

Project and Skill Management Reference Scenario



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Icons in Body Text

| Icon | Meaning |
|---|----------------|
|  | Caution |
|  | Example |
|  | Note |
|  | Recommendation |
|  | Syntax |

Additional icons are used in SAP Library documentation to help you identify different types of information at a glance. For more information, see *Help on Help → General Information Classes and Information Classes for Business Information Warehouse* on the first page of any version of *SAP Library*.

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| Type Style | Description |
|---------------------|--|
| <i>Example text</i> | Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation. |
| Example text | Emphasized words or phrases in body text, graphic titles, and table titles. |
| EXAMPLE TEXT | Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE. |
| Example text | Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools. |
| Example text | Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation. |
| <Example text> | Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system. |
| EXAMPLE TEXT | Keys on the keyboard, for example, F2 or ENTER. |

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Exploring SAP NetWeaver CE Reference Scenario

This documentation provides information about the SAP NetWeaver CE reference application named Project and Skill Management. With the example the user can gain benefit and see the actual representation of the Service Oriented Architecture (SOA).

Composite applications are defined as packaged applications that sit on top of other applications and reuse their functionality by service calls. The composites are developed following the paradigm of model-driven development and this is relevant for the example described in this documentation. Model-driven development reduces the amount of handcrafted coding and increases the amount of configured or modeled parts of the composite. This approach improves the overall productivity and quality.

The scenario shows how to design a composite process on top of Java EE application.



Project and Skill Management Application

Use

The following documentation provides a logical procedure describing the scenario in general, architecture hints, steps describing how to run the application, also the necessary steps when executing the scenario, and instructions how to review the source code of the application.

Procedure

1. Review general information about the scenario.
More information: [Scenario Overview \[Page 5\]](#)
2. Review the application architecture.
More information: [Application Architecture \[Page 7\]](#)
3. Run the application.
More information: [Running the Application \[Page 8\]](#)
4. Execute the scenario process.
More information: [Executing the Scenario Process \[Page 13\]](#)
5. Review the application's source code.
More information: [Reviewing the Application's Source Code \[Page 14\]](#)



Scenario Overview

In this scenario, the underlying data comes from the Project Management and Employee Services application and is accessed via Web Services calls. Although it relies on the data model of the Project Management and Employee Services application, it has own business logic and specific user interfaces.

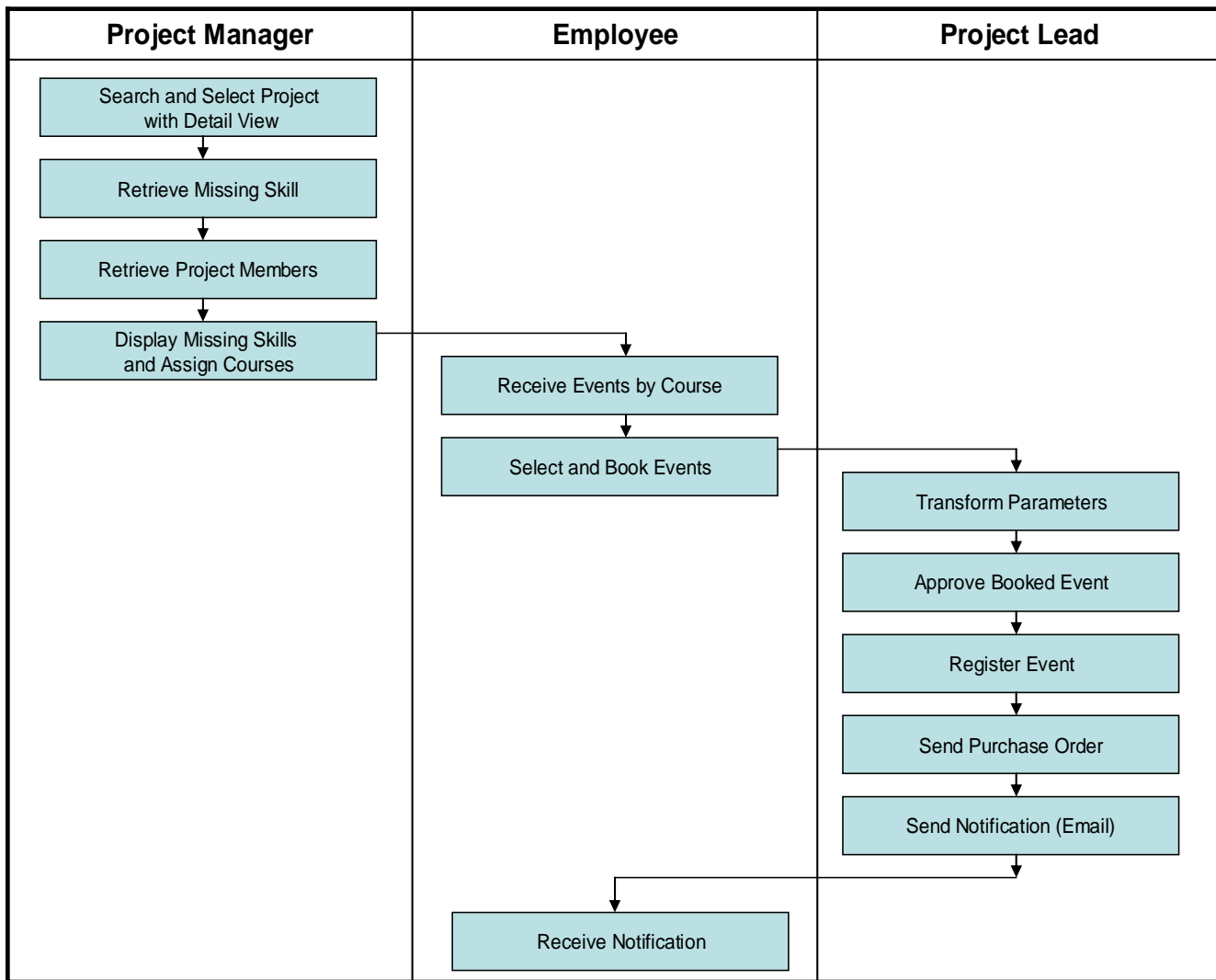
More information about the data model of the Project Management and Employee Services application:

http://help.sap.com/saphelp_nwce10/helpdata/en/f0/91fa524e734ffe93e25e94c242abbc/content.htm

You can start this scenario in Guided Procedures (GP) runtime of the Portal by selecting *Start a New Process* → *ReferenceApplication* → *xEDM* and choosing *xEDM_Process*.

The Project and Skill Management scenario allows a manager to search for a project by various criteria, then the system defines the missing skills, the manager chooses an event from the available courses, and assigns an employee to join.

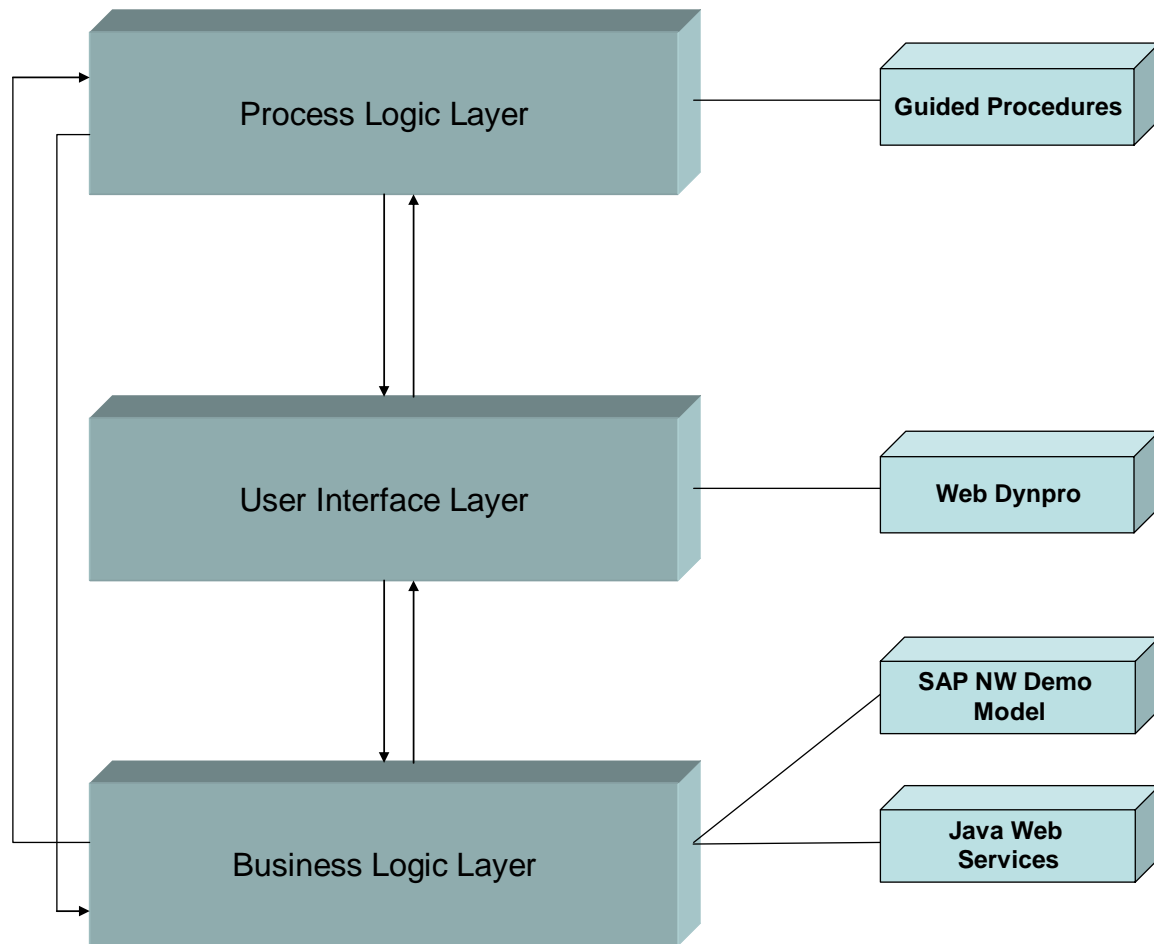
After logging on to the system, the employee books an event from the available courses. Finally the team manager approves/rejects the training, registers the training, and the employee is notified by e-mail.





