Oracle® Retail Predictive Application Server Cloud Service

Implementation Guide

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Primary Author: Judith Meskill

Contributing Author: Scott Coulter

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Preface

Oracle Retail Implementation Guides provide detailed information useful for implementing and configuring the application. It helps you to understand the behind-the-scenes processing of the application.

Audience

This document is intended for administrators and system implementers of RPASCE.

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Related Documents

For more information, see the following documents in the Oracle Retail Predictive Application Server Cloud Edition documentation set:

- *Oracle Retail Predictive Application Server Cloud Edition Configuration Tools User Guide*
- *Oracle Retail Predictive Application Server Cloud Edition Release Notes*
- *Oracle Retail Predictive Application Server Cloud Edition Security Guide*
- *Oracle Retail Predictive Application Server Cloud Edition User Guide*

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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.
italic	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.

1

Implementation

RPASCE acts as a platform to create tailored solutions or migrate existing on-premise solutions into the cloud. This guide addresses the process of preparing a custom solution for use in either of these Cloud Service environments.

Because Oracle Retail Cloud Service applications do not support any back-end server access, implementation is different from an RPAS on-premise implementation. The applications provide online tools to cover all the necessary facets of an RPASCE application roll-out and administration. These include:

- Deploying and patching applications from your custom configuration
- Defining nightly, weekly, or ad hoc batch process sequences
- Scheduling recurring batch processes

Required Skills

Since implementations are based on a retailer- or implementer-provided configuration, working knowledge of the RPASCE configuration tools is essential. The RPASCE configuration tools are supported for offline use on a Windows 10 system. They are available in the applicable Starter Kits, and their use is detailed in the *Oracle Retail Predictive Application Server Cloud Edition Configuration Tools User Guide*.

In addition to supplying an RPASCE configuration, the implementer must also prepare the retailer to provide RPASCE Hierarchy (dimension) and Measure (fact) data load files, as well as to take RPASCE exported Measure (fact) data files for any downstream integration needs. While the implementer does not call the RPASCE command-line utilities directly, knowledge of their usage gained from the Oracle Retail Predictive Application Server Cloud Edition Administration Guide is helpful.

Data files for loading into the applications and exported files for integration with other systems are sent and received from the RPASCE cloud environment via Oracle Object Storage. Knowledge of the use of Object Storage File Transfer Service APIs, including an ability to automate such uploads and downloads, is a necessary prerequisite for routine nightly or weekly batch processing jobs.

Batch Framework

RPASCE operations require that the administrative user, who will not have command-line server access, must be able to select, initiate, and schedule RPASCE batch activities.

The RPASCE platform includes an Online Administration Tool (OAT) capability, which allows simple parameterization and scheduling of pre-configured batch tasks. The RPASCE provides an enhancement to the OAT framework that allows a sequence of several batch tasks to be

defined. This sequence is built from a list of available batch services, such as Measure (fact) data loading, calculation, segment workspace refresh, and so on. These service tasks run in a defined order, so that you can know, for example, that your daily data updates have been loaded before your workspace refresh tasks are run. The batch tasks are configured to run under the existing OAT framework, so that scheduling them to run once, or on a repeating basis, is the same as for other OAT tasks.

The batch task sequences are defined in a small set of text files, which are specified below, with some examples.

Batch Processes Under the Control of the Implementer

Using the RPASCE batch execution framework, the following are under implementer control:

- List of batch operations to be run, with available parameterization
- Order in which batch operations are to be run
- Scheduling of one or more recurring batch tasks, which can be modified by the administrator, as needed

Batch Processes Not Under the Control of the Implementer

Due to the operational and security constraints of the Cloud Service environment, the following are not under implementer control:

- Parallelization: The applications automatically parallelize any applicable batch tasks with a number of processes set to match the provisioned server environment.
- Script file names, file and directory locations: Custom scripting is not supported for this environment, and no knowledge of file system names or locations is necessary in defining and parameterizing the batch task files.
- Incoming and outgoing file locations: These details are fixed within the RPASCE Cloud Service environment.

POM Jobs and Batch Exec Service

Process Orchestration and Monitoring (POM) is the enterprise batch-scheduling solution for retail applications migrating to the cloud. In POM, the RPASCE schedule contains multiple static jobs for each RPASCE application, namely, three daily jobs (jos_daily_pre, jos_daily, and jos_daily_post) and three weekly jobs (jos_weekly_pre, jos_weekly, and jos_weekly_post).

These jobs must exist in batch_exec_list and can map to other batch control sets for the Batch Exec Service.

For example, the following section in the batch_exec_list defines the mappings for the POM jobs.

```
# Entries for scheduling in JOS/POM
jos_daily_pre    | exec | *hook_jos_daily_pre
jos_daily        | exec | batch_daily
jos_daily_post   | exec | *hook_jos_daily_post
jos_weekly_pre   | exec | *hook_jos_weekly_pre
jos_weekly_pre   | exec | batch_weekly_pre
jos_weekly       | exec | batch_weekly
jos_weekly_post  | exec | *hook_jos_weekly_post
```

In this example, the job_weekly is configured to execute the batch_weekly control set, which is a set of tasks within the batch_exec_list that can be configured in the same way as you would if not using POM. The "*" before the control set name indicates that this control set is optional,

that is, if it does not exist, the batch execution of the POM job just ignores it without reporting any errors.

For more details about the RPASCE Schedule for POM, refer to the *Oracle Retail Predictive Application Server Cloud Edition Administration Guide*.

Batch Framework Service Catalog

This section describes the batch services that are available to be configured.

Batch Exec Service

The Batch Exec service is the controller for all the other services, specifying groups of tasks to be run, their sequences, and top-level parameters.

The Batch Exec service groups are specified in a text file batch_exec_list.txt. In this file, each active line takes this form:

```
batch_type | service | service parameter
```

The first column is an identifier, which may be repeated on several lines to define a grouping of tasks to be run together. The second column indicates which task from the catalogue is being requested. The third column gives parameter details for that task (as necessary). Comments may be placed in the batch_exec_list.txt file by starting a comment line with the hash sign (#).

Here is a sample batch_exec_list.txt file for reference:

```
# Daily Batch Cyle
daily | waittrigger | daily_upd.txt~3600
daily | unpack      | daily_upd.zip
daily | calc        | exp_set
daily | measexport  | daily_exp_set
daily | measload    | load_oo_list
daily | sendtrigger | batch_load_complete.txt~ftp
daily | calc        | batch_oo
daily | rebuild | rebuild_daily_group

# Batch Cycle to Load OO
load_oo | measload | load_oo_list
load_oo | calc     | batch_oo

# Weekly Batch Cyle
weekly | calc       | exp_calc_set
weekly | measexport | weekly_exp_set
weekly | hierload   | clnd~14~N
weekly | hierload   | prod~14~N
weekly | hierload   | loc~14~N
weekly | measload   | load_act_list
weekly | measload   | load_oo_list
weekly | calc       | batch_week
weekly | calc       | batch_fcst
weekly | refresh    | refresh_weekly
weekly | rebuild    | rebuild_weekly
weekly | autobuild  |
```

In this sample file, three batch task groups are specified: daily, load_oo, and weekly. Note that these names are implementer-defined identifiers; there is nothing special about the names "daily" or "weekly". Each identifier is thus associated with a sequence of tasks, which will run in the order they are listed in the file.

Note also that no information is provided about times or schedules on which these task groups should be run. Scheduling information must be specified in the RPASCE Online Administration Tool.

The services listed for each batch task group are run in the order specified when that type of batch run is requested through the OAT interface. Details on the individual batch services and what their service parameters mean are described in the following sections.

Load Measure (Fact) Data: measload

The Load Measures service allows the loading of one or several measures, the data for which may be found in one or several files. The measload service will check for the required data files in the Object Storage incoming files area. The service will optionally either validate the presence of all data files and treat this as an error condition, or treat the presence of files as optional and continue with no error if the files are not present.

Groups of measures to be loaded are specified in a control file, batch_loadmeas_list.txt, with the columns as follows:

- Load set name
- Parameter type, which must be one of the following:
  - H - Fact data file name
  - V - Validate option, if present, indicates missing data files are to be treated as an error condition. No third-column parameter required.
  - R - Rejected record threshold (optional). Requires third column parameter; it must be a positive integer. When this parameter is presented, the process will be stopped (error code 37) with a failure trigger when the number of rejected records exceeds the number specified. If this option is not specified, a warning trigger will be created if there are any rejected records in the measure load; however, the process will continue.
  - C - RPASCE v19 parameter, which is no longer supported.
  - M - RPASCE v19 parameter, which is no longer supported.
  - S - RPASCE v19 parameter, which is no longer supported.
- Parameter value. Relative to the parameter type specified above.

Fact Data files may contain the data for one or several facts in a comma-separated value format (CSV) with a header line.

Here is an example control file for the Load Measure service:

```
# Load Forecast Measures
load_fcst|R|200
load_fcst|V|
load_fcst|H|mp_fcst.csv.ovr
load_fcst|H|mt_fcst.csv.ovr
load_fcst|H|lp_fcst.csv.ovr
load_fcst|H|lt_fcst.csv.ovr
```

In this example, if any files for the listed measures are absent, an error condition will be reported.

The Validate option checks for required data files in the internal input file directory, as well as files that have been placed in Object Storage. This allows the measload task's Validate option to correctly detect files that were previously placed in the internal input location by an unpack batch task.

When fact data files are loaded, some lines in the file may be rejected (possibly due to an incorrectly formatted input file or a position that does not exist in the dimension). The RPASCE measure load process does not, by default, treat these rejected lines as errors and will continue loading any valid lines from the rest of the file. In order to detect when rejected lines were encountered, since the batch framework does not report this as an error, the loadmeas batch task writes the rejected records count into its own log file and also creates a rejected records warning file in the outgoing area of Object Storage.

The warning file has no content, providing all relevant information in the file name itself. The file name indicates the name of the measure, the count of rejected records, and a timestamp to indicate when the task was run.

In the following example, the measure apcpfcstslsu had four rejected records when it was loaded on 26-April-2018 at 7:52am:

warning.eebatch_loadmeas.apcpfcstslsu.rejected.4.20180426075212

If the optional |R| parameter is given in the control file, the numerical value indicates a limit to the number of rejected lines, above which the rejections will be reported as an error rather than a warning. For example, in the load_fcst config shown above, the limit is given as 200. If, while loading any particular measure in this load group, more than 200 rejected record lines are detected, then the task will halt, reporting an error, and the batch sequence that includes this task will also halt. In this way, if a badly formatted or corrupted data file was uploaded, then later batch steps such as calculations or workbook refreshes will be performed.

Export Measure (Fact) Data: measexport

The Export Measures service allows the flat-file export of one or more measures, using a control file, batch_export_list.txt, to group (and parameterize) the measure lists for particular export operations. The control file allows multiple parameters to specify the details of each export group.

