

Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service

Configuration Guide

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Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service
Configuration Guide

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Preface

Welcome to the Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Configuration Guide.

The preface includes the following:

- [Audience](#)
- [Documentation and Resources](#)
- [Updates to Documentation](#)
- [Documentation Accessibility](#)
- [Conventions](#)
- [Acronyms](#)

Audience

This document is intended for anyone implementing the integration between Oracle Human Capital Management and Oracle Utilities Work and Asset Cloud Service for Employee, Job, and Employee Absence Synchronization.

Documentation and Resources

For more information regarding this integration, foundation technology and the edge applications, refer to the following documents:

Product Documentation

Resource	Location
Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service documentation	https://docs.oracle.com/en/industries/utilities/integrations-index.html
Oracle Utilities Work and Asset Cloud Service documentation	https://docs.oracle.com/en/industries/energy-water/work-asset-cloud-service/index.html
Oracle Human Capital Management Cloud	https://docs.oracle.com/en/cloud/saas/human-resources/22b/oawpm/index.html

Additional Documentation

Resource	Location
Oracle Integration Cloud Service documentation	Refer to the OIC documentation at: https://docs.oracle.com/en/cloud/paas/integration-cloud/index.html
Oracle Support	<p>Visit My Oracle Support at https://support.oracle.com regularly to stay informed about updates and patches.</p> <p>Refer to the <i>Certification Matrix for Oracle Utilities Products (Doc ID 1454143.1)</i> on My Oracle Support to determine if support for newer versions of the listed products is included.</p> <p>For more information, refer to the Oracle Utilities Integrations page at http://my.oracle.com/site/tugbu/productsindustry/productinfo/utilities/integration/index.htm</p>
Oracle University for training opportunities	http://education.oracle.com/

Updates to Documentation

The complete Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service documentation set is available from Oracle Help Center at <https://docs.oracle.com/en/industries/utilities/index.html>.

Visit [My Oracle Support](#) for additional and updated information about the product.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

Oracle customers have access to electronic support for the hearing impaired. Visit: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs>

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Acronyms

The following terms are used in this document:

Term	Expanded Form
Oracle HCM	Oracle Human Capital Management
Oracle UCM	Oracle's Universal Content Management or Oracle Webcenter Content Server
WACS	Oracle Utilities Work and Asset Cloud Service
OIC	Oracle Integration Cloud

Chapter 1

Introduction

This chapter provides an overview of Oracle Human Capital Management integration with Oracle Utilities Work and Asset Cloud Service for Employee, Job (Craft), and Employee Absence (Leave) synchronization using Oracle Integration Cloud. It also provides information about software requirements, participating applications and supported business processes by this integration.

The chapter contains the following:

- [Overview of the Integration](#)
- [About Oracle Human Capital Management](#)
- [About Oracle Utilities Work and Asset Cloud Service](#)
- [About Oracle Integration Cloud](#)
- [Software Requirements](#)

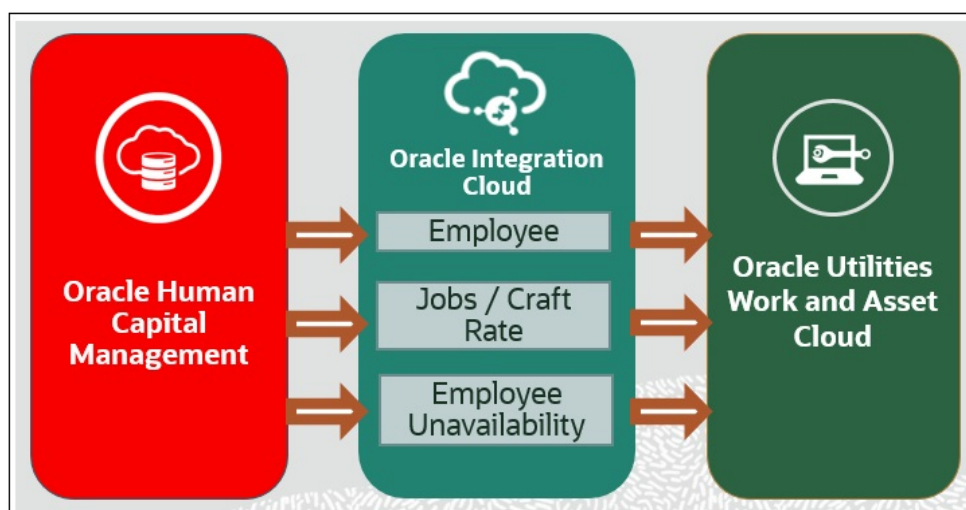
Overview of the Integration

Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service helps to facilitate the transfer of employee, job and employee absence information between the two applications.

This integration supports three key functionalities:

- Sends Employee information to Oracle Utilities Work and Asset Cloud Service for crew resources in Work Management.
- Sends Job information to Oracle Utilities Work and Asset Cloud Service for craft resources in Work Management.
- Sends Employee Absence to Oracle Utilities Work and Asset Cloud Service for Employee Unavailability (Employee Leave) Work Management planning.

The following diagram provides a high-level representation of the integration.



About Oracle Human Capital Management

Employee Integration

The objective of the Employee interface is to synchronize employee records originating in Oracle Human Capital Management to Oracle Utilities Work and Asset Cloud Service.

In the initial bulk process, all active employee records are extracted and sent to the Oracle Utilities Work and Asset Cloud Service. For incremental updates, as employee records are updated within the Oracle Human Capital Management application, the records are extracted and sent to Oracle Utilities Work and Asset Cloud Service. These incremental updates include changes to employee basic information and assignment, creation of new employees and termination of existing employees by inactivating their employee records.

These employee records can then be referenced by the Employee Absence (Leave) Integration. Each Employee is assigned a Job (Craft), and each Absence (Leave) request applies to an Employee.

Initial Bulk Employee Sync

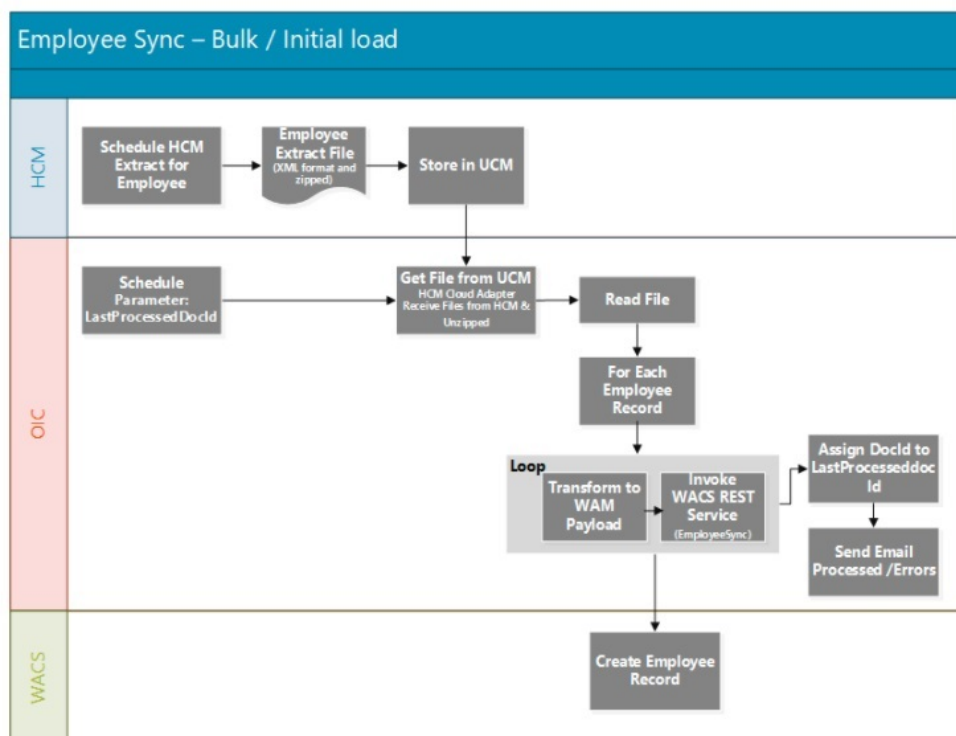
HCM Extract that is designed in the data exchange is ran to create the employee extract file that is stored in the universal content manager (UCM).

The selection of the employees in the Oracle Human Capital Management module to synchronize to Oracle Utilities Work and Asset Cloud Service is controlled by filters. The business may choose to import all employee records from Oracle Human Capital Management or select the filtering criteria based on Legal Entity, Business Unit or Cost Centers. The extract file will be based on filtering criteria selected and Employee Status is “Active”.

A few examples of attributes that will be passed to Oracle Utilities Work and Asset Cloud Service in this integration are personal number, legal entity, address, email ID, employee type, rate, assignment and job role.

Oracle Integration Cloud Bulk Employee Sync Process is scheduled to pick the file from UCM, transforms the payload and invoke the Employee Sync REST endpoint of Oracle Utilities Work and Asset Cloud Service to synchronize the employee information.

The following diagram shows the initial bulk employee end-to-end synchronization process:



Incremental Employee Sync

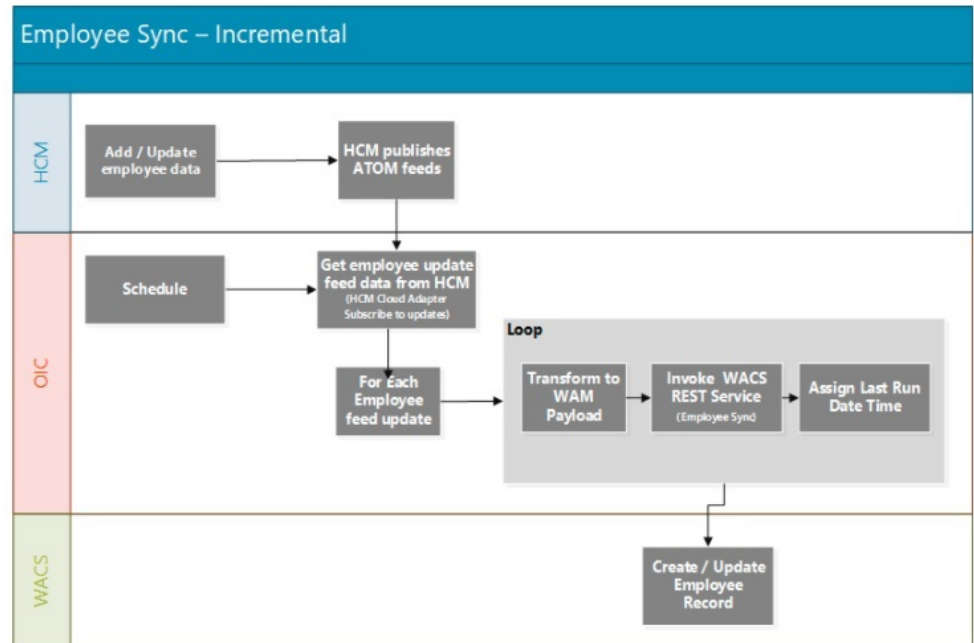
The incremental updates to any changes in employee information, new hire or terminated employees are handled through ATOM feed. Four feeds are available in the Oracle Human Capital Management cloud that will be used in this employee integration.

