Upgrade Guide for mWorkOrder 2505

Connected Worker Solutions

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Preface

Understand audience, know related documents and products and conventions followed in this document.

Audience

This guide is for technical configurators who Upgrade and do related configurations for mWorkOrder, a Mobile Workorder Management Solution of *Connected Workforce Platform*™.

Related Documents and Products

- Work Order Management
- Inventory and Warehouse Management
- Operator Rounds
- Inspections Checklist
- Fixed Asset Management
- Field Procurement
- Analytics and Dashboards

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Document Conventions

Table 0-1 Conventions followed in the document

Convention	Meaning
boldface	Indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.

Table 0-1 Conventions followed in the document (continued)

Convention	Meaning
italic	Indicates book titles, emphasis, or place-holder variables for which you supply values.
`monospace`	Indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter

Contents

1. Upgrade Supporting Systems

Upgrade the following supporting systems as part of the pre-upgrade requirements.

Table 1-1 Prerequisites

Software	• BTP (SAP Business Technology Platform) • SAP Cloud Connector latest version • SAP NetWeaver Gateway 7.4 and above with SAP_GWFND 740 component (SP 13 and above) • Reverse proxy (SAP Web Dispatcher, Apache, Junos Pulse, NetScaler proxy servers are recommended. Others need to be evaluated) • SAP_UI 740 SP13 and above or SAP_UI 750 SP01 and above • SPAM Version 69 and above (only for Add-Ons)
SAP Business Suite	• ECC 6.0 EHP 5 with SAP_BASIS 702 and above (recommended) • Lower versions are compatible (requires evaluation) • SAP S/4HANA Business Suite 1909, 2021, 2022, and 2023 (lower versions requires evaluation)
Compatible Security Authentication Mechanism	• SSO2 between BTP and NetWeaver Gateway Active Directory SSO • SAML 2.0 Authentication

Table 1-1 Prerequisites (continued)

Access	• Sap Basis & security access is required as per the access sheet provided (minimum display access)
Assumptions	Access to the RACE™ portal provided with required roles assigned

2. Upgrade mWorkOrder

Once you complete the pre-upgrade requirements, begin mWorkOrder upgrade. The following flow gives you an overview of the steps involved in upgrading mWorkOrder.

Table 2-1 References

Task	Reference to section
Install RACE™ Add-ons in SAP® S/4HANA or Hub Systems (ECC & Gateway)	Install RACE™ Add-ons in SAP® S/4HANA or Hub Systems (ECC & Gateway) *(on page 10)*
Install mWorkOrder Add Ons in SAP S/4HANA or Hub Systems (ECC & Gateway)	Install mWorkOrder Add Ons in SAP® S/4HANA or Hub Systems (ECC & Gateway) *(on page 13)*
Import RACE™ and mWorkOrder SAP® ECC and Gateway Transports in Target SAP Environments	Import RACE™ and mWorkOrder SAP® ECC and Gateway Transports in Target SAP Environments *(on page)*
Activate OData, UI5, and FIORI Services	• Activate RACE™ & mWorkOrder OData Services *(on page 18)* • Activate UI5 Service *(on page 20)* • Activate FIORI Service *(on page 22)*

2.1. Install Add Ons

Add-On/Transports: Install the add-on or transports for the current release that is provided by Innovapptive representative.

Please follow the SAP standard process to install add ons. For more information, see https://help.sap.com/doc/saphelp_gbt10/1.0/en-US/18/e08d38dfc44765e10000009b38f842/content.htm?no_cache=true

Note:
Ask your Innovapptive contact for the latest add-ons and support-packs and these components will be provided in a compressed file format, such as .zip, .rar, and sent to you either through email or through FTP.

2.2. Install RACE™ Add-ons in SAP® S/4HANA or Hub Systems (ECC & Gateway)

Table 2-2 RACE™ ECC Add-On and Support Packages (applicable for both S/4 HANA and Hub)

Type	Add-On	Description	Dependency
Add-On	EZY0021310268_-0000004.PAT	INNOV:RACE™:2208 SP02 ECC Objects	None
SP01	EZY0021310268_-0000006.PAT	Innov RACE 2208 SP02 HF01 ECC Objects	Dependency
SP21	EZY0021310268_-0000053.PAT	Innov RACE 2208 SP02 HF03-HF25 ECC Objects	Dependency
SP31	EZY0021310268_-0000078.PAT	Innov RACE 2208 SP02 HF26-HF35 ECC Objects	Dependency
SP42	EZY0021310268_-0000104.PAT	Innov RACE 2208 SP02 HF36-HF46 ECC Objects	Dependency
SP43	EZY0021310268_-0000118.PAT	Innov RACE 2208 SP02 HF47.1 ECC Objects	Dependency
SP44	EZY0021310268_-0000119.PAT	Innov RACE 2208 SP02 HF48 ECC Objects	Dependency
SP45	EZY0021310268_-0000121.PAT	Innov RACE 2208 SP02 HF49 ECC Objects	Dependency
SP46	EZY0021310268_-0000126.PAT	Innov RACE 2208 SP02 HF50 ECC Objects	Dependency
SP47	EZY0021310268_-0000131.PAT	Innov RACE 2501.1 ECC Objects	Dependency
SP48	EZY0021310268_-0000140.PAT	Innov RACE 2502.1 ECC Objects	Dependency

Table 2-2 RACE™ ECC Add-On and Support Packages (applicable for both S/4 HANA and Hub) (continued)

Type	Add-On	Description	Dependency
SP49	EZY0021310268_-0000144.PAT	Innov RACE 2502.3 ECC Objects	Dependency
SP50	EZY0021310268_-0000151.PAT	Innov RACE 2503.3 ECC Objects	Dependency
SP51	EZY0021310268_-0000153.PAT	Innov RACE 2504.01 ECC Objects	Dependency

Table 2-3 RACE™ Gateway Add-On and Support Packages (applicable for both S/4 HANA and Hub)

Type	Add-On	Description	Dependency
Add-On	NZY0021310268_-0000006.PAT	INNOV:RACE™:2208 SP02 Gateway Objects	None
SP01	NZY0021310268_-0000008.PAT	Innov RACE 2208 SP01 UI5 Application	Install RACE™ Add-On NZY0021310268_-0000006.PAT before importing SP01
SP39	NZY0021310268_-0000113.PAT	RACE 2208 SP02 GW Addon(HF03 - HF25)	Install RACE™ Add-On NZY0021310268_-0000008.PAT before importing SP01
SP58	NZY0021310268_-0000148.PAT	RACE 2208 SP02 GW Addon (HF26 - HF35.1)	Dependency
SP59	NZY0021310268_-0000149.PAT	RACE 2208 SP02 UI5 (HF26 - HF35)	Dependency
SP60	NZY0021310268_-0000150.PAT	RACE 2208 SP02 Fiori (HF26 - HF35)	Dependency
SP61	NZY0021310268_-0000152.PAT	RACE 2208 SP02 HF36 GW Objects	Dependency

Table 2-3 RACE™ Gateway Add-On and Support Packages (applicable for both S/4 HANA and Hub) (continued)

Type	Add-On	Description	Dependency
SP62	NZY0021310268_-0000154.PAT	RACE 2208 SP02 UI5 (HF03 - HF35)	Dependency
SP63	NZY0021310268_-0000155.PAT	RACE 2208 SP02 Fiori (HF00 - HF35)	Dependency
SP74	NZY0021310268_-0000179.PAT	RACE 2208 SP02 GW Addon (HF36 - HF46)	Dependency
SP75	NZY0021310268_-0000182.PAT	RACE 2208 SP02 Fiori (HF36 - HF46)	Dependency
SP76	NZY0021310268_-0000183.PAT	RACE 2208 SP02 HF47 GW Objects	Dependency
SP77	NZY0021310268_-0000184.PAT	RACE 2208 SP02 HF48 GW Objects	Dependency
SP78	NZY0021310268_-0000186.PAT	RACE 2208 SP02 HF49 GW Objects	Dependency
SP79	NZY0021310268_-0000191.PAT	RACE 2208 SP02 HF50 GW Objects	Dependency
SP80	NZY0021310268_-0000194.PAT	RACE 2208 SP02 2501.1 GW Objects	Dependency
SP81	NZY0021310268_-0000195.PAT	RACE 2208 SP02 2501.1 Fiori Objects	Dependency
SP82	NZY0021310268_-0000197.PAT	RACE 2208 SP02 2501.2 Fiori Objects	Dependency
SP83	NZY0021310268_-0000200.PAT	RACE 2208 SP02 2501.3 GW Objects	Dependency
SP84	NZY0021310268_-0000202.PAT	RACE 2208 SP02 2501.4 GW Objects	Dependency
SP85	NZY0021310268_-0000215.PAT	RACE 2208 SP02 2503.3 GW Objects	Dependency

Table 2-3 RACE™ Gateway Add-On and Support Packages (applicable for both S/4 HANA and Hub) (continued)

Type	Add-On	Description	Dependency
SP86	NZY0021310268_-0000218.PAT	RACE 2208 SP02 2504.01 GW Objects	Dependency

2.3. Install mWorkOrder Add Ons in SAP® S/4HANA or Hub Systems (ECC & Gateway)

Table 2-4 MWO ECC Add-On and Support Packages (applicable only for Hub (ECC System))

Type	Add-On	Description	Dependency
Add-On	EZY0021310268_-0000005.PAT	INNOV: MWO:2208 SP02 ECC Objects	Install RACE™ Add-On (EZY0021310268_-0000004.PAT) before installing the mWO Add-On (EZY0021310268_-0000005.PAT)

Table 2-5 MWO Gateway Add-On and Support Packages (applicable only for Hub (Gateway System))

Type	Add-On	Description	Dependency
Add-On	NZY0021310268_-0000007.PAT	INNOV MWO 2208 SP02 Gateway Objects	Install RACE™ Add-On (NZY0021310268_-0000006.PAT) before installing the mWO Add-On (NZY0021310268_-0000007.PAT)

Table 2-5 MWO Gateway Add-On and Support Packages (applicable only for Hub (Gateway System)) (continued)

Type	Add-On	Description	Dependency
Support Pack - SP01	NZY0021310268_-0000009.PAT	INNOV MWO 2208 SP01 UI5 Application	Install mWO Add-on (NZY0021310268_-0000007.PAT) before importing the support pack SP01
Support Pack - SP02	NZY0021310268_-0000055.PAT	INNOV MWO 2208 SP02 FIORI Application	Install mWO Add-on (NZY0021310268_-0000052.PAT) before importing the support pack SP02

Table 2-6 MWO Embedded (S/4 HANA) Add-On and Support Packages

Type	Add-On	Description	Dependency
Add-On	MZY0021310268_-0000003.PAT	INNOV MWO 2208 SP02 EMB Addon	Install RACE™ Add-On (EZY0021310268_-0000004.PAT) before Installing RACE™ Add-On (NZY0021310268_-0000006.PAT) before installing MZY0021310268_-0000003.PAT
Support Pack - SP01	MZY0021310268_-0000004.PAT	INNOV MWO 2208 SP01 UI5 Application	Install mWO Add-on (MZY0021310268_-0000003.PAT) before importing the support pack SP01

Table 2-6 MWO Embedded (S/4 HANA) Add-On and Support Packages (continued)

Type	Add-On	Description	Dependency
Support Pack - SP24	MZY0021310268_-0000028.PAT	INNOV MWO 2208 SP02 FIORI Application	Install mWO Add-on (MZY0021310268_-0000026.PAT) before importing the support pack SP24

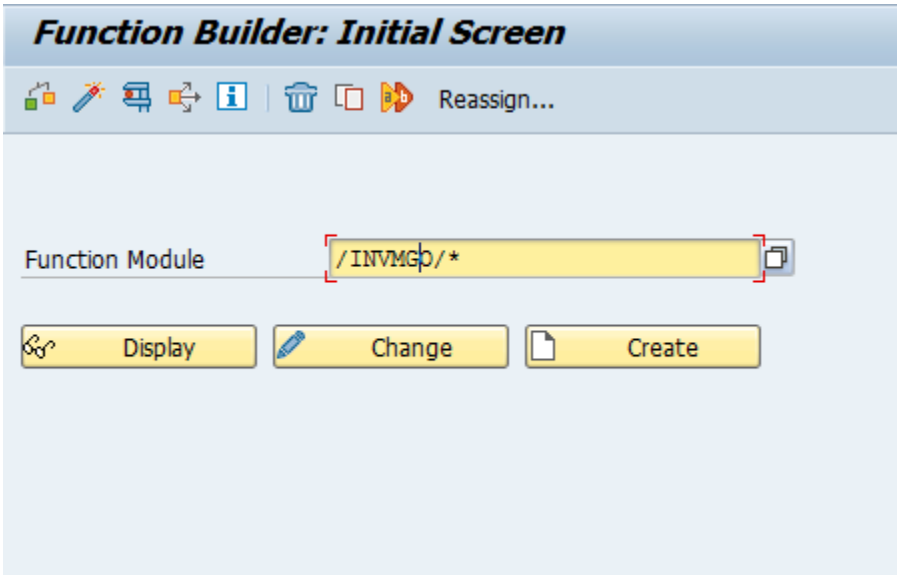
2.3.1. Verify SAP® ECC RACE™ and MWO Add-On

To verify the SAP® ECC RACE™ and MWO add-on:

1. Run the transaction code **SE37**.
2. Enter the program name as **/INVMGO/*** in the **Function Module** field.

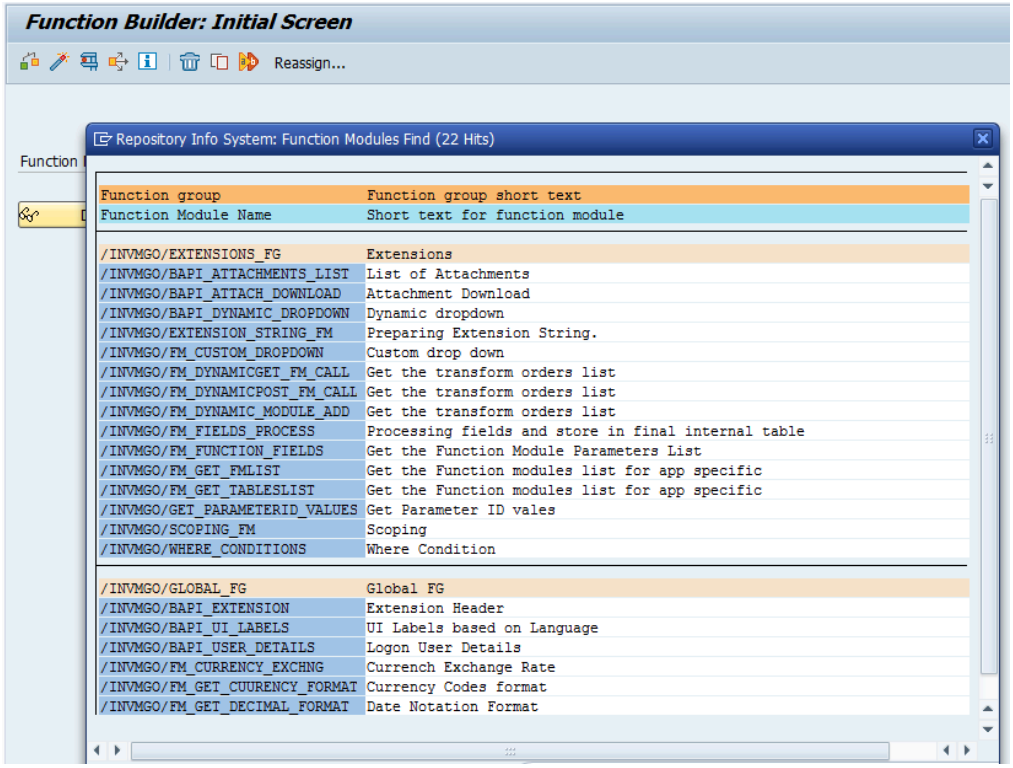
> **Note:**
> Use the program name as **/INVMWO/*** for MWO.

Figure 2-1 Function Builder Initial Screen



3. Press **<F4>** to view the list of classes and capture the screenshot(s) to share the results.

Figure 2-2 Function Module Classes



2.3.2. Verify SAP® GW RACE™ and MWO Add-On

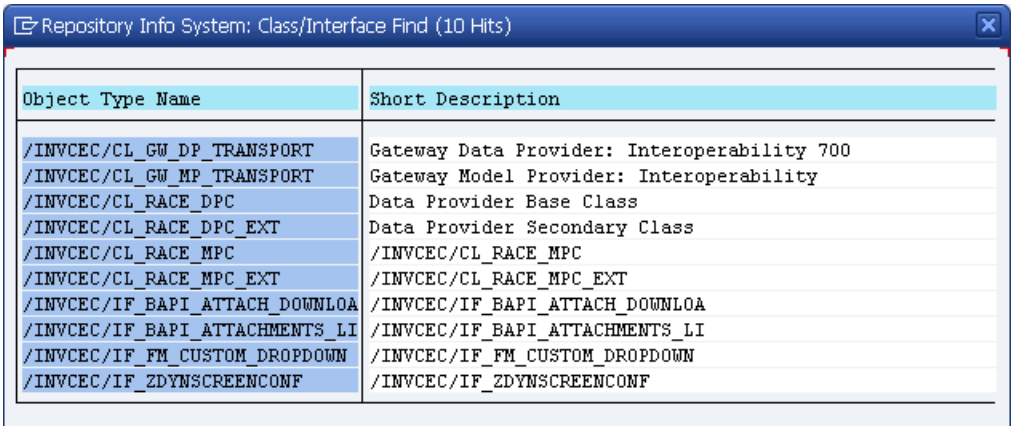
To verify the SAP® GW RACE™ and MWO Add-On:

1. Navigate to the transaction code **SE24**.
2. Enter **object type** to search for all objects **/INVCEC/***.

> **Note:**
> Use the object type as **/INVMWO/*** for MWO.

3. Press **<F4>** to view the list of classes and capture the screenshot(s) to share the results.

Figure 2-3 Object Classes



2.3.3. Activate RACE™ & mWorkOrder OData Services

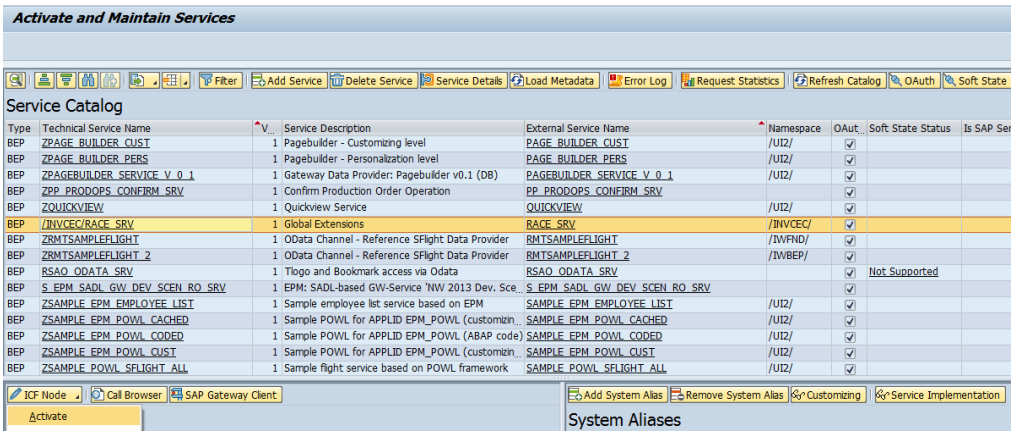
Once add-on and support packs are installed, activate RACE™ and mWorkOrder OData Services.

To activate the RACE™ OData Service:

1. Login to Gateway system.
2. Navigate to the transaction **/IWFND/MAINT_SERVICE**.
3. Select the service **/INVCEC/RACE_SRV**.
4. Click **Activate** from the drop-down list of **ICF Node** options.

   A message appears notifying the package selection appears.

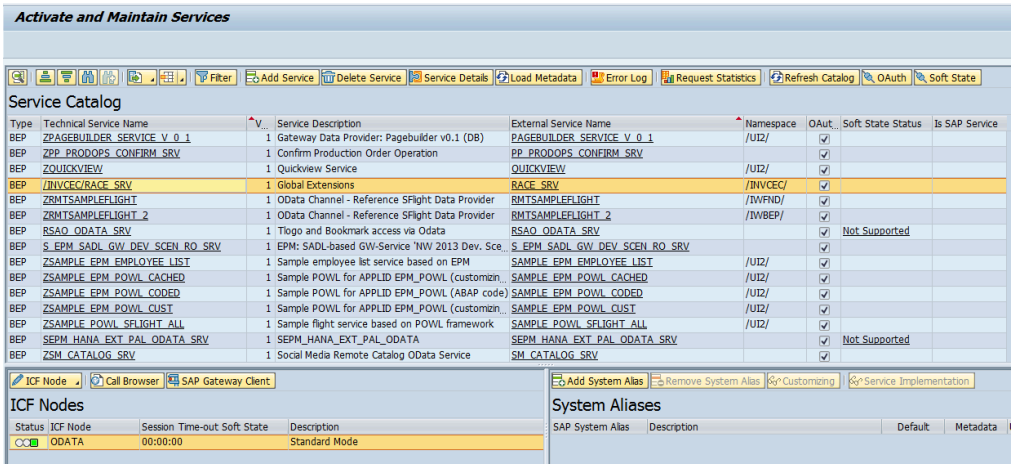
Figure 2-4 Activate and Maintain Services



5. Click the **Local Object** button and continue to activate the service.

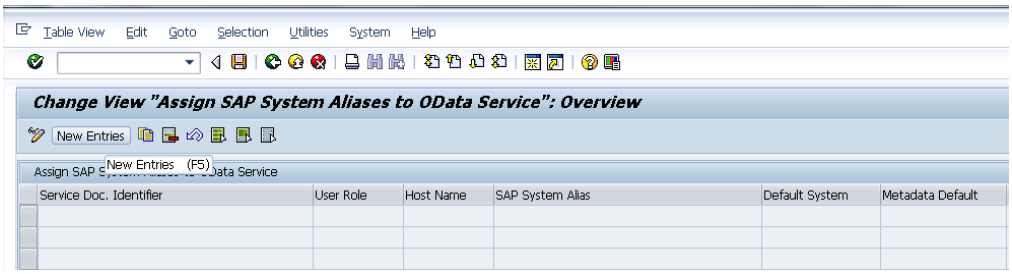
   The OData service is activated and the status turns **green**.

