Configure mAssetTag 2009 using RACE™ 2009

Connected Worker Solutions

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RACE™ Configurations Guide for mAssetTag, a Mobile Asset Management Solution of *Connected Workforce Platform*™

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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 Install and do related Configurations for mAssetTag, a Mobile Asset Management Solution of *Connected Workforce Platform*™ .

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.
italic	Indicates book titles, emphasis, or placeholder 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

Related Documents and Products

- Work Order Management
- Inventory and Warehouse Management
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Contents

1. Understand RACE™

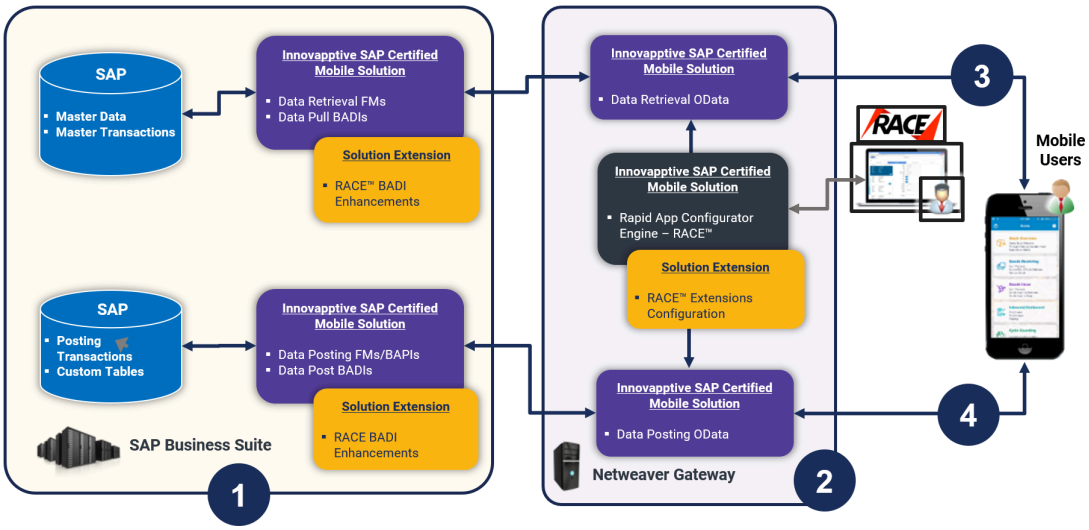
Innovapptive's Connected Workforce Platform™ uses built-in integrations to connect your SAP®, IBM Maximo, and other back-office systems with mobile applications.

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

Figure 1-1 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 and can be deployed on SAP ECC through an Add-On Package. You can make enhancements to this, as required, 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 runs 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

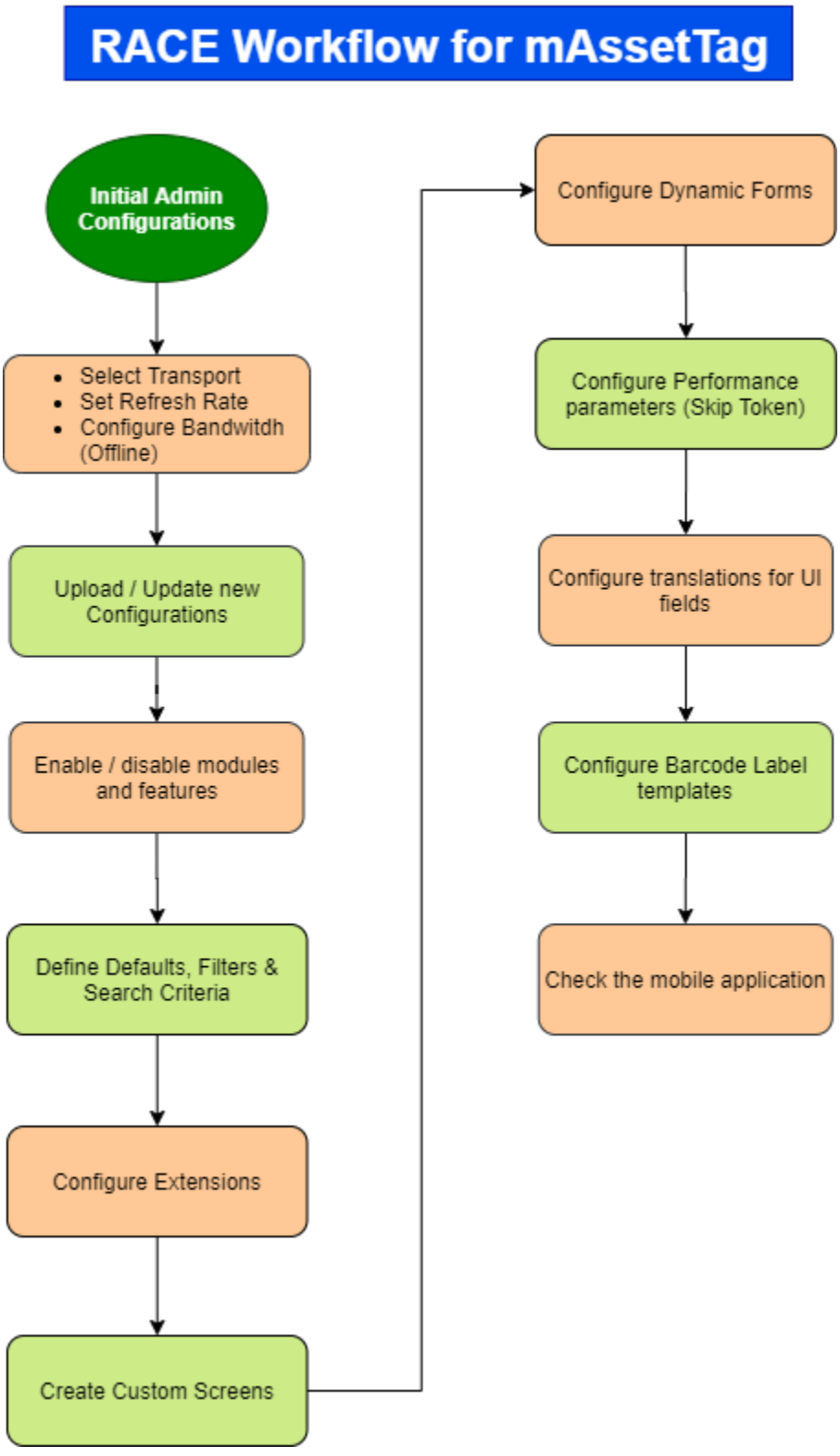
1.1. Features of RACE™

You can do the following with RACE™ for your Innovapptive Connected Worker 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. For example, when you define the Default Plant the technician is employed at and the type of peripherals he /she uses, the Plant and Peripherals fields are auto populated when the technician uses the application. This saves productive time of the field worker and eliminates scope for errors.
- **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 to Purchase Orders and restrict the list that is displayed.
- **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 language requirements.
- Apply security access capabilities to modules and features.
- Configure security for newly added fields.
- Map newly added fields with SAP fields.

1.2. Workflow to configure mAssetTag using RACE™

Figure 1-2 RACE Workflow



1.3. RACE™ Admin Configurations – Setting it up

You are a RACE™ administrator and you configure screen components, field types, form templates and attributes, dropdown table fields which can be used by non-admin RACE™ configurators.

For example, when you configure an Extension or Search field as check label, check box or an auto input dropdown field type in the admin section, a RACE™ user uses from these options for configuring applications.

To manage these configurations, login to RACE™ as an administrator, click the Admin  icon on the top right of the screen and do the configurations listed in this section

1.3.1. Connect to backend SAP systems to retrieve data

Connect to backend SAP systems and retrieve tables, fields, and BAPIs list.

To connect to backend SAP systems to retrieve data:

1. In the Admin section, click **Systems** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing UI field type to populate the properties in the **Create New System** section.
3. In the **Create New System** section, enter this information:

Table 1-1 System attributes

Field	Description
System Name	Name of the system to retrieve the data from like ECC, CRM, and so on.

Field	Description
System ID	Unique identity (alpha numeric) to specify the ID for system.
Destination	Name of the system where the data is posted.

4. Click **Create**.

> **Note:**
> For recommended settings, see the RACE™ Preset Configuration spreadsheet.

1.3.2. Get appropriate access permissions

When users make RACE™ configuration changes, the changes are captured in SAP Netweaver Gateway as custom transports.

To make these configuration changes, RACE users must have one of the following valid profiles with required authorizations.

- **Add and update configurations**: Access to Authorization Object /INVCEC/RA and Activity 01,02,03
- **Update configurations only**: Access to Authorization Object /INVCEC/RA and Activity 02.
- **View configurations only**: Access to Authorization Object /INVCEC/RA and Activity 03

Provide required authorizations to RACE™ users.

1.3.3. Configure UI Field Types

Use the **UI Field Types** menu to configure field types for RACE™ User screen.

When you configure an Extension or Search field as check label, check box or an auto input dropdown, a RACE™ user uses any of these or all types as the field type when configuring the fields for Innovapptive Connected Worker mobile applications.

To configure UI field type:

1. In the Admin section, click **UI Field Types** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing UI field type to populate the properties in the **Create UI Field** section.
3. In the **Create new UI Fields** section, enter this information:

Table 1-2 UI Field Types attributes

Field	Description
UI Field	Type of extension field to be displayed in the application.
UI Field Description	Description of the UI field type.
UI Field Category	Category of the UI field like dropdown and non-dropdown depending on which some fields are shown on the application.
Product(s)	Select the applications for which the field type is configured.

4. Click **Create**.

Note:
For recommended settings, see the RACE™ Preset Configuration spreadsheet.

1.3.4. Configure components for transaction screens

Use the **Components** option to configure screen area, screen type, element, and element type components for RACE™ transaction screens.

When you configure a screen, you select a component like Header and define extensions or fields depending on the type of transaction / workflow.

To configure screen components:

1. In the Admin section, click **Components** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing UI field type to populate the properties in the **Create new Component** section.
3. In the **Create new Component** section, enter this information:

Table 1-3 Screen Component attributes

Field	Description
Component Type	Type of screen component. Possible values: • Screen Area • Screen Type • Element • Element Type
Component Name	Name of the screen element like Header, Tab, Label and Button.
Component Description	Description of the Screen component.
Parent Component	Name of the parent component like screen or element.

4. Click **Create**.

> **Note:**
> For recommended settings, see the RACE™ Preset Configuration spreadsheet.

1.3.5. Configure dropdown table and dependency fields

Use the **DD Tables** menu to configure dropdown tables to retrieve data from SAP for transaction screens on the mobile.

You can also configure the Dependency Field and Dependency Key Field for the dropdown field. For example, when you select the dropdown table to configure an Extension or Search dropdown field, the dependency fields are auto populated.

To configure dropdown table for fields:

1. In the Admin section, click **DD Tables** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing UI field type to populate the properties in the **Create new predefined DD table fields** section.
3. In the **Create new predefined DD table fields** section, enter this information:

Table 1-4 Dropdown table field attributes

Field	Description
Predefined DD Table	Enter the dropdown table field.
DD Table Name	Enter the name of SAP table to retrieve data from.
DD Field Name	Enter the name of SAP field to retrieve.
DD Dependency Field	Enter the name of the field to auto-populate depending on the value selected in dropdown field.
Text Required	Define how the text for dropdown values is displayed. Possible values: • 0 – Not Required (not relevant) • 1 – Only Description (only the description of the value is displayed) • 2 – Key and Description (both the key and description of the value are displayed)
Text Table	Enter the table name to fetch the text from.

Field	Description
Text Field	Enter the table field name to fetch the text.
Text Key Field	Enter the name of the field to fetch the value.

4. Click **Create**.

> **Note:**
> For recommended settings, see the RACE™ Preset Configuration spreadsheet.

1.3.6. Configure form template for dynamic screens

Configure form templates so that the RACE™ users can use them when creating embedded forms for transactions in mobile application.

You can define the key / repetitive fields used across the forms. When you create a Form using template, fields configured are added to the form and you can add / modify the fields depending on the requirements.