ATOM feed for Employee:

- empAssignment
- empUpdate

- newHire
- termination

For more information about Oracle Human Capital Management cloud, see:
https://docs.oracle.com/en/cloud/saas/human-resources/20a/farws/Employee_Atom_Feeds.html



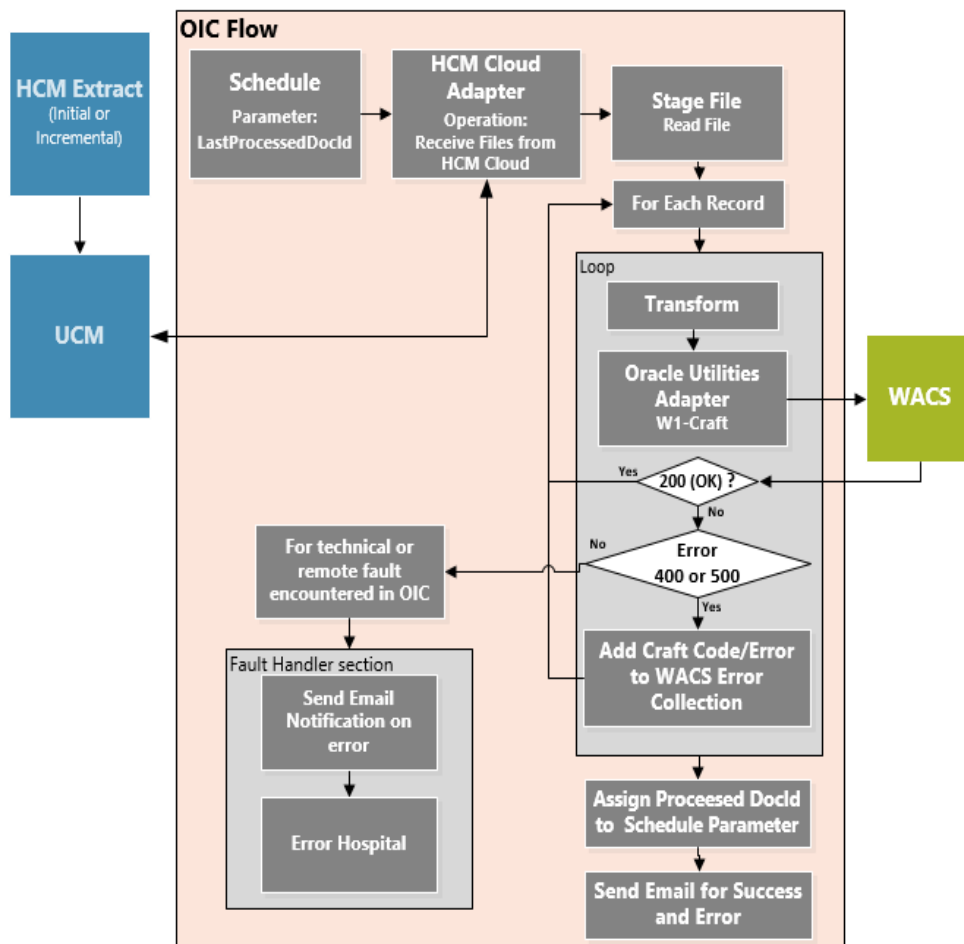
Jobs (Crafts) Integration

The objective of the Jobs interface is to synchronize the job records originating in Oracle Human Capital Management to Oracle Utilities Work and Asset Cloud Service as craft records.

In the initial bulk process, all active job records are extracted, and sent to the Oracle Utilities Work and Asset Cloud Service.

For incremental updates, as the job records are updated within Oracle Human Capital Management, the records are extracted and sent to the Oracle Utilities Work and Asset Cloud Service. These updates include changes to job information, changes to the job record status and newly activated jobs. The resulting craft records can then be referenced by the Employee Integration, and within the Oracle Utilities Work and Asset Cloud Service application referenced as a resource for Work Management.

The following diagram shows the end-to-end synchronization process:



Maintenance of Jobs

Oracle Human Capital Management is the master for Jobs information. Creation and updates to job information are done in this application.

Jobs Data Extract

The HCM Data Extract is used to extract the job information from Oracle Human Capital Management applications by generating a job data file created in XML format and stored in UCM. The extract can be scheduled to run as per the business requirements.

The same HCM Jobs Data Extract is used to synchronize both bulk and incremental sync.

The extract has the following criteria as configuration:

- Effective Date: Mandatory
JOB BIP report extracts data based on the effective date and should be decided before executing/scheduling the report.
- Job Set (Based on Legislative Unit: Can be global or specific to one legislative unit): Mandatory
- Legislative Group

- Changes Only
 - Choose “All Attributes” when running the initial load. For initial load, only jobs in ‘Active’ status are interfaced.
 - Choose “Changed and marked attributes” when running incremental load. For incremental load, both ‘Active’ and ‘Inactive’ jobs are interfaced.
- WACS JOB (Flexfield is set to YES): Report Parameter as filter

For information about how to create Job Set, Profile, EFF and sample Job Records, refer to the *Oracle Human Capital Management Cloud Configurations for Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Setup Guide* included in this release.

Jobs (Crafts) Synchronization

Oracle Integration Cloud gets the extract file from UCM server, transforms the data and invokes the Craft Synchronization REST service to synchronize the craft and craft rate information in Oracle Utilities Work and Asset Cloud Service.

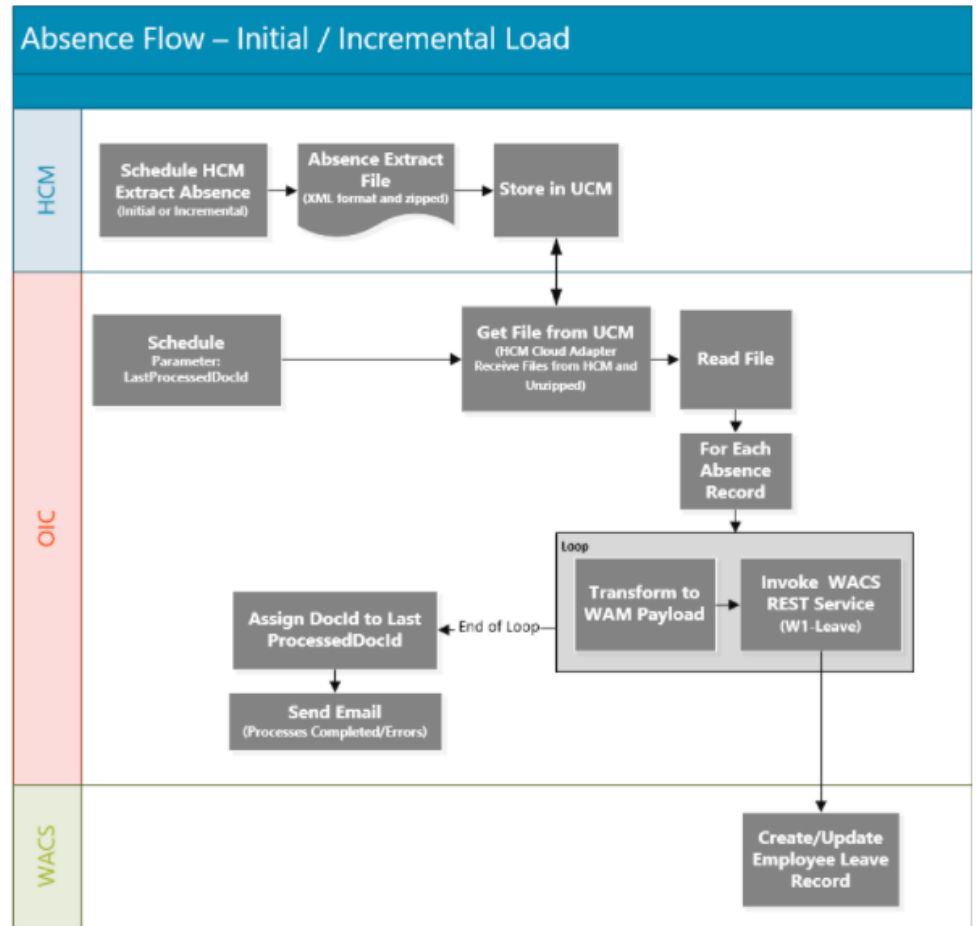
After all jobs records are processed, Document ID (docId) of the processed file is assigned to the flow’s schedule parameter LastProcessedDocId. This enables the integration process to use this value to get the next file when the integration process is executed again.

Employee Unavailability (Absence or Leave) Integration

The objective of the Employee Unavailability (Leave) interface is to integrate Absence records originating in Oracle Human Capital Management with Employee Unavailability within the Oracle Utilities Work and Asset Cloud Service. In the initial, bulk process, all approved Absence records are extracted, processed, and sent to the Oracle Utilities Work and Asset Cloud Service. For incremental updates, as the Absence records are updated within Oracle Human Capital Management, the record is extracted, processed, and sent to the Oracle Utilities Work and Asset Cloud Service. These updates include canceled requests. These Employee Unavailability records can then be used in the Planning process for Work Management.

The scope of the absence integration is bulk data (initial) and incrementally based on the following approach. Bulk data would be uploaded initially and thereafter only incremental (changes/new/updated) absence records would be interfaced to Oracle Utilities Work and Asset Cloud Service system.

The following diagram shows the end-to-end synchronization process:



Maintenance of Employee Absences

Oracle Human Capital Management is the master for Employee Absence information. Creation and updates to absences information are done in this application.

Absences Data Extract

HCM Data Extract is used to extract the employee absence information from the Oracle Human Capital Management applications by generating an absence data file created in XML format and stored in UCM. The extract can be scheduled to run as per the business requirements.

The extract has the following criteria used as configuration:

- Effective Date (Mandatory)
 - Absence report extracts the data based on effective date and should be decided before executing/scheduling the report.
- Legislative Entity Name (Mandatory)
 - Filter for Employee and Employee Unavailability extract is the same, based on Legal Entity, business Unit, or Cost Center.

- Changes Only
 - Choose “All Attributes” when running the initial load.
For initial load, only “Approved (Scheduled and In Progress)” absences are interfaced. This will include future applied leaves as well.
 - Choose “Changed and marked attributes” when running the incremental load.
For incremental load, “Approved (Scheduled, In Progress, Completed)” and “Cancelled (Awaiting withdrawal approval and Withdrawn)” absences are interfaced.