Here are the columns in the export control file:

- Export Set Name
- Parameter type, which must be one of the following:
  - M - Measure name, format name (optional), and output file name (optional). Separated by |. The format name is the name of the format directive specified in the measure_format_list.txt file. The output file name option is only supported when the control set is using the I parameter. If the I parameter is not specified, the output file name will be determined by the O parameter.
  - F - Filter mask measure.
  - X - Base intersection. F or X is required.
  - O - Output file name (optional). One single output file for all exported measures. This parameter is ignored if the I parameter is specified. If multiple O parameters are provided, only the first one will be used.
  - I - Flag to use an individual output file for each measure (optional). The default file name is measure_name.csv.ovr unless it is overridden by the output file name option of the parameter of M.
  - S - File share destination. Keywords: ftp, temp, cloud:<app>, where <app> is one of: ri, mfp, rdf, ap, rms. (For the rare case where multiple instances of a single RPASCE application are to be deployed, the second instance may be integrated by using the values mfp2, rdf2, or ap2.) The cloud:<app> keyword sends the output file to the indicated Oracle RGBU Cloud Service application, if configured for your environment. The temp keyword sends the output to an internal temporary location,

where it will not be accessible externally but can be used by other configured batch tasks such as the transform file service (by specifying temp as the input value for the subsequent task).

- C - Compress output. Optional; file (or files) will be compressed into .zip format.
- D - Delimiter. Optional character to use in place of a comma; to select the | character as the delimiter, specify the keyword PIPE.

  Note: D simply replaces all commas with the delimiter. It does not work well with string measure values that include commas.

- U - Uppercase position name (optional). Does not have a third column option. If it is specified, the position name in the output file will be converted to an uppercase name.

  P - useDate parameter (optional). Requires either the value start or end for the third column. It is used for a measure that has a high level on the CLND hierarchy (for example, Mnth). When specified, it will replace the measure CLND level position of each data record with the lowest CLND level (for example, Day) position corresponding to that higher level position. The values start or end are used to determine whether the starting day position or the ending day position of the corresponding mnth period will be output.

- N - Specifies when to skip NA values in export (optional). Valid options for the third column are never, allna, and anyna.
  - never - Export the corresponded data point even though the measure's values are all NA values. This option essentially exports all data points in the logical space.
  - allna - Do not output the corresponded data point if all measure values are NA values (default mode).
  - anyna - Do not output the corresponded data point if any one measure value is an NA value.
- T - Appends a unique identifier as suffix to the file name (optional). This generates a unique name to ensure that the parallel export can proceed. This flag can only be used with default file naming, without using the |O| flag. This flag is specifically designed to work with the intradayexport() expression.

- Parameter value. Relative to the parameter type selected above.

Here is an example control file for the Export Measure service:

```
# Export PoC Plan CP
lpcp|F|lpcpexportb
lpcp|S|ftp
lpcp|M|lpcpbopc
lpcp|M|lpcpbopr
lpcp|M|lpcpbopu
lpcp|M|lpcpeopc
lpcp|M|lpcpeopr
```

For the lpcp export group, the implementer has provided a Filter Mask measure, has indicated that the file will be published to the Object Storage outgoing file location (the ftp parameter naming is for compatibility with previous RPASCE versions), and has provided a list of several measures to be included in the output.

Mace Calculation Service: calc

The Calc service, which indicates that the RPASCE utility mace is to be run, uses a control file called batch_calc_list.txt. The format of this file is as follows:

```
calc_list | [group or expression] | <group name or expr text>
```

The first column provides an identifier for each group of calc instructions. These identifiers are used to select calculations to be run either directly, or as part of a Batch Exec run.

The second column must contain the keyword group or expression to indicate whether the calculation to be run is a rule group registered in the application configuration or an individual expression given in the control file itself.

The final column provides either the name of the rule group to be executed or the text of the expression to be run.

As with the other control files, any line starting with # is ignored and can be used to comment or document the file, as needed.

Here is an example file for the calculation service:

```
# Calc Set for Batch Aggregation Weekly
batch_week | group | Batch_GB
batch_week | group | Batch_AggW
batch_week | group | Batch_InvRoll
batch_week | expression | LTWPNSlsR = DRTYNSls1R+DRTYNSls2R
batch_week | expression | LTWPNSlsU = DRTYSls1U+DRTYSls2U-DRTYRtn1U-DRTYRtn2U

# Calc Set for Generating Forecast
batch_fcst | group | Batch_Fcst_G
batch_fcst | group | Batch_Fcst_L
```

Export Hierarchy: hierexport

The Export Hierarchy service allows the flat-file export of one hierarchy (dimension/levels) using a control file, batch_exporthier_list.txt, to specify available options. The format of the control file is similar to the Export Measure control file, with the exception that only one hierarchy may be specified at a time.

The three columns in the control file are:

- Export Set Name
- Parameter Type, which must be one of these options:
  - H - Hierarchy name (required)
  - T - Export type. F - only formal positions, I - only informal positions, A (or omit) - all positions
  - L - Header line export. Output file includes header line for dimension and label columns.
  - U - Export positions of user defined dimensions. This implies Header Line export mode; cannot be used with the only formal export type.
  - O - Output file name. This is optional; defaults to <hier>.dat).
  - C - Compress result file to .zip (optional)
  - S - File export destination. Keywords: ftp, cloud:<app>, where <app> is one of: ri, mfp, rdf, ap, or rms. (For the rare case where multiple instances of a single RPASCE application are to be deployed, the second instance may be integrated by using the

values mfp2, rdf2, or ap2.) This sends the output file to the indicated Oracle RGBU Cloud Service application, if configured for your environment.

- Parameter value. If required, by parameter type.

Here is an example control file for the Export Hier service:

```
# Export PROD hierarchy, compressed
prod_export|H|prod
prod_export|T|F
prod_export|O|prod_exp.dat
prod_export|C|
prod_export|S|ftp
```

In this example, the prod_export grouping indicates that only the formal positions in the PROD hierarchy will be written to a compressed file prod_exp.dat.zip and placed in the Object Storage outgoing file location (the ftp parameter naming is for compatibility with previous RPASCE versions).

Load PDS Dimension: loaddimdata

This service supports the option of loading dimension (hierarchy) data into your application from flat files. This task does not require a separate control file, but can be fully specified inside the Batch Exec (batch_exec_list.txt) control file itself.

The parameter column provided in the Batch Exec file contains two values, separated by the ~ character. The values are: hierarchy to be loaded and purgeAge value.

Here is an example:

```
weekly | loaddimdata | prod~28
weekly | loaddimdata | loc~28
```

This task, when run, looks for <hier>.csv.dat or <hier>.hdr.csv.dat files in Object Storage in the path planning/incoming/input. The task also checks for planning/incoming/input/dimdata.zip, and if found, will unpack the zip file and use any relevant .dat files located in it. If no incoming data files are found, a log message will indicate this, and then the Batch process will continue without error.

Wait for Trigger File: waittrigger

For a recurring batch task (such as a nightly or weekly batch), you can schedule the batch to run at a particular time, but you must also ensure that it will not start processing until the required input files are available. This requirement is supported by the waittrigger task. The trigger file is a temporary file that is uploaded to Object Storage under the planning/incoming path. Note that this file must be uploaded to the Object Storage last, after all the other required files are present. Note also that this trigger file will be deleted once the waittrigger task sees it, so you must not specify an actual data file as your trigger. For example, if the batch must wait for prod.dat to be present, you must specify a second file name, such as prod_dat_trigger.txt, and the external integration process that sends the latest prod.dat into the Cloud environment must also create prod_dat_trigger.txt after the prod.dat file is available.

By default, the waittrigger task waits for 23 hours for the trigger file to appear before timing out and reporting an error. A shorter timeout may optionally be specified, given in the number of seconds to wait.

The waittrigger task requires only an entry in the batch_exec_list.txt control file; no separate control file is required. Here is an example configuration for a waittrigger task:

```
daily | waittrigger | daily_upd.txt~3600
```

This example daily batch task waits up to one hour for the file daily_upd.txt to be present in the Object Storage location. The third column uses the tilde (~) character as a separator and gives two parameters values:

- the trigger file name. Simple file names only, no paths.
- (optional) number of seconds to wait before timing out

Send a Trigger File: sendtrigger

In order to notify other processes, either internal or external to the Oracle RGBU Cloud environment, of the progress of a batch task sequence, the sendtrigger task may be configured. This task takes a two parameter values, separated by the tilde (~) character. The first parameter specifies the trigger file name.

The second portion specifies the destination in which the trigger file will be created:

- ftp - writes to the Object Storage outgoing location for this application (ftp designation is for legacy compatibility with earlier RPASCE versions).
- cloud:<app> - sends the file to the Oracle RGBU Cloud Service indicated by <app>, with valid values ri, mfp, rdf, ap, or rms. (For the rare case where multiple instances of a single RPASCE application are to be deployed, the second instance may be integrated by using the values mfp2, rdf2, or ap2.)
- input - writes the file into the input directory of the current application.

The sendtrigger task requires only an entry in the batch_exec_list.txt control file; no separate control file is required. Here is an example entry for a sendtrigger task:

```
daily | sendtrigger | batch_load_complete.txt~ftp
```

This control line indicates that the file batch_load_complete.txt will be created in the Object Storage outgoing file area once batch execution successfully reaches this point in the daily batch sequence.

Note that no automatic clean-up of the trigger file is performed, so other processes that look for the presence of this trigger file must remove it. If a trigger file from the previous batch run is still in place during a subsequent batch run, the file will remain in place and the file's timestamp will be updated.

Extract Input Files from Archive: unpack

Batch tasks such as dimdataload or measload expect to find their individual .dat or .ovr files in the incoming file areas. For some integration needs, it may be preferable to send these files together in a compressed archive for faster upload and to ensure that all matching files arrive together. This integration scenario is supported by the unpack task. The unpack task may specify files with the .zip extension to be found in the incoming file area and unpacked into the application input directory. The archive must contain only simple file names and not any subdirectory structure, as this structure would then prevent the files from being found in the <application>/input directory, where later batch tasks expect them.

The daily batch example above contains this usage for the unpack task:

```
daily | unpack      | daily_upd.zip
```

The task specifies that the archive file daily_upd.zip is expected to be in the incoming file area, and it will be unpacked into the application’s input directory before any subsequent batch tasks are performed.

Transform File Service

The Transform file service is used for simple integration capabilities for file transformations before hierarchy or measure file loads such as splitting a file, renaming file, swapping columns in the files, and so on. It also provides an option to filter file records based on particular data values. It does not call any RPASCE utilities, but instead uses some pre-defined functions that can be called and controlled by control file setting changes. It provides some powerful integration capabilities in which the user does not need to create any external process to format the files so it can readily fit into the regular batch framework. For example, a source system might send multiple measure data in a single file but the configured RPASCE solution expects individual measures per file. In such cases, users can call this service to split those files. This process can also be used to transform the exported output files into required formats that can be copied to other locations.

The parameters for this service are provided in a control file batch_xform_list.txt. This service can be invoked from batch_exec_list.txt (Batch Exec Control file) as follows:

<batch_set_name> | transform | <transform_set_name>

Here are the columns in the batch transform control file separated by the PIPE symbol ("|") for the different functions that can be used.