Figure 2-5 Service Status



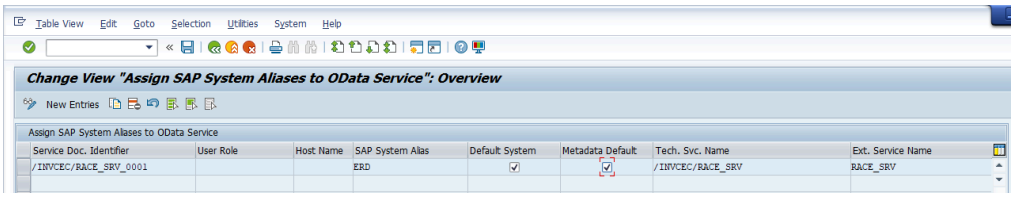
6. Click **Add System Alias** above **System Aliases** on the right to add the SAP System alias for the selected service.
7. Click **New Entries**.

Figure 2-6 New Entries for System Alias



8. Assign the System Alias (ERD in this case) for the service and save changes.

Figure 2-7 Assign SAP System Alias to Service



9. For the below mWorkOrder services, follow the above steps (1-8).

Service	Technical Service Name
Work Order	/INVMWO/MWORKORDER_SRV
Equipment	/INVMWO/MWOEQUIPMENT_SRV
Functional Location	/INVMWO/MWOFUNLOCATION_SRV
Attachments	/INVMWO/MWOATTACHMENTS _SRV

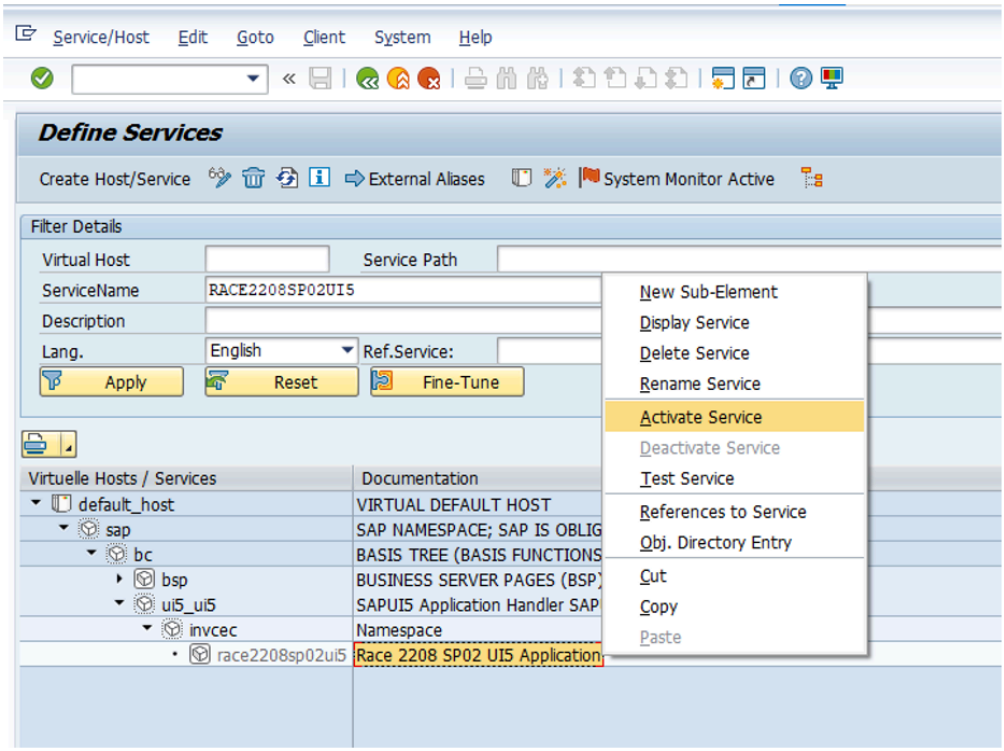
2.3.4. Activate UI5 Service

Activate UI5 Service once you have activated RACE™ and mWorkOrder OData Services.

To activate UI5 Service:

1. Go to the transaction code SICF and navigate to ***/default_host/sap/bc/ui5_ui5/ invcec/ race2208sp02ui5***.
2. Right-click **RACE 2208 SP02 UI5** and click **Activate Service**.

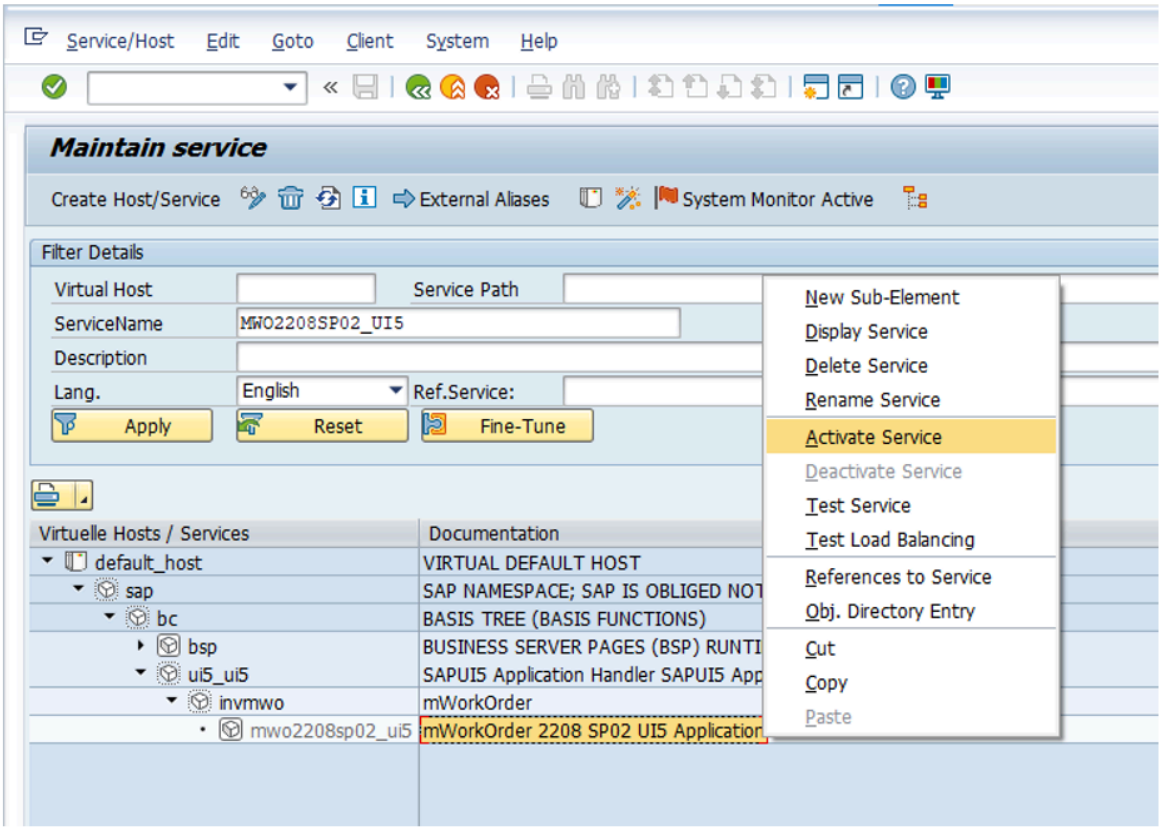
Figure 2-8 Activate RACE BSP Service



3. Click **Yes**.

   Access the SAPUI5 web application by replacing the host name, port number and client number in the following template's URLs to match your SAP NetWeaver Gateway instance: ***http://<hostname>:<port_number>/sap/bc/ui5_ui5/invcec/race2208sp02ui5/ index.html?sap-client=100***

> **Note:**
> To activate the mWorkOrder UI5 service, follow the above steps (1-3).



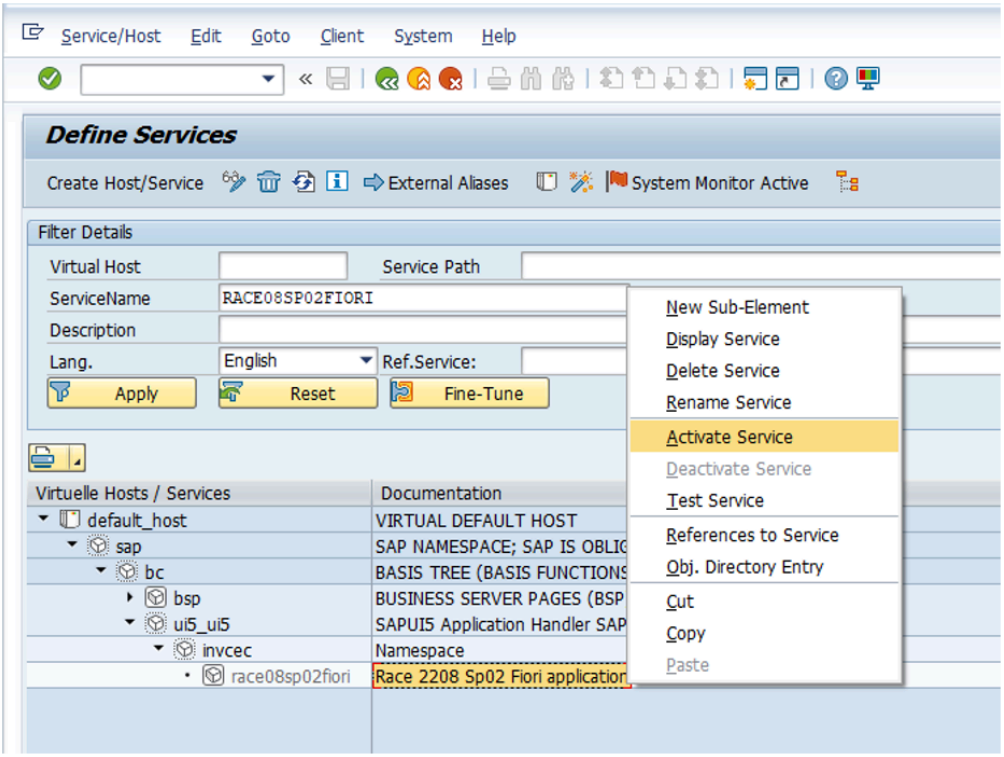
2.3.5. Activate FIORI Service

Activate FIORI service after you have activated UI5 service.

To activate FIORI Service:

1. Go to the transaction code SICF and navigate to ***/default_host/sap/bc/ui5_ui5/invcec/race08sp02fiori***.
2. Right-click **RACE 2208 SP02 FIORI** and click **Activate Service**.

Figure 2-9 Activate RACE FIORI Service

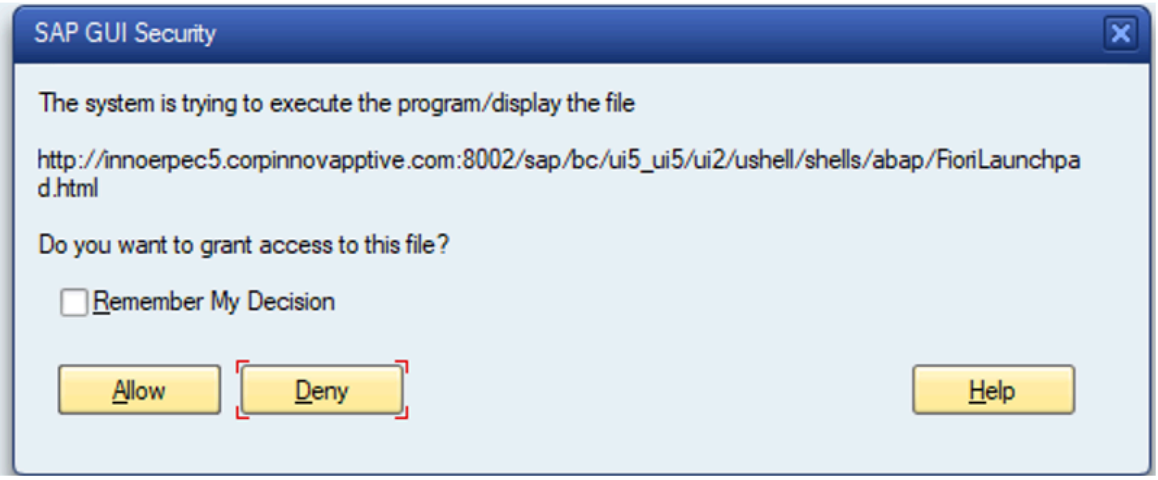


3. Click **Yes**.

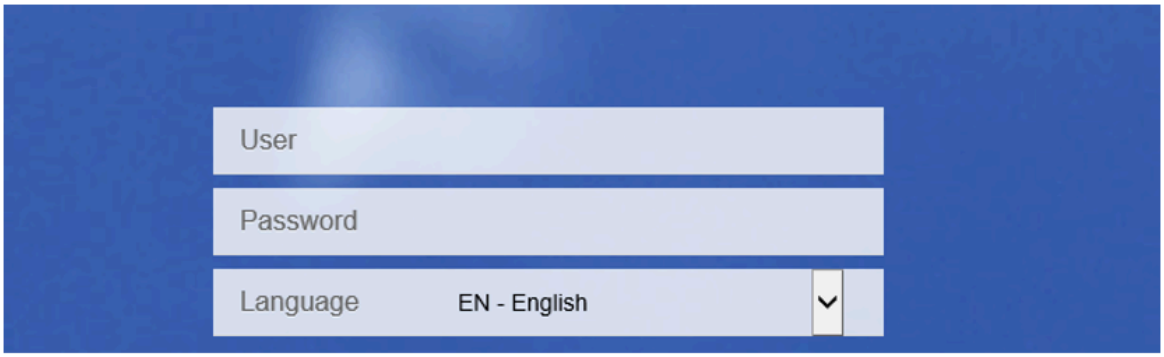
   Access the SAP Fiori web application by transaction code /N/UI2/FLP. You are redirected to the below template URLs to match your SAP NetWeaver Gateway instance:

   - *http://<hostname>:<port_number>/sap/bc/ui5_ui5/invcec/race08sp02fiori/index.html?sap-client=100*

4. Click **Allow**.



5. On the login page, provide the credentials to login.



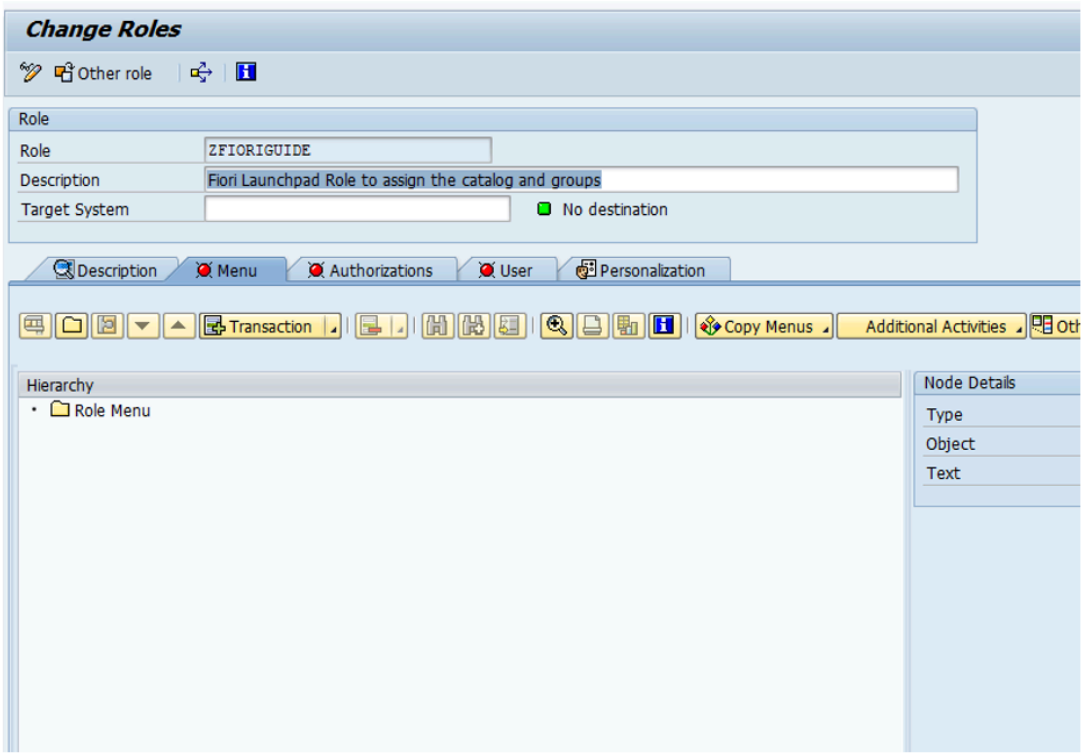
Note:

The logged in user can see only assigned application tiles.

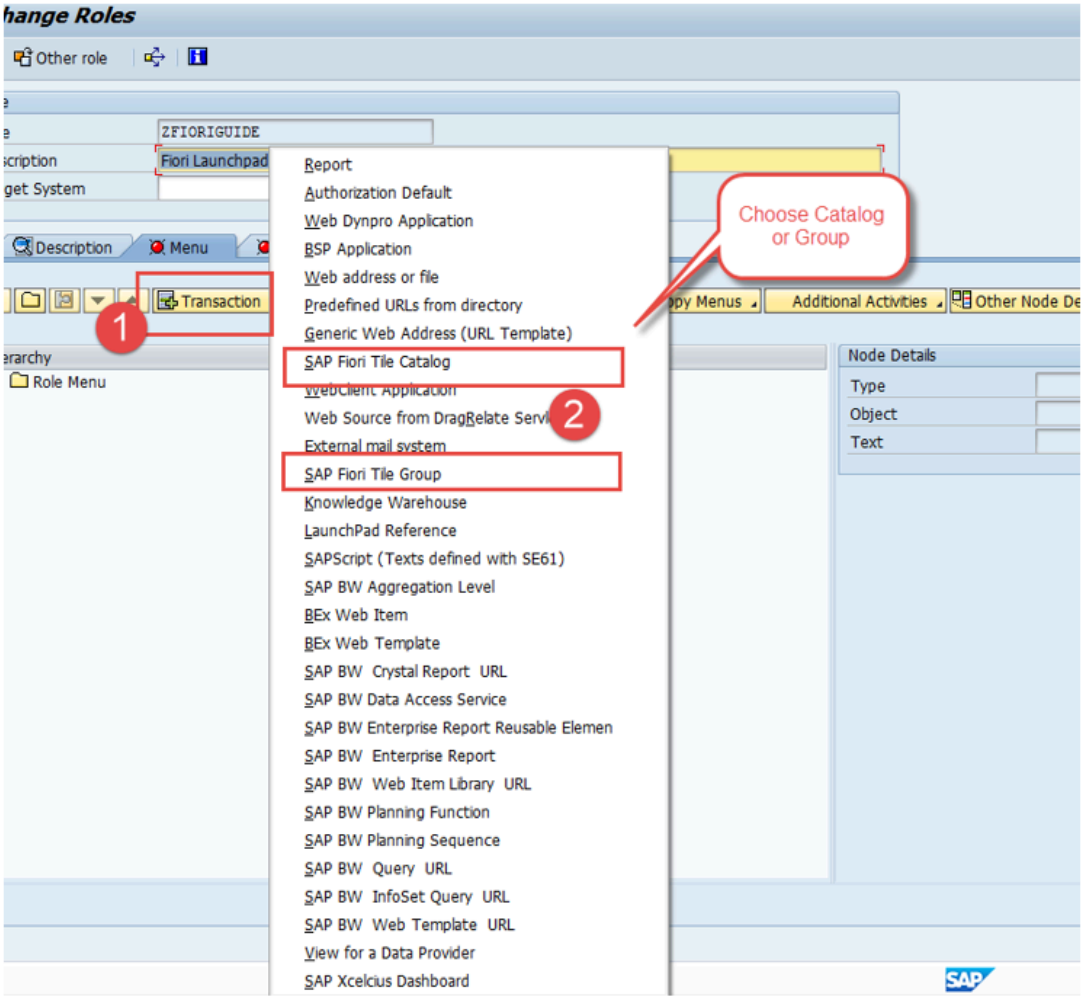
Our team will share Tile & catalog transports along with products add-ons.

6. The steps to assign the catalog or group to the role are as follows:

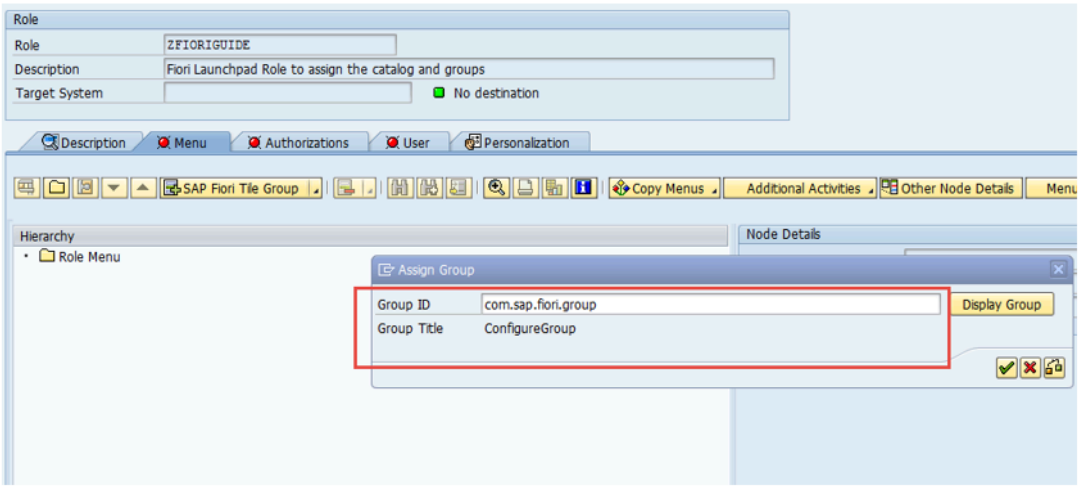
a. Log on to Gateway SAP system and call the transaction PFCG.



b. In the Role menu, click on the button with plus symbol and select the option to either add a tile catalog or tile group.

