ORACLE

10

Additional OIC Capabilities

Objectives

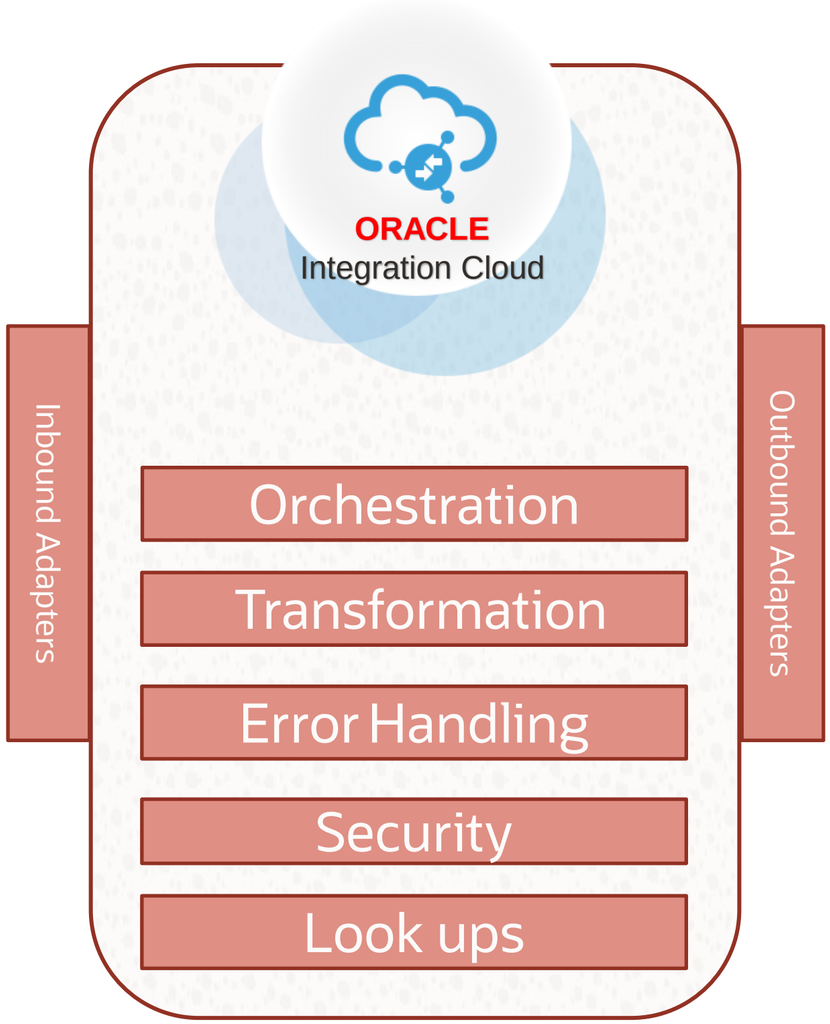
After completing this lesson, you should be able to:

- Define basic and advanced schedules for a scheduled orchestration
- Execute scheduled or ad hoc runs in scheduled orchestrations
- Resubmit failed scheduled orchestration run instances
- Leverage schedule parameters for multiple run instances
- Monitor integration instances and message details
- View, resubmit, or discard integration error instances
- Access diagnostic logs for troubleshooting
- Describe the OIC REST API capabilities