Employee Absence Synchronization

Oracle Integration Cloud gets extract file from UCM server, transforms the data and invokes the Leave Synchronization REST service to synchronize the employee absences (leave) information in Oracle Utilities Work and Asset Cloud Service.

After all the absence records are processed, the Document ID (docId) of the processed file is assigned to the flow’s schedule parameter LastProcessedDocId. This enables the integration process to use this value to get the next file when the integration process is executed again.

About Oracle Utilities Work and Asset Cloud Service

The most comprehensive, integrated, and scalable financial management solution available, Oracle Utilities Work and Asset Management offers extensive support for global companies in a wide variety of industries. Whether challenge is streamlining accounting and general ledgers, complying with new revenue recognition guidelines, automating expense processing, or reporting on new KPIs, Oracle Utilities Work and Asset Management module can handle these requirements.

Used by businesses of all sizes, Oracle Utilities Work and Asset Management offers comprehensive modern financial management applications and tools that easily integrate and scale as your business grows. Designed for collaboration and real-time access to the latest data, Oracle Utilities Work and Asset Management gives companies insights faster to help minimize costs and increase productivity.

An important benefit of Oracle Utilities Work and Asset Management is the delivery of a deep and versatile internal control system, highlighting critical information and messages for prioritization. Built on open standards, Oracle Utilities Work and Asset Management readily extends into legacy systems, third-party applications, and Oracle Cloud Marketplace partner offerings to deliver custom integrated solutions for business.

About Oracle Integration Cloud

Oracle Integration Cloud is a unified platform to integrate the applications, automate processes, and create applications.

Using the Process Builder the business processes can be rapidly designed, automated, and managed in the cloud. Using integrations connect the applications into a continuous business flow. The integrations can be quickly developed and activated between both the

applications that live in the cloud; and the applications still live on premises. The lookups help to match application specific codes between the two applications.

Integration Insights and Stream Analytics helps to simplify and extract business metrics and create custom dashboards.

Software Requirements

The following software is required for the integration to work:

- Oracle Utilities Work and Asset Cloud Service
- Oracle Integration Cloud
- Oracle Human Capital Management Cloud

For specific application versions, refer to the *Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Release Notes* included in this release.

Chapter 2

Solution Architecture

This chapter provides an overview of the application architecture used by the integration, including:

- [Solution Overview](#)
- [Business Flows](#)

Solution Overview

The technical aspects involved in the integration between Oracle Human Capital Management and Oracle Utilities Work and Asset Cloud Service for Employee, Job(Craft), and Employee Absence (Leave) are:

- The integration layer is made up of integration processes deployed on Oracle Integration Cloud.
- The integration processes interact with other applications using the following adapters:
 - Oracle Human Capital Management Cloud Adapter to receive files from Oracle Human Capital Management application. It gets the files created by the HCM Extract which is delivered to Oracle UCM for Bulk Employee, Job and Employee Absence Synchronizations.
 - The adapter also subscribes to Oracle Human Capital Management atom feeds to track changes made for Employee incremental updates.
 - REST adapter to interact with Oracle HCM REST APIs.
- Oracle Utilities Adapter to interact with WACS REST APIs.
- The integration pattern used for the solution is:
 - One-way asynchronous for all flows.

Refer to [Business Flows](#) for more information on each integration process.

Business Flows

The integration scope supports the following business processes:

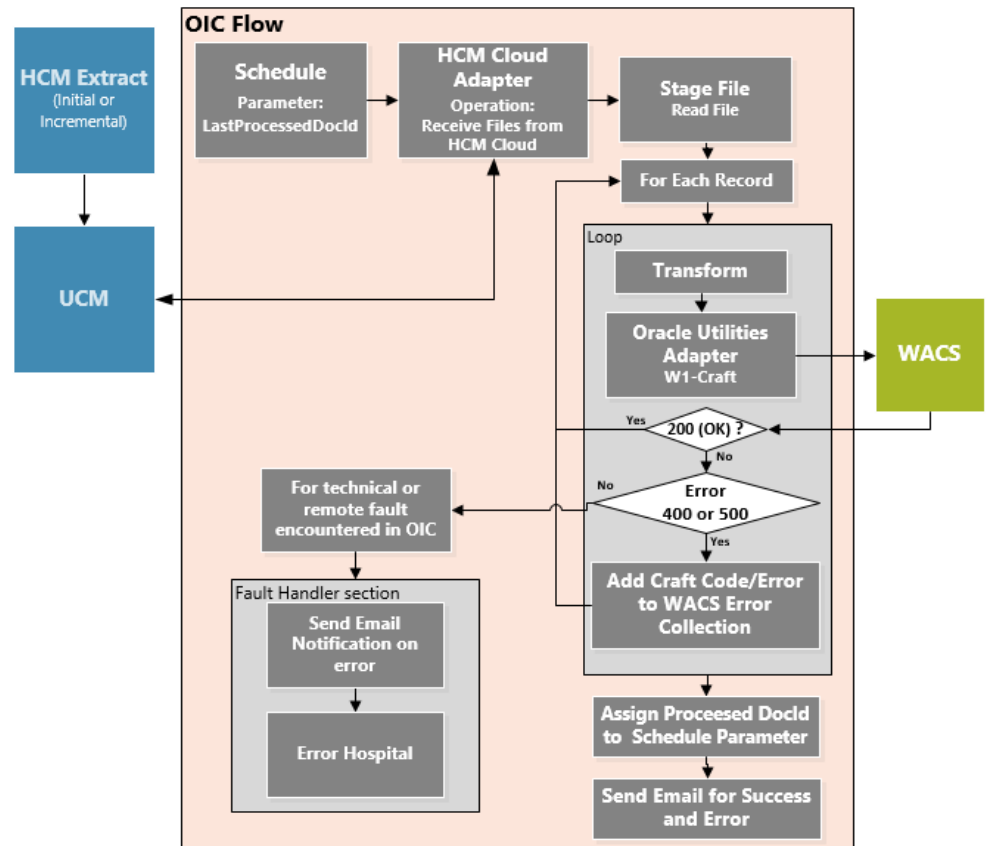
- [Jobs Synchronization Process \(Oracle Human Capital Management Cloud Initiated\)](#)
- [Employee Extract/Initial Sync Process \(Oracle Human Capital Management Cloud Initiated\)](#)
- [Employee Newhire Incremental Sync Process \(Oracle HCM Initiated\)](#)
- [Employee Update Incremental Sync Process \(Oracle Human Capital Management Initiated\)](#)
- [Employee Assignment Incremental Sync Process \(Oracle Human Capital Management Initiated\)](#)
- [Employee Termination Incremental Sync Process \(Oracle Human Capital Management Initiated\)](#)
- [Employee Absence Synchronization Process \(Oracle Human Capital Management Initiated\)](#)

Jobs Synchronization Process (Oracle Human Capital Management Cloud Initiated)

The integration process is used to synchronize jobs from Oracle Human Capital Management to Work and Oracle Utilities Work and Asset Cloud Service as craft information.

On initial load, only jobs in active status are sync from Oracle Human Capital Management Cloud to Oracle Utilities Work and Asset Cloud Service. For incremental sync, active and inactive jobs are sync over to Oracle Utilities Work and Asset Cloud Service.

The diagram shows a graphical representation of the Job Synchronization integration process.



Processing Details

This is a scheduled integration process deployed on Oracle Integration Cloud and does the following activities:

1. This process is triggered by a schedule and has one schedule parameter.

Parameter	Description	Initial Value
LastProcessedDocId	<p>This is the last processed Document ID.</p> <p>Once the job extract file is processed by the integration, the processed file's Doc ID is stored in the schedule parameter and is used as input by the data extract operation in the Oracle HCM Cloud Adapter to get the next file to process.</p> <p>By default, this parameter is updated by the Job Sync Integration Process.</p>	0

Define the integration schedule for this process and make sure it coordinates with the HCM Extract for Job schedule in Oracle Human Capital Management Cloud.

Note: Job HCM Extract should always run first in the Oracle Human Capital Management Cloud application before this integration process is ran so Job Extract file is available in Oracle Universal Content Management (Oracle UCM).

2. Invoke Oracle Human Capital Management Cloud Adapter to get the job extract file created in Oracle Human Capital ManagementCloud in Oracle UCM.
3. Read the File.
4. For each job record in the file, the process does the following:
 - Transform the Job information received from Oracle Human Capital Management Cloud to the Oracle Utilities Work and Asset Cloud Service format.

Note: For more information, refer to the *Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Data Mapping Guide* included in this release.

 - Invoke the W1-Craft WACS REST API.
 - If the WACS REST API returns:
 - Status 200 (OK), process the next job record in the file.
 - Error status 400 or 500, add the Job Code in error and the error details to the Oracle Utilities Work and Asset Cloud Service Error Collection. Then, it continues to process the next job record.
 - Error status NOT 400 or 500, stop the process and send out an error email notification from the global fault handler. These errors are considered technical or remote faults (Sample Error Status: 401, 404, 503, etc.)
 - Check if the error count in the Oracle Utilities Work and Asset Cloud Service Error Collection reached the value for property name

maxerrorcount.per.emailnotification defined in the configuration properties lookup.

- If yes, send an error email notification with the job records in error.

Note: This property maxerrorcount.per.emailnotification determines the number of errors to be sent out in an error email notification and how frequent an error email notification is sent out.

5. Assign the processed file's Document ID (docId) in the schedule parameter. This enables the integration process to use this value to get the next file when the integration process is ran again.
6. After all records in the file are processed, send a process completed email notification with the name of the file processed, record processed count and records in error count, if any.

Note: All email notification are optional. By default, this is enabled to true in the Configuration Properties file.

Technical Details

The following table describes the integration processes and the respective artifacts used in this integration process.

