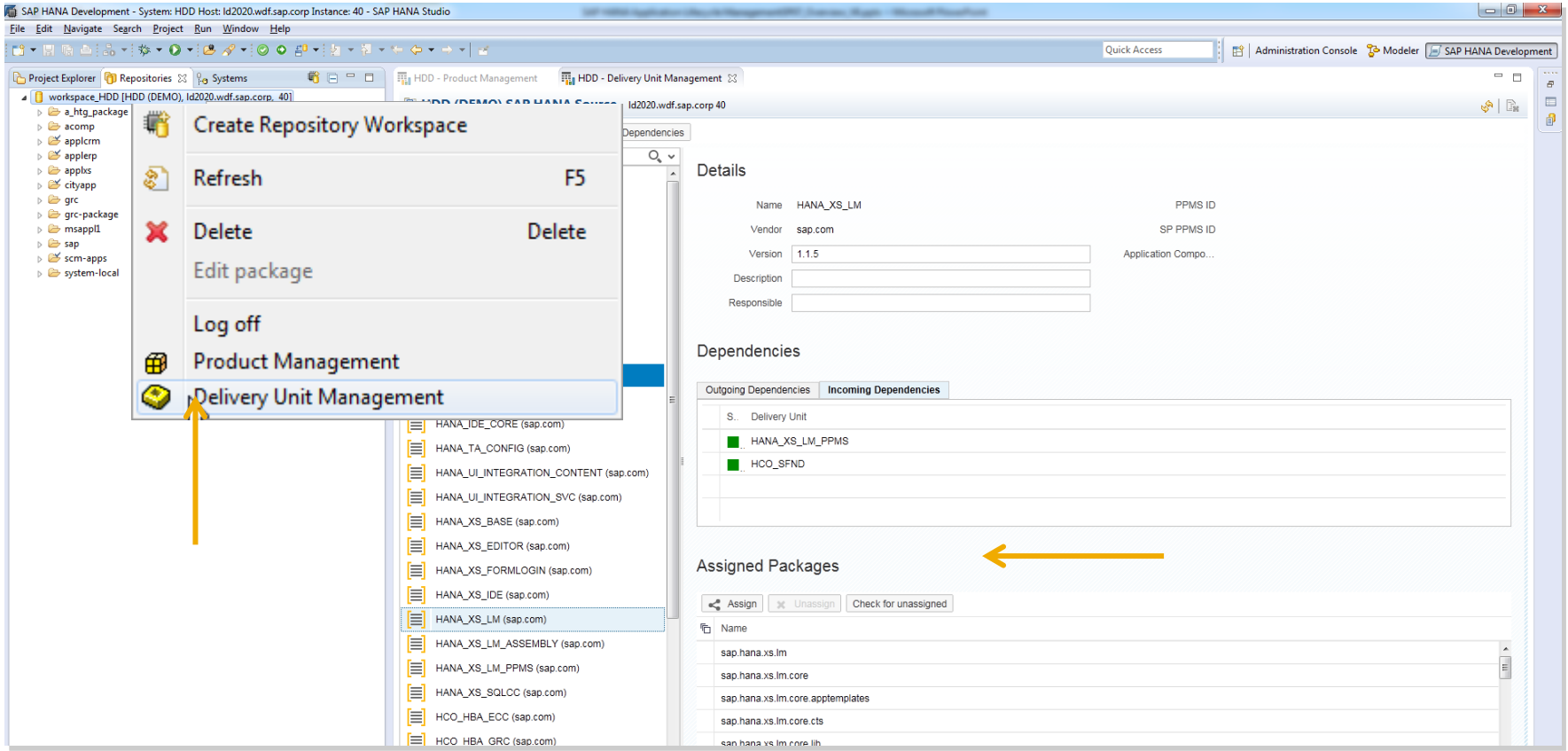
1 Delivery Unit : **1** Product Instance : **1** Product

Integration into SAP HANA Studio

- **Easy access** to product management capabilities in SAP HANA studio:

Development perspective, repositories view > right mouse click on the workspace >

choose *Product Management* or *Delivery Unit Management*



Model Product
Product View

A *product* corresponds to an application – which could be an SAP-delivered application, a partner application, or customer application developed on a project basis

The *Product View*

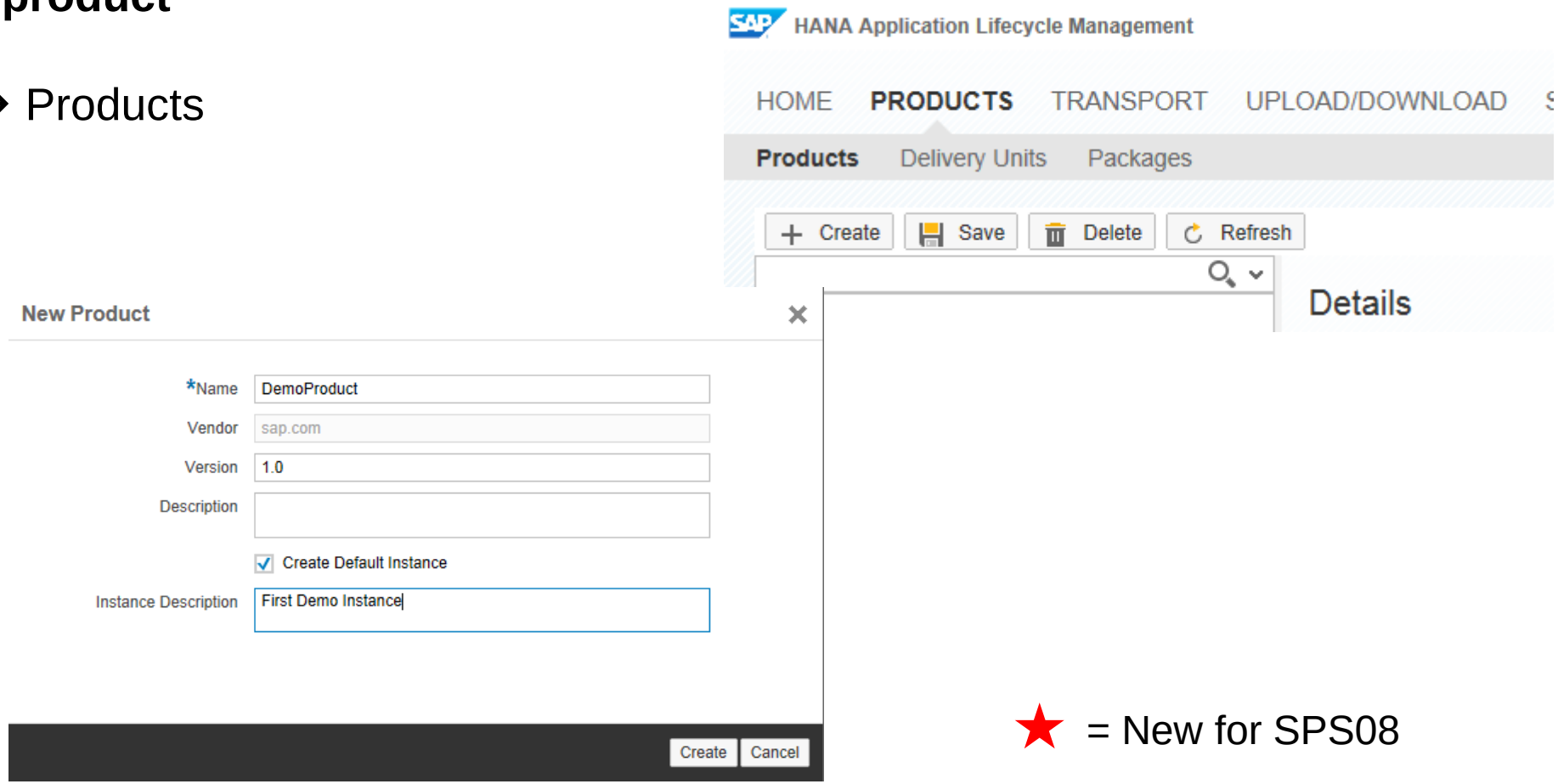
- **Shows installed *products* (i.e. applications) and their metadata in the system**
- **Ability to create, modify, and remove SAP HANA products (meta-data only)**
- **Is used to associate Delivery Units with a product instance and remove them**

Model Product
What & Where

New in SPS08

What to do to create a product

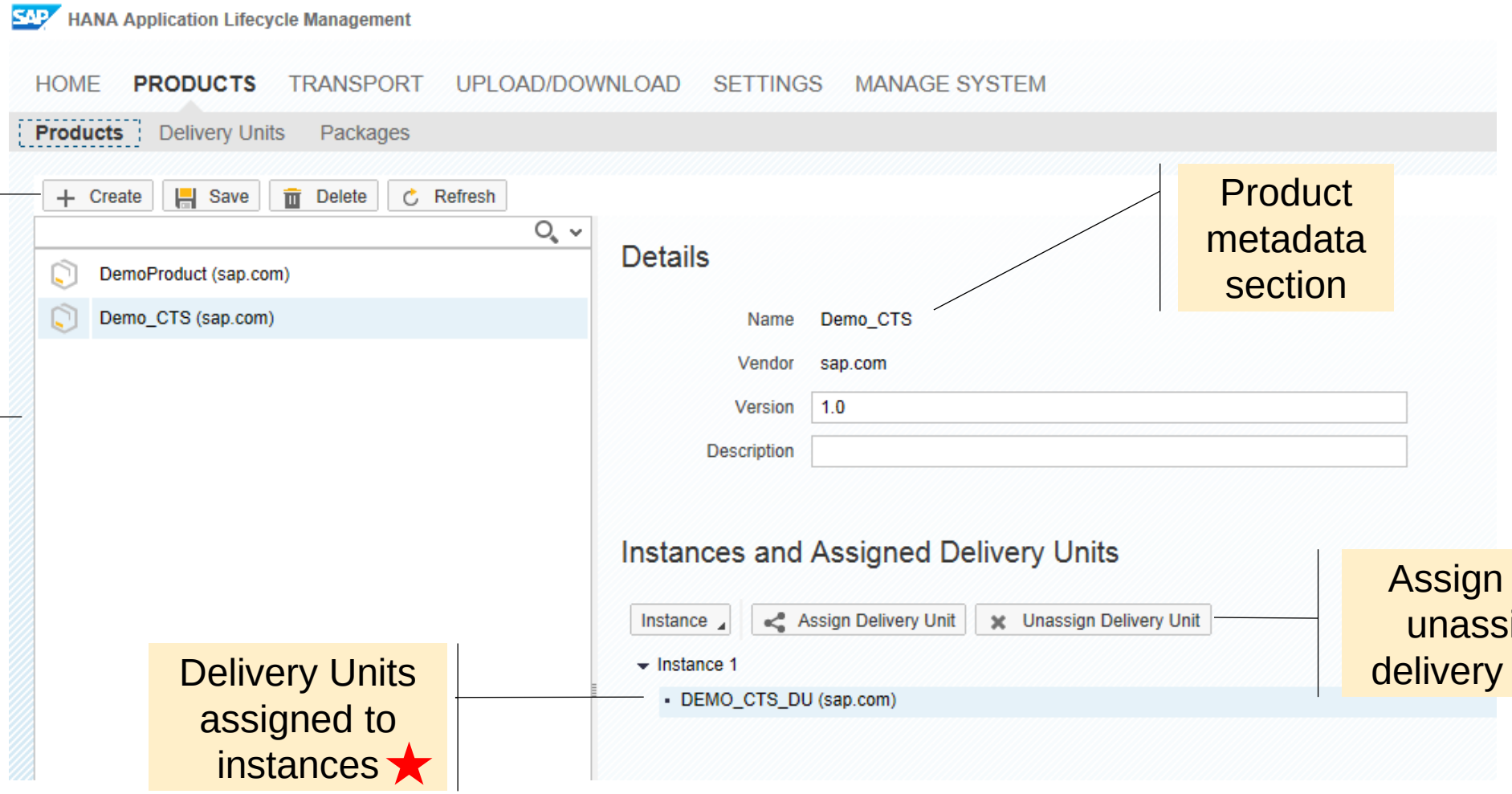
- Go to PRODUCTS → Products
- Define
  - Name
  - Version
  - Description
  - Instance ★



★ = New for SPS08

Model Product
Product View

New in SPS08

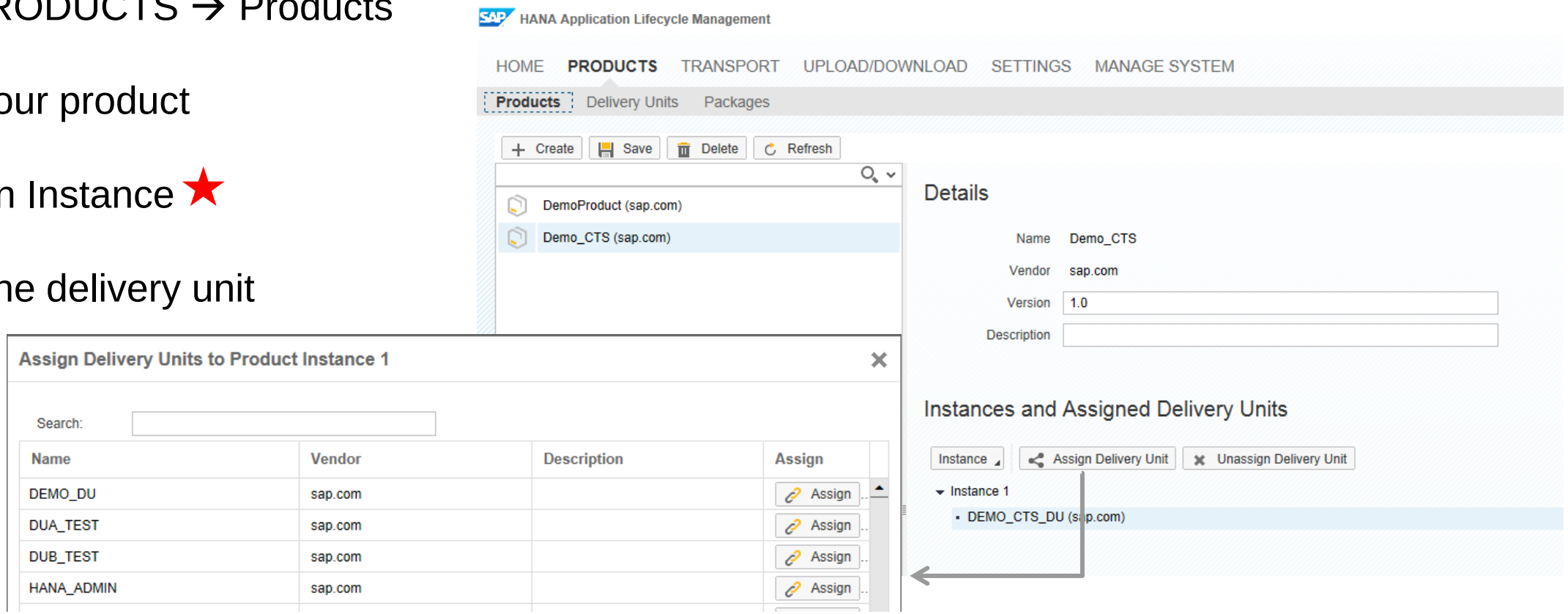


Model Product
Assign Delivery Unit

New in SPS08

What to do to assign a delivery unit to a product

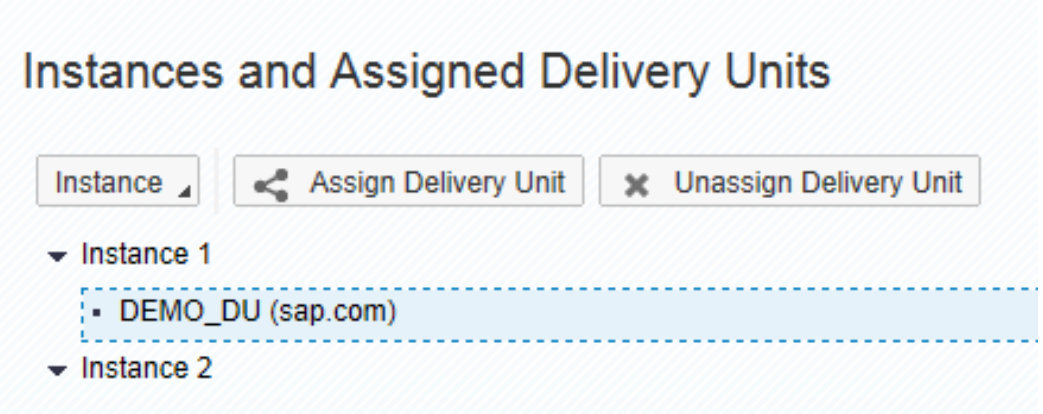
- Go to PRODUCTS → Products
- Select your product
- Select an Instance ★
- Assign the delivery unit



Model Product
Change Delivery Units assigned

What to do to change a DU assignment

- Unassign
  - Go to the Product Instance the Delivery Unit is currently assigned
  - Choose the DU and unassign it
- Assign
  - Go to the Product Instance to which you would like to assign the DU
  - Click assign to choose the DU



Model Delivery Unit
Delivery Unit View

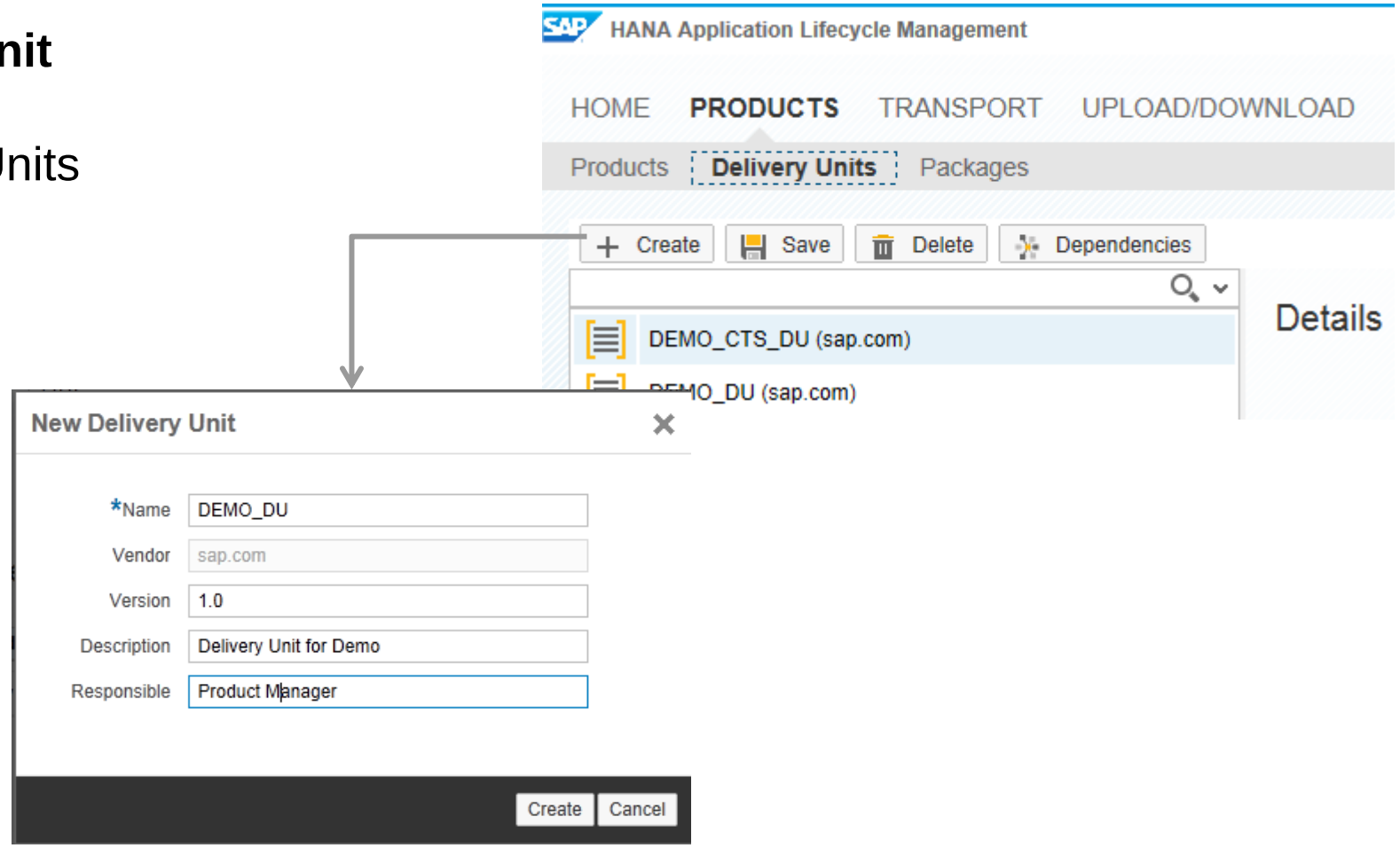
The Delivery Unit view:

- Shows installed Delivery Units and their metadata
- Ability to create, modify, and remove Delivery Units (metadata only)
- Un-deploy (remove) delivery units
- Assign packages to Delivery Units and unassign them
- View Delivery Unit dependencies and object references causing dependencies

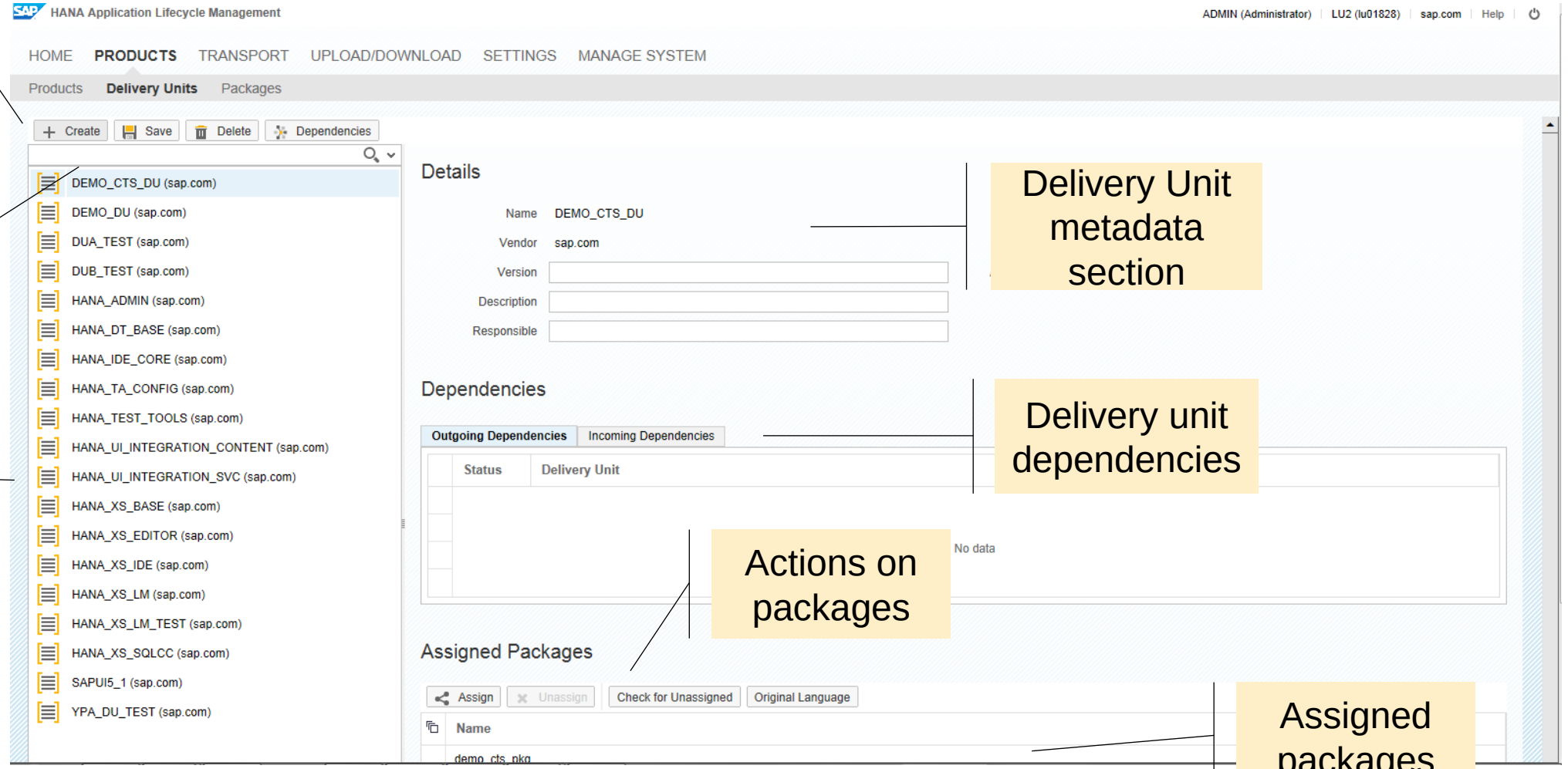
Model Delivery Unit
What and Where

What to do to create a Delivery Unit

- Go to PRODUCTS → Delivery Units
- Define
  - Name
  - Version
  - Description
  - Responsible



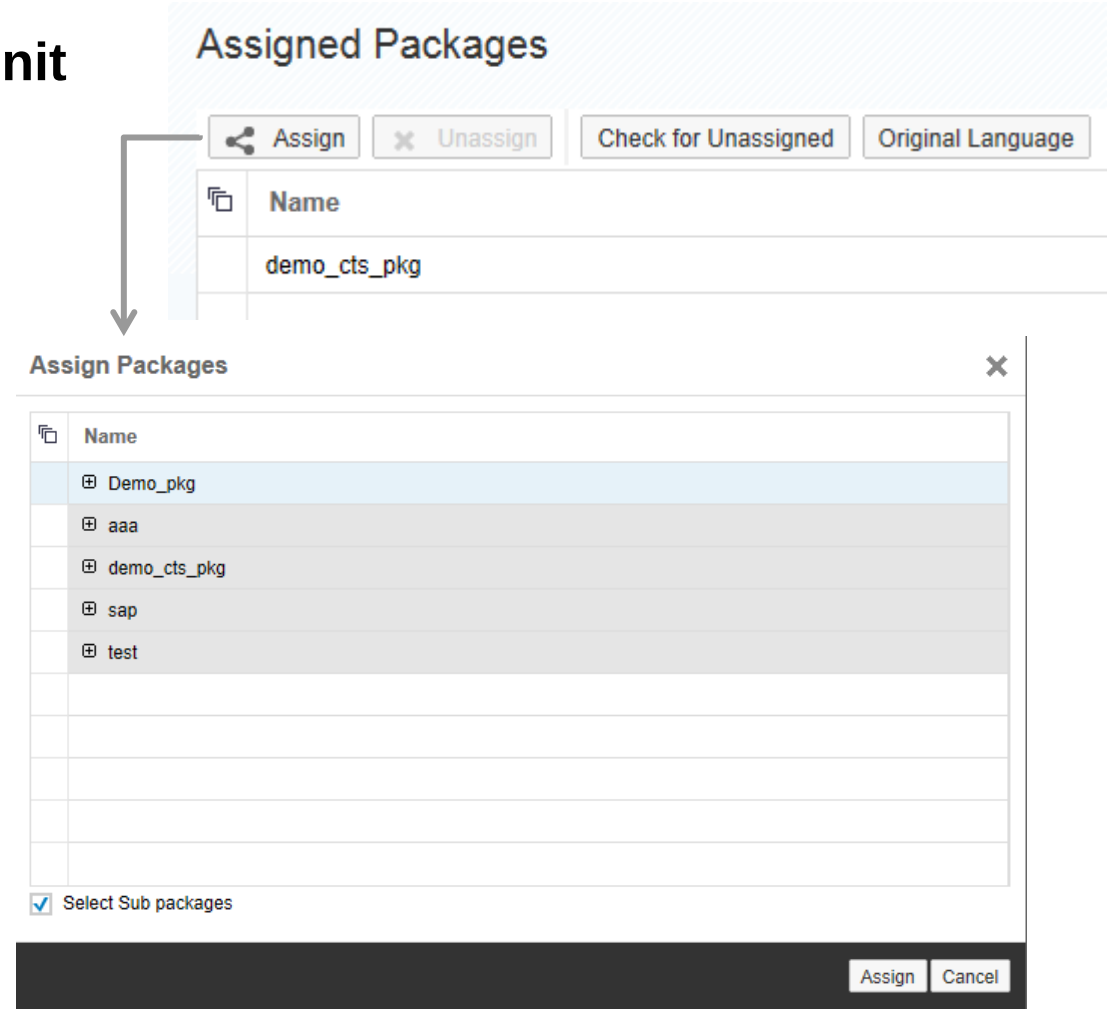
Model Delivery Unit
Delivery Units View



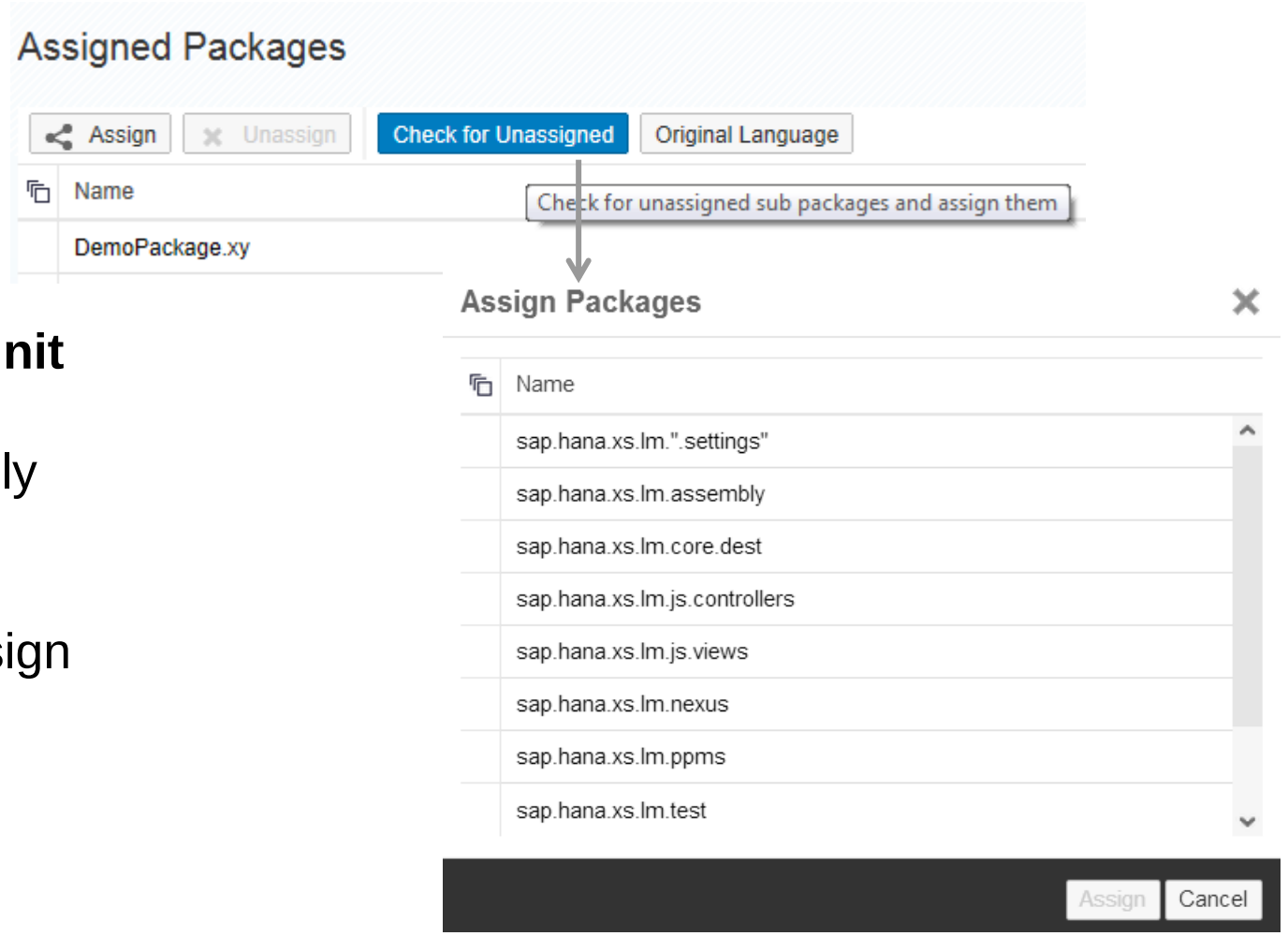
Model Delivery Unit
Assign Package to Delivery Unit

What to do to assign a package to a delivery unit

- Go to PRODUCTS → Delivery Units
- Choose your delivery unit (if not pre-selected)
- Assign the package(s) that you created (include sub-packages if needed)
- You can check for unassigned packages



Model Delivery Unit
Check for “forgotten” packages



Packages not assigned to a Delivery Unit

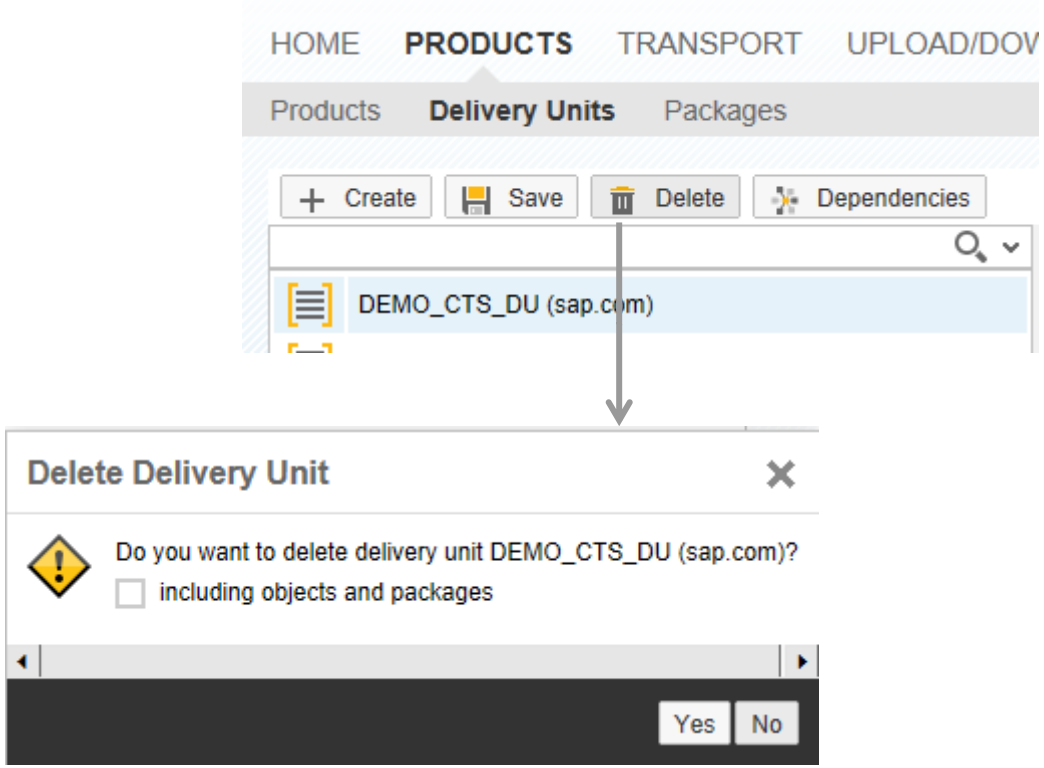
- Lead to issues during product assembly and installation
- Select *Check for Unassigned,* and assign them accordingly

Model Delivery Unit
Uninstalling a Delivery Unit

Delete or uninstall a delivery unit

Deleting means that only the DU metadata will be deleted but all packages and tables remain intact.

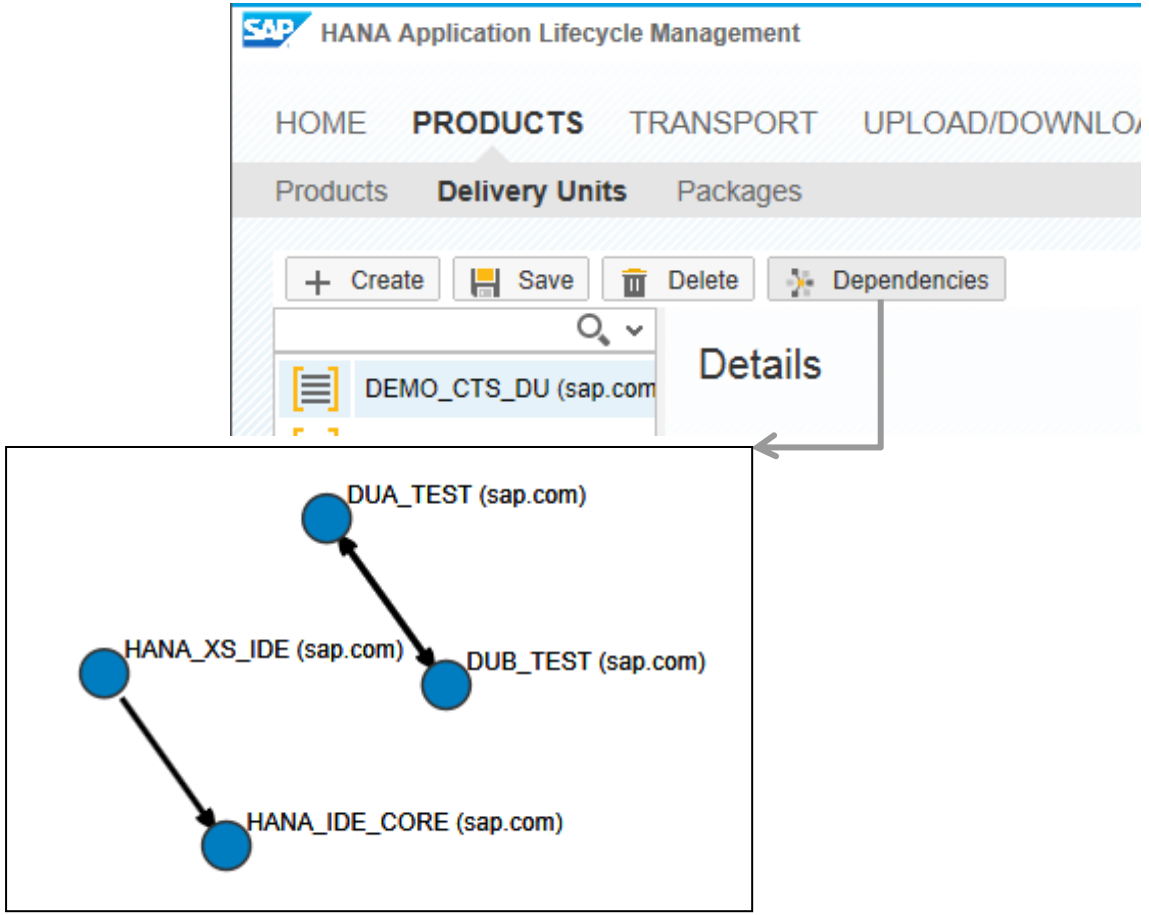
Uninstalling means that all DU metadata and all objects, packages, and possible database tables will be removed.