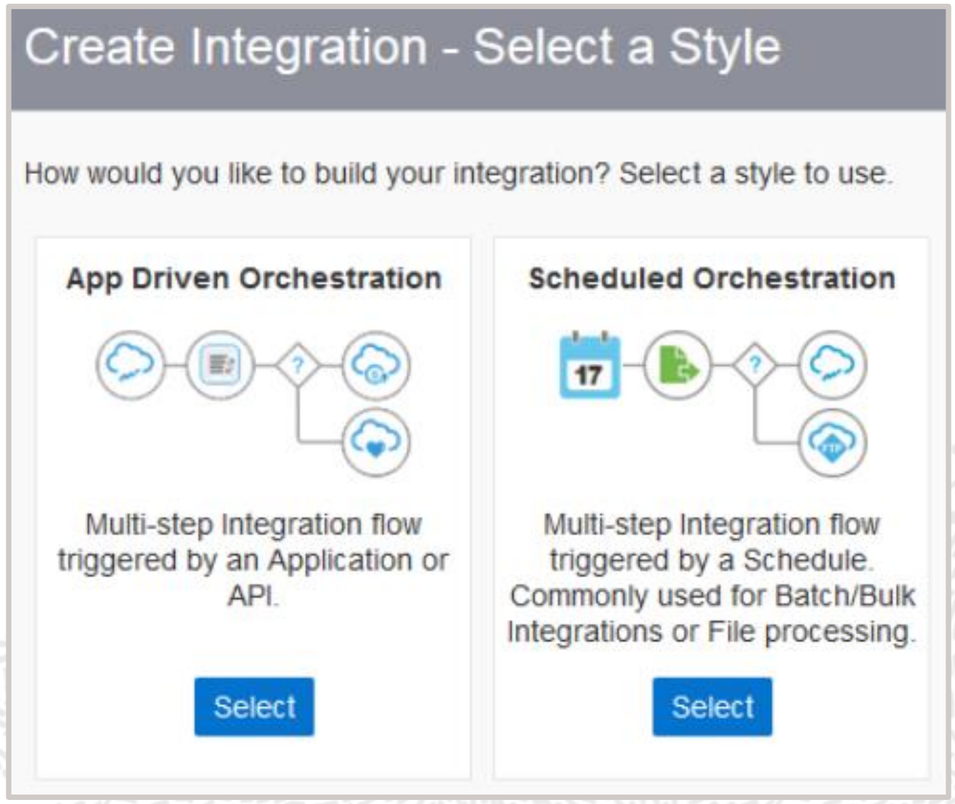
Agenda

- Creating Scheduled Integrations
- Monitoring Instances and Message Tracing
- Managing Error Instances and Troubleshooting
- OIC REST API Overview

Orchestration Styles (Review)



- **App Driven** (Interface invoked by a client application)
- **Scheduled** (Executes automatically or on-demand)