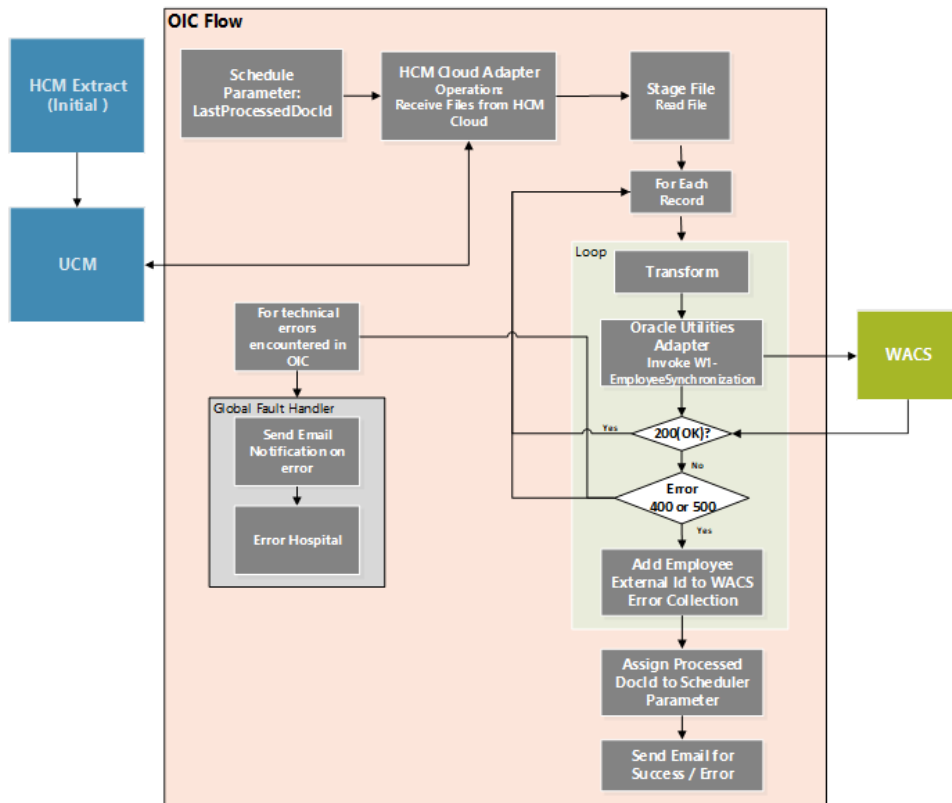
Artifacts	Value
Integration Process Name	Oracle Utilities HCM WACS Job Sync
Integration Package Name	outl.ba.hcm_wacs.1_22_2002
WACS REST APIs	W1-Craft Computed URL: https://{host}:{port}/{tenant}/{domain}/wac/rest/apis/asset/resources/crafts Method: PUT URI: /{externalSystem}/{externalId}
HCM Cloud Adapter	Action: Receive Files from HCM Cloud Operations: Integration Name for HCM Extract: HCMJOBWACS Unzip the extract: Yes

Employee Extract/Initial Sync Process (Oracle Human Capital Management Cloud Initiated)

This integration process is used to synchronize employees from Oracle Human Capital Management to Oracle Utilities Work and Asset Cloud Service for adding employee resources for Work Management.

As part of initial sync, only employees in active state are sync from Oracle Human Capital Management to Oracle Utilities Work and Asset Cloud Service.

The following diagram shows a graphical representation of the Employee Initial Sync integration process.



Processing Details

This is a scheduled integration process deployed on Oracle Integration Cloud and does the following activities:

1. This process is triggered by a schedule and has one schedule parameter.

Parameter	Description	Initial Value
LastProcessedDocId	This is the last processed Document ID. Once the extract is processed by the integration, the ID is stored in the schedule parameter and is required as input by the data extract operation in the Oracle HCM Cloud Adapter.	0

Define the integration schedule for this process and make sure it coordinates with the Oracle Human Capital Management Extract for Employee schedule in Oracle Human Capital Management Cloud.

Note: Employee Oracle Human Capital Management Extract should always run first in the Oracle Human Capital Management Cloud application before this integration process is ran so Employee Extract file is available in Oracle Universal Content Management (Oracle UCM).

2. Invoke Oracle Human Capital Management Cloud Adapter to get the employee extract file created in Oracle Human Capital Management Cloud in Oracle UCM.
3. Read the file.
4. For each employee record in the file, the process does the following:

- Transform the employee information received from Oracle Human Capital Management Cloud to the Oracle Utilities Work and Asset Cloud Service format.

For more information, refer to the *Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Data Mapping Guide* included in this release.

- Invoke the W1-EmployeeSynchronization WACS REST API.
 - If the REST API returns:
 - Status 200 (OK), process the next employee record in the file.
 - Error status 400 or 500, add the Employee Id in error and the error details to the Oracle Utilities Work and Asset Cloud Service Error Collection. Then, it continues to process the next employee record.
 - Error status NOT 400 or 500, stop the process and send out an error email notification from the global fault handler. These errors are considered technical or remote faults (Sample Error Status: 401, 404, 503, etc.)
 - Check if the error count in the Oracle Utilities Work and Asset Cloud Service Error Collection reached the value for property name `maxerrorcount.per.emailnotification` defined in the configuration properties lookup.
 - If yes, send an error email notification with the employee records in error.
5. Assign the processed Document ID in the schedule parameter. This enables the integration process to use this value to get the next file or doc ID the next time the processed is run.
 6. After all records in the file are processed, send a process completed email notification with the name of the file processed, record processed count and records in error count, if any.

Note: All email notification are optional. By default this is enabled to true in the Configuration Properties file.

Technical Details

The following table describes the integration processes and the respective artifacts used in this integration process.

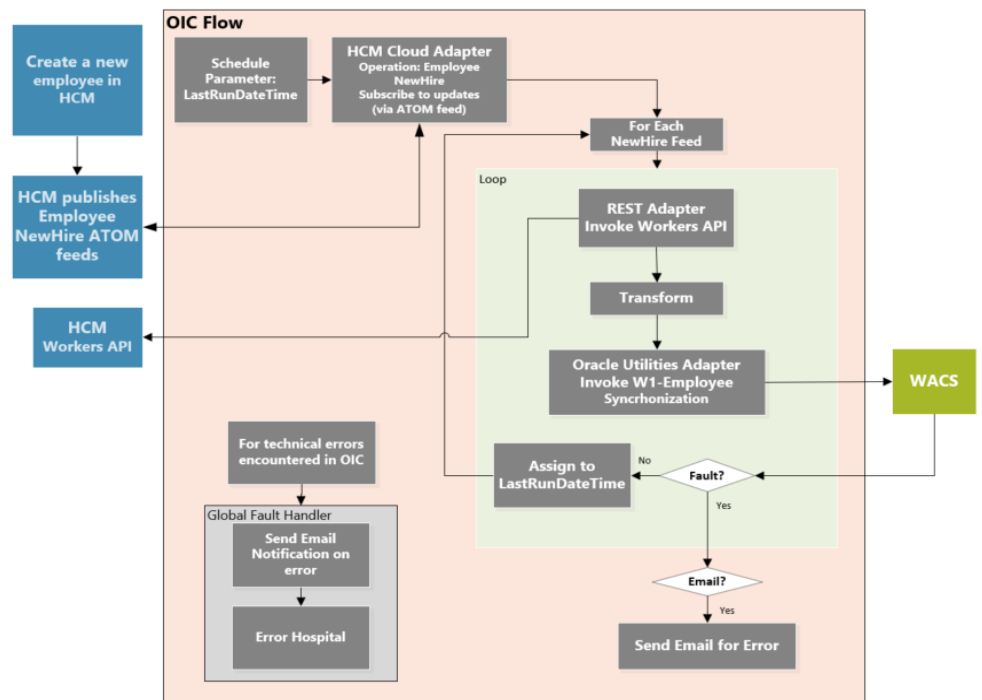
Artifacts	Value
Integration Process Name	Oracle Utilities HCM WACS Employee Initial Sync
Integration Package Name	outl.ba.hcm_wacs.1_22_2002

Artifacts	Value
WACS REST APIs	W1-EmployeeSynchronization Computed URL: https://{host}:{port}/{tenant}/{domain}/wac/rest/apis/ /asset/resources/employeeSynchronization Method: POST URI: /
HCM Cloud Adapter	Action: Receive Files from HCM Cloud Operations: Integration Name for HCM Extract: HCMEMPWACS Unzip the extract: Yes

Employee Newhire Incremental Sync Process (Oracle HCM Initiated)

This integration process is used to sync a new employee information from Oracle Human Capital Management to Oracle Utilities Work and Asset Cloud Service.

The diagram shows a graphical representation of the Employee Newhire Incremental Sync integration process.



Business Processing

This is a scheduled integration process deployed on Oracle Integration Cloud and does the following activities:

1. This process is triggered by a schedule and has one schedule parameter.

Parameter	Description	Initial Value
lastRunDateTime	This is the last run date time. Once the new hire atom feed response is processed by the integration, the updated date time is stored in the schedule parameter and is required as input by the Employee Newhire operation in the Oracle HCM Cloud Adapter.	Provide the date/time in the "New Value" column starting from when the incremental data should be sync. Sample DateTime format is "2000-01-01T01:01:01.000Z".

Define the integration schedule for this process.

2. Invoke Oracle Human Capital Management Cloud Adapter to get employee newhire feeds from Oracle Human Capital Management.
3. For each employee record in the newhire atom feed response, the process does the following:
 - Invoke HCM “retrieve Worker details” REST API to get employee names, primary phone, primary email and workRelationship information.
 - Transform the employee information received from Oracle Human Capital Management Cloud to the Oracle Utilities Work and Asset Cloud Service format.

For more information, refer to the *Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Data Mapping Guide* included in this release.

 - Invoke W1-EmployeeSynchronization WACS REST API.
 - If the API invocation is successful and Oracle Utilities Work and Asset Cloud Service returns the sync request ID, assign the updated datetime to lastRunDateTime scheduler parameter. This enables the integration process to get the next record in the Atom feed response based on the last run date time.
 - If Oracle Utilities Work and Asset Cloud Service returns a fault, send an optional email notification with the fault details and terminate the flow.
4. If there is any other error in the flow, a fault is thrown and an optional email notification is sent from global fault handler.

Note: All email notification are optional. By default, the "email.flag" property is enabled to true in the Configuration Properties lookup.

Technical Details

The following table describes the integration processes and the respective artifacts used in this integration process.