- Transform Set Name
- Parameter Type, which must be one of the following:

Table 1–1 Transform Parameters

Parameter Type	Value
I	Input file path and valid parameter values are cloud for cloud share location (files coming in from other Oracle RGBU Cloud Services), ftp_in for SFTP input, ftp_out for SFTP output, dom_in for Dapplication input (default), dom_out (application output), temp for internal temporary ftp_dim_in for <SFTP> /rdm_input/dimdata, ftp_fact_in for <SFTP>/rdm_input/factdatadirectory, rdm_dim_in for <RDM_ROOT>/dimdata, rdm_fact_in for <RDM_ROOT>/factdata to transform interim export files.
O	Output file path, valid parameter values are: dom_in (application input directory; this is the default), dom_out (application output directory), ftp_in (SFTP input directory, ftp_out (SFTP output directory), rdm_dim_in (PDS dimension data directory), rdm_fact_in (PDS fact data directory), cloud:<app> (sends file to another Oracle RGBU Cloud Service's SFTP input directory; valid values for <app> are: ri, mfp, rdf, ap, rms; for the rare case where multiple instances of a single RPASCE application are deployed, the second instance may be integrated by using the values mfp2, rdf2, or ap2.
D	Field delimiter (default: comma), for pipe use PIPE.
E	Output file delimiter (default: comma), for pipe use PIPE.
F	Input file name (required). Can have multiple F entries, in order to merge multiple files, but at least one F entry is required.
X	Transformed file name and field numbers (in order) as parameter value. It can also use Linux Cut command format. One entry for each separate file must be created. It can also take one additional argument. If provided, used as headers for the transformed files.
V	Validate for files to be present.
Q	To add quotes; required if data can contain commas and the input delim is not a comma.
L	Filter file based on where filter column and filter value as parameters. By default, it equates the value; however, to use filter value as not equal to, use additional parameter as N after filter value.

Table 1–1 (Cont.) Transform Parameters

Parameter Type	Value
U	Create unique record output files.
C	Copy a column to the end of file (copy column number).
W	Swap column from input file (column numbers to swap).
S	Sort file columns based on key columns.
A	Add a constant value at end of file.
J	Join two columns using a separator and add to the end of the file.
G	To create a complete trigger output file, if needed at the end.
Z	To compress output files of a particular pattern as a zip file. It requires the following four parameters delimited by | ■ <output_compressed_filename> ■ <input_files_prefix> ■ <input_files_extn> ■ <delete_compressed_files_flag (Y/N)>
M	Move or copy files of a particular pattern of files from input to output location. If M is used, only files will be moved or copied. It will not do any further processing to those files. It requires two parameters delimited by | ■ <move_file_pattern> ■ delete_file_flag (Y/N) If the delete_file_flag is Y, the source is removed and the operation is a true move. If the delete_file_flag is N, it is a copy instead of a move and the source is not removed.
N	Do not push output files to cloud:<app> location at the end and still hold the files in a temporary location for further processing to compress the files before pushing the file to cloud:<app> location.
H	Add headers to transformed output file if option X is not used to transform the output file. Parameter must be the complete header for that file and is added as the first record for the output file.
Y	To delete the input files from the input directory after the transform; if not, the used input file will not be detected.
B	Do not merge input files by file name pattern. By default, this task takes all input files with same pattern and merges them. For example, if the input file name is given as sls.csv.ovr, it will merge all files matching sls.csv.ovr*. This option indicates that only the single input file by the exact name must be used.

- Parameter Values - Relative to the parameter type selected above.

Example 1: To split a single file into multiple files based on column IDs.

```
rms_oo|F|rms_oo.csv.ovr
rms_oo|I|cloud
rms_oo|V|
rms_oo|X|drtyoou.csv.rpl|1,2,3,6
rms_oo|X|drtyooc.csv.rpl|1,2,3,7
rms_oo|X|drtyoor.csv.rpl|1,2,3,8
```

This example shows an input file split into multiple files using the multiple X option based on column numbers. In the above example, the output files are created in the application input directory.

Example 2: To split a single file into multiple files based on column IDs and also to filter records based on a column value.

```
rms_inv1|F|rms_inv.csv.ovr
rms_inv1|I|cloud
rms_inv1|V| rms_inv1|L|5|N
rms_inv1|X|drtyeop1u.csv.ovr|1,2,3,6
rms_inv1|X|drtyeop1c.csv.ovr|1,2,3,7
rms_inv1|X|drtyeop1r.csv.ovr|1,2,3,8
```

In this example, the first only records with fifth column value as N in the csv file and then those will split into multiple files.

Example 3: To copy columns and swap columns before writing the output file.

```
rms_curh|F|rms_curr.csv.ovr
rms_curh|I|cloud
rms_curh|C|3
rms_curh|W|2|6
rms_curh|U|
rms_curh|X|curh.csv.dat|2,3
```

In this example, the original file only contains five columns. The third column is copied to the end of the file as the sixth column due to the use of option C. Then, columns 2 and 6 are swapped due to the use of option W. Then it writes out column 2,3 after removing duplicates due to use of option U.

Example 4: To add a constant value to a file and to join two columns based on a separator.

```
rms_patt3|F|rms_prod.csv.dat
rms_patt3|I|cloud
rms_patt3|L|22|NA|N
rms_patt3|A|BRAND
rms_patt3|J|34|22|_
rms_patt3|X|drdvprdattt.csv.ovr.3|1,34,35
```

It is necessary to add a constant value BRAND and also concatenate it with another column and export both the columns.

In this example, the original file only contains 33 columns. It is first filtered for records not equal to NA in column 22. Then it adds a constant value BRAND in column 34. Then, columns 34 and 22 are joined, using the separator _ (underscore) that is added as column 35. Finally, the newly added columns 34 and 35 are extracted into an output file.

Example 5: The following sample shows the use of E to create different delimited output file and Z option to compress the output file.

```
mfp_exp_ri|F|ri_mpop_plan.dat
mfp_exp_ri|F|ri_mpcp_plan.dat
mfp_exp_ri|I|temp mfp_exp_ri|V|
mfp_exp_ri|X|W_RTL_PLAN1_PROD1_LC1_T1_FS.dat|4-
mfp_exp_ri|O|cloud:ri mfp_exp_ri|E|PIPE
mfp_exp_ri|Z|RI_MFP_DATA|W_RTL_PLAN|dat|Y
```

In this example, use of multiple F options merges two output files and creates one output file with only from column 4 delimited by comma. However, the final output file is created with delimiter as PIPE due to use of option E.

In addition, the use of the Z option compresses the output files of pattern W_RTL_PLAN*.dat created at cloud:ri location into a compressed file as RI_MFP_DATA.zip and deletes the generated file after compressing.

Example 6: The following option shows the use of the M option to copy a set of files from one location to another location.

```
copy_dom_in|I|dom_in
copy_dom_in|O|ftp_out
copy_dom_in|M|*.dat|N
```

This example copies all files of the pattern *.dat from the application.input location to the Object Storage outgoing file area. Due to use of option N to not delete the input files, it only copies the file. To move the files, option Y should be used.

Custom Function: ap_set_datr

This feature allows product attributes to be assigned during item creation if the product attributes are defined as dimension attributes. For this functionality, th product attribute hierarchy (for example, PATR) must be defined with two dimensions (product attribute value and product attribute). The mapping of the product attribute values to items must be defined in the measure at the item/product attribute intersection level (for example, addvprdattt). This custom function can be called in a customer's batch control framework to register the loaded product attributes as dimension attributes.

This application-level function registers all the loaded product attributes as dimension attributes that can take two parameters, product attribute measure and product attribute hierarchy name. It must be called each time a new set of product attributes is loaded.

The following example illustrates calling this custom function to register dimension attributes. The product attribute measure name is addvprdattt and the product attribute hierarchy used by customer is patr. The ra_custom is the service name to be used to call the custom functions in batch_exec_list.txt and the custom function name is ap_set_datr. The two parameters for the function must be separated with ~.

Example:

batch_datr | ra_custom | ap_set_datr~addvprdattt~patr

Convert Informal Positions to Formal: formalize

The formalize service allows the modifying of current informal positions (which were created on a given hierarchy and dimension having Dynamic Position Maintenance, or DPM, enabled) to make them formal positions. One or more files matching the pattern <hier>.formalize[.extension] must be uploaded via Object Storage to the planning/incoming/input location. This file (or files) specifies which informal positions to formalize. An option is also available to allow the formalization of all current informal positions on a dimension. Parameters are specified via the batch_formalizepositions_list.txt batch control file.

The batch_formalizepositions_list.txt control file contains multiple lines to specify each formalize task, each with three required columns, as follows:

- Formalization Set Name.
- Parameter Type, from these values.
  - C - Column index (starting from 1) of the dimension position name in the hierarchy file (as generated by exportHier) [required].
  - D - Dimension to formalize [required].
  - H - Hierarchy of the dimension [required].
  - A - Formalize all informal positions on Dim (no value needed) [optional; omit if sending a <hier>.formalize.dat file].

- Parameter Value (varies by parameter type).

If the (A)ll option is not provided, then at least one <hier>.formalize[.extension] file is expected to be available in Object Storage. If no formalize files are present, the batch task will report an error. File format details are available in the *Oracle Retail Predictive Application Server Cloud Edition Administration Guide*.

Here is an example specifying a formalization task called prod_sku, which operates on positions of the SKU dimension in the PROD hierarchy:

```
prod_sku|H|prod|
prod_sku|D|sku|
prod_sku|C|1|
```

Rename Positions in a Hierarchy: renamepositions

The Rename Positions service enables the renaming of existing positions in a hierarchy. The task is configured by specifying the hierarchy on which positions are to be renamed and looks for a file with the name [hier].rn.dat in Object Storage. If the rename data file is not present, the rename task will exit without error so that the following batch sequence steps may continue.

The format of the rename data file is as specified in the *Oracle Retail Predictive Application Server Cloud Edition Administration Guide*.

The rename positions batch task does not require a separate control file, but may be specified as an entry in the batch_exec_list.txt file, for example:

```
weekly  |  renamepositions  |  prod
```

This control line indicates that the weekly batch task will look for a rename positions data file for the PROD hierarchy, prod.rn.dat, and will carry out the renamings specified.

Workspace Refresh by Template Name: refresh

The Workspace Refresh service enables the refresh of particular workspaces with current application data. This allows the selection of all workspaces built from a particular template, including the ability to match on partial template names.

The batch_refresh_list.txt contains only two columns: a refresh group identifier and a template name pattern to match. Here is an example of this file:

```
refresh_weekly | mt_wb
refresh_weekly | mp_wb
refresh_weekly | lt_wb
refresh_weekly | lp_wb
```

The example contains one refresh group, with four template pattern names to match. All workspaces that are built from templates matching those patterns will be refreshed.

Workspace Rebuild by Template Name: rebuild

The Workspace Rebuild service is similar to Workspace Refresh task; however, it allows for the workspaces to be completely rebuilt rather than just having their data refreshed. This covers the case where new positions have been added and must be reflected in the workspaces.

The batch_rebuild_list.txt contains only two columns: a rebuild group identifier and a template name pattern to match. Here is an example of this file:

```
rebuild_weekly | mt_wb
rebuild_weekly | mp_wb
```

The example contains one rebuild group, with two template pattern names to match. All workspaces that are built from templates matching those patterns will be rebuilt.

Workspace Delete by Template Name: delete

The Workspace Delete service enables the bulk deletion of all workspaces built from a particular template. This service does not require a separate control file but can be fully specified within the batch_exec_list.txt file. All workspaces built from the given template will be removed. To remove workspaces from several template types, specify one delete task for each template.