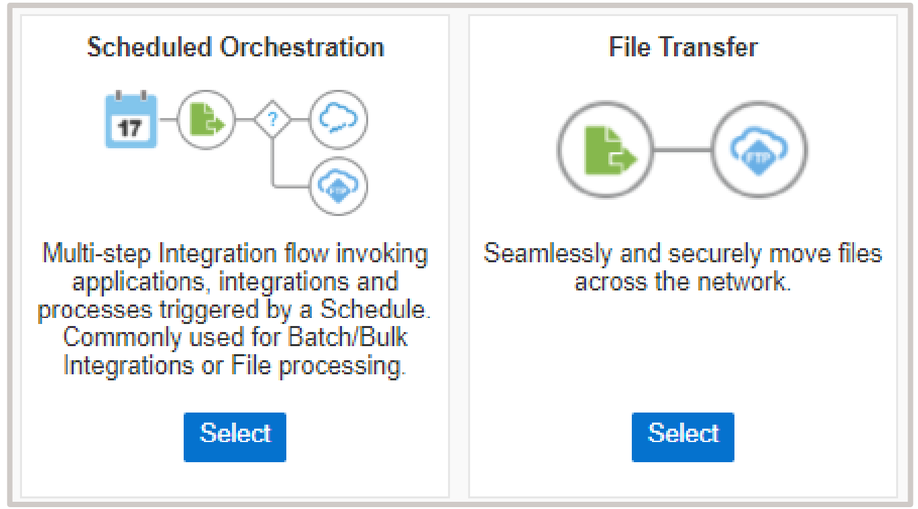


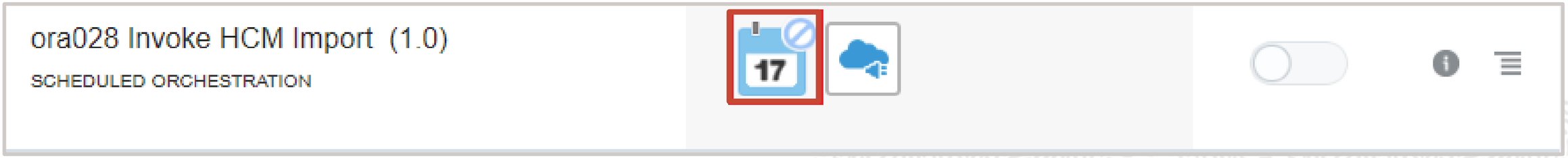
Scheduled Integrations

Create the integration by using the **Scheduled Orchestration** or **File Transfer** style.

- *Currently, there is no difference in functionality.*

When a scheduled integration is created, a **schedule** icon is displayed for that integration on the **Integrations** page.





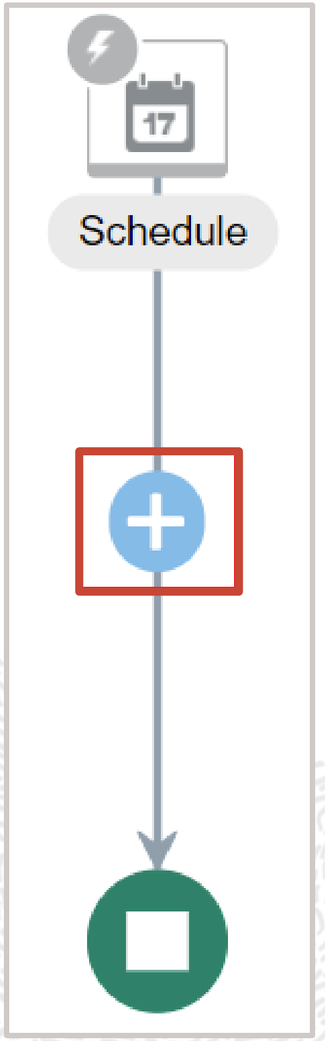
Scheduled Orchestration Design Canvas

The design canvas is identical as when creating an App Driven Orchestration style integration.

- The same invokes and action menu is available for design.

However, unlike *App Driven Orchestrations*, the design canvas does not allow for configuring a Trigger connection.

- Instead, you are prompted to start adding invokes or actions into the flow to implement your orchestration integration use case.

