



PUBLIC

How To Integrate Extended Warehouse Management (EWM) and Transportation Management (TM) in One Client for SAP Digital Supply Chain Management, edition for SAP S/4HANA

THE BEST RUN



DOCUMENT HISTORY

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1 BUSINESS SCENARIO

This how-to guide describes the configuration for integrating Extended Warehouse Management (EWM) and Transportation Management (TM) in one client as part of SAP Digital Supply Chain Management, edition for SAP S/4HANA.

Note

If you have set up your system using the TM documentation, you might have already performed some of the cross-process settings.

2 SETTINGS FOR EWM AND TM IN THE SYSTEM

2.1 Check Point-to-Point Connection is Enabled

To allow the transfer of documents using SOA Manager or WSRM Setup, you must perform the Customizing activity *Activate Support for Point2Point Communication*.

In Customizing for *Cross-Application Components*, open *Processes and Tools for Enterprise Applications > Enterprise Services > Point-to-Point Enablement for Asynchronous Enterprise Services > Activate Support for Point2Point Communication*.

Create a new entry and select the *Active* checkbox

2.2 Perform SLD Check

It is very important that the result of the SLD check on the screen in the backend (not in the dialog box) reverts a system under the call of function "LCR_GET_OWN_BUSINESS_SYSTEM".

Perform an SLD check (transaction SLDCHECK). Check that the system finds your own business function. If it doesn't find the business function, ask the basis or security team to add the system in the SLD System.

2.3 Check Business System in SOA Manager

When the SLD check is successful, open transaction SOAMANAGER and check the business system there.

1. Open transaction SOAMANAGER,
2. On the *Technical Administration* tab, choose *SAP Client Settings*.
3. If the *Business System* field is empty, choose *Get from SLD*.

2.4 Run SRT_ADMIN

Transaction SRT_ADMIN creates most of the settings on its own, like creating ICF notes, creating a Delay Logon user, and so on.

Run transaction SRT_ADMIN in *Run Technical Setup* mode

For EWM-TM Integration, you can ignore the message that idempotency isn't operational. If you want to remove this message, see [Appendix A.6](#).

If there is an issue with the ICF nodes, see [Appendix A.3](#).

2.5 Perform Central Configuration in SOA Manager

For the SOA Manager setup, it is recommended that you use one central system.

1. Open transaction SOAMANAGER.
2. On the *Technical Administration* tab, choose *SAP Client Settings*.
3. In the *Central Configuration* screen area, choose *Edit*
4. Select the *Central System* checkbox and save.

A dialog box appears

5. Enter the system user (for example, ALE_REMOTE), username, and password.

2.6 Enter Values for SLD Buffer Table

During the EWM-TM integration, the system also calls a buffer table for the SLD entry. Check that the system data has been entered in the table the Customizing activity *Define SLD Data of Business Systems*.

1. In Customizing for *SAP Transportation Management*, open *Transportation Management > Integration > Define SLD Data of Business Systems* (table /SCMB/TBUSSYS) and validate the entry for the EWM system.
2. If the data hasn't been entered by the system, enter your system data.
3. In the *Manual Maint.* field, choose *Flag is Not Set* to ensure the entry is updated from the SLD.

2.7 Enter Your Own Business System

Check that your business system is maintained in Customizing for *Extended Warehouse Management*, under *Interfaces > ERP Integration > General Settings > Define Own Business System*.

2.8 Define EWM Integration Profile

The EWM-TM integration is also based on the settings of the integration profile.

In Customizing for *Transportation Management* under *Integration > Integration with SAP Extended Warehouse Management > Define EWM Integration Profile*, check the integration profile. If there is no entry, create the integration profile.

2.9 Define Freight Order Type Customizing

The freight order type must be set up correctly for the EWM-TM integration.

Check that the following important TM-EWM-relevant indicators are set in Customizing for *Transportation Management* under *Freight Order Management > Freight Order > Define Freight Order Types*:

- *Document Creation Relevance* has been set to *E Transportation Activity Creation in SAP EWM*. If this setting is not made, the system doesn't communicate to EWM
- The *Immediate Processing* checkbox is selected. If it is not selected, the update propagation indicator is not set on freight unit level, which can cause various errors later on
- An output profile has been entered in *Output Profile*. If there is no entry in this field, no PPF Action is triggered, and the system doesn't communicate to EWM. You can use the standard profile /SCMTMS/TOR

3 SETTINGS IN CLIENT 000

3.1 Execute Setup in Client 000

If the SRT_ADMIN call of your client hasn't created the BGRFC settings completely, run the automatic setup in transaction SRT_ADMIN. In the *Automatic Setup* screen area, select the *Run Technical Setup* radio button and choose *Execute*.