Dependency Viewer

Graphical tool to display dependencies between delivery units:

- Graphical depiction is interactive – can be rotated and shifted around to provide different perspectives
- Useful for determining which delivery units should be transported together
- Useful for detecting unwanted dependencies, in order to clean them up



Model Delivery Unit
Dependency Viewer – Object References

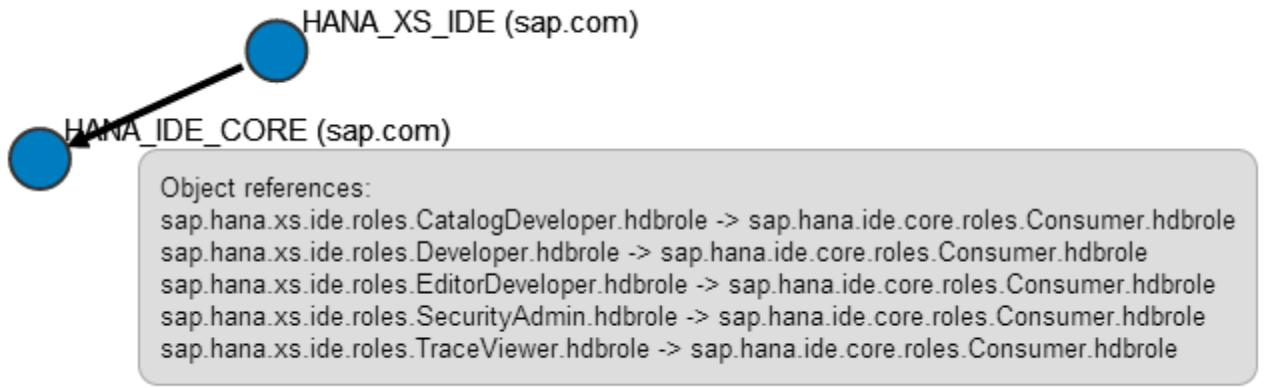
Move the mouse over a connector to view object references causing the dependency between delivery units.

Dependencies are caused by object references between objects

Example:

- Deliver Unit 1 contains tables
- Delivery Unit 2 contains views referencing the tables of Delivery Unit 1

➢ Delivery Unit 2 depends on Delivery Unit 1



Model Package: Package View

The Package view

- Shows installed packages, their hierarchy and their metadata
- Allows to create, modify, and delete packages

Package concept

Package

- Every SAP HANA repository object is assigned to a package
- Groups objects that logically “belong together”
- Provides a namespace
  - Each object is uniquely identified by combination of package name, object name, and object type

Package Hierarchy

- Establishes a parent-child relationship between packages
- Used to organize objects

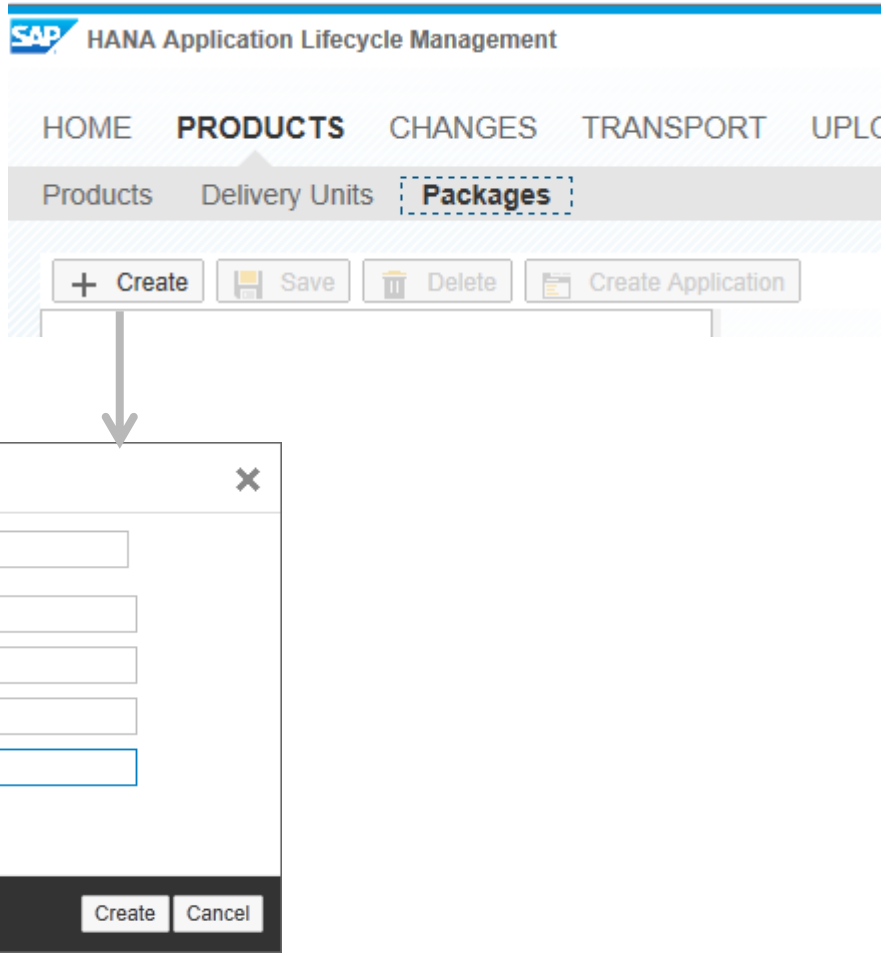
Package Privileges

- Define access to objects in package; assign to specific user or role
- Authorizations assigned to a package are implicitly assigned to sub-packages in the hierarchy

Model Package
What & Where

What to do to create a Package

- Go to PRODUCTS → Packages
- Define
  - Name
  - Description
  - Responsible
  - Original Language

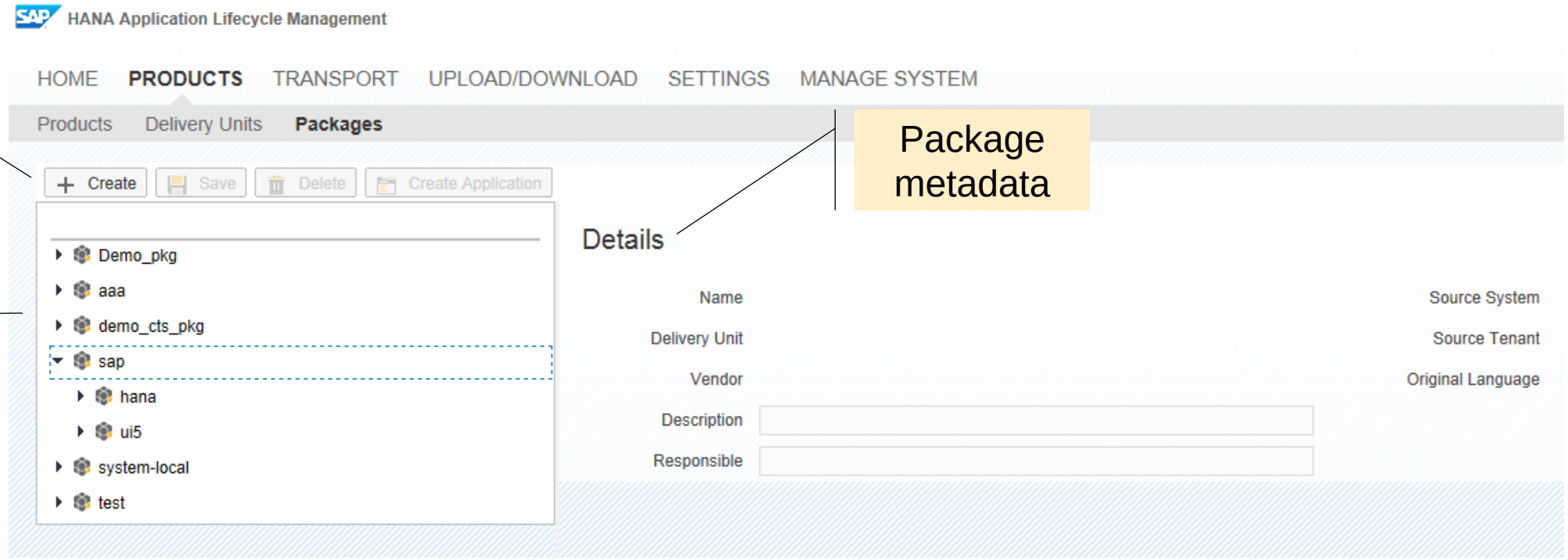


Model Package
Package View

Actions for packages

Hierarchical package view

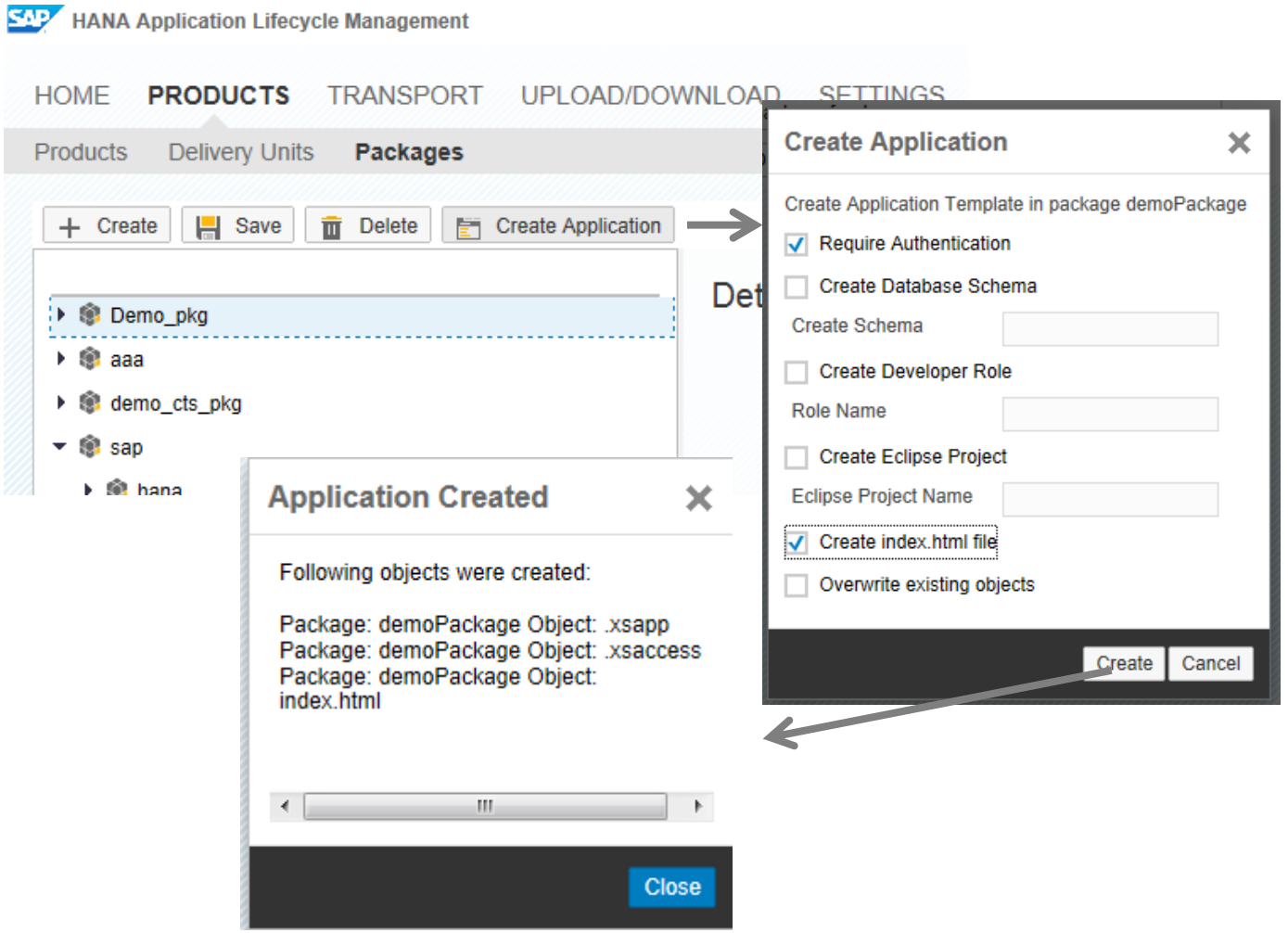
Package metadata



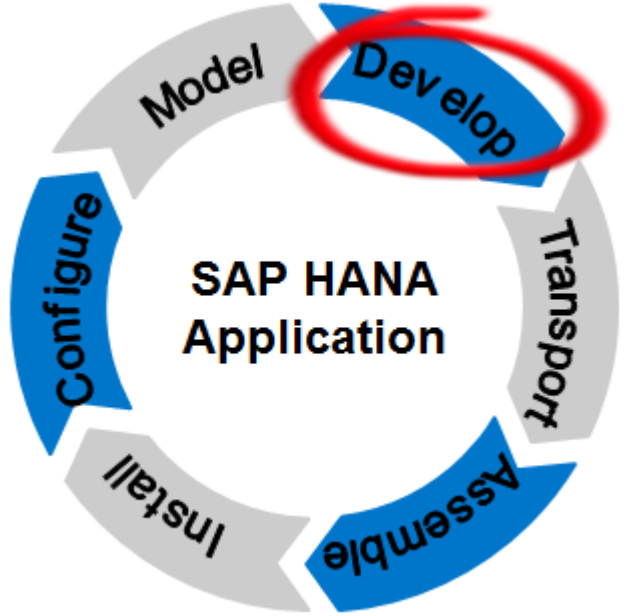
Model Package
Create Application

Create an application

- Choose the options that you need
  - Require authentication
  - create a schema
  - developer role
  - create project
  - create index.html
  - overwrite existing objects
- Objects are created automatically, providing a fast start to the application development process.



Develop


Model
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Assemble
Install
Configure
SAP HANA
Application

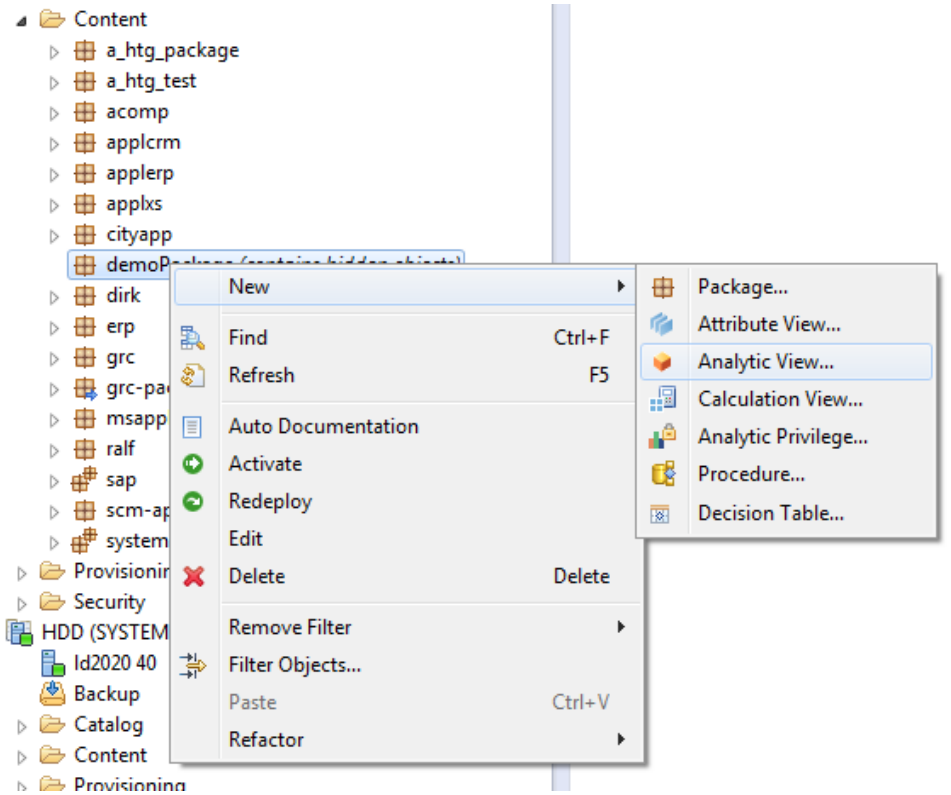
Creating Content
What & Where

Create Content (i.e. development artifacts) in SAP HANA Developer Studio

Example from Modelling view:

- Refresh the *Content* folder in your development system
- Choose your package
- Create your content

Alternatively, you can create SAP HANA Content in the Web IDE



Change Recording in SAP HANA

Change recording …is the infrastructure to **record changes** during development

Change recording provides:

- Automatic **recording** and **grouping** of object changes
- **Decoupling** of activation and transport
- **Predecessor** calculation of changes

Change Recording…can be enabled as global system setting in your development environment

Change Recording
Concept

Without change recording:

- Delivery Unit transport contains *all* active objects in the packages of that particular DU
- If an object is ready to be transported, its Delivery Unit must be released
  - Some objects in the DU may not be ready for transport yet though, but they automatically get transported anyway

With change recording:

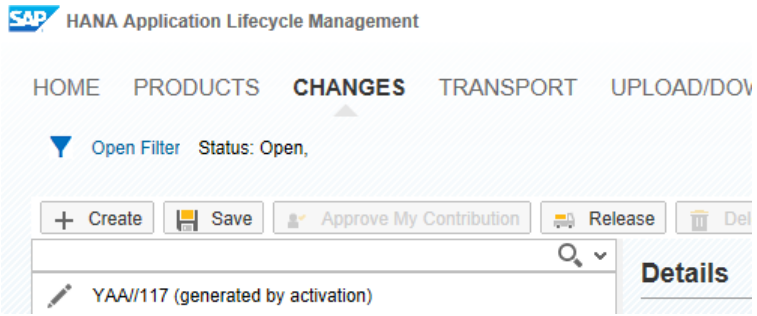
- **Automatic recording of object changes** to a change list when an object is activated
- **Team Development:** Allows a developer (or team) to work on a development artifact and release the "change" only when the artifact is ready to promote to the test system. For developers not contributing to this change the objects are locked
- **Release in two steps:** contributors have to approve first before a change can be released
- **Transport:** Delivery Unit transport contains only objects where their change has been released

Change Recording
What & Where

New in SPS08

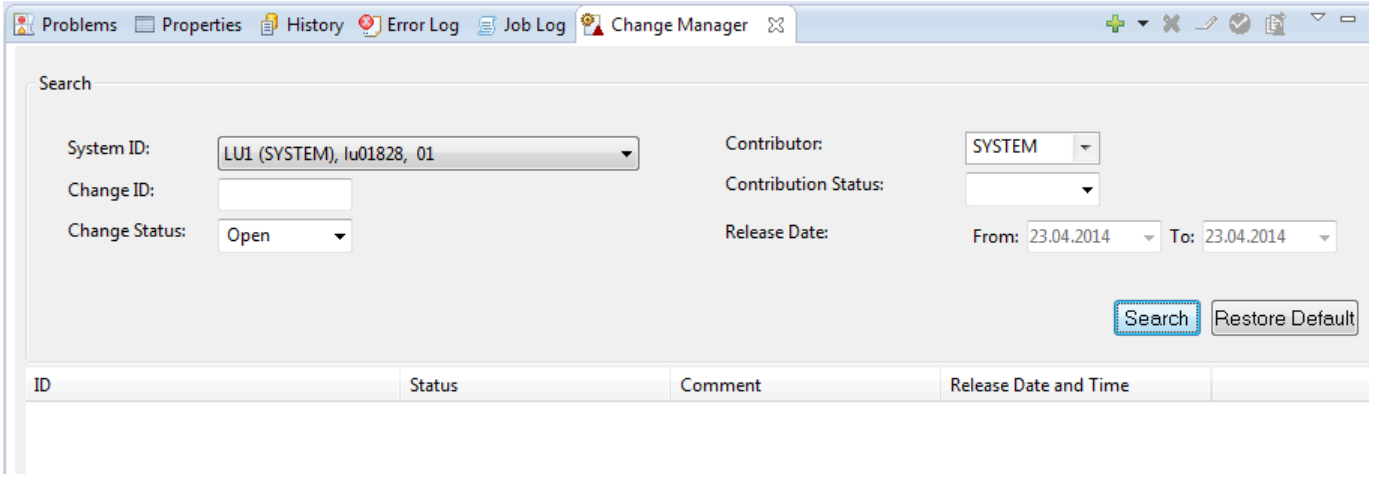
Changes in HALM ★

- Select CHANGES
- Filter results if needed (default filter is applied)
- Work with the changes