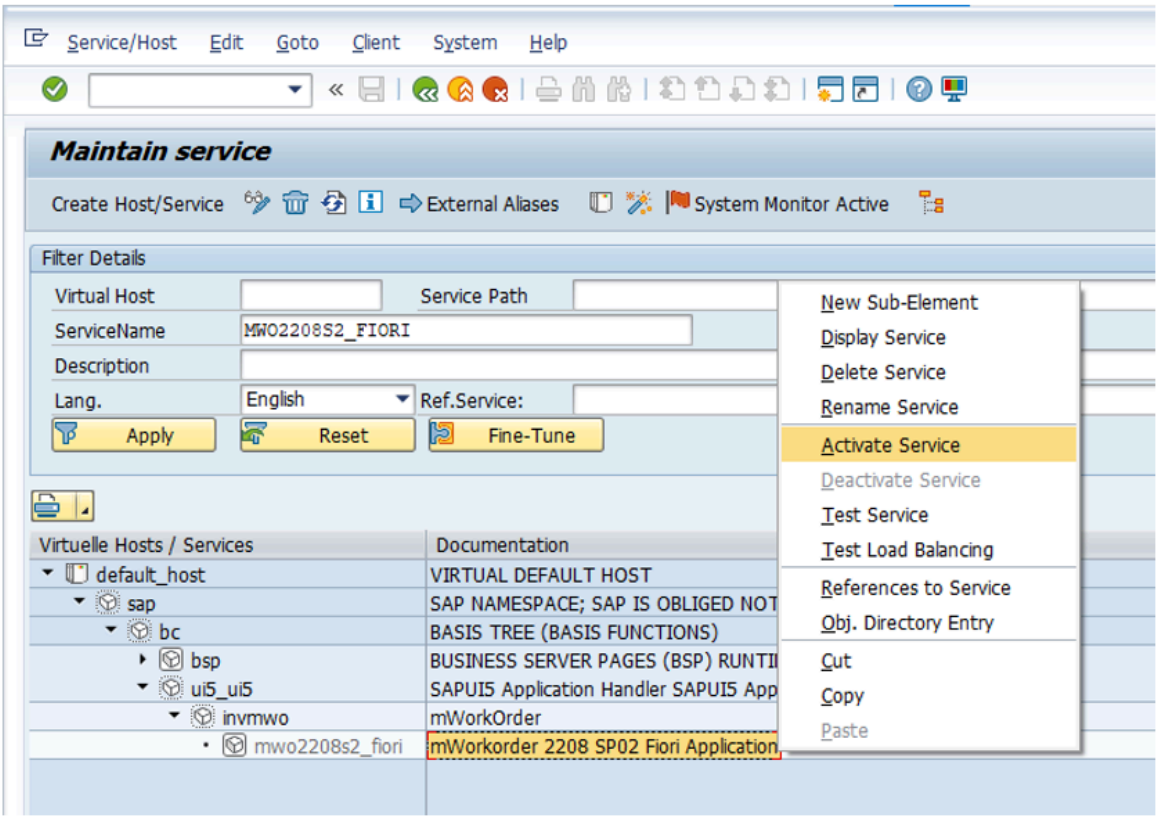


c. Provide the catalog / group name and submit.



d. Save the changes to the role.

Note:
To activate the mWorkOrder FIORI service, follow the above steps (1-5).

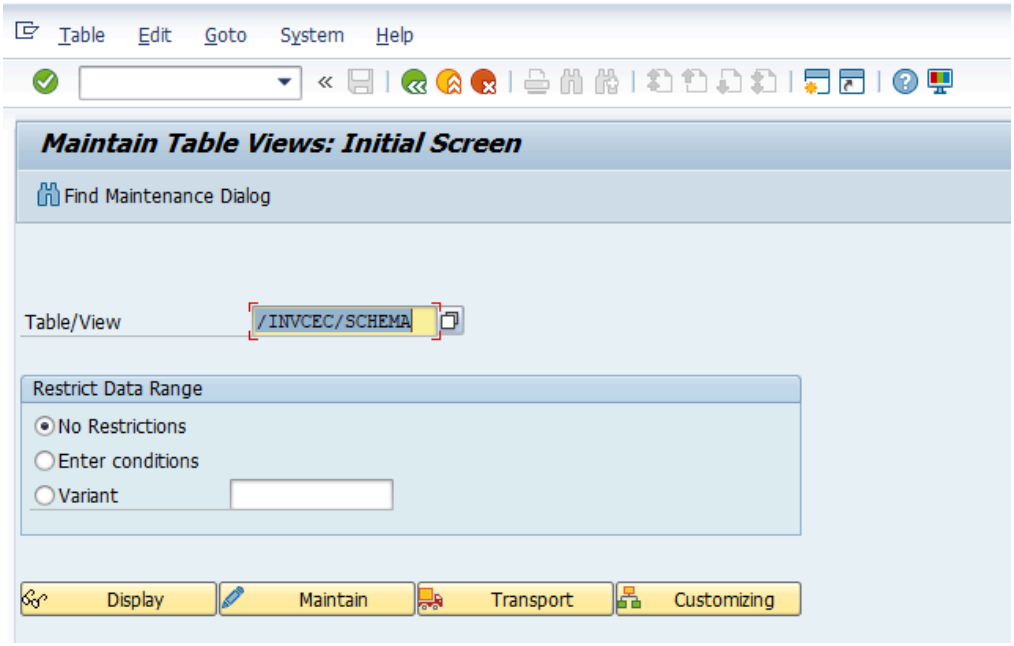


3. Check Schema Change Indicator

After importing support packs into the systems, perform the following steps to check the Schema Change Indicator.

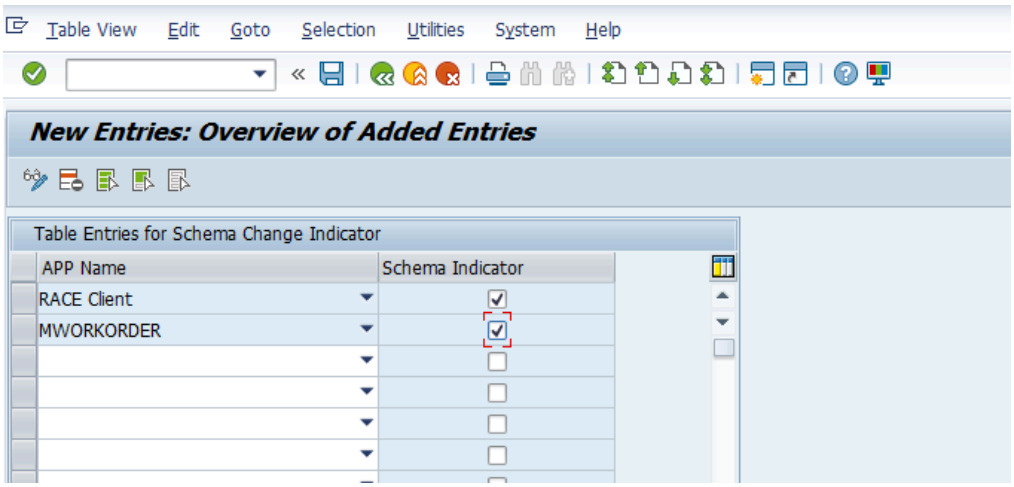
1. Login to SAP Gateway system.
2. Go to **tcode – SM30**.

Figure 3-1 SM30



3. Click **Maintain**.
4. Click **New Entries**.

Figure 3-2 Table Entries for Schema Change Indicator



5. Select RACE™ Client and mWorkOrder from App Name drop-down and select **Schema Indicator** checkbox.
6. Save the changes in Transport Request to move the changes to Quality and Production environment.

Table 3-1 Schema Details

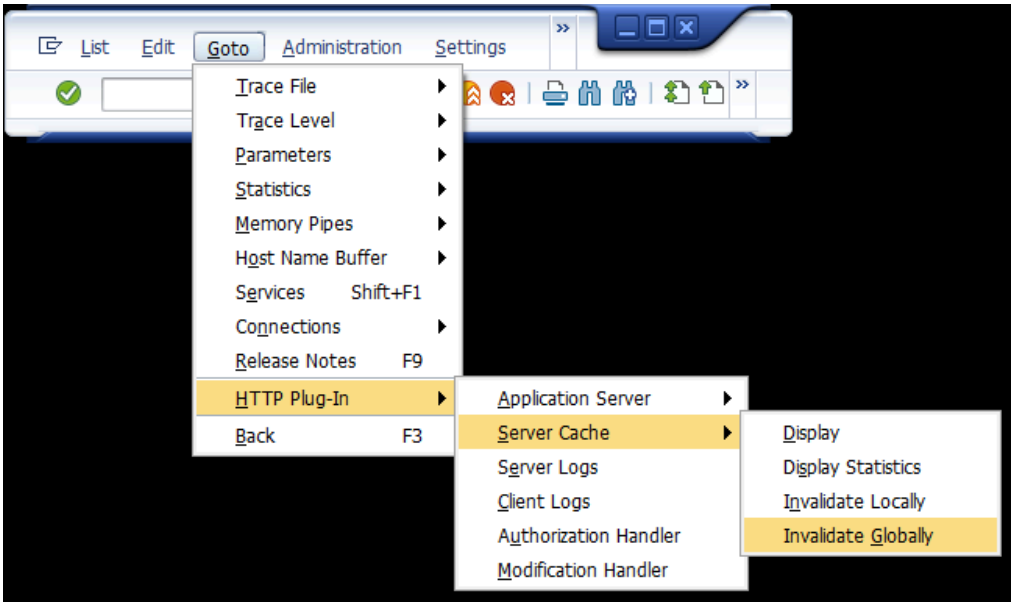
Base URL	Old Schema	New Schema
/INVCEC/RACE_SRV	/INVCEC/RACE_SRV	RACECLIENT
/INVMWO/MWORKORDER_-SRV	/INVMWO/MWORKORDER_-SRV	MWORKORDER
/INVMWO/MWOEQUIPMEN-T_SRV	/INVMWO/MWOEQUIPMEN-T_SRV	MWOEQUIPMENT
/INVMWO/MWOFUNLO-CATION_SRV	/INVMWO/MWOFUNLO-CATION_SRV	MWOFUNLOCATION
/INVMWO/WOATTACHMEN-TS_SRV	/INVMWO/WOATTACHMEN-TS_SRV	MWOATTACHMENTS
/INVMWO/MWOOPERATOR-ROUND_SRV	/INVMWO/MWOOPERATOR-ROUND_SRV	MWOOPERATORROUND

4. Clean SAP Gateway Cache

Clean up the SAP Gateway Cache after importing support packs into the systems.

1. Login to SAP Gateway system.
2. Go to transaction /n/iwfnd/cache_cleanup in the gateway system.
3. Select the **Cleanup Cache for all Models** checkbox and click **Execute**.
4. Go to transaction */n/iwbep/cache_cleanup* in the gateway system.
5. Select the **Cleanup Cache for all Models** checkbox and click **Execute**.
6. Go to transaction *smicm* in the gateway system.
7. Navigate to **Goto**, **HTTP Plugin**, **Server Cache** and **Invalidate Globally** option.

Figure 4-1 smicm transaction



8. Click **Yes**.

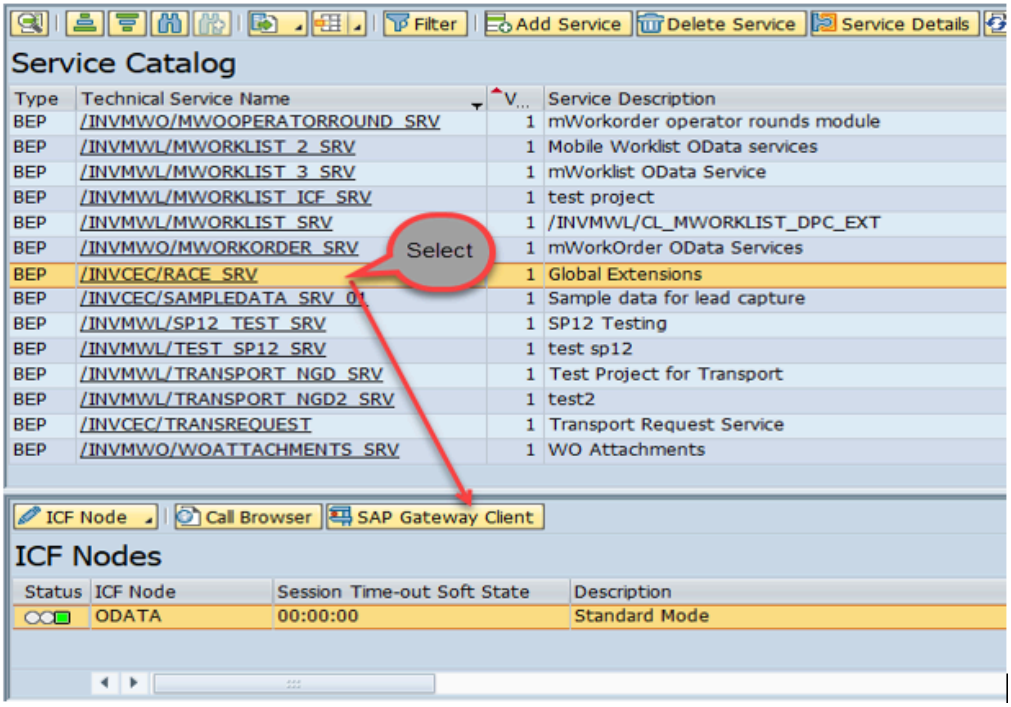
Validate SAP Gateway Cache Cleanup

1. Navigate to t-code: **/n/iwfnd/maint_service**

   In HUB systems this step should be done in Gateway system

2. Filter **Technical Service Name** with **/INV*** to view the Innovapptive specific services.
3. Click each service & click **SAP Gateway Client**.

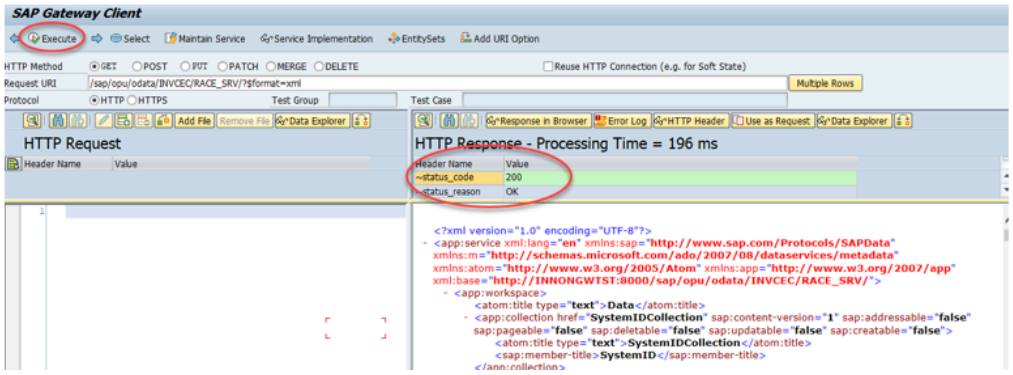
Figure 4-2 Validate Clean up of each service



4. Click **Execute** in the next screen.

   You should see the value 200 in green.

Figure 4-3 Validate Clean up

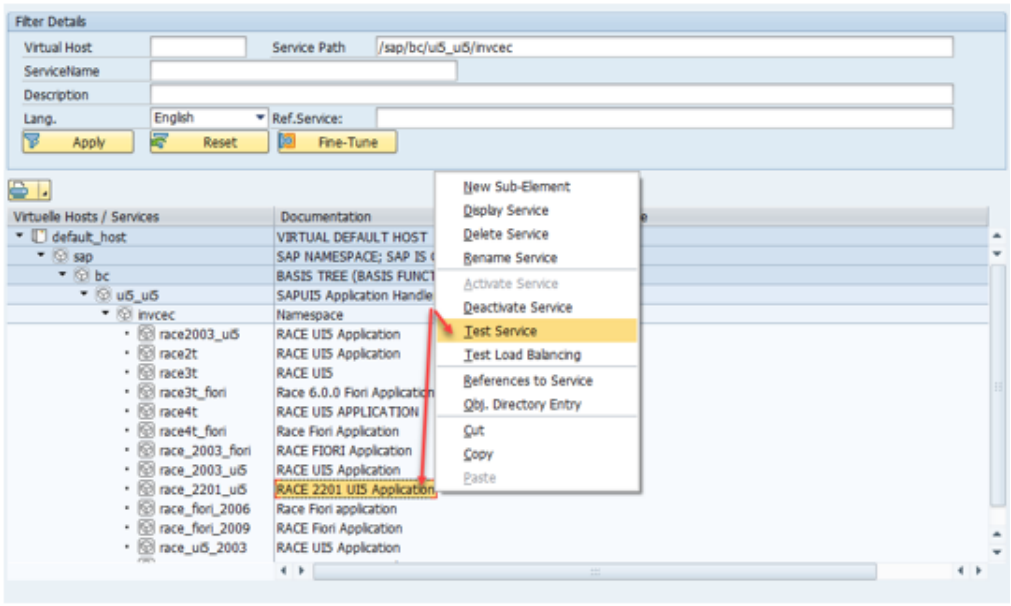


5. Navigate to t-code SICF: **/sap/bc/ui5_ui5/invcec/**

   In the following steps you will validate RACE UI5 Application

6. Click **Test Service**.

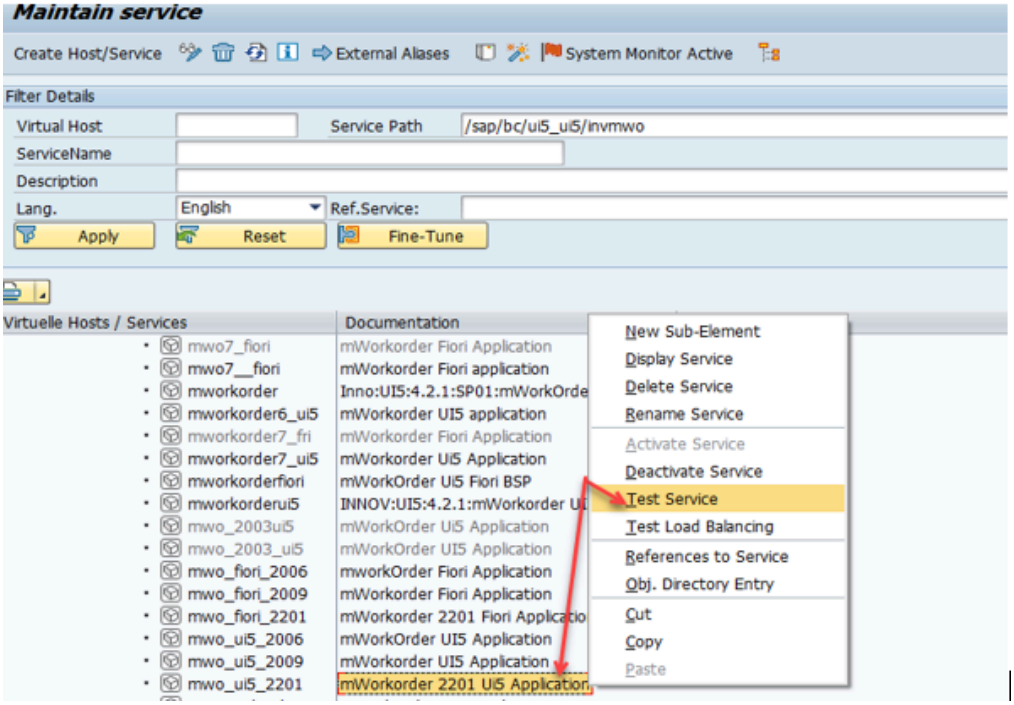
Figure 4-4 Validate Clean up



7. Enter user credentials in the RACE Screen (Gateway for HUB Systems) and authenticate.

8. Share the URL with the Innovapptive team. If there is web dispatcher, prefix the host and port to the path. For example, *https://instst.testing.com:44100/sap/bc/ui5_ui5/incec/race_2203_ui5*
9. Test **UI 5 application**.

Figure 4-5 Validate Clean up



10. Share the URL with the Innovapptive team. If there is web dispatcher, prefix the host and port to the path. For example, *https://instst.testing.com:44100/sap/bc/ui5_ui5/invmwo/mwo_ui5_2203*

5. Configure SAP Gateway for mWorkOrder

Plant maintenance workers can use mWorkOrder solution to do the following:

- Download work orders to mobile devices, view workorder history and assigned activities,
- Access asset information to facilitate diagnosis and repair, and issue and return parts
- Log timesheets, view documents, add images and attachments.
- Create personalized to-do lists that include the specific details for a task.
- Capture labor information accurately using start, stop, and pause controls.
- Print workorder reports with an ease.

5.1. Prerequisites for SAP Gateway Configuration

Ensure these components are installed and configured:

- Dependency
    - Innovapptive Add-Ons and Support Packs are installed successfully.
- Assumptions
    - The backend processes required for the app are enabled and related data is set up.
    - The Innovapptive mWorkOrder mobile solution Add-on for SAP ECC and SAP NetWeaver Gateway are installed and validated.
    - Mobile platform (SAP Mobile Platform or SAP Cloud Platform mobile services) is configured with the mobile application.

The mWorkOrder mobile solution helps you do the following with SAP Plant Maintenance (PM) module.