To configure form template:

1. In the Admin section, click **Dynamic Forms** on the left panel.
2. Click the **Add**  icon next to the search field.
3. In the **Create Form** pop up window, enter this information:

Table 1-5 Dynamic Form Attributes

Field	Description
Form Name	Unique ID or name to identify the form.
Form Title	Name of the Form. Alpha-numeric code to identify the form.
Form Type	Type of Form like Single or Multi level.

Field	Description
Attributes	Select the attributes like Plant, Order Type and Material for which the Form is applicable. Depending on the values you select, app filters the forms list shown to the field technician.

4. Click **Create**.
5. On the **Create New Form Fields** pane, enter this information:

Table 1-6 Dynamic Forms field attributes

Field	Description
Field Key	Unique identifier for the form to perform validations.
Valid From	Date from when the Form parameters are applicable.
Valid To	Date after which the Form parameters are not valid.
Version	Version number of the Form.
Section Name	Select the Section where the field appears on the form. Section contains a group of fields that share the same purpose, for styling and organization of form data.
Section Position	Position of Section on the Form layout.
Reference Field	Select Reference field for the form field. Reference field defines relationship between fields like defining Currency units related to Quantity values.
Sub-Form Name	To maintain navigation inside the form and it is maintained same as forms.
Field Label	Enter the text to be shown on the application UI.
Field Position	Position for the field compared to other fields on the form.
Placeholder	Text to describe the field like type or description.
Field Type	Element type for form field like Dropdown, text field. Following are a few of the supported field types for forms:

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td></td><td>
Table 1-7 UI Field Types
<table>
<tr><th>Field Type ID</th><th>Field Type</th><th>Purpose</th></tr>
<tr><td>LF</td><td>Label Field</td><td>Displays only field value.</td></tr>
<tr><td>DL</td><td>Date Label</td><td>Displays field value of type Date.</td></tr>
<tr><td>CB</td><td>Check Box</td><td>To enable and disable the check box.</td></tr>
<tr><td>DD</td><td>Drop-Down</td><td>Allows to select of a value from a drop-down list of values.</td></tr>
<tr><td>DF</td><td>Date Field</td><td>Allows to select a date.</td></tr>
<tr><td>TF</td><td>Text Field</td><td>Allows to enter free text.</td></tr>
<tr><td>SF</td><td>Scan Field</td><td>Scans a barcode or a enter free text.</td></tr>
<tr><td>ID</td><td>Input Drop-Down</td><td>Allows to either select a value from a drop-down list of values or a enter free text.</td></tr>
<tr><td>ARD</td><td>Array Field Line Display</td><td>Allows to add sub-form inside a field of a form.</td></tr>
</table>
</td></tr>
</table>

Field	Description

Field Type ID	Field Type	Purpose
		Note: Select the form in the Sub-form field if you configure this field type.
TIF	Time Field	Allows to add time.
TIL	Time Label	Allows to add label for time.
TV	Text View	Allows to add text fields with more characters.
GAI	Geo-Location Address Input	Allows to add the current location of device in the field.
GAL	Geo-Location Address Label	Fetch the location of device and display in form.
SGF	Signature Field	Allows to add signature.
SMF	Sum Field	Calculates the field values and shows the sum in the form.
NF	Numeric Field	Allows to enter a numeric value in a free text field.
CL	Check Label	Displays a Check Box.

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Field Type ID</th><th>Field Type</th><th>Purpose</th></tr>
<tr><td>DDM</td><td>Drop Down Multi Selection</td><td>Allows to select multiple values from a list of values.</td></tr>
<tr><td>IDM</td><td>Input Drop-Down Multi Selection</td><td>Allows to select either multiple values from a list of values or enter multiple values as free text.</td></tr>
<tr><td>ATT</td><td>Attachment</td><td>Allows to add images as attachments to the form.</td></tr>
<tr><td>DOC</td><td>Document</td><td>Adds a reference document in line with the form field.</td></tr>
<tr><td>IMG</td><td>Image</td><td>Adds an image in line with the form fields.</td></tr>
<tr><td>VI</td><td>Visible Input</td><td>Shows the possible values for the field on the screen but not as a list.</td></tr>
<tr><td>RT</td><td>Rating</td><td>Shows a scale to record or capture the readings.</td></tr>
</table>
</td></tr>
<tr><td>DD Dependency Fields</td><td>Select the Dependent field on the transaction screen that facilitates filtering of the field values.</td></tr>
</table>

Field	Description
	Note: Displayed only if the **Field Type** is set to **DD - Drop Down** or **ID - Input Dropdown**.
DD Values	Values for dropdown form elements in json format.
Dropdown Table	Source table from where the dropdown field values are populated.
Active	To show/hide the field on the form.
Overview	Enable/disable the form field in Overview section of the transaction screen.
Detail	Enable/disable to show the form field in Detail section of the transaction screen.
Default Value	Value to be populated in the form field.
Field Instruction	User instructions relevant to the field.
Field Color	Defines the color of the field on the Form in the UI.
Mandatory	To show the extension as Mandatory field on the transaction screen.
Follow up Indicator	To mandate the follow-up process for this Form.
Validation Required	To configure validation rules for the form field.
UI Validation	Specify the validations for user entered values. **Note:** This field is displayed only if the **Validation Required** is enabled.
UI Validation Message	Enter the alert message to be displayed if the UI validation is applicable.

Field	Description
	Note: This field is displayed only if the **Validation Required** is enabled.
API Type	Indicates the type of data source such as RFC, BOR, ODATA services. Currently we support only RFC, BOR.

6. Click **Create**.

Note:
For recommended settings, see the RACE™ Preset Configuration spreadsheet.

1.3.7. Configure Barcode Types for labels

Configure the types of barcodes that the RACE™ User can use them when defining parameters like Layout, Height, and Width of the barcode labels.

1. In the Admin section, click **Barcode Types** on the left panel.
2. Click the **Add**  icon next to the search field.
3. In the **Create new Barcode Type** section, enter the following information:

Table 1-8 System attributes

Field	Description
Barcode Type	Unique identity (alpha numeric) to specify the barcode type like CODE_128 and DATA_MATRIX.
Barcode Description	Description of the barcode type.

4. Click **Create**.

Note:
For recommended settings, see the RACE™ Preset Configuration spreadsheet.

1.4. Before you configure mAssetTag using RACE™

Before you use RACE™ to configure mAssetTag, do the following:

- Familiarize yourself with the mAssetTag RACE™ UI *(on page 23)*
- Select Transport for Migrating Changes *(on page 24)*
- Configurations for your Connected Worker Mobile Application *(on page 24)*

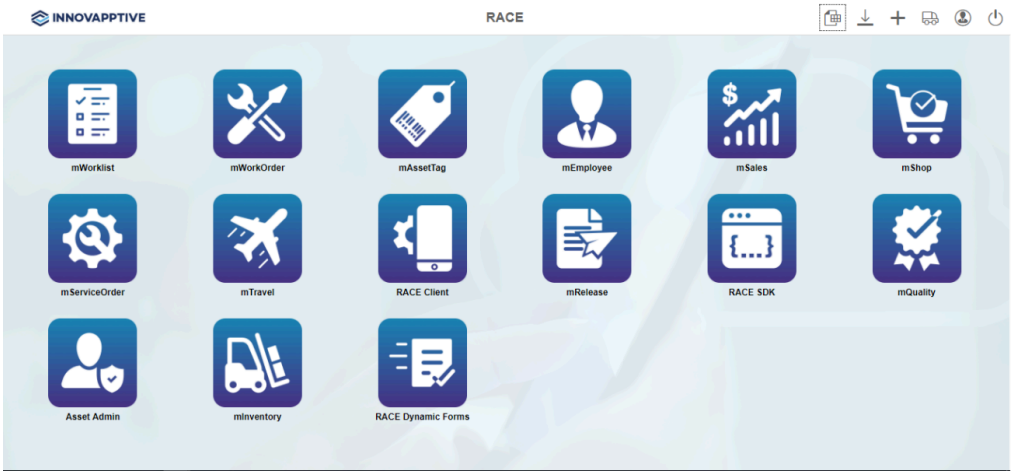
1.4.1. Familiarize yourself with the mAssetTag RACE™ UI

Understanding the mAssetTag RACE™ dashboard helps you do your tasks faster.

To access mAssetTag RACE™ UI to familiarize yourself with the dashboard.

1. Enter the RACE™ URL in a browser and login using your User ID and Password.
2. From the Dashboard, select the **mAssetTag** application.

Figure 1-3 RACE™ Home Page



RACE™ for mAssetTag configuration panel appears with the following options:

- Modules and Screens
- Scoping
- Dynamic Searches
- Defaults
- Extensions
- Filters
- Performance
- Localization
- Postings
- Screens

1.4.2. Select Transport for Migrating Changes

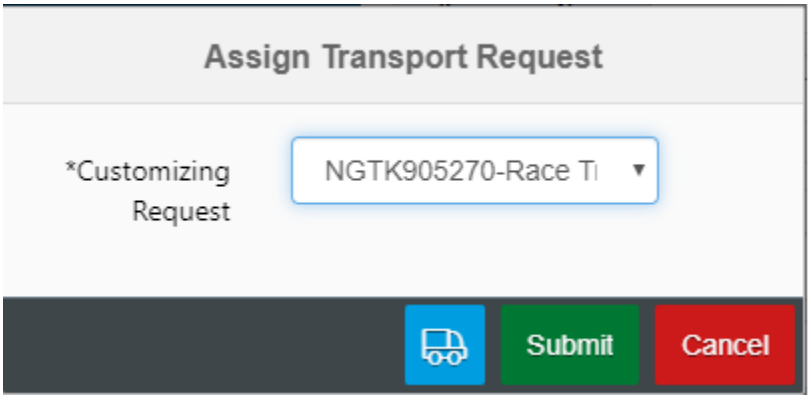
Before you upload the RACE™ configurations provided in spreadsheets, or do any configuration changes, select the valid SAP transport request. These SAP transports help migrate the configurations that you make in RACE™ from Development to Quality and to Production systems.

Note:
You can use 'LOCAL' Object as an option. However, changes made under 'LOCAL' are not transportable. Use this option only when making changes to 'Productive' environment settings.

To select the transport to be used for moving configurations:

1. On the top panel bar, click the **Transport Requests** icon.
2. Select a transport in the **Assign Transport Request** window.
3. Click **Submit**.

Figure 1-4 RACE™ Transport Request



1.4.3. Configurations for your Connected Worker Mobile Application

Configurations such as Offline, RACE Menu, Application details and configurations are applicable to your entire mobile application.

You can do the following configurations for your connected worker mobile application:

To do the app level configurations, On the top panel bar, click the **Settings**  icon on the top panel.

Application Details

You can view the basic application details like App Name, App ID, App Title and Project Name.

- You cannot change **App Name** or **App ID**.
- You can edit **App Title** and **Project Name**. Do only if required.
- User Project Name when creating or adding a new module. Do not change this value for the standard product deployment.

Offline Configurations

- **Refresh Offline:** Choose this if you want the application to synchronize data into the offline database. Helps in low and no connectivity zones of your workplace.
- **Refresh Rate:** Duration in seconds to auto refresh the offline database, from the time the last refresh was triggered.
- **Bandwidth:** Duration in seconds before the application switches to offline mode, if the bandwidth of the network connection falls below the level maintained in application settings.

Application Configurations

This option enables the User Profile feature in the mobile application. You can configure default logout method for every application user:

- **Logout:** When the user clicks on Logout, the user will be logged out. But the user is still registered with the device. A new user will not be able to login to the device. If the device is shared between multiple employees, the registered user must navigate to the Settings screen in the application and Unregister.
- **Logout and Unregister:** With this option, when the user logs out, the user is also unregistered from the device at the same time. All Offline database and cached data of the user is also cleared. New users can use the same device to do the transactions in the next shift.