Application Architecture

The applications Project and Skill Management have the same architecture goal that is typical for a general composite - to use data and functions provided as services by platforms and other applications (in our case, it uses services from the Project Management and Employee Services application and SAP NetWeaver Demo Model), and to combine these into user-centric processes and views. To build the process the application uses Guided Procedures (GP) and Web Dynpro to create user interfaces. The details of the application layer structure are described below.



Process Logic Layer

The process logic layer is implemented with GP. GP allows you to model lightweight collaborative processes in which you connect various back-end applications and services into a single workflow. Process modeling with GP does not require specific programming skills and is targeted at business experts who are familiar with business processes. You can review the process structure (the actual step sequence with the corresponding callable objects, actions, sequential blocks, parallel dynamic blocks, and so on) in the Portal by selecting *Guided Procedures* → *Design Time* → *xEDM Process* and choosing *Open*.

Within each process step, exactly one action is executed. Each action is wrapped around a callable object, which either represents a user interface or a service.

User Interface Layer

A process modeled with GP can integrate steps executed in the background and others that require certain user interaction. For steps that involve user interaction you can implement user interfaces using Web Dynpro, Visual Composer, or Composite Forms. Web Dynpro is used for developing more advanced online user interfaces and this is the technology used for the Project and Skill Management application. The Web Dynpro interfaces are integrated in GP as callable objects. For this purpose, they also implement a specific GP interface that allows the framework to automatically render the callable object parameters and result states.

Business Logic Layer

Most of the steps in the Project and Skill Management application include invocations of Java Web services provided by:

- Underlying Java EE 5-compliant Project Management and Employee Services application. For example, the *Identify Missing Skills* step involves a call to the *ProjectDataServiceBean* service.
- SAP NetWeaver Demo Model which is part of the SAP NetWeaver 7.1 Composition Environment installation. This model provides demo data for many of the SAP NetWeaver areas. It contains a variety of data (services, business objects, Portal content, non-structured data, and so on). For example, the *Send Purchase Order* step involves a call to a service provided by the SAP NetWeaver Demo Model.



Running the Application

Use

This procedure shows the necessary steps to configure and to run the Project and Skill Management application.

Procedure

1. Set up Project and Skill Management application.
More information: [Setting Up Project and Skill Management \[Page 9\]](#)
2. Activate the Configuration Template.
More information: [Activating the Configuration Templates \[Page 10\]](#)
3. Adding Guided Procedures Runtime portal roles.
More information: [Adding Guided Procedures Runtime Portal Roles \[Page 10\]](#)
4. Prepare the SAP NetWeaver Demo Model application for use in this scenario.
More information: [Preparing the SAP NetWeaver Demo Model Application \[Page 11\]](#)
5. Initiate the Guided Procedures process.
More Information: [Initiating the Project and Skill Management Process \[Page 12\]](#)



Setting Up Project and Skill Management

Use

This procedure shows you how to configure the AS Java in the SAP NetWeaver Developer Studio, and how to deploy the downloaded archive files on the AS Java. To actually run the application, you need to perform additional configuration steps.