Here is an example of an entry in the batch_exec_list.txt file for this task:

```
weekly | delete | AD_POC
```

Run Segment Build Queue: autobuild

The autobuild service is the simplest to configure in the RPASCE batch framework, as it requires no parameters to be specified. When the autobuild service is included in a batch task group, the wbbatch utility is run to invoke the -startQueue build option. Any segments that have been previously queued for automatic build will be created by this call. Since no further parameters are needed, there is no third column for the autobuild service line.

Here is an example of an entry in the batch_exec_list.txt file for this task:

```
batch_weekly | autobuild  |
```

Note that nothing is required after the second pipe (|) character.

Initialize Testing Environment: initrpac

This is the first of two batch tasks that work together to provide automated test capabilities. See the full explanation of RPAC test automation capabilities in Automated Testing with RPAC; the specific activities carried out by the batch tasks are described briefly here.

The initrpac task serves two purposes related to setting up the environment to be ready to run your automated test cases. First, it checks for new or updated test collateral files in Object Storage. Note that there are three archives of test collateral files that can be sent: tests.zip, input.zip, and compare.zip. If any of these collateral file archives are present in Object Storage under the planning/incoming/rpac subdirectory, then they will be moved into the internal holding area, ready to be used by the next step in the process; if no new files are present, then the previously sent files will continue to be used.

Note: Incrementally adding test collateral files are not supported; previous file sets of each type are removed before unpacking the new archive, so any updated archive must contain all collateral files of that type. This prevents stale test scripts or data files from being left in the testing environment, which could otherwise cause unexpected test failures.

The second task carried out by initrpac is to stage the contents of the input.zip into the internal input directory. This will be used to place any hierarchy load (.dat) or measure load (.ovr, .clr, .rpl) files into position so that subsequent batch tasks may set the application into a known state, ready for automated tests to run and verify the expected result values.

The initrpac task entry in the batch_exec_list.txt control file does not require any parameters. It would normally be placed as the first entry in a test-enabled alternate version of a daily or weekly batch execution sequence. See full example in Automated Testing with RPAC.

```
rpac_validate | initrpac |
```

Execute Automated Tests: runrpac

This is the second of the two batch tasks that work together to support automated testing capabilities. The runrpac task executes all automated tests in a single test .XML file. (See further information about the RPAC automation testing framework in Automated Testing with RPAC.) While the preceding initrpac task must only be run once, you may specify as many runrpac tasks as needed to execute all configured automation tests, possibly at several different points in an overall batch execution sequence.

The runrpac task entry in the batch_exec_list.txt control file takes one parameter that combines an identifier for the test, along with the filename of the test .XML file to be executed (separated by ~ character):

```
rpac_validate | runrpac   | MFPCS_Sample_Test_1~RT01_MT_WB.xml
```

In this case, the test file RT01_MT_WB.xml will be executed under an identifying title "MFPCS_Sample_Test1". See Automated Testing with RPAC for a full example of a test-enabled batch execution sequence.

Summary test results will be visible in the output log for the batch execution (visible in the Online Administration dashboard), and full test result details will be available in the log file archive that is sent to Object Storage under planning/outgoing after the batch execution completes.

Automated Testing with RPAC

The RPASCE Pluggable Automation Component (RPAC) utility is supported for use with RPASCE cloud application deployments. RPAC tests are specified in XML-format text files and cover a range of RPASCE application and segment activities. Note that RPAC does not support the testing of GUI functions and is not a performance testing tool. In order to support the validation of a newly installed or patched environment, in the context of configured daily or weekly batch operations, RPAC for Cloud deployments is supported through new entries in the RPASCE Batch task catalog. These tasks allow a pre-production application to be set to a known state through a combination of hierarchy load and measure load files, and then can compare both application and segment workspace measures to known values represented either directly in the test xml files or in data comparison files. This is similar to a measure data load file, but used only for comparison rather than for loading.

Three types of collateral files are involved in the RPAC testing process:

- **Input data file set:** a group of hierarchy (.dat) and measure (.ovr, .clr, or .rpl) data files that must be loaded into the application before any RPAC tests are run. Uploaded to Object Storage in the planning/incoming/rpac directory as input.zip.
- **Test file set:** one or more .xml files where tests and test suites are defined using the available set of RPAC tags and attributes. Uploaded to Object Storage in the planning/incoming/rpac directory as tests.zip.
- **Comparison data file set:** an optional way to efficiently validate that one or more measures currently contain an expected set of values. Uploaded to the Object Storage planning/incoming/rpac directory as compare.zip.

Each of these collateral file archives, once sent through the Object Storage interface, will be kept internally to be used every time an RPAC-enabled batch execution sequence is run. Updates to the collateral files can be sent to the Object Storage site before the next call of the initrpac batch task and will be brought into the active environment at that time. Note that when any of the collateral file archives is updated, the previous contents are entirely removed from

the internal storage area, so the replacement archive file must be a complete set of files of that type. This prevents stale test scripts or data files from being left in the environment.

The two RPASCE Batch tasks, initrpac and runrpac, are detailed in the batch task catalog in "Initialize Testing Environment: initrpac" and "Execute Automated Tests: runrpac". The initrpac task is expected to be run once, at the start of the RPAC-enabled batch exec sequence; the runrpac task can be called multiple times, including at separate points during the batch exec sequence, if needed. Here is an example batch execution sequence that shows how an existing weekly batch specification might be augmented with RPAC tests:

```
# Standard Weekly Batch Cycle
weekly | unpack    | weekly_sales.zip~ftp
weekly | hierload  | prod~14~N
weekly | hierload  | loc~14~N
weekly | measload  | load_oo_list
weekly | calc      | batch_fcst
weekly | autobuild |

# RPAC-enhanced Batch Cyle
validate | initrpac  |
validate | hierload  | prod~14~N
validate | hierload  | loc~14~N
validate | measload  | load_oo_list
validate | runrpac   | RPAC_Domain_Tests~DomainTests.xml
validate | calc      | batch_fcst
validate | runrpac   | RPAC_Segment_Tests~SegmentTests.xml
```

The first section, labeled "weekly", represents a weekly batch sequence that might run at midnight every Saturday. Note that updated hierarchy and measure data files for the week are sent through Object Storage in an archive file named "weekly_sales.zip" using the unpack task.

The second section shows how the weekly batch sequence has been augmented with RPAC tests and named "validate". Note that the unpack task from the weekly sequence has been left out, and in its place initrpac is called to place the test data input files into the application. If new or updated RPAC test collateral files have been placed on the Object Storage server, they will be brought in at this point and used.

There are two sets of RPAC tests in this sequence, specified by the runrpac task entries. The first runs immediately after the hierarchy and measure files are loaded, and validates expected values in the application. The second test set is executed after some further calculations have been run, and builds one or more segments, then validates values within them as well.

When RPAC-enabled batch sequences are run, the primary log file, which is available through the Online Administration dashboard as well as through the Object Storage log archive package, will show a brief summary of test results. Full test details and log files are available in the complete log archive package from the batch exec run, available in the Object Storage area once the execution has completed.

For full details on the contents of an RPAC test .xml file, and all the tags and attributes that are available for specifying RPAC tests, see "RPASCE Test Automation" in *Oracle Retail Predictive Application Server Cloud Edition Administration Guide*. Note that the latest version of this guide specifies which RPAC features are available for Cloud deployments. Due to Cloud security constraints, some RPAC features, primarily the <SHELL> tag, have been disabled; however, inclusion of RPAC tests as a step in existing batch execution sequences should fully compensate for this restriction.

Application Deploy

This section describes the process for deploying an application in an RPASCE Cloud Service environment.

Object Storage Upload Location

Oracle RGBU cloud services include an Object Storage site for incoming and outgoing file transfers. See "Uploading and Downloading Files" for details on the Object Storage interface.

For the purposes of building the application, four paths within the Object Storage site are used:

config

For uploading the application configuration into the cloud environment, create a .zip archive containing the contents of the config directory (without the top level config folder). This archive file must be named as <config_name>config.zip. This archive file must be placed in the planning/incoming/config path on the Object Storage service. It may be updated as often as necessary in support of application build or patch activities.

Example

The ascs_config.zip may contain the following contents:

- ascs folder - this is the folder with configuration for an application called ASCS (required).
- ascsDashboardSettings.json - custom settings for the ASCS dashboard (optional).
- ascsHelpConfig.json - custom settings for ASCS Online Help (optional).

batch_control

The set of batch process control files, as detailed in the previous section, must be uploaded as planning/incoming/batch_control.zip (or alternatively as individual files in the planning/incoming/batch_control path) within the Object Storage service. These files are loaded into the application's data store during deployment, and can be updated later as part of the Patch Application task or by running the Manage Batch Control task.

Bootstrap Environment

A newly provisioned RPASCE cloud environment is set up with a bootstrap configuration that allows the implementer to log into the RPASCE Client and access the Online Administration Tool (OAT) interface before an application has been deployed. The bootstrap OAT configuration allows only tasks required to deploy your application. Once the application has been deployed, both the application-specific tasks and activities as well as the deploy activities will be available. This allows the application to be re-deployed from scratch multiple times, should this be required during the implementation phase. (Note that this would trigger a complete loss of any data, so would only be applicable in early phases of implementation testing.)

OAT Parameters

A few parameters must be specified when initiating an Application Deploy process through OAT. The implementer must supply these values:

Config Name

The name under which the configuration has been saved. For those familiar with the RPASCE application construction process, this is the name that is internally passed as the -cn parameter

to rpasInstall. A drop-down list offers choices based on the available application config archive files in the incoming FTP area.

Partition Dim

The dimension on which the application will be partitioned. The application is constructed with one sub-application for each position in the given dimension. This must be a level of separation that fits with the intended workflow for individual users so that, when possible, most users' daily tasks relate to only one sub-application. This lessens contention when many users are active in the system.

Batch Group

Once a application has been built successfully, a named group of batch operations may be specified (typically including measure data loads and mace calculations). This operation sequence must be one batch_type entry in the Batch Exec control file, batch_exec_list.txt (described in "Batch Exec Service").

Overwrite

In the case where the application has already been built once, and the implementer must rebuild the application from scratch, which might occur because a non-patchable change has been made to the configuration, this option must be selected. If it is left in the default unselected state, then the application build process will halt and report an error, rather than overwrite the existing application.

Application Build

The application build process automatically carries out the following steps:

1. Basic validation of the given config name and partition dimension.
2. Ensure that a configuration with the given config name has been uploaded.
3. If the overwrite flag is false, ensure that there is no existing application. It reports an error if the application exists.
4. If the overwrite flag is true, remove the existing application.
5. Build the application using the config name and the partition dimension as specified in the OAT parameter screen.
6. Copy any users and user groups from the bootstrap application environment into the application environment.
7. Copy the uploaded batch control text files into the application from the SFTP location.
8. Run post-application-build batch group.
9. Add the application details into the provisioned RPASCE Client configuration.

Once the Bootstrap Application task has completed, you only need to log out of the RPASCE Client and then log back in again to see the tasks and menus associated with your newly built application. (It is no longer required to restart the RPASCE Client, and this option has been removed from the OAT menus.)

2

In-Context Help

This chapter describes how to configure In-Context Help for solutions based on RPASCE.

In-Context Help is a resource to access relevant help topics, in the format of HTML and video, within the application. At present, it focuses on help topics related to the dashboard and the workspace. The naming convention is <app-name>HelpConfig.json.