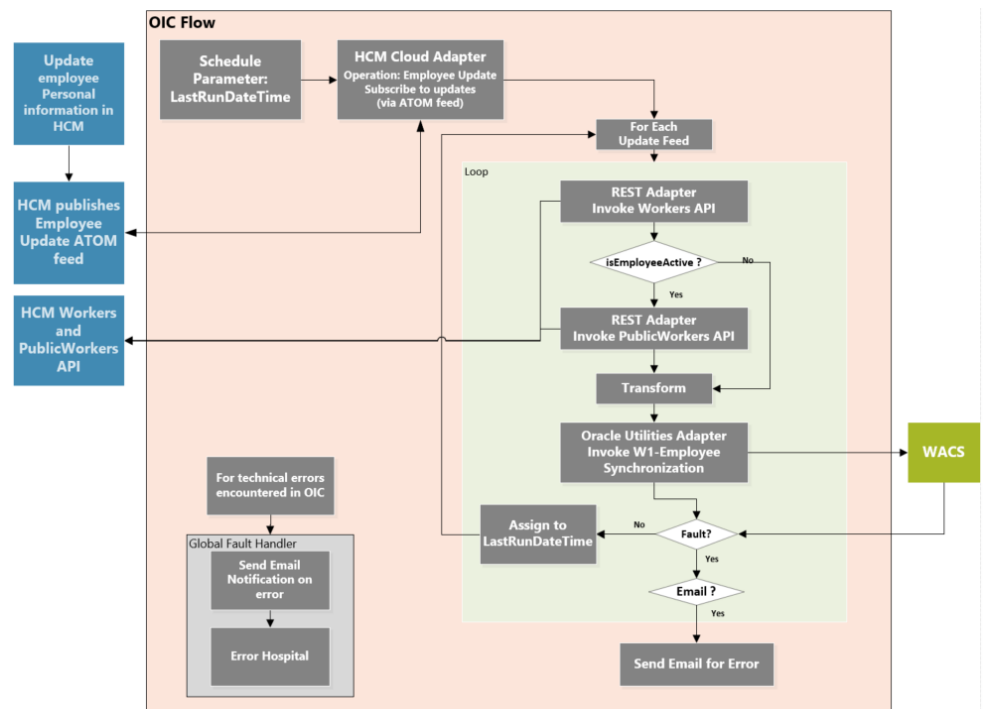
Artifacts	Value
Integration Process Name	Oracle Utilities HCM WACS Employee Newhire Sync
Integration Package Name	outl.ba.hcm_wacs.1_22_2002

Artifacts	Value
WACS REST API	W1-EmployeeSynchronization
HCM Cloud Adapter	Subscribed Feed: Employee New Hire Max entries to process: 25

Employee Update Incremental Sync Process (Oracle Human Capital Management Initiated)

This integration process is used to transfer an employee information from Oracle Human Capital Management to Oracle Utilities Work and Asset Cloud Service when the basic information is updated.

The diagram shows a graphical representation of the Employee Update Incremental Sync integration process.



Business Processing

This is a scheduled integration process deployed on Oracle Integration Cloud and does the following activities:

1. This process is triggered by a schedule and has one schedule parameter.

Parameter	Description	Initial Value
lastRunDateTime	This is the last run date time. Once the employee update atom feed response is processed by the integration, the updated date time is stored in the schedule parameter and is required as input by the Employee Update operation in the Oracle HCM Cloud Adapter.	Provide the date/time in the "New Value" column starting from when the incremental data should be sync. Sample DateTime format is "2000-01-01T01:01:01.000Z".

Define the integration schedule for this process.

2. Invoke Oracle Human Capital Management Adapter to get employee update feeds from Oracle Human Capital Management.
3. For each employee record in the employee update atom feed response, the process does the following:
 - Invoke HCM “retrieve Worker details” REST API to get the primary phone, the primary email, and assignment information. The integration will send the first valid employee’s phone to Oracle Utilities Work and Asset Cloud Service if the primary telephone has expired. The same rule applies when the primary email expires.
 - If employee is active, invoke HCM “get a Worker” REST API to get work address information.
 - Transform the employee information received from Oracle Human Capital Management Cloud to the Oracle Utilities Work and Asset Cloud Service format.

For more information, refer to the *Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Data Mapping Guide* included in this release.

 - Invoke W1-EmployeeSynchronization WACS REST API.
 - If the API invocation is successful and Oracle Utilities Work and Asset Cloud Service returns the sync request id, assign the updated datetime to lastRunDateTime scheduler parameter. This enables the integration process to get the next record in the Atom feed response based on the last run date time.
 - If Oracle Utilities Work and Asset Cloud Service returns a fault, send an optional email notification with the fault details and terminate the flow.
4. If there is any other error in the flow, a fault is thrown and an optional email notification is sent from global fault handler.

Note: All email notification are optional. By default, the “email.flag” property is enabled to true in the Configuration Properties lookup.

Technical Details

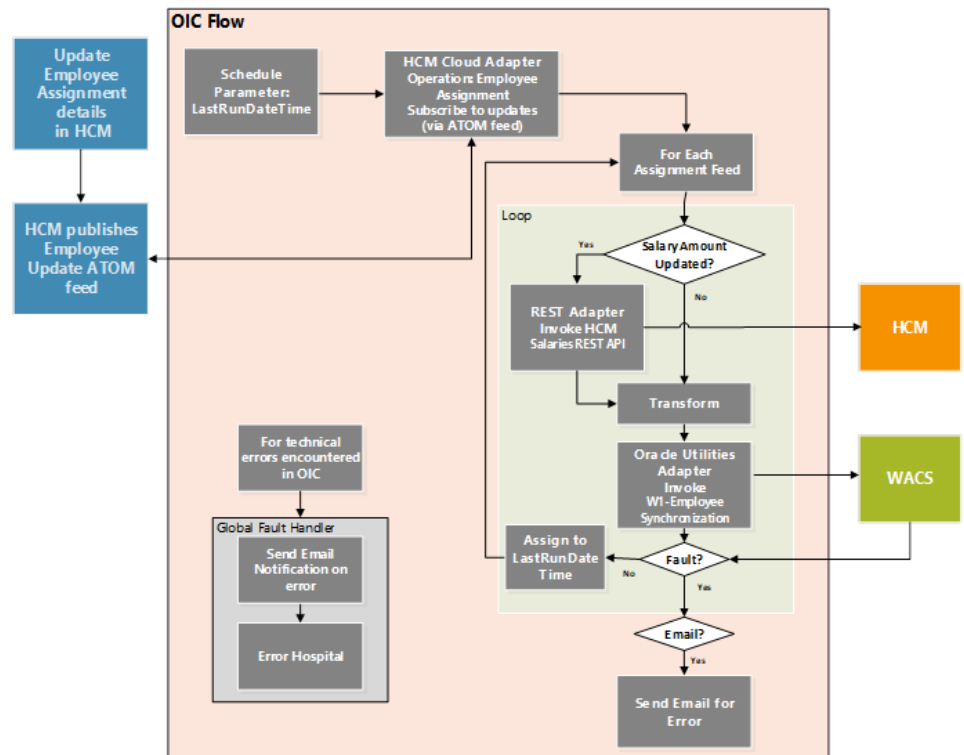
The following table describes the integration process and the respective artifacts used in this integration process.

Artifacts	Value
Integration Process Name	Oracle Utilities HCM WACS Employee Update Sync
Integration Package Name	outl.ba.hcm_wacs.1_22_2002
WACS REST API	W1-EmployeeSynchronization
HCM Cloud Adapter	Action: Subscribe to Updates (via ATOM feed) Operation: Employee Update Max entries to process: 25

Employee Assignment Incremental Sync Process (Oracle Human Capital Management Initiated)

This integration process is used to transfer an employee information from Oracle Human Capital Management to Oracle Utilities Work and Asset Cloud Service when the employee's assignment information is updated.

The diagram shows a graphical representation of the Employee Assignment Incremental Sync integration process.



Business Processing

This is a scheduled integration process deployed on Oracle Integration Cloud and does the following activities:

1. This process is triggered by a schedule and has one schedule parameter.

Parameter	Description	Initial Value
lastRunDateTime	This is the last run date time. Once the employee assignment atom feed response is processed by the integration, the updated date time is stored in the schedule parameter and is required as input by the Employee Assignment operation in the Oracle HCM Cloud Adapter.	Provide the date/time in the "New Value" column starting from when the incremental data should be sync. Sample DateTime format is "2000-01-01T01:01:01.000Z".

Define the integration schedule for this process.

2. Invoke Oracle Human Capital Management Adapter get employee assignment feeds from Oracle Human Capital Management.
3. For each employee record in the employee update atom feed response, the process does the following:

- If changed attribute matches SalaryBasisId, invoke HCM “get person salary information” REST API to get employee salary amount.
- Transform the employee information received from Oracle Human Capital Management Cloud to the Oracle Utilities Work and Asset Cloud Service format.

For more information, refer to the *Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Data Mapping Guide* included in this release.

- Invoke W1-EmployeeSynchronization WACS REST API.
 - If the API invocation is successful and Oracle Utilities Work and Asset Cloud Service returns the sync request ID, assign the updated datetime to lastRunDateTime scheduler parameter. This enables the integration process to get the next record in the Atom feed response based on the last run date time.
 - If Oracle Utilities Work and Asset Cloud Service returns a fault, send an optional email notification with the fault details and terminate the flow.
4. If there is any other error in the flow, a fault is thrown and an optional email notification is sent from global fault handler.

Note: All email notification are optional. By default, the "email.flag" property is enabled to true in the Configuration Properties lookup.

Technical Details

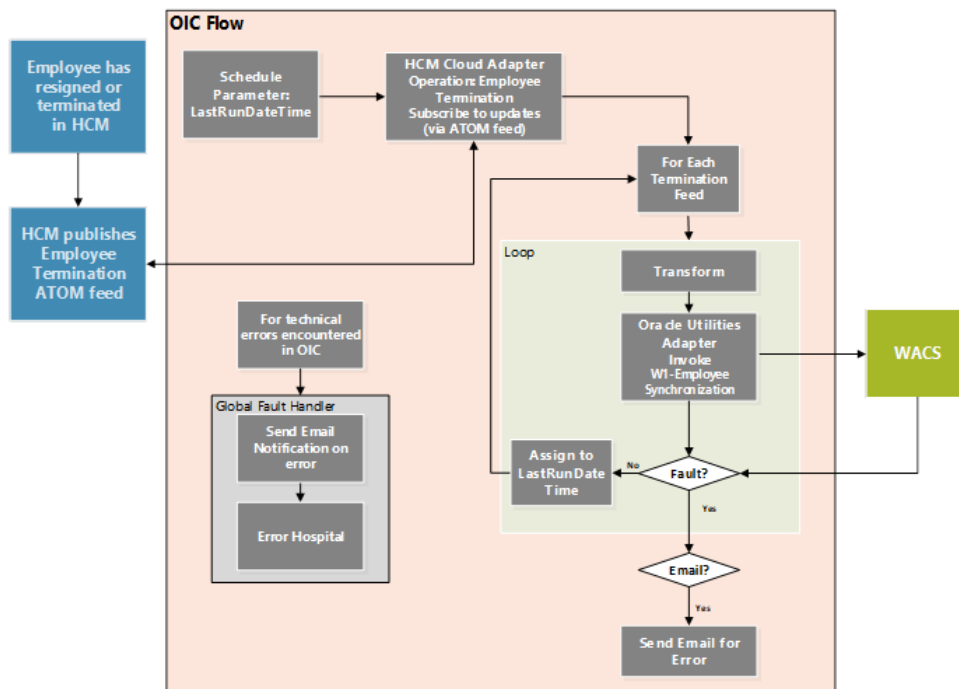
The following table describes the integration process and the respective artifacts used in this integration process.

