



An Oracle White Paper  
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# Oracle Fusion Applications: Integrating Project Management with Sales Cloud

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## Glossary

TERM	DEFINITION
SOAP Web Service	Simple Object Access Protocol. A protocol specification for exchanging structured information in the implementation of web services in computer networks that relies on extensible markup language.
SSL Certificate	Secure Sockets Layer (SSL), are cryptographic protocols which are designed to provide communication security over the Internet. An SSL certificate (also known as a digital certificate) is an electronic document that uses a digital signature to bind a public key with an identity.
Project Execution Management	A set of applications that focus on project execution and enable organizations to accelerate project delivery through intuitive project planning and scheduling, staff projects using the skills and availability of resources, and offer team members the ability to collaboratively plan, execute, and progress their work.
Project Financial Management	A set of applications that focus on the financial management of projects and enable organizations to manage project budgets and forecasts, control and account for costs, bill customers and recognize revenue, and deliver real-time insight into the status of projects.
Project Work Plan Service	Project work plans enable project managers to define a task hierarchy, assign resources, and track progress of project tasks. The service supports creating, reading, and updating project work plans.
Project Service	A project represents the effort and resources required to achieve a significant business objective within a specific, usually finite, time frame. Projects are used to plan, track, manage and control the financial aspects and the work effort required. The service supports creating, reading, and updating projects.
Project Enterprise Resources	A project enterprise resource is a person or an expense in a project enterprise. Assign project enterprise resources to projects, tasks, issues, and deliverables.
Opportunity	An opportunity is used by a sales organization to track information about a potential sale such as the sales account, key contacts, product interests, and potential revenue.
Groovy Script	Groovy is an object-oriented programming language for the Java platform.
Sales Pipeline	The set of sales opportunities that the organization is tracking through their respective stages.
Win Probability	The percentage probability of winning an opportunity.

## Introduction

Today's connected world demands a high degree of collaboration between sales organizations and project delivery organizations to gain visibility into opportunities in the sales pipeline, plan effectively for forthcoming engagements, accurately track the cost of pursuing opportunities, and win sales opportunities.

A close integration between sales automation tools and project management solutions allows sales and delivery teams of an organization to work together to ensure that projects are properly planned, resourced, and delivered, thus increasing revenue and margin, and gaining competitive advantage.

This white paper explains how you can integrate Oracle Sales Cloud with Oracle Project Portfolio Management (PPM) Cloud to create projects directly from opportunities in the sales pipeline. The integration enables sales and delivery teams to:

- Gain visibility into the project management organization and leverage advanced business-user reporting capabilities.
- Track costs of pursuing an opportunity as a separate pursuit project.
- Effectively plan and resource upcoming engagements by leveraging the powerful resource management and collaborative project management capabilities of Oracle PPM before finalizing a deal.

Integrating Oracle Sales Cloud with Oracle PPM is a one-time setup that involves registering project web services in Oracle Sales Cloud, customizing the opportunity object to include project-related attributes, and allowing Oracle Sales Cloud users access to Oracle PPM.

## Integrate Oracle Sales Cloud with Oracle PPM to Track Proposal Projects

The integration simplifies project creation for sales representatives by automating it when the probability of winning an opportunity reaches a predefined threshold such as 60%. Sales representatives using the Opportunity Management application must minimally provide the project name and a brief description of the project. They can optionally use templates to quickly build out a preliminary project and resource plan with labor resources, cost and bill rates, quantities, non-labor expense resources, and a high-level project structure.

As the deal matures, the sales and delivery organizations collaborate on project planning and staffing needs and enhance the project and resource plan. For example, they can use Oracle PPM to check availability of key personnel when a deal is finalized, coordinate on pricing, build the detailed project structure, and share it with key stakeholders as the opportunity progresses.

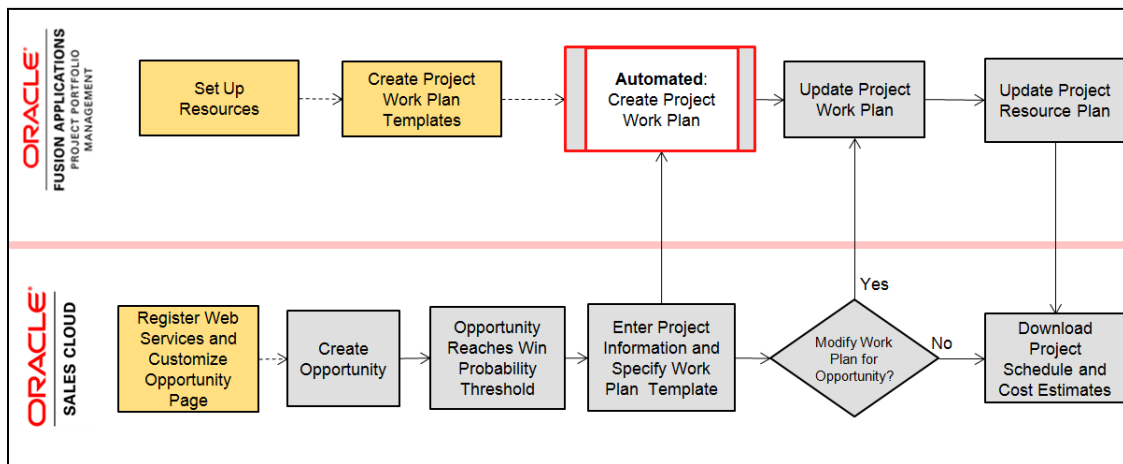


Figure 1: Functional flow of the integration between Oracle Sales Cloud and Oracle PPM

## Integration Steps

The following sections discuss the integration of Oracle Sales Cloud and Oracle PPM, assuming they are deployed in the same environment.

**Important:** If Oracle Sales Cloud is not deployed in the same environment as Oracle PPM and has a separate database and a separate middleware host, then the administrator must provision sales representatives to access the application. Additional steps required for this scenario are described in the [Appendix](#).

Perform the following steps to integrate opportunities with projects:

- Register the Project Work Plan web service in Oracle Sales Cloud
- Modify the Opportunity Details page to capture project information
- Set up Oracle Sales Cloud users as project enterprise resources

### Register the Project Work Plan Web Service in Oracle Sales Cloud

The Oracle Sales Cloud administrator must use the Application Composer to register the Project Work Plan web service with Oracle Sales Cloud. This service enables Oracle Sales Cloud users to create projects and view project plan information.

You require the following information to register a web service:

- Web service name and WSDL URL
- Web service security credentials

If both Oracle Sales Cloud and Oracle PPM are deployed in the same environment, then enter a credential key for registering the web service with the credentials of a project administrator.

Follow these steps to register the Project Work Plan web service in Oracle Sales Cloud:

1. Log in as the Oracle Sales Cloud administrator.
2. Open the Application Composer from the Navigator, and select *Sales* from the list of applications in the Application Composer.
3. Go to *Web Services* from the list of Common Setup and create a new web service connection to register the Project Work Plan web service.
4. Specify following attributes to register the web service before clicking Read WSDL:
  - a) Name: ProjectWorkPlanService
  - b) WSDL URL:  
`http://<prj_server:PortNumber>/pjtCommonProject/ProjectServiceV2?WSDL`

Figure 2: Create SOAP Web Service Connection page

5. Click the Read WSDL button to populate the **Service** and **Port** fields and enable the **Security Schemes** options
6. After selecting Read WSDL, select a security scheme:
  - c) For http use “Invoke with separate user credentials and message protection”
  - d) For https use “Invoke with separate user credentials over SSL”
    - Create a credential key using the user credentials of the project administrator

Figure 3: Create a credential key while registering the Project Work Plan web service

## Modify the Opportunity Details Page to Capture Project Information

The Oracle Sales Cloud administrator must customize the Opportunity object:

1. **Create Custom Fields Using the Opportunity Object:**
  - Add a custom field to capture basic planning project information such as name, description, start date, and work plan template name.

- Build expressions to control when the application must create a project and when users can enter project-related information. For example, set the threshold so that the project-related fields remain disabled until the opportunity reaches a win probability of 50%.
- 2. **Modify the Opportunity Object Detail Page to Include Custom Attributes:** Modify the opportunity-related pages show these fields in the user interface.
- 3. **Write Server Scripts to Trigger the Project Work Plan Web Service:** Define a win probability that determines when the application must create a project based on the opportunity using a Groovy script to trigger the Project Work Plan web service.
  - **Note:** The script also ensures that updates you make to the opportunity, such as a change of status, win probability, or deal amount are automatically updated on the project.
- 4. **Write Server Scripts to Set Default Values for Certain Project Attributes:** Optionally, set default values for project attributes.
- 5. **Verify Project Attributes on the Opportunity Details Page:** Validate the configuration.

#### Create Custom Fields Using the Opportunity Object

1. Open the Application Composer from the Navigator, and select *Sales* from the Applications list in Application Composer
2. Select the Opportunity object from the list of Standard Objects after expanding the Standard Objects node in the Objects list in Application Composer
3. Add the project-related attributes to the Opportunity object by creating new custom fields.
4. To add a custom field:
  - a. Navigate to Fields under the Opportunity object node and click **Create New**.
  - b. Select the field type and then provide other details like display label, display width, and default value.