Navigating to Help Topics on RPASCE

You can navigate to the help topics in the following ways:

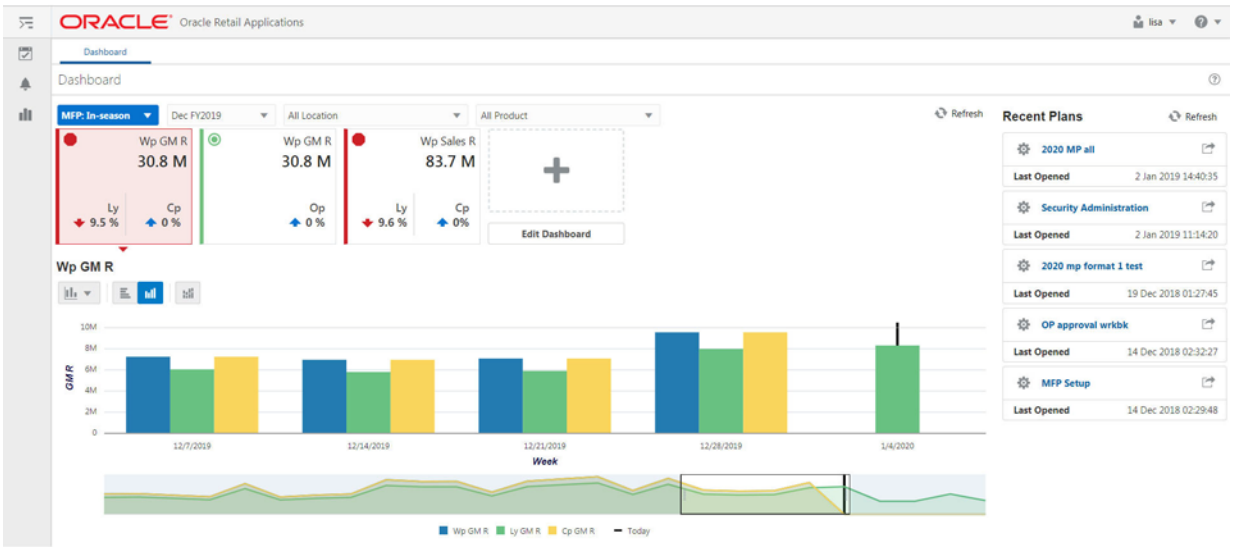
Dashboard

The help topics for the dashboard are added to the following two levels:

- All: The generic topics related to MFP or A&IP are added to this level.
- Report: This consists of topics related to dashboards such as the effective usage, how to analyze the metrics, and so on.

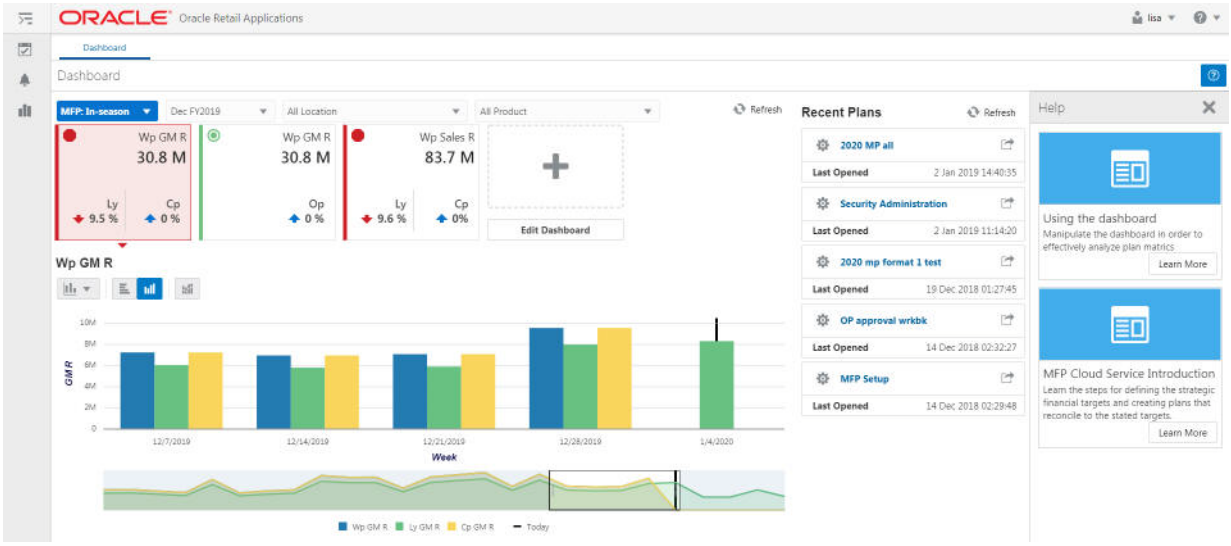
Figure 2–1 shows the view of a dashboard.

Figure 2–1 Dashboard Window



The help topics for the dashboard are visible on the right side panel, as shown in Figure 2–2.

Figure 2–2 Dashboard Help Topics

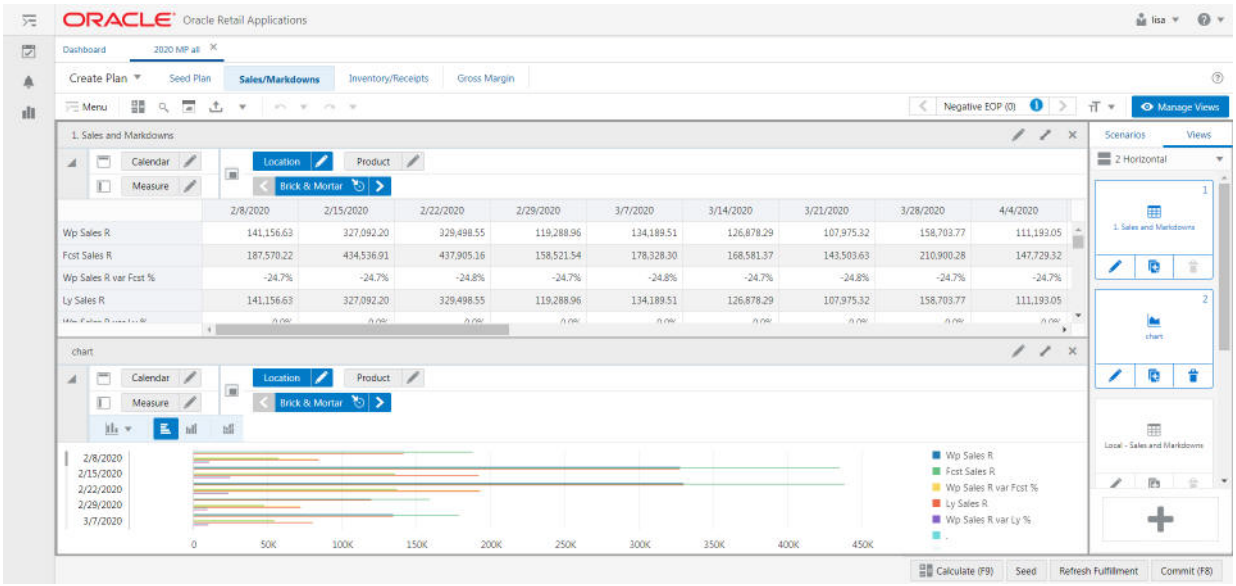


Workspace

The workspace contains the actual content related to MFP or A&IP. Here the topics are aligned with respect to the different levels of the Taskflow.

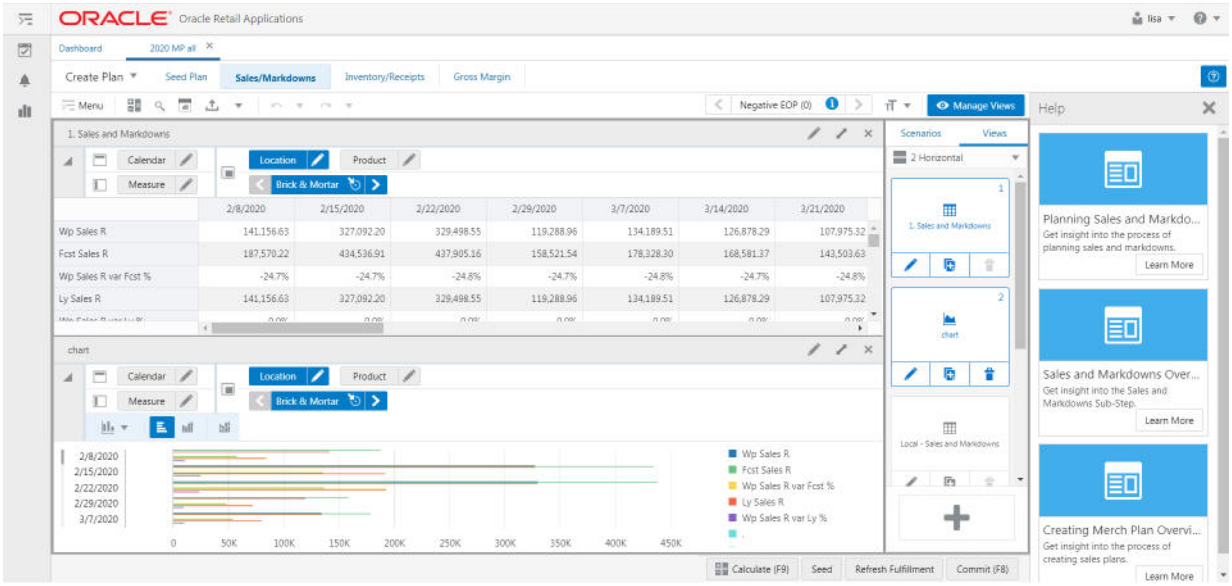
Figure 2–3 illustrates the workspace for the product MFPRCS.

Figure 2–3 MFPRCS Workspace



Here the Step, Tabs, and View are visible.

Figure 2–4 MFPRCS Workspace with Help



Creating the Contextual Help Configuration File

The specifications related to Contextual Help for the RPASCE dashboard and workspace are implemented by creating a configuration file. This file is created outside of the RPASCE Configuration Tools and is deployed in the RPASCE Client application. The contents of this configuration file are used by the RPASCE Client to determine how to organize and display the help topics in the dashboard and the workspace.

Although a Contextual help configuration file can be created from scratch, in most cases, it is simpler to modify an existing version of the file to incorporate any desired changes.

Using JSON in the Contextual Help Configuration File

The contents of the Contextual Help Configuration file are formatted as a JSON (JavaScript Object Notation) object. JSON is a common flexible information encoding notation used frequently in cloud applications; it is more compact and, when properly formatted, more readable than the XML format. (Importantly, it is also not subject to some security concerns that are present when using XML for information encoding.)

JSON is a simple and straightforward format; information about the specifics of the format is readily available online.

Structure of Contextual Help Configuration File

The configuration file is divided into three levels: ALL, REPORTS, and WORKBOOKS. All three levels are of type JSON Object. The ALL level is the generic level. REPORTS and WORKBOOKS are children of level ALL.

Table 2–1 Configuration File Levels

Level	Description
ALL	Describes the generic help topics related to the RPASCE solution in use.
REPORTS	Contains the help topics related to the dashboard.