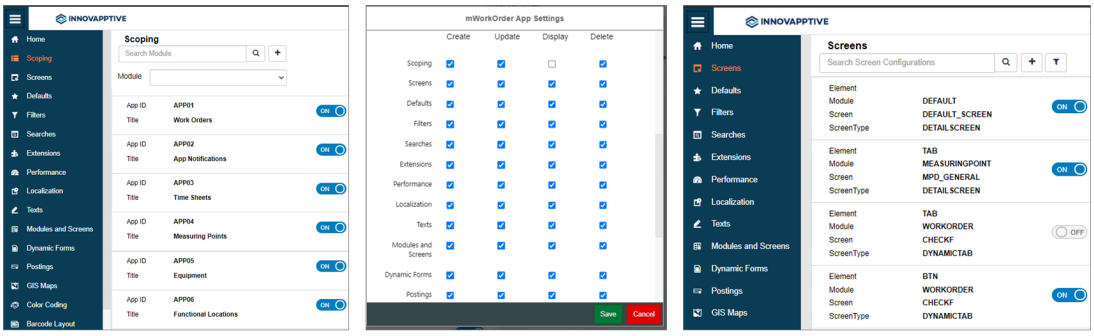
RACE™ Menu Configuration

When the RACE™ Admin creates a RACE™ user, the user gets full access to do the configurations by default. If the user needs to be provided restricted access, the RACE™ admin can provide the following access levels.

- Create allows the user to add new configuration entry for the module.
- Update allows the user to modify the existing configuration entry for that module.
- Display allows the user to view configuration entries for that module.
- Delete allows the user to remove any existing configuration entry in that module.

In the following screenshot, when the **Display** of the **Scoping** module is turned off, you can see that the user can no longer view the **Scoping** module.

Figure 1-5 RACE™ Menu Configurations



Scoping display ON | Turn Off Scoping display in Menu | Scoping display Off

1.5. Upload mAssetTag pre-set Configuration Spreadsheets Using RACE™

RACE™ configurations are provided in spreadsheets. Download them from Innovapptive support website and upload the spreadsheets to enable the latest RACE™ features that are developed for mAssetTag.

When you use the RACE™ pre-set configuration spreadsheets, you enable all the recommended features / configurations automatically. Contact your Innovapptive representative if you need help downloading them.

mAssetTag configuration RACE Spreadsheets

- **Admin Configurations_2006.zip**: (Mandatory file) Upload this file during the product deployment. You cannot reconfigure the settings.
- **Applications_2006.xlsx**: (Mandatory file) Upload this file during the product deployment and reconfigure as required later.
- **Defaults_2006.xlsx**: (Recommended file) Upload this file during the product deployment. The configurations in the file ensure that the application works as designed. However, you can reconfigure as required later.

  Note:
  - If UI field type is related to drop down, check and maintain dynamic drop-down configuration fields data properly (DD TABLE NAME, DD FIELD NAME, TEXT REQ, TEXT TABLE NAME, TEXT FIELD NAME, TEXT KEY FIELD NAME, DEPENDENCY FIELD NAME, DEPENDENCY KEY FIELD NAME).
  - Try to avoid Transaction tables in DD Table Name (MARA, VBAK, MARC, MSEG).
  - Dynamic drop-down table should have very less data (< 1000 entries). If we have more data in dynamic drop-down table, there will be chances of offline store failure.
- **Dynamic Search_2006.xlsx** & **Dynamic Search Asset Admin_2006.xlsx**: (Recommended file) Upload this file during the product deployment. The configurations in the file ensure that the application works as designed. However, you can reconfigure as required later.

Note:

- At least one search field should be active for each module name and search screen name.
- If UI field type is related to drop down, check and maintain dynamic drop-down configuration fields data properly (DD TABLE NAME, DD FIELD NAME, TEXT REQ, TEXT TABLE NAME, TEXT FIELD NAME, TEXT KEY FIELD NAME, DEPENDENCY FIELD NAME, DEPENDENCY KEY FIELD NAME).
- Try to avoid Transaction tables in DD Table Name (MARA, VBAK, MARC, MSEG). Dynamic drop-down table should have very less data (< 1000 entries).
- If we have more data in dynamic drop-down table, there will be chances of offline store failure.

- **Extensions_2006.xlsx** & **Extensions Asset Admin_2006.xlsx**: (Reference file) Use this file as a reference to create similar kinds of configurations based on your requirements and upload it.

Note:

- If UI field type is related to drop down, check and maintain dynamic drop-down configuration fields data properly (DD TABLE NAME, DD FIELD NAME, TEXT REQ, TEXT TABLE NAME, TEXT FIELD NAME, TEXT KEY FIELD NAME, DEPENDENCY FIELD NAME, DEPENDENCY KEY FIELD NAME).
- Try to avoid Transaction tables in DD Table Name (MARA, VBAK, MARC, MSEG).
- Dynamic drop-down table should have very less data (< 1000 entries). If we have more data in dynamic drop-down table, there will be chances of offline store failure.

- **Filters_2006.xlsx**: (Recommended file) Upload this file during the product deployment. The configurations in the file ensure that the application works as designed. However, you can reconfigure as required later.

Note:

- Try to filter the data as much as the end user requires.
- Do not maintain any junk data.

- **Localization_2006.xlsx:** (Mandatory file) Upload this file during the product deployment and reconfigure as required later.

- **Modules and Screens_2006.xlsx** & **Modules and Screens Asset Admin_2006.xlsx**: (Mandatory files) Upload this file during the product deployment and reconfigure as required later.
- **Performance_2006.xlsx**: (Mandatory file) Upload this file during the product deployment and reconfigure as required later. The configurations in the file ensure that the performance of application is optimized.

> **Note:**
>
> - Sync the collections to offline as per the customer scope only.
> - For drop-down collection, if no. of entries < 1000, then enable delta token and offline sync. Access from offline should be active.
> - For drop-down collection, if no. of entries > 1000, then enable skip token and offline sync. Skip token size should be 500 to 1000. Access from offline should be active.
> - For expand collections, enable skip token and offline sync. Access from offline should be active.
> - Delete any duplicate collections.
> - If expand collection (WORKORDERHEADERCOLLECTION?$expand=operationscollection...etc) is enabled for offline sync, then there is no need to enable the offline sync for plain collection (GROPHEADERCOLLECTION). We maintain expand collection and plain collection separately only to increase the skip token value in online mode.

- **Scoping_2006.xlsx** & **Scoping Asset Admin_2006.xlsx**: (Mandatory file) Upload this file during the product deployment and reconfigure as required later.

> **Note:**
>
> - Each entry should have a system name.
> - Do not configure any static feature directly in customer environment. It should come through P&I.
> - Do not maintain any junk data.

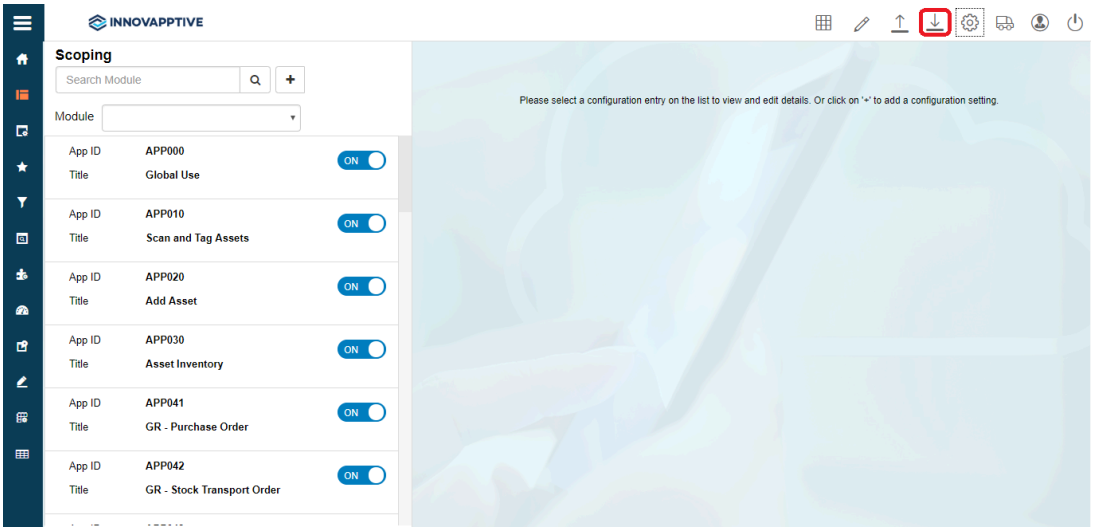
- **Dynamic Forms_2006.xlsx**: (Reference file) Use this file as a reference to create similar kinds of configurations based on your requirements and upload it.
- **Push Notifications_2006.xlsx**: (Reference file) Use this file as a reference to create similar kinds of configurations based on your requirements and upload it.

1.5.1. Download current version RACE™ configuration spreadsheets

Before you upload the latest version's RACE™ configuration spreadsheets, download your existing RACE™ configurations and place them in a backup folder.

To download RACE™ configurations, click the **Download** icon and save.

Figure 1-6 Download RACE™ Configurations



1.5.2. Upload/upgrade RACE™ configurations of the current release

When you use the RACE™ preset configuration spreadsheets, you enable all the modules/ features, extensions, or screens and other configurations on the mobile application automatically.

Choose either upload or upgrade options for the RACE™ preset configuration spreadsheets.

Upload : Updates all RACE™ configurations and override existing configurations

Use this option if your organization had not made any customizations to RACE™ preset configurations or if you want to override customizations made by your organization.

Following table illustrates how RACE™ Upload option works:

Table 1-9 RACE™ Upload Configurations

Preset Configurations in Spreadsheets	Configurations Changes made by your organization	After RACE™ Upload
Extension 1 – DD	Extension 1 – DD	Extension 1 – DD
Extension 2 – TF	**Extension 2 – CB**	**Extension 2 – TF**
Extension 3 – ID	Extension 3 – ID	Extension 3 – ID
Extension 4 – SCAN	**Extension 4 – OCR**	**Extension 4 – SCAN**

Update  **: Updates only the new configurations**

Updates new configurations without overriding the changes to native RACE™ preset configurations made by your organization

Following table illustrates you how RACE™ Update option works:

Table 1-10 RACE™ Update Configurations

Preset Configurations in Spreadsheets	Configurations Changes made by your organization	After RACE™ Update
Extension 1 – DD	Extension 1 – DD	Extension 1 – DD
Extension 2 – TF	**Extension 2 – CB**	**Extension 2 – CB**
Extension 3 – ID	Extension 3 – ID	Extension 3 – ID
Extension 4 – SCAN	**Extension 4 – OCR**	**Extension 4 – OCR**

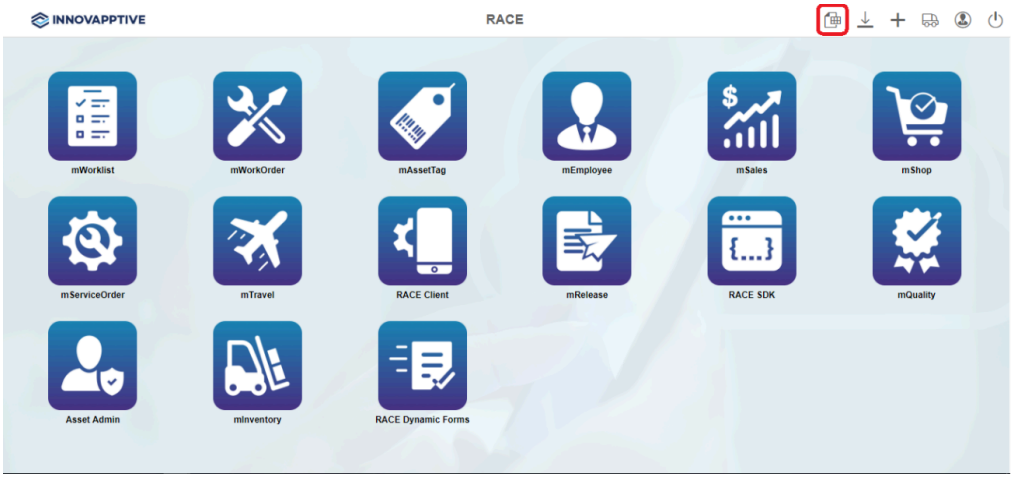
1.5.3. Upload/upgrade configurations for multiple modules at once

You can upload or upgrade multiple modules using RACE™ preset configuration spreasheets at one go.