**ORACLE**

**Application Composer**

**Create Text Field**

**Appearance**  
Configure how this field will appear when displayed to your users.

\* Display Label

Help Text

Display Width  Characters

Display Type ☒ Simple Text Box ☐ Multiline Text Area

**Name**  
Each field requires a unique name in the system. Name and description are for internal use only, and are never displayed to your users.

\* Name

Description

**Constraints**

☐ Required ☒ Updateable ☒ Searchable ☐ Indexed

Minimum Length  Characters

Maximum Length  80 Characters

**Default Value**  
Enter the value you want to set for the field when an object is created. Select Expression if you want to set the default dynamically.

☒ Fixed Value

☐ Expression

Figure 4: Add the project-related attributes as custom fields of the Opportunity object

TABLE 1. LIST OF CUSTOM FIELDS TO ADD TO AN OPPORTUNITY

FIELD TYPE	DISPLAY NAME	DISPLAY TYPE	REQUIRED	UPDATEABLE	SEARCHABLE	MIN-MAX LENGTH	DEFAULT VALUE
Text	Project ID	Simple Text Box	No	No	No	0-80	<blank>
Text	Project Name	Simple Text Box	No	Only if Win Probability is greater than 50	Yes	0-80	<blank>
Text	Project Description	Multiline Text Area	No	Only if Win Probability is greater than 50	Yes	0-1500	<blank>
Date	Project Start Date	NA	No	Only if Win Probability is greater than 50	Yes	NA	<blank>
Text	Project Manager E-mail	Simple Text Box	No	Only if Win Probability is greater than 50	No	0-80	E-mail ID of logged-in user
Text	Project Work Plan	Simple Text Box	No	Only if Win Probability is greater than 50	No	0-80	<blank>

## Template

- e) Enter the following expression for the *Updateable* attribute for each of the custom fields (except Project ID) to ensure that these fields are enabled only after the opportunity reaches a predefined win probability threshold (50% in this example, but you can configure the threshold based on the business requirements of your organization):

```
If (ProjectId_c==null & WinProb >= 50) {
    return true ;
}
```

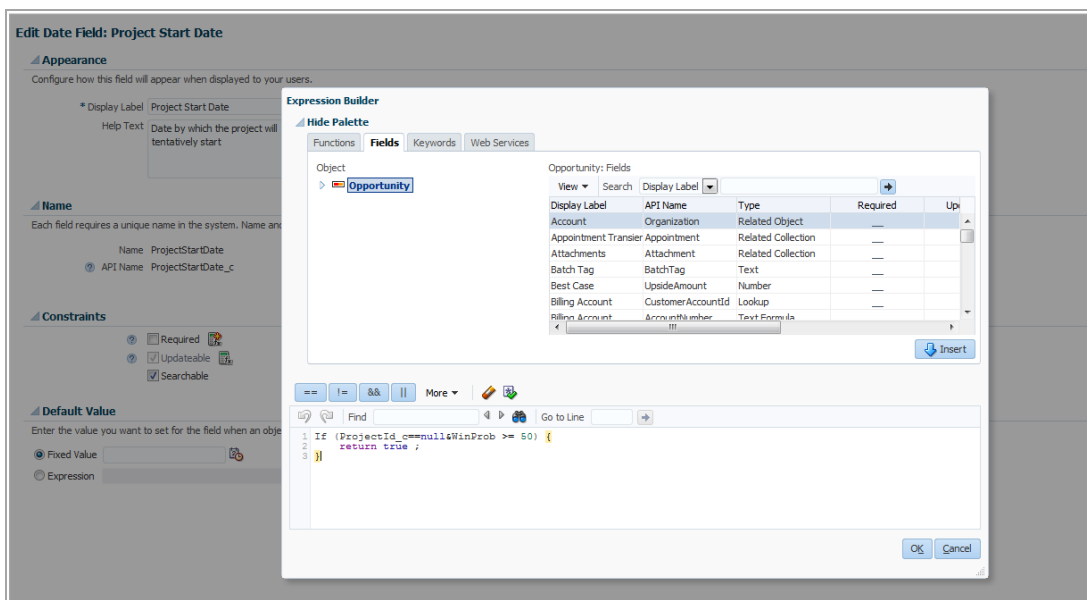


Figure 5: Expression for enabling custom fields after the opportunity reaches a predefined win probability

- f) After including the above expression, the additional field *Depends On* is available in the Edit Date Field custom field page to specify the fields, which have dependency. Specify *Project ID* and *Win Probability* in this field.

### Modify the Opportunity Object Detail Page to Include Custom Attributes

Follow these steps to modify the opportunity object:

1. Add the project-related attributes (except Project ID) that you configured to the Summary section of the Detailed Opportunity page from the *Pages* section under the opportunity object node.

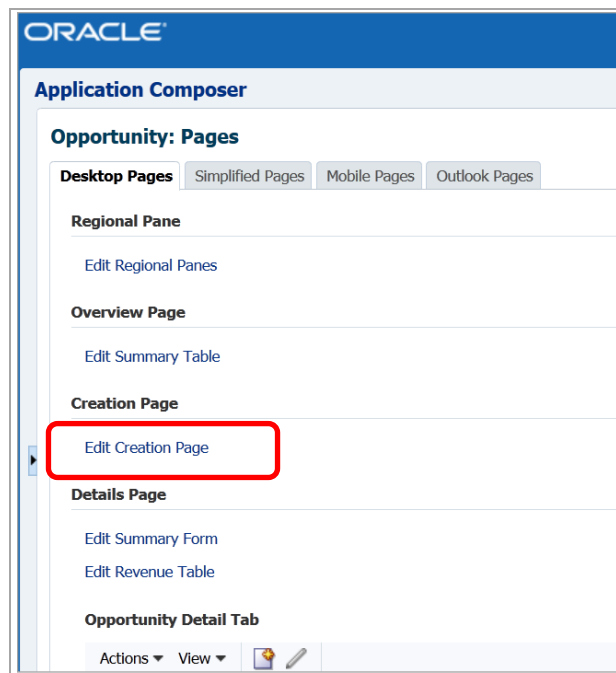


Figure 6: Edit Summary section on the Opportunity Details page

2. Update the opportunity Summary Form by moving all project-related fields from the Available Fields list to the Selected Fields list in the Configure Detailed Summary section, as shown in below images.

**Edit Details Page Summary Form**

Object Name Opportunity

**Configure Default Summary**

Select the fields to appear in this object's default summary.

Available Fields	Selected Fields
Batch Tag	Business Unit
Billing Account	Opportunity Name
Billing Account	Sales Account
Budget Amount	Primary Contact
Budgeted	Opportunity Owner
City	Attachments
Classification Code	Partners
Comments	Competitors
Consumer First Name	Revenue
Consumer Last Name	Worst Case
Contact Point ID	Best Case
ContactName	Currency

**Configure Detailed Summary**

Select the fields to appear in this object's detailed summary, which is initially hidden during run time. You can optionally add attachments for this object, as we

Available Fields	Selected Fields
Batch Tag	Estimated Deal Duration
Best Case	Key Internal Sponsor
Billing Account	Budgeted
City	Line of Business
Classification Code	Creation Date
Close Date	Date Budget Available
Comments	Budget Amount
Consumer First Name	Source
Consumer Last Name	Include in Forecast
Contact Point ID	Project Name
ContactName	Project Description
Conversion Rate	Project Start Date

Figure 7: Project-related custom fields in the Configure Detailed Summary section of the Opportunity Details page

### Write Server Scripts to Trigger the Project Work Plan Web Service

1. In Application Composer, go to the Triggers list for the Opportunity object listed under Server Scripts section (Navigator - Application Composer - Sales - Standard Objects - Opportunity - Server Scripts).
2. Create a new trigger in the Object Triggers section to invoke the registered Project Work Plan web service. The trigger includes a script to invoke the Project Work Plan web service after the opportunity win probability exceeds the set threshold.
  - a. The script validates if the sales representative has specified the required project information such as the project name and start date.
  - b. The script also validates whether the project is already created. If it is, then the script updates the key opportunity attributes like status, win probability, and deal amount in the project as these attributes are updated in Oracle Sales Cloud.
  - c. A sample Groovy script to use in the trigger:

```
def projectPlanRowResponse=[]
def projectPlanRow =
[
    ExternalProjectId :OptyId,
    Name :Name,
```

```

StartDate : ProjectStartDate_c,
ProjectManagerEmailId :ProjectManagerEmail_c,
Description: DescriptionText,
pportunityName: Name,
    OpportunityNumber: OptyNumber,
    OpportunityId:OptyId,
    DealAmount: Revenue,
    WinProbability: WinProb,
    OpportunityStatus: StatusCode,
    CustomerName: TargetPartyName,
    CustomerId: CustomerRegistryID
]

if (ProjectId_c==null&&WinProb>=50){

projectPlanRowResponse=adf.webServices.ProjectPlanServiceNew.createProjectPlan(
projectPlanRow);

//use following only for users with sales admin role
setAttribute("ProjectId_c",projectPlanRowResponse.ProjectId);
setAttribute("ProjectName_c",Name);

}
else if (ProjectId_c!=null&&WinProb>=50){

projectPlanRowResponse=adf.webServices.ProjectPlanServiceNew.updateProjectPlan(
projectPlanRow);

}