Artifacts	Value
Integration Process Name	Oracle Utilities HCM WACS Employee Assignment Sync
Integration Package Name	outl.ba.hcm_wacs.1_22_2002
WACS REST API	W1-EmployeeSynchronization
HCM Cloud Adapter	Action: Subscribe to Updates (via ATOM feed) Operation: Employee Assignment Max entries to process: 25
HCM REST API	https://ERP_HOST/hcmRestApi/resources/11.13.18.05/salaries?finder=findByAssignmentIdAndDate;AssignmentId={AssignmentId}

Employee Termination Incremental Sync Process (Oracle Human Capital Management Initiated)

This integration process is used to transfer an employee information from Oracle Human Capital Management to Oracle Utilities Work and Asset Cloud Service when the employee has resigned or terminated, or termination is reverted to active.

The diagram shows a graphical representation of the Employee Termination Incremental Sync integration process.



Business Processing

This is a scheduled integration process deployed on Oracle Integration Cloud and does the following activities:

1. This process is triggered by a schedule and has one schedule parameter.

Parameter	Description	Initial Value
lastRunDateTime	This is the last run date time. Once the employee assignment atom feed response is processed by the integration, the updated date time is stored in the schedule parameter and is required as input by the Employee Assignment operation in the Oracle HCM Cloud Adapter.	Provide the date/time in the "New Value" column starting from when the incremental data should be sync. Sample DateTime format is "2000-01-01T01:01:01.000Z".

Define the integration schedule for this process.

2. Invoke Oracle Human Capital Management Adapter get employee assignment feeds from Oracle Human Capital Management.
3. For each employee record in the employee update atom feed response, the process does the following:

- Transform the employee information received from Oracle Human Capital Management Cloud to the Oracle Utilities Work and Asset Cloud Service format.

For more information, refer to the *Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Data Mapping Guide* included in this release.

- Invoke W1-EmployeeSynchronization WACS REST API.
 - If the API invocation is successful and Oracle Utilities Work and Asset Cloud Service returns the sync request ID, assign the updated datetime to lastRunDateTime scheduler parameter. This enables the integration process to get the next record in the Atom feed response based on the last run date time.
 - If Oracle Utilities Work and Asset Cloud Service returns a fault, send an optional email notification with the fault details and terminate the flow.
4. If there is any other error in the flow, a fault is thrown and an optional email notification is sent from global fault handler.

Note: All email notification are optional. By default, the "email.flag" property is enabled to true in the Configuration Properties lookup.

Technical Details

The following table describes the integration process and the respective artifacts used in this integration process.

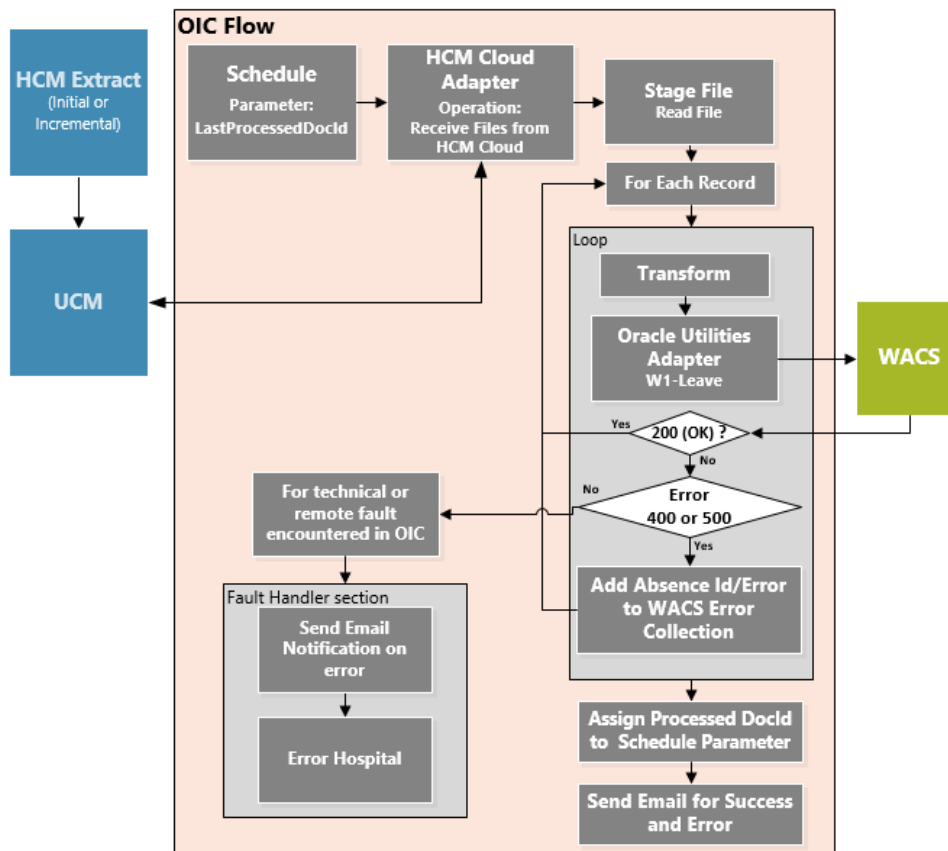
Artifacts	Value
Integration Process Name	Oracle Utilities HCM WACS Employee Terminate Sync
Integration Package Name	outl.ba.hcm_wacs.1_22_2002
WACS REST API	W1-EmployeeSynchronization
HCM Cloud Adapter	Action: Subscribe to Updates (via ATOM feed) Operation: Employee Termination Max entries to process: 25

Employee Absence Synchronization Process (Oracle Human Capital Management Initiated)

The integration process is used to synchronize approved or canceled employee absence information from Oracle Human Capital Management to Oracle Utilities Work and Asset Cloud Service as employee leave information.

On initial load, only absence information in approved status are sync from Oracle Human Capital Management Cloud to Oracle Utilities Work and Asset Cloud Service and for incremental sync absence information in approved and canceled statuses.

The diagram shows a graphical representation of the Employee Absence Synchronization integration process.



Business Processing

This is a scheduled integration process deployed on Oracle Integration Cloud and does the following activities:

1. This process is triggered by a schedule and has one schedule parameter.

Parameter	Description	Initial Value
LastProcessedDocId	This is the last processed Document ID. Once the extract is processed by the integration, the ID is stored in the schedule parameter and is required as input by the data extract operation in the Oracle HCM Cloud Adapter.	0

Define the integration schedule for this process and make sure it coordinates with the Oracle Human Capital Management Extract for Employee Absence schedule in Oracle Human Capital Management Cloud.

Note: Employee Absence Oracle Human Capital Management Extract should always run first before this integration process is ran so Employee Absence Extract file is available in Oracle Universal Content Management (Oracle UCM).

2. Invoke Oracle Human Capital Management Cloud Adapter to get the employee absence extract file in Oracle UCM.

3. Read the file.

4. For each employee absence record in the file, the process does the following:

Transform the employee absence information received from Oracle Human Capital Management Cloud to the Oracle Utilities Work and Asset Cloud Service format.

For more information, refer to the *Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service Data Mapping Guide* included in this release.

- Invoke the W1-Leave WACS REST API.
- If the REST API returns:
 - Status 200 (OK), process the next employee absence record in the file.
 - Error status 400 or 500, add the employee absence id in error and the error details to the Oracle Utilities Work and Asset Cloud Service Error Collection. Then, it continues to process the next employee absence record.
 - Error status NOT 400 or 500, stop the process and send out an error email notification from the global fault handler. These errors are considered technical or remote faults (Sample Error Status: 401, 404, 503, etc.)
- Check if the error count in the Oracle Utilities Work and Asset Cloud Service Error Collection reached the value for property name `maxerrorcount.per.emailnotification` defined in the configuration properties lookup.
 - If yes, send an error email notification with the employee absence records in error.

Note: This property `maxerrorcount.per.emailnotification` determines the number of errors to be sent out in an error email notification and how frequent an error email notification is sent out.

5. Assign the processed Document ID (`docId`) in the schedule parameter. This enables the integration process to use this value to get the next file or `docId` the next time the processed is ran.
6. After all records in the file are processed, send a process completed email notification with the name of the file processed, record processed count and records in error count, if any.

Note: All email notification are optional. By default, this is enabled to true in the Configuration Properties file.

Technical Details

The following table describes the integration processes and the respective artifacts used in this integration process.

Artifacts	Value
Integration Process Name	Oracle Utilities HCM WACS Absence Sync
Integration Package Name	outl.ba.hcm_wacs.1_22_2002
WACS REST API	W1-Leave Computed URL: https://{host}:{port}/{tenant}/{domain}/wac/rest/apis/ /asset/resources/leave Method: PUT URI: /externalId}
HCM Cloud Adapter	Action: Receive Files from HCM Cloud Operations: Integration Name for HCM Extract: HCMABSWACS Unzip the extract: Yes

Chapter 3

Configuring Oracle Utilities Work and Asset Cloud Service

This chapter provides details regarding the configuration settings needed in Oracle Utilities Work and Asset Cloud Service for this integration. It includes the following sections:

- [One-Time Configuration Setup](#)
- [Configuring Admin Data](#)
- [Managing Catalog Services](#)

One-Time Configuration Setup

Certain one-time configuration settings must be coordinated manually to ensure proper flow of data between the two applications.

Configuring Admin Data

To configure Oracle Utilities Work and Asset Cloud Service admin data setup for the integration:

1. Login to Oracle Utilities Work and Asset Cloud Service.
2. Navigate to **External System**.
Define the External System representing the Oracle Human Capital Management Cloud. This is used by Employee, Job, and Employee Absence Integrations.
3. Navigate to **Country**.
Define a Country code that will be used within the Employee address information.
4. Navigate to **Business Unit**.
Define Business Unit(s) used within the Employee integration.

5. Navigate to **Inbound Web Service (IWS)**.

The following REST IWS are delivered for this integration:

- W1-Craft
- W1-EmployeeSynchronization
- W1-Leave

The full URI Component for the REST web service is configurable.

Refer to Oracle Utilities Work and Asset Cloud Service documentation for instructions about the one-time setup.

6. Navigate to **Master Configuration > HCM Integration Master Configuration**.
This is used by Job(Craft) and Employee Absence(Leave) sync integrations.
 - a. In the **Main** section, define the Oracle Human Capital Management External System created in Step 2.
 - b. Defines a Key Reference Mapping keyed by Maintenance Object to find existing integration records. Create a row for the Resource Type Maintenance Object used for JobSync Integration and create another row for the Employee Unavailability Maintenance Object for Absence SyncIntegration.

For reference, refer to the following table.