- Work Orders
    - Create Work Order
    - Create Emergency Work Order
    - Change Work Order
    - Release and Complete Work Order
    - Time Confirmation of Work Order Operation
    - Overall Completion Confirmation
    - Component Issue
    - Component Issue Reversal
    - Configurable Dashboard—Work Orders

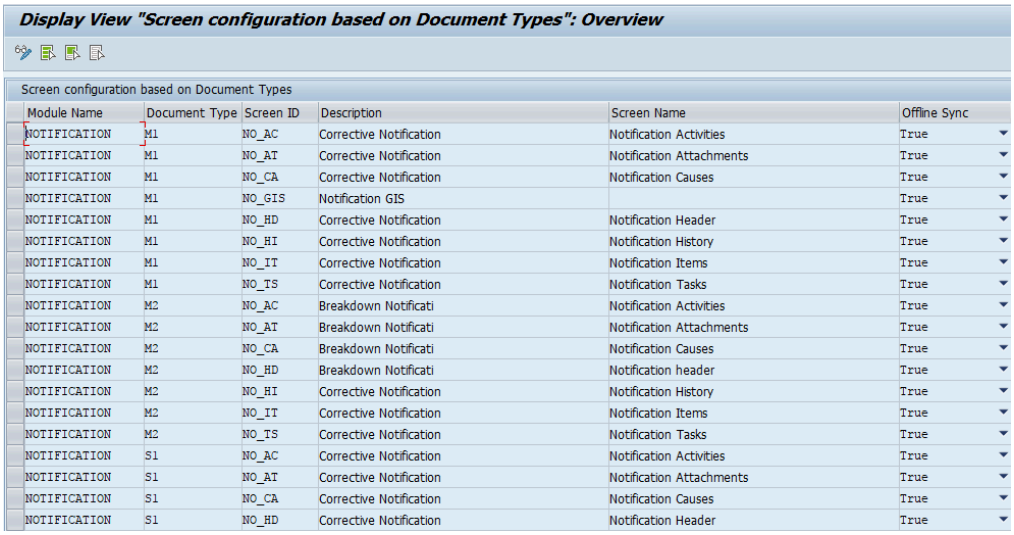
- Notifications
    - Create Notification
    - Create Follow-up Notification
    - Change Notification
    - Complete Tasks and Activities
    - Complete Notification
    - Configurable Dashboard—Notifications
- Equipment
    - Create Equipment
    - Modify Equipment
    - Display Equipment
    - Create a Notification
    - Create a Work Order
    - Equipment Dashboard
- Functional Locations
    - Create Functional Location
    - Modify Functional Location
    - Display Functional Location
    - Create a Notification
    - Create a Work Order
- Time Sheets
    - Create Time Sheet
    - Change Time Sheet
    - Display Time Sheet
- Measuring Points
    - Rounds processing
    - Measurement Readings
    - Measurement Document creation
- Inspection Lots
    - Inspection Lot display and Characteristics overview
    - Results Recording
- Usage Decisions
    - View Results
    - Usage Decisions

5.2. Configure screens based on Order Types and Notification Types

Configure screens or tabs based on Plant Maintenance Work Order Types or Notification Types.

1. In SAP NetWeaver Gateway, run T-Code **/n/INVMWO/SCRCONFI**. Table is **/INVMWO/SCRCONFI**.
2. Add the following entries:

Figure 5-1 Screens based on Document Type - Notifications



Display View "Screen configuration based on Document Types": Overview

Screen configuration based on Document Types

Module Name	Document Type	Screen ID	Description	Screen Name	Offline Sync
NOTIFICATION	M1	NO_AC	Corrective Notification	Notification Activities	True
NOTIFICATION	M1	NO_AT	Corrective Notification	Notification Attachments	True
NOTIFICATION	M1	NO_CA	Corrective Notification	Notification Causes	True
NOTIFICATION	M1	NO_GIS	Notification GIS		True
NOTIFICATION	M1	NO_HD	Corrective Notification	Notification Header	True
NOTIFICATION	M1	NO_HI	Corrective Notification	Notification History	True
NOTIFICATION	M1	NO_IT	Corrective Notification	Notification Items	True
NOTIFICATION	M1	NO_TS	Corrective Notification	Notification Tasks	True
NOTIFICATION	M2	NO_AC	Breakdown Notificati	Notification Activities	True
NOTIFICATION	M2	NO_AT	Breakdown Notificati	Notification Attachments	True
NOTIFICATION	M2	NO_CA	Breakdown Notificati	Notification Causes	True
NOTIFICATION	M2	NO_HD	Breakdown Notificati	Notification header	True
NOTIFICATION	M2	NO_HI	Corrective Notification	Notification History	True
NOTIFICATION	M2	NO_IT	Corrective Notification	Notification Items	True
NOTIFICATION	M2	NO_TS	Corrective Notification	Notification Tasks	True
NOTIFICATION	S1	NO_AC	Corrective Notification	Notification Activities	True
NOTIFICATION	S1	NO_AT	Corrective Notification	Notification Attachments	True
NOTIFICATION	S1	NO_CA	Corrective Notification	Notification Causes	True
NOTIFICATION	S1	NO_HD	Corrective Notification	Notification Header	True

Figure 5-2 Screens based on Document Type - Work Orders

Display View "Screen configuration based on Document Types": Overview

Screen configuration based on Document Types

Module Name	Document Type	Screen ID	Description	Screen Name	Offline Sync
WORKORDER	PM01	WOHIER	Hierarchy	Hierarchy	True
WORKORDER	PM01	WO_AT	Maintenance Order	Work Order Attachments	True
WORKORDER	PM01	WO_CO	Maintenance Order	Work Order Components	True
WORKORDER	PM01	WO_GIS	Work Order GIS		True
WORKORDER	PM01	WO_HD	Maintenance Order	Work Order Header	True
WORKORDER	PM01	WO_HI	Maintenance Order	Work Order History	True
WORKORDER	PM01	WO_OP	Maintenance Order	Work Order Operations	True
WORKORDER	PM01	WO_PL	Maintenance Order	Work Order Planning view	True
WORKORDER	PM01	WO_SG	Work Order Form	Work Order Form	True
WORKORDER	PM02	WOHIER	Hierarchy	Hierarchy	True
WORKORDER	PM02	WO_AT	Maintenance Order	Work Order Attachments	True
WORKORDER	PM02	WO_CO	Maintenance Order	Work Order Components	True
WORKORDER	PM02	WO_HD	Maintenance Order	Work Order Header	True
WORKORDER	PM02	WO_HI	Maintenance Order	Work Order History	True
WORKORDER	PM02	WO_OP	Maintenance Order	Work Order Operations	True
WORKORDER	PM02	WO_PL	Maintenance Order	Work Order Planning View	True
WORKORDER	PM06	WOHIER	Hierarchy	Hierarchy	True
WORKORDER	PM06	WO_AT	Maintenance Order	Work Order Attachments	True
WORKORDER	PM06	WO_CO	Maintenance Order	Work Order Components	True
WORKORDER	PM06	WO_HD	Maintenance Order	Work Order Header	True

Table 5-1 Screen attributes

Field	Description
Module Name	Module in the mobile app like Notification or Work Order for which the Document Type is configured.
Document Type	Document Type (Work Order Type/Notification Type) for use on the mWorkOrder Mobile App.
Screen ID	Unique ID of the screen for the **Document Type**.
Description	Description of the **Document Type**.
Screen Name	Description to identify the Screen.
Offline Sync	To show/hide screen on the mobile application.

5.3. Configure Plant Maintenance Emergency Order Types

To configure plant maintenance emergency work order types:

1. In SAP ECC, run T-Code **/n/INVMWO/EMGDOC**. Table is **/INVMWO/EMGDOC**.
2. Add the following entries:

Figure 5-3 Emergency Document Type

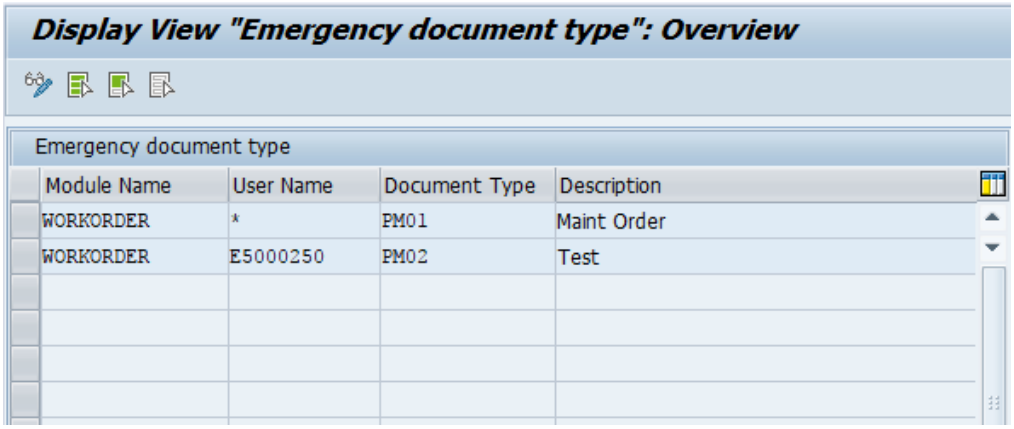


Table 5-2 Emergency Order Document Type Attributes

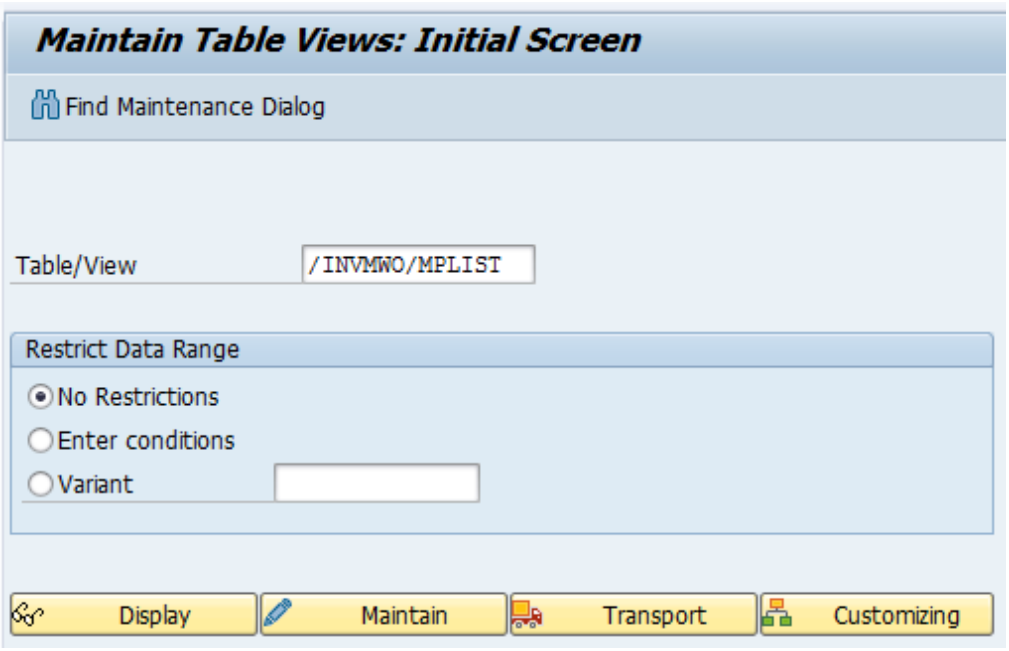
Field	Description
Module Name	Name of the module where the Document Type is configured.
User Name	User to whom the Document Type is available in the application. **Note:** It is recommended to configure this field as '*' so that the Document Type is available to all the users.
Document Type	Indicates the Document Type like Work Order Type.
Description	Description of the Document Type.

5.4. Map Measuring Entry List to Mobile User

To map measuring entry list to users:

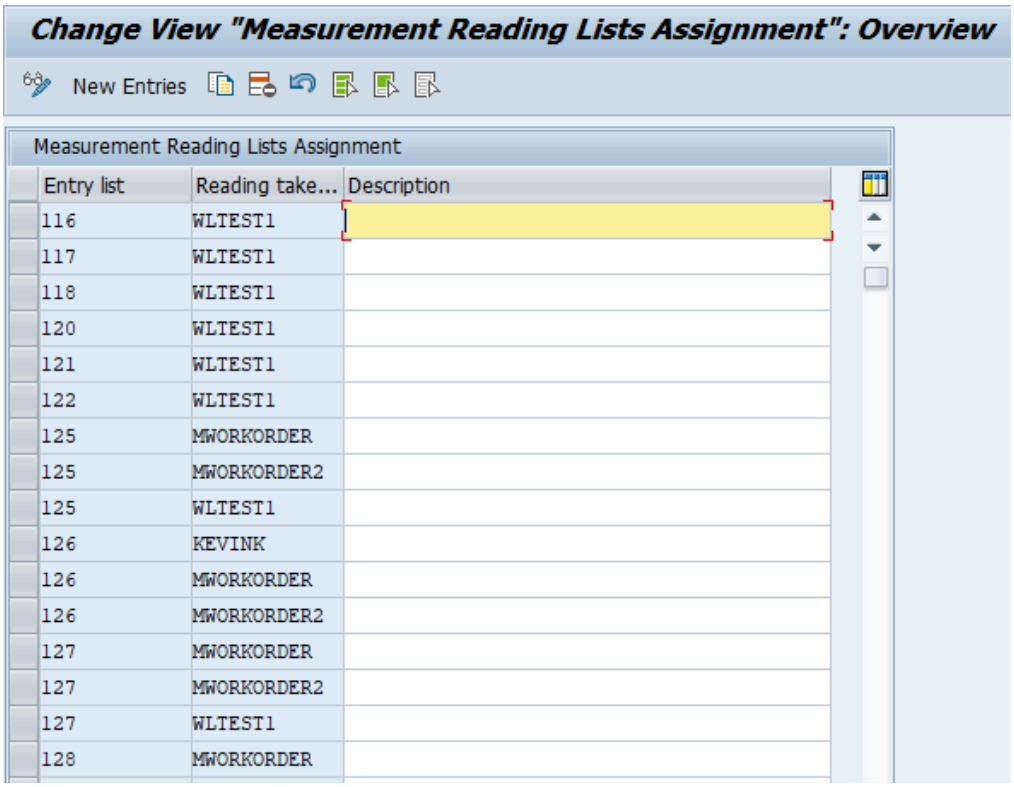
1. In SAP ECC, run SM30. Give the Table Name as /INVMWO/MPLIST.
2. Click **Maintain**.

Figure 5-4 SM30



3. Click **New Entries** and maintain new entries. Entry List is the Readings Task List and Reading Taken by is the Mobile user to whom the Task List will be assigned and sent to capture Readings.

Figure 5-5 Measurement Reading Lists Assignment



5.5. Configure Priority and System Status Color Coding

To configure priority and system status in Work Order and Notification Modules:

1. In SAP ECC, run T-Code SM30. Table is /INVMWO/PRICOLOU.
2. Add the following entries:

Figure 5-6 Priority Color

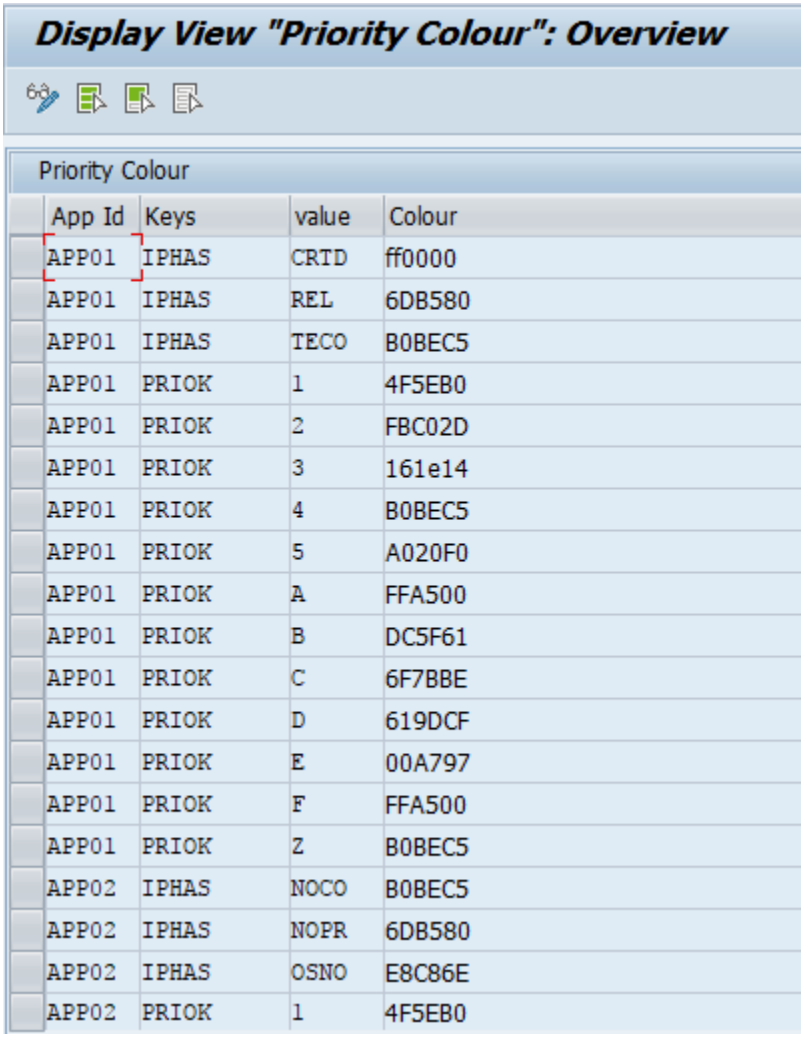


Table 5-3 Priority and System Status configuration attributes

Field	Description
App ID	Unique application ID to identify the module where the priority color coding is configured.
Key	Standard SAP field (Priority/Status) key to configure color coding.

Field	Description
Value	SAP field (Priority/Status) value to configure color coding.
Colour	Indicates the hexa decimal code of the color for Priority/Status.

5.6. Configure Work Order Numbers Color Coding

To configure work order numbers color coding in work order module:

1. In SAP ECC, run T-Code **SM30**. Table is **/INVMWO/WO_CLRCD**.
2. Add the following entries:

Figure 5-7 Work Order Color Coding

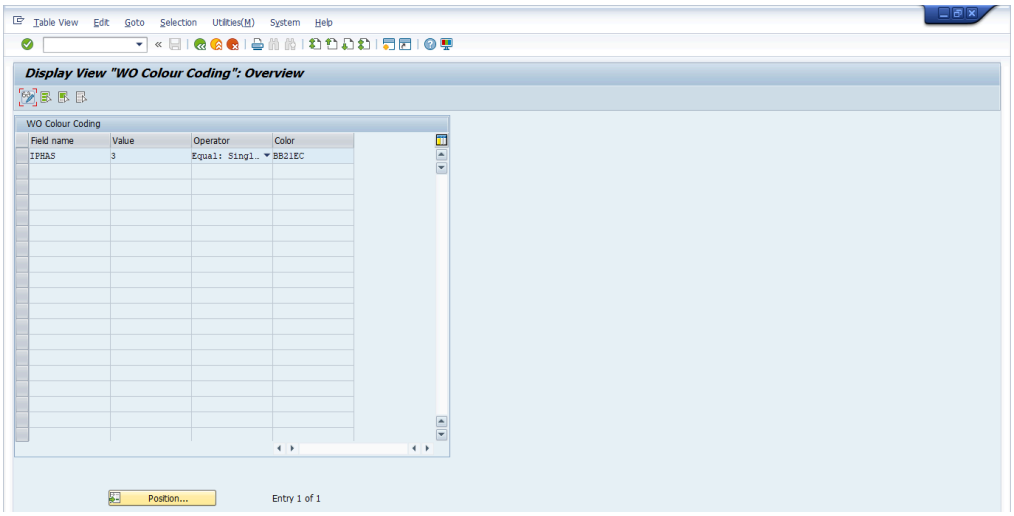


Table 5-4 Work Order Color Coding configuration attributes

Field	Description
Field Name	Work Order field key.

Field	Description
Value	Value of the field to be compared.
Operator	Formula (<, >, =, ≥, ≤)
Color	This field allows you to enter desired color coding for Work Order Numbers. Use the HTML color codes to define the Work Order Number colors.

5.7. Configure DMS Document Object Links

To configure DMS document object links:

1. In SAP ECC, run T-Code /n/INVMWO/OBJLINK. Table is /INVMWO/OBJLINK.
2. Add the following entries:

Figure 5-8 DMS Document Object Links

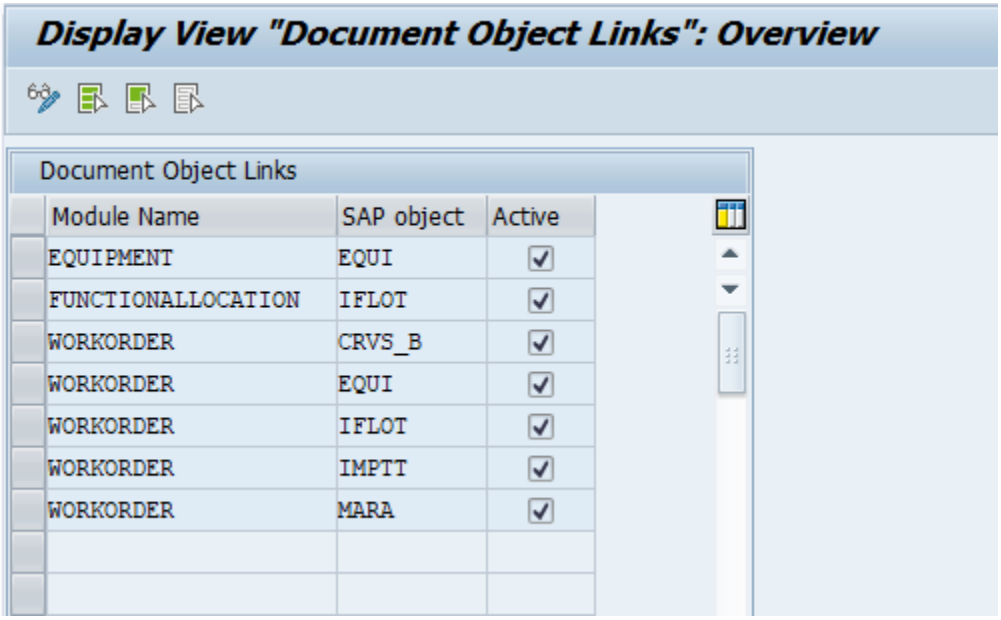


Table 5-5 DMS Document Object Links attributes

Field	Description
Module Name	Name of the module where the object link is configured.
SAP Object	Source field to configure DMS document object link.
ACTIVE	To enable/disable the object link.