```

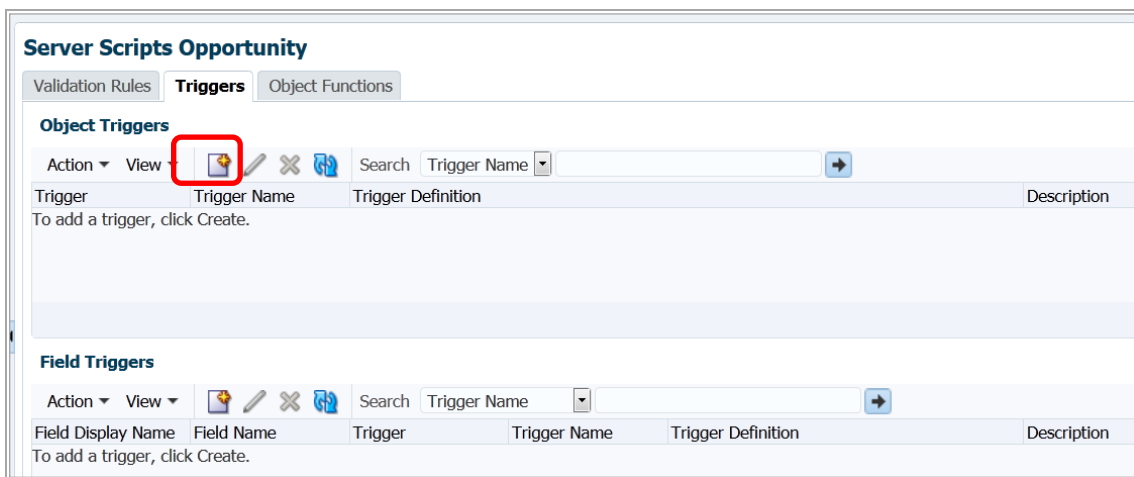


Figure 8: Triggers tab on the Server Scripts page for the Opportunity object in Application Composer

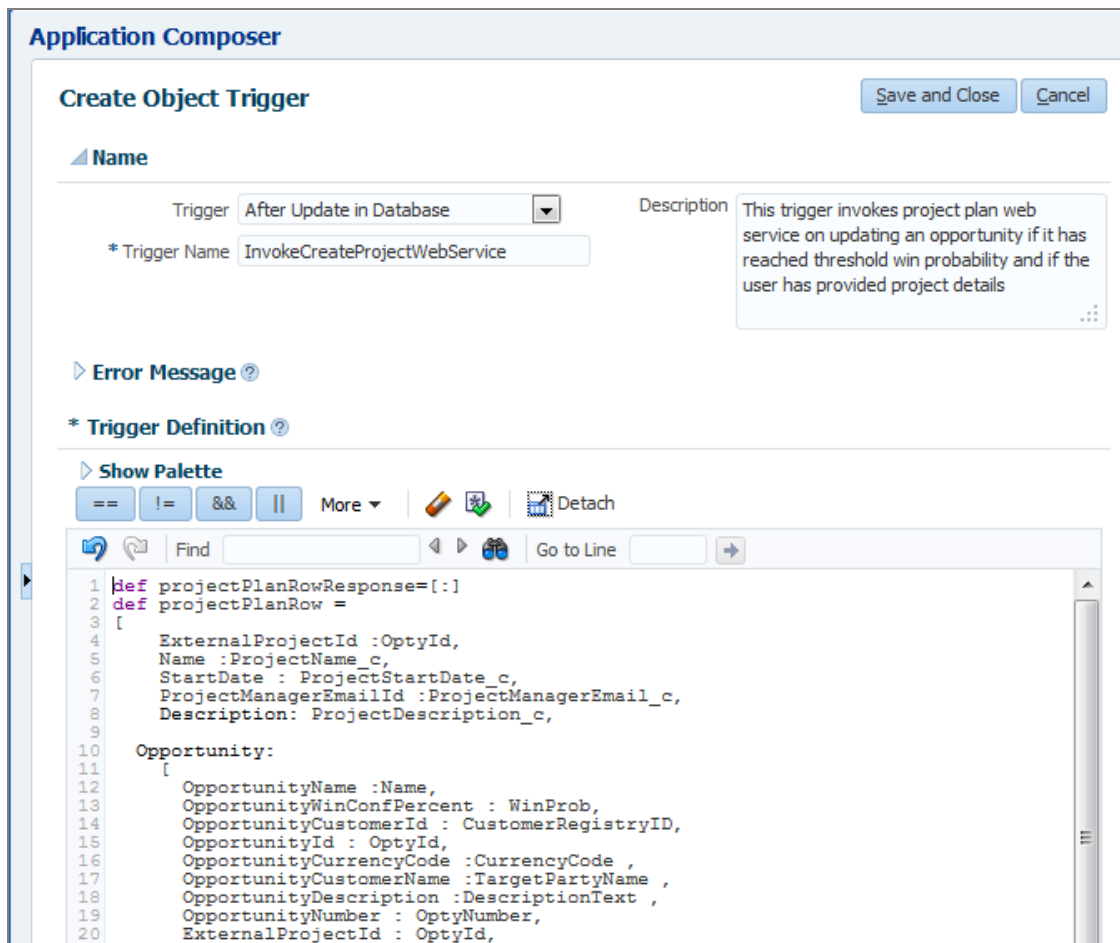


Figure 9: Trigger for Opportunity object to invoke Project Work Plan web service

### Write Server Scripts to Set Default Values for Certain Project Attributes

For example, set the opportunity owner's e-mail as the default value in the Project Manager E-mail field, by adding a field trigger on Project Name field. The trigger sets the default value for Project Manager E-mail after specifying the Project Name.

To create the trigger,

1. Go to the Triggers list for the Opportunity object listed under Server Scripts section in Application Composer (Navigator - Application Composer - Sales - Standard Objects - Opportunity - Server Scripts).
2. Create a new trigger in Field Triggers section to default the value in Project Manager E-mail field with the e-mail of the opportunity owner.

Sample groovy script that you can use in the trigger:

```
def mgrEmail=ProjectManagerEmail_c;
```

```

if ( mgrEmail==null){
    setAttribute("ProjectManagerEmail_c",EmailAddress);
}

```

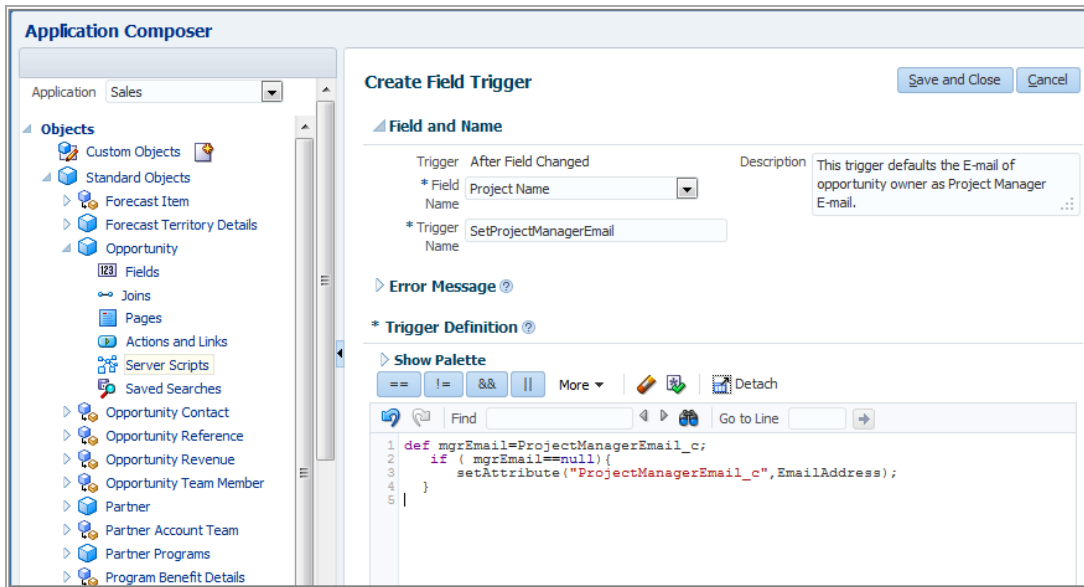


Figure 10: Build an expression for setting a default value in the project manager E-Mail field

### Verify Project Attributes on the Opportunity Details Page

Verify that the project attributes are visible in the update opportunity page (Navigator - Opportunities - Edit Opportunity - Summary) and that the attributes are editable when the opportunity win probability reaches the set threshold.

### Set Up Oracle Sales Cloud Users as Project Enterprise Resources

In order to give Oracle Sales Cloud users the ability to create new projects and access project information, the project application administrator must add them as project enterprise resources with the primary project role of project manager. Users must be project enterprise resources to be listed as a project manager on projects that they create from opportunities and to access opportunity-related projects for reporting and analysis purposes.

**Important:** To create project enterprise resources, administrators must have access to the Manage Project Enterprise Resources task in the Setup and Maintenance work area.

If Oracle Sales Cloud and Oracle PPM are deployed on the same environment, then verify that the Oracle Sales Cloud users are valid trading community resources and have resource role, resource manager, and organization assigned to them.