Maintenance Object	Business Object	Ongoing Sync Key Reference View	Identifier Type
W1-EU (Employee Unavailability)	W1-LeaveInt (Leave)	W1_ON_EU_VW (Employee Unavailability View)	W1EI

Maintenance Object	Business Object	Ongoing Sync Key Reference View	Identifier Type
W1-RESRCTYPE (Resource Type)	W1-Craft (Craft)	W1_ON_CRAFT_VW (Ongoing Sync Key Craft View)	W1EI

c. In **Accounting Information**, define **Regular** and **Premium Expense Codes** to use as defaults within the Job Integration.

7. Navigate to **Master Configuration > Seeder Sync Request Master Configuration**. This is used by Employee sync integration.

- a. Create a row for the Oracle Human Capital Management External System and Employee Maintenance Object (MO): W1-EMP for Employee Sync Integration.
- b. Defines the Ongoing Sync Request BO that will process the integration record and the Ongoing Sync Key Reference View to find existing integration records.

For reference, refer to the table below:

Maintenance Object	Business Object	Ongoing Sync Key Reference View	Identifier Type
W1-EMP (Employee)	W1-OngoingSync RequestEmployee (Employee Ongoing Sync Request)	W1_ON_EMPLOYE_YEE_VW (Ongoing Sync Key Employee View)	W1EI

8. Navigate to **Master Configuration > Master Data Synchronization Master Configuration**.

- a. This Master Configuration is used to update External IDs with IDs used within Oracle Utilities Work and Asset Cloud Service. Create a row for the Employee FK Ref and Oracle Human Capital Management External System that references the Employee Ongoing Sync Key Reference View.

For reference, refer to the table below:

FK Reference	Ongoing Sync Key Reference View	External System	Identifier Type
W1-EMP (Employee)	W1_ON_EMPLOYE_EE_VW (Ongoing Sync Key Employee View)	HCM External System created in Step 2	W1EI

9. Navigate to **Business Object**.

SOA-based ERP integrations required positive/negative acknowledgment messages to be returned to the ERP system. These are not needed for the Oracle Application Cloud - HCM integrations.

On the Employee Ongoing Sync Request Business Object, inactivate the following lifecycle algorithms. To inactivate the algorithm, add an Option within the Status

with an Inactive Algorithm Option Type and the name of the algorithm within the **Value** field.

- a. Synchronized (SYNCHRONIZED) Status - Create Positive Acknowledgment for ERP (W1-CPOSAERP)
- b. Negative Acknowledgement Sent (NEG-ACK-SENT) Status - Create Negative Acknowledgement (W1-CRENEGACK)
- c. Navigate to **User**.

User records: Employee records will be matched against any existing Oracle Utilities Work and Asset Cloud Service User record. The User and Employee records must match on First Name, Last Name, and Email Address (if Email Address is sent with the employee record and exists on the User record).

Managing Catalog Services

The catalog service is used by Oracle Integration Cloud to communicate with the respective application. It is configured in Catalog URL in the Oracle Integration Cloud connection.

To configure the catalog service in Oracle Utilities Work and Asset Cloud Service:

1. Login to Oracle Utilities Work and Asset Cloud Service.
2. Navigate to the **Web Service Catalog** page either from the **Admin** menu or the **Search** menu.
3. Select **REST Web Service Class**.
4. Add the REST inbound web services mentioned below to the catalog.

Service Type	Service Name	Description
Inbound Web Service	W1-EmployeeSynchronization	Employee Synchronization
Inbound Web Service	W1-Craft	Craft
Inbound Web Service	W1-Leave	Employee Leave

For more information about configuration, refer to the Oracle Utilities Work and Asset Cloud Service documentation on Oracle Help Center at <https://docs.oracle.com/en/industries/energy-water/work-asset-cloud-service/index.html>.

Chapter 4

Configuring Oracle Human Capital Management Cloud

For Oracle Human Capital Management Cloud configuration details, refer to the *Oracle Human Capital Management Cloud Configurations for Oracle Human Capital Management Cloud Integration to Oracle Utilities Work and Asset Cloud Service 22B Setup Guide* included in this release.

The documentation is available at: <https://docs.oracle.com/en/industries/utilities/integrations-index.html>

Chapter 5

Importing, Configuring, and Testing Integration Connections

This chapter provides the configuration settings required for the integration, including:

- [Importing the Oracle Integration Cloud Package from Oracle Cloud Marketplace](#)
- [Verifying the Package Import](#)
- [Configuring Connections in Oracle Integration Cloud](#)
- [Setting up Certificates for Security](#)

Importing the Oracle Integration Cloud Package from Oracle Cloud Marketplace

All integration points are shipped as part of single package (.par) file.

To import a pre-built integration from Oracle Cloud Marketplace:

1. Launch the Oracle Cloud Marketplace portal.
https://cloudmarketplace.oracle.com/marketplace/en_US/homePage.jspx
2. Click **Applications**.
3. Search for “Oracle Utilities Work and Asset Cloud Service”.
4. Browse through the list of applications and select the pre-built integration package to import.
5. Click **GetApp**.
6. Review and accept “Oracle Standard Terms and Restrictions”.
7. Click **Next**. My Oracle Support portal opens.
8. Download the integration package from My Oracle Support.
9. When prompted, select the server where the pre-built integration file should be uploaded.

The pre-built integration is imported as a package file that is visible on the **Packages** page in Oracle Integration Cloud.

10. On the **Integrations** page, the individual integrations of the imported package file that are designated with a BUILT BY ORACLE message are displayed.

Important! This note is applicable only for existing customers. Make sure to take a backup of the existing package and lookups, and perform the cleanup before proceeding with the new package import. The cleanup includes deactivating the existing flows in this package and deleting the package, connections, lookups and libraries used in the integration.

To import a package in Oracle Integration Cloud:

1. Login to Oracle Integration Cloud.
2. Navigate to **Integrations > Designer > Packages**.
3. Click **Import**.
4. Select the .par file downloaded from Oracle Cloud Marketplace.
5. Verify if the package is imported is successfully.

Verifying the Package Import

To verify the package import was successful:

1. Verify if the following integrations are imported successfully.
 - Oracle Utilities HCM WACS Job Sync
 - Oracle Utilities HCM WACS Employee Initial Sync

- Oracle Utilities HCM WACS Employee Update Sync
 - Oracle Utilities HCM WACS Employee Terminate Sync
 - Oracle Utilities HCM WACS Employee Assignment Sync
 - Oracle Utilities HCM WACS Employee Newhire Sync
 - Oracle Utilities HCM WACS Absence Sync
2. Verify if the following connections are in place.
 - Oracle Utilities REST WACS for HCM-WACS
 - Oracle Utilities HCM for HCM-WACS
 - Oracle Utilities REST HCM for HCM-WACS
 3. Make sure that the following lookups are imported successfully.
 - OUTL-BRT-HCM_WACS_Email_ID
 - OUTL-BRT-HCM_WACS_PhoneType
 - OUTL-BRT-HCM_WACS_AbsenceType
 - OUTL-BRT-HCM_WACS_EmployeeType
 - OUTL-BRT-HCM_WACS_BusinessUnit
 - OUTL-BRT-HCM_WACS_EmployeeStatus
 - OUTL-BRT-HCM_WACS_AbsenceStatus
 - OUTL-BRT-HCM_WACS_JobStatus
 - OUTL-BRT-HCM_WACS_State
 - OUTL-BRT-HCM_WACS_ConfigProps
 - OUTL-BRT-HCM_WACS_Country

Configuring Connections in Oracle Integration Cloud

After the packages are imported and verified, the respective connections have to be configured.

This section describes the procedure to set up the following connections:

- [Configuring Oracle Utilities REST WACS for HCM-WACS_ERPWACS Connection](#)
- [Configuring Oracle Utilities HCM for HCM-WACS Connection](#)
- [Configuring Oracle Utilities REST HCM for HCM-WAC Connection](#)

Configuring Oracle Utilities REST WACS for HCM-WACS_ERPWACS Connection

This connection is used to communicate with Oracle Human Capital Management using the Oracle Utilities adapter.

Configure the Oracle Utilities REST WACS for HCM-WACS connection:

1. Specify the Oracle Utilities Work and Asset Cloud Service REST web catalog to the catalogURL section.

The REST Catalog URL follows this format: `https://{host}:{port}/{tenant}/{domain}/{appName}/rest/openapi/iws/catalog`

2. In the **Security policy** section, select **Basic Authentication**.
3. Provide **Username** and **Password** to connect to Oracle Utilities Work and Asset Cloud Service.
4. From the **Security Policy** drop-down list, select **Basic Authentication**.
5. Click **Test** at the upper-right corner.
6. After the connection is tested successfully, click **Save**.

Configuring Oracle Utilities HCM for HCM-WACS Connection

This connection is used to communicate with Oracle Human Capital Management Cloud applications using the Oracle Human Capital Management Cloud Adapter.

To configure the Oracle Human Capital Management for HCM-WACS connection:

1. Enter the HCM Cloud Host.

Provide the hostname that appear in the Oracle Human Capital Management Cloud home page URL.

2. In the **Security Policy** section, select **Username Password Token**.
3. Enter the **Username** and **Password** to connect to Oracle Human Capital Management Cloud.
4. Click **Test**.
5. After the connection is tested successfully, click **Save**.

Configuring Oracle Utilities REST HCM for HCM-WAC Connection

This connection is used to communicate with Oracle HCM Cloud REST API using the REST adapter.

To configure the Oracle Utilities REST HCM for HCM-WACS connection:

1. In the **Connection Properties** section define the following:
 - a. From the **Connection Type** drop-down list, select **REST API Base URL**.
 - b. Enter the Oracle HCM Cloud REST API Base URL in the **Connection URL**.

Note: Typically, this is the HCM REST API Base URL.

Example: `https://{HCM_HOST}:{HCM_PORT}/hcmRestApi/resources/11.13.18.05`

2. In the **Security** section, define the following:
 - a. From the **Security Policy** drop-down list, select **Basic Authentication**.
 - b. Enter the user name and password.
3. Click **Test** at the upper-right corner.
4. After the connection is tested successfully, click **Save**.

Setting up Certificates for Security

Important! Skip this section if there are valid CA certificates for the integration.

If there no valid certificates for this integration, download the Oracle Utilities Work and Asset Cloud Service certificates and upload them to Oracle Integration Cloud to handshake with Oracle Utilities Work and Asset Cloud Service.

To download the Oracle Utilities Work and Asset Cloud Service certificate:

1. Login to Oracle Utilities Work and Asset Cloud Service.
2. Click the URL on the top-left corner.
3. On the **Security** tab, click **View Certificate**.
4. On the **Details** tab, click **Export**.
5. Save the certificate.

To upload the certificate to Oracle Integration Cloud:

1. Login to Oracle Integration Cloud with Admin credentials.
2. Navigate to **Settings > Certificates**.
3. On the **Certificate** window, click **Upload**.
4. Select **Certificate Type** as **Trust Certificate**.
5. Provide the **Certificate Alias Name**.
6. Select the certificate to upload.
7. Click **Upload**.