Changes in SAP HANA Developer Studio

- Open Change Manager view

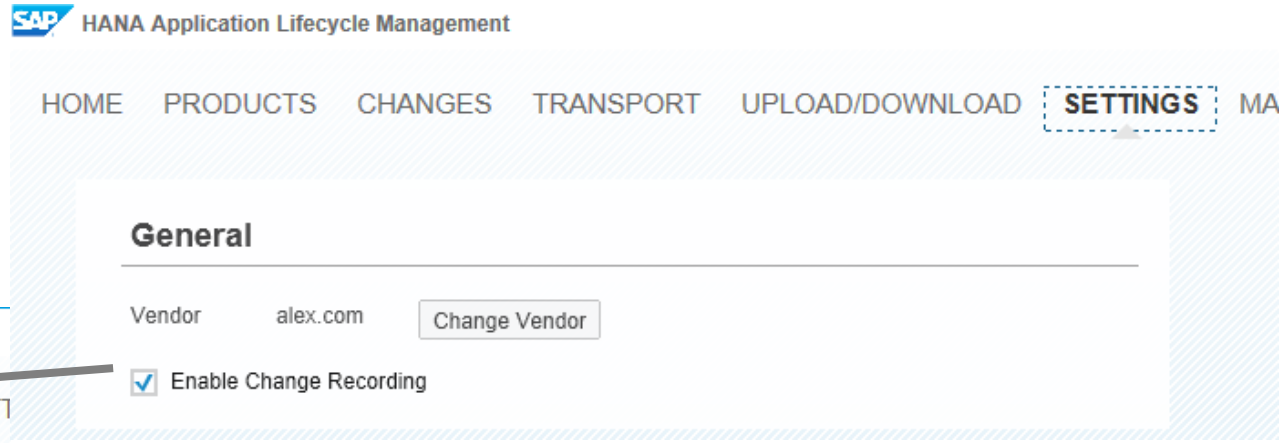


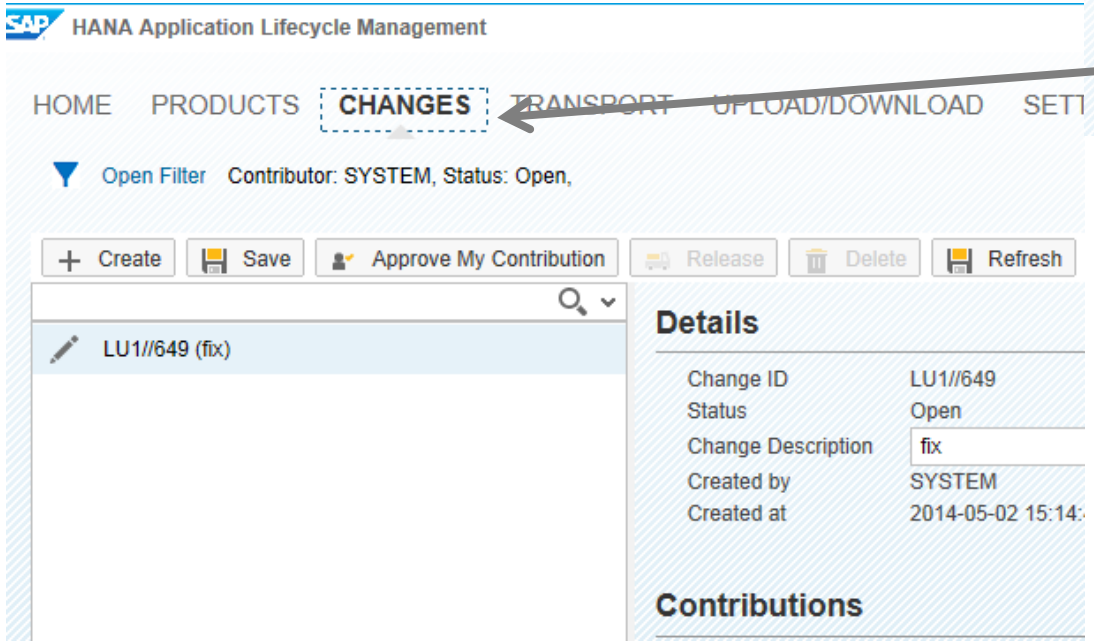
Change Recording
Enable Change Recording

New in SPS08

Setting the option *Enable Change Recording*

adds the menu entry *CHANGES* ★

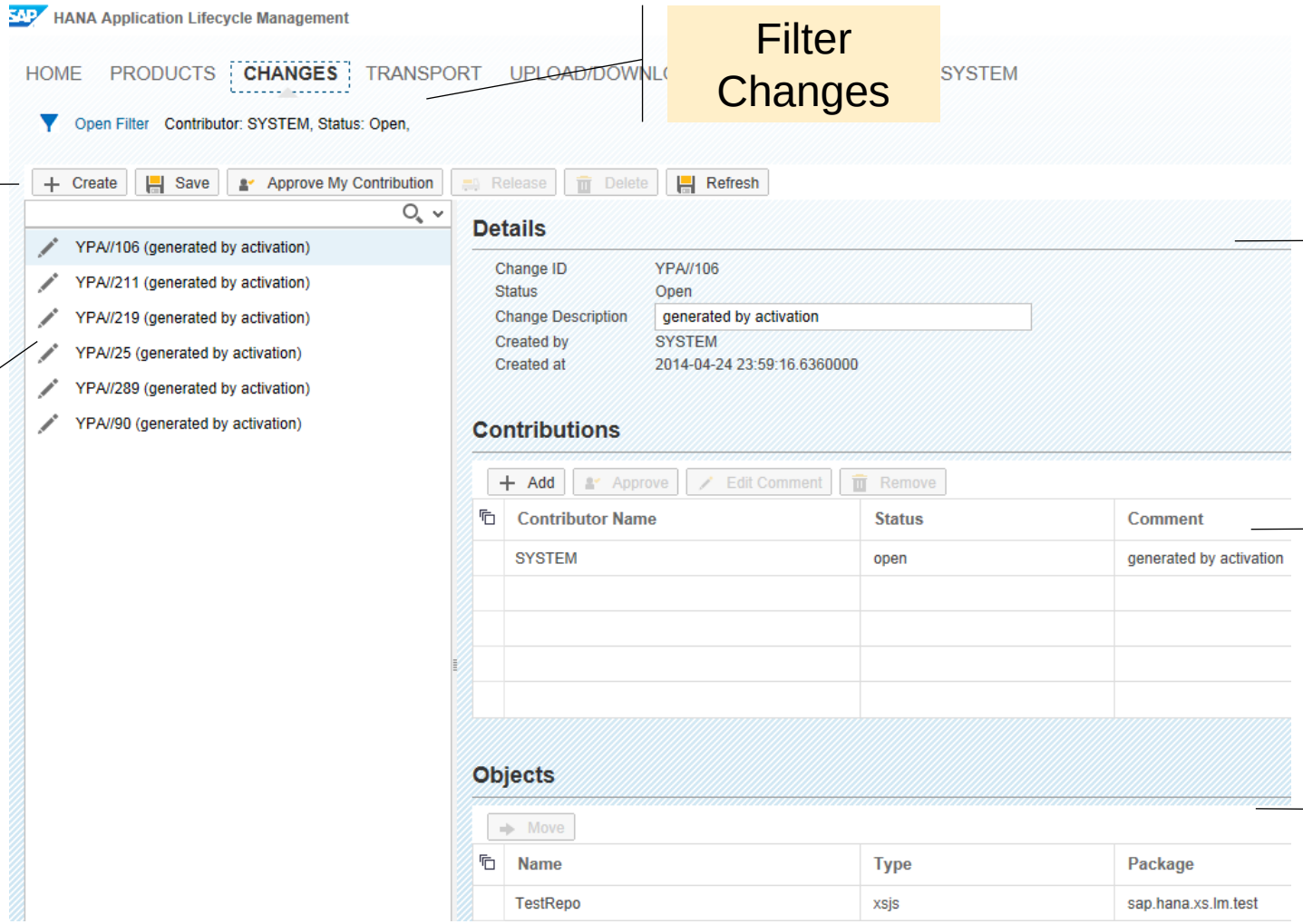




Released Changes for all active objects will be created when Change Recording is first enabled

Change Recording
Changes in HALM

New in SPS08



Filter Changes

Actions for changes

List of Changes

Details for Change

List of Contributors

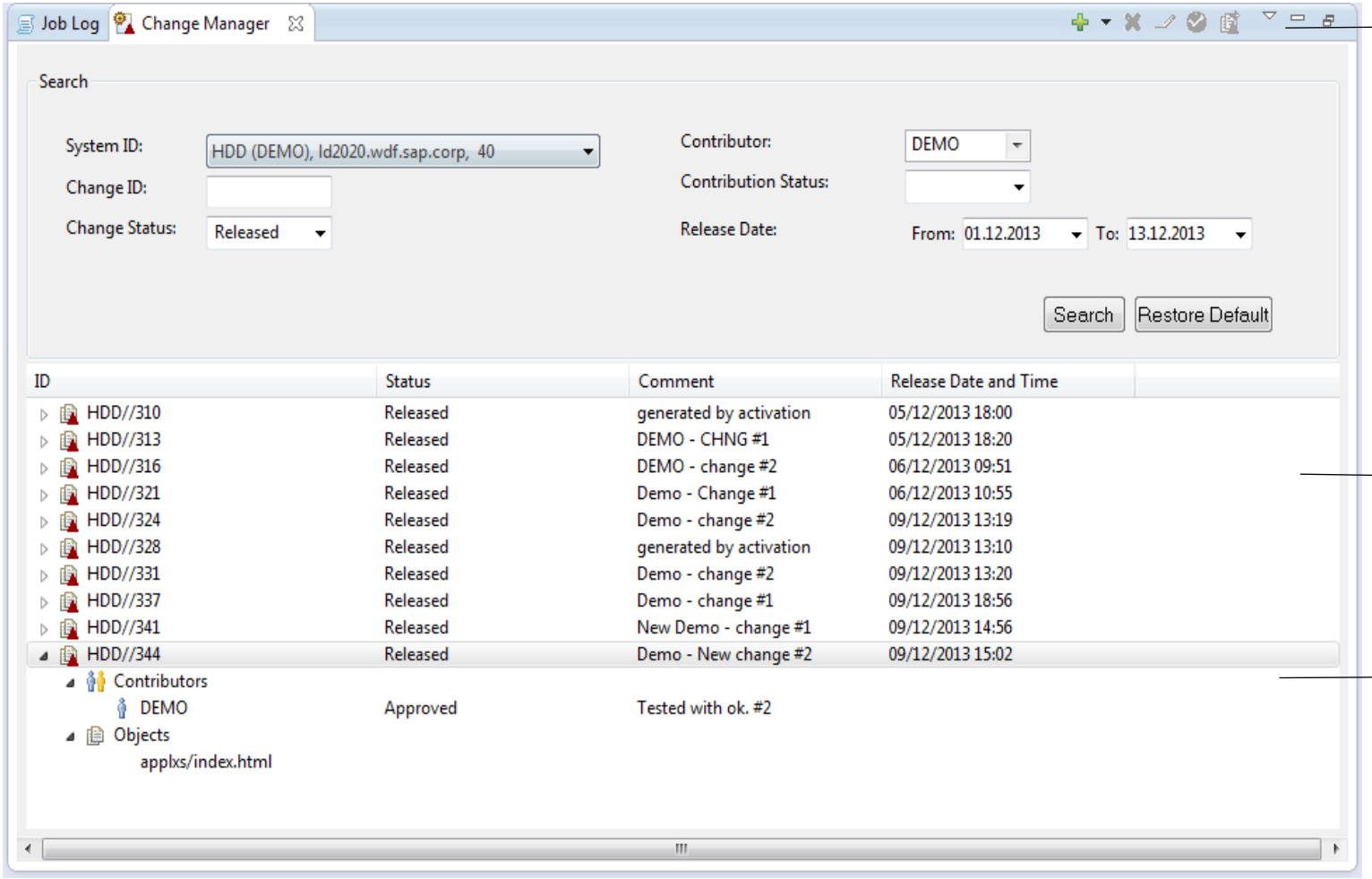
Changed objects

Change Recording

- **Automatic recording of object changes** to a change list when doing the object activation
- **Team Development:** Allows a developer (or team) to work on a development artifact and release the “change” only when the artifact is ready to promote to the test system. For developers not contributing to this change the objects are locked.
- **Release in two steps:** contributors have to approve first before a change can be released.

Change Recording

Change Manager View in SAP HANA Studio



Actions for Changes

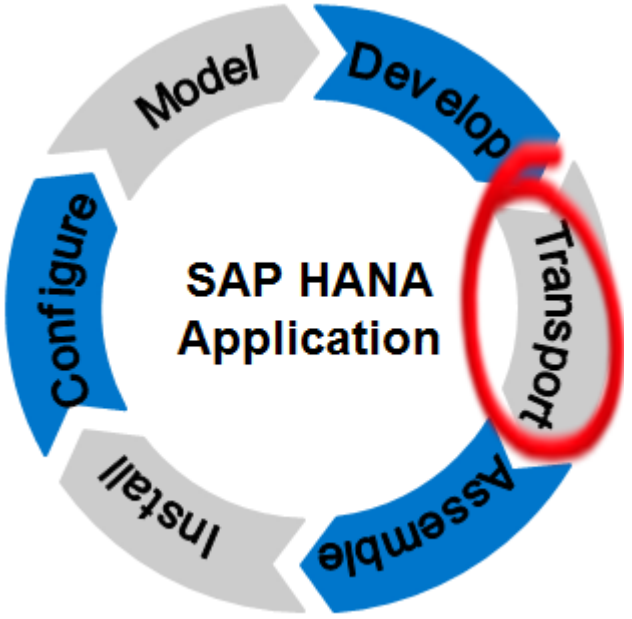
Filter for changes

Changes that match your selection

List of Contributers

Changed Objects

Transport


Model
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Transport
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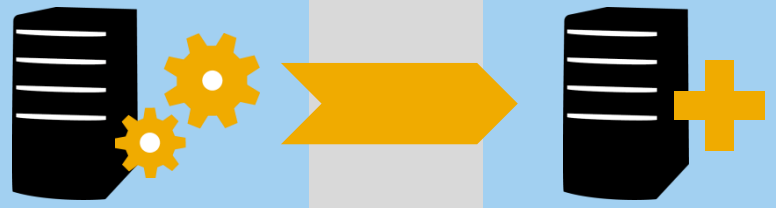
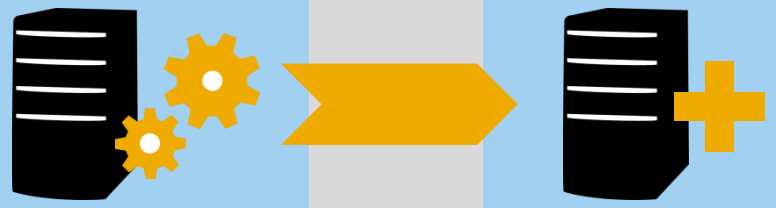
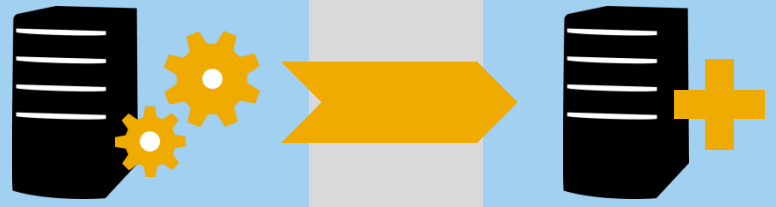
SAP HANA
Application

Transport scenarios for SAP HANA content

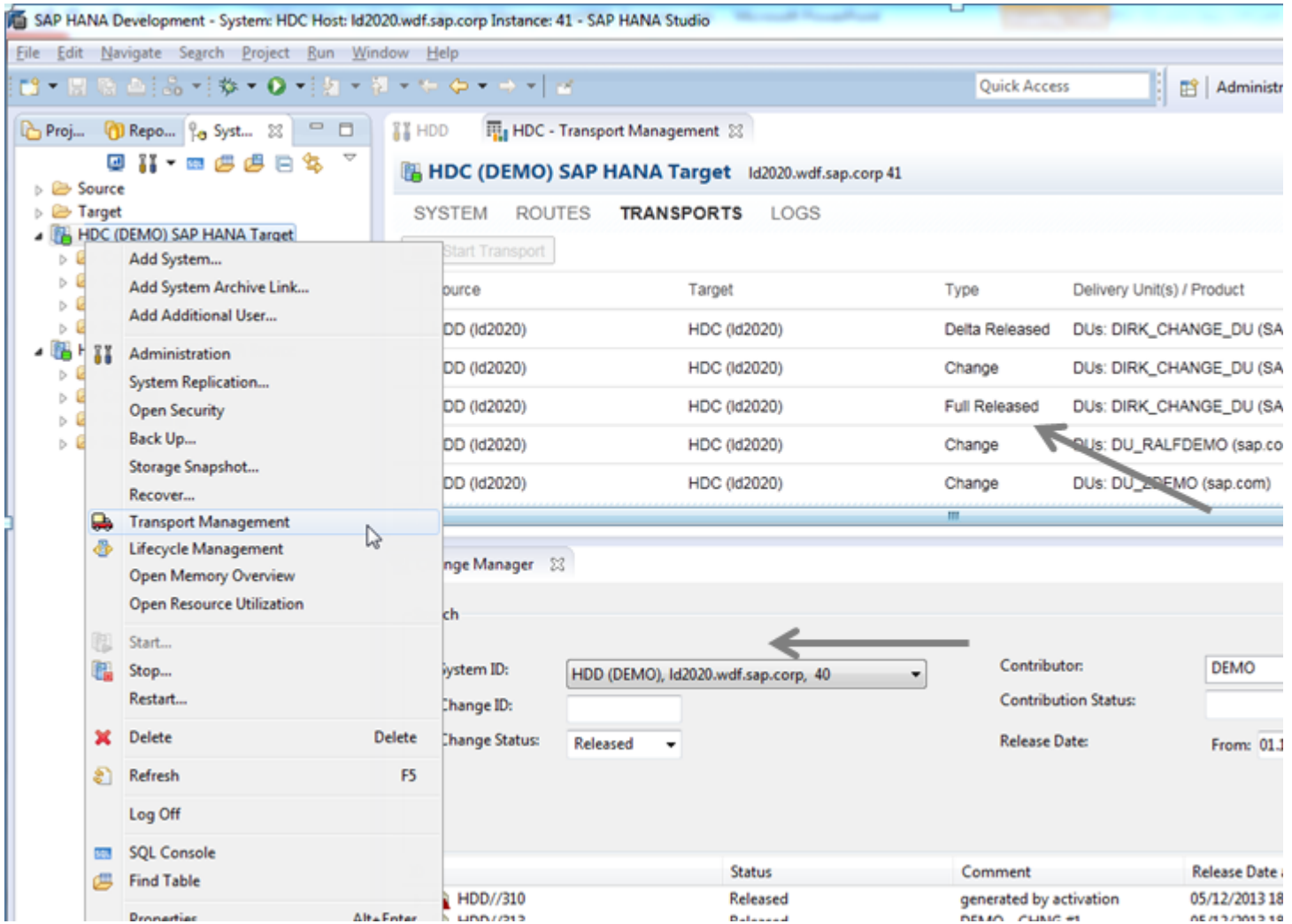
Use case	SAP HANA Source	SAP HANA Target	Transport Management
Native SAP HANA content			**SAP HANA Application Lifecycle Management** • SAP HANA stand-alone transport management • No need for ABAP-footprint • Lightweight and easy-to-use transport tool
Native SAP HANA content or as part of a solution (BI, Mobile, …)			**Enhanced CTS (CTS+)** • Transported as any other non-ABAP content • Integrated in existing CTS transport landscape • Integrated in SAP process tools (ChaRM, QGM)
SAP HANA content exclusively used by ABAP (ABAP for SAP HANA)			**HANA Transport Container** • Transported with standard ABAP transports • Integrated in existing CTS transport landscape • Integrated in SAP process tools (ChaRM, QGM)