**Create Project Enterprise Resource**

\* Type: Labor

☒ Create from HCM person

\* HCM Person: [Dropdown]

First Name: [Text Box]

Last Name: [Text Box]

\* Name: [Text Box]

E-Mail: [Text Box]

**Personal Details**

Calendar: PJT Standard US Calendar

Primary Project Role: Project Manager

Phone: [Text Box]

Manager: [Dropdown]

Resume Attachments: None

**Rate Details**

Unit of Measure: Hours

Cost Rate: USD

Bill Rate: USD

Save and Close Cancel

Select an employee or contingent worker to associate with this resource in Oracle Fusion Project Portfolio Management

Figure 11: Add Oracle Sales Cloud users as project enterprise resources created from HCM persons

If you have a large number of Oracle Sales Cloud users, you can import HCM persons as project enterprise resources using the Manage Project User Provisioning option in Setup and Maintenance work area. You can import HCM persons based on business unit, organization, or manager as shown below.

**Manage Project User Provisioning**

User Provisioning Default Provisioning Attributes

Search Advanced

\*\* Name: [Text Box] \*\* E-Mail: [Text Box]

First Name: [Text Box] User Name: [Text Box]

Last Name: [Text Box]

**Search Results**

Actions View Format Freeze Detach Wrap

Create

Edit

Export to Excel

Assign Resource as Project Manager

Submit

Import HCM Persons as Project Enterprise Resources

Administrator Status Last Request S

No data to display.

Figure 12: Import HCM persons as project enterprise resources using the Manage Project User Provisioning page

The screenshot shows the 'Manage Project User Provisioning' page. At the top, there are tabs for 'User Provisioning' and 'Default Provisioning Attributes'. Below these is a search section with fields for '\*\* Name', '\*\* E-Mail', 'First Name', 'Last Name', and 'User Name'. A modal dialog box titled 'Import HCM Persons as Project Enterprise Resources' is open in the center. This dialog contains three dropdown menus: '\*\*Business Unit', '\*\*Organization', and '\*\*Manager'. At the bottom of the dialog are 'Submit' and 'Cancel' buttons. The background page shows a 'Search Results' table with columns 'Name' and 'User Name', and a 'Role Details' table with columns 'Project Role' and 'Description'. Both tables currently display 'No data to display.'

Figure 13: Options for Importing HCM persons as project enterprise resources

## Opportunity and Project Integration

The following steps illustrate how sales representatives can use the integration.

1. **Set Up Project Work Plan Templates:** Before creating opportunity-related projects, set up a few standard project work plan templates in Oracle PPM and use the templates to quickly create standard project plans for opportunities. If no standard task structure exists, then skip this step.
2. **Create Opportunity-Related Project:** When an opportunity reaches the win probability threshold, the sales representative can provide basic project information to create a project plan. They can alternatively use a work plan template to quickly build a project plan.
3. **Update and Share the Opportunity-Related Project:** Update the project plan to customize it for the specific opportunity and export the project information, including the project plan and staffing plan, to support the sales process.

### Set Up Project Work Plan Templates

Create project work plan templates from any of the existing projects in Oracle PPM. If you have no existing projects, start by creating a new project and save it as a work plan template. Use the Create icon on the Project Manager Dashboard to start creating a project as shown below.

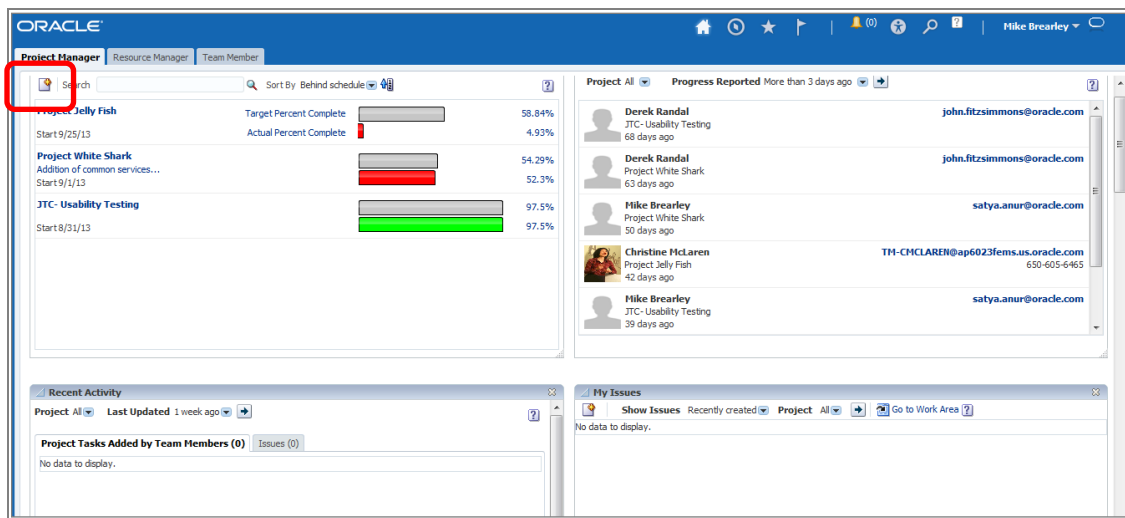


Figure 14: Create project from the Project Manager Dashboard in Oracle PPM

**Create Project**

\* Project Name: Standard CRM Implementation      \* Project Manager: Mike Brearley

\* Project Start Date: 11/12/13      Project Finish Date:

\* Calendar: PJT Standard US Calendar      Description: This is a standard project for implementing Oracle Fusion CRM for a mid-size organization.

Save and Close      Cancel

Figure 15: Create a project to build a standard project work plan template

Build a standard project plan that includes the basic tasks that are required on projects. Create a task hierarchy, build dependencies between tasks, assign expense and labor resources to lowest-level tasks, and specify deliverable types as needed for each task.

Optionally, include a high-level resource plan for both labor and expense resources and specify the estimated cost and bill amounts. After building the plan, save the project plan as a work plan template and give it a unique name and a brief description. Make this work plan template public so that web services can access it.

**Project Management**  
Standard CRM Implementation

**Manage Project Plan**

Task Name      Actions      Start Date      Finish Date      Percent Complete      Resource      Allocation Percentage      Nov 10, '13      Nov 11, '13

Task Name	Actions	Start Date	Finish Date	Percent Complete	Resource	Allocation Percentage	Nov 10, '13	Nov 11, '13
Standard CRM Implementation	Create Tasks from Requirements Create Milestone Create Tasks from Work Plan Template			0	Connor Horton			
Task 1	Evaluate Task Completion			0	Project Manager	100		
Task 2				0	Business Analyst	100		
Task 3	Cut      Ctrl+X			0	Implementation Specialist	100		
Task 4	Copy      Ctrl+C			0	Engineer	100		
Task 5	Paste      Ctrl+V			0	Implementation Specialist	100		
Task 6	Fill Down			0	Business Analyst	100		
Task 7	Delete Tasks			0	Engineer	100		
Task 8	Filter			0	Quality Assurance	100		
Task 9				0	Implementation Specialist	100		
Task 10	Schedule			0	Project Manager	100		

Save as Work Plan Template

Figure 16: After creating the project plan, save it as a work plan template

Figure 17: Save the standard project plan as a work plan template with a unique name and make it public

### Create an Opportunity-Related Project

When the win probability of an opportunity reaches the predefined threshold, the sales representative can create a project for the opportunity that includes a high-level project plan showing key milestones, labor resource estimates and expense details. The ability to enter project-related attributes and initiate project creation is not available until the opportunity reaches the predefined win probability threshold.

Figure 18: Project-related attributes are disabled until opportunity reaches the predetermined win probability threshold

To create the project, specify a unique name for the project, provide a tentative start date for the project, and optionally a brief description on Edit Opportunity page. By default, the integration uses the user's e-mail address as the project manager e-mail to provide access to the project. Optionally, the user can provide the e-mail address of someone else from sales or the project execution organization as needed. This individual is not usually the project manager who will execute the project, but instead represents someone from the sales or project management office who is responsible for supporting the sales process.

If it is a standard opportunity and a suitable work plan template exists, then quickly specify name of the work plan template to create a standard project plan. Alternatively, leave the work plan template name blank and create the project without any tasks or resources.

On saving the opportunity with this project information, the application creates a draft project in Oracle PPM. The next time you view the opportunity details, the project-related attributes are disabled to prevent any further updates.

Figure 19: Enter project details while updating the opportunity to create an opportunity-related project

After creating the opportunity-related project, the application automatically updates the project with important changes to the opportunity such as status, win probability, and deal amount.

Figure 20: Project details are cannot be updated after the project is created

## Update and Share Opportunity-Related Projects

The project manager can make updates to the opportunity-related project to meet the unique requirements of the opportunity. They can access and update the project and collaborate with the project delivery organization to share documents, make changes to the plan, submit resource requests, and add other resources to the project.

After updating the project plan to meet the requirements of the opportunity, the project manager can export the project plan including resource estimates and expense plan to commonly used formats such as Microsoft Project or Microsoft Excel.