If you want to check if the BGRFC is set up correctly, you can also perform checks described in [Appendix A.5](#).

4 SOA MANAGER SETUP IN CENTRAL SYSTEM

All the following actions happen in transaction SOAMANAGER.

The title line now includes the word "Central". If you have the old session of SOA Manager still open, close it first and open a new session so that it has the "Central" in the title line.

4.1 Enter System Name in Domain System

On the *Technical Administration* tab, choose *Domains*.

If the *Logical System* field is empty, enter the logical system, and save.

4.2 Create Domain

On the *Technical Administration* tab, choose *Domains*.

1. Choose *Create* and enter the following values

| Field | Value |
|-------------|---------------|
| Domain Name | DO_TM_EWM |
| Weight | 1 |
| Description | Domain TM-EWM |

2. Choose *Add System* and select the TM-EWM system from the list.
3. In the *Profile* screen area, on *Security Settings* tab, see the *Authentication Method* section. Under *Transport Chanel Authentication*, select the checkbox for *User ID/Password*.
This is done in the sample setup. If you want to have another option to do the setup, you can also make your settings here.
4. In the *General* screen area, in the *State* field, choose *Active*.
5. Save the domain

4.3 Add User Data

When you select the authentication method *User ID/Password*, you need to enter the logon data name, for example, service user ALE_REMOTE, or TM_EWM_USER, or the service user in your user setup.

On the *Service Administration* tab, choose *Logon Data Management*

1. Choose *Create*
2. In *1: General*, enter the following values:

| Field | Value |
|-----------------|-----------------|
| Type | Template |
| Logon Data Name | e.g. ALE_REMOTE |
| Description | |

3. Choose *Next*
4. In *2 Credentials*, enter the following values:

| Field | Value |
|-----------------------|------------------------------------|
| Authentication Method | User/Password or X.509 |
| User Name | ALE_REMOTE |
| Password | *PW of the user of selected system |

5. Choose *Finish*
6. Activate the user

4.4 Set Up Integration Scenario (Central)

On the *Service Administration* tab, choose *Integration Scenario Configuration*

Create the integration scenario (for example, TM_EWM_LDAP) with service group connections for the system with the following interfaces:

- TM service group and EWM inbound interface
- EWM service group and TM inbound interface

Proceed as follows:

1. Choose *Create* and enter the name "TM_EWM_LDAP" and the description "TM EWM Peer to Peer Communication". Choose the *Create* button.
2. In the *Service Group Connection* screen area, choose *Create*.
3. In *Assign IBC References*, proceed as follows:
 1. In the *Actor 1* field, get the value of the one system by drag and drop from the client list
Both systems are the same
 2. In the *Actor 2* field, get the value of the system by drag and drop from the client list
 3. Choose *Next*
4. In *2 Assign Service Groups*, choose the connection type *Service Group Based, Request Response* and proceed as follows:
 1. In *Actor 1*, add service group /SCMTMS/TOR_LDG_APPT_RQ for sending the request message from TM to EWM
If the error message "Service Group '/SCMTMS/TOR_LDG_APPT_RQ' used in IS " does not exist in system <your system>" appears, delete the cache. For more information, see [Appendix A.7](#).
 2. In *Actor 2*, add service group /SCWM/SRVG_TM_SR for the response message from EWM to TM
 3. Choose *Next*
5. In *3 Define Matching Interfaces*, proceed as follows:
 1. Check that the automatically determined provider interface for *Actor 1* is
TransportationOrderLoadingAppointmentRequest_in {http://sap.com/xi/EWM/Global}
 2. Check, that the automatically determined provider interface for *Actor 2* is
TransportationOrderLoadingAppointmentNotification_In {http://sap.com/xi/TMS/Global}
 3. Choose *Finish*
 4. Save
6. Activate the scenario

Release the integration scenario configuration by choosing *Release* and releasing all the actions in the dialog box.

4.5 Add Logical Determination of Receiver using Service Groups

The following step needs to be executed only for the interface from TM to EWM. Because a system could have multiple EWM systems, this setting determines which system to use. In a scenario with one TM and one EWM, this setting is just an easy receiver determination because all the messages are going to one client. If you are integrating TM with multiple EWM systems, you must maintain those systems here as well

This setting is not needed in the other direction is because EWM always sends the information back to the TM system that the message comes from.