Transports: Integration into SAP HANA Studio

Easy access to transport management capabilities in SAP HANA studio:

Development perspective, systems view > right mouse click on the system

select *Transport Management* from the menu



Native SAP HANA Content
What and Where (1/2)

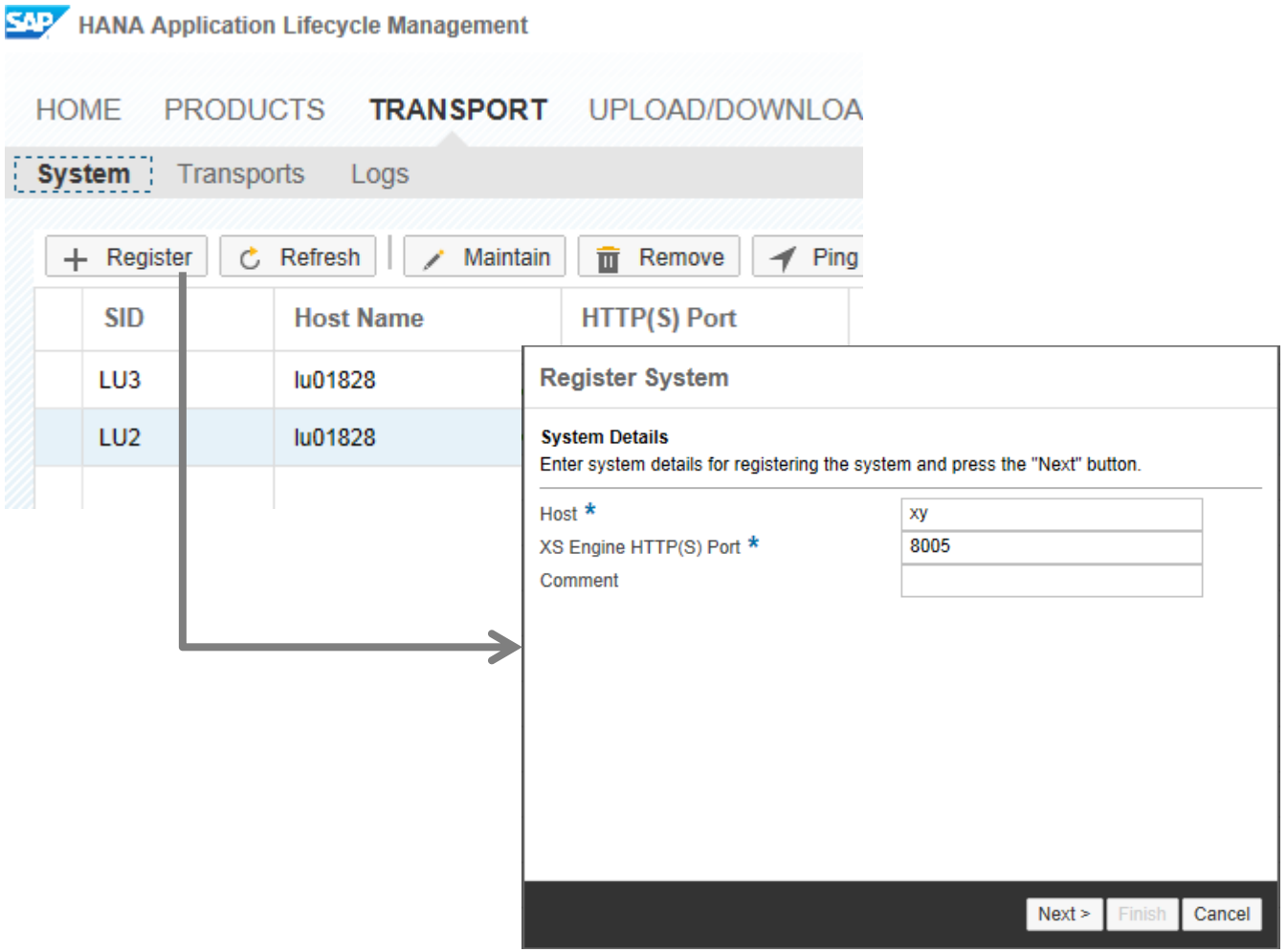
Changed in SPS08

What to do to make a system known

- Log on to the target system
- Go to TRANSPORT → System
- Check whether the source system exists

or

- Register the source system



Native SAP HANA Content
What and Where (2/2)

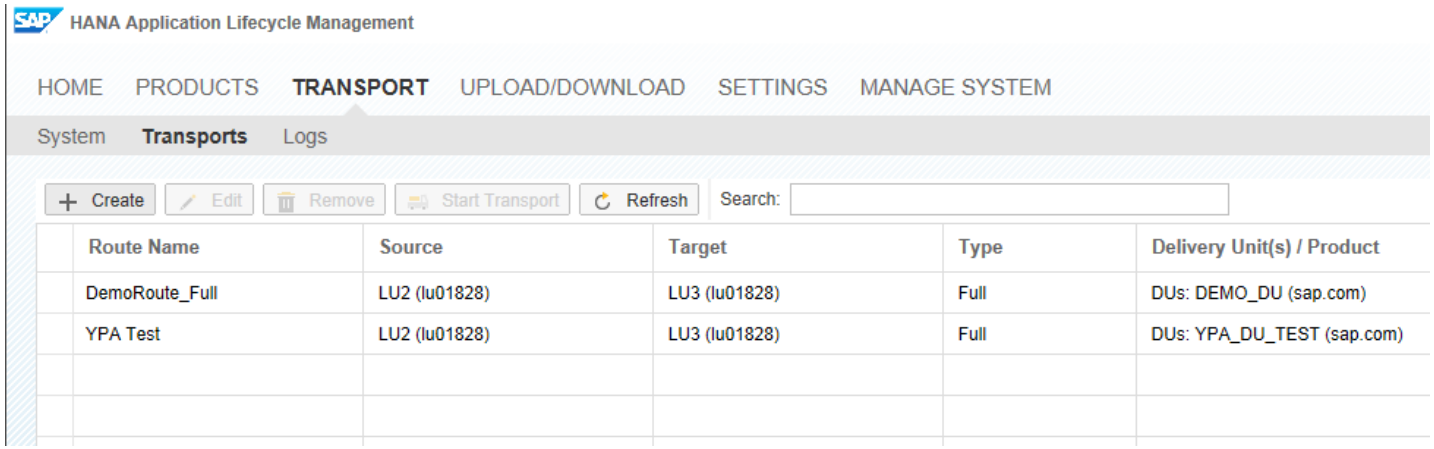
Changed in SPS08

What to do to transport content

- Go to TRANSPORT → Transports
- Create a route covering your needs

or

- Choose the route you need



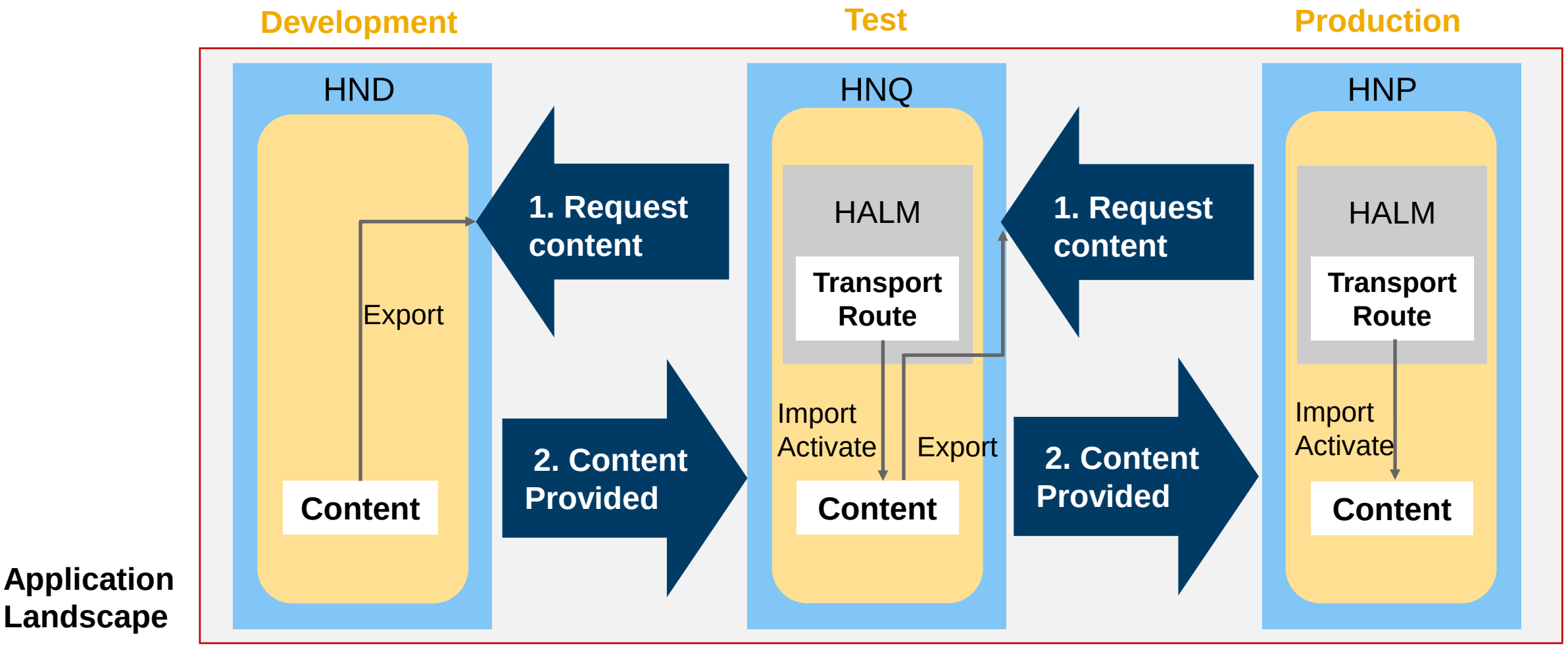
Native SAP HANA Content
Basics for Transports

Target Group
- New SAP customers without ABAP-footprint
- SAP customers with the need for a lightweight transport management

What to use
- Content Creation: SAP HANA Studio (source system)
- Transport: SAP HANA Application Lifecycle Management (target system)

Granularity
- Full Deliver Unit / Product (without Change Recording)
- Full Released Delivery Unit / Product (with Change Recording enabled)
- Change (with Change Recording enabled)

Native SAP HANA Content
Transport Landscape



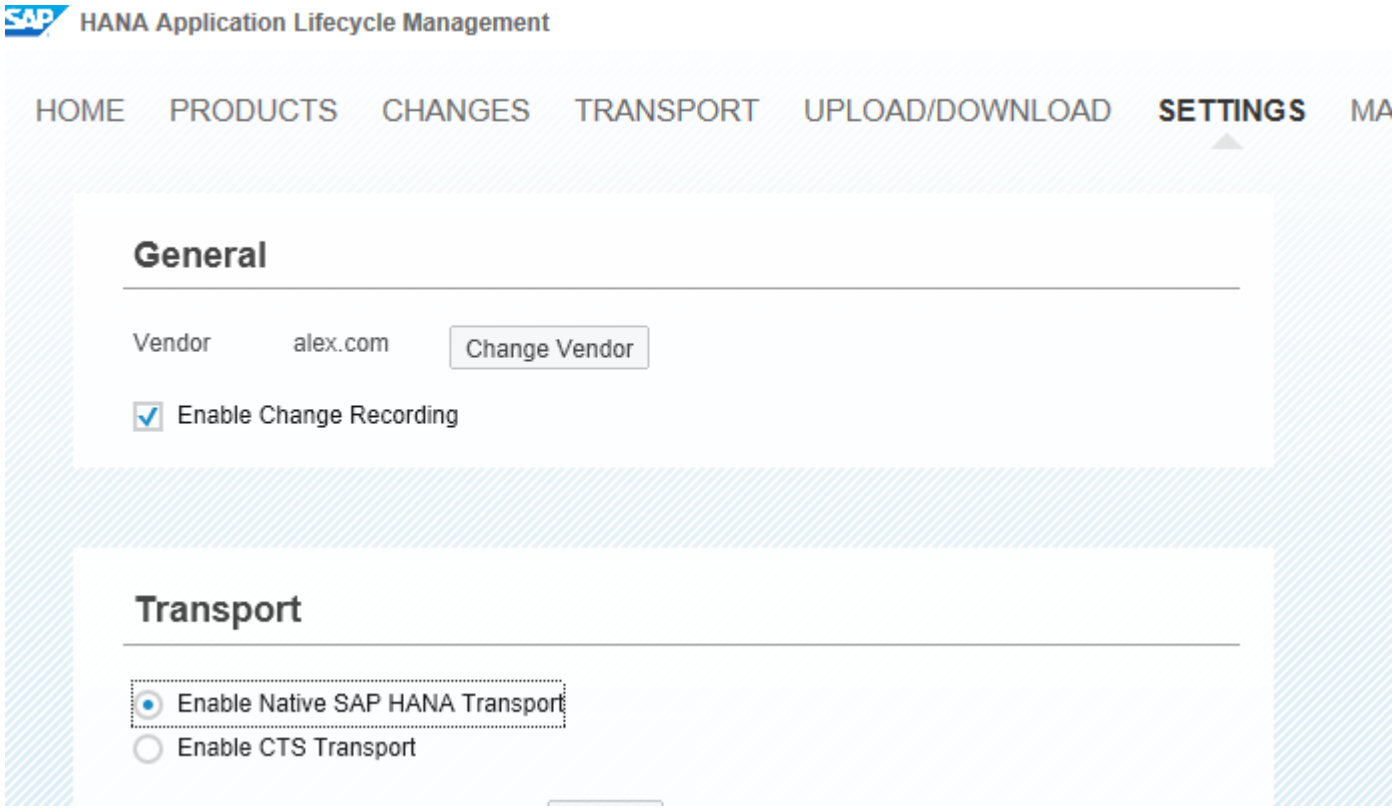
Native SAP HANA Content
Configuration

New in SPS08

Configure native SAP HANA Transport ★

- Go to SETTINGS
- Set *Enable Native HANA Transport*

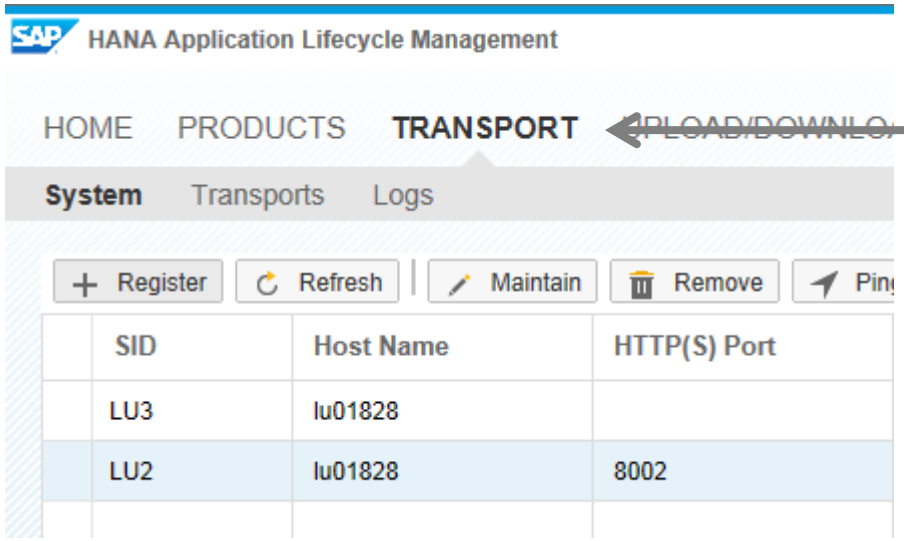
This is the default setting

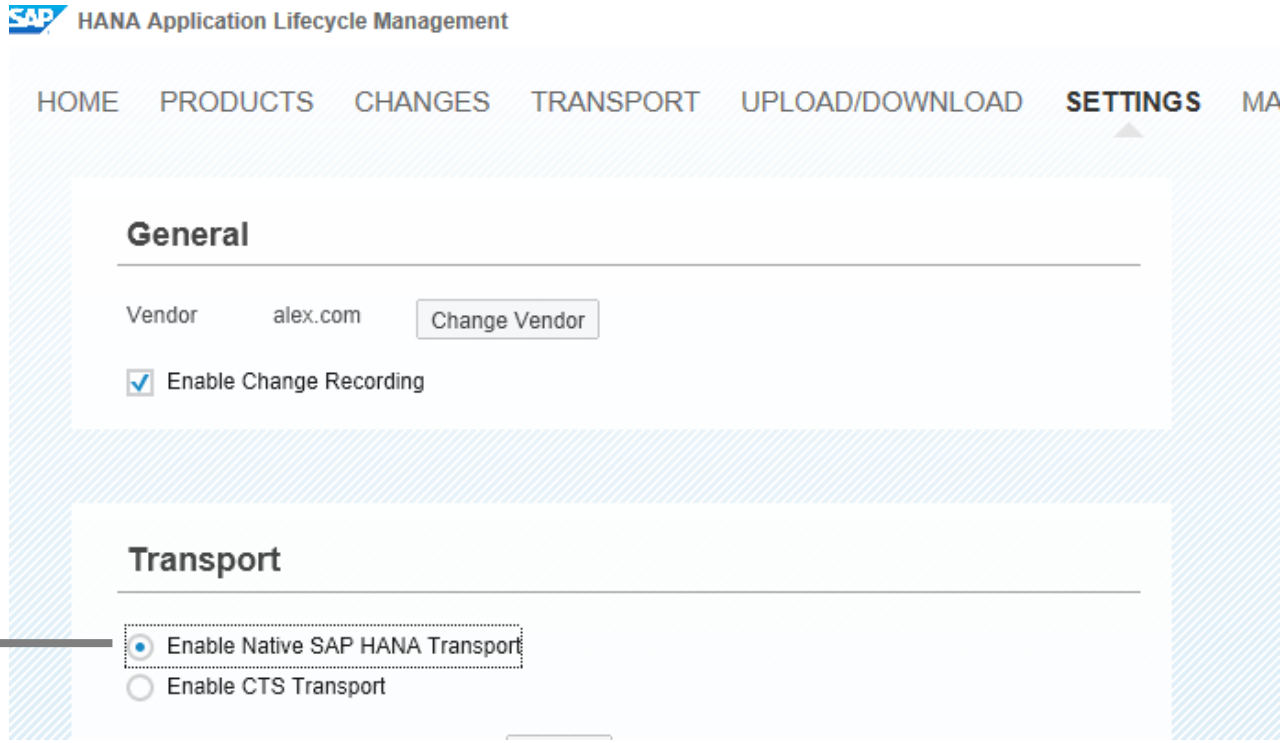


Native SAP HANA Content
Configuration

New in SPS08

The menu entry TRANSPORT is only available if Native SAP HANA Transport is enabled





Native SAP HANA Content
Create Transport Route

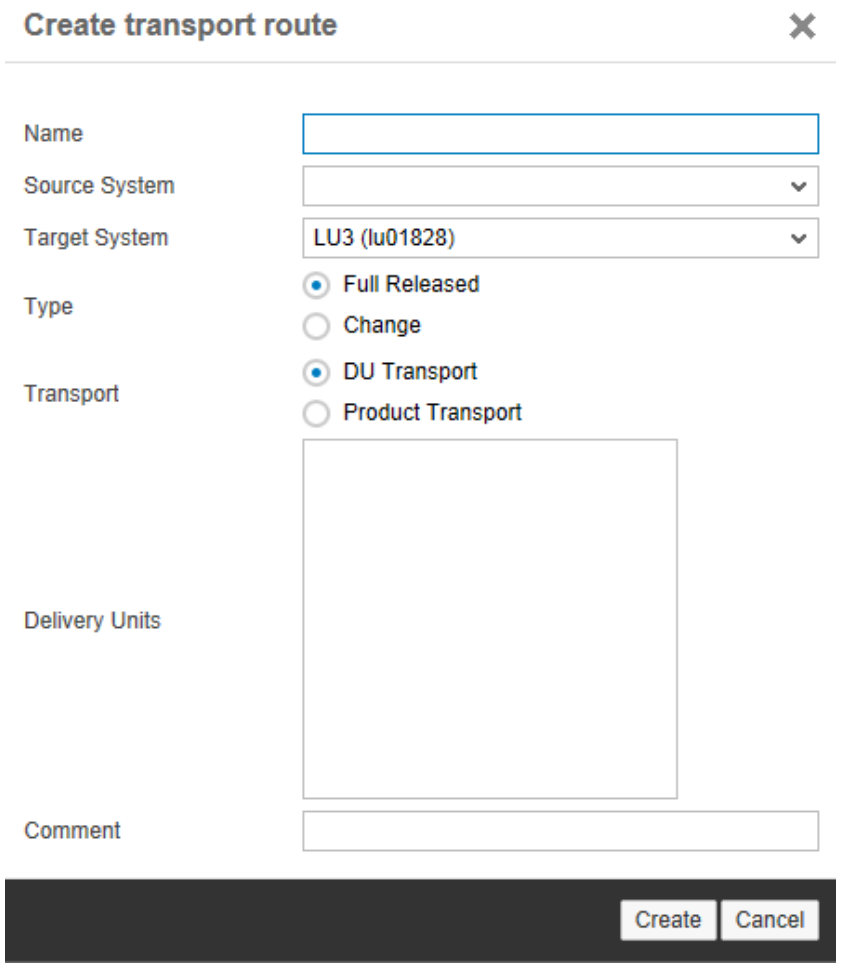
Changed in SPS08

The route management is an essential part transport management.