**Project Management**  
Maxwell Controls Software Upgrade Phase 2

**Manage Project Plan**

Task	Start Date	End Date	Duration	Resources
Maxwell Controls Software Upgrade Phase 2	8/15/14	1/15/15	110	0 Connor Horton
Kick Off	8/15/14	8/15/14	0	0 Camille Artois
Pre-Upgrade	8/15/14	8/28/14	10	0 Abraham Mason
Planning and Structure	8/29/14	10/16/14	35	0 Connor Horton
Project Plan	8/29/14	10/16/14	16	0 Connor Horton
Infrastructure Environments	9/19/14	10/16/14	16	0 Connor Horton
Upgrade Strategy	10/3/14	10/16/14	14	0 Connor Horton
Change Management	10/17/14	10/16/14	0	0 Connor Horton
System Definition	11/7/14	10/16/14	0	0 Connor Horton
Upgrade	11/14/14	10/16/14	0	0 Connor Horton
System Certification	12/12/14	10/16/14	0	0 Connor Horton
Environment Readiness	12/17/14	10/16/14	0	0 Connor Horton
Sign-off for Deployment	12/18/14	10/16/14	0	0 Connor Horton
Deploy	12/18/14	1/15/15	20	0 Connor Horton

**Opportunity Details**

- Opportunity Name: Maxwell Controls Software Upgrade Phase 2
- Opportunity Number: OPPTY\_300785
- Win Probability: 85
- Deal Amount: 1625000 USD
- Opportunity Status: OPEN
- Customer Number: CUST00325

**Maxwell Controls Software Upgrade Phase 2: Project Details**

**Basic Information**

- Project Name: Maxwell Controls Software Upgrade Phase 2
- Project Number: 3001000364269004
- Project Start: 8/15/14
- Calendar: 8 hours per day, 5 days per week
- Project Currency: USD
- Project Customer: Vision Inc.
- Project Manager: Connor Horton
- EPS Node: Unassigned Projects
- Project Finish Date: 10/15/14
- Project Status: Active
- Description: Phase 2 of the controls software upgrade for Maxwell

Figure 21: View opportunity information for the project

## Export the Staffing Plan

The project manager can export the project resource allocation details including resource names, roles, from and to dates, effort, allocation percentages, labor rates, labor amounts, and expense amounts using a web service or directly to Microsoft Excel to share with stakeholders.

The following screen capture illustrates the Export to Excel option in the Manage Project Resources page.

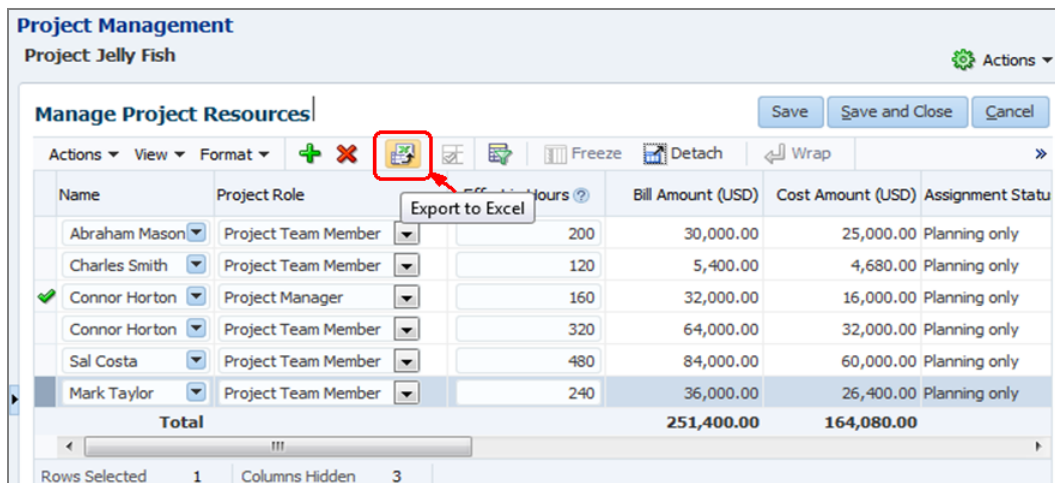


Figure 22: Export all project resources to Microsoft Excel using the toolbar option on the Manage Project Resources page

### Share the Project Plan in Microsoft Project

The project manager can choose to import the project into Microsoft Project, including the task structure, resource assignments, start and finish dates, effort, allocation percentages, amounts, and dependencies between tasks.

In order to import a project plan, the project manager must download and install a client extension for Microsoft Project. Download the extension from the Manage Project Plan page as shown below.

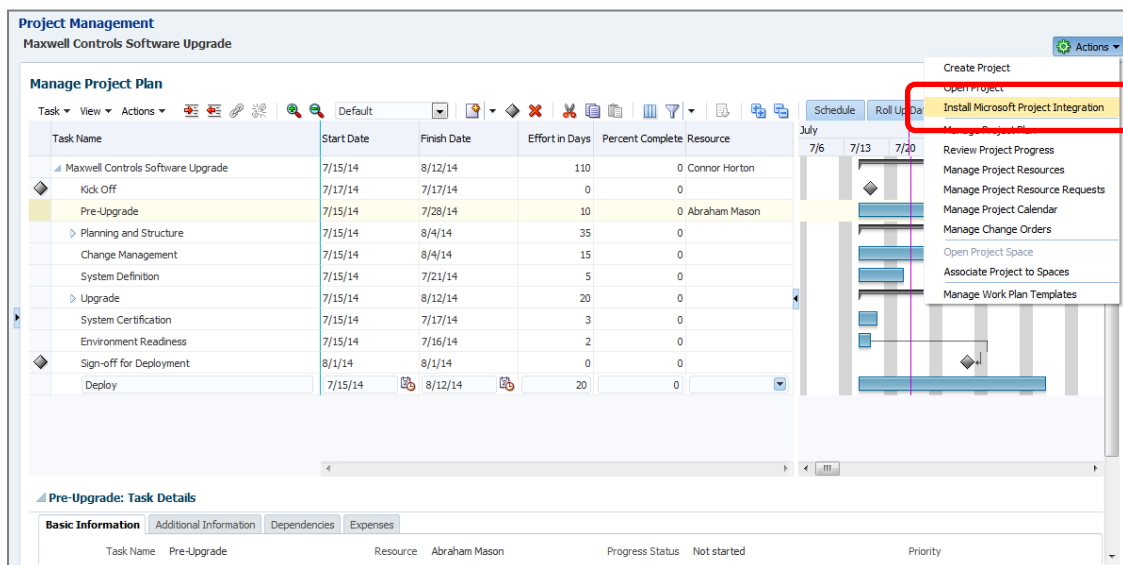


Figure 23: Action to download the Microsoft Project extension for integration

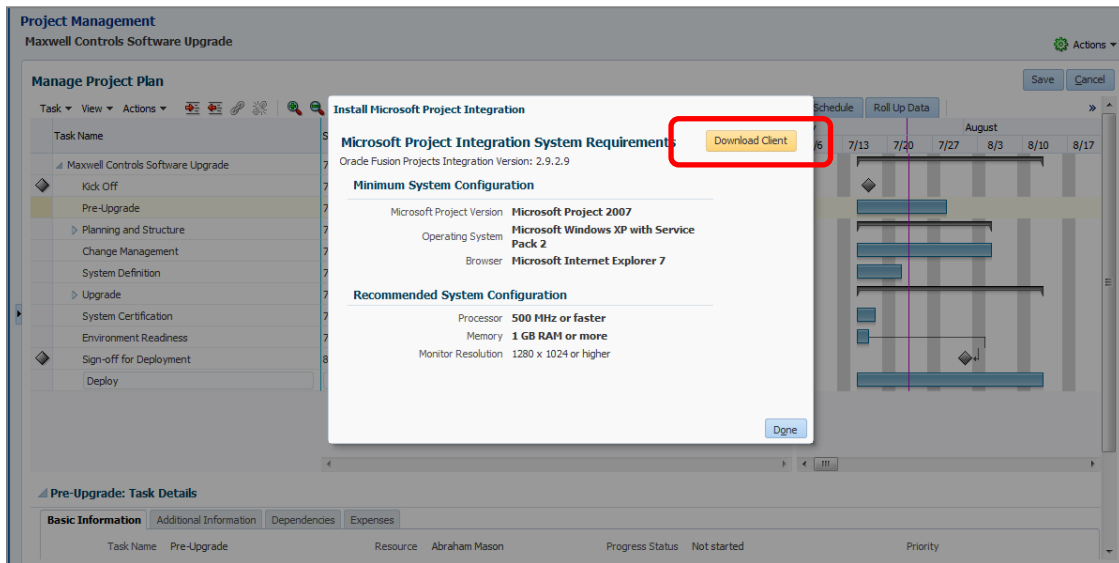


Figure 24: Download and install the Microsoft Project extension for integration

A new menu option, Oracle Fusion Projects, appears in Microsoft Project after installing the extension.

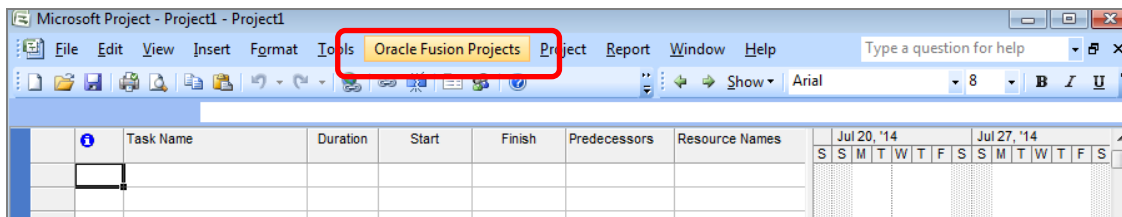


Figure 25: New menu Oracle Fusion Projects appears in Microsoft Project after installing the extension

As shown below, use the Change Environment feature to specify the server address of the Oracle PPM application in following format:

`http://<prj_server:PortNumber>/projectsManagement`

Use https if it requires secure connection. This information is retained in Microsoft Project until you uninstall the extension or clear this information manually.