Prerequisites

- You have SAP NetWeaver 7.1 Composition Environment (SP3 or newer) installed in your system landscape.
- You have started SAP NetWeaver Developer Studio.
- You have the necessary application archive files available in your system.

Procedure

1. Configure the AS Java in the SAP NetWeaver Developer Studio

1. Navigate to *Window* → *Preferences* → *SAP AS JAVA*.
2. In the *SAP Instance identity* field, enter the correct settings.


For a local SAP NetWeaver Composition Environment installation, the settings are:

- Instance Number: the number you entered during installation. Usually 0 or 1.
- Instance Host: **localhost**

If you are using a remote SAP NetWeaver 7.1 Composition Environment installation, enter the corresponding IP address or name.

3. Select the *Default SAP System* indicator.
4. Choose *Register SAP Instance* and then *OK*.

2. Deploy the Archive File to the AS Java

1. In the SAP NetWeaver Developer Studio, open the *Deploy* perspective by selecting *Window* → *Open Perspective* → *Other* → *Deploy* and then choosing *OK*.
2. In the *Deploy view* window, select the context menu of *External Deployable Archives*, choose *Add*.
3. From your file system, browse to the correct location of the file and choose *Open*.
The file appears under *External Deployable Archives* in the *Deploy View*.
4. Select the deployable *CERAXEDM00_0.sca* and choose  *Deploy*.





Activating the Configuration Template

Use

This procedure describes how to activate the application configuration template, which performs configuration steps, not visible for the user, such as importing users (roles), creating Web service destinations, and so on.

Procedure

1. From your browser, start the SAP NetWeaver Administrator:
`http://<server>:<port>/nwa`.
If prompted for a log on, use the following credentials:
 - User ID: administrator
 - Password: the password set during SAP NetWeaver 7.1 Composition Environment installation
2. Choose *Configuration Management* → *Scenarios* → *Configuration Wizard*.
3. Select *All Configuration Tasks* from the dropdown box in the *Configuration Tasks* window.
4. In the field next to the  *filter button*, enter **Configuration of Reference Application xEDM** and choose *Enter*.
5. Choose  *Expand tray* in the *Details* field.
6. To activate the configuration template, choose *Start*.
7. Enter the administrative user name (the user name you entered during SAP NetWeaver 7.1 Composition Environment installation, usually *administrator*) and choose *Next*.



Adding Guided Procedures Runtime Portal Roles

Use

The following procedure describes how you assign *GP Runtime WC* portal roles to the default *Administrator* user and the users executing the application.

Procedure

1. From your browser, start the portal: `http://<server>:<port>/irj`.
If you are prompted to log on, use the following credentials:
 - User ID: administrator
 - Password: the password set during SAP NetWeaver 7.1 Composition Environment installation
2. Choose *System Administration* → *Permissions* → *Portal Content* → *Content Provided by SAP* → *platform_add_ons* → *Guided Procedures* → *GP Runtime WC*.
3. From the *GP Runtime WC* context menu, choose *Open* → *Permissions*.

4. In the *Search In* field, located in the *Assigned New Permissions* window, choose *Group* and then *Go*.
5. Select the indicator in front of the group *Everyone* and choose *Add*.
The group *Everyone* appears in the list in the *Assigned Permissions* window.
6. Select the group *Everyone* indicator that appoints to *End User* and choose *Save* then *OK*.

Result

After you assign the above roles, the *Administrator* user and the rest of the users are able to access the Guided Procedures *Runtime*.



Preparing the SAP NetWeaver Demo Model Application

Use

This procedure describes how to prepare the necessary test data needed for the application, provided from the predeployed SAP NetWeaver demo model application. To run the reference application, you need to call and run a predefined via the Web Service Navigator.

Procedure

1. Open the start page of the Application Server Java using the following URL:
`http://<host>:<port>`
2. Choose *Web Services Navigator*.
3. Enter the following URL in the WSDL URL field:
`http://<host>:<port>/NWDemoAdminBeanService/NWDemoAdminBean?wsdl`

4. Choose *Go*.
5. Select the `generateData` operation and select the *Endpoint in WSDL* option under *Configuration*.

6. Choose *Execute*.



Configuring SMTP server

Use

This procedure helps you configure your mail server, thus you can execute the Project and Skill Management process thoroughly including the steps where mail notifications are necessary.