Route definition for transport on target system:

- Source & target system
- which Delivery Units (multi-select available)
- Select transport all objects (Full Released) or just released changes (Change)
- Select DU Transport or Product Transport

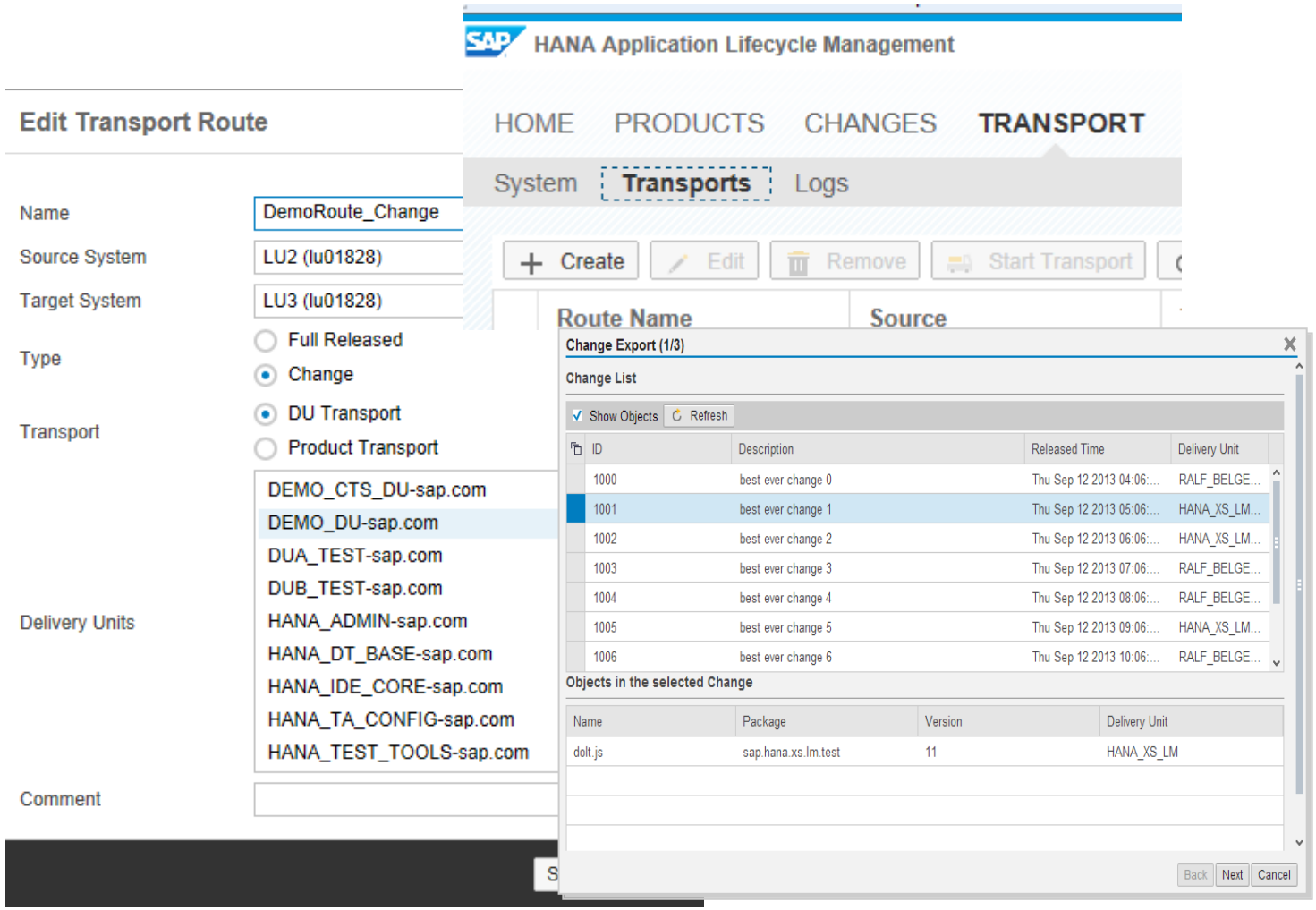
The route definition can be specified in a static way or during each transport.



Native SAP HANA Content

Transport based on Changes

- **Transport based on released changes:** only objects which are assigned to a released change are transported
- **Object transport:** Selecting a single change from the list of changes imports only objects involved in this change into the target system –not the full delivery unit.
- **Dependency calculation:** Automatically grabbing depending changes as part of the transport too.



Transport via CTS+

Basics for Transports

Target Group

- SAP customers with ABAP-footprint and existing CTS transport landscape
- SAP HANA content is handled like any other non-ABAP content

What to use

- Content Creation: SAP HANA Studio (source system)
- Export: SAP HANA Studio (source system)
- Transport: Transport Organizer Web UI (for source system) / STMS (for target system)

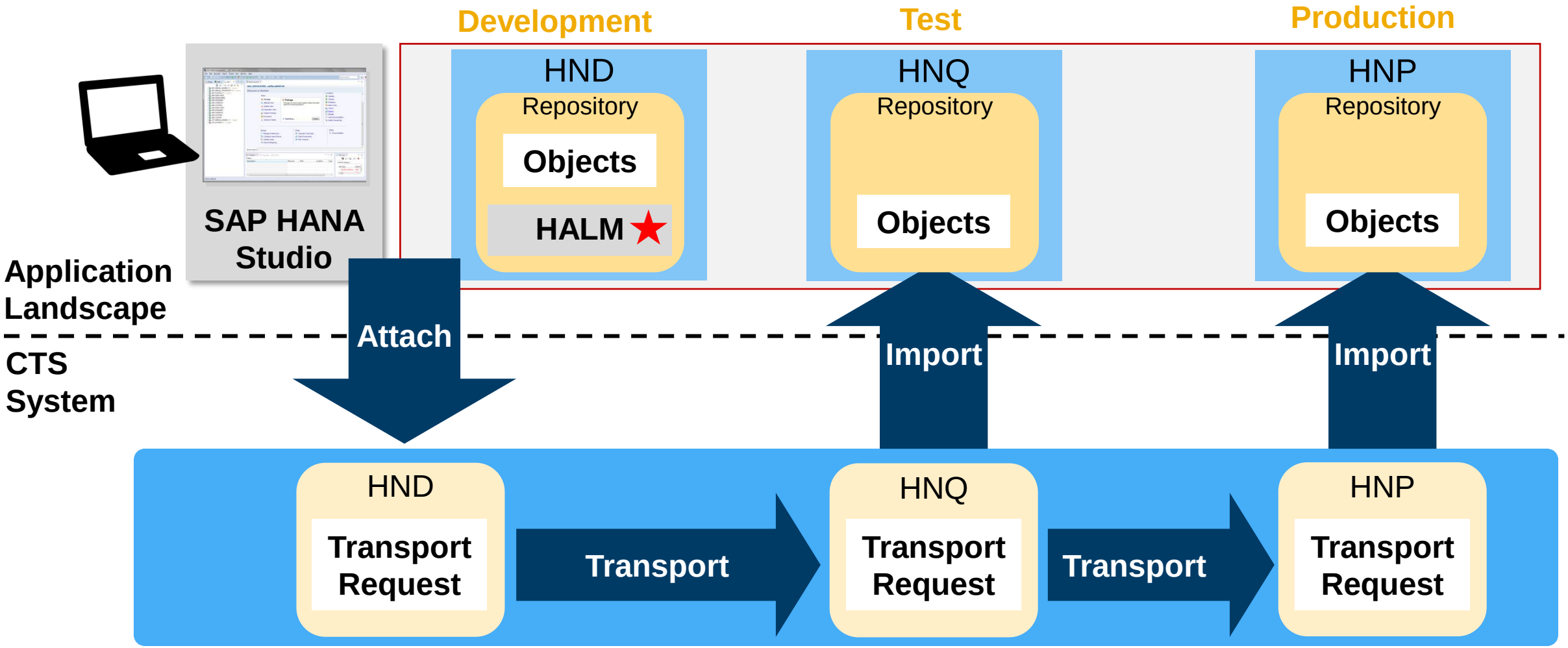
Granularity

- Delivery Unit
- Change

Transport via Change and Transport System (CTS+)

Transport Landscape

New in SPS08

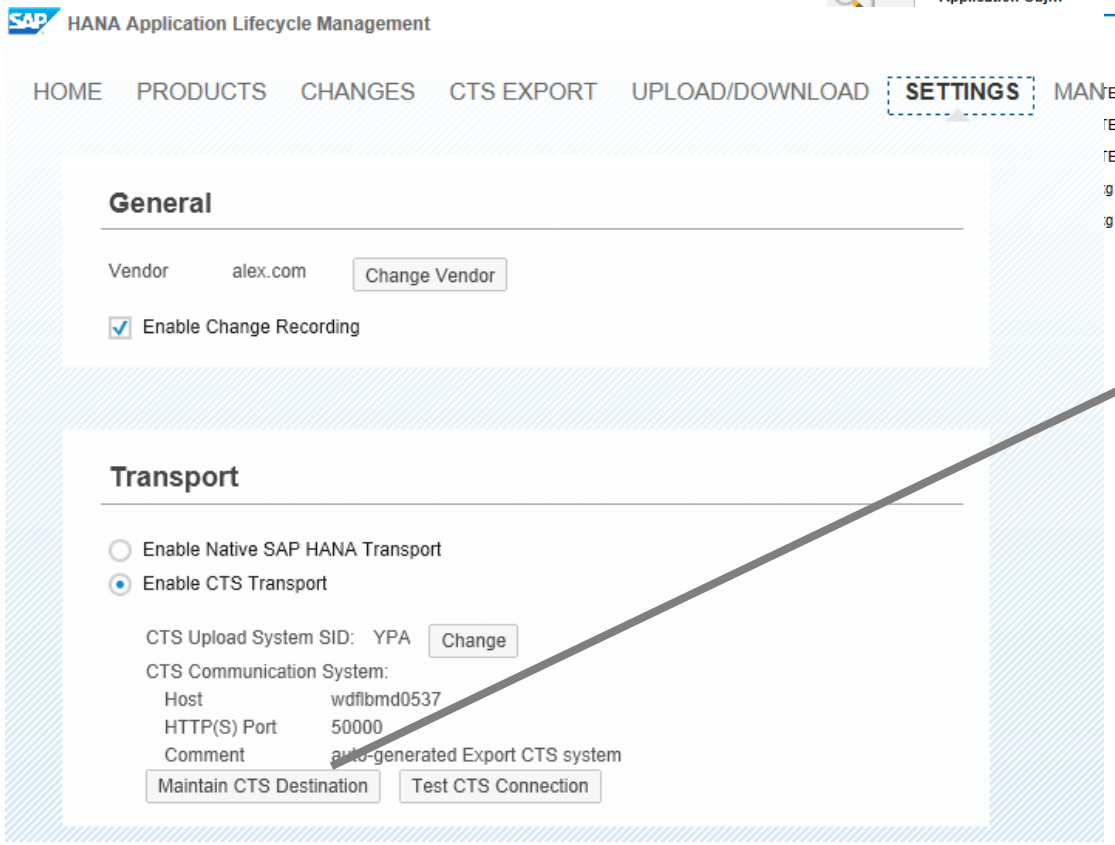


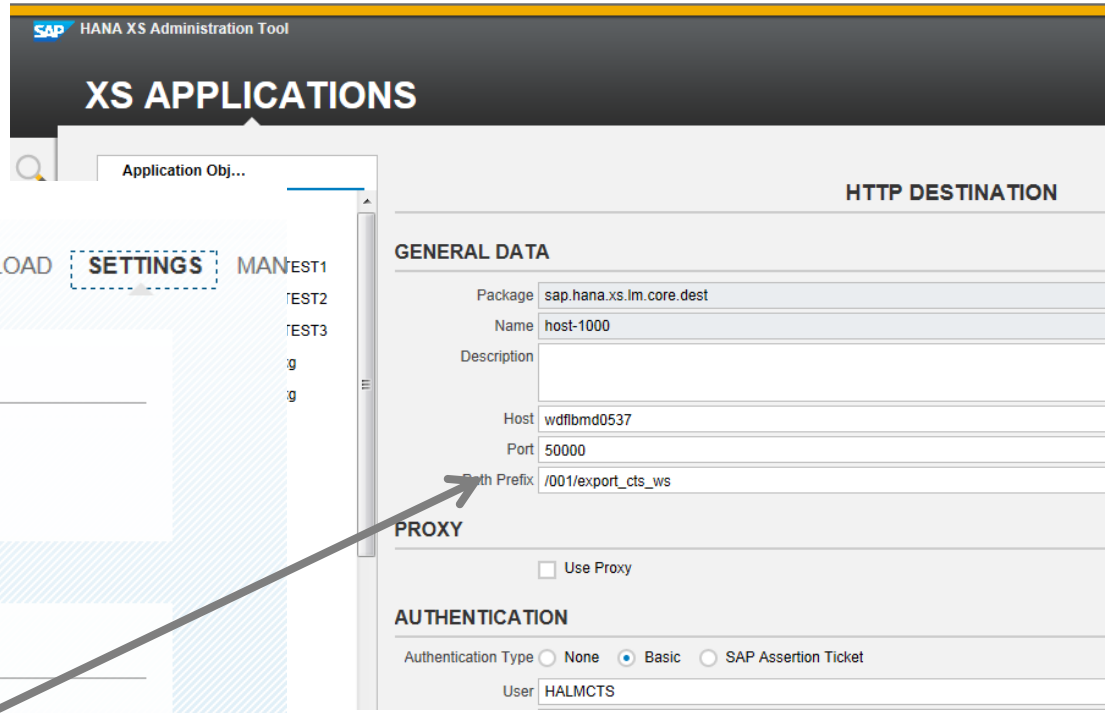
Transport via CTS+
Configuration

New in SPS08

Go to SETTINGS

Select Enable CTS Transport ★





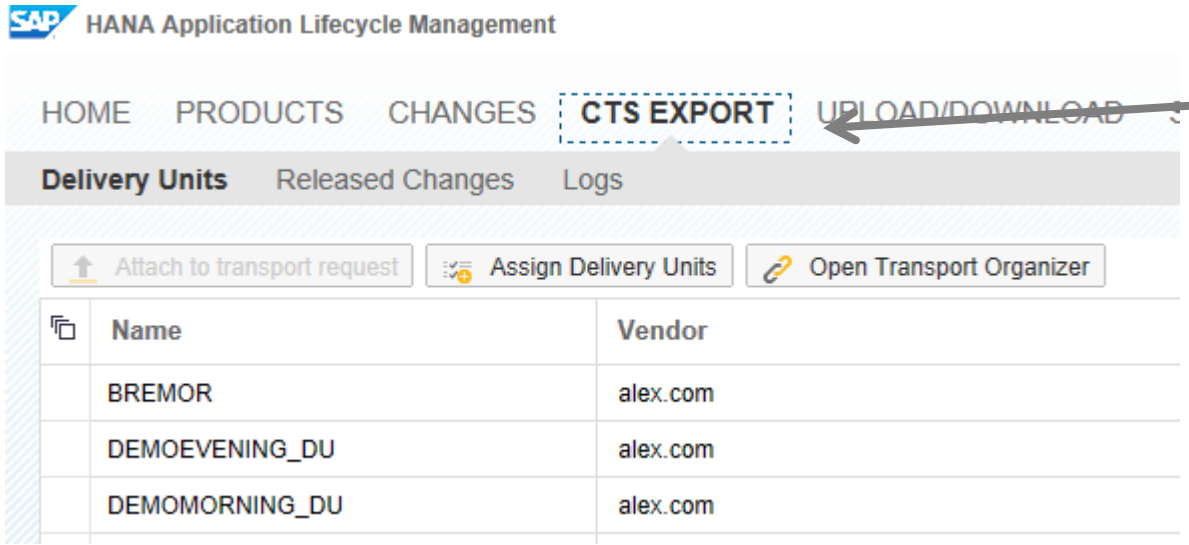
Enter Data of your CTS System

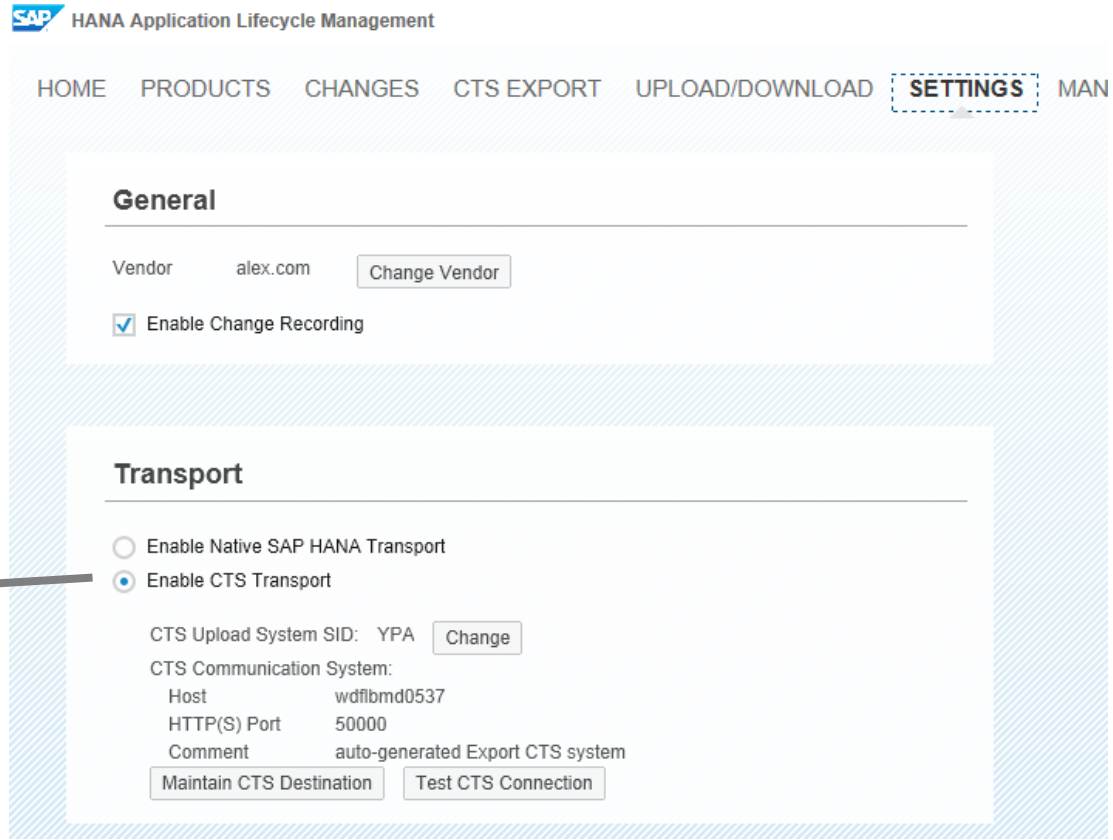
(Additional Configuration on CTS System is required)