To upload or upgrade RACE™ configurations for all modules at one go:

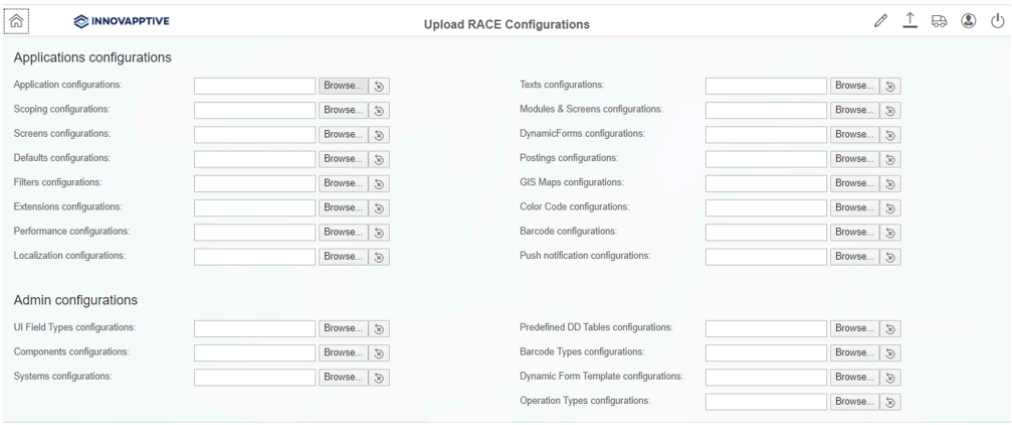
1. Click on the  icon on RACE™ home page.

Figure 1-7 Upload RACE™ Configuration Settings



2. On the **Upload RACE™ Configurations** screen, click **Browse** next to the module/feature to select the spreadsheet for that module/feature.

Figure 1-8 Upload RACE™ Configurations



3. Click the **Upload**  or **Update**  icon.

1.5.4. Upload/upgrade configurations for one module at a time

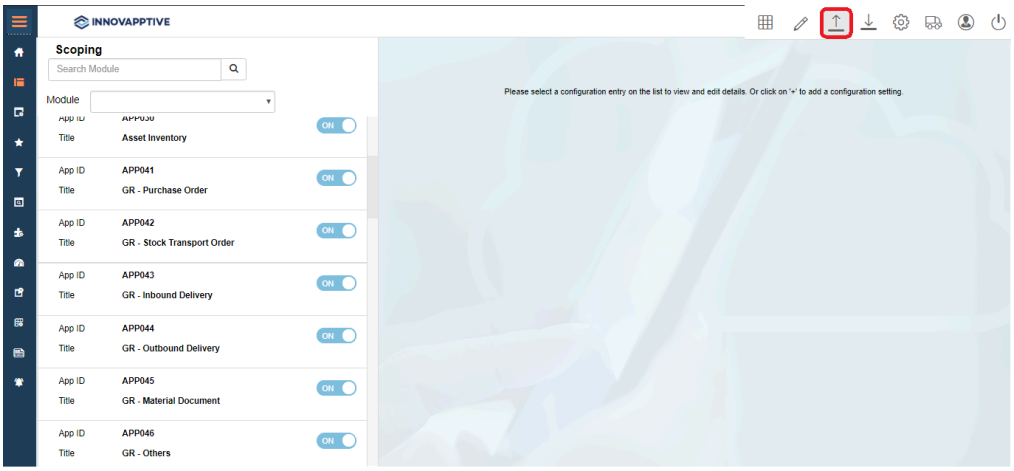
You can upload or upgrade multiple modules using RACE™ preset configuration spreasheets at one go.

To upload/ upgrade one module in RACE™ at a time:

1. Click the module that you want to upgrade in the left pane. For example, click the **Scoping** module.

2. Click the **Upload**  icon or **Update**  icon to browse and select the excel spreadsheet.

Figure 1-9 Upload RACE™ Configuration Settings



2. Enable/disable modules and features

When you upload RACE preset configuration spreadsheets, all the standard features and configurations that are required for the mobile application are enabled. You can disable the features that are not required for your organization or not applicable for your industry.

This chapter helps you with the following tasks

2.1. Module / Feature Properties

Before you enable or disable features, read the explanations of the properties of the fields related to modules and features in the following table.

Table 2-1 Scoping attributes

Field	Description
Type	Type of the feature/module. Possible values: • **Standard**: Standard feature/module in the mobile application. You can only enable or disable. • **Custom Category**: New feature can be added in the application. User can add the entries under custom category with or without using the templates. • **Template Category**: New feature can be added in the application with reference to templates.
System ID	Indicates the SAP system like ECC, CRM, SRM to retrieve tables, fields and BAPIs list in other screens like Defaults, Extensions.

Table 2-1 Scoping attributes (continued)

Field	Description
Module Name	Enter/select the name to define/identify the module.
App ID	Unique identity (alpha numeric) to specify the ID for the application.
Parent App ID	Parent App ID of the module for which the **Module** is the sub-module.
BOR Object ID	Business object ID based on the transaction codes used for the configuration process.
Description	Description of the module/feature.
Sequence No	Defines the sequence or position of the screen for the Module.
Title	Short description of the feature.
Active	To show/hide the module/feature in the mobile application.
Access Category	Enable/disable extension field based on user access: • T-Transaction Code • U-User Group • R-Role • A-Authorization Object.
Access Value	This field is used for data related to security. Based on the access category, data in this field needs to be maintained. For example, if you maintain a transaction code in the **Access Category** field then you must enter the t-code name in this field. Module/feature is displayed in the mobile application only if the user has access to the transaction code.

2.2. Enable/disable modules and features for all users (application level)

You can enable or disable modules / features that are not required for all users in the organization.

To enable / disable a module at the application level:

1. Click **Scoping** on the left panel.
2. Enter the App ID or name of module in the search field.
   You can also select the module name in the **Module** field and filter the App IDs.
3. Select the App ID you want to enable / disable.
4. Turn ON / OFF the **ACTIVE** toggle switch.
5. Click **Save**.

2.3. Enable / Disable modules and features for specific users

You can disable or enable modules / features to a specific set of roles / users. This helps customize application based on the job function.

To enable or disable modules / features to a few users in your organization:

1. Click **Scoping** on the left panel.
2. Enter the App ID or name of the module/feature in the search field.
   You can also select the module name in the **Module** field and filter the App IDs.
3. Select the App ID you want to enable / disable.
4. Turn **ON** / **OFF** the **ACTIVE** toggle switch.
5. Select the **Access Category** from the **Transaction Code**, **User Group**, **Role**, **Authorization Group** options.
6. Specify the **Access Value** for the Access Category.

   For example, when you select MIGO as access value for Transaction Code, users who have SAP security access to MIGO transaction can view the module/sub-module in the mobile application.
7. Click **Save**.

2.4. Enable Features that are not enabled with preset configuration spreadsheets

When you upload RACE™ preset configuration spreadsheets, only the core business features are enabled. Non-standard features developed for a few customers are not enabled when you import the preset configuration spreadsheets.

You can enable these features, if required, by your business. To enable / disable these special features:

1. Click **Scoping** on the left panel.
2. Enter the App ID.
3. Select the App ID.
4. Turn **ON** / **OFF** the **ACTIVE** toggle switch.
5. If you want to turn on / off the scanner options based on the access category:
    a. Select the **Access Category** from the **Transaction Code**, **User Group**, **Role**, **Authorization Group** options.
    b. Specify the **Access Value** for the Access Category.

    For example, when you select MIGO as access value for Transaction Code, users who have SAP security access to MIGO transaction can view the module/sub-module in the mobile application.
6. Click **Save**.

2.4.1. Features not enabled by default in mAssetTag

The following features are not enabled by default in mAssetTag.

Table 2-2 mAssetTag modules/features not enabled by default

App ID	Module / Feature
APP050	GR Attachments
APP452	GR - Mat doc - Mat.Doc O/p
APP421	GR - STO - Mat.Doc O/p
APP441	GR - OD - Mat.Doc O/p
APP431	GR - ID - Mat.Doc O/p
APP461	GR - Others - Mat.Doc O/p
APP000	Global Use

Table 2-2 mAssetTag modules/features not enabled by default (continued)

App ID	Module / Feature
APP210	GR - PO
APP452	GR - Mat doc - Mat.Doc O/p
APP421	GR - STO - Mat.Doc O/p
APP441	GR - OD - Mat.Doc O/p
APP431	GR - ID - Mat.Doc O/p
APP461	GR - Others - Mat.Doc O/p
APP210	GR - PO
ATT030	My List
ATT010	Scan and Tag Assets

3. Define Defaults, Filters and Search Criteria

Defaults, Filters and Dynamic Search configuration settings through RACE™.

The corresponding table in SAP NetWeaver Gateway is **/INVCEC/SEARCH**. Basic application configurations in this table are populated through the Add-On transport and you can update or modify them using RACE™.

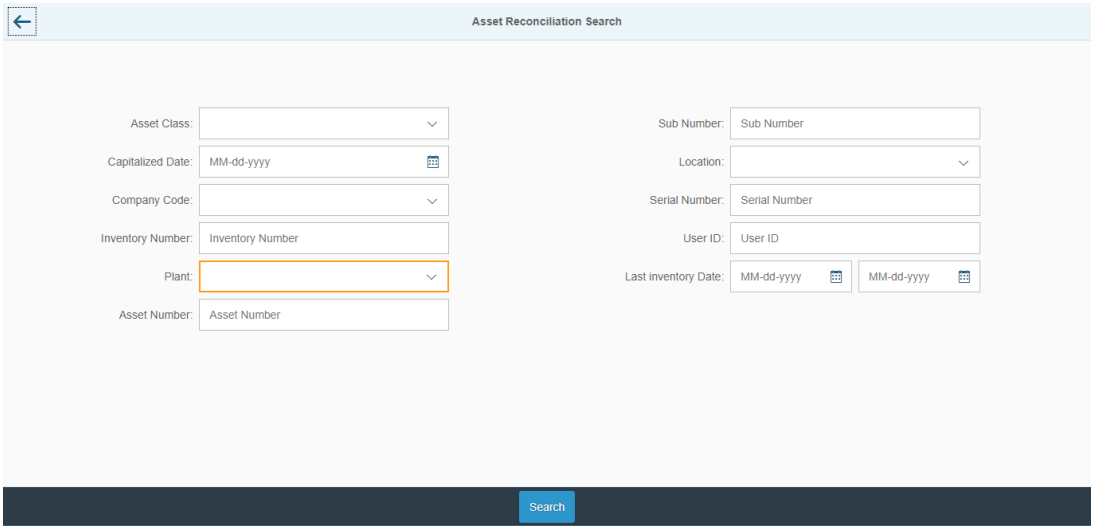
This chapter helps you with the following:

3.1. Configure search criteria

Define search criteria and provide mobile user the flexibility to search transaction data.

The following screen shows the mAssetTag UI5 application search screen. The fields **Asset Class**, **Plant, Asset Number, Serial Number** are configured using RACE™ Dynamic Search configuration.

Figure 3-1 Asset Reconciliation Search



Note:
Dynamic Search is applicable only in UI5 application (Asset Reconciliation and Asset Scheduler modules).

To configure search fields using RACE™:

1. Click **Searches** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing Search field to populate the properties in the **Create Search Field** section.
3. In the **Create Search Field** section, enter the following information:

Table 3-1 Search configuration attributes

Field	Description
Module	Select the module where the field is configured.
Screen	Select the screen within the module where the field is displayed.
Category	Select between Standard and Extension options to choose the configuration type.
Table / BAPI Name	Select the table/BAPI to fetch the data from.
Table Description	Auto-populated based on **Table / BAPI Name**.
Field Name	Select the table/BAPI field to retrieve the field data.
Field Description	Populated based on the **Field Name**.
External Field	Enter the name of external system to integrate like Maximo.
Search Type	Select between the Header and Item level options to perform the search with this field.
UI Label	Enter the text to be shown on the application UI.