5.8. Configure staging table for Equipment and Functional Location master

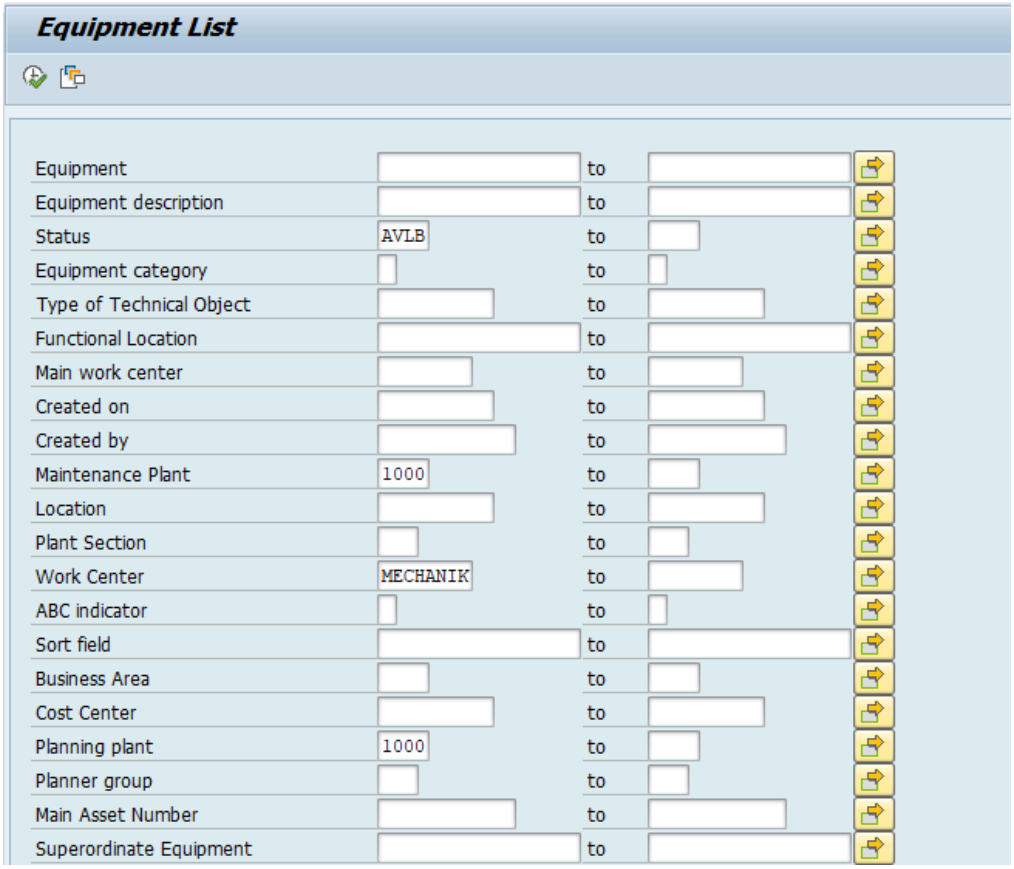
Learn how to configure staging table for standard tables of Equipment and Functional Location master.

This process is applicable only if the Scoping ID **APPSTG** is enabled in RACE™.

To configure staging table:

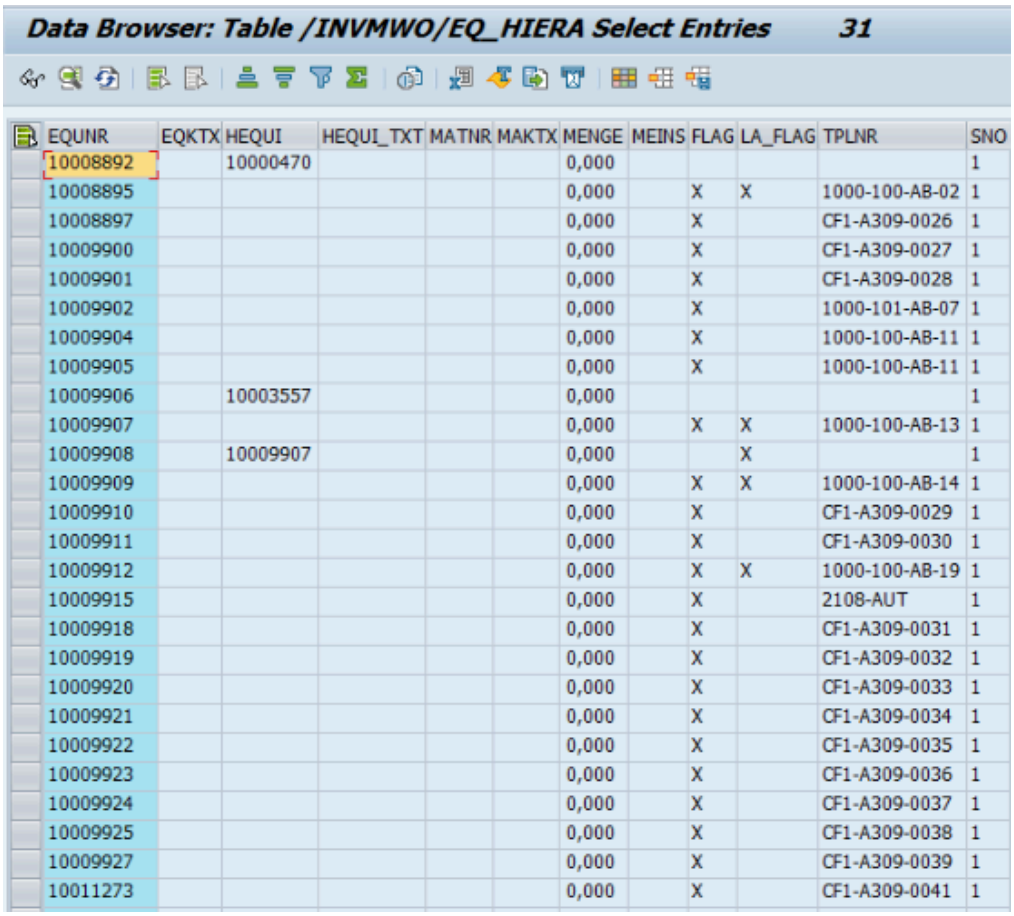
1. In SAP ECC, run T-Code **/n/INVMWO/EQ_STG**.
2. Enter selection criteria and execute.

Figure 5-9 Equipment Selection Criteria



3. Entries are shown in these tables:
    a. /INVMWO/EQ_HIERA
    b. /INVMWO/EQ_MEASU
    c. /INVMWO/EQ_H_SUB
    d. /INVMWO/EQ_LIST
    e. /INVMWO/EQ_HEADR
    f. /INVMWO/EQ_GEOLC
    g. /INVMWO/EQ_CLSIT
    h. /INVMWO/EQ_CLSHD
    i. /INVMWO/EQ_PRTNR

Figure 5-10 Equipment Hierarchy table

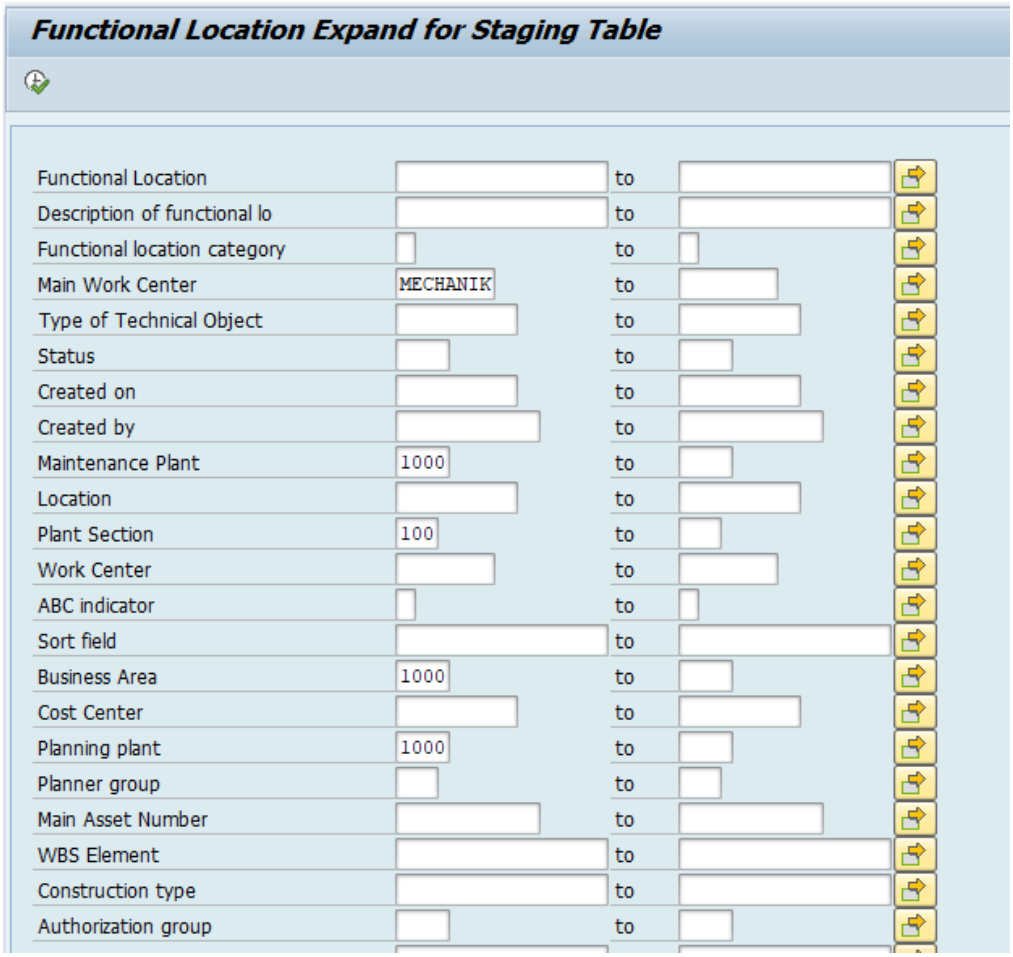


Data Browser: Table /INVMWO/EQ_HIERA Select Entries 31

EQUNR	EQKTX	HEQUI	HEQUI_TXT	MATNR	MAKTX	MENGE	MEINS	FLAG	LA_FLAG	TPLNR	SNO
10008892		10000470				0,000					1
10008895						0,000		X	X	1000-100-AB-02	1
10008897						0,000		X		CF1-A309-0026	1
10009900						0,000		X		CF1-A309-0027	1
10009901						0,000		X		CF1-A309-0028	1
10009902						0,000		X		1000-101-AB-07	1
10009904						0,000		X		1000-100-AB-11	1
10009905						0,000		X		1000-100-AB-11	1
10009906		10003557				0,000					1
10009907						0,000		X	X	1000-100-AB-13	1
10009908		10009907				0,000			X		1
10009909						0,000		X	X	1000-100-AB-14	1
10009910						0,000		X		CF1-A309-0029	1
10009911						0,000		X		CF1-A309-0030	1
10009912						0,000		X	X	1000-100-AB-19	1
10009915						0,000		X		2108-AUT	1
10009918						0,000		X		CF1-A309-0031	1
10009919						0,000		X		CF1-A309-0032	1
10009920						0,000		X		CF1-A309-0033	1
10009921						0,000		X		CF1-A309-0034	1
10009922						0,000		X		CF1-A309-0035	1
10009923						0,000		X		CF1-A309-0036	1
10009924						0,000		X		CF1-A309-0037	1
10009925						0,000		X		CF1-A309-0038	1
10009927						0,000		X		CF1-A309-0039	1
10011273						0,000		X		CF1-A309-0041	1

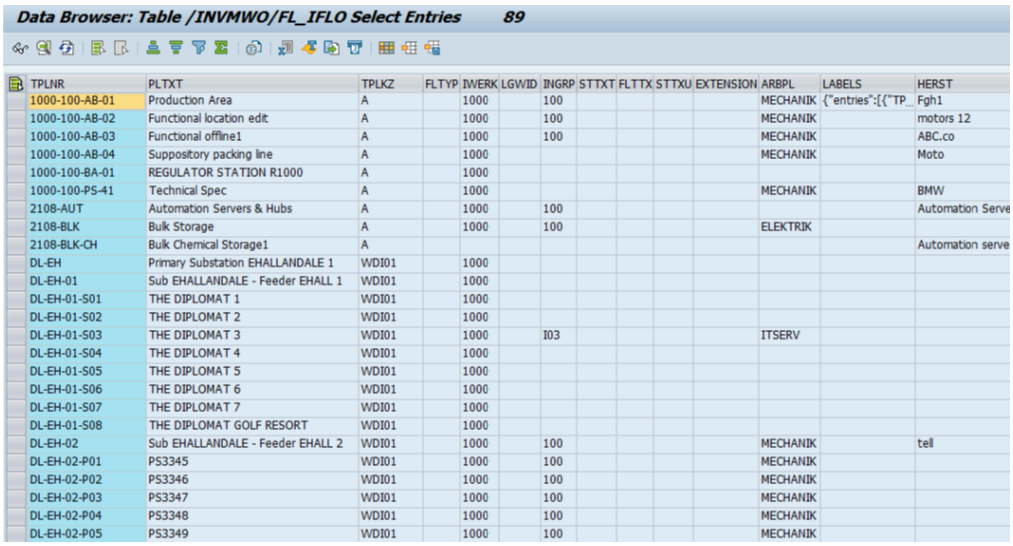
4. In SAP ECC, run T-Code **/n/INVMWO/FL_STG**.
5. Enter selection criteria and execute.

Figure 5-11 Functional Location Selection Criteria



6. Entries are shown in these tables:
    a. /INVMWO/FL_IFLO
    b. /INVMWO/FL_HI_DE
    c. /INVMWO/FCHEADER
    d. /INVMWO/FL_HIER
    e. /INVMWO/FL_MEAS
    f. /INVMWO/NOTF_GEO

Figure 5-12 Functional Location table



Data Browser: Table /INVMWO/FL_IFLO Select Entries 89

TPLNR	PLTXT	TPLKZ	FLTYP	IWERK	LGWID	INGRP	STTXT	FLTTX	STTXU	EXTENSION	ARBPL	LABELS	HERST
1000-100-AB-01	Production Area	A		1000		100					MECHANIK	{"entries":[{"TP...	Fgh1
1000-100-AB-02	Functional location edit	A		1000		100					MECHANIK		motors 12
1000-100-AB-03	Functional offline1	A		1000		100					MECHANIK		ABC.co
1000-100-AB-04	Suppository packing line	A		1000							MECHANIK		Moto
1000-100-BA-01	REGULATOR STATION R1000	A		1000									
1000-100-PS-41	Technical Spec	A		1000							MECHANIK		BMW
2108-AUT	Automation Servers & Hubs	A		1000		100							Automation Serve
2108-BLK	Bulk Storage	A		1000		100					ELEKTRIK		
2108-BLK-CH	Bulk Chemical Storage1	A											Automation serve
DL-EH	Primary Substation EHALLANDALE 1	WDI01		1000									
DL-EH-01	Sub EHALLANDALE - Feeder EHALL 1	WDI01		1000									
DL-EH-01-S01	THE DIPLOMAT 1	WDI01		1000									
DL-EH-01-S02	THE DIPLOMAT 2	WDI01		1000									
DL-EH-01-S03	THE DIPLOMAT 3	WDI01		1000		I03					ITSERV		
DL-EH-01-S04	THE DIPLOMAT 4	WDI01		1000									
DL-EH-01-S05	THE DIPLOMAT 5	WDI01		1000									
DL-EH-01-S06	THE DIPLOMAT 6	WDI01		1000									
DL-EH-01-S07	THE DIPLOMAT 7	WDI01		1000									
DL-EH-01-S08	THE DIPLOMAT GOLF RESORT	WDI01		1000									
DL-EH-02	Sub EHALLANDALE - Feeder EHALL 2	WDI01		1000		100					MECHANIK		tell
DL-EH-02-P01	PS3345	WDI01		1000		100					MECHANIK		
DL-EH-02-P02	PS3346	WDI01		1000		100					MECHANIK		
DL-EH-02-P03	PS3347	WDI01		1000		100					MECHANIK		
DL-EH-02-P04	PS3348	WDI01		1000		100					MECHANIK		
DL-EH-02-P05	PS3349	WDI01		1000		100					MECHANIK		

Note:
Update the tables with background scheduled jobs regularly.

- Configure these filters in RACE™, to filter and populate data in the staging table when no value is entered for a field in the selection screen (/INVMWO/FM_EQ_EXPAND_STG).

Master	Filter
Equipment	EQSTG_FILTERs
Functional Location	FLSTG_FILTERs

- Configure these when using Staging process:

Table 5-6 Staging Configuration

Master	Filter	Table Name
Equipment	EQSTG_FILTER	/INVMWO/EQ_LIST
Functional Location	FLSTG_FILTER	/INVMWO/FCHEADER

Note:
Data is filtered only for the fields in tables /INVMWO/FCHEADER and /INVMWO/EQ_LIST.

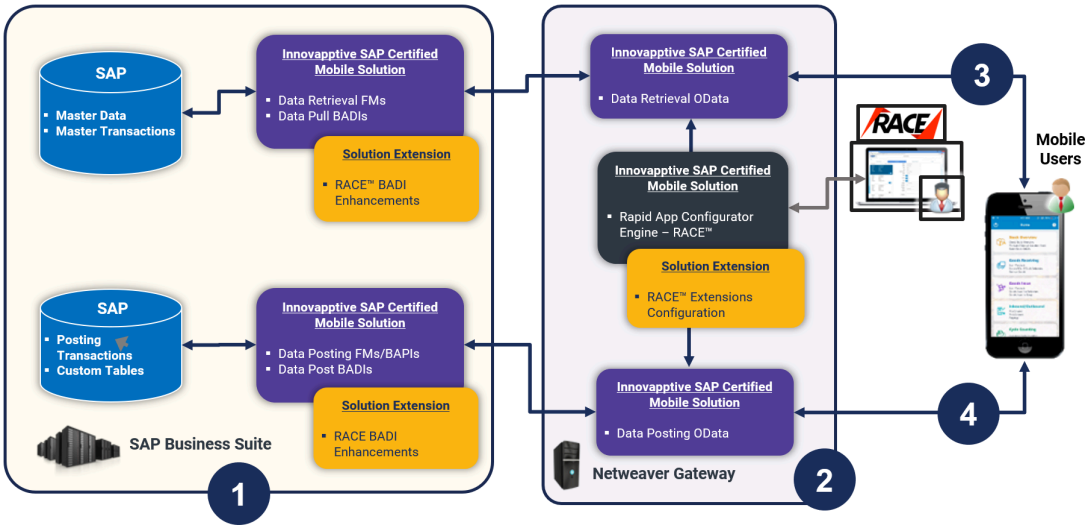
6. Configure RACE™ for mWorkOrder

Innovapptive's Connected Workforce Platform™ uses built-in integrations to connect your SAP®, IBM Maximo, and other back-office systems with mobile applications. This helps organizations bridge communication and information gaps between executive teams, field technicians, plant operators, warehouse operators, maintenance engineers, and back-office staff. Connect data points across cloud and on-premise networks to quickly and easily.

- Draw powerful insights
- Identify cost-savings opportunities
- Make calculated business decisions
- Respond quickly to trends or problems

To align our solutions with your operations, we built a Rapid App Configuration Engine (RACE™) directly into our mobile Connected Workforce Platform. This sophisticated configuration toolkit gives developers and non-developers complete freedom to customize mobile environments without any coding experience.

Figure 6-1 RACE™ Architecture



Deployment ecosystem consists of the following:

1. **SAP ECC Integration Component (SAP Certified Add-On in Innovapptive Namespace)**: This SAP-certified add-on is developed on ABAP. You can deploy this add-on on SAP ECC through an Add-On Package. You can make enhancements to this through BADI by developing those enhancements in ABAP. This add-on helps you manage Data retrieval and do posting to BAPI's or Function Modules.
2. **SAP NetWeaver Integration Component with OData Web Services**: Developed on ABAP and OData and offered as an SAP Certified Add-On. This add-on is deployed through an Add-On Package on SAP NetWeaver. You can make enhancements through RACE Configurations. This add-on helps manage the OData integration components (i.e. OData Web Services) to interface with the mobile app. The RACE™ Add-On has both the front-end components and the back-end data tables for the RACE™ Lite Configuration tool.
3. **Native App Client + Desktop Web App**: Application front-end solutions are offered on all three major mobile OS as a native application that can run on tablets and smartphones.
    - iOS - Developed using native iOS (Swift SDK)
    - Android - Developed using Android SDK on JAVA
    - Windows OS - Developed using Windows development kits.
    - Browser based App for desktop - Developed using SAPUI5 technology.