Transport via Change and Transport System (CTS+)
Configuration

New in SPS08

- Menu entry CTS EXPORT is only shown if CTS Transport is enabled
- (Menu entry TRANSPORT is removed)
- Transports can be done on DU or Change level





Transport via Change and Transport System (CTS+)
What & Where

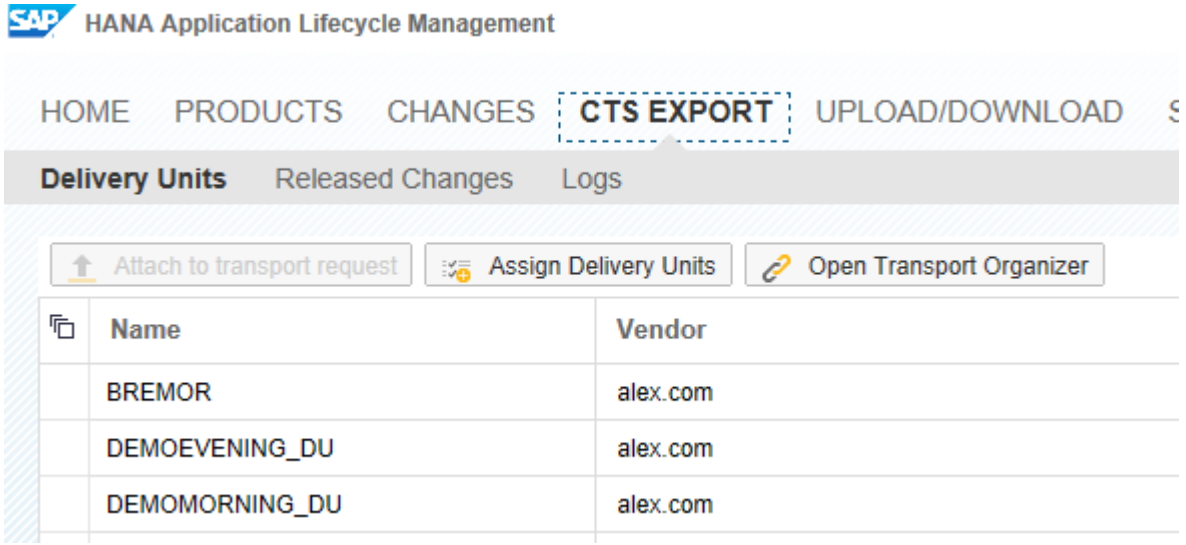
New in SPS08

What to do to transport content

- Log on to the source system
- Go to CTS Export
- Transport Delivery Units

or

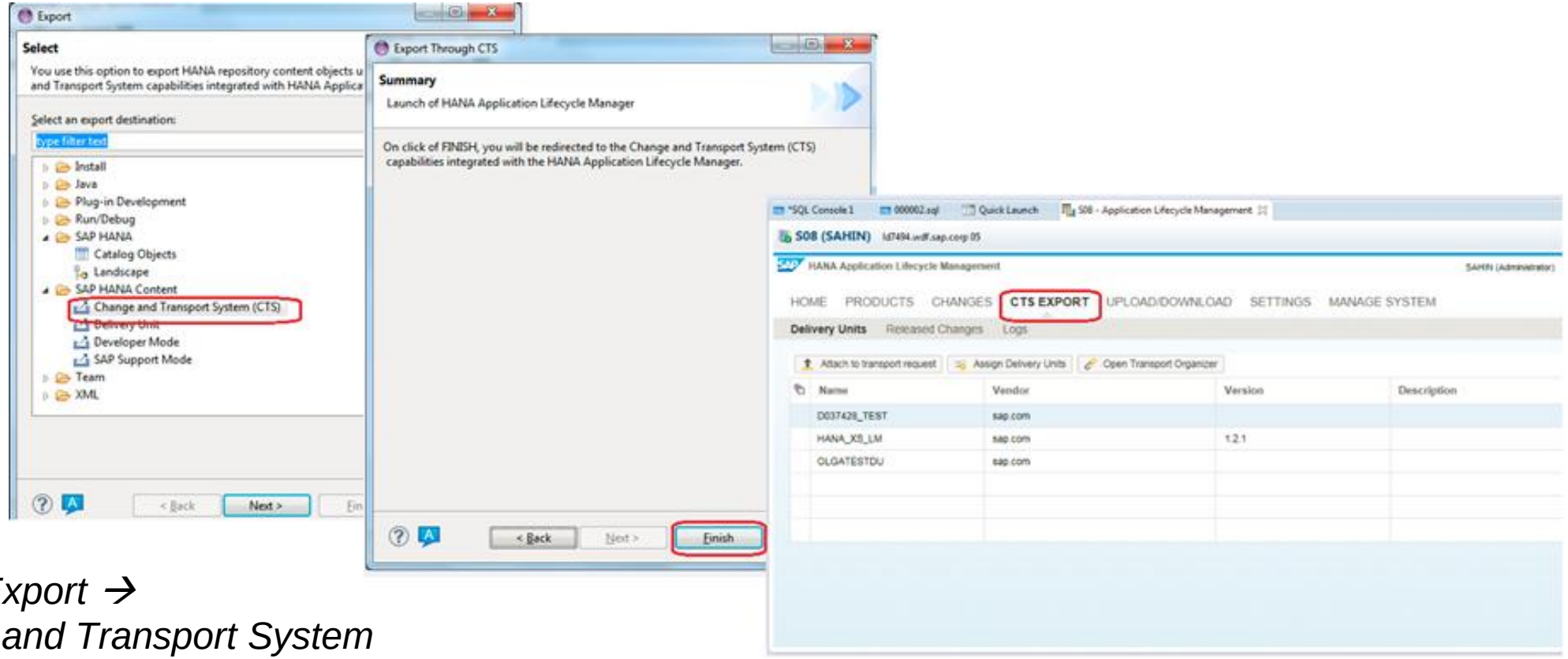
- Transport Released Changes



Transport via Change and Transport System (CTS+)

Export Process in SAP HANA Studio

Changed in SPS08



File → Export → Change and Transport System (CTS)
or Modeler → Export

Click on *Next*

Choose System

Choose transport via Delivery Units or Released Changes

Select *Attach to Transport Request*

Check *Transport Request Details*

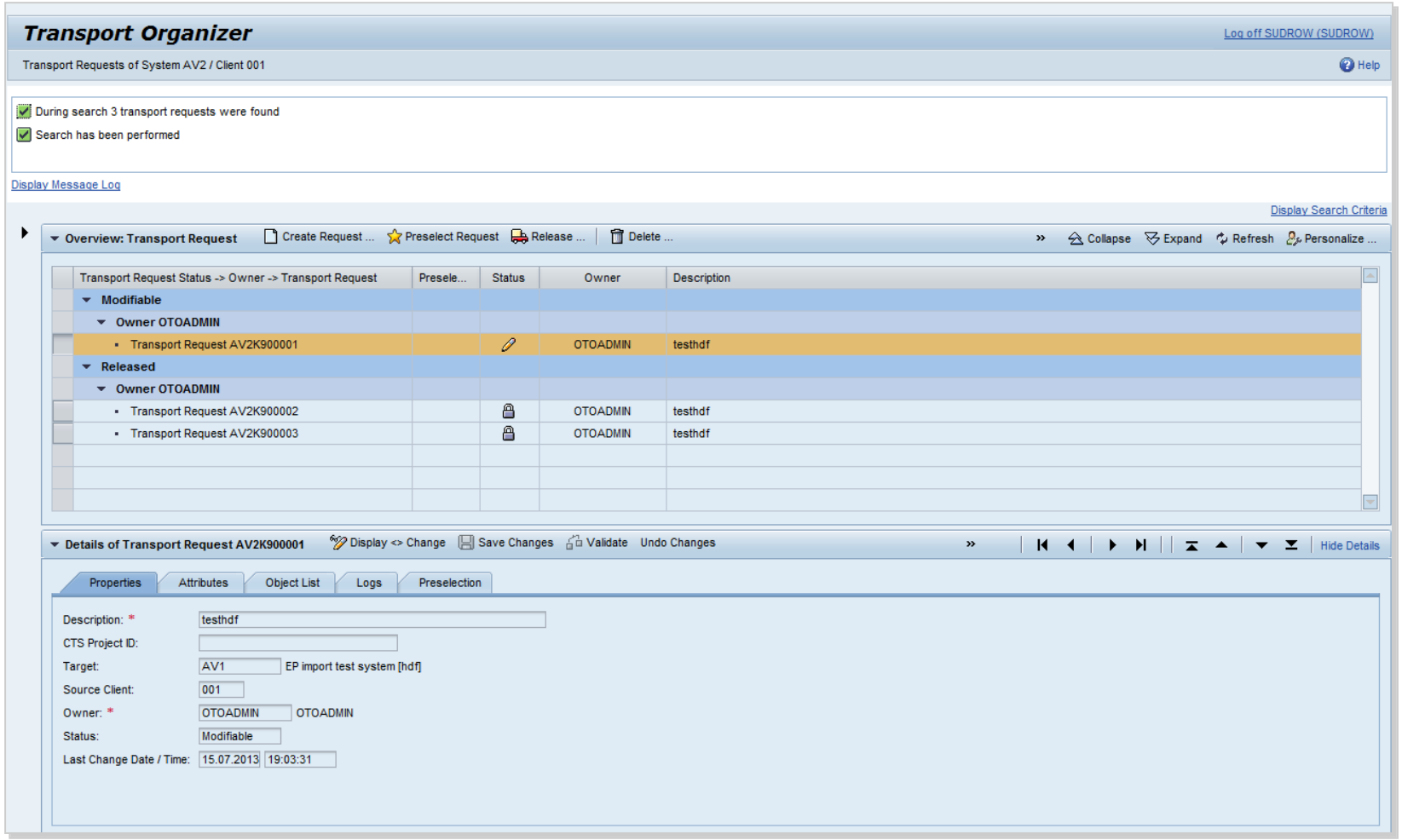
Click on *Next* and then *Finish*

Transport via CTS+

Transport Organizer for non-ABAP

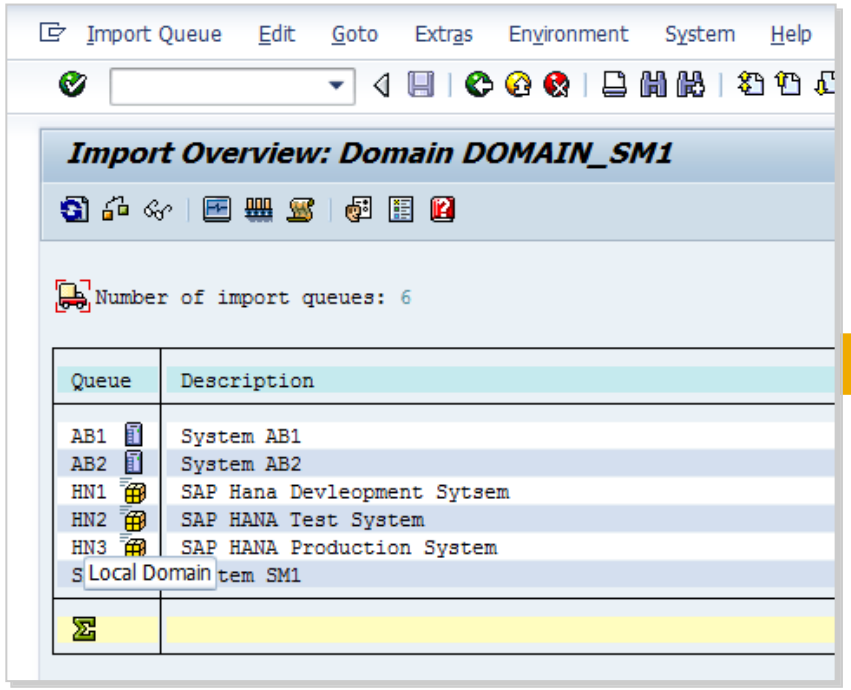
Transport Organizer for non-ABAP is used to:

- Create Transport Requests
- Preselect requests
- Release requests
- Monitor or change content of requests
- Maintain attributes
- Monitor status
- View logs

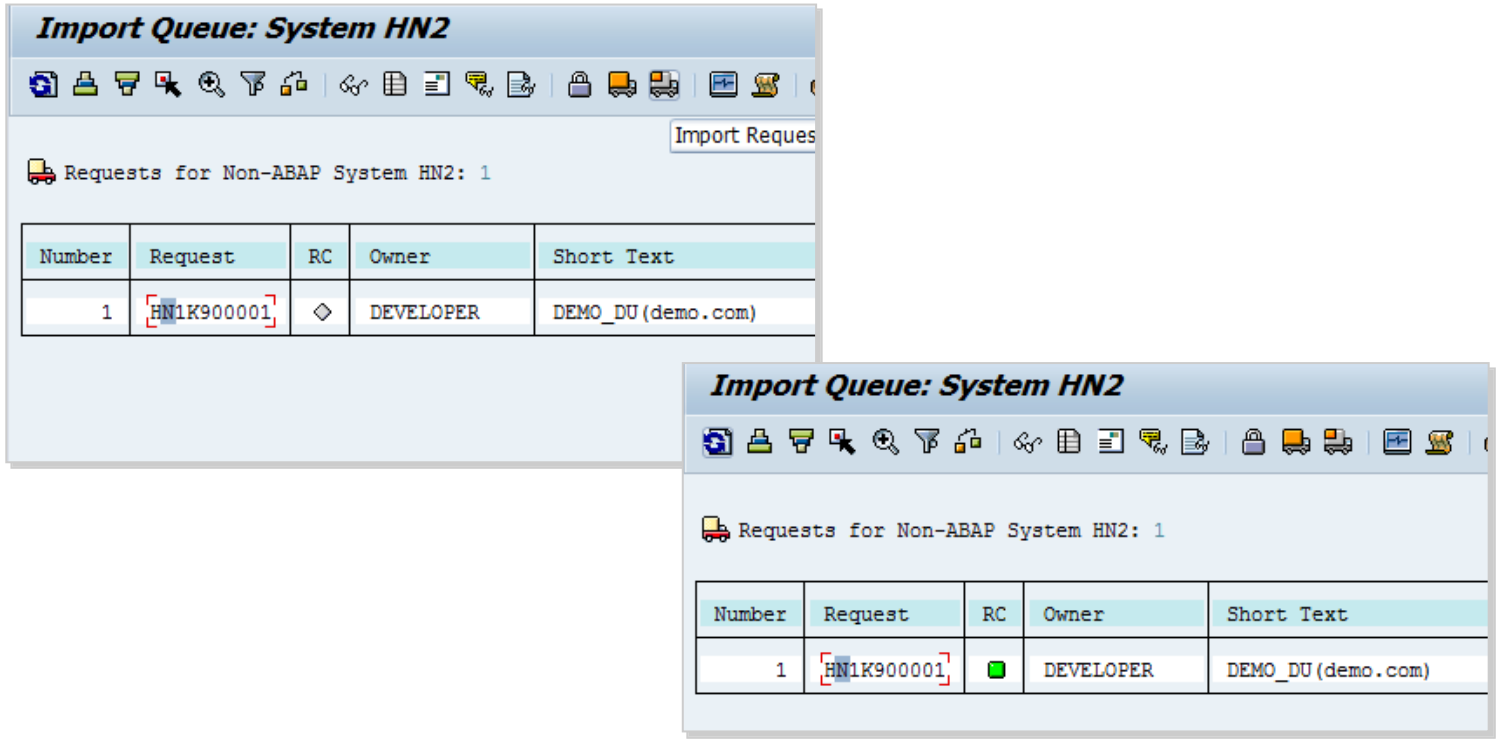


Transport via CTS+

Import Process in TMS



Choose queue of your target system



Import the request(s) and check the result

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SAP HANA Database Client Installation

New in SPS08

Command Line Tool

- can be installed locally
- Can run on Server

```
SAP HANA Database Client installation kit detected.

SAP HANA Lifecycle Management - Client Installation 1.00.73.00.390371
************************************************************************



Enter Installation Path [C:\Program Files\sap\hdbclient]: c:\MyProgs\SP8HDBClien
t
Checking installation...
Preparing package 'Python Runtime'...
Preparing package 'Product Manifest'...
Preparing package 'SQLDBC'...
Preparing package 'ODBO'...
Preparing package 'REPOTOOLS'...
Preparing package 'Python DB API'...
Preparing package 'ODBC'...
Preparing package 'JDBC'...
Preparing package 'HALM Client'...
Preparing package 'Client Installer'...
Installing SAP HANA Database Client to c:\MyProgs\SP8HDBClient...
Installing package 'Python Runtime'...
Installing package 'Product Manifest'...
Installing package 'SQLDBC'...
```

Open the Command Line Tool

New in SPS08

hdbalm

Commands:

- product
- admin
- update
- dependencies
- install
- du
- Transport
- log
- help

```
C:\MyProgs\SP8HDBClient>hdbalm
usage: hdbalm [<args>] <command> [<command args>]

Commands are:
product          manage SAP HANA products
help             Print available commands
admin            manage administration
update           Updates a HANA product with the given stack.xml and SAR archives
.
dependencies     View and analyze delivery unit dependencies
install          Installs a HANA product available in zip format
du               manage delivey units
transport        transport management
log              log file viewer


args:
  -u <user>, --user=<user>  User name
  -h <host>, --host=<host>  XSEngine host
  -p <port>, --port=port>   XSEngine port
  -v, --verbose             writes debug messsages to stderr
  -s, --https               send request via https
  -c, --certs               certificate file when using https
  -y, --yes                 non-interactive mode, does not ask questions
  -j, --json                print result as json if successful

The parameters -u, -h, and -p take precedence over environment variables. The
program will query for a password if no password is set in the environment.

Command args are command specific. Use

  hdbalm help <command>

for further details.

The following environment variables are read:

  HDBALM_USER       user name
  HDBALM_PASSWD     password
  HDBALM_HOST       host
  HDBALM_PORT       port
```