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>UI Field Type</td><td>Define the type of the field. Following are a few of the UI field types available for mAssetTag:

Table 3-2 UI Field Types<table><tr><th>Field Type ID</th><th>Field Type</th></tr><tr><td>DD</td><td>Drop Down</td></tr><tr><td>DF</td><td>Date Field</td></tr><tr><td>TF</td><td>Text Field</td></tr><tr><td>SF</td><td>Scan Field</td></tr><tr><td>ID</td><td>Input Drop Down</td></tr><tr><td>DFR</td><td>Date Field Range</td></tr></table></td></tr>
<tr><td>UI Position</td><td>Define the position for the extension compared to other fields on the search screen.</td></tr>
<tr><td>Default Value</td><td>Enter the value to be populated in the search field.</td></tr>
<tr><td>Active</td><td>Select whether to show/hide the extension on the transaction screen.</td></tr>
<tr><td>Mandatory</td><td>To show the search field as Mandatory field on the transaction screen.</td></tr>
<tr><td>Validation Required</td><td>To configure validation rules for the extension field.</td></tr>
<tr><td>UI Validation</td><td>Specify the validations for user entered values.

Note:
This field is displayed only if the Validation Required is enabled.</td></tr>
<tr><td>UI Validation Message</td><td>Enter the alert message to be displayed if the UI validation is applicable.</td></tr>
</table>

Field	Description
	Note: This field is displayed only if the **Validation Required** is enabled.
Dropdown Table	Select the Source table from where the values of a dropdown field are retrieved. **Note:** This field is displayed only if the **UI Field type** is set to **DD - Drop Down** or **ID - Input Dropdown**.
Dropdown Field	Select the Field in the source table from where the values of a dropdown field are retrieved. **Note:** This field is displayed only if the **UI Field type** is set to **DD - Drop Down** or **ID - Input Dropdown**.
DD Dependency Field	Select the Dependent field on the transaction screen that facilitates filtering of the field values. For example, **Storage Location** search field is dependent on **Plant** field. **Note:** Displayed only if the **UI Field type** is set to **DD - Drop Down** or **ID - Input Dropdown**.

Field	Description
Authorization Relevant	Enable/disable security authorization relevancy. This is relevant for fields of type 'drop down', and when activated, filters values based on security org values set up in SAP security roles.
Access Category	Enable/disable extension field based on user access: • T-Transaction Code • U-User Group • R-Role • A-Authorization Object.
Access Value	This field is used for data related to security. Based on the access category, value in this field must be maintained. For example, if you configure a transaction code in the **Access Category** field then the t-code name must be specified in this field. Search field configured is displayed in the mobile application only if the transaction code is assigned to the user.
Text Required	Define how the dropdown values are displayed. Possible values: • 0 – Not Required (not relevant) • 1 – Only Description (only the description of the value is displayed) • 2 – Key and Description (both the key and description of the value are displayed)
Text Table	Select the Table from where the text is retrieved.

Field	Description
	Note: This field is displayed only if the **Text Required** is set to **Only Description** or **Key and Description**.
Text Field Name	Select the table field name from where the text is retrieved. When the value in **Text Required** field is set to 1 or 2, the corresponding Description is fetched from the text table in SAP. **Note:** This field is displayed only if the **Text Required** is set to **Only Description** or **Key and Description**.
Text Key Field Name	Select the field to define the relationship between the dropdown field and table.
Collection	Select the Source Collection from where the dropdown field values are retrieved.
Collection Filter	Select the field to filter the values retrieved from the Collection.

4. Click **Create**.

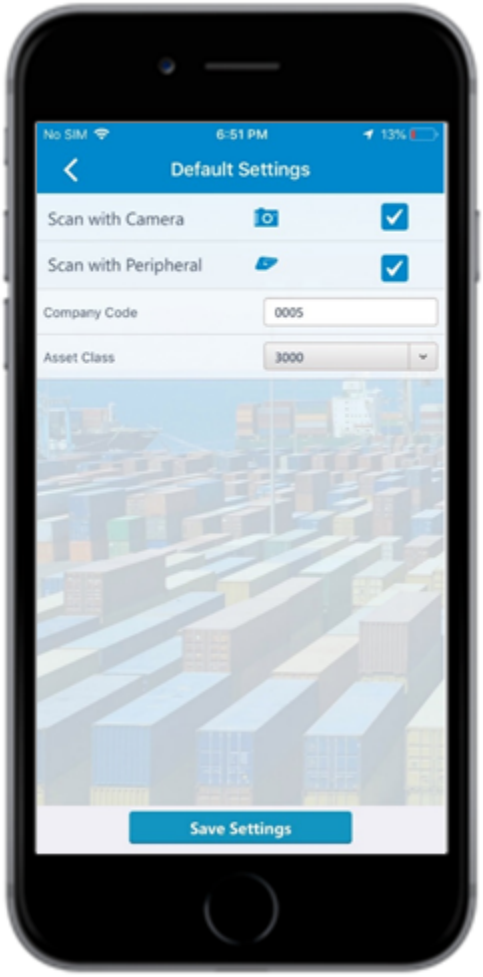
Note:
For recommended settings, see the RACE™ Preset Configuration spreadsheet. This spreadsheet contains list of Search fields with attributes like Module Name, Screen, Field Name and Description.

3.2. Configure default values

Configure key field values that are used repetitively in your everyday / regular tasks. These values, when configured, are populated across all the Search and Creation screens. The population of default values improve the productivity of the of the field workers.

The following screen shows the mAssetTag mobile application's **Default Settings** screen. Initially the values of fields in the default settings screen are populated from the Mobile User's SAP user parameters. If user parameters are not set in the SAP, the default values configured in RACE™ are populated in the mobile. When the user updates the Default Settings, the application updates the user parameters in SAP.

Figure 3-2 Default Settings



To configure Default Settings using RACE™:

1. Click **Defaults** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing Default field to populate the properties in the **Create Default Field** section.
3. In the **Create Default Field** section of the screen, enter the following information:

Table 3-3 Default Field configuration attributes

Field	Description
Module	Select the Module where the field is configured. For example, Default module.
Screen	Select the screen where the field is displayed. For example, Default Settings screen.
Table Name	Select the table from where the field data is retrieved.
Table Description	Auto-populated based on the **Table Name**.
Field Name	Select the name of the field in SAP Table.
Field Description	Populated based on the **Field Name**.
UI Label	Enter the text to be shown on the application UI.
UI Field Type	Define the type of the field. Following are a few of the UI field types:

Table 3-4 UI Field Types

Field Type ID	Field Type
DD	Drop Down
DF	Date Field
TF	Text Field
SF	Scan Field
ID	Input Drop Down
DFR	Date Field Range

Field	Description
	<table><tr><th>Field Type ID</th><th>Field Type</th></tr><tr><td>SID</td><td>Scan Input Drop Down</td></tr></table>
UI Position	Define the position for the default field compared to other fields on the transaction screen.
Default Value	Enter the value to be populated in the default field.
Active	To show/hide the field on the Default Settings screen.
Mandatory	Helps you show the field as Mandatory field on the Default Settings screen.
Validation Required	To configure validation rules for the UI field.
UI Validation	Specify the validations for user entered values. **Note:** This field is displayed only if the **Validation Required** is enabled.
UI Validation Message	Enter the alert message to be displayed if the UI validation is applicable. **Note:** This field is displayed only if the **Validation Required** is enabled.
Authorization Relevant	Enable/disable security authorization relevancy. This is relevant for fields of type 'drop down', and when activated, will filter values based on security org values set up in SAP security roles.
Dropdown Table	Select the Source table from where the values of a dropdown field are retrieved.

Field	Description
	Note: This field is displayed only if the **UI Field type** is set to **DD - Drop Down** or **ID - Input Dropdown**.
Dropdown Field	Select the Field in the source table from where the values of a dropdown field are retrieved. **Note:** This field is displayed only if the **UI Field type** is set to **DD - Drop Down** or **ID - Input Dropdown**.
DD Dependency Field	Select the Dependent field on the transaction screen that facilitates filtering of the field values. For example, **Storage Location** search field is dependent on **Plant** field. **Note:** Displayed only if the **UI Field type** is set to **DD - Drop Down** or **ID - Input Dropdown**.
Text Required	Define how the dropdown values are displayed. Possible values: • 0 – Not Required (not relevant) • 1 – Only Description (only the description of the value is displayed) • 2 – Key and Description (both the key and description of the value are displayed)
Text Table	Select the Table from where the text is retrieved.

Field	Description
	Note: This field is displayed only if the **Text Required** is set to **Only Description** or **Key and Description**.
Text Field Name	Select the table field name from where the text is retrieved. When the value in **Text Required** field is set to 1 or 2, the corresponding Description is fetched from the text table in SAP. **Note:** This field is displayed only if the **Text Required** is set to **Only Description** or **Key and Description**.
Collection	Select the Source Collection from where the dropdown field values are retrieved.
Collection Filter	Select the field to filter the values retrieved from the Collection.

4. Click **Create**.

Note:
For recommended settings, see the RACE™ Preset Configuration spreadsheet. This spreadsheet contains default values for key fields with attributes like Module Name and UI Field Type.

For example, to set default value for **Asset Class** create Default Field with the following values:

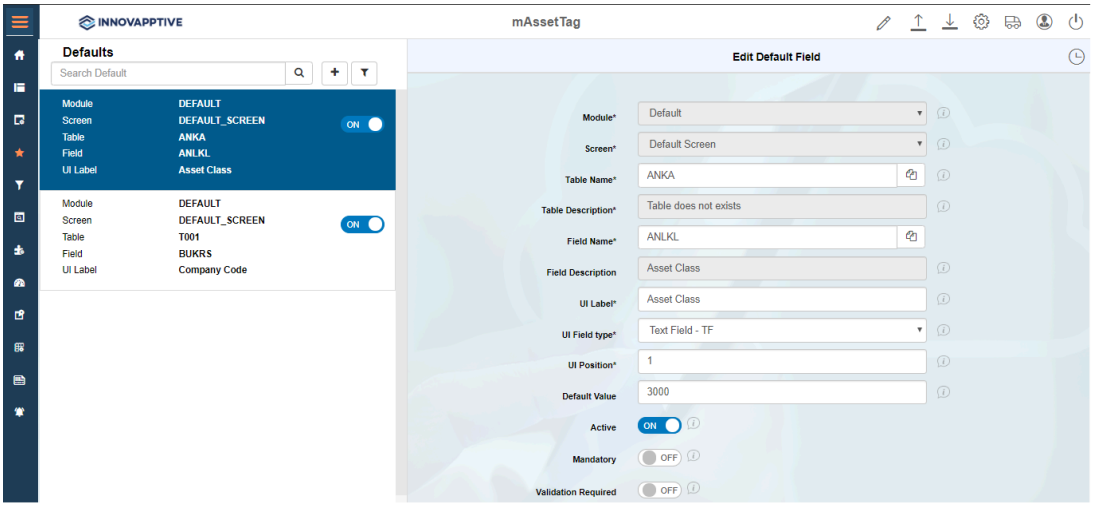
Table 3-5 Default value for Asset Class

Field	Value
Table	ANKA
Field	ANLKL
UI Field Type	ID – Input Dropdown

Table 3-5 Default value for Asset Class (continued)

Field	Value
UI Position	Desired value

Figure 3-3 Create Default Field



3.3. Configure data filters

SAP tables hold a lot of data. Pulling the entire table increases the data volume and significantly impacts offline sync and overall performance of the app.

You can configure filters to pull specific data into modules and sub modules of your mobile application using the Filters feature in RACE™.

Filters help users focus on data which they are supposed to work on. You can set filter in the following ways:

- Authorization object
- Single filter value
- Multiple filter values (not based on range)
- Including or Excluding defined values/range
- Range of values (by using the “Select Option” field)

To configure data filters:

1. Click **Filters** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing Filter field to populate the properties in the **Create Filter Field** section.
3. Select **Purchase Order Filters** from the **Screen** dropdown field.