Procedure

1. Launch your portal by entering `http://<host>:<port>/irj` in your browser.
2. Log on using the user name (for example, **Administrator**) and the SAP NetWeaver CE master password defined at installation.
3. Under *Guided Procedures*, choose *Administration* → *Administer BMF*.
4. Choose *Clients*, then under *BMF Clients* choose *Settings*, and then choose *Mail Sending*.
5. Enter the data for *SMTP Server and Mail Transport Protocol*. For example:
 - SMTP Server: **mail.sap.corp**
 - Mail Transport Protocol: **smtp**
6. Choose *Save*.



Initiating the Project and Skill Management Process

Prerequisites

You have completed the preceding steps described in [Running the Application \[Page 8\]](#)

Procedure

1. Launch your portal by entering `http://<host>:<port>/irj` in your browser.
2. Log on using user name `Administrator` and the SAP NetWeaver CE master password defined at installation.
3. Go to *Guided Procedures* → *Runtime*.
4. Choose *Start a New Process*.
5. Browse to select *ReferenceApplication* → *xEDM* → *xEDM Process* and choose *Next*.
6. Select *Project Manager* from the dropdown box and choose *Add User*.
7. In the *Find* field, enter a user who belongs to the EDMProjectManager UME group (for example, `fallf`) and choose *Go*.

All users from EDMProjectManager UME group can be used in the application role *Project Manager*.
8. To add the user to the role, select it in the result list, and choose *Add*.
9. Select *Team Manager* from the dropdown box and enter a user who belongs to the EDMTeamManager UME group (for example, `platter`).

All users from EDMTeamManager UME group can be used in the application role *Team Manager*.



10. To add the user to the role, select it in the result list, and choose *Add*.
11. Choose *Done* and then *Next*.
12. (Optional) You can change the name of the process in the *Process Name* field.
13. To start the process, choose *Initiate*.



Executing the Scenario Process

Use

This procedure shows the process flow of the Project and Skill Management reference scenario.

Prerequisites

You have completed the steps in [Running the Application \[Page 8\]](#)

Procedure

1. Launch the portal by entering `http://<host>:<port>/irj` in your browser.
2. Log on with the user you have assigned to the project manager role (**fallf**).
3. Go to *Guided Procedures* → *Runtime* and choose *Tasks Where Action is Required to Continue Process Flow* under *Tasks that require my action*.
4. Choose *Search and Select Project*.
5. Enter **Software Programming** in the *Enter search parameter* field and choose *Search*.

| Search | | |
|------------------------|----------------------|------------------------|
| Enter search parameter | Software Programming | Search |
| Result List | | |
| Project ID | Title | Start |
| 17 | Software Programming | 2007-05-20T0:00:00.000 |

The project is displayed in the *Result List*.

6. Choose *Next* and then *Refresh*.
7. Select the *EN:Java Programming* from the list of *Missing Skills in Project*.
The available courses are displayed in the *List of Courses*.
8. Select *SW510/C++Start-Up Kit (EN)* and choose *Assign Employees*.
9. Select an employee from the *Employee List* (for example Paul Burke, the user has user name **burkep**) and choose *Select*.
10. Choose *Next* and then *Finish*.
11. Log off from the portal and log on again with the user assigned to the employee role (in our case **burkep**).

12. Go to *Guided Procedures* → *Runtime* and choose *Tasks Where Action is Required to Continue Process Flow*.
13. Select *Book Course Events*, choose a course from the *Event List*, and choose *Book Event*.
14. Log off from the portal and log on with the user assigned to the Team Manager role (**platter**).
15. Go to *Guided Procedures* → *Runtime* and choose *Tasks Where Action is Required to Continue Process Flow*.
16. Choose *Approve Booking*, enter your comments (if any) under the *Comment* field, and then choose *Accept* or *Reject*.
17. Log on as the employee (**burkep**) to receive the notification.
18. Select *Guided Procedures* → *Runtime* and choose *Tasks Where Action is Required to Continue Process Flow*.
19. Choose *Receive Notification* and then *Complete*.



Reviewing the Application's Source Code

Use

This procedure describes how to import and review source code of the application built with Web Dynpro and Guided Procedures.

Prerequisites

- You have installed and opened SAP NetWeaver Developer Studio.

Procedure

1. Review the Application Part Built with Web Dynpro



If you have already imported the development configuration file *CE-RA.export* (if you were reviewing the source code of Customer Service Care application) do not execute steps from 1 to 5. Alternatively, start from step 1.