Command Line Support for Delivery Units

New in SPS08

All operations available from the delivery unit view are available through the command line

In addition a full dependency report is available to show all relevant dependencies between delivery units.

```
C:\halm>halm.py help dependencies
View and analyze delivery unit dependencies.
usage: halm [<args>] dependencies [<command args>]
       [<source du>] [<source du vendor>]
       [<target du>] [<target du vendor>]
command args:
  -f, --full                  show full dependency view and analysis
  -r, --references            shows object references between delivery units
  -n, --nirvana               shows nirvana references for a delivery unit

notes:
The references command requires source and target du name as well as the
DU vendor.

The nirvana command displays object references for objects that are part of
a delivery unit to objects which are not part of a delivery unit. When
exported it will not be possible to import and activate these delivery
units into another system. Those reference therefore pose a serious problem.

With no arguments a list of delivery unit dependencies will be displayed.
Each line of the output lists a delivery unit followed by a colon and a
command separated list of referenced delivery units. In the following example
the delivery unit HANA_XS_LM has references to SAPUI5_1 and HANA_XS_BASE:

HANA_XS_LM(sap.com): SAPUI5_1(sap.com), HANA_XS_BASE(sap.com)
```

hdbalm transport

New in SPS08

- list
- start

```
C:\MyProgs\SP8HDBClient>hdbalm help transport

Client to the HANA Application Lifecycle Management transport system.

usage: halm [<args>] transport <transport command>

transport commands:
-------------------

list

  Lists available transport routes

  usage:
  halm [<args>] transport list

start

  Starts a transport operation on the given transport route. The transport
  type is in accordance with the transport route definition. In case of
  transport type change all released changes that are still not imported to
  the target system are transported.

  usage:
  halm [<args>] transport start [options] <route id>

  Supported options are:
    -t <type>, --type=type    type can be "full" or "delta"
```

hdbalm product

New in SPS08

- list
- get
- create
- delete

```
C:\MyProgs\SP8HDBClient>hdbalm help product

Commands to manage SAP HANA Products.

usage: halm [<args>] product <product command> [<command args>]

product commands:
-----------------

list

  Lists all products installed in the system

  usage:
  hdbalm product list

get

  get product metadata

  usage:
  hdbalm product get <product name> <vendor name>

create

  Create a product in the system (metadata only).

  usage:
  hdbalm product create <product name>

delete

  Delete the product (metadata only). No delivery units are removed
  from the system.

  usage:
  hdbalm product delete <product name> <vendor name>
```

hdbalm dependencies

New in SPS08

```
C:\MyProgs\SP8HDBClient>hdbalm help dependencies
View and analyze delivery unit dependencies.
usage: halm [<args>] dependencies [<command args>]
       [<source du>] [<source du vendor>]
       [<target du>] [<target du vendor>]

command args:
  -f, --full                  show full dependency view and analysis
  -r, --references            shows object references between delivery units
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notes:
The references command requires source and target du name as well as the
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```

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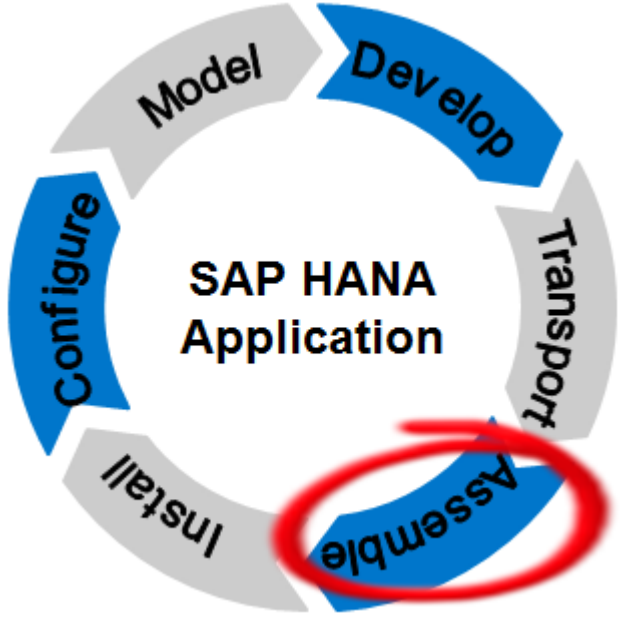
Assemble


Model
Develop
Transport
Assemble
Install
Configure
SAP HANA
Application

Assemble
What You Should Know

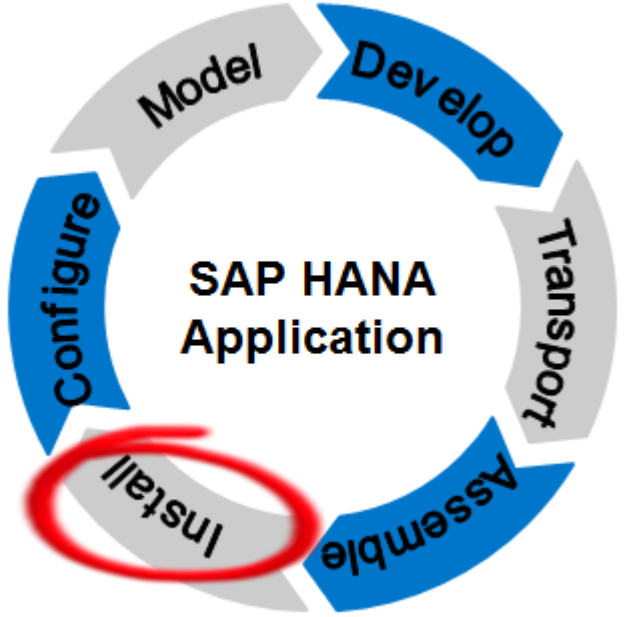
Labs Preview

Currently only available for SAP-internal usage

Planned for Customers and partners for a future release

Planned to support you in creating a file out of your product that can be delivered to your (internal or external) customers

Install


Model
Develop
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Install an Application

New in SPS08

Use Command Line Tool; Install one or several product instances

Checks that all pre-requisites are met for installing the product (correct SAP HANA version, other products as a pre-requisite)

Possibility to select single product instances for installation

Installs all delivery units and creates product metadata

Command line based installation

Installation Transcript

New in SPS08

```
C:\dev\test>hdbalm install SAP_HANA_EXPLORER_WEB.zip


SYSTEM INFORMATION
_____________________________________________________________________________
HOST     : ld2020
PORT     : 8045
USER     : dirk
INSTANCE : 045
_____________________________________________________________________________


PRODUCT INFORMATION
_____________________________________________________________________________
| NAME     : SAP HANA EXPLORER WEB
| VERSION  : 1.0
| VENDOR   : sap.com
_____________________________________________________________________________


PRODUCT INSTANCES FOR INSTALL
_____________________________________________________________________________
| No.| Instance Id | Product Instance
_____________________________________________________________________________
| 1  |   1         | SAP Lumira Server (EA) 1.0
_____________________________________________________________________________

Validating Product Descriptor.
Validation successful.
```

```
SAP HANA EXPLORER WEB
_____________________________________________________________________________
|               | INSTALLED                     | TO BE INSTALLED
_____________________________________________________________________________
|PRODUCT VERSION| NOT YET INSTALLED             |1.0
|SP VERSION     | NOT YET INSTALLED             |Initial Shipment Stack
_____________________________________________________________________________

SAP Lumira Server (EA) 1.0
_____________________________________________________________________________
INSTALLED VERSION  | TO BE INSTALLED    | IMPORT | DELIVERY UNIT
_____________________________________________________________________________
|NOT YET INSTALLED | 1.0.000.0          | YES    | HANA_EXP_WEB
_____________________________________________________________________________

Do you wish to continue with the installation for the specified
product?[yes/no]-->yes

Installing Delivery Units.

[…]


Updating Repository Tables.
Update successful.

Installation process is complete.
```

Product Installation

New in SPS08

Install and uninstall products via Command Line tool

Functionality moved from SAP HANA Platform Lifecycle Management to HALM

→ No <SID>adm required any more

hdbalm install

New in SPS08

Command:

install

Optional parameters to

Display product instance information

Install specified Product instance(s)

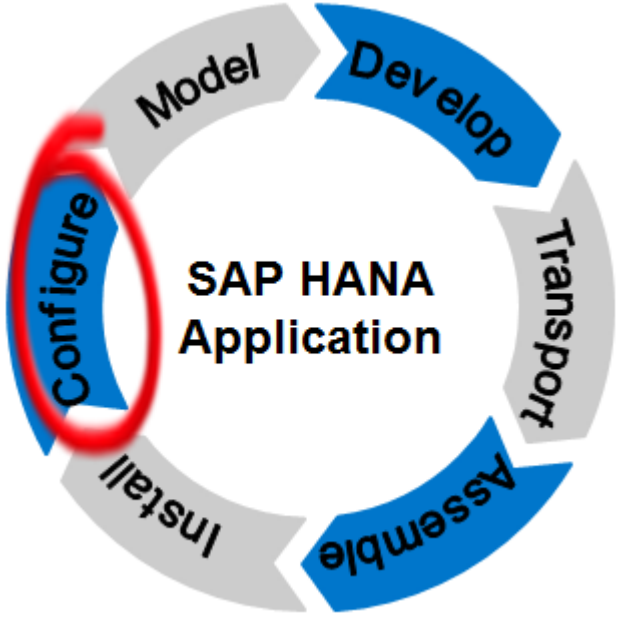
Required parameter to

Specify installation file location

```
C:\MyProgs\SP8HDBClient>hdbalm help install

Installs all product instances, or selected product instances from the product a
rchive.
The archive location is specified as a command line argument.

usage: hdbalm [<args>] install [<command args>]

command args:
     <SourceArchive>     (Required parameter) Location where product archive is
present.
     display             (Optional parameter) To display the product instance in
formation.
     <instance list>     (Optional parameter) To do installation for the specifi
ed list of instances for a product

example:
        hdbalm <args> install <SourceArchive>

        hdbalm <args> install <SourceArchive> display

        hdbalm <args> install <SourceArchive> 1,2 (To install instances with ser
ial no 1 and 2)

        hdbalm <args> install <SourceArchive> 1   (To install instance with seri
al no 1)

        hdbalm <args> install <SourceArchive> 0   (To install all the instances)
```

Configure

Planned for future releases



Technical Configuration Today

Application Configuration (general)

- Typically found on service market place /instguides

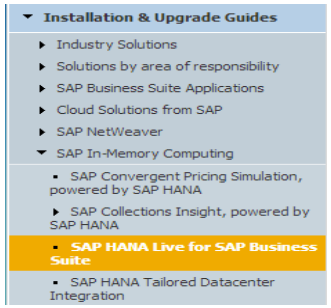
Application Configuration (specific)

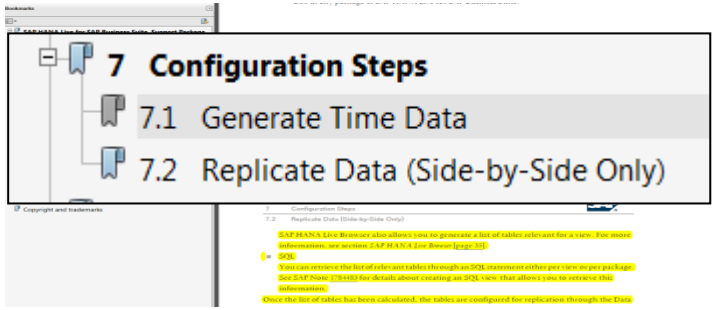
Hana Live Configuration

- Configuration is documented in installation guide
- Manual description of SQL statements to configure application

Configuration Process

- Administrator reads documentation
- Administrator performs tasks





SCENARIO 1 → N SERVICE 1 → N PROCESS

Steps

Tasks

Technical Configuration (planned)

Labs Preview

Lifecycle Experts
(Cloud Infrastructure Experts)

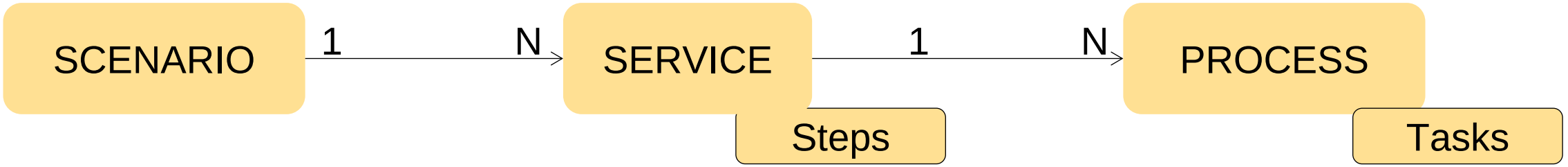
- Defining scenarios
- Documenting scenarios

Application Developer

- Understanding scenarios and their content contribution requirements
- Providing content for configuration automation

Administrators or Orchestration Tools

- Executing configuration services
- Orchestrating end2end and/or cloud processes



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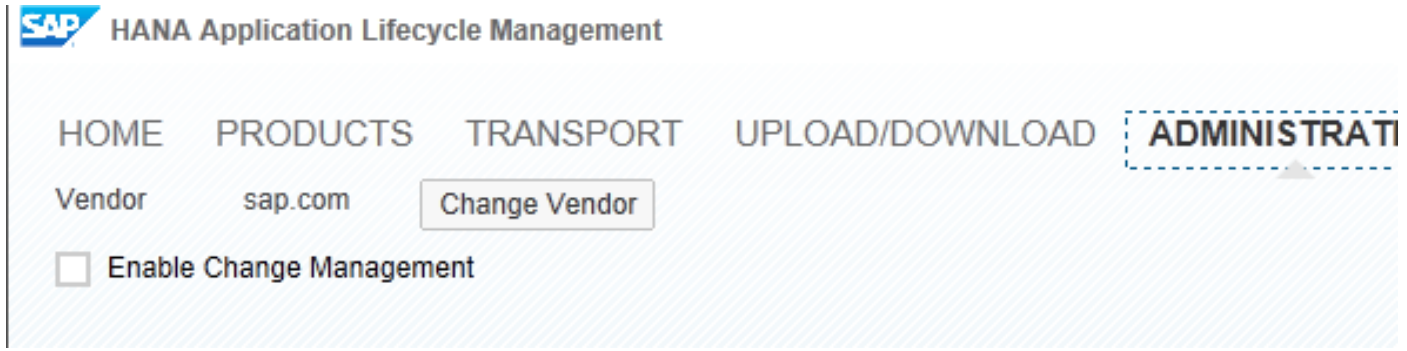
Set vendor

Vendor must be set before you start creating SAP HANA Content

You can change the vendor later on



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System requirements

- **For SAP HANA Application Lifecycle Management**
  - Part of each SAP HANA shipment as of SAP HANA appliance SP06

- **For Transporting SAP HANA content with enhanced CTS (CTS+)**
  - **CTS+ Domain Controller:** SAP Solution Manager 7.1 SP05 and higher support package levels or SAP NetWeaver 7.31 with SL Toolset 1.0 SP07 and higher support package levels or SAP NetWeaver 7.4 with SL Toolset 1.0 SP07 and higher support package levels
  - **SAP HANA systems:** SAP HANA Appliance SP05 and higher support package levels

- **For Transporting SAP HANA content with HANA Transport Container**
  - SAP NetWeaver 7.40 SP0 and higher support package levels
  - SAP NetWeaver 7.31 SP5 and higher support package levels

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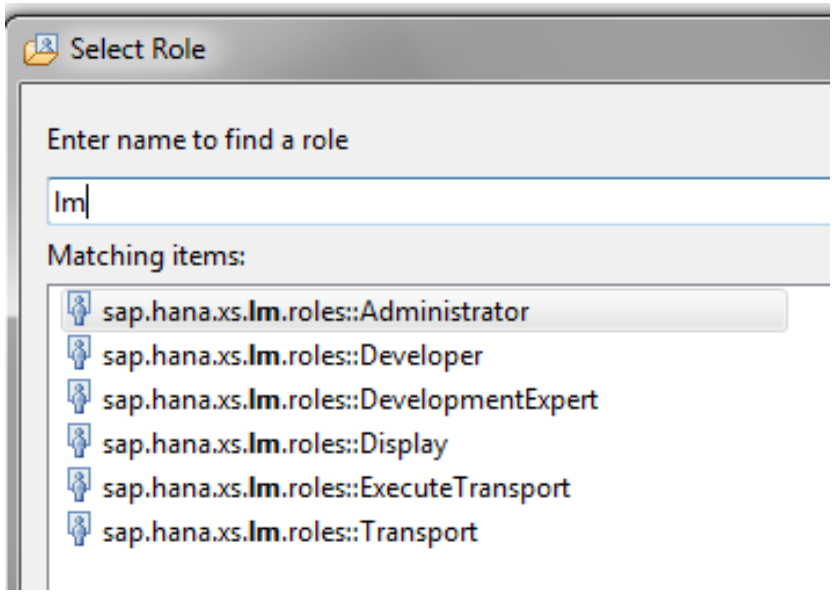
Roles

New in SPS08

The following roles exist for the SAP HANA Application Lifecycle Management:

- Administrator
- Developer
- DevelopmentExpert
- Display
- Execute Transport
- Transport

Additional roles for SAP HANA Repository are required



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Availability of features in SAP HANA

Labs Preview

	SP6	SP7	SP8	Future
Model	+Basics in HALM	+ Dependency Viewer	+ Improved UIs	
Develop		+ Change Recording via HANA Studio	+ Change Recording via WebIDE & HALM	
Transport	+ DU/Products via HALM & CTS+ in Studio	+ Change Transport (HANA native)	+ Change Transport (via CTS+)	+ CTS+ without AS JAVA
Assemble				+ For customers and Partners
Install			+ Via CLT	+ via Web UI
Configure				+ Ship configuration + Allow configuration dev

CLT: Command Line Tool

HALM: SAP HANA Application Lifecycle Management

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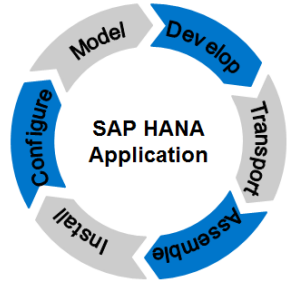
Key Takeaways for SAP HANA Application Lifecycle Management

What do we provide?
HALM as tool to manage the **Lifecycle of SAP HANA XS Applications**



When?
Available since **SAP HANA 1.0 SPS06**

For whom?

- Easy to use, lightweight application with **native SAP HANA transport** for customers with none or little ABAP footprint, or who simply prefer it's streamlined approach
- Comprehensive transport handling with **CTS+** for customers who prefer to integrate SAP HANA transports into existing promote-to-production processes

Further information

SAP Public Web

http://www.saphana.com/docs/DOC-4268 > What´s new in SAP HANA 1.0 SPS07 for Extended Application Services (XS) and Content Lifecycle Management

http://scn.sap.com/community/hana-in-memory >

http://scn.sap.com/docs/DOC-46119 > SAP HANA Lifecycle Management

http://scn.sap.com/docs/DOC-49327 > Overview of SAP HANA Content Transport Management

http://scn.sap.com/docs/DOC-8576#HANA > How to Configure SAP HANA for CTS+

http://www.saphana.com/community/about-hana/features#administration/application-lifecycle-management > HALM@ saphana.com

SAP Notes

1920406 - Release Note SAP HANA Application Lifecycle Management SP7

1998966 – Release Note for SAP HANA Application Lifecycle Management SP8

SAP Internal

https://wiki.wdf.sap.corp/wiki/display/SDT/HANA+Application+Lifecycle+Management

Further information

SAP Public Web

SAP HANA Master Guide:
http://help.sap.com/hana/SAP_HANA_Master_Guide_en.pdf

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SAP HANA Developer Guide:
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To get the best overview of what's new in SAP HANA SPS 08, read this blog.

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