Oracle Utilities Cloud Services

Development Operations Guide

For 20B Releases

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Oracle Utilities Customer Cloud Services 20B Development Operations Guide

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Cloud Operations Service Requests

This document provides details regarding service requests (SR) provided by the Oracle Utilities Cloud Operations team for customers during implementation and operation of the following Oracle Utilities Cloud Services:

- Oracle Utilities Billing Cloud Service

- Oracle Utilities Customer Cloud Service

- Oracle Utilities Meter Solution Cloud Service

- Oracle Utilities Rate Cloud Service

- Oracle Utilities Work and Asset Cloud Service

- Oracle Utilities Operational Device Cloud Service

The service requests described in this document include:

- Backup and Restore Policy Overview

- Requesting a Full Ad-Hoc Backup

- Restoring from a Full Ad-Hoc Backup

- Requesting a Database Restore Point

- Rolling Back Environment to Restore Point

- Request for DNS Address List

- Request to Execute Data Correction Scripts

- Request for Temporary Additional Threads

- Request to Export Cloud Environment Schema for On-Premises Use

- Refreshing Data (Cloning)

Service request descriptions in this document include the following information:

- A brief description of the service to be performed

- **Service Level Objective** (SLO):

    - **Advanced Notice**: The amount of advanced notice (in days) the Cloud Operations team needs to perform the service request, starting from the first full business day after the service request was created.

      A future dated request for performing any of the above mentioned activities on end of business day, Friday will be executed in the next week on the first

working day. For example, if the service request states to take a back up on January 7th 20210after 6PM PST, it will be executed in the week of January 11th 2021 on the first working day, during agreed maintenance hours.

Service requests will not be executed on weekend days since weekends are reserved for scheduled planned maintenance activities like upgrades.

- **Acknowledge/Schedule**: The amount of time the Cloud Operations team would take to acknowledge and schedule the request.
- **Execution Time**: The amount of time (in days) it will take to perform the service request

Note: Times provided in this document are based on the data center where the cloud service is deployed. For example, a reference to "8:00 AM" means 8:00 AM in the time zone of the data center, not necessarily the time zone of the customer.

Backup and Restore Policy Overview

Introduction

Oracle Cloud Infrastructure (OCI) team is responsible for configuring and managing the backup and restore for all Oracle Databases. The OCI team has adopted by default the regime known as the Oracle Suggested Backup Strategy.

Scheduling

The backups for the Oracle-Recommended Backup Strategy are scheduled to run by default as follows:

- Weekly **full database** backup on Sunday at 2AM
- Daily **incremental backups** on every other day at 2AM.
- Daily **archive log backups** are taken three times per day at 6AM, 2PM, and 10PM

Note: These time are based on the Local Data Center Time.

Encryption

All backups are encrypted at two levels:

- OCI Storage
- RMAN (Oracle Recovery Manager)

Monitoring and Alerting

Monitoring of the backup activity is done through Oracle Enterprise Manager. Alerts are sent to the Oracle Cloud Infrastructure database administration team if backup jobs fail so that remedial action can be taken.

Backup Retention

The retention period for backups defaults to **60 days**.

Requesting a Full Ad-Hoc Backup

As specified in Backup and Restore Policy Overview section, weekly full backups are taken on every Sunday at 2 AM data center time. The customer or system integrator can request an ad-hoc full backup if they want to keep a copy of the database at a particular state so they can later restore the database back to that copy.

Request Specifications

- The request backs up the database, not object storage files or application code.

Customer Obligations

- The customer needs to utilize the backup within 60 days from the date the backup has been taken or the backup will be lost.

- When creating the service request, the customer needs to specify the source environment, the target environment, and the date and time (specifying the time zone) when back up is needed.

- The customer should note the version of code in the backup, as it will only be able to be restored to a target environment on the same code version.

Oracle Cloud Operations Team Obligations

- Acknowledge and schedule the execution of the service request

- Coordinate with Infrastructure teams (if needed) for completion of the service request

- Communicate the status upon completion of the service request

Service Level Objective

- **Advanced Notice**: 3 business days

- **Acknowledge/Schedule**: 2 business days

- **Execution Time**: 1 business day

Restoring from a Full Ad-Hoc Backup

The customer or system integrator will request the rollback to a previously requested full backup by opening a Service Request with Oracle Support.