1. On the *Service Administration* tab, choose *Add Logical Determination of Receiver using Service Groups*
2. Choose *Create*
3. Enter the following values:

| Field | Value to input | Input method |
|------------------------|-------------------------|-------------------------|
| Service Group | /scmtms/tor_ldg_appt_rq | Manual typing |
| Provider IBC Reference | EWM system | Drag and Drop from list |

4. Choose *Next*
5. Choose *Create New Routing* and enter following values:

| Field | Value |
|----------------|----------------------|
| Priority | 100 |
| Attribute Name | Logical Syst. (Rec.) |
| Sign | Inclusive |
| Option | Contains Pattern |
| Value Low | * |

6. Choose *Create New Routing*
7. Choose *Finish*

4.6 Check Completeness of the Settings

Once the setup is completed, check the completeness:

1. On the *Tools* tab, choose *Health Check*
2. Run the health check
It might take some time for the results to be displayed
3. In the dialog box, select your system
4. In the result screen, review the checks that were performed.

All the checks must be green **except** the following:

- Technical settings of SOAP runtime:
 - The idempotency can still be in red- error-state
 - Clients that are not in use can be red
- Self ping can still be red

A APPENDIX - TROUBLESHOOTING AND FURTHER CHECKS

A.1 Perform Any Additional Customizing Needed

Additional customizing might be needed if a message can't be processed in EWM

- Means of transports must be in sync.
This is most likely more valid for a decentralized scenario
In Customizing for *SCM Basis*, choose *Master Data > Transportation Lane > Maintain Means of Transport* and update the means of transport entries.
- In EWM, customizing needs to be performed about how to form a TU and a vehicle
In Customizing for *Extended Warehouse Management*, choose *Cross-Process Settings > Shipping and Receiving > General Settings > Devine Control Parameters for Forming Vehicles/Transportation Units*.
- Package types must be customized
In Customizing for *Extended Warehouse Management*, choose *Goods Receipt Process > Slotting > Influencing Parameters > Packaging Material Determination > Define Packaging Material Types*
- Manual tasks must be performed in EWM to map the packaging material to MTR
In transaction /SCWM/PM_MTR, enter the following data:

| Field | Value |
|---------------|---------------|
| MTr | 0001 |
| Pack.Material | EWMS4-TRUCK00 |
| Optional | checked |
| Seq. PMs | blank |
| No PMs in MTr | blank |
| Cont. PM | checked |

- If you want to use the shipping cockpit in EWM, the following SICF needs to be activated:
 - SAP/PUBLIC/BC/ICONS
 - SAP/PUBLIC/BC/ICONS_RTL
 - SAP/PUBLIC/BC/PICTOGRAMS
 - SAP/PUBLIC/BC/WEBDYNPRO/*
 - SAP/PUBLIC/BC/WEBICONS
 - SAP/BC/NWBC/*
 - SAP/BC/WEBDYNPRO/SCWM/SCO
 - SAP/BC/WEBDYNPRO/SCWM/SCO_EXEC
 - SAP/BC/WEBDYNPRO/SCWM/SHP_ASSIGN_DOOR_LP
 - SAP/BC/WEBDYNPRO/SCWM/SHP_ASSIGN_TU_DOOR

A.2 Correct Setup After a Client Copy

After a client or system copy, the SOA Manager setup is no longer correct as it referred to the original systems. To delete the central configuration and all the SOA Manager setup, run report SRT_WSP_INITIALIZE_CEN_LOC_CFG in transaction SE38 in the SAP S/4HANA system and the EWM system.

First run the report in test mode. Afterwards, deselect the *Test Mode* checkbox and run the report in again.

If the report is not available in your system, please note that the report comes with SAP Note [0002748671](#), and SAP Note [2830754](#) might be helpful as well.

A.3 Create Missing ICF Nodes

If ICF nodes are not created by transaction SRT_ADMIN, open transaction SE38 and run the program SRT_WSP_SETUP_ICF.

Select the *Setup Web Service Root ICF Nodes* radio button and choose *Execute*

A.4 Set Up Service User if Setup Failed in SRT_ADMIN

If the service user is not created by transaction SRT_ADMIN, open transaction SE38 and run the program WSS_SETUP.

Enter the necessary data and create the service user.

A.5 Optional: Check in Client 000 if BGRFC Settings Successful

In transaction SBGRFCCONF, check all the settings.