   Example: Set data filters for Goods Receiving. Select Goods Receiving from the Module dropdown field.
4. In the **Create Filter Field** section, enter the following information:

Table 3-6 Data Filter configuration attributes

Field	Description
Module	Select the name of the Module where the filter is configured.
Screen	Select the name of the screen where the records are filtered. For example, Purchase Order List.
Table Name	Select the table from where the data is retrieved.
Table Description	Auto-populated based on the **Table Name**.
Field Name	Select the standard field in the SAP Table.
Field Description	Populated based on the **Field Name**.
UI Label	Enter the text to be shown on the application UI.
Field Type	Define the type of the field. Following are a few of the UI field types: **Table 3-7 UI Field Types** **Field Type ID** / **Field Type** DD / Drop Down DF / Date Field TF / Text Field

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Field Type ID</th><th>Field Type</th></tr>
<tr><td>SF</td><td>Scan Field</td></tr>
<tr><td>ID</td><td>Input Drop Down</td></tr>
<tr><td>DFR</td><td>Date Field Range</td></tr>
</table>
</td></tr>
<tr><td>Active</td><td>To enable or disable the data filter.</td></tr>
<tr><td>Access Category</td><td>Enable/disable data filter based on user access:
• T-Transaction Code
• U-User Group
• R-Role
• A-Authorization Object.</td></tr>
<tr><td>Access Value</td><td>This field is used for data related to security. Based on the access category, value in this field must be maintained. For example, if you configure a transaction code in the Access Category field then the t-code name must be specified in this field. Data filter configured is displayed in the mobile application only if the transaction code is assigned to the user.</td></tr>
<tr><td>Authorization Relevant</td><td>Enable/disable security authorizations defined in SAP for the user. This is relevant for drop-down fields and when activated, will filter values based on security org values set up in SAP security roles.</td></tr>
<tr><td>Sign</td><td>Select whether to include the values defined in Low Value and High Value fields to filter data.</td></tr>
<tr><td>Select Option</td><td>Select an Operation to filter data based on the specified Low Value and High Value. Possible values:</td></tr>
</table>

Field	Description
	• Equal To • Not Equal To • Between Lower and Upper Value • Outside Lower and Upper Value • Contains the Pattern • Does Not Contain the Pattern • Less Than • Less Than or Equal To • Greater Than • Greater Than or Equal To
Low Value	Enter the lower value based on which data is filtered and shown in the mobile application. **Note:** Displayed only if **Select Option** field is set to **Between Lower and Upper Value** and **Outside Lower and Upper Value**.
High Value	Enter the upper value based on which data is filtered and shown in the mobile application. **Note:** Displayed only if **Select Option** field is set to **Between Lower and Upper Value** or **Outside Lower and Upper Value**.
Filters	Values based on which data is filtered and shown in the mobile application. For example, if you enter purchase order filters PO1, PO100, all the purchase orders of these series are shown in the GRPO list screen.

Field	Description
Custom Table	Select the custom table in SAP from where the data is retrieved.
Custom Field	Select the field in SAP custom table.

5. Click **Create**.

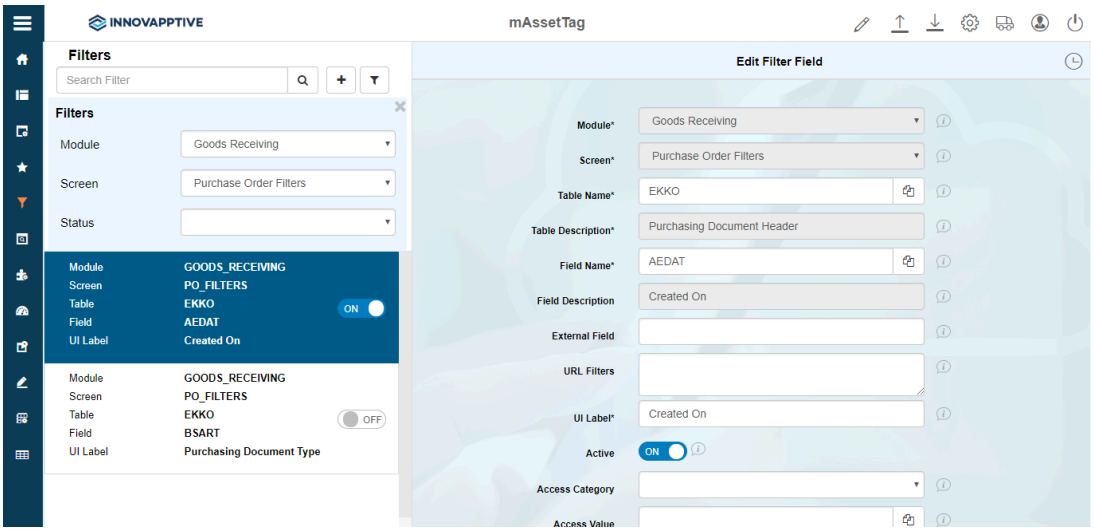
> **Note:**
> For recommended settings, see the RACE™ Preset Configuration spreadsheet.

For example, to filter data based on the **Created-On** date of the Purchasing Document, you can create Filter using the following values:

Table 3-8 Filter for Asset Class

Field	Value
Table	EKKO
Field	AEDAT
UI Field Type	ID – Input Dropdown
Default Value	-10,0 **Note:** -10,0 denotes a range of 10 days in the past and 0 days in the future.

Figure 3-4 Create Filter Field



4. Configure Extensions

Extensions help you configue additional fields and properties, modify the properties of standard fields or create and map a new field from the SAP system.

Data flows to the app in the form of collections. A collection is a group of fields (Standard fields) which are pre-configured in the app to execute the business transactions. A collection also includes few optional fields based on standard industry practices. You can modify the behavior of standard fields using Extensions menu. For example, you can hide the standard field if it is not required for your transactions or change the field type or the UI Label.

An Extension is an additional field that you can configure and enable it depending on your specific requirements. Changes done in Extensions menu are stored in the SAP NetWeaver Gateway table: /INVCEC/COCKPIT and the transaction code: /n/INVCEC/COCKPIT.

Learn how to configure additional fields and properties on the transaction screens (list, header, item details).

To configure fields for transaction screens:

1. Click **Extensions** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing extension to populate the properties in the **Create Extension** section.
3. In the **Create Extension** section, enter this information:

Table 4-1 Extension configuration attributes

Field	Description
Module Name	Select the module where the field is configured.
Screen Name	Select the screen within the module where the field is displayed.
Category	Select between Standard and Extension options to choose the configuration type.

Field	Description
	Note: Select **Standard** to customize the type of input required to be displayed on the header.
Section Name	Helps you group the Extension fields into sections for retrievals or Posting Forms.
Section Position	Define the position of the section within the screen relevant to other sections.
Source Type	Select the source like BAPI or SAP Table from where the data is retrieved. a. **BAPI**: Select this option if the extension field is part of the BAPI structure. And the value entered in the extension field is posted to the backend ECC. b. **Table**: Select this option if the extension field is part of the SAP table. And the value in the extension field is pulled from the backend ECC table.
Entity Set	Collection to which the Standard field belongs. **Note:** Auto-populated based on Module and Screen selected if the **Category** field is set to Standard.
Entity Type	Auto-populated based on Module and Screen selected if the **Category** field is set to Standard.
Table / BAPI Name	Select the table/BAPI to fetch the data from.

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td></td><td>Note:
This field is applicable only if you selected Extension in the Category field.</td></tr>
<tr><td>Table / BAPI Description</td><td>Auto-populated based on Table / BAPI Name.

Note:
This field is applicable only if you selected Extension in the Category field.</td></tr>
<tr><td>Field Name</td><td>Select the table/BAPI field to retrieve the field data.</td></tr>
<tr><td>Field Description</td><td>Populated based on the Field Name.</td></tr>
<tr><td>UI Label</td><td>Enter the text to be shown on the application UI.</td></tr>
<tr><td>Field Type</td><td>Define the type of the field. Following are a few of the UI field types:

Table 4-2 UI Field Types<table><tr><th>Field Type ID</th><th>Field Type</th></tr><tr><td>DD</td><td>Drop Down</td></tr><tr><td>DF</td><td>Date Field</td></tr><tr><td>TF</td><td>Text Field</td></tr><tr><td>SF</td><td>Scan Field</td></tr><tr><td>ID</td><td>Input Drop Down</td></tr><tr><td>DFR</td><td>Date Field Range</td></tr></table></td></tr>
<tr><td>UI Position</td><td>Position for the extension compared to other fields on the transaction screen.</td></tr>
<tr><td>Default Value</td><td>Value to be populated in the extension field.</td></tr>
</table>

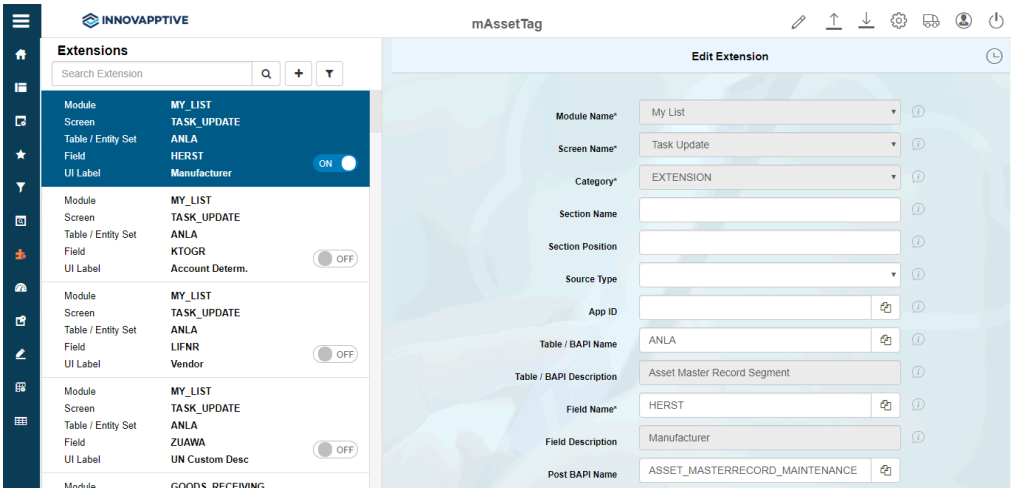
Field	Description
Case Sensitive	To show the extension field value in Uppercase or Lowercase.
Active	To show/hide the extension on the transaction screen.
Overview	Enable/disable the extension field in the Overview section of the transaction screen. For example, header fields and line item fields in the Item Overview list screen are displayed in the Overview section.
Detail	Enable/disable to show the extension in Detail section of the transaction screen.
Mandatory	To show the extension as a Mandatory field on the transaction screen.
Validation Required	To configure validation rules for the extension field.
UI Validation	Specify the validations for user entered values.. **Note:** This field is displayed only if the **Validation Required** is enabled.
UI Validation Message	Enter the alert message to be displayed if the UI validation is applicable. **Note:** This field is displayed only if the **Validation Required** is enabled.
Authorization Relevant	Enable/disable security authorization relevancy. This is relevant for fields of type 'drop down', and when activated, will filter values based on security org values set up in SAP security roles.

Field	Description
Access Category	Enable/disable extension field based on user access: • T-Transaction Code • U-User Group • R-Role • A-Authorization Object.
Access Value	This field is used for data related to security. Based on the access category, value in this field must be maintained. For example, if you configure a transaction code in the **Access Category** field then the t-code name must be specified in this field. Extension configured is displayed in the mobile application only if the transaction code is assigned to the user.
Dropdown Table	Select the Source table from where the values of a dropdown field are retrieved. **Note:** This field is displayed only if the **UI Field type** is set to **DD - Drop Down** or **ID - Input Dropdown**.
Dropdown Field	Select the Field in the source table from where the values of a dropdown field are retrieved. **Note:** This field is displayed only if the **UI Field type** is set to **DD - Drop Down** or **ID - Input Dropdown**.
DD Dependency Field	Select the Dependent field on the transaction screen that facilitates filtering of the field values. For example, **Storage Location** search field is dependent on **Plant** field.

Field	Description
	Note: Displayed only if the **UI Field type** is set to **DD - Drop Down** or **ID - Input Drop-down**.
Parent Table	Select the Table from where the field is retrieved.
Parent Key	Select the field to define the relationship between the dropdown field and table.
Condition	Enter the logic to show the configured field. For example, you can show an extension 'Supplying Plant' only if the Purchase Order type is UB (Internal Purchase Order).
Text Required	Define how the dropdown values are displayed. Possible values: • 0 – Not Required (not relevant) • 1 – Only Description (only the description of the value is displayed) • 2 – Key and Description (both the key and description of the value are displayed)
Text Table	Select the Table from where the text is retrieved. **Note:** This field is displayed only if the **Text Required** is set to **Only Description** or **Key and Description**.
Text Field Name	Select the table field name from where the text is retrieved. When the value in **Text Required** field is set to 1 or 2, the corresponding Description is fetched from the text table in SAP.