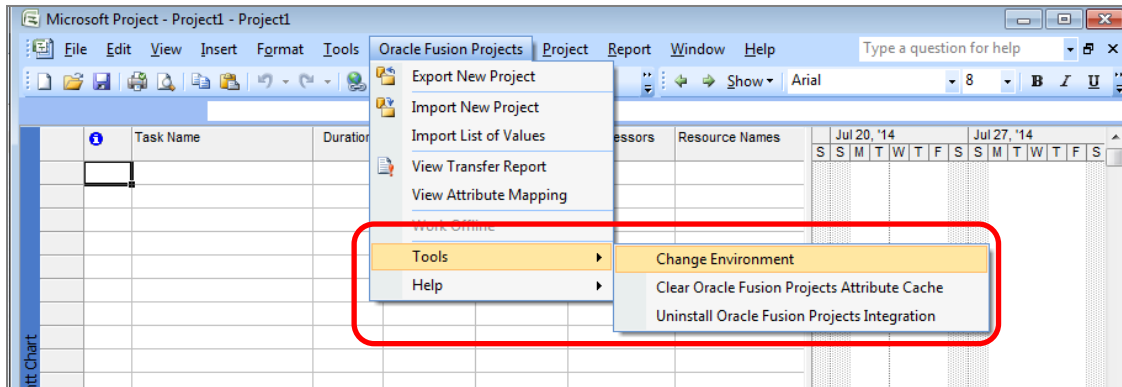


Figure 26: Option to change the environment details

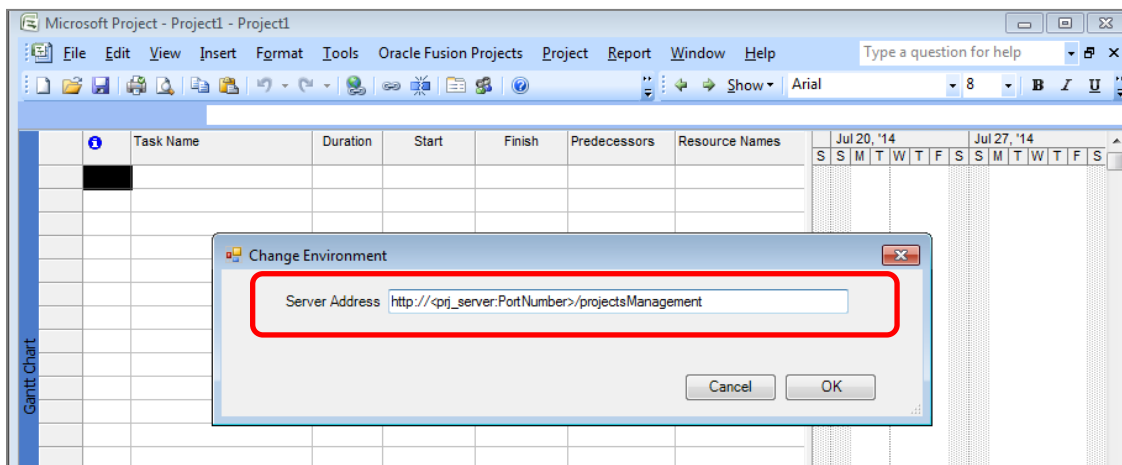


Figure 27: Specify the server address of the Oracle Fusion Project Management application

After the setup, authenticate yourself and import projects into Microsoft Project using the Import New Project option.

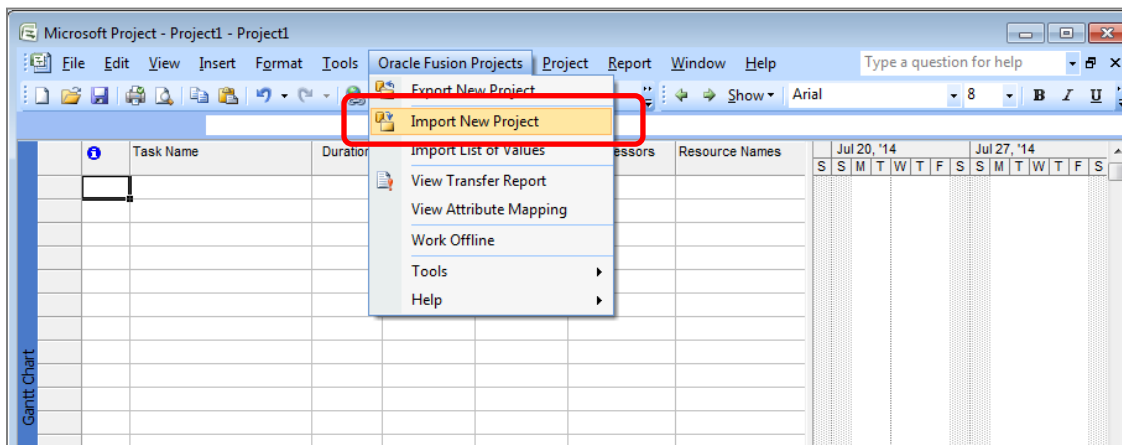


Figure 28: Option to import a project into Microsoft Project

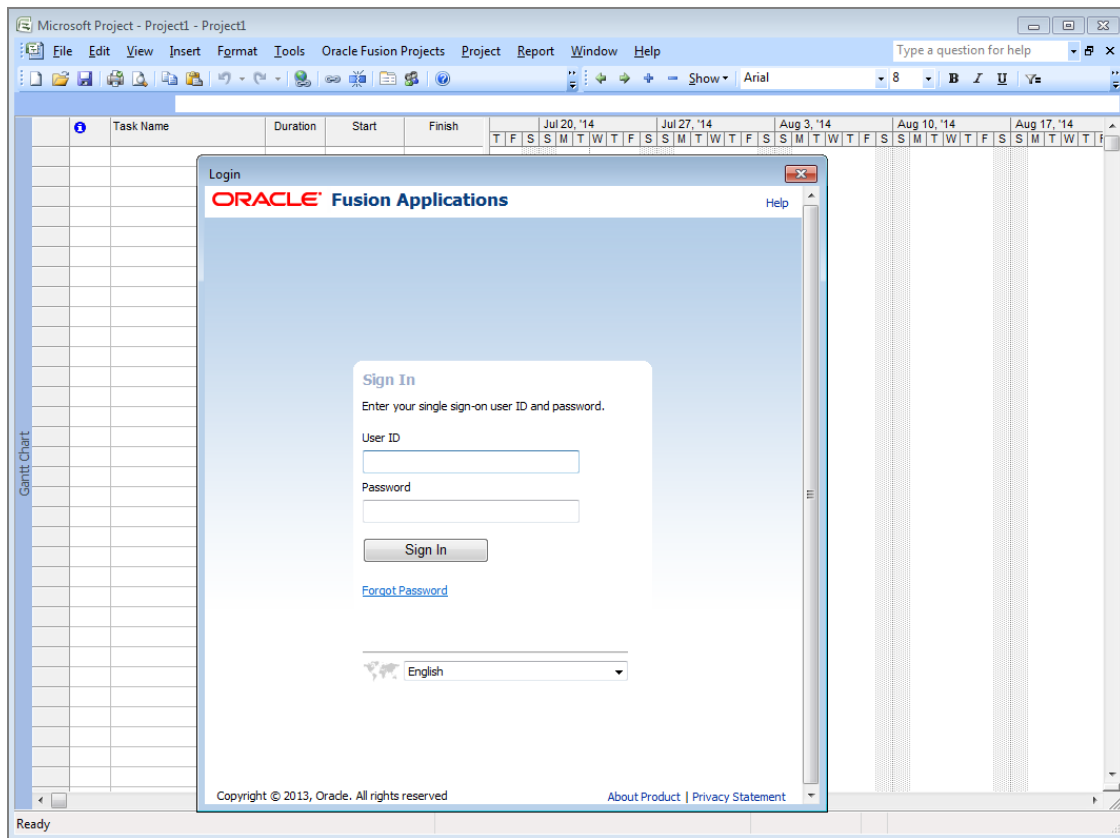


Figure 29: Provide Oracle Fusion PPM user credentials before importing a project

## Integrate Oracle Sales Cloud with Oracle PPM to Track Pursuit Costs

The following sections discuss the integration of Oracle Sales Cloud and Oracle PPM, assuming they are deployed in the same environment.

Integrate Oracle Sales Cloud with Project Financial Management applications of Oracle PPM to create pursuit projects and track the cost of pursuing an opportunity.

### Integration Steps

Steps to integrate Oracle Sales Cloud with Project Financial Management applications include:

1. Define the integration lookup code in the Setup and Maintenance work area
2. Register the Project web service in Oracle Sales Cloud
3. Modify the Opportunity Details page to capture the pursuit project information
4. Set up Oracle Sales Cloud users to access Project Financial Management applications

### Define the Integration Lookup Code in the Setup and Maintenance Work Area

Specify Oracle Sales Cloud Opportunities as a separate source for creating projects in Project Financial Management applications.