Chapter 6

Configuring Lookups, Error Handling, and Email Notifications

This chapter describes the lookup configuration, error handling for faults encountered and email notifications in this integration. It includes the following sections:

- [Configuring Lookups](#)
- [Configuration Properties](#)
- [Error Handling](#)
- [Email Notifications](#)

Configuring Lookups

The following table lists the lookups that are part of this integration.

DVM Name	Description
OUTL-BRT-HCM_WACS_ConfigProps	Maps PropertyName column to the respective Value Column. Do not change the value in PropertyName column.
OUTL-BRT-HCM_WACS_Email_ID	Maps from and to recipient values to the mentioned email IDs. User can configure multiple emails by putting comma to separate the email IDs.
OUTL-BRT-HCM_WACS_AbsenceStatus	Map ERP Absence Status to WACS Leave Status. Sample Values: WACS - APPROVED or CANCELED HCM - SUBMITTED or ORA_WITHDRAWN Used in Chart of Accounts Synchronization Process
OUTL-BRT-HCM_WACS_JobStatus	Map HCM Job Status to WACS Craft Status. Sample Values: WACS - ACTIVE or INACTIVE HCM - A or I
OUTL-BRT-HCM_WACS_PhoneType	Map HCM phone type to WACS employee phone type. Sample values: HCM - W1M WACS - W1PR
OUTL-BRT-HCM_WACS_AbsenceType	Map HCM employee absence type to WACS employee leave type. Sample values: HCM - VACATION WACS - Vacation
OUTL-BRT-HCM_WACS_EmployeeType	Map HCM employee type to WACS employee type. Sample values: HCM - Emp WACS - Regular
OUTL-BRT-HCM_WACS_BusinessUnit	Map HCM legal entity to WACS business unit. Sample values: HCM - US1 WACS - US1
OUTL-BRT-HCM_WACS_EmployeeStatus	Map HCM employee status to WACS employee status. Sample values: HCM - ACTIVE WACS - Active

DVM Name	Description
OUTL-BRT-HCM_WACS_State	Map HCM state/province to WACS state/province. Sample values: HCM - CA WACS - CA
OUTL-BRT-HCM_WACS_Country	Map HCM country to WACS country. Sample values: HCM - US WACS - US

Editing Lookups

To edit a lookup:

1. Login to Oracle Integration for Cloud.
2. Navigate to **Integrations > Designer > Lookups**.
3. Select the look up to edit.
4. Make the necessary changes.
5. Click **Save** and **Close**.

Configuration Properties

The OUTL-BRT-HCM_WACS_ConfigProps lookup contains the properties that can be configured and defaulted in the integration.

Property Name	Sample Value	Description
email.flag	true	If this value is set to true, email notification will be sent out. Valid values: true/false. Default to true.
wacs.externalsystem	HCM	External System defined in WACS for Oracle HCM Cloud Application
maxerrorcount.per.emailnotification	100	This value controls the number of errors to be sent out in an error email notification. When the error count reaches this value, an error email notification is sent out. It will keep sending an email notification for every interval of the maximum error count. Example: There are 150 records to be processed and this property is set to 50. When the process reached it's 50th error record then an email notification listing the 50 error records is sent. For every 50 error records an email notification is sent out.

Property Name	Sample Value	Description
wacs.inc.newempstatus	ACTIVE	Defines newly hired employee status. It should be the same value defined in OUTL-BRT-HCM_WACS_EmployeeStatus lookup /wacs column.
wacs.inc.empphonetype	W1PR	Defines the employee primary phone type in WAM for Newhire incremental sync.
hcm.inc.salaryannualrate	2080	Defines employee salary annual rate during employee assignment incremental sync. This should be the same value defined as profile value when submitting employee bulk data extract.
wacs.inc.termempstatus	INACTIVE	Defines terminated employee status which is INACTIVE; this should be the same value defined in OUTL-BRT-HCM_WACS_EmployeeStatus lookup / wacs column.
wacs.offset	-08:00	Defines the WACS offset.
hcm.offset	+00:00	Defines the HCM offset.

Error Handling

This section provides information about the different ways used to handle errors in the integration and also resubmitting the instances after rectifying the errors.

- [Error Handling Ways](#)
- [Resubmitting the Error Instances in Oracle Integration Cloud](#)

Error Handling Ways

In this integration, all integration flows are asynchronous. This section describes error handling for asynchronous flows.

- [Asynchronous Flow Error Handling](#)
- [Summary of Integration Error Handling](#)

Asynchronous Flow Error Handling

Technical Fault

This fault occurs when there is a data mismatch or any Xpath related error. When this error occurs, the flow immediately goes to global fault handler and an optional email to the respective user is sent.

Remote Fault

This fault occurs when the target system is down or not accessible. When this error occurs, the flow immediately goes to global fault handler and an optional email is sent to the respective user.

Business Fault

These faults are application-specific faults that occur when there is a problem with the information being processed in the target application due to invalid data or business error validations.

For processing records in a file

When Oracle Utilities Work and Asset Cloud Service returns HTTP status codes 400 or 500, these are considered business faults by the integration. When these errors occur, the flow will not stop but continue to process the next record and the errors will be stored in a temporary error collection. When the file is done processing an optional email is sent with the list of errors to the respective user.

Summary of Integration Error Handling**Integration Process: Job Synchronization (Craft Sync)**

Type of error	Action	Notification Type	Retry
Technical or Remote Fault	Process Stop	Email	Resubmit Error Instance From OIC
Business Fault (WACS returns Status Not 400 or 500)	Process Stop	Email	Resubmit Error Instance From OIC
Business Fault (WACS returns Status 400 or 500)	Continue Process	Collect errors and send errors in Email	Data Fix in Integration - Reprocess Job file Data Fix in WACS - Reprocess Job file

Integration Process: Absence Synchronization (Leave Sync)

Type of error	Action	Notification Type	Retry
Technical or Remote Fault	Process Stop	Email	Resubmit Error Instance From OIC
Business Fault (WACS returns Status Not 400 or 500)	Process Stop	Email	Resubmit Error Instance From OIC

Type of error	Action	Notification Type	Retry
Business Fault (WACS returns Status 400 or 500)	Continue Process	Collect errors and send errors in Email	Data Fix in Integration - Reprocess Absence file Data Fix in WACS - Reprocess Absence file

Resubmitting the Error Instances in Oracle Integration Cloud

In this integration, all processes are asynchronous flows so the resubmit option is available in Oracle Integration Cloud if the process ends in a fault.

To resubmit the error instances in Oracle Integration Cloud:

1. Login to Oracle Integration Cloud.
2. Navigate **Integrations > Monitoring > Errors**.
3. Select the integration to resubmit.
4. Click the **Resubmit** icon.

Reprocess File

To reprocess the Job or Absence file:

1. Login to Oracle Integration Cloud.
2. Navigate to **Integrations > Integrations**.
 - For Job Sync: Navigate to **Oracle Utilities HCM WACS Job Sync** integration and click **Run**.
 - For Employee Initial Sync: Navigate to **Oracle Utilities HCM WACS Employee Initial Sync** integration and click **Run**.
 - For Absence Sync: Navigate to **Oracle Utilities HCM WACS Absence Sync** integration and click **Run**.
3. Click **Submit Now** to display the Schedule Parameters.
4. Enter the **LastProcessedDocId** of the previous file processed.

Note: The Doc ID of the file process from the process completed email or from the instance you want to rerun is displayed. If it is the only file in Oracle UCM, put 0.
5. Click **Submit**.

Email Notifications

This pre-built integration includes a configurable email notification.

To receive an email notification:

1. Login to Oracle Integration Cloud.
2. Navigate to **Integrations > Designer > Lookups**.
3. Edit the **OUTL-BRT-HCM_WACS_Email_ID** look up.
 - a. In the **from** field, enter the email ID to receive an email from.
 - b. In the **to** field, enter the email ID to send the email to.
 - c. In the **Email_Id** field, provide the comma separated email IDs.

Note: In the OUTL-BRT-HCM_WACS_Email_ID lookup, do not edit the values provided under the **Recipient** column.

Chapter 7

Activating and Testing the Integration Flows

This section provides an overview of how integration flows are activated and tested. It includes the following sections:

- [Prerequisites](#)
- [Activating Integration Flows](#)

Prerequisites

The prerequisites are:

- All lookups/DVMs are setup in the Oracle Integration Cloud.
- Oracle Utilities Work and Asset Cloud Service REST web catalog is published under OpenAPI 3.0 standard.

Activating Integration Flows

To activate the integration flows:

1. Navigate to the integration to activate.
2. Drag the slider for that integration. When prompted to enable tracing, click **Yes** to view the instances.
3. Click **Activate**.

The integration takes time to get activated. The activated integration appears at the top of the integrations list.

Chapter 8

Monitoring and Troubleshooting

This section provides information about monitoring and troubleshooting the integration. It includes the following:

- [Oracle Utilities Work and Asset Cloud Service](#)
- [Oracle Integration Cloud](#)

Oracle Utilities Work and Asset Cloud Service

For more information about errors and notifications, refer to the Oracle Utilities Work and Asset Cloud Service documentation.

Oracle Integration Cloud

This section focuses on the monitoring Oracle Integration Cloud and troubleshooting any issues that occur during the integration activation.

Monitoring Integration Flows

Integration flows are monitored using the following:

- Dashboard
- Cloud Logs

To monitor the integration flows from the Oracle Integration Cloud dashboard:

1. Login to Oracle Integration Cloud.
2. On the **Home** page, click **Monitoring**.
3. Select any of the following as required:
 - **Dashboards** - To monitor the complete dashboard of integration.
 - **Integrations** - To monitor each integration.
 - **Tracking** - To monitor instance and flow trace/activity stream of the integration.
 - **Error** - To monitor the integrations in 'error' state. Re-submit the asynchronous integration flows.

To monitor the integration flows using Oracle Integration Cloud logs:

1. Login to Oracle Integration Cloud.
2. On the **Home** page, click **Monitoring**.
3. On the navigation pane, click **Dashboards** to view the overall success/failure rate of the integration.
4. Navigate to the **Logs** menu.
5. In the right pane, click the link to show options for downloading the Oracle Integration Cloud logs or diagnostics logs.
6. In case of any issues, attach the diagnostic logs to a service request for help.

Troubleshooting

If an activation fails, the **Integrations** page displays an error message.

To troubleshoot the activation error:

1. Click **Download Diagnostic Logs** to download the logs for diagnosing the issue.
2. Select **Enable Tracing**.

TRACE ENABLED is displayed next to ACTIVE.

Some of the sample cases are as follows:

- For any connectivity errors while activating the integration, make sure the trigger connection is successful. Test the connection and refresh the metadata, and then activate the integration.