1. Open the *Development Infrastructure* perspective by selecting *Window* → *Open Perspective* → *Other* → *Development Infrastructure* and then choosing *OK*.
2. From the main menu, choose *File* → *New* → *Other* → *Development Infrastructure* → *Development Configuration* → *Next* to open the next screen.
3. From the *Create/Import Development Configuration* field select the *from Development Configuration file* indicator and choose *Browse*.
4. Browse to the correct location of the downloaded from SDN development configuration file (*CE-RA.export*) and choose *Open* and then *Next*.
5. On the *Development Configuration Info* window, choose *Finish*.
6. If prompted for a log on, use the following credentials again:
 - User ID: administrator

- Password: the password set during SAP NetWeaver 7.1 Composition Environment installation

The content of development configuration named *CE-RA [0]* appears in the *Component Browser*.

7. Select the *CE-RA-XEDM[sap.com]* context menu, then choose *Import*.
8. Browse to the correct location of the downloaded file from SDN *CERAXEDM00_0* and choose *Open*.
9. Choose *Next* and then *Finish*.
10. Select simultaneously the following software components under *CE-RA-XEDM[sap.com]* (using the *Ctrl* button):
 - *xapps/ra/xedm.aevtfrm.wd*
 - *xapps/ra/xedm.appvfrm.wd*
 - *xapps/ra/xedm.msklfrm.wd*
 - *xapps/ra/xedm.ntfform.wd*
 - *xapps/ra/xedm.psrhfrm.wd*
11. From the context menu, choose *Sync/Create Project* → *Create Project*.
12. Deselect the *Build DC after sync* indicator and choose *OK*.
13. When prompted to switch to *Web Dynpro* perspective, choose *Yes*.

The components are displayed in the *Web Dynpro Explorer* and you can browse through their content.

2. Review the Application Part Built with Guided Procedures

More information: [Reviewing the GP Design Time of the Application \[Page 15\]](#)



Reviewing the GP Design Time of the Application

Procedure

1. Allow General Portal Permissions

1. From your browser, start the portal: `http://<server>:<port>/irj`.
2. When prompted for a logon, use the following credentials:
 - User ID: administrator
 - Password: the password set during SAP NetWeaver 7.1 Composition Environment installation
3. Choose *System Administration* → *Permissions* → *Portal Content* → *Content Provided by SAP* → *platform_add_ons* → *Guided Procedures* → *GP Superuser*.
4. From the *GP Superuser* context menu, choose *Open* → *Permissions*.
5. In the *Search In* field, located in the *Assigned New Permissions* window, choose *Group* and then *Go*.

6. Select the indicator in front of the group *Everyone* and choose *Add*.
The group *Everyone* appears in the list in the *Assigned Permissions* window.
7. Select the group *Everyone* indicator that points at *End User* and choose *Save then OK*.
8. Repeat steps from 3 to 7 (as described above for the role *GP Superuser*) also for the role *GP Business Expert*.

2. Allow the Administrator to View the GP Design Time

1. Open the start page of the Application Server Java using the following URL:
`http://<host>:<port>`
2. Choose *User Management* → *Identity Management*.
3. From the *Search Criteria* dropdown box, select *Role*.
4. Enter
`pcd:portal_content/com.sap.pct/platform_add_ons/com.sap.caf.eu.gp.folders.gp/com.sap.caf.eu.gp.roles.superuser` then choose *Go*.
5. Select the role displayed and choose *Modify*.
6. Select *Assigned Users*, enter **A*** in the *Search Criteria* field, and choose *Go* to find the default *Administrator* user.
7. Select the *Administrator* user, choose *Add* and then *Save*.
8. Repeat steps 3 to 7 also for the role
`pcd:portal_content/com.sap.pct/platform_add_ons/com.sap.caf.eu.gp.folders.gp/com.sap.caf.eu.gp.roles.designtime`

3. Review the Design Time of the Application

1. Start the portal again `http://<server>:<port>/irj`.
2. If prompted for a logon, use the following credentials again:
 - User ID: administrator
 - Password: the password set during SAP NetWeaver 7.1 Composition Environment installation
3. Choose *Guided Procedures* → *Design Time* → *Reference Application* → *xEDM* → *xEDM Process* → *Open*.

In the application process you can browse through the process steps and review the details such as type of step (action, sequential block, parallel dynamic block), also details as roles, parameters, permissions, exceptions, and so on.