Field	Description
	Note: This field is displayed only if the **Text Required** is set to **Only Description** or **Key and Description**.
Text Key Field Name	Select the field to define the relationship between the dropdown field and table.

Figure 4-1 Create Extension



4. Click **Create**.

Note:
For recommended settings, see the RACE™ Preset Configuration spreadsheet. This spreadsheet contains fields configured as extensions with attributes like Module Name, Screen, UI Label and Field Type.

5. Create Custom Screens

Use the **Screens** menu to configure custom screens or screen elements like custom tabs - Single Panel and three (Line Item) panel view, single and multiple forms and form buttons.

You can assign the form to the screen to help field technicians with checklist or capture measurement data. The corresponding table in SAP NetWeaver Gateway is /INVCEC/SCRCONF. Basic application configurations are updated in this table using the mAssetTag Add-on / transport and you can update or enhance them using RACE™.

The following screens shows the custom form and tab on Check-Out Assets screen configured using RACE™ **Screens** menu.

Figure 5-1 Dynamic Screen

To create custom screens using RACE™:

1. Click **Screens** on the left panel.
2. Click the **Add**  icon next to the search field and click **Create Screen**.

   You can also click the **Copy**  button on the details pane of an existing Screen configuration to populate the properties in the **Create Screen** section.
3. In the **Create Screen** section, enter the following information:

Table 5-1 Dynamic Screen configuration attributes

Field	Description
Module Name	Select the module where the dynamic screen or element is configured.For example, Work Order.
Screen Name	Select the screen within the module where the dynamic screen or element is displayed.
Screen Type	Type of screen to configure such as Create Screen (for new record), Detail Screen, List Screen or Dynamic Tab.
Screen Area	Position of the screen such as header, footer, and body where the dynamic form/tab is displayed.
Element	Element to be displayed on the screen such as Tab, Form Tab or Button.
Element Type	The sub-type of **Element** such as Multi-Form Tab, Line Item Tab or Draft or Submit Buttons.
Sequence No.	Define the sequence or position of the form/tab or element on the application UI.
UI Label	Enter the text to be shown on the application UI.

Field	Description
UI Position	Define alignment for form/tab or element on the screen such as Center, Left or Right.
Action	Define the screen navigation for the element.
Action Type	Define the type of the action to be completed for the screen navigation by the element.
Style	Tap to define Style properties for screen element like Icon, Icon Color, Background Color and Text Color in the **Select Styles** window that appears.
Layout	Select the Layout order (Horizontal or Vertical) for the element.
Data Provider	Define the source to retrieve data for the element.
Data Provider Key	Specify the fields to retrieve data from the data provider.
Active	To enable or disable the dynamic screen or element.
Form Name	Select the Form from where the fields on the Dynamic Screen appear.

4. Click **Create**.

Note:
For recommended settings, see the Dynamic Screens RACE™ Preset Configuration spreadsheet. This spreadsheet contains a list of Screens with attributes like Module Name, Screen Type, Screen Area, Layout Type, Element and Element Type.

Following are a few examples to configure Dynamic Screen and components:

- To configure Risk Assessment form for Work Order module, do these configurations:

Table 5-2 Risk Assessment form for Work Order

Field	Value
Module Name	WORKORDER
Screen Name	RISKASSESS (as configured in **Modules and Screens** section)
Screen Type	Dynamic Tab
Screen Area	Body
Element	Tab
Element Type	Form Tab **Note:** ◦ Set this field to Multi-Form Tab to save revision history for the form. ◦ For Custom tabs, select the **Element Type** as Tab (Single panel tab) or Line Item Tab (Three panel view).

- To configure Button on dynamic screen, do these configurations:

Table 5-3 Configure Button for Form

Field	Value
Module Name	WORKORDER
Screen Name	RISKASSESS (as configured in **Modules and Screens** section)

Field	Value
Screen Type	Dynamic Tab
Screen Area	Footer
Element	Button
Element Type	Select the button type such as Save, Submit or Help.

5.1. Supported screen types and elements

You can configure the following screen types and elements in the custom module:

Screen types:

- Search Screen
- List Screen
- Detail Screen
- Line Item Detail Screen
- Create Screen
- Item Detail Screen

Supported screen elements depending on screen area:

Table 5-4 Screen Components

Screen Area	Element	Corresponding element type
Header	Button	Accept Button, Add Button, Approve Button, Check Box, Combo Scan Button, Confirm Button, Draft Button, Edit Button, Email Button, Help Button, Print Button, Reject Button, Reset Button, Save Button, Search Button, Select/Deselect Button and Submit Button
	Label	Label Field
	Left Button	Back Button, Home Button

Table 5-4 Screen Components (continued)

Screen Area	Element	Corresponding element type
	Right button	Filter Button, Multi-Select Button, Analytic Button and Forward Button, Search Button and Signature Button. **Note:** Buttons are applicable depending on the Module configured.
Body	List View	Search List View, List View
	Tab	Line Items Tab, Attachments Tab, Approvers Tab, Text Tab, Approvers Note Tab, Geo Location Tab. **Note:** Tabs are applicable based upon the Module that is configured)
	Form	Header Form
	Button	Accept Button, Add Button, Approve Button, Check Box, Combo Scan Button, Confirm Button, Draft Button, Edit Button, Email Button, Help Button, Print Button, Reject Button, Reset Button, Save Button, Search Button, Select/Deselect Button and Submit Button
	Attachment	Attachments Tab
	Form Tab	Item Form
Footer	Button	Accept Button, Add Button, Approve Button, Check Box, Combo Scan Button, Confirm Button, Draft Button, Edit Button, Email Button, Help Button, Print Button, Reject Button, Reset Button, Save Button, Search Button, Select/Deselect Button and Submit Button

5.2. Build screen using data from existing screens

You can also use existing screen as a template to create and configure new screens.

To configure custom screen using data from existing screens:

1. Click **Screens** on the left panel.
2. Click the **Add**  icon next to the search field and click **Create Screen with Template**.
3. In the **Create Screen with Template** window, enter this information:

   Table 5-5 Screen template attributes

Field	Description
Module	Select the Module where the custom screen is configured.
Screen Name	Select the screen in the Module where the custom screen (form/tab) is configured.
Screen Type	Type of screen to configure such as Create Screen, Detail Screen, List Screen or Dynamic Tab.

4. Click **Submit**.
   Use the **Preview** button to view layout of the selected Screen Type on application UI (Mobile and Tablet)

6. Configure forms and form fields for dynamic screens

Use the **Dynamic Forms** menu to configure forms for transactions where you need the mobile user to capture and post data depending on attributes relevant to your process requirements.

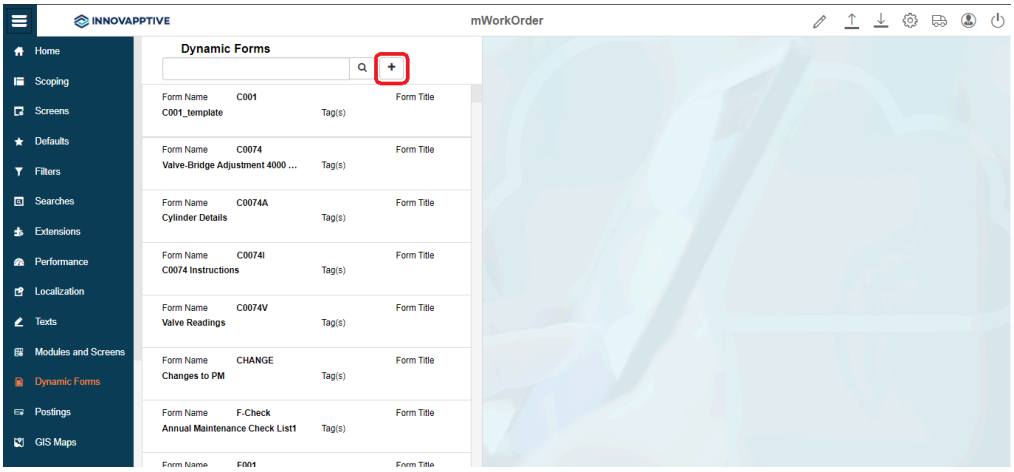
For example, you can add multiple forms in Check-in and Check-out module to track your assets. Create and assign form to each Department depending on the criticality of assets and whenever the asset is Checked Out, the user fills in this form and posts the data.

The corresponding table in SAP NetWeaver Gateway is **/INVCEC/DFORM**. Basic application configurations in this table are updated through the mAssetTag Add-on / transport and you can update or modify them using RACE™.

6.1. Create dynamic form

1. Click **Dynamic Forms** on the left panel.

Figure 6-1 Dynamic Forms



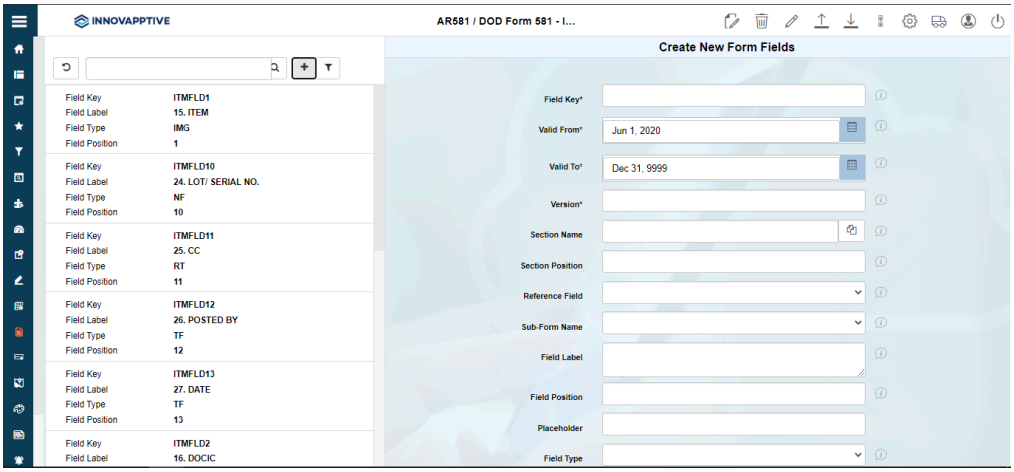
2. Click the **Add**  icon next to the search field and click **Create New Form**.
   You can also create a Form using an existing template. See Build dynamic form using data from existing forms *(on page 74)*.
3. In the **Create Form** popup window, enter this information:

Table 6-1 Create Form attributes

Field	Description
Form Name	Unique ID or name to identify the form.
Form Title	Name of the Form shown on application UI.
Form Type	Type of Form like Single or Multi level.
Attributes	Select the attributes like Plant, Division or Department for which the Form is applicable. Depending on the values you select, app filters the forms are shown to the personnel. .

4. Click **Create**.

Figure 6-2 Dynamic Form Fields



5. On the **Create New Form Fields** pane, enter this information:

Table 6-2 Dynamic Forms configuration attributes

Field	Description
Field Key	Unique identifier for the form to perform validations.
Valid From	Date from when the Form parameters are applicable.

Field	Description
Valid To	Date after which the Form parameters are not valid.
Version	Version number of the Form.
Section Name	Select the Section where the field appears on the form. Section contains a group of fields that share the same purpose, for styling and organization of form data.
Section Position	Position of Section on the Form layout.
Reference Field	Select Reference field for the form field. Reference field defines relationship between fields like defining Currency units related to Quantity values.
Sub-Form Name	To maintain navigation inside the form and it is maintained same as forms.
Field Label	Enter the text to be shown on the application UI.
Field Position	Position for the field compared to other fields on the form.
Placeholder	Text to describe the field like type or description.
Field Type	Element type for form field like Dropdown, text field.
DD Dependency Fields	Select the Dependent field on the transaction screen that facilitates filtering of the field values. **Note:** Displayed only if the **Field Type** is set to **DD - Drop Down** or **ID - Input Dropdown**.