    Changes on the application user interface is managed through the RACE™ Lite Admin tool.
4. **Interface between Mobile App and NetWeaver Gateway**: OData Web Services
5. **Interface between NetWeaver Gateway and SAP ECC**: RFC Connection

6.1. Features of RACE™

You can do the following with RACE™ in your mobile application:

- **Enable and Disable features**: Enable or disable modules on the fly; no additional development or deployments efforts.
- **Define Defaults**: Define default device and application values that you use every day at work like Default Plant or the type of peripherals that you use. When you do this, the fields for specifying those values are automatically populated.
- **Manage Filters**: Create, edit, or delete filters to define the transaction records that you want to view across the modules. For example, you can add a date filter for Purchase Orders to restrict a list of Purchase Orders displayed in a list screen.
- **Add/Modify fields**: Add new fields and modify existing field parameters, such as Field Types, UI Label, UI Positions and visibility. Define mandatory, optional or display/hidden fields.
- **Add and customize search criteria**: Add/modify search fields to filter records based on your work requirements.
- **Create modules and screens**: Create new modules and screens to address your specific business requirements.
- **Optimize Performance**: Enable or disable a collection for Offline storage and configure the page size on the list screen using Skip Token.
- **Localization**: Configure the UI labels in the language of your choice to cater to regional language requirements.
- Apply security access capabilities to modules and features.
- Configure security for newly added fields.
- Map newly added fields with SAP fields.

6.2. How to Configure RACE™ for mWorkOrder

RACE™ configurations are provided in spreadsheets. Upload these spreadsheets to your RACE application instance to enable the latest RACE™ features that are developed for mWorkOrder. Contact your Innovapptive representative for the RACE configuration spreadsheets for your release.

When you use the RACE™ preset configuration spreadsheets, you enable all the recommended features / configurations automatically.

Some non-standard features are developed for a few customers. These features are not enabled by default when you import the spreadsheets with configurations. You can enable these features if required by your business.

For detailed information on RACE configurations, see the *Upload Application Configurations Using RACE™* section in the *Configure mWorkOrder using RACE™* document.

7. SAP transactions and tables for mWorkOrder

The following table provides the list of key SAP transactions and tables that are relevant to the mWorkOrder mobile solution.

Table 7-1 SAP Transactions and Tables

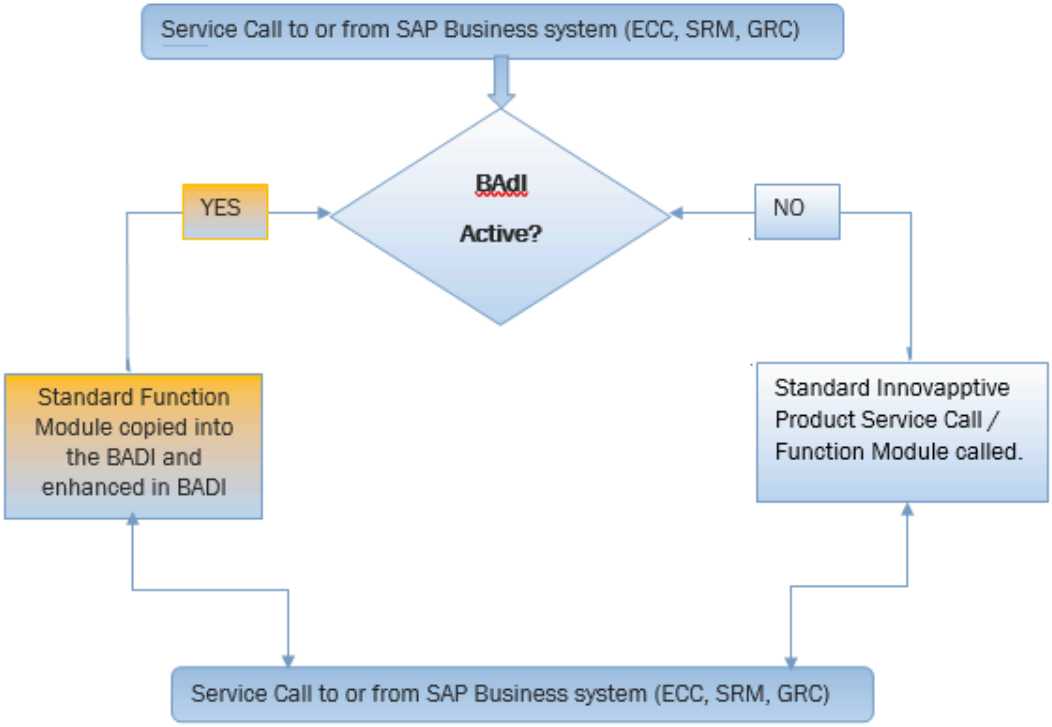
Module Name	Applicable Table	Transaction Code
Work Orders	AUFK, AFIH, AFKO, RESB, MARD, MARA	IW31, IW32, IW33, IW34, IW39, IW41, IW42, IW43, IW45, MIGO, MMBE
	VIAUFKST	
Notifications	QMEL, QMIH	IW21, IW22, IW23, IW29
	QMSM, QMUR	
	QMFE, QPCT	
Equipment	EQUI, EQUZ	IE01, IE02, IE03, IH08
	EQKT	
Functional Locations	IFLO, IFLOT	IL01, IL02, IL03, IH06
	ILOA	
Measuring Points	IMPTT	IK01, IK02, IK03, IK11, IK13, IK34
	IMRG	
Time Sheets	CATSDB	CAT2
Usage Decisions	QALS	QA03
	QAMV	
Inspection Lots	QALS	QA13
	QMFEL	

8. Implement BADIs

mWorkOrder uses SAP oDATA based on RESTful design. mWorkOrder performs service calls to read and post data from the SAP Business backend system. These service calls invoke remote enabled function modules in the backend systems to either get or post data depending on the direction of the call. Like Standard SAP code, Innovapptive Add-On code objects cannot be modified in customer systems.

Innovapptive's solution provides the ability for customers to avail additional functionality through BADIs. The enhanced / modified service calls/function modules that are designed to meet special / additional requirements of customers are replaced in the customer environment BADI.

Figure 8-1 BADI Implementation



8.1. Prerequisites for BADI Implementation

Ensure you have the following:

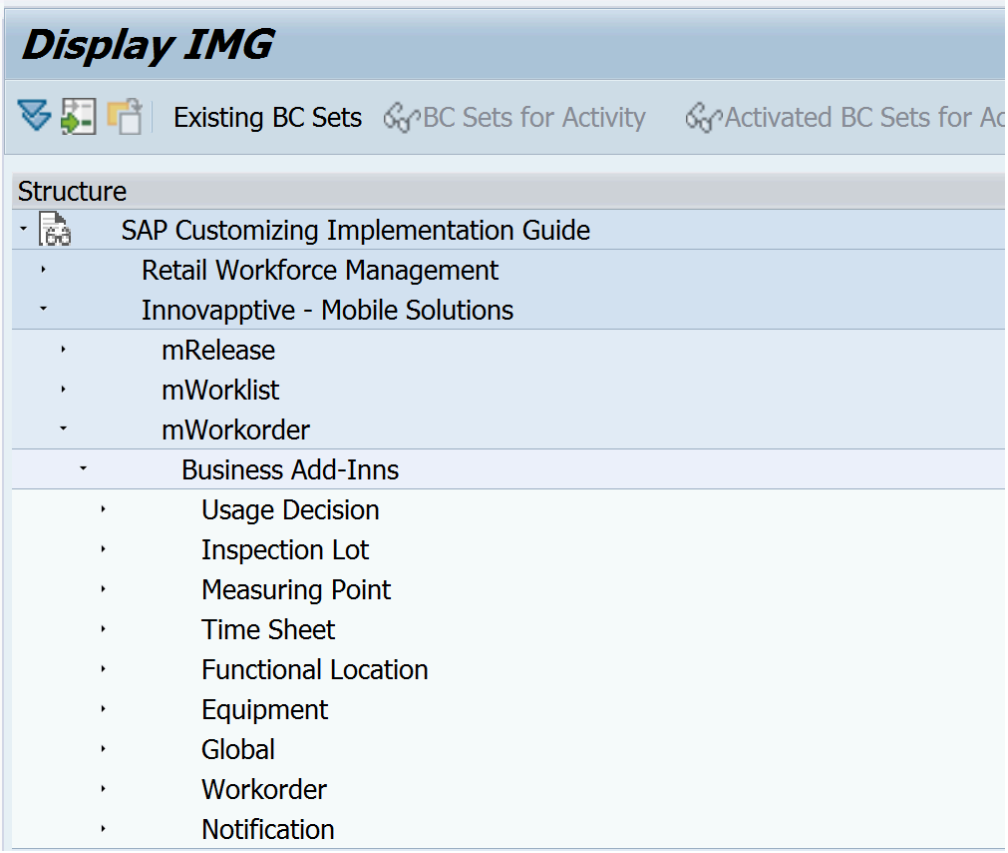
- **Access**
  - Access to the ECC system as ABAP Developer.
- **Dependency**
  - Installation of ECC and Gateway Add-ons.
  - BRD and Fit-GAP analysis has been performed. Gap resolution requires custom enhancement to be performed on the customer SAP system.
- **Assumptions**
  - Person who performs the actions outlined has full knowledge and understanding of ABAP Development and has BADIs implementation experience.
  - Standard SAP best practices are followed, and the business requirements are documented, the Fit-Gap analysis is performed, FS and TS are documented to ensure that the changes to the standard functionality are done using the SDLC process.
  - All changes done in the BADI are owned by the customer and changes and support (during upgrades) are fully owned by the customer as these are enhancements to the Product and thus no longer part of the standard Innovapptive product Add-On code. This is in line with SAP standard methodology, all enhancements/BADIs are fully owned by the customer and need to evaluate during upgrades for impact or adjustments.

8.2. Activate and Implement BADI

To activate and implement BADI:

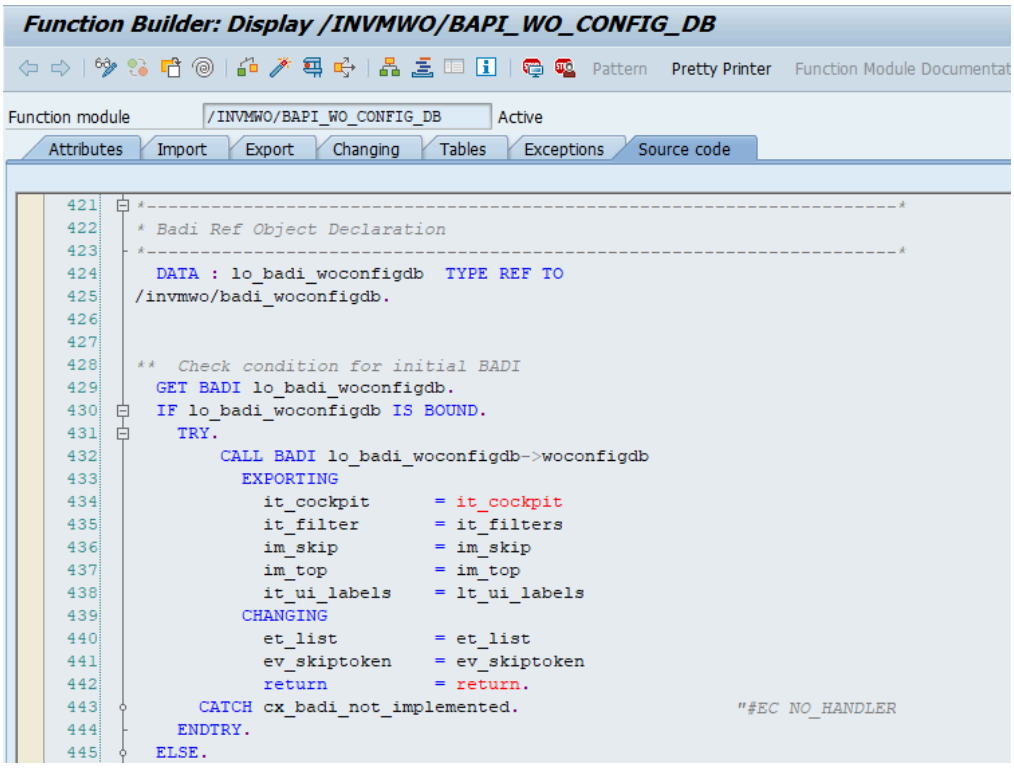
1. Log in to SAP.
2. Run transaction SPRO.
3. Click Innovapptive – Mobile Solutions, mWorkOrder and select BADI as shown in the image.
   For the list of BADIs available for mWorkOrder, see List of BADIs for mWorkOrder *(on page 60)*.

Figure 8-2 SPRO IMG Structure

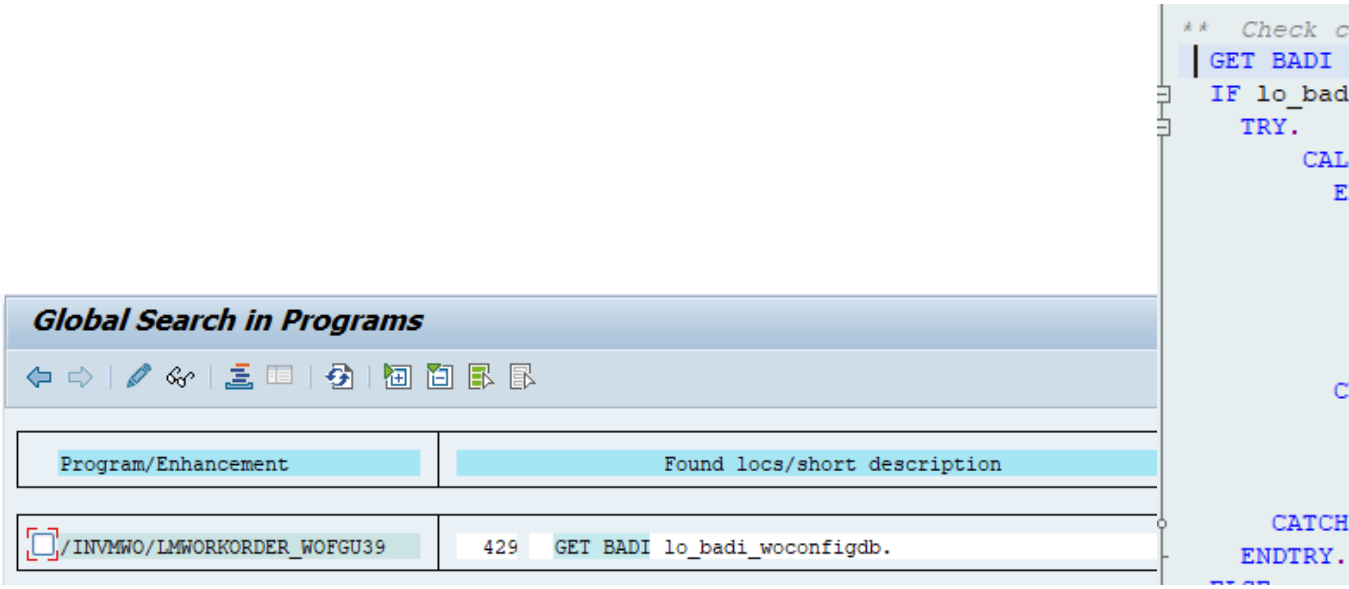


4. Click Execute.
5. Alternatively, you can use transaction SE37 and view the function module /INVMWO/BAPI_WO_CONFIG_DB. This FM is related to service call that gets WorkOrder Configurable Dashboard.

Figure 8-3 FM: /INVMWO/BAPI_WO_CONFIG_DB



6. Search the function module with the string GET BADI
7. Click GET BADI

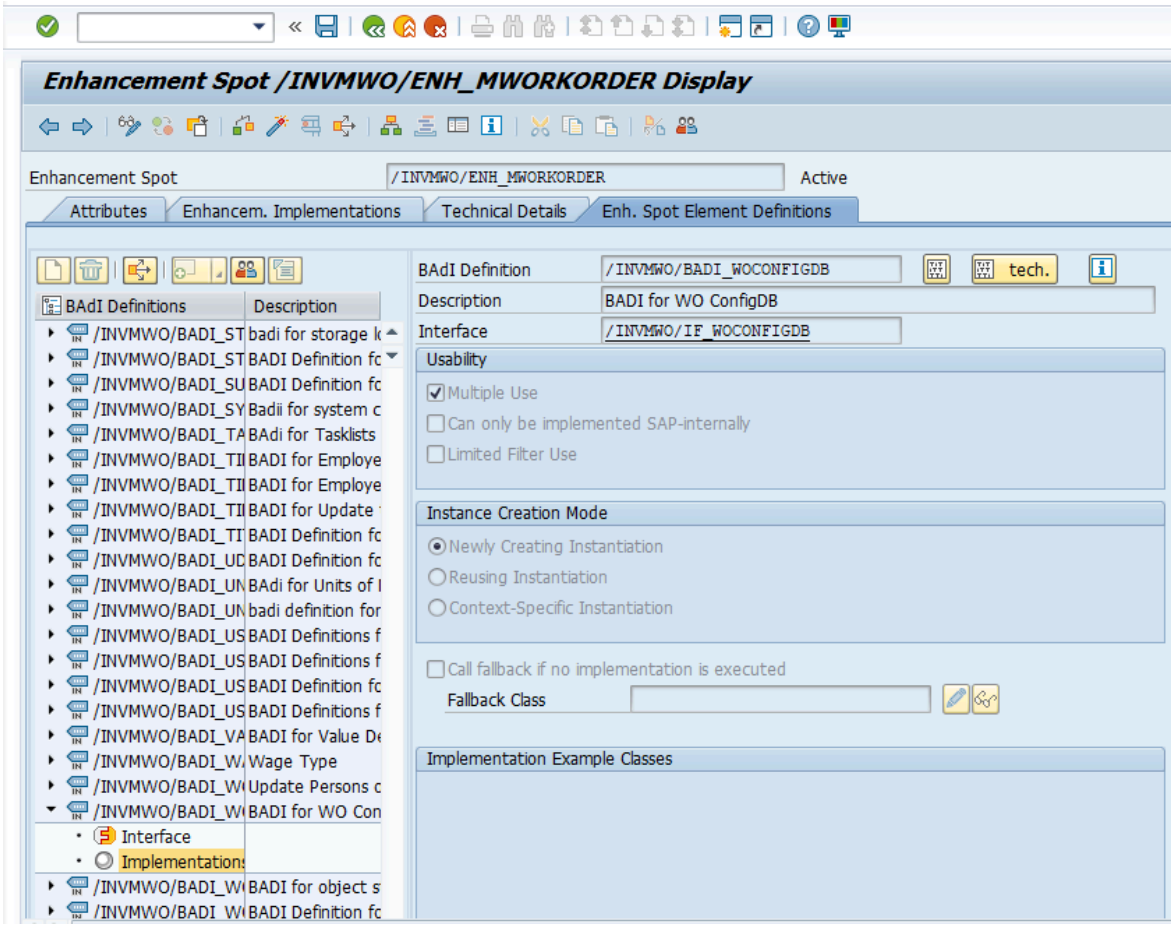


8. Double-click the BADI to navigate to the SE18 transaction

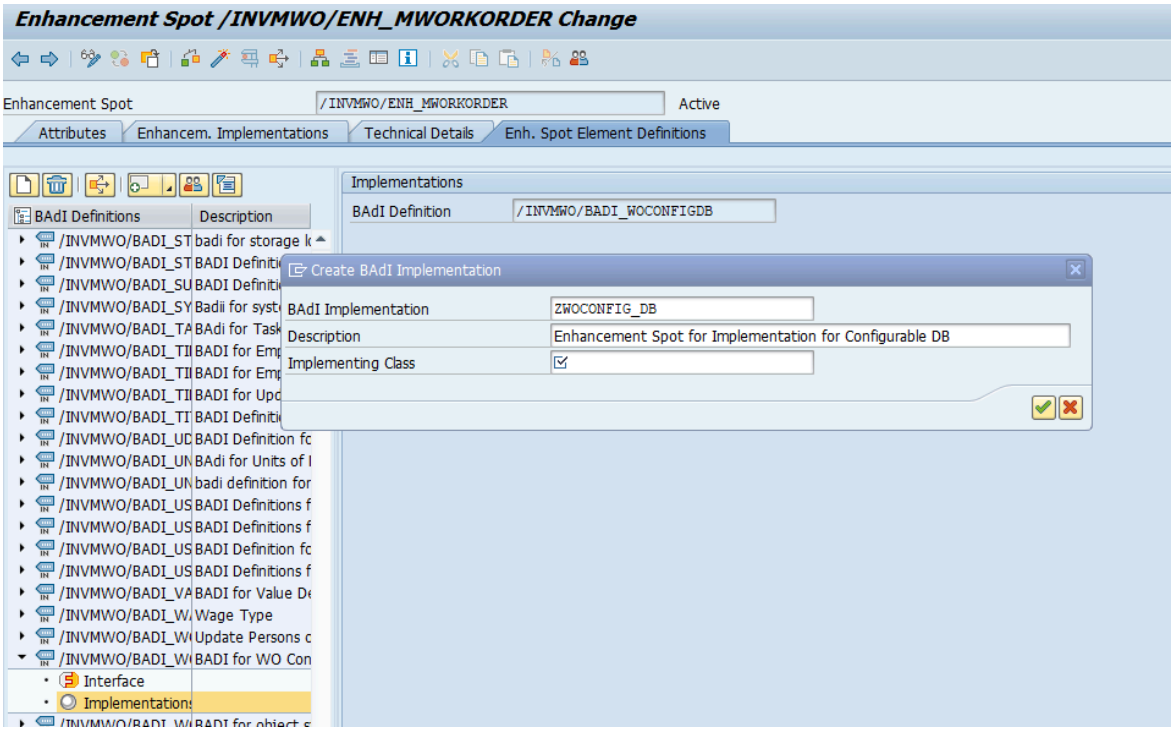
Figure 8-4 SE18

```
*---------------------------------------------------------------------*
 * Badi Ref Object Declaration
*---------------------------------------------------------------------*
  DATA : lo_badi_woconfigdb  TYPE REF TO
/invmwo/badi_woconfigdb.
```

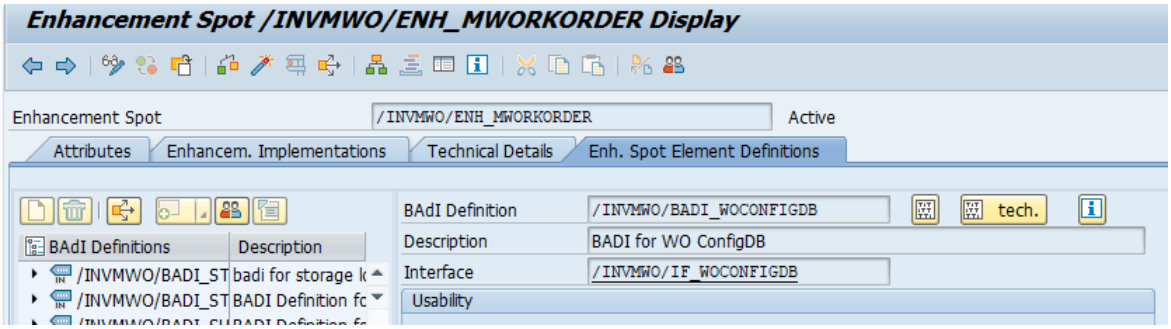
9. Click the Implementation  icon for BADI.



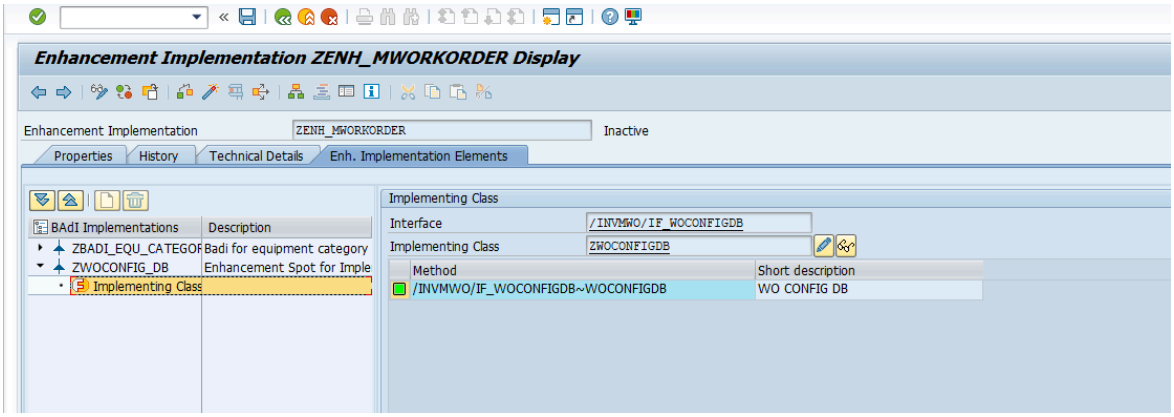
10. Enter an appropriate name (starting with Y/Z) for enhancement of spot implementation. (Follow the naming conventions and standards as per the policies and procedures defined.)



11. Enter the package name.
12. Enter an appropriate name starting with Y/Z for BADI implementation and any Z/Y name for implementing a class.

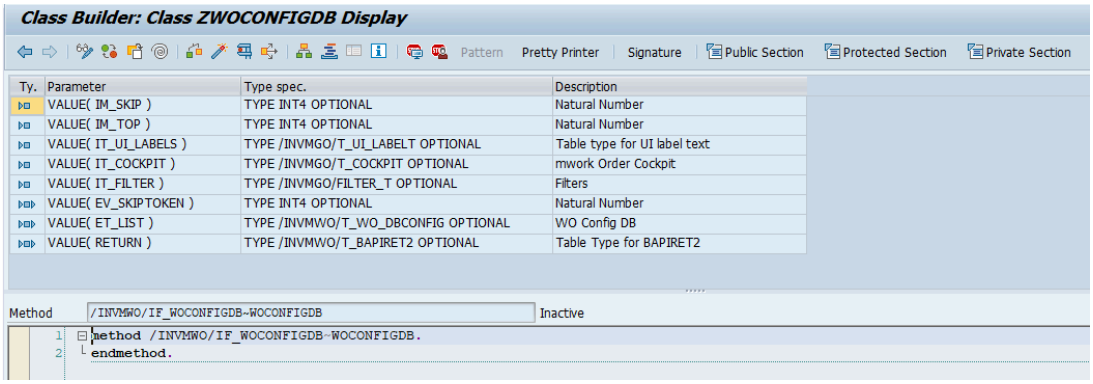


13. Click the method as shown in the following screenshot.



14. Click **Yes**.
15. Perform the development activity (code changes and enhancements) to meet the business requirements:
    a. By default, the BADI is initially blank.
    b. Copy all the lines of the code from the standard Innovapptive—delivered FM / INVMWO/BADI_WOCONFIGDB to this section.

    The code can now be enhanced by following the standard ABAP development practices.

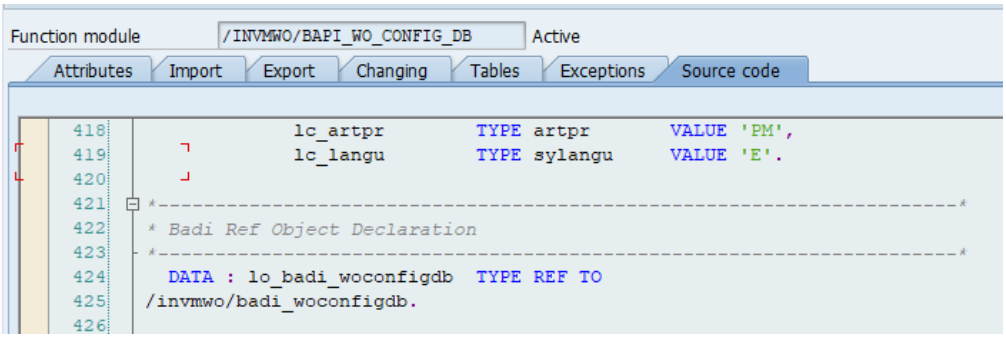


    c. Activate the BADI implementation (while activating, select all the relevant objects in the activation list).

8.3. Verify BADI Implementation

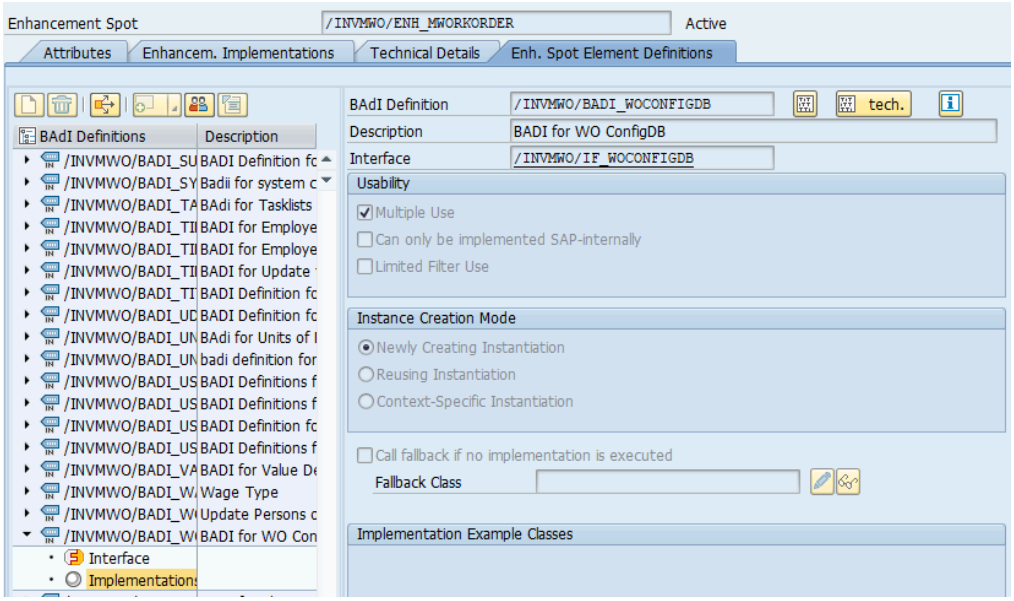
1. Run **SE37** and display the function module **/INVMWO/BAPI_WOCONFIGDB**.

Figure 8-5 Function Module: /INVMWO/BAPI_WOCONFIGDB



2. Double-click the BADI **//INVMWO/BADI_WOCONFIGDB**

Figure 8-6 BADI: //INVMWO/BADI_WOCONFIGDB



This displays the BADI implementation along with the active or inactive status.

3. Verify the **Implementation is active** check box.

8.4. List of BADIs for mWorkOrder

List of BADIs (Business Add-Ins) available as part of the mWorkOrder SAP ECC Add-on component to enhance the standard functionality with ABAP development.

Table 8-1 BADIs in mWorkOrder Application

MODULE NAME	BADI Name	BADI Description	Screen Description
EQUIPMENT	/INVMWO/BADI_ADDRNO_CREATE	BADI Definition for Address Number Create and Update	Equipment Address Create
EQUIPMENT	/INVMWO/BADI_EQUIPMENT_DETAIL	BADI Definition for Equipment List	Equipment General Display
EQUIPMENT	/INVMWO/BADI_EQUIPMENT_LIST	BADI Definition for Equipment List	Equipment Header Display
EQUIPMENT	/INVMWO/BADI_EQUI_CREATE	BADI definition for Equipment Create	Equipment Location Create
EQUIPMENT	/INVMWO/BADI_MAINTENANCE_PLANS	Maintenance Plans	Equipment Display Maintenance plant
EQUIPMENT	/INVMWO/BADI_EQUIPMENT_BOM	BADI Definition for Equipment BOM	Equipment Display Bill of Material
EQUIPMENT	/INVMWO/BADI_EQUIP_ATTACHMENTS	BADI for Equip Attachments	Equipment Filters
FUNCTIONAL LOCATION	/INVMWO/BADI_IFLO_CREATE	BADI Definition for Functional Location Create	Functional Location Header Display
FUNCTIONAL LOCATION	/INVMWO/BADI_FL_LAST_MEASPOINT	BADI Definition for Last MP List	Functional Location Measuring Counter
FUNCTIONAL LOCATION	/INVMWO/BADI_EQUIP_NEAR_ME	BADI Definition for Equipment Last Active Orders	Functional Location Near Me Notification Filters
FUNCTIONAL LOCATION	/INVMWO/BADI_PARTNER_LIST	BADI Definition for Partner List	Functional Location Partner Create
FUNCTIONAL LOCATION	/INVMWO/BADI_FUNCTIONAL_DETAIL	BADI Definition for Functional Location	Functional Location Search
INSPECTIONLOT	/INVMWO/BADI_INSP_CHAR_LIST	BADI Definition for Inspection Lot List	Inspection Lot Characteristics Display

Table 8-1 BADIs in mWorkOrder Application (continued)

MODULE NAME	BADI Name	BADI Description	Screen Description
INSPECTIONLOT	/INVMWO/BADI_-INSP_OPERATIONS	BADI Definition for inspection Lot Operations	Inspection Lot Operations Display
INSPECTIONLOT	/INVMWO/BADI_-INSPECLOT_NO_LIST	BADI Definition for Inspection Lot List	Inspection Lot Search
MEASURINGPOINT	/INVMWO/BADI_ENTRYLIST	BADI for Entry list	Measuring Point Entry List Display
MEASURINGPOINT	/INVMWO/BADI_-MEASURING_POINT	BADI Definition for Get List of Measuring point	Measuring Point Range Limits Display
MEASURINGPOINT	/INVMWO/BADI_-MEASPOINT_CREATE	BADI Definition for Create Measuring Point	Measuring Point Header Create
MEASURINGPOINT	/INVMWO/BADI_-MEASDOC_HISTORY	BADI Definition for MP History	Measuring Point History Display
NOTIFICATION	/INVMWO/BADI_-WO_NOTIF_LIST	BADI for Notification List	Notification Map
NOTIFICATION	/INVMWO/BADI_-NOTIF_ACTIVITY_LI	BADI for Notification Activity List	Notification Activities Create
NOTIFICATION	/INVMWO/BADI_-NOTIF_CREATE	BADI for Notification Create	Notification Header Create
NOTIFICATION	/INVMWO/BADI_-NOTIF_ITEM_UPDATE	BADI Definition for Notify Item Update	Notification Items Create
NOTIFICATION	/INVMWO/BADI_-WO_NOTIF_DETAILS	BADI for Notification Details	Notification Header
NOTIFICATION	/INVMWO/BADI_-NOTIF_ITEMS_DISP	BADI for Notification Items List	Notification Items
NOTIFICATION	/INVMWO/BADI_-NOTIF_CAUSES_LIST	BADI for Notification Causes list	Notification Causes

Table 8-1 BADIs in mWorkOrder Application (continued)

MODULE NAME	BADI Name	BADI Description	Screen Description
NOTIFICATION	/INVMWO/BADI_-NOTIF_TASK_LIST	BADI for Notification Task List	Notification Tasks
NOTIFICATION	/INVMWO/BADI_-NOTIFTASK_REL_COM	Notification Release and Complete	Notification Task Create
NOTIFICATION	/INVMWO/BADI_-NOTIF_HISTORY	BADI Definition for Notification History	Notification History
NOTIFICATION	/INVMWO/BADI_-NOTIF_CAUSES_UPD	BADI for Notification Causes Update	Notification Header Display
WORKORDER	/INVMWO/BADI_-WO_COMPONENT_-LIST	BADI for Components list	Work Order Components Create
WORKORDER	/INVMWO/BADI_-WORKORDERS_LIST	BADI for work order list	Work Order Header Create
WORKORDER	/INVMWO/BADI_-WO_OPERATION_LIST	Work Order Operation List	Work Order Operations Create
WORKORDER	/INVMWO/BADI_-WORKORDER_CREATE	BADI Definition for Create Workorder	Work Order Header Display
WORKORDER	/INVMWO/BADI_-MATERIAL_GETLIST	BADI for Material List	Material Search
WORKORDER	/INVMWO/BADI_EQUI_CREATE	BADI definition for Equipment Create	Work Order Header
WORKORDER	/INVMWO/BADI_-PLANNING_VIEW	BADI for PLANNING_-VIEW	Work Order Planning tasks Display
WORKORDER	/INVMWO/BADI_-WORKORDER_HISTORY	BADI Definitions for Workorder History	Work Order History Display
WORKORDER	/INVMWO/BADI_-WO_OPERATION_LIST	Work Order Operation List	Work Order Operations
WORKORDER	/INVMWO/BADI_-WO_BOM_DETAILS	BADI definition for BOM details	Work Order Components

Table 8-1 BADIs in mWorkOrder Application (continued)

MODULE NAME	BADI Name	BADI Description	Screen Description
WORKORDER	/INVMWO/BADI_-OPECONF_DETAILS	BADI Definitions for WO Operations	Work Order Operation Confirmation Create
WORKORDER	/INVMWO/BADI_-ALM_CONF_CANCEL	BADI Definitions for Priority Count	Workorder DB search
WORKORDER	/INVMWO/BADI_AT-TACHMENT_CREATE	BADI Definition for at-tachment create	Workorder Attach-ments
WORKORDER	/INVMWO/BADI_-MATERIAL_STOCK	BADI Definition for Material Stock	Material Availability Filters
WORKORDER	/INVMWO/BADI_-WOTYPES_GETLIST	BADI for Work Order Types	WO DocType Filters
WORKORDER	/INVMWO/BADI_D-DWORKORDERS_LIST	BADI Definitions for DD Workorders List	Work Order Search
WORKORDER	/INVMWO/BADI_-NOTIF_EQUIPT_LIST	BADI for Notification Equipment list	DD Equipment Filters
WORKORDER	/INVMWO/BADI_-NOTIF_FUNLOC_LIST	BADI Notification function location list	DD Functional Loca-tion Filters
USAGEDECISION	/INVMWO/BADI_-USAGE_DEC_LIST	BADI Definitions for Usage Decision List	Usage Decision Header Display
USAGEDECISION	/INVMWO/BADI_DE-FECTS_GET	BADI Definitions for Defects List	Usage Decision De-fects Display
USAGEDECISION	/INVMWO/BADI_-USAGE_DEC_SAVE	BADI Definitions for Usage Decision Save	Usage Decision Save
TIMESHEET	/INVMWO/BADI_-TIME_ENTRY_OVRVEW	BADI for Employee Time Entry Overview	Timesheet Filters
TIMESHEET	/INVMWO/BADI_-TIME_ENTRY_CREATE	BADI for Employee Time Entry Creation	Time Sheet Create
CREWMANAGEMENT	/INVMWO/BADI_W-C_PERSONS_UPD	Update Persons of Work Center	Pernr Search

Table 8-1 BADIs in mWorkOrder Application (continued)

MODULE NAME	BADI Name	BADI Description	Screen Description
CREWMANAGEMENT	/INVMWO/BADI_DDEMP_LIST	BADI Definitions for Employee List	Pernr Search
WORKORDER	/INVMWO/BADI_WO_ATTACH_DEL	BADI to delete WO attachments	Work Order
EQUIPMENT	/INVMWO/BADI_EQUIP_ATTACH_DEL	BADI to delete Equipment attachments	Equipment
FUNCTIONALLOCATION	/INVMWO/BADI_FL_ATTACH_DEL	BADI to delete FL attachments	Functional location
NOTIFICATION	/INVMWO/BADI_NOTIF_ATTACH_DEL	BADI to delete Notification attachments	Notification
MEASURINGPOINT	/INVMWO/BADI_MP_ATTACH_DEL	BADI to delete Measuring Points attachments	Measuring Points
WORKORDER	/INVMWO/BADI_WOCONFIGDB	BADI Definition for WOCONFIGDB	Work Order
NOTIFICATION	/INVMWO/BADI_NOCONFIGDB	BADI Definition for NOCONFIGDB	Notification
WORKORDER	/INVMWO/BADI_VALUE_DESC	BADI Definition for Value Descriptions	Work Order
WORKORDER	/INVMWO/BADI_WOOBJ_STATUS_LIST	BADI for object status and individual status for an object	Work Order
NOTIFICATION	/INVMWO/BADI_NOOBJ_STATUS_LIST	BADI for Object or Individual status for an object	Notification
WORKORDER	/INVMWO/BADI_ALM_CONF_CANCEL	BADI for Confirmation Cancelation	Work Order

Table 8-1 BADIs in mWorkOrder Application (continued)

MODULE NAME	BADI Name	BADI Description	Screen Description
WORKORDER	/INVMWO/BADI_-MULTIOPER_CONF	BADI for Work Order Multi Operation con-firmation	Work Order
NOTIFICATION	/INVMWO/BADI_-NOTIF_UPDATE	BADI for Notif Update for overall conf	Notification
WORKORDER	/INVMWO/BADI_-WO_OPERATION_UPD	BADI for Updating the work order	Work Order
WORKORDER	/INVMWO/BADI_-UNIT_OF_WORK	BADI Definition for Unit of Work	Work Order
WORKORDER	/INVMWO/BADI_-WO_TLIST_COMP_-PRT	BADI Definition for Tasklists Components	Work Order
WORKORDER	/INVMWO/BADI_-TASKLIST_CREATE	BADI Definition for Tasklists Create	Work Order
WORKORDER	/INVMWO/BADI_-TASKLIST_CHANGE	BADI Definition for Tasklists Change	Work Order
WORKORDER	/INVMWO/BADI_-IFLO_UPDATE	BADI Definition for Functional Location Update	Work Order
WORKORDER	/INVMWO/BADI_-MEASDOC_CREATE	BADI Definition for Create Measuring Document	Work Order
WORKORDER	/INVMWO/BADI_-WO_PRT_DOCS	BADI Definition for WO Display PRT's Docu-ment	Work Order
WORKORDER	/INVMWO/BADI_-WO_TLIST_PRTS_DOC	BADI Definition for WO Create PRT's Docu-ment	Work Order

Table 8-1 BADIs in mWorkOrder Application (continued)

MODULE NAME	BADI Name	BADI Description	Screen Description
NOTIFICATION	/INVMWO/BADI_-NOTIF_CODEGR_LIST	BADI Definition for Notification Code group List	Notification
WORKORDER	/INVMWO/BADI_-WO_OBJECTS_DETAIL	BADI Definition to get Object list	Work Order
WORKORDER	/INVMWO/BADI_-WO_OBJECTS_UP-DATE	BADI Definition to update object details	Work Order
WORKORDER	/INVMWO/BADI_-WO_OBJECTS_CRE-ATE	BADI Definition to create new object	Work Order
WORKORDER	/INVMWO/BADI_-MULTDFORM_DISPLAY	BADI Definition to get multiple form list of Workorder	Work Order
NOTIFICATION	/INVMWO/BADI_-MULTDFORM_DISPLAY	BADI Definition to get multiple form list of Notification	Notification
WORKORDER	/INVMWO/BADI_-MULDFORM_UPDATE	BADI Definition to update forms of workorder	Work Order
NOTIFICATION	/INVMWO/BADI_-MULDFORM_UPDATE	BADI Definition to update forms of Notification	Notification
TIMESHEET	/INVMWO/BADI_-TIME_ENTRY_CONFRM	BADI definition for timesheet confirmation	Timesheet
TIMESHEET	/INVMWO/BADI_-TIMESHEET_RELEASE	BADI for Timesheet Release	Timesheet

Table 8-1 BADIs in mWorkOrder Application (continued)

MODULE NAME	BADI Name	BADI Description	Screen Description
WORKORDER	/INVMWO/BADI_-WO_DASHBOARD	BADI Definition for Work Order and Operations Dashboard	Work Order Dashboard screen
WORKORDER	/INVMWO/BADI_-WO_DASHBOARD_-LIST	BADI Definition for Work Order and Operations Dashboard	Work Order Dashboard screen
WORKORDER	/INVMWO/BADI_-WO_WC_PERSONS	BADI Definition for Work Center and Persons Relation	Work Order Dashboard screen
WORKORDER	/INVMWO/BADI_-NOTIFSCODEGROUP	Badi for Notifications Code-group in offline.	Notification
WORKORDER	/INVMWO/BADI_-NOTIFICATIONCODE	Badi for Notification Codes	Notification
WORKORDER	/INVMWO/BADI_-WO_NO_EXPAND_-NEW	Badi for Workorder store(General store) in offline	Work Order

Table 8-2 BADIs for mWorkOrder

Module Name	BADI Name	BADI Description
WORKORDER	/INVMWO/BADI_WOORDER-ENTITYSET	BADI Definition for to get workorder details
WORKORDER	/INVMWO/BADI_WO-ORDEROPER	BADI Definition for to get operation details
WORKORDER	/INVMWO/BADI_WO-ORDEROPERDEL	BADI Definition for Workorder Operations delete
WORKORDER	/INVMWO/BADI_WO_DYND-DENTITYSET	Dynamic Dropdown
WORKORDER	/INVMWO/BADI_WO_DYN_-CREATE	Create Dynamic extension collection

Table 8-2 BADIs for mWorkOrder (continued)

Module Name	BADI Name	BADI Description
WORKORDER	/INVMWO/BADI_WO_HANDLCHANGESET	Workorder Handle change set
WORKORDER	/INVMWO/BADI_WO_OPER_UPDATE	Work order Operation Update
WORKORDER	/INVMWO/BADI_WO_ORDERSUPDATE	Work order update
WORKORDER	/INVMWO/BADI_WOORDERCOMPDEL	Work Order Component Delete
WORKORDER	/INVMWO/BADI_WOORDERCOMP	WorkOrder Component
WORKORDER	/INVMWO/BADI_WODYNEXTUPDATESET	Dynamic Extension Update
WORKORDER	/INVMWO/BADI_WODYNEXTENTITYSET	Dynamic Extension
WORKORDER	/INVMWO/BADI_WODYNEXTUPDATESET	Dynamic Extension Update
WORKORDER	/INVMWO/BADI_WOORDERCOMP	WorkOrder Component
WORKORDER	/INVMWO/BADI_WOORDERCOMPDEL	Work Order Component Delete
WORKORDER	/INVMWO/BADI_WOORDERENTITYSET	Work order collection
WORKORDER	/INVMWO/BADI_WOORDEROPER	BADI Definition for Workorder Operations
WORKORDER	/INVMWO/BADI_WOORDEROPERDEL	BADI Definition for Workorder Operations delete
WORKORDER	/INVMWO/BADI_WO_DYNDDENTITYSET	Dynamic Dropdown

Table 8-2 BADIs for mWorkOrder (continued)

Module Name	BADI Name	BADI Description
WORKORDER	/INVMWO/BADI_WO_DYN_-CREATE	Create Dynamic extension collection
WORKORDER	/INVMWO/BADI_WO_HAN-DLCHANGESET	Workorder Handle change set
WORKORDER	/INVMWO/BADI_WO_OPER_-UPDATE	Work order Operation Update
WORKORDER	/INVMWO/BADI_WO_OR-DERSUPDATE	Work order update
WORKORDER	/INVMWO/BADI_WODYNEX-TENTITYSET	Dynamic Extension
WORKORDER	/INVMWO/BADI_WOCOUN-TENTITYSET	Count Entity
WORKORDER	/INVMWO/BADI_WOAT-TACHENTITYSET	Workorder Attachment
WORKORDER	/INVMWO/BADI_WOAPP-DATAENTITYSE	App Data Configuration
WORKORDER	/INVMWO/BADI_USER_DE-TAILS	User details
WORKORDER	/INVMWO/BADI_SEARCH_FIL-TER	Search and filters
WORKORDER	/INVMWO/BADI_OPER-ATION_LIST	Operation List
WORKORDER	/INVMWO/BADI_DD_DROP-DOWN	Dynamic drop down : sub
WORKORDER	/INVMWO/BADI_COMPONEN-T_UPDATE	Component update
WORKORDER	/INVMWO/BADI_COMPONEN-T_LIST	Get Component List

Table 8-2 BADIs for mWorkOrder (continued)

Module Name	BADI Name	BADI Description
WORKORDER	/INVMWO/BADI_ATTACHCRE-ATESET	Attachment creation

9. Generate Secondary Indices

To improve the application performance, for tables containing large amounts of data, generate secondary indices for key tables relevant for the product.

Note:
Ensure you have ABAP Developer access to ECC system with authorization to maintain tables and set up table indexes.

Table 9-1 Secondary Indice - Table and Field

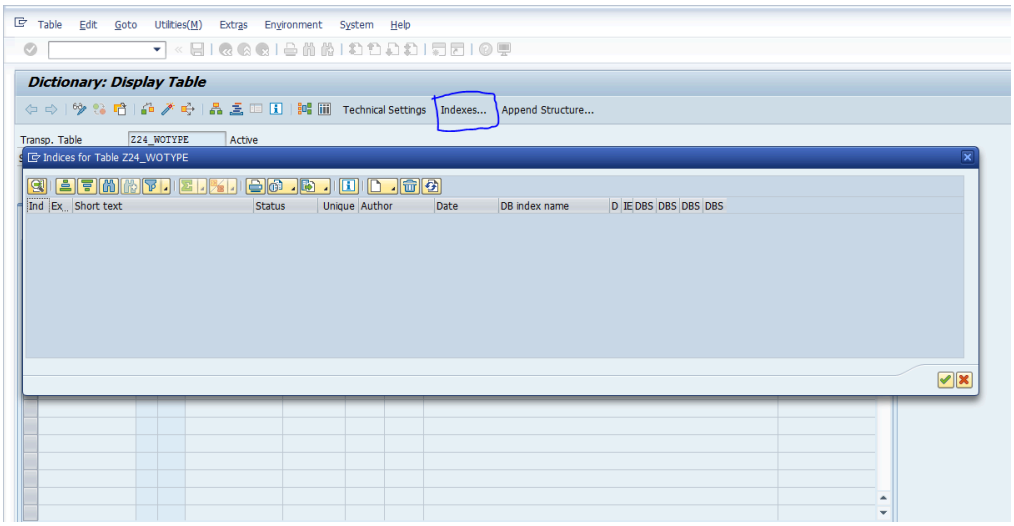
Table	Field for Secondary Index
PLKO	WERKS
AFIH	GEWRK
AUFK	WERKS

9.1. Create Secondary Index

To create secondary index:

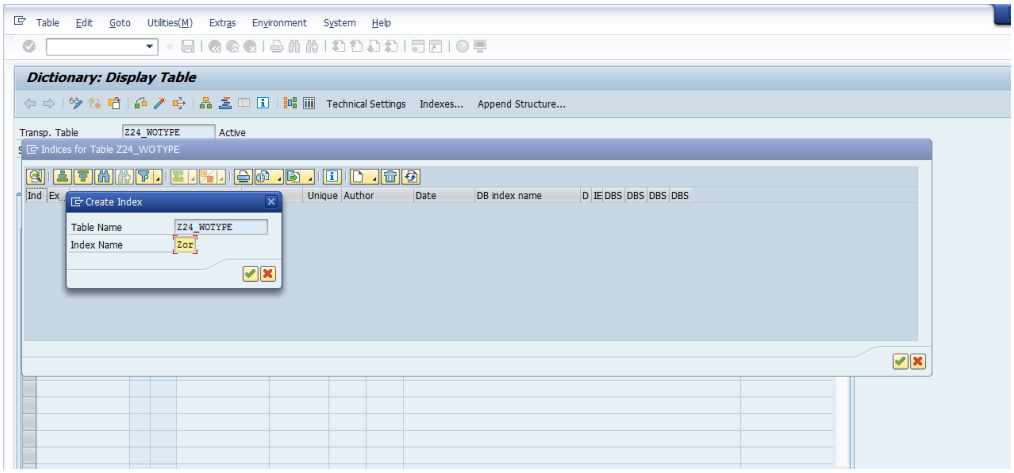
1. Log in to SAP ECC.
2. Go to transaction SE11.
3. Enter the Table name.
4. Click Display to view the table.
5. Click Indexes.

Figure 9-1 Display Table - Indexes



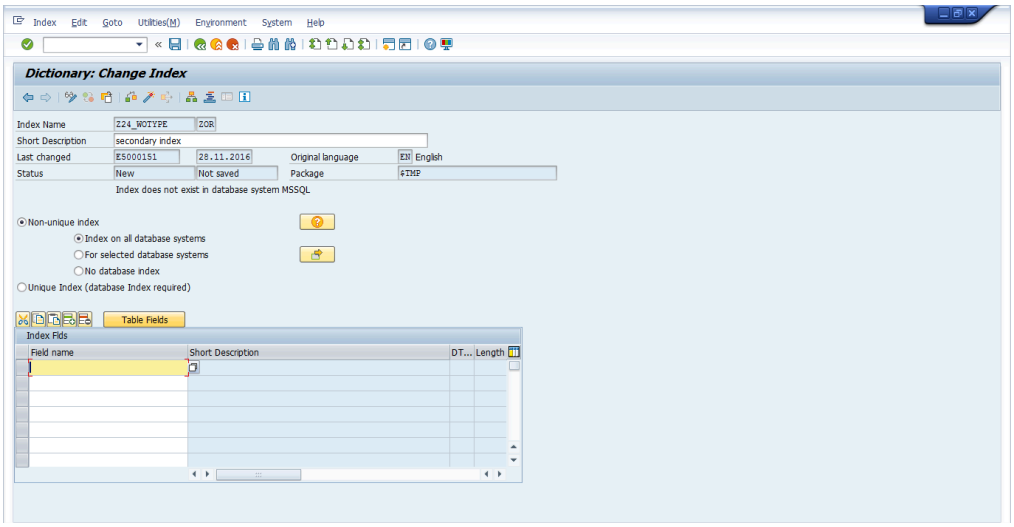
6. Click Create and select Create Index.
7. Enter the Index Name.

Figure 9-2 Create Index - Index Name



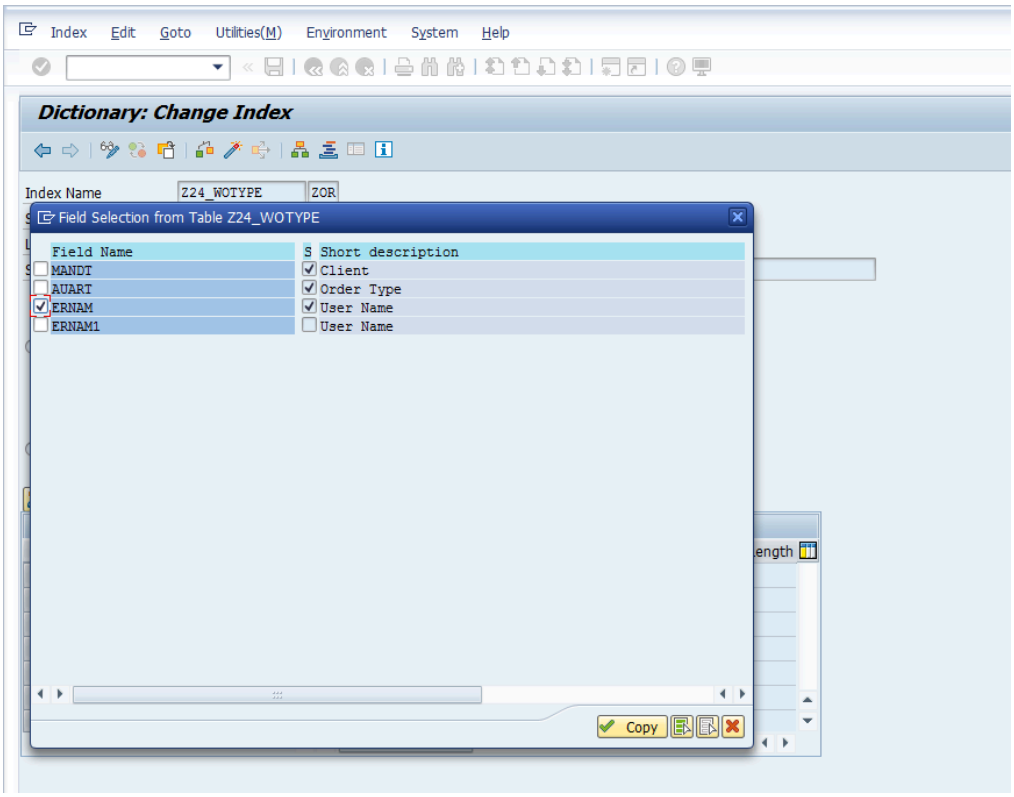
8. Enter description in the displayed fields.
9. Select **Table Fields** option to enter the Field name.

Figure 9-3 Table Fields



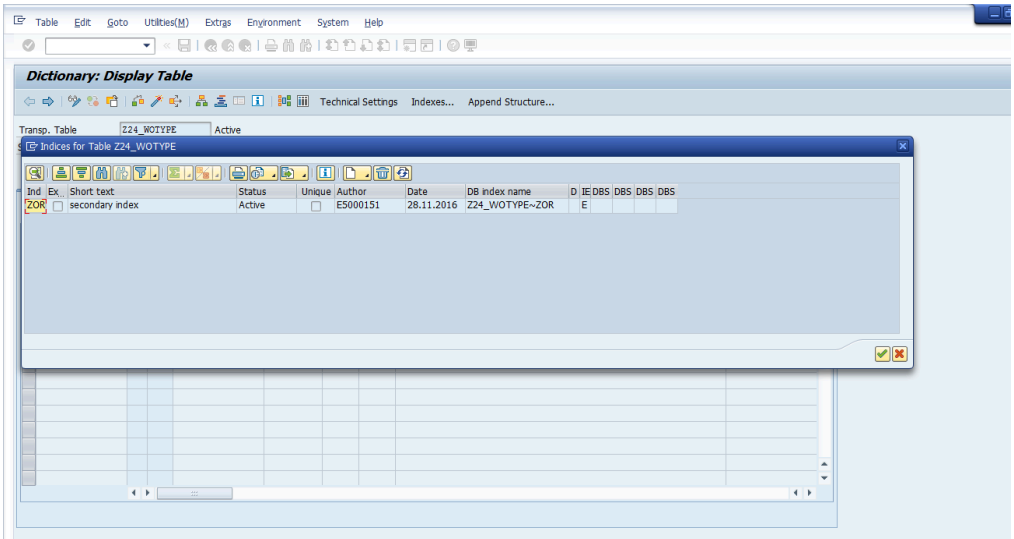
10. Select the required field for secondary index and click Copy.

Figure 9-4 Select Table Fields



11. Click **Activate**.

Figure 9-5 Activate Index



10. Update Resource File

This section describes the steps to view and modify the content, format, and structure of the Resources file.

As part of the initial product deployment, Innovapptive will provide a default zip file that needs to be updated to reflect your settings and branding needs.

mWorkOrder application resource file **resources_mworkorder.zip** on Windows platform is used as an example to demonstrate the steps and actions that are needed to be performed. The same steps can be followed for other products and platforms as well using the appropriate file and product names for other products.

To prepare and update the resource file:

1. Download the resources_mworkorder_zip file to the local drive.
2. Extract the resource_mmworkorder.zip file.

   The folder structure: **resource_mworkorder, Dev, ios** is displayed after successful extraction:
3. Navigate to the iOS folder. (Same file and settings are applicable for iOS, Android, and Windows).
   Standard images, logo, and the settings file are displayed in the folder.
4. Open the file **settings.json** in Notepad/Notepad++ (any standard text file editor).
5. Modify the default setting from **settings.json** file as required.

Table 10-1 json file attributes

Attribute	Description
AppName	This field is used to identify the Innovapptive product name. **Conditions:** Use uppercase alphabets. **Possible Values:** Based on the product, refer to the table Table 10-3 : AppName and App id *(on page 82)*. **Example:** MWORKORDER

Attribute	Description
Environment	Identifies the landscape to which the mobile application is connected. This value is displayed on the Login page of the mobile app. **Conditions:** None **Possible Values:** Development/Quality/Production
ShowDemoButton	Set to True to display the Sample Data button on the application Login page. Upon clicking the sample data, the user can view the demo data. **Conditions:** Use lowercase alphabets. **Possible Values:** true/false
hcolor	Custom header color for application. Use this parameter to customize the app screen elements, such as the header bar, to meet your corporate branding needs. Work with your appropriate branding team to identify the color that meets your enterprise palette. **Tip:** Using the Google Hex color picker, you can identify the Hex color code value that needs to be set up. To find the hex color code, go to www.google.com and search for “hex color picker.” Select the desired color and you will see the color code. **Condition:** Use the Hex color code value based on the color you would like to see on the mobile app screen elements. **Possible Values:** As per the requirement.

Attribute	Description
	Example:#42c2f4
TouchId	Set the value as **True** to enable the **Touch ID** feature in application.
AppPassCode	Set the value as **True** to enable the **App Passcode** feature in application**.**
ForgotPwd	Set the value as **True** to enable the **Forgot Password** feature in application.
ForgotPwdLink	Set the value as **True** to display the web-site link to reset password.
ForgotPwdMsg	Set the value as **True** to display the message to reset password.
Languages	Languages that are configured in the **settings.json** file are displayed to the user as a drop-down menu for selection. Additional languages can be added provided the language is available in SAP and the necessary translations are maintained. **Syntax:** `{"id":<SequenceNumber>,"key":"<SAPLanguageCode>","value":"<LanguageName>"}` **Possible Values:** Languages supported by SAP **Example:** {"id":1,"key":"E","value":"English"} **Note:** For RACE™ Dynamic Forms, only English language is supported.

Attribute	Description
Timeout	Application idle Timeout (in minutes). This setting allows the administrator to specify the automatic time out when apps are left idle. **Example:**D30

6. Review and update the content block for each environment (Development, Quality, and Production).

> **Note:**
> Values described in the following table are case sensitive and are recommended to be used in the same format as mentioned in the Description section. All the values are mandatory.

Table 10-2 json parameters

Parameter	Description
Server	The DNS/HostName of the SMP/SCPms servers, which will be used for mobile application connection. **Example:** smp.innovapptive.com
Port	The application establishes the communication to the server based on the specified port number. **Possible Values:** 8080, 8081, 443 **Example:** HTTP/HTTPs (SMP default HTTP port 8080, HTTPs 8081, SCPms HTTPs 443 and custom ports for proxy)

Parameter	Description
ApplicationID	ApplicationID is the ID configured in SMP/SCPms and the mobile application will use it to connect to server for the registration. **Condition:** Use the same application ID as defined in SMP/SCPms. **Possible Values:** Based on the product, refer to the table below. **Example:.**com.innovapptive.mworkorder
SecurityType	This field is used to identify the security type configured in SMP/SCPms server for the application. Security types are used based on authentication mechanism/login mechanism selected for the application. **Condition:** Use the same security profile name as defined in SMP/SCPms. **Example:** Basic Authentication (SSO2), SAML Authentication (SAML) and x509 authentication(x509) mechanisms.
https	This field is used to identify the protocol type. The default value should be set to **false**. **Conditions:** Use lowercase alphabets. **Possible Values:** true/false

Parameter	Description
Whitelist [ApplicationID]	All Innovapptive applications require connection settings for RACE™ services and may require other connection settings also. mWorkOrder application requires connection setting for RACE™, EQUIPMENT, FUNCTIONALLOCATION, and ATTACHMENT. **Example**. com.innovapptive.race, mwo.equipment, mwo.funloc and mwo.attach.
Whitelist [StoreName]	This field describes the name Offline stores for whitelist ApplicationIDs. RACE™ store is common for all Innovapptive applications. mWorkOrder application requires to configure for following StoreName – RACE™, EQUIPMENT, FUNCTIONALLOCATION, and ATTACHMENT.

Figure 10-1 Sample JSON Settings file


```
{
  "Server": "smphost",
  "Port": "8080",
  "ApplicationID": "com.innovapptive.mworkorder",
  "SecurityType": "SSO2",
  "https": false,
  "AppName":"MWORKORDER",
 "Environment": "Development",
  "ShowDemoButton":true,
  "hcolor":"#445E75",
 "TouchId":true, "AppPassCode":true, "ForgotPwd":true, "ForgotPwdLink":false, "ForgotPwdMsg":"http://www.innovapptive.com/", "StoreName":"",
 "Languages":[{"id":1,"key":"E","value":"English"},{"id":2,"key":"D","value":"German"},{"id":3,"key":"F","value":"French"},
{"id":4,"key":"S","value":"Spanish"},{"id":5,"key":"P","value":"Portuguese"},{"id":6,"key":"1","value":"Chinese"},{"id":7,"key":"M","value":"Thai"}],
 "Timeout":"D30", "Whitelist":[{"ApplicationID": "com.innovapptive.mworace","StoreName":"RACE"},{"ApplicationID": "mwo.equipment","StoreName":"EQUIPMENT"},
{"ApplicationID": "mwo.funloc","StoreName":"FUNCTIONALLOCATION"},{"ApplicationID": "mwo.attach","StoreName":"ATTACHMENT"}]
}
```


ApplicationID and **AppName** depend on the app that you configure. The following table will help to configure the details.

Table 10-3 AppName and App id

Name	APP ID	AppName
Mobile Asset Tag	com.innovapptive.masset-tag	MASSETTAG
Mobile Inventory	com.innovapptive.minven-tory	MINVENTORY
Mobile Service Order	com.innovapptive.mser-viceorder	MSERVICEORDER
Mobile Shopping Cart	com.innovapptive.mshop	MSHOP
Mobile Worklist	com.innovapptive.mwork-list	MWORKLIST
Mobile Work Order	com.innovapptive.mworko-rder	MWORKORDER
RACE™ Dynamic Forms	com.innovapptive.racedy-namicforms	RACEDYNAMICFORMS

7. Save the **settings.json** file with the same name. (As a best practice, maintain a backup of the file with a different name)
8. Update the Image files.
   The .png image files that are provided can be replaced with images to meet your branding needs. Ensure that the file format, image size, quality, resolution, and so on are aligned with the image that is being replaced.
9. Compress the following files with the updated files from Part 1 & 2 into a zip file with the name **resources_ios.zip**. Ensure that the content and filenames are exactly matching.
   - App_BG_iPad_Landscape.png
   - App_BG_iPad_Protrait.png
   - App_BG_iPhone.png
   - App_Logo.png
   - settings.json

11. Download App and Install

Before you download new version of the App, do the following:

- Complete all the transactions (Online and Offline),
- Unregister from the application

Download the latest version of mWorkOrder app from Apple App Store, Google Play or the Microsoft Store and install it.