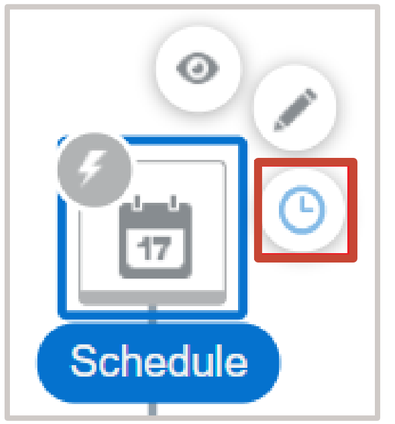


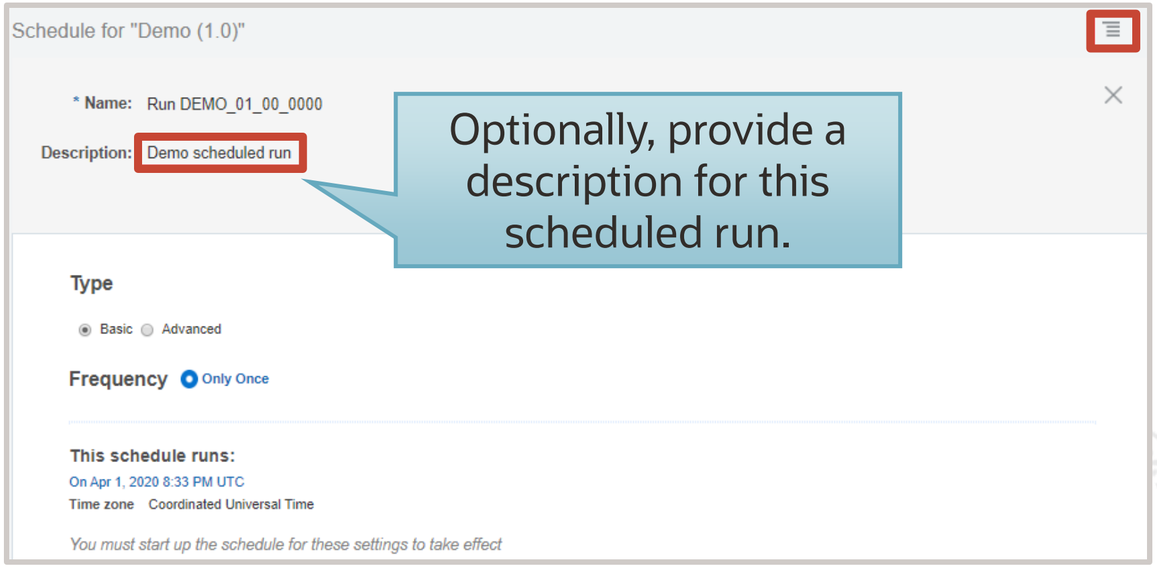
Creating a Schedule

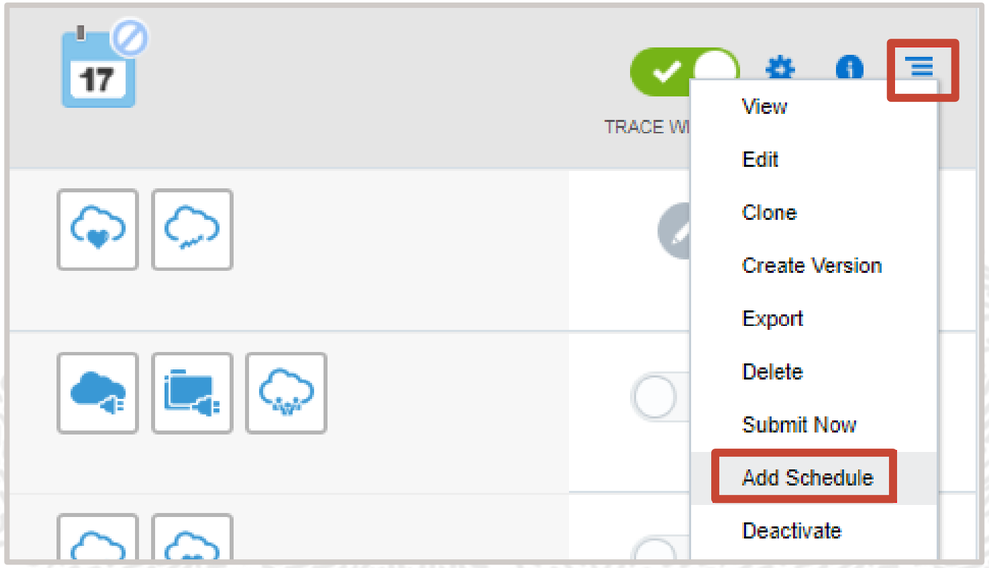
On the design canvas, click the Timer icon on the **Schedule** node.

- Alternatively, you can add a schedule on the Integrations page before or **after** the integration has been activated.

The Scheduler page is displayed:







Defining a Basic Schedule

1. Choose the **Basic** type.
2. In the **Frequency** section:
   - Choose **Only Once** (*the default*), and then specify the start date and time
   - Or, define a recurring schedule based on Months, Weeks, Days, or Hours/Minutes
3. Define the expiration of this schedule.
   - **Never** (repeat indefinitely) is the default.