Request Specifications

- The backup being requested to be restored, must be of same environment.

- The backup must be from the same version of code as the target environment to be used for a restore.

- The restore request can also be from a scheduled weekly full or daily incremental backups.

- The restore impacts the database, not object storage files or application code.

- The production environment may not be restored to a backup unless the environment is not yet used for production purposes.

Customer Obligations

- The customer needs to utilize the backup within 60 days or else the backup will be lost.

- When creating the service request, the customer needs to specify details related to the source environment, the source environment backup date, the target environment, and the date and time (including time zone) the restoration has to be performed.

- The customer should note the version of code in the backup, as it will only be able to be restored to a target environment on the same code line.

Oracle Cloud Operations Team Obligations

- Acknowledge and schedule the execution of the service request

- Coordinate with Infrastructure teams (if needed) for completion of the service request

- Communicate the status upon completion of the service request

Service Level Objective

- **Advanced Notice**: 3 business days

- **Acknowledge/Schedule**: 2 business days

- **Execution Time**: 1 business day

Requesting a Database Restore Point

A Restore Point is a snapshot of data that is saved at a specific point in time. The customer or system integrator will request a Restore Point by opening a Service Request with Oracle Support.

Request Specifications

- The restore point impacts the database, not object storage files or application code.

- The restore point may not be restored to a backup unless the environment is not yet used for production purposes.

Customer Obligations

- The customer needs to utilize the restore within **3 calendar days** or else the restore will be lost.

- When creating the service request, the customer needs to specify details related to the source environment, the source environment backup date, the target environment, and the date and time (including time zone) the restoration has to be performed.

- The customer should note the version of code in the backup, as it will only be able to be restored to a target environment on the same code line.

Oracle Cloud Operations Team Obligations

- Acknowledge and schedule the execution of the service request

- Coordinate with Infrastructure teams (if needed) for completion of the service request
- Communicate the status upon completion of the service request

Service Level Objective

- **Advanced Notice**: 1 business day
- **Acknowledge/Schedule**: 2 business days
- **Execution Time**: 1 business day

Rolling Back Environment to Restore Point

The customer or system integrator will request the rollback to a previously saved Restore Point by opening a Service Request with Oracle Support.

Request Specifications

- The restore point must be of the same environment to be used for a restore.
- The restore point impacts the database, not object storage files or application code.
- The restore point must be the same version of code as the target environment.
- The restore point may not be restored to a backup unless environment is not yet used for production purposes.

Customer Obligations

- The customer needs to utilize the restore within 3 days since when the restore point was taken or else the restore will be lost.
- When creating the service request, the customer needs to specify details related to the source environment, the source environment backup date, the target environment, and the date and time (including time zone) the restoration has to be performed.
- The customer should note the version of code in the backup, as it will only be able to be restored to a target environment on the same code line.

Oracle Cloud Operations Team Obligations

- Acknowledge and schedule the execution of the service request
- Coordinate with Infrastructure teams (if needed) for completion of the service request
- Communicate the status upon completion of the service request

Service Level Objective

- **Advanced Notice**: Within 2 calendar days from the time the restore point was created
- **Acknowledge/Schedule**: 1 business day

- **Execution Time**: 1 business day

Request for DNS Address List

The customer or system integrator can request a DNS (Domain name service) name to be added in the allow list for outbound interface communication. An allow list provides access to specified DNS addresses that the Oracle network would otherwise prevent access to. For Oracle Utilities cloud services, a customer or system integrator must request a DNS to be added to allow list for outbound communication to all external systems. This section describes the process to for customers or system integrators to request a DNS allow list.

Request Specification:

- A single request to allow a named DNS or a list of named DNS will ensure allowing the same DNS in all customer environments. Customer need not to request per environment (Dev, Test, Prod).

Customer Obligations

- The customer must provide the named DNS OR URL along with the justification for its allowance.

- The SSL port 443 must be used.

- The hosts must have a valid TLS certificate signed by a trusted public certificate authority (Digicert,Symantec/VeriSign, Comodo, etc.)