1. Find the Lookup Type PJF\_PM\_PRODUCT\_CODE in the Manage Standard Lookups task in the Setup and Maintenance work area
2. Add a new lookup code such as FUSION\_OPPORTUNITY. Specify this code while invoking the Project service to create a pursuit project.

**Manage Standard Lookups?** [Save] [Save and Close] [Cancel]

**Search**

Lookup Type: P\_JF\_PM\_PRODUCT\_CODE  
 Meaning:   
 Description:   
 Module:

[Search] [Reset]

**Search Results**

Actions View Format [Add] [Delete] [Freeze] [Detach] [Wrap]

Lookup Type	Meaning	Description	Module	Customization
P_JF_PM_PRODUCT_CODE	Source Application	A third-party application, such as Microsoft Pro	Common	Extension

**P\_JF\_PM\_PRODUCT\_CODE: Lookup Codes**

Actions View [Add] [Delete] [Detach]

Lookup Code	Display Sequence	Enabled	Start Date	End Date	Meaning	Description	Tag
> FUSION_OPPORTUNITY		<input checked="" type="checkbox"/>	1/1/09		Integration with Fusion CRM Opportunity	Integration with Fusion CRM Opportunity	
> MSP		<input checked="" type="checkbox"/>	1/1/51		Microsoft Project	Name of the integrating application is Microsoft	
> OPEN_INTERFACE		<input checked="" type="checkbox"/>	1/1/51		Oracle Fusion Applications Open Interfaces	Information is imported using the Projects, Tas	

Figure 30: Add a new lookup code using the Manage Standard Lookups page in the Setup and Maintenance work area

### Register the Project Web Service in Oracle Sales Cloud

The Oracle Sales Cloud administrator must register the Project (Version 2) web service with Oracle Sales Cloud using Application Composer. This service enables users of Oracle Sales Cloud to create pursuit projects. Registering the Project Service is very similar to registering the Project Work Plan service.

Use the following information to register a web service:

- The web service name and WSDL URL
- Security information to access these web services

Follow these steps to register the Project web service in Oracle Sales Cloud:

1. Log in as the Oracle Sales Cloud administrator
2. Open Application Composer from the Navigator, and select Sales from the list of applications in the Application Composer.
3. Go to Web Services from the list of Common Setup and create a new web service connection to register the Project web service.
4. Specify the following attributes to register the web service before clicking Read WSDL:

g) Name: ProjectService

- h) WSDL URL:  
`http://<prj_server:PortNumber>/pjfProjectDefinition/ProjectDefinitionPublicServiceV2?WSDL`

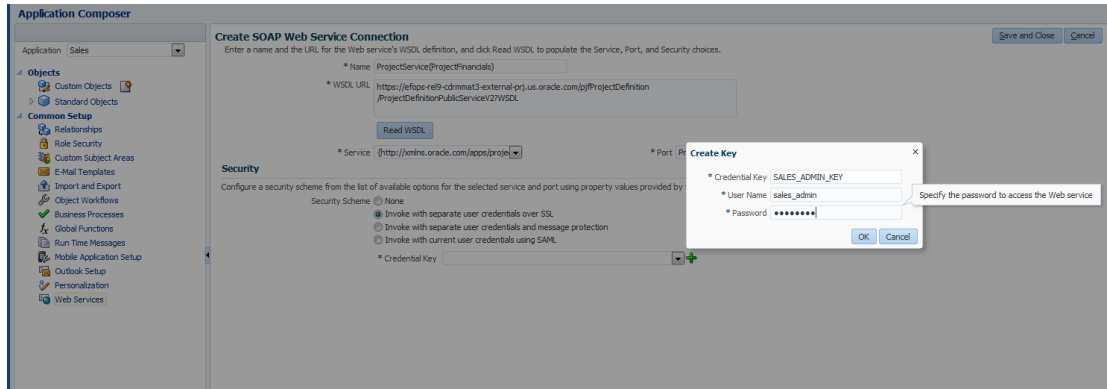


Figure 31: Create SOAP Web Service Connection page

5. Click the Read WSDL button to populate Service and Port and enable the Security Schemes
6. After selecting Read WSDL, select a Security Scheme:
  - i) For http use “Invoke with separate user credentials and message protection”
  - j) For https use “Invoke with separate user credentials over SSL”
    - Create a Credential Key using project administrator credentials

### Modify Opportunity Details to Capture Pursuit Project Information

Similar to the planning project attributes (shown above in [Figure 4](#)), the Oracle Sales Cloud administrator must add custom fields to the Opportunity object to capture basic information about pursuit projects such as project name, project number, start date, and project template name.

TABLE 2. LIST OF CUSTOM FIELDS TO ADD TO AN OPPORTUNITY FOR A PURSUIT PROJECT

FIELD TYPE	DISPLAY NAME	DISPLAY TYPE	REQUIRED	UPDATEABLE	SEARCHABLE	MIN-MAX LENGTH	DEFAULT VALUE
Checkbox	Create Pursuit Project	Checkbox	No	Yes	No	-	<blank>
Text	Pursuit Project ID	Simple Text Box	No	No	No	0-80	<blank>
Text	Pursuit Project Name	Simple Text Box	No	Only if Pursuit Project ID is null	Yes	0-80	<blank>

Text	Pursuit Project Number	Simple Text Box	No	Only if Pursuit Project ID is null	Yes	0-1500	<blank>
Date	Pursuit Project Start Date	NA	No	Only if Pursuit Project ID is null	Yes	NA	Opportunity Start Date
Text	Pursuit Project Template	Simple Text Box	No	Only if Pursuit Project ID is null	No	0-80	<blank>

Add business logic to control field behavior based on business needs. In this example, the sales representative selects the **Create Pursuit Project** check box to create a pursuit project to track the cost of pursuing the opportunity. On selecting the check box, the application enables the other attributes related to the pursuit project and the sales representative can then specify required details such as project name, number, start date, and project template name. The pursuit project is created on saving the opportunity. After the project is created, the check box and all other pursuit project related attributes become read-only.

1. Add the following expression to the **Create Pursuit Project** check box so that the application disables the check box after creating the pursuit project.

```
if (PursuitProjectID_c != null){
    return false;
}
```

2. Add the following Groovy expression to the updateable property of the Pursuit Project Name, Pursuit Project Number, Pursuit Project Start Date, and Pursuit Project Template attributes. Make the fields dependent on the Create Pursuit Project check box and the Pursuit Project ID to enable the fields for update only under certain desired conditions.

```
if (CreatePursuitProject_c == 'N' || CreatePursuitProject_c == null || PursuitProjectID_c != null) {
    return false;
}
```

3. Add an After Update trigger on the **Create Pursuit Project** check box to set default values for the pursuit project attributes.

```
def projectName=PursuitProjectName_c;
def projectNumber=PursuitProjectNumber_c;
def pStartDate=PursuitProjectStartDate_c;
def oppCreationDate=OpptyCreationDate;

if (projectName==null && CreatePursuitProject_c == 'Y'){
    setAttribute("PursuitProjectName_c",Name);
}
```

```

if ( projectNumber==null && CreatePursuitProject_c=='Y'){
    setAttribute("PursuitProjectNumber_c",Name);
}

if (pStartDate==null && CreatePursuitProject_c=='Y'){
    if (oppCreationDate!=null){
        setAttribute("PursuitProjectStartDate_c",oppCreationDate);
    }
    else {
        setAttribute("PursuitProjectStartDate_c",adf.currentDate);}
}

if (CreatePursuitProject_c=='N'){
    setAttribute("ProjectTemplate_c",null);
    setAttribute("PursuitProjectStartDate_c",null);
    setAttribute("PursuitProjectNumber_c",null);
    setAttribute("ProjectName_c",null);
}

```

After you add the custom attributes to the Opportunity object, you must modify the Opportunity pages to show these fields in the user interface; similar to the planning project attributes (as shown in Figure 6 and Figure 7 above). In addition to modifying the user interface, write a Groovy script to trigger the Project service from the Update Opportunity page to create the pursuit project for the opportunity.

Add the following logic to After Update trigger of opportunity object to invoke the Project service to create a pursuit project.

```

def projectResponse=[:];

def inProject =
[
    ClientKey : 'OPEN_INTERFACE',
    ClientProjectKey : Name, // opportunity name
    ProjectNumber : PursuitProjectNumber_c,
    ProjectName : PursuitProjectName_c,
    StartDate : PursuitProjectStartDate_c,
    TemplateKey : ProjectTemplate_c
]
if (PursuitProjectId_c==null && CreatePursuitProject_c=='Y'){
    projectResponse=adf.webServices.ProjectService.createProject(inProject);
    setAttribute("PursuitProjectId_c",1000); // set a dummy value to the project id place holder, just to control the behavior of the checkbox
}

```

**Server Scripts Opportunity**

Validation Rules | **Triggers** | Object Functions

**Object Triggers**

Trigger	Trigger Name	Trigger Definition	Description
AfterUpdate	InvokeProjectService	// Create pursue project def projectResponse={}; /* this should be the payload for R9 def inProject = [ ClientKey :OPEN_INTERFACE, ClientProjectKey :1234567, ProjectNumb	

**Field Triggers**

Field Display Name	Field Name	Trigger	Trigger Name	Trigger Definition	Description
Create Pursue Project	CreatePursueProject	AfterFieldChanged	SetDefaultValue	def projectName=ProjectName_c; def projectNumber=PursueProjectNumber_c; def pStartDate=PursueProjectStartDate_c; def oppO	
Create Planning Project	CreatePlanningProject	AfterFieldChanged	SetDefaultValueForPl	def pName=PlanningProjectName_c; def mgrEmail=PlanningProjectManagerEmail_c; def pStartDate=PlanningProjectStartDate_c; def	

Figure 32: Server scripts for the opportunity

## Set Up Oracle Sales Cloud Users to Access Project Financial Management Applications

The application administrator must grant project roles to Oracle Sales Cloud users so that they can use the Project service to create projects. This example illustrates the roles to grant to Oracle Sales Cloud users to invoke both the Project and Project Plan services:

**Administration** | Authorization Policy | Gabrielle Lee

Welcome | Advanced Search: Users | Gabrielle Lee

Reset Password | Lock Account | Disable User | Delete User

The selected roles have been assigned successfully to the user.