This schedule is effective:

From When schedule starts

Until Never (repeat indefinitely)

Time zone Coordinated Universal Time

This schedule is effective:

From May 1, 2020 11:00 PM UTC

Until May 1, 2021 11:00 PM UTC

Time zone Coordinated Universal Time

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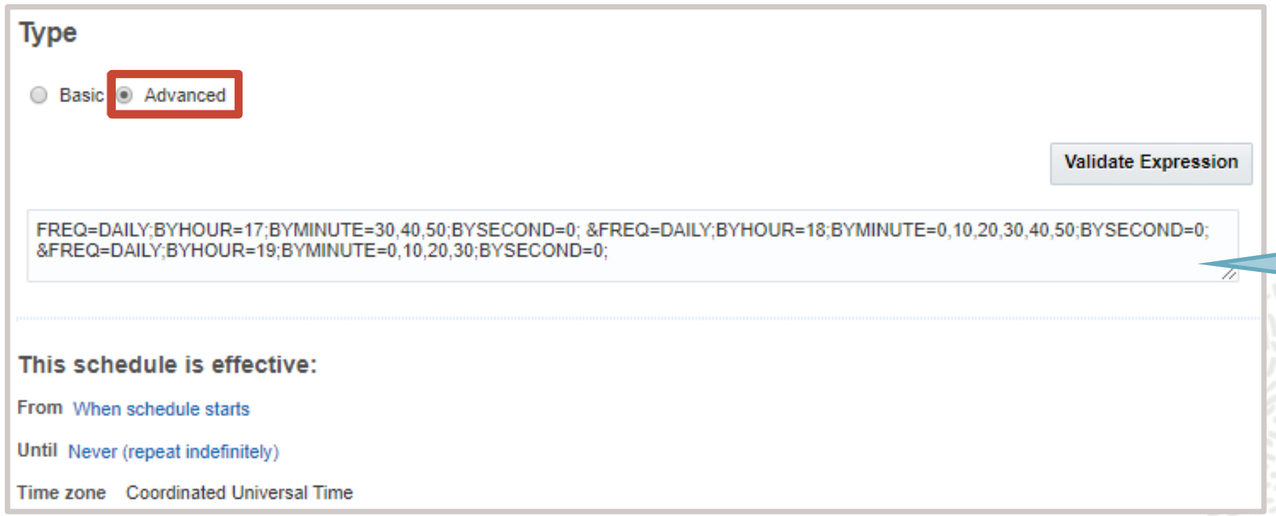
Defining an Advanced Schedule

- Choose the **Advanced** type to provide an iCal expression.
  - Click **Validate Expression** to verify the correct syntax.
  - The example below runs each month on the 1st, 10th, and 15th days of the month at 5:15 AM, 10:15 AM, 3:15 PM, and 8:15 PM.

```
FREQ=MONTHLY;BYMONTHDAY=1,10,15;BYHOUR=5,10,15,20;BYMINUTE=15;
```

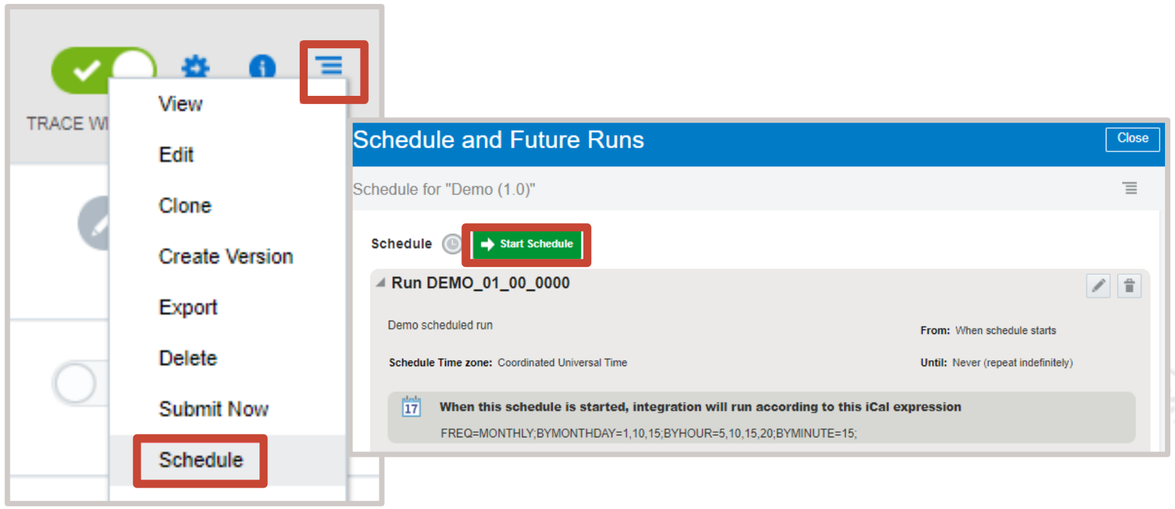
- You can also define multiple schedule frequencies.

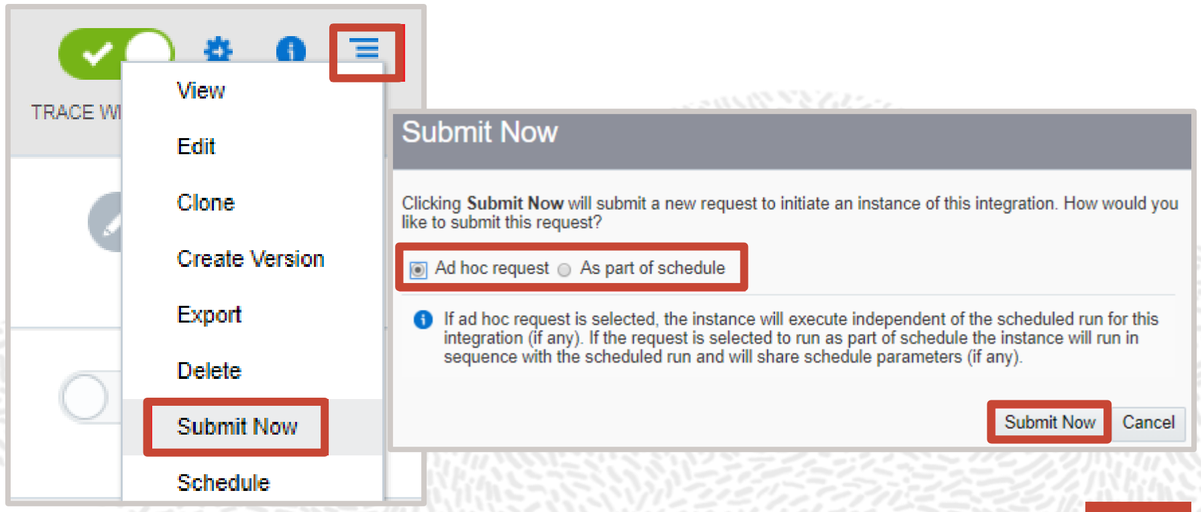


This example runs every day between the hours of 5:30 PM and 7:30 PM, and during these hours it executes every 10 minutes.

Initiating an Integration Run Schedule

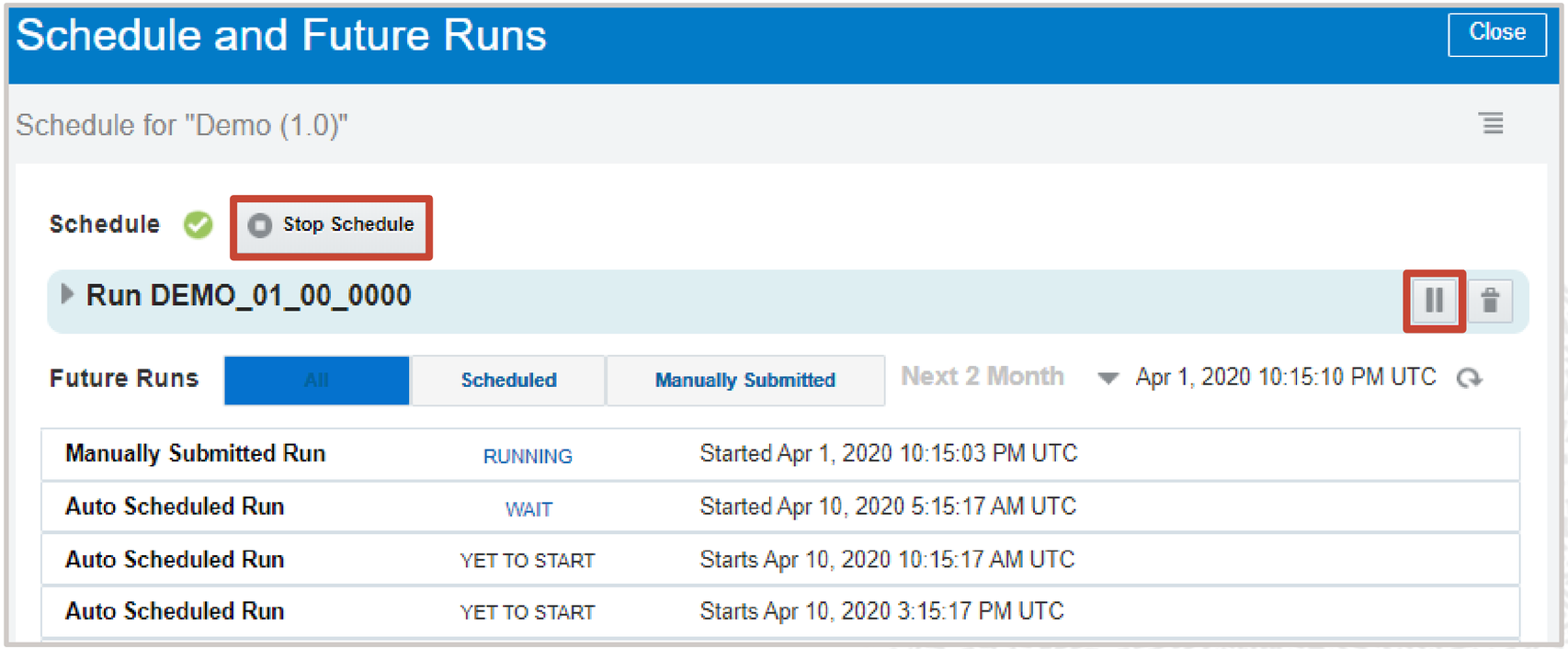
- If the integration is not yet active, the schedule will start automatically when the integration is activated.
- If the integration is already activated, click **Schedule** to activate the schedule.
- Another option is to click **Submit Now** to initiate an integration run immediately.
  - This option is available even if there is no schedule configured at all.
  - You can run this as an ad hoc run, or in sequence with a scheduled run.





Managing Integration Schedules

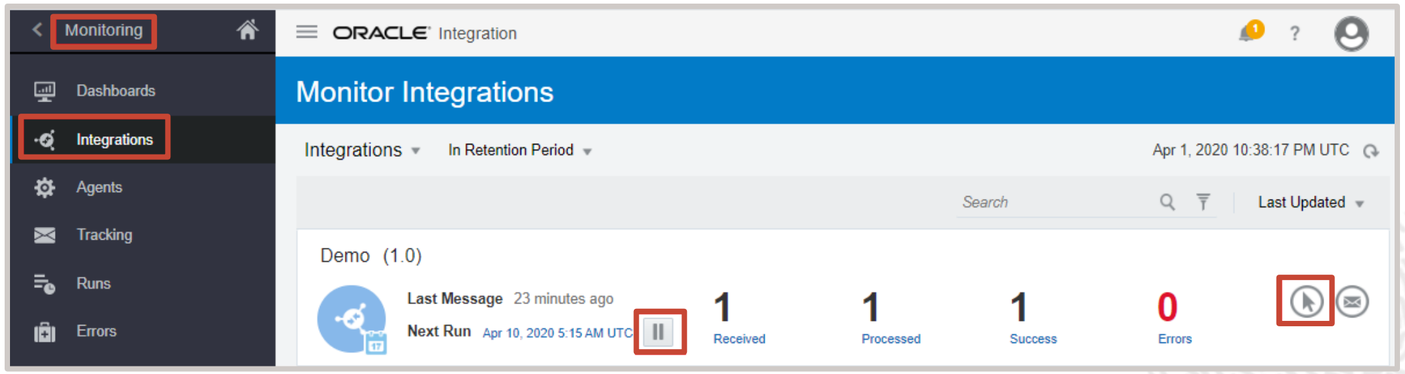
- Started schedules can be paused and restarted.
  - A schedule can also be stopped.
- You can also view the list of future runs from this page.

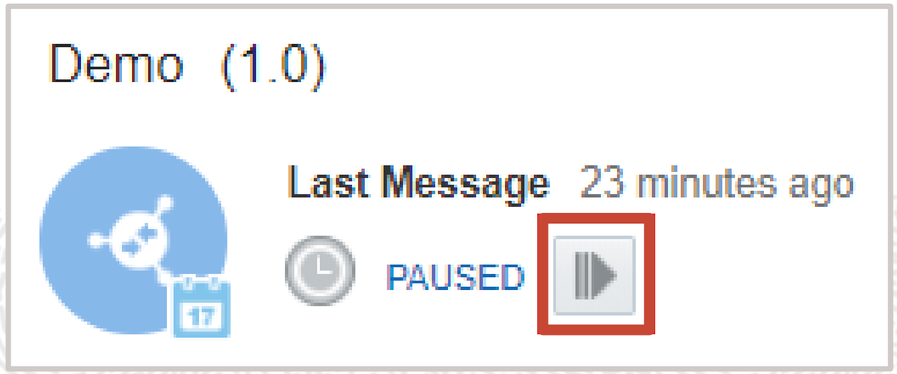


Monitoring Integration Runs

Navigate to the **Monitoring** console and select **Integrations**. Locate the integration on the **Monitor Integrations** page.

- Review information as to all completed run instances and the time for the next run.
- Click the **Submit Now** icon to start another manual run.
- Click the **Pause** icon to pause the schedule.
- If paused, click the **Play** icon to restart the schedule.

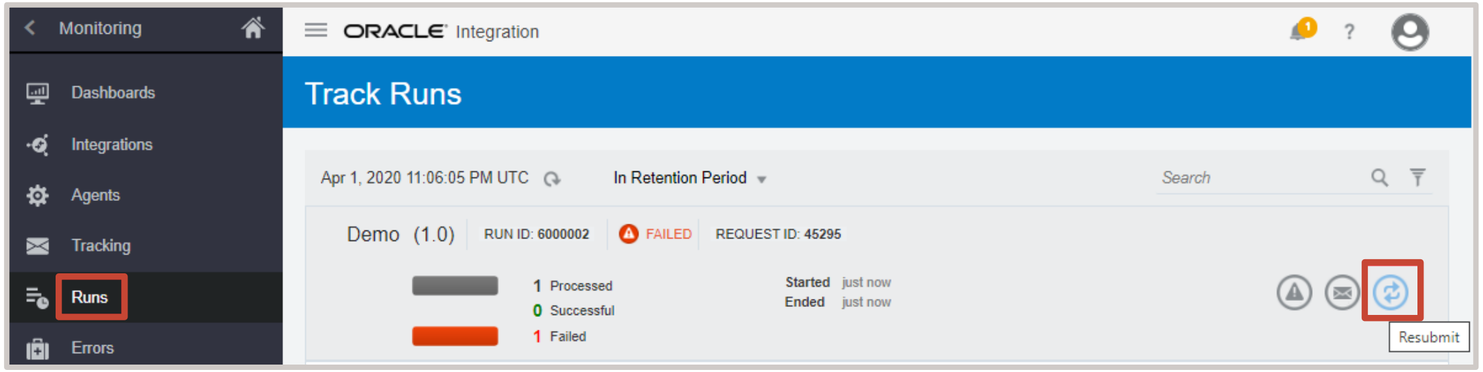