Oracle Cloud Operations Team Obligations

- Acknowledge and schedule the execution of the service request

- Coordinate with Infrastructure teams (if needed) for completion of the service request

- Communicate the status upon completion of the service request

Service Level Objective

- **Advanced Notice**: 7 business days

- **Acknowledge/Schedule**: 2 business days

- **Execution Time**: 2 business days

Request to Execute Data Correction Scripts

The customer or system integrator can request execution of data correction scripts.

Note: In most cases, the customer or system integrator should be able to do this by creating a Plug-In Driven batch control. If a situation should occur where this cannot be done please follow this procedure.

Request Specification:

- The customer must ensure there are no commits in the scripts and provide the count of the records that are going to be updated by the given script. The Cloud Operations team will commit upon successful execution of the script.

- The customer must specify the schema name where the script to be executed. ex: CISADM, STGADM and SCHADM

- The execution of data correction scripts may or may not require a maintenance window depending on the nature of the scripts being executed

Customer Obligations

- The customer must provide a justification for executing data correction scripts.

- The customer must provide the environment name where the script has to be executed.

- The customer must provide the exact SQL they request to be run.

- The customer must first request SQL be run in a non-production environment before executing in production.

Oracle Utilities Product Development Team Obligations

- Oracle Utilities Product Development team must review and approve the script, before the Cloud Operations team can execute it against the environmen

- Oracle Utilities Product Development team will also suggest if the script would require outage on the environment

Oracle Cloud Operations Team Obligations

- Acknowledge and schedule the execution of the service request

- Coordinate with Infrastructure teams (if needed) for completion of the service request

- Communicate the status upon completion of the service request

Service Level Objective

- **Advanced Notice**: 3 business days from the time the script is approved by Oracle Utilities Product Development

- **Acknowledge/Schedule**: 2 business days

- **Execution Time**: 1 business day

Request for Temporary Additional Threads

The customer or system integrator can request additional threads to be added to an environment temporarily.

Request Specification:

- The customer must specify a percentage increase/ or absolute number of threads in Batch thread pool workers to be increased with justification.

- The customer must specify duration for which additional threads are required (Default duration is 1 Month maxumum).

- Cloud Operations team will assess capacity in order to accept request
- The customer must specify the environment where threads to be added.

Customer Obligations

- Refer to the Request Specification above.

Oracle Cloud Operations Team Obligations

- Acknowledge and review the additional threads requested.
- Assess the capacity and seek management approval
- Schedule the execution of service request and communicate the schedule to customer
- Communicate the status upon completion of the request

Service Level Objective

- **Advanced Notice**: 7 business days
- **Acknowledge/Schedule**: 2 business days
- **Execution Time**: 1 business day

Request to Export Cloud Environment Schema for On-Premises Use

The customer or system integrator can request export of a cloud environment schema (CISADM) for on-premises use. This schema export is limited to be used for reporting purposes and is intended for initial extract only. The subsequent change is expected to be loaded via Generalized Data Extracts batch jobs

Request Specification:

- The customer must request the export of the cloud environment application schema providing details of the source environment.
- The customer should also provide details of the Object Storage Location and access details (including credentials to access object storage bucket) where the export files are to be copied

Customer Obligations

- The customer or system integrator must specify the environment from which the application schema export is to be taken, including Date and Time of the export.
- This request requires 7 business days lead time from the time of creation of service request

Oracle Cloud Operations Team Obligations

- Acknowledge and validate access to Object Storage
- Schedule the execution of the service request
- Execute the activities to complete the service request
- Communicate the status upon completion of the service request

Service Level Objective

- **Advanced Notice**: 7 business days
- **Acknowledge/Schedule**: 2 business days
- **Execution Time**: 1-5 business days, depending on the size of the database

Database Size	Duration of Export
Up to 0.5 TB	1-2 days
Between 0.5 TB and 1 TB	2-3 days
Between 1 TB and 5 TB	3-4 days
Larger than 5 TB	5+ days

NOTE: The customer will receive daily status updates on the service request for the duration of the export activity.

Refreshing Data (Cloning)

Cloning Process Overview

What is environment cloning?