Field	Description
DD Values	Values for dropdown form elements in json format.
Dropdown Table	Source table from where the dropdown field values are populated.
Active	To show/hide the field on the form.
Overview	Enable/disable the form field in Overview section of the transaction screen.
Detail	Enable/disable to show the form field in Detail section of the transaction screen.
Default Value	Value to be populated in the form field.
Field Instruction	User instructions relevant to the field.
Field Color	Defines the color of the field on the Form in the UI.
Mandatory	To show the extension as Mandatory field on the transaction screen.
Follow up Indicator	To mandate the follow-up process for this Form.
Validation Required	To configure validation rules for the form field.
UI Validation	Specify the validations for user entered values. **Note:** This field is displayed only if the **Validation Required** is enabled.
UI Validation Message	Enter the alert message to be displayed if the UI validation is applicable.

Field	Description
	Note: This field is displayed only if the **Validation Required** is enabled.
API Type	Indicates the type of data source such as RFC, BOR, ODATA services. Currently we support only RFC, BOR.
System Name	Origin of the data source like SAP ECC and CRM.
API Name	Data provider that carries the data sets of the API.
API Field	Name of the field in the data source to be associated with form field. For example, you would want to retrieve Vendor details based on the Purchasing Document. Here, Vendor field is the API Field.
API Keys	Indicates the relation between API and the document. For the API field (Vendor), Purchasing Document is the API Key field.

6. Click **Create**.

6.2. Build dynamic form using data from existing forms

Create a Form using existing form as a Template. Form Templates are defined in **Dynamic Forms** (Dynamic Form Templates) module of Admin section which can be accessed by tapping  icon on the top right of the screen.

To create a Form using Template:

1. Click **Dynamic Forms** on the left panel.
2. Click the **Add**  icon next to the search field and click **Create New Form from Template**.
3. In the **Copy forms from template** window, select the form to copy the properties.
4. Click **Copy**.

6.3. Add form fields by copying fields from existing forms

Configure additional fields on the form or copy from an existing form.

To create a Form using Template:

1. Click **Dynamic Forms** on the left panel.
2. Click on the Form from the list.
3. On the Form details screen, click the **Add**  icon next to the search field and click **Copy from existing Form**.

   Note:
   Click **Create New Form Field** to add new form field properties manually.
4. In the **Select Form Name** window, click on the **Form** from where the fields are copied.
5. In the **Copy from existing Form** window, select the fields to copy to your Form.
6. Click **Copy**.

6.4. Assign Embedded form to dynamic screen

Once you configure a form and fields for the form, you can assign the form to the transaction screen.

To add form to dynamic screen:

1. Click **Screens** on the left panel.
2. Select the Dynamic screen where you want to view the form details. See Create Custom Screens *(on page 63)* to create a dynamic screen.
3. Do the following configurations:

Table 6-3 Embedded Form attributes

Field	Value
Module	Name of the module where the dynamic screen is configured.
Screen	Name of the screen where the embedded form is configured.
Screen Type	Dynamic Tab
Screen Area	Body
Element	Tab
Element Type	Multi Form Tab
Action Type	GET
Layout	Horizontal
Form Name	Enter the name of the forms or click  to select the forms in **Choose Forms** pop up window.

4. Click **Save**.
5. Configure the form in the ECC table /INVMGO/DOCFORM. Configure access role for dynamic forms *(on page 77)*.

   Dynamic form is displayed in the mobile app as:

   Figure 6-3 Dynamic Screen - Form

6.5. Configure access role for dynamic forms

Configure access for the form so that the users (technician) can take specific actions on the Form and post the data to SAP.

You can assign the following access roles to users:

- **Submit**: Allows to draft or submit the form for approval.
- **Accept**: Allows to modify and accept the form.

To configure access role for the form:

1. Login to SAP ECC.
2. Go to transaction **/INVMGO/DOCFORM**.
3. Enter the following information:

Table 6-4 /INVMGO/DOCFORM attributes

Field	Description
Application Name	Name of the application where the form is configured.
Object Category	Category of the Object like Work Order, Notification, Equipment or Functional Location. **Note**: This field is not applicable for Standalone forms.
Object Type	Type of the Object like Order Type, Notification Type, Equipment Type or Functional Location Type.
Object No.	Alphanumeric code of the Object.
Form ID	Alphanumeric code to identify the Form.
User Role	Code of the role assigned to user for authorization.
User Group	User Group provides access based on SAP User Groups (SU3)
Access	Indicates the user action on the form.

7. Optimize Performance and Define Offline Configuration Parameters

Use the **Performance** menu to define the performance optimization and offline configuration parameters for the application.

The corresponding Table in SAP NetWeaver Gateway is **/INVCEC/DATACONF** and the transaction Code is **/n/INVCEC/DATACONF**. Configurations in this table are populated through the mAssetTag Add-On transport, and you can update them using RACE™.

To update a Data Configuration entry:

1. Click **Performance** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing configuration to populate the properties in the **Create Performance** section.
3. In the **Create Performance** section, enter this information:

Table 7-1 Performance configuration attributes

Field	Description
Module Name	Select the module to which the performance configuration is applicable.
Request	Select the Service collection that fetches data from SAP to mobile.
URL	Specify the additional filters to the existing entities.
Request Desc	Describe the Service collection that fetches data from SAP.
Data Format	Specify the data format like JSON or XML for the mobile application.

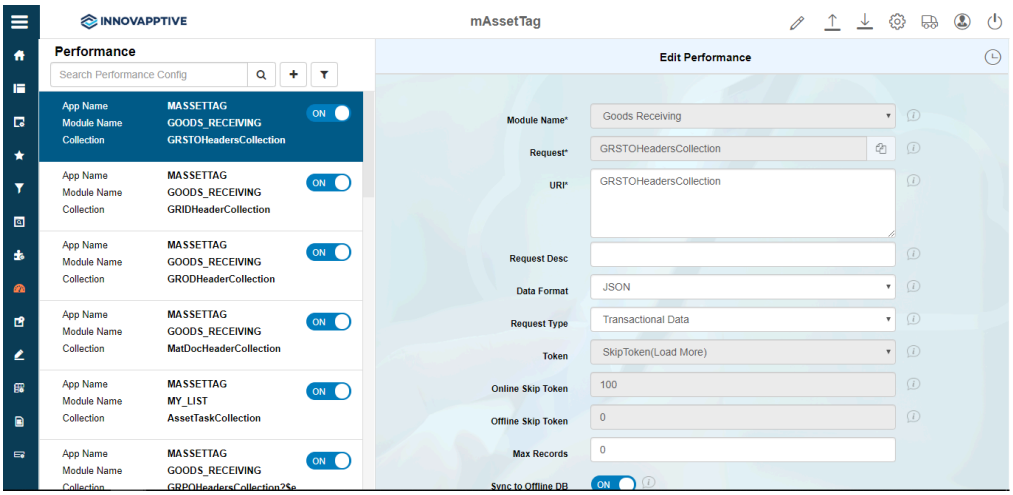
Field	Description
	Note: • XML supports Delta and Skip token and is recommended for Transactional data. • JSON supports only Skip token functionality and is recommended for Master Data.
Request Type	Select whether the data is Dynamic, Master or Transactional. This is for information purpose only.
Token	Select the Token type used for subsequent calls of the Collection. For example, Skip token is used to load specified size of data while Delta token is used to load only delta data on subsequent requests. **Note:** This field is enabled only if Data Format is **XML**.
Online Skip Token	Enter the number of Collection records that must be fetched when the device is connected to the network. The Collection call fetches data records in increments of the Page Size. **Note:** This field is enabled only if Skip Token is implemented.

Field	Description
Offline Skip Token	Enter the number of Collection records that must be fetched when the device is not connected to the network. The Collection call fetches data records in increments of the Page Size. **Note:** This field is enabled only if Skip Token is implemented.
Max Records	Define the maximum number of records to be fetched into the mobile application.
Load More	This is applicable only for Skip Token category. If Load More is enabled, the Collection records are retrieved with the Load More capability based on the Page Size.
Sync to Offline DB	Helps you select whether the Collection data is retrieved and available when the device is not connected to the network.

Data Access	Select the option to enable data retrieval. Possible values:
	a. Offline
	b. Online & Offline
	Following is the data access and retrieval process for each of these options.
	
	Offline: User initiates Data Retrieval Call
	
	`> Is data available in App Offline Store of device?`
	`> YES – Retrieve data from Offline Store`
	`> NO – Service call to SAP`

Field	Description
	> Is Network available? > YES – Service call to SAP > NO – No records found **Online & Offline**: User initiates Data Retrieval Call > Is Network available? > YES – Service call to SAP > NO – Retrieve data from Offline Store > Is data available in App Offline Store of device? > YES – Retrieve data from Offline Store > NO – No records found
Filter Condition	Enter the condition/logic to filter data in a collection.

Figure 7-1 Performance configuration



4. Click **Save**.

   Innovapptive recommends you to:

- Configure Master Data in JSON, Skip Token, Load More and Offline Only as:
  - Master data is not changed often compared to transactional data, and given the potentially larger volumes of master data, synchronizing master data and accessing it only from offline store helps improve the application performance and user experience.
  - Load More allows loading smaller packets of large volume of data thereby allowing user to only search for and work with smaller pools of data until request for additional data is intitated.
- Configure Transaction Data in XML, Delta Token and Offline Only as:
  - Transaction data is often changed, XML and Delta Token capabilities improve the delta data synchronization.
  - Offline Only access improves the application performance and user experience. Although for smaller volumes of transaction data, Online & Offline is recommended for real-time data availability and backend data validations to improve the accuracy of transaction data processing.

Note:
For recommended settings, see the RACE™ Preset Configuration spreadsheet. This spreadsheet contains fields configured to optimize app performance with attributes like Module Name, Request and Request Type.

8. Define localization entries

Use the Localization menu to the local language translation for UI fields.

The corresponding Table in SAP NetWeaver Gateway is **/INVCEC/UILABELT** and the transaction code is **/n/INCEC/UILABELT**. Application configurations in this table are populated through the mAssetTag Add-on transport and you can update them using RACE™.

To add/change a translation entry:

1. Click **Localization** on the left panel.
2. Click **Add**.

   You can also select an existing record and click the **Copy**  icon to populate the properties to **Add Translation entry** window and modify them.
   Add Translation entry pop-up window appears.
3. Select the **Language**, **Module Name**, **Screen Name**.
4. Enter the **Field Name** and the translation in the **UI Label** field..
5. Click **Create**.
   You can do the following:
   - Sort or filter existing translations: Click the column header and select **Sort Ascending** or **Sort Descending**. Enter a value in the **Filter** field to search the translation values.
   - Change a translation: Select and change the **UI Label** value and click the **Save**  icon.
   - Remove a translation: select the record and click the **Delete**  icon.

> **Note:**
> For recommended settings, see the RACE™ Preset Configuration spreadsheet. This spreadsheet contains fields with attributes like Module Name, Screen, UI Label and Field Name.

9. Configure template custom for barcode labels

Configure template for barcode labels with parameters like Barcode Type, Layout, Height and Width.

You can print custom barcode labels with an image like your company logo. Upload the image to the barcode layout. Barcode label with an image generated on the mobile application looks like:

Figure 9-1 Preview of Barcode Label with Image

To configure:

1. Click **Barcode Layout** on the left panel.
2. Click the **Add**  icon next to the search field.

   You can also click the **Copy**  button on the details pane of an existing configuration to populate the properties in the **Create Barcode Layout** section.
3. In the **Create Barcode Layout** section, enter this information:

Table 9-1 Barcode layout configuration attributes

Field	Description
Module	Select the Module for which the barcode template is configured.
Screen	Screen for which the data is printed on barcode.
Barcode Layout	Position of the barcode layout on the screen.
Barcode Type	Type of Barcode like QR Code, Data Matrix.
Barcode Description	Auto-populated based on **Barcode Type**.
Barcode Height	Use the slider to set the Height of barcode.
Barcode Width	Use the slider to set the Width of barcode.
Barcode Position	Select the position of Barcode on the layout.
Barcode Date Format	Required date formats in label printing and barcode layouts.

4. In the **Upload Image** field, click **Browse** to select and upload the image.
5. Click **Create**.