**Roles**

Display Name	Role Name	Description	Role Namespace
ALL USERS	ALL_USERS	Default role for all users	Default
Employee	PER_EMPLOYEE_ABSTRACT	Identifies the person as an employee.	cn=FusionGroups,cn=groups,dc=us,dc=oracle,dc=com
Project Administrator	P.J.F_PROJECT_ADMINISTRATOR_JOB	Assists the project manager with the administrative f	cn=FusionGroups,cn=groups,dc=us,dc=oracle,dc=com
Project Application Administrator	P.J.F_PROJECTS_APPLICATION_ADMINISTRATOR_IC	Collaborates with project application users to maintai	cn=FusionGroups,cn=groups,dc=us,dc=oracle,dc=com
Project Creator	P.J.F_PROJECT_CREATOR_ABSTRACT	Identifies the person who creates projects.	cn=FusionGroups,cn=groups,dc=us,dc=oracle,dc=com
Project Execution	P.J.F_PROJECT_EXECUTION_ABSTRACT	Identifies the person who manages projects in projec	cn=FusionGroups,cn=groups,dc=us,dc=oracle,dc=com
Project Management Duty	P.J.F_PROJECT_MANAGEMENT_DUTY_ABSTRACT	Identifies the person who manages individual project	cn=FusionGroups,cn=groups,dc=us,dc=oracle,dc=com
Project Manager	P.J.F_PROJECT_MANAGER_JOB	Manages the execution and completion of a single pr	cn=FusionGroups,cn=groups,dc=us,dc=oracle,dc=com
Sales Administrator	7RS_6AI_FI_ADMINISTRATOR_JOB	Manages sales department and personnel. Performs	cn=FusionGroups,cn=groups,dc=us,dc=oracle,dc=com

Figure 33: Administration page in Oracle to assign appropriate roles to Oracle Sales Cloud users

## Create Opportunity-Related Pursuit Projects

As soon as an opportunity is created, create a pursuit project to track the cost of pursuing the opportunity.

Figure 34: Project-related attributes are disabled till the opportunity reaches the predetermined win probability threshold

Select the **Create Pursuit Project** check box to enable the pursuit project related fields. Specify a name, project template, and project number for the pursuit project. By default, the Pursuit Project Start Date is set to the Opportunity Creation Date. As part of the implementation, you can create new project templates as needed to support pursuit projects.

On saving the project information in the opportunity, the application creates the pursuit project in the Project Financial Management application. The next time you view the opportunity details the pursuit project-related attributes will be disabled for any further updates.

## Conclusion

You can integrate Oracle Sales Cloud and Oracle PPM by following a few setup steps and configuring users and resources in both applications. Sales representatives can use the integrated system to quickly create standard template-based projects in the context of an opportunity and also to update and share the project plans with customers.

## Appendix: Oracle Sales Cloud and Oracle PPM Deployed in Different Environments

When Oracle Sales Cloud and Oracle PPM are deployed in different environments, and the applications have different databases and middleware hosts, you must perform some additional to integrate the two applications.

Perform the following steps to integrate opportunities with projects on different environments:

1. Register web services
2. Provision Oracle Sales Cloud Users in Oracle PPM

### Register Web Services

When Oracle Sales Cloud and Oracle PPM are deployed in different environments, in addition to adding the web services in Oracle Sales Cloud, you must download the security certificate from the Oracle PPM environment and import it to the Oracle Sales Cloud environment.

If Oracle PPM requires a secure connection (works over HTTPS), then download the SSL Certificate from the Project service or Project Work Plan service WSDL URL, and import the it in the Oracle Sales Cloud environment. This certificate enables the Oracle Sales Cloud environment to securely access Oracle PPM.

If Oracle PPM does not require a secure connection and works over HTTP, then download the Message Protection certificate from the Project service or Project Work Plan service WSDL URL and import it to the Oracle Sales Cloud environment.

When you add the Project service or Project Work Plan service in Oracle Sales Cloud:

1. Ensure that the administrator in both environments, Oracle PPM and Oracle Sales Cloud, are the same.
2. Specify Security Scheme as:
  - k) “Invoke with separate user credentials over SSL” and import SSL certificate for HTTPS
  - l) “Invoke with separate user credentials and message protection” and import Message Protection (MP) certificate for HTTP

### Download and Import the SSL Certificate

1. Download the SSL certificate from the Oracle PPM environment:
  - a. Point browser to Project service or Project Work Plan service WSDL URL (https://<prj\_server:PortNumber>/pjfProjectDefinition/ProjectDefinitionPublicServiceV2?WSDL or [https://<prj\\_server:PortNumber>/pjtCommonProject/ProjectService?WSDL](https://<prj_server:PortNumber>/pjtCommonProject/ProjectService?WSDL))

- b. Select the "lock" and download the SSL certificate into a file (slc05heh.crt)
2. Import the certificate into the Oracle Sales Cloud environment:
  - a. In the application server, go to APPTOP/instance/keystores/
  - b. Import the certificate into fusion\_trust.jks.
    - `keytool -import -trustcacerts -file slc05heh.crt -keystore fusion_trust.jks -alias slc05heh`
    - Enter welcome1 as password

### Download and Import the Message Protection Certificate

1. Download the Message Protection certificate from the Oracle Fusion Project Management environment:
  - a. Point browser to Project service or Project Work Plan service WSDL URL  
(`http://<prj_server:PortNumber>/pjfProjectDefinition/ProjectDefinitionPublicServiceV2?WSDL` or  
`http://<prj_server:PortNumber>/pjtCommonProject/ProjectService?WSDL`)
  - b. Locate the X509Certificate inside the WSDL file, which looks like this:  

```
<dsig:X509Certificate>

<encoded string>

</dsig:X509Certificate>
```
  - c. Copy and paste and save the encoded string into a file, named as slc05heh\_mp.pem.
  - d. Add a line "-----BEGIN CERTIFICATE-----" at top and "-----END CERTIFICATE-----" (five '-' each before and after the string) at the end, and paste the certificate content from in between.
2. Import the Message Protection certificate in the Oracle Sales Cloud environment:
  - a. Navigate to \$domain\_folder/config/fmwconfig/default-keystore.jks
  - b. Import the certificate with the following credentials:
    1. `keytool -importcert -file slc05heh_mp.pem -keystore default-keystore.jks -alias slc05heh_mp.pem`
    2. When prompted password is "welcome1"

### Provision Oracle Sales Cloud Users in Oracle PPM

As Oracle PPM and Oracle Sales Cloud are deployed in different environments, create and provision Oracle Sales Cloud users as project enterprise resources in the Oracle PPM environment.

While adding the Oracle Sales Cloud users to project enterprise resources, select the **Request user account** check box in the Create Project Enterprise Resource window to provision a user account for this user.

The screenshot shows the 'Create Project Enterprise Resource' window. The 'Type' is set to 'Labor'. The 'Create from HCM person' checkbox is unchecked. The 'First Name' is 'Abraham', 'Last Name' is 'Mason', and '\* Name' is 'Abraham Mason'. The 'E-Mail' is 'abraham.mason@visioncorp.com'. The 'Request user account' checkbox is checked and highlighted with a red rectangle. Below this are sections for 'Personal Details' (Calendar: PJT Standard US Calendar, Primary Project Role: Project Manager, Phone, Manager) and 'Rate Details' (Unit of Measure: Hours, Cost Rate: USD, Bill Rate: USD). At the bottom are 'Save and Close' and 'Cancel' buttons.

Figure 35: Add Oracle Sales Cloud Opportunity users as project enterprise resources

To add a large number of Oracle Sales Cloud users as project enterprise resources, use the option to upload all the users at once to the open interfaces using standard XLSM templates.

In order to allow Oracle Sales Cloud users to access Project Financial Management applications, the application administrator must add them as HCM resources and provide them appropriate project roles.



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Author: Sanjay Kumar Bhandari  
Contributing Authors: Jeff Colvard, Tianyi Wang

Oracle Corporation  
World Headquarters  
500 Oracle Parkway  
Redwood Shores, CA 94065  
U.S.A.

Worldwide Inquiries:  
Phone: +1.650.506.7000  
Fax: +1.650.506.7200  
[oracle.com](http://oracle.com)



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