Environment cloning is a process of copying data from source to target environment. The most frequent use cases include:

- During implementation, to clone a 'gold' configuration to another environment.
- During implementation, to clone an environment with converted data to another environment for System Integration testing or User Acceptance Testing.
- Once live, to clone Production data to a Test environment.

Pre-requisites for requesting environment clones

- In order to clone the environment, the source and target environments must be on the same version and patch set level.
- Source environments must maintain data integrity, and also should not have unusable indexes and if found, the Cloud Operations team would notify the customer to fix it and reschedule the cloning activity.
- During the implementation phase, a customer can request:
  - A Dev-sized environment to be cloned to another Dev, Test or Prod environment.
  - A Test-sized environment can be cloned to another Test or Prod environment.
  - A Prod environment can only be cloned to a Test environment.

Once the customer is live, a non-prod environment will not be cloned to Prod environment.

Frequency of Clone requests

There is a limit to number of data refresh (cloning) requests that a customer can make during the implementation phase and after go-live. Refer to the **Usage Limits** section in the Utilities Global Business Unit Service Descriptions and Metrics document.

How to submit request for Cloning

Please refer to the Submitting a Request for Cloning section below for instructions on how to submit an environment clone request.

Process of Cloning

Cloning in Oracle Utilities cloud environments is done using Oracle Data Pump. Oracle Data Pump technology enables very high-speed movement of data and metadata from one database to another.

The following data would be truncated and replaced with data from source environment

- Metadata

- Admin Data

- Master Data

- Transactional Data

- Conversion Staging and Scheduler data is optional and is copied upon request

In addition, the table structures/partitions would match the source environment.

The following data would be preserved in the target environment

- Users and User Groups

  Users and User Groups from the source will be appended to the target application tables. This means that Users who could previously access the target environment can still access it after the clone. However, note that Identity Cloud Service (IDCS) Users are not migrated from source to target, so any users that exist as IDCS Users with rights to access the source environment will not automatically have IDCS rights to access the target environment. Customer may need to adjust this manually as needed (please refer to the *Oracle Utilities Cloud Services End User Provisioning Guide* for details).

- External system configuration

- Process automation configuration

- Configuration related to how the target environment is identified by name is preserved during the clone. For example, if the target environment is called "DEV01"

- Configuration related to Oracle Object Storage that are environment specific are preserved during the clone and not overwritten by source data.

- Outbound integration references specified on external system application tables are preserved during the clone and not overwritten by the source data. (eg: message senders, external system references).

Business Impact

There is no impact on the source environment during the data pump export process and no outage is caused. For all tables in the export to be consistent to the same point in time, export utility parameter FLASHBACK_TIME is used.

The target environment would require outage for the duration of data pump import process depending on the size of the database being cloned.

Database Size	Duration of Import
Up to 0.5 TB	1 - 2 Days
Between 0.5 TB and 1 TB	2 - 3 Days
Between 1 TB and 5 TB	4 - 6 Days
Larger than 5 TB	6+ Days

Note: The customer will receive daily status update on the service request for the duration of the cloning activity.

Post Cloning Steps

There are some post-cloning steps that the customer needs to perform from the application user interface on the target environment before it can be released to end-users. Oracle Support would communicate these steps via the service request upon completion of request.

Submitting a Request for Cloning

The customer or system integrator can request to refresh data from one environment to another environment(s) belonging to the customer.

Request Specifications

- The customer can request a data refresh from their Production environment to Non-Production environments, or from one non-production environments to other non-production environments.

- The source environment can't be larger than target environment.

- The customer needs to specify the date/ time of the cut of the source environment.

Customer Obligations

- The customer needs to understand and follow post cloning procedure to complete the clone.

- The customer needs to request if cloning needs to be taken as soon as possible or at a specific date and time (specifying time zone).

Oracle Cloud Operations Team Obligations

- Acknowledge and schedule the execution of the service request

- Execute the activities to complete the service request

- Provide daily status update if the outage during clone is more than a business day.

- Verify if the table row counts matches between source and target.

- Communicate the status upon completion and provide post cloning steps

Service Level Objective

- **Advanced Notice**: 7 business days

- **Acknowledge/Schedule**: 2 business days

- **Execution Time**: Based on the size of the source environment. Please see the table in Business Impact section above.