A.6 Optional: Get Rid of IDEMPOTENCY Warning in SRT_ADMIN

In transaction SE38, run report SRT_WS_IDP_CUSTOMIZE.

Afterwards, check if the idempotency warning is gone in transaction SRT_ADMIN

A.7 Delete Caches in SOA Manager

In SOA Manager, in the *Service Administration* tab, choose *Design Time Cache*

On the *Administration* tab, select the *Force Build of Cache* checkbox and choose *Build*. It will take some time.

A.8 Retest Data of an Action that has Already been Triggered

1. Open transaction SPPFP
2. Enter the following data:
Action Definition: TOR_LDAP_REQ,
Processed At: Processing when saving document
Created From (Date): 01.03.2020
Choose *Execute*.
3. Select a message and note down the message ID in the *Sort Field* column.
4. Choose *Process the Message*.
5. In the message monitor (transaction SRT_MONI), enter the message ID
6. In the message details, check for the freight order number in the *ID* field below *BaseBusinessTransactionDocumentReference*.
7. In transaction /SCWM/TU, with the correct Warehouse ID, check for the freight order number in the *TU* field
If the message doesn't send, set an external breakpoint in following classes:
 - /SCMTMS/CL_PPF_SERV_TOR_B2B->EXEC_TOR_LDAP_REQ
 - or
 - /SCMTMS/CL_TOR_LDAP_REQ->PROXY_CALLEnter "LCR_GET_BS_DETAILS" in line of the call function and trigger the message again.

A.9 Check Delivery Document if LDAP is not Triggered

In transaction /BOBF/TEST_UI, use object /SCMTMS/TOR to check if the delivery of the freight order is pointing to the correct EWM system:

1. Choose *Load Node Instances > By Alternative Key*

2. Select *Root – Tor_ID*
3. Enter the freight order you would like to send.
4. Go to the node *ITEM_TR*
5. Select the main cargo item
6. In *WM_LOGSYS*, check the logical system of the EWM system is correct.
If the logical system is not correct, check the EWM setup

A.10 Correct Errors in the Update Propagation Indicator in the case of Direct EWM-TM Integration for Shipper

If you are setting up direct EWM-TM integration for the shipper, and the update propagation indicator is not set correctly, the reason is that the fields *WM_LOGSYS*, *WM_WH_NUMBER* and *UPD_PROP_INDICATOR* are not filled for the freight order and freight unit items. These fields are checked at multiple code places, for example, the system detects which scenario (shipper or transit warehouse) is used based on these fields. The *UPD_PROP_INDICATOR* has to be set to 'N' when sending the LDAP request message. The value 'N' indicates that the freight units and freight orders are protected against changes from the SAP ERP system until the LDAP notification is posted. In shipper scenario, the freight units and freight orders can be changed only by the LDAP notification message. Without this protection, the LDAP notification might dump or hang with different errors.

1. In Customizing for *Integration with other SAP Components* under *Extended Warehouse Management > Assign Warehouse Number to EWM Warehouse Number*, assign the SAP ERP warehouse number to the EWM warehouse number.
2. In Customizing for *Transportation Management* under *Freight Order Management > Freight Order > Define Freight Order Types and Planning > Freight Unit > Define Freight Unit Types*, select the *Immediate Processing* checkbox and enter the correct setting for your process in the *Execution Tracking Relevance* field also accordingly.
3. In *Define Freight Order Types*, in *Document Creation Relevance*, choose *E - Transportation Activity Creation in SAP EWM*.
4. If the system uses delivery-based transportation requirements (DTR), in Customizing for *Transportation Management* choose *Integration > Logistics Integration > External TM System Integration > Delivery-Based Transportation Requirement > Define Delivery-Based Transportation Requirement Types*. In the corresponding DTR type, in the *Direct EWM Integration Active* field, choose *E Direct EWM Integration*.
5. Valid for software component S4CORE: When the BAdI method */SCMTMS/BADI_LOGINT_CHG_TTRQ->CHANGE_TTRQ_LE* is implemented in your system and you also set the flag *DIRECT_EWM_ACTIVE*, ensure that for direct TM-EWM integration cases you set the field *DIRECT_EWM_ACTIVE* to "E" or space (NOT to "G").
6. Valid for software component S4CORE: In the table T340D for the warehouses using the direct TM-EWM integration, set the field *EWM_DEPLOYMENT* to space (don't set the value 'A - S/4HANA Cloud Warehouse Management').
7. Ensure that the note "3058295 - Issues in EWM Integration when using Condition Based Document Type Determination" is implemented.

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