Table 2–1 (Cont.) Configuration File Levels

Level	Description
WORKBOOKS	Contains the help topics for the workbook and its sub-categories, such as Task, Step, Tab, and View.

The generic JSON structure for any solution is as follows:

```
    "helpTopics" : []
    "reports" : {"helpTopics" : [] }
    "workbooks" : {"helpTopics" : []
}
```

Help Topic Building Block

The help topics object as a whole is a JSON array of collection of attributes. This help topics object is the building block for all the different levels.

The following JSON snippet explains the generic helpTopics object structure:

```
"helpTopics" : [{
"name" : "Help Topic 1",
    "description" : "Description 1",
    "url" : "URL 1",
    "type" : "Type 1",
    "imageSrc" : "Image 1",
    "color" : "Color 1"
},{
    "name" : "Help Topic 2",
    "description" : "Description 2",
    "url" : "URL 2",
    "type" : "Type 2",
    "imageSrc" : "Image 2",
    "color" : "Color 2"
}]
```

Table 2–2 list the help topic properties.

Table 2–2 Help Topic Properties

Property	Value Type	Description
Name	JSON String	The name of the topic.
Description	JSON String	A short description of the topic.
URL	JSON String	The URL link to the help topic.
Type	JSON String	The type of the resource. Values are: document, image. or video.
ImageSrc	JSON String	The path to the image file to be displayed in the Help topic card, for example, an icon representing a video or an illustrative screenshot.
Color	JSON String	The color in which the help topic tile should be visible. Color is displayed at the top of the Help topic card. It is typically used to visually distinguish between help formats (document or video), but may be used for a variety of purposes. Values are: lightblue, red, lightgreen, purple, blue, grey, orange, turquoise, green.

Key Naming Convention

The naming convention of the key depends upon the level or sub-level of each element. Here is an example of the naming conventions at different levels.

Consider the solution in use is mfprcs.

Table 2–3 MFPRCS Key Naming Example

Level/Sub-Level	Key Example	Description
All	NA	No need of the key as help topics are added to the root of the JSON.
Reports	reports	
Reports > Dashboard	reports.dashboard.id	The key must match the name provided for reports in the Taskflow_MultiSolution.xml file.
Workbooks	workbooks	
Activity > Task	mfprcs.Activity1.Task1	The task name must match the entry provided in Taskflow_ MultiSolution.xml file for the specific task.
Activity > Task > Step	mfprcs.Activity1.Task1.Step1	The step name must match the entry provided in Taskflow_ MultiSolution.xml file for the specific step.
Activity > Task > Step > Tab	mfprcs.Activity1.Task1.Step1. Tab1	The tab name must match the entry provided in Taskflow_ MultiSolution.xml file for the specific tab.
Activity > Task > Step > Tab > View	MT_TB01_WS01	The view name must match the entry provided in Taskflow_ MultiSolution.xml file for the specific view. The view key name is unique, as it can be added anywhere under Task, Step, or Tab from the solution.

JSON Structure of Contextual Help Configuration File

Here is an example of JSON object containing all the three levels and the help topics related to each of them. The maxTopics in the following snippet defines how many topics can be visible on RPASCE. This value must be increased if you want to show more help topics at a given level than the value of maxTopics. If, for a specific level, there are fewer than maxTopics topics, it fetches the remaining topics from its parent. In the following snippet the maxTopics for workbooks is set to 2 and overrides the maxTopics for the root, which is set to 3 for the workbooks level. Also, since no maxTopics is set for reports, the maximum topics for this level is capped to 3, which is fetched from the root level.

```
{
  "maxTopics" : "3.0",
  "helpTopics" : [ {
    "name" : "MFP Cloud Service Introduction",
    "description" : "Learn the steps for defining the strategic financial targets
and creating plans that reconcile to the stated targets.",
    "url" : "http://docs.oracle.com/cd/E75764_
01/merchfinplan/pdf/cloud/161/html/retail_implementer_
```

```
guide/output/introduction.htm#introduction",
    "type" : "document",
    "imageSrc" : "",
    "color" : "turquoise"
  } ],
  "reports" : {
    "helpTopics" : [ ],
    "reports.dashboards.id" : {
      "helpTopics" : [ {
        "name" : "Using the dashboard",
        "description" : "Manipulate the dashboard in order to effectively analyze
plan matrics",
        "url" : "http://docs.oracle.com/cd/E75764_
01/merchfinplan/pdf/cloud/161/html/retail_implementer_
guide/output/dashboard.htm#dashboard",
        "type" : "document",
        "imageSrc" : "",
        "color" : "turquoise"
      } ]
    }
  },
  "workbooks" : {
    "maxTopics" : "2.0",
    "helpTopics" : [ ],
    "mfprcs.Activity1.Task1" : {
      "helpTopics" : [ {
        "name" : "Overview of Merch Plan Targets",
        "description" : "Learn about the steps associated with creating and
monitoring targets",
        "url" : "http://docs.oracle.com/cd/E75764_
01/merchfinplan/pdf/cloud/161/html/retail_implementer_
guide/output/CreateMerchPlanTargets.htm#create_merch_plan_targets_task",
        "type" : "document",
        "imageSrc" : "",
        "color" : "turquoise"
      } ]
   }
}
```

Editing the Contextual Help Configuration File

Help topics can be edited or added directly under the levels ALL and REPORTS. For level WORKBOOKS, the implementer can add or edit under Task or can add or edit under a specific sub-level (Step, Tab, or View).

The following examples indicate where the implementer can add help topics at different levels.

- Adding or editing the help topic for level ALL.

  The implementer can add the help topic object directly under the root of the JSON under the property helpTopics. For editing, the implementer must search the name of the help topic in JSON and edit any of the required properties.

- Adding or editing the help topic for level REPORTS.

  Here the implementer must add the help topic under the reports object of the JSON. The implementer must search for the key reports and then add the help topic under the attribute helpTopics. Similarly, any particular help topic can be edited by searching the name of the help topic.

- Adding or editing the help topic for sub-level Step under level WORKBOOKS.

To add a topic under sub-level Step, the implementer must search for the Step key and add the help topic. For editing, the implementer must search for a particular help topic and edit any of the properties as required.

- Adding or editing the help topic for sub-level View under level WORKBOOKS.

  To add a topic under sub-level View, the implementer must search for the View key and add the help topic. For editing, the implementer must search for a particular help topic and edit any of the properties as required.

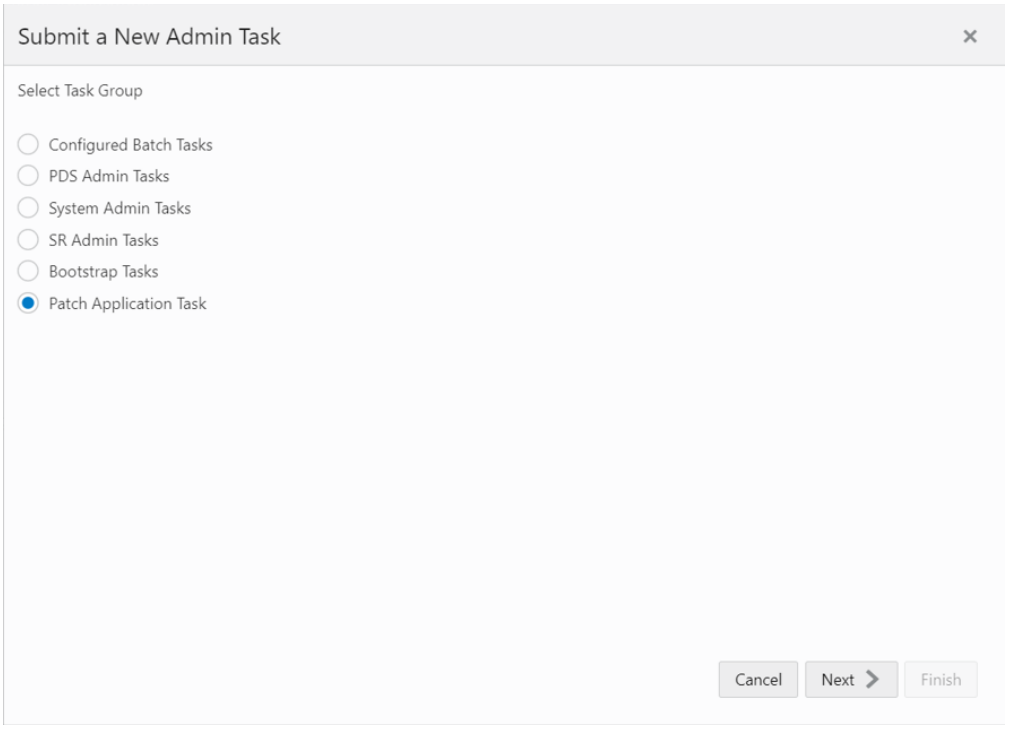
Retrieve/Update InContext help JSON file:

The user can update or retrieve the help JSON file through an OAT (Online Admin Tools) task and can easily update the existing JSON file or retrieve it. This provides the flexibility to view the list of available help resources and modify them according to the requirement.

Following are the steps to submit the OAT task.

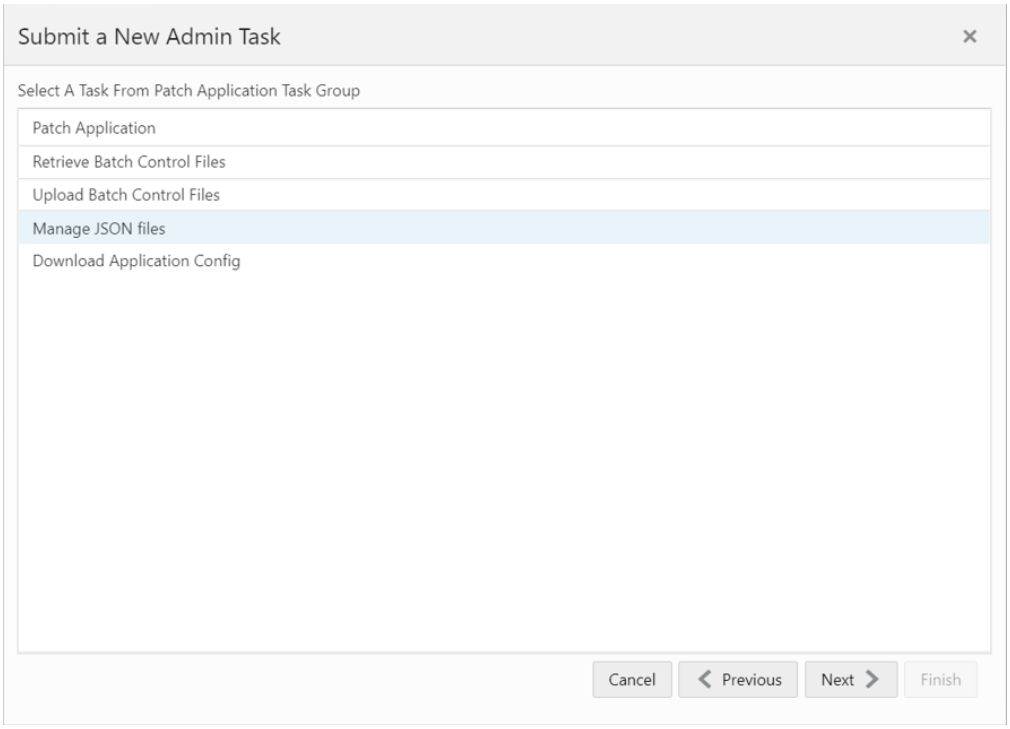
1. Open **Submit a New Admin Task** under Online Admin Tools.
2. Select **Patch Application Task** under task group and click **Next**, as shown in Figure 2–5.

Figure 2–5 List of Task Groups



3. Select **Manage JSON files** from the list of available tasks and click **Next**, as shown in Figure 2–6.

Figure 2–6 List of Tasks Under Patch Application Task Group



4. Now the user can provide a task label and select the type of operation to be performed.

   - **Retrieve JSON files to Object Storage:** This operation performs the task of fetching the help JSON file from the RPASCE application. When this task is run, the help JSON file (with other JSON files) is bundled as a zip with label as <app_name>_ json.zip and is placed in object storage under <SubNamespace>/planning/outgoing. The help JSON file is also prefixed with the app name as <app_ name>HelpConfig.json

     Example: mfprcsHelpConfig.json

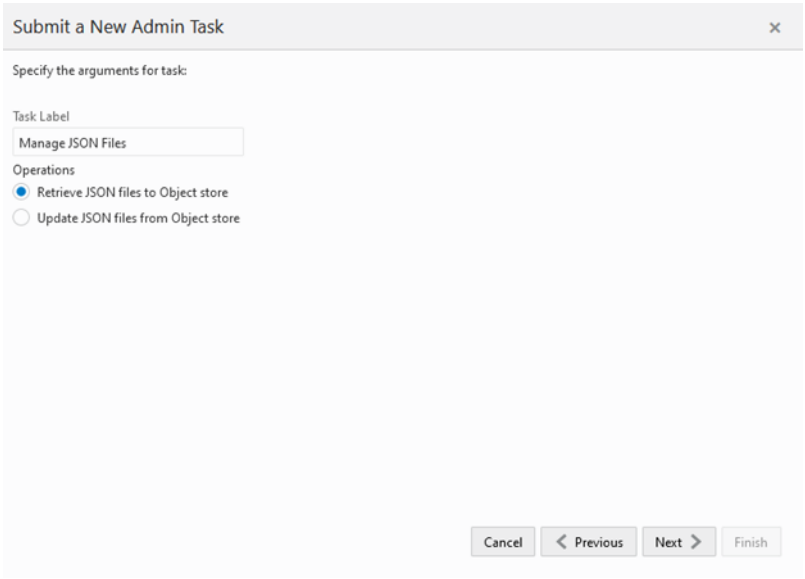
     Refer to Chapter 3, "Uploading and Downloading Files" for more details about downloading and uploading files to Object Storage.

   - **Update JSON files from Object Storage:** The user can update the help JSON file as per their requirements. Once updated, the file name must be prefixed with the app name as <app_name>HelpConfig.json. Then, this JSON file must be bundled as <app_ name>_json.zip and placed in the <SubNamespace>/planning/incoming/config directory.

     When the Update JSON files from Object Storage operation is performed on the RPASCE UI, it fetches the zip bundle from the Object Storage location <SubNamespace>/planning/incoming/config and updates the application with the new changes from the help JSON file. The user must re-login to the application to see the changes.

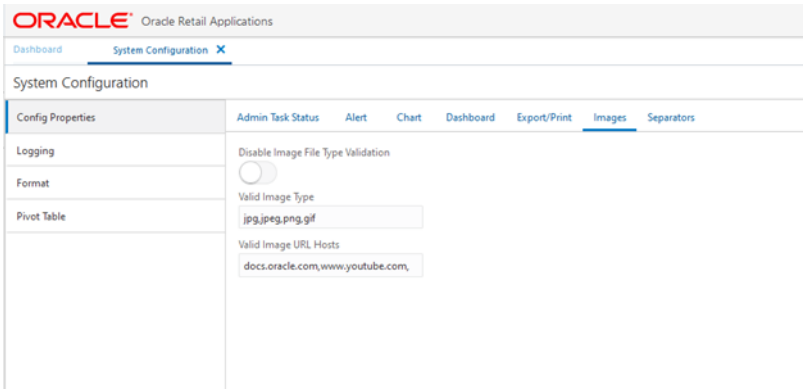
     Refer to Chapter 3, "Uploading and Downloading Files" for more details about downloading and uploading files to Object Storage.

Figure 2–7 Options to Fetch or Update the JSON Files



Note: If the user updates the URLs for the help topics in the help JSON file, these URLs must be allowed so that the links are accessible from the RPASCE UI. To allow the URLs, the user must navigate to System Configuration > Config Properties > Images and append the URL host in **Valid Image URL Hosts** text box.

Figure 2–8 Location to Allow List the URLs



3

Uploading and Downloading Files

The Oracle Cloud Infrastructure Object Storage service is used to upload and download the files used in batch processing.

Object Storage

The Oracle Cloud Infrastructure Object Storage service is an internet-scale, high-performance storage platform that offers reliable and cost-efficient data durability. The Object Storage service can store an unlimited amount of unstructured data of any content type.

More information on Object Storage can be found here.

https://docs.oracle.com/en-us/iaas/Content/Object/Concepts/objectstorageoverview.htm

Accessing Endpoints to Manage Files in Object Storage

A Public Wrapper API over the Object Storage that has a built-in virus scanning ability is been available to perform various actions on Object Storage.

The following terms are used in Table 3–1:

- **PAR**: a pre-authenticated request used to upload or download files. This is valid only for a limited duration and is set to five minutes.
- **Storage Prefix**: Object Storage is a flat storage area and does not include the concept of directories. Storage prefix is a prefix for a file that imitates a directory structure.

  For example, planning/incoming is prefixed to a filename to provide a more readable and distinguishable name.

Before accessing the APIs, an OCI IAM token must be generated. This token is passed in the request header for authentication.

```
curl -i -u "<IDCS-client-id>":"<IDCS-client-secret>" \
https://<idcs-tenant-id>.<IDCS_URL> \
-H 'Content-Type: application/x-www-form-urlencoded' \
-H 'Host: <idcs-tenant-id>.<IDCS_URL>' \
-d 'grant_type=client_credentials' -d 'scope=urn:opc:idm:__myscopes__'
```

Table 3–1 API Endpoints

Action	Endpoint	Payload	Response	Details

Get PAR (pre-authenticated requests) for upload of files	/uploadFiles	`[ { "storagePrefix": "string", "fileName": "string" }, ...]`	PAR URI	This endpoint is used to generate PARs, which are then used to upload files.
				Data:
				`{ "listOfFiles": [{ "storagePrefix": "<subnamespace>/planning/incoming/input", "fileName": "prod.csv.dat" }, { "storagePrefix": "<subnamespace>/planning/incoming/config", "fileName": "RetailHomeConfig.json" }] }`
				Command:
				`curl -X POST "<url>/<BucketName>/uploadFiles" \ -H "accept: application/json" -H "Accept-Language: en" -H "Authorization: Bearer <AccessToken>" -H "Content-Type: application/json" \ -d "{\"listOfFiles\":[{\"storagePrefix\":\"<subnamespace>/planning/incoming/input\",\"fileName\":\"prod.csv.dat\"},{\"storagePrefix\":\"\<subnamespace>/planning/incoming/config/\",\"fileName\":\"RetailHomeConfig.json\"}]}"`

Table 3–1 (Cont.) API Endpoints

Action	Endpoint	Payload	Response	Details
				Response 200: `{ "parList": [{ "id": "WhmJ1Jn6v1GufaHDVISg2sUyiOLEoDAG3rWGUp1J/yj7NgvpJtf77q6Qehsz9h9R:<subnamespace>/planning/incoming/input/prod.csv.dat", "name": "prod.csv.dat", "accessUri": "https://objectstorage.us-phoenix-1.oraclecloud.com/p/oKDbsdO0T3LsfEWgys5WMD85DOyB7W4AvNK_lYXGtVMkGobebU6NIdvuz5AqrtO4/n/oraclegbudevcorp/b/<BucketName>/o/<subnamespace>/planning/incoming/input/prod.csv.dat", "objectName": "<subnamespace>/planning/incoming/input/prod.csv.dat", "accessType": "ObjectWrite", "timeExpires": 1629914865691, "timeCreated": 1629914565988 }, { "id": "I0zDNVNqpQG8KEgGoJokViRIZ6yAQNX7haWIvBfDME+UabAShOhVu7zNvmERkZLm:<subnamespace>/planning/incoming/config/RetailHomeConfig.json", "name": "RetailHomeConfig.json", "accessUri": "https://objectstorage.us-phoenix-1.oraclecloud.com/p/Oja49u66xQqkzgOC6i5GA1PooED1XQV2bsnDwurqKbwetAnqX1RzVb4-e1mPiWWs/n/oraclegbudevcorp/b/<BucketName>/o/<subnamespace>/planning/incoming/config/RetailHomeConfig.json", "objectName": "<subnamespace>/planning/incoming/config/RetailHomeConfig.json", "accessType": "ObjectWrite", "timeExpires": 1629914866213, "timeCreated": 1629914566301 }] }` Files can then be uploaded using the generated PARs (accessURI in the response). `curl --request PUT --data-binary <File> <PAR>`

Table 3–1 (Cont.) API Endpoints

Action	Endpoint	Payload	Response	Details

Get PAR for download of files	/downloadFiles	`[ { "storagePrefix": "string", "fileName": "string" }, ...]`	PAR URI	This endpoint is used to generate PARs, which are then used to download files.
				Data:
				`{ "listOfFiles": [{ "storagePrefix": "<subnamespace>/planning/incoming/input", "fileName": "prod.csv.dat" }, { "storagePrefix": "<subnamespace>/planning/incoming/config/", "fileName": "RetailHomeConfig.json" }] }`
				Command:
				`curl -X POST "<url>/<BucketName>/downloadFiles" \ -H "accept: application/json" -H "Accept-Language: en" -H "Authorization: Bearer <AccessToken>" -H "Content-Type: application/json" \ -d "{\"listOfFiles\":[{\"storagePrefix\":\"<subnamespace>/planning/incoming/input\",\"fileName\":\"prod.csv.dat\"},{\"storagePrefix\":\"\<subnamespace>/planning/incoming/config/\",\"fileName\":\"RetailHomeConfig.json\"}]}"`

Table 3–1 (Cont.) API Endpoints

Action	Endpoint	Payload	Response	Details

				Response 200:
				`{`
				`"parList": [{`
				`"id": "SMINYf9O09IQmfkIxb8gHb0oRN2VrgAD88knbvo3pcNvvrNEhG8btWlPOdnfcLRG:<subnamespace>/planning/incoming/input/prod.csv.dat",`
				`"name": "prod.csv.dat",`
				`"accessUri": "https://objectstorage.us-phoenix-1.oraclecloud.com/p/M7JSr6Jp4up_XnVgib6xXqCuc17YHoWZDVzwGmt1x76_sqIRTQGHS3X_5aMar2HV/n/oraclegbudevcorp/b/<BucketName>/o/<subnamespace>/planning/incoming/input/prod.csv.dat",`
				`"objectName": "<subnamespace>/planning/incoming/input/prod.csv.dat",`
				`"accessType": "ObjectRead",`
				`"timeExpires": 1629916720360,`
				`"timeCreated": 1629916420483`
				`},`
				`{`
				`"id": "8Jtqp6T2g3k+1KY9RhO9D7Kftmm5OBn6PIhCzxIQAH9jbvyQmi54SNoXuEzx0eqM:<subnamespace>/planning/incoming/config/RetailHomeConfig.json",`
				`"name": "RetailHomeConfig.json",`
				`"accessUri": "https://objectstorage.us-phoenix-1.oraclecloud.com/p/5wvRsj2D00nRkjX7-IMZoo9xOSRkMJUM37yyy4wKL1PKwTpdgQ8BWQKlg_jHXnrh/n/oraclegbudevcorp/b/<BucketName>/o/<subnamespace>/planning/incoming/config/RetailHomeConfig.json",`
				`"objectName": "<subnamespace>/planning/incoming/config/RetailHomeConfig.json",`
				`"accessType": "ObjectRead",`
				`"timeExpires": 1629916720632,`
				`"timeCreated": 1629916420742`
				`}]`
				`}`
				Files can then be downloaded using the generated PARs (accessURI in the response).
				`curl --request GET <PAR> --output <file>`

Table 3–1 (Cont.) API Endpoints

Action	Endpoint	Payload	Response	Details

Delete Files	/deleteFiles	`[ {`
		`"storagePrefix": "string",`
		`"fileName": "string"`
		`},`
		`...]`
			Status: ok/error per file	This endpoint is used to delete files from Object Storage.
				Data:
				`{`
				`"listOfFiles": [{`
				`"storagePrefix": "<subnamespace>/planning/incoming/input",`
				`"fileName": "prod.csv.dat"`
				`},`
				`{`
				`"storagePrefix": "<subnamespace>/planning/incoming/config/",`
				`"fileName": "RetailHomeConfig.json"`
				`}]`
				`}`
				Command:
				`curl -X DELETE "<url>/<BucketName>/deleteFiles" \`
				`-H "accept: */*" -H "Accept-Language: en" -H "Authorization: Bearer <AccessToken>" -H "Content-Type: application/json" \`
				`-d "{\"listOfFiles\":[{\"storagePrefix\":\"<subnamespace>/planning/incoming/input\",\"fileName\":\"prod.csv.dat\"},{\"storagePrefix\":\"<subnamespace>/planning/incoming/config/\",\"fileName\":\"RetailHomeConfig.json\"}]}"`

Table 3–1 (Cont.) API Endpoints

Action	Endpoint	Payload	Response	Details

				Response 200:
				{
				"filesDeleted": [{
				"filePath": {
				"storagePrefix": "<subnamespace>/planning/incoming/input",
				"fileName": "prod.csv.dat"
				},
				"responseMessage": "File successfully deleted <subnamespace>/planning/incoming/input/prod.csv.dat"
				},
				{
				"filePath": {
				"storagePrefix": "<subnamespace>/planning/incoming/config/",
				"fileName": "RetailHomeConfig.json"
				},
				"responseMessage": "File successfully deleted <subnamespace>/planning/incoming/config/RetailHomeConfig.json"
				}],
				"filesFailedDeletion": []
				}

Table 3–1 (Cont.) API Endpoints

Action	Endpoint	Payload	Response	Details

Move/Rename Files	/moveFiles	`[ {`
		`currentPath: {`
		`"storagePrefix": "string",`
		`"fileName": "string"`
		`},`
		`newPath: {`
		`"storagePrefix": "string",`
		`"fileName": "string"`
		`}`
		`},`
		`...]`
			Status: ok/error per file	This endpoint is used to move files within Object Storage.
				Data:
				`{`
				`"listOfFiles": [{`
				`"currentPath": {`
				`"storagePrefix": "<subnamespace>/planning/incoming/input2",`
				`"fileName": "prod.csv.dat"`
				`},`
				`"newPath": {`
				`"storagePrefix": "<subnamespace>/planning/incoming/config1/",`
				`"fileName": "prod.csv.dat"`
				`}`
				`}]`
				`}`
				Command:
				`curl -X POST "<url>/<BucketName>/movefiles" \`
				`-H "accept: */*" -H "Accept-Language: en" -H "Authorization: Bearer <AccessToken>" -H "Content-Type: application/json" \`
				`-d "{\"listOfFiles\":[{\"currentPath\":{\"storagePrefix\":\"<subnamespace>/planning/incoming/input2\",\"fileName\":\"prod.csv.dat\"},\"newPath\":{\"storagePrefix\":\"<subnamespace>/planning/incoming/config1/\",\"fileName\":\"prod.csv.dat\"}}]}"`

Table 3–1 (Cont.) API Endpoints

Action	Endpoint	Payload	Response	Details
				Response: `{ "failedMove": [], "successfulMove": [{ "moveFile": { "currentPath": { "storagePrefix": "<subnamespace>/planning/incoming/input2", "fileName": "prod.csv.dat" }, "newPath": { "storagePrefix": "<subnamespace>/planning/incoming/config1/", "fileName": "prod.csv.dat" } }, "responseMessage": "Successfully moved." }] }`

List storage prefixes	/listStoragePrefixes	`{ "storagePrefix": "string", "fileNameStartsWith": "optional_string" }`	Storage prefix name, Size, Number of files	This endpoint is used to list Storage Prefixes in Object Storage.
				Allows customer to discover consumption and storage prefix names.
				`curl -X GET "<url>/<BucketName>/listprefixes" -H "accept: application/json" -H "Accept-Language: en" -H "Authorization: Bearer <AccessToken>"`
				Response: 200
				`[ "<subnamespace>/planning/incoming/config/", "<subnamespace>/planning/incoming/input" ]`

Table 3–1 (Cont.) API Endpoints

Action	Endpoint	Payload	Response	Details

List files within a storage prefix	/listFiles	`{ "storagePrefix": "optional_string" }`	storage prefix name, file name, size, md5 checksum, created date, modified date, scan date, scan status	This endpoint is used to find and list files from Object Storage.
				`curl -X GET "<url>/<BucketName>/listfiles?prefix=<subnamespace>/planning/incoming&contains=prod&sort=size:asc" \ -H "accept: application/json" -H "Accept-Language: en" -H "Authorization: Bearer <AccessToken>"`
				Response:
				`{ "resultSet": [{ "name": "<subnamespace>/planning/incoming/config1/prod.csv.dat", "size": 177023, "md5": "vlN/r8gbNyQ1EdsC++Hv1w==", "version": "ca60582d-bacb-4309-bbbf-89d4a1aa2843", "etag": "7d6dde3b-5b5b-430d-8494-78e090418946", "createdDate": "2021-08-25T20:36:40Z", "modifiedDate": "2021-08-25T20:36:40Z", "scanStatus": "Passed" }], "totalResults": 1, "limit": 0, "count": 1, "offset": 0, "hasMore": false }`

Table 3–1 (Cont.) API Endpoints

Action	Endpoint	Payload	Response	Details

Find file	/findFileByName	`{ "stringContains": "string" }`	storage prefix name, file name, size, md5 checksum, created date, modified date, scan date, scan status	This endpoint is used to find and list files from Object Storage.
				`curl -X GET "<url>/<BucketName>/findFileByName?prefix=<subnamespace>/planning/incoming&contains=prod&sort=size:asc" \ -H "accept: application/json" -H "Accept-Language: en" -H "Authorization: Bearer <AccessToken>"`
				Response:
				`{ "resultSet": [{ "name": "<subnamespace>/planning/incoming/config1/prod.csv.dat", "size": 177023, "md5": "vlN/r8gbNyQ1EdsC++Hv1w==", "version": "ca60582d-bacb-4309-bbbf-89d4a1aa2843", "etag": "7d6dde3b-5b5b-430d-8494-78e090418946", "createdDate": "2021-08-25T20:36:40Z", "modifiedDate": "2021-08-25T20:36:40Z", "scanStatus": "Passed" }], "totalResults": 1, "limit": 0, "count": 1, "offset": 0, "hasMore": false }`

Liveness test	/ping			This endpoint allows customer to check for service liveness.
				`curl -X GET "<url>/ping" -H "accept: */*" -H "Accept-Language: en" -H "Authorization: Bearer <AccessToken>"`
				Response:
				`{ "appStatus": 200 }`

A

Appendix: Exit Codes

This appendix describes all non-success exit codes from the Batch Framework services and batch administration tasks.

All EE batch scripts have consistent exit codes. Codes from 1 to 22 come from the BSA framework (although only 6 and 13 are commonly used by EE batch and so are included in the table below). Codes of 30 and above are from EE batch scripts themselves and are also listed in Table A–1.

Table A–1 lists the common (non-success) exit codes from the EE batch scripts and the BSA framework.

Table A–1 Common Exit Codes

Code	Reason
6	too few args / missing arg
13	invalid application path
30	required environment variable is not set
31	batch config file is not found
32	selected batch config entry is not found in file
33	invalid or missing info in batch config file
34	unknown error detected in RPASCE utility log output
35	file/directory not found when moving or copying files
36	file/directory permission error when moving or copying files
37	measure load exceeded reject record limit.

Note that in a live OCI-provisioned environment, it is not expected that customers will see any of these error codes except 31 through 33. These codes indicate issues in the customer-provided batch config files.

Table A–2 lists additional exit codes from eebatch_exporthier.ksh, eebatch_exportmeas.ksh, eebatch_loadhier.ksh, and eebatch_loadmeas.ksh, that result from the exit codes of the underlying RPASCE binary utilities (exportHier, exportMeasure, loadHier and loadMeasure). The exit codes from the binary utilities are reported by the EE Batch Framework as being 100 more than the raw utility results. This prevents overlap between the BSA/EE script result codes and the RPASCE binary utility result codes. If loadHier itself returns an error code of 5, then the EE batch framework will report the error as code 105.

Table A–2 Additional Exit Codes

Script	Code	Reason
Generic codes applied to all scripts	103	Invalid application. Version mismatch.
	104	Generic argument error of the underlying utility.
	105	Generic exception occurred during main operation.
	106	Lock exception or parallel sub-process error.
eebatch_calc.ksh	107	Expression parsing error.
eebatch_exportmeas.ksh	108	Error during export preparation.
	109	Error during main execution.
	110	Error during post operation. Possible during the merging of local application files.
eebatch_loadhier.ksh	108	loadHier cannot add a new position to a partition dimension. For example, no store has been defined for the new position.
	109	Calendar prepending error.
	110	Input data contains conflicting information.
	111	Metadata error. Corrupted internal data.
	112	Unable to update the ITT table for the hierarchy that is shared by PDS.
	113	Data mover staging error.
	114	Data mover merging error. Hierarchy update was applied but measure data was not moved completely. The user must fix the underlying issue and re-run the operation to complete the hierarchy update.
	115	NA handler error. Hierarchy update was applied but measure data was not moved completely. The user must fix the underlying issue and re-run the operation to complete the hierarchy update.
	116	Purge all failed.
	117	Reindex is in progress. No operation was performed.
	120	PDS repartitioning is in progress.
eebatch_loadmeas.ksh	98	Internal aggregation error
	99	Internal aggregation error. Cannot load in CLR mode because the measure does not have a clear intersection. Unknown internal error.

It is not expected that customers will encounter any of the RPASCE exceptions, internal errors, or C++ exceptions, which indicate corrupted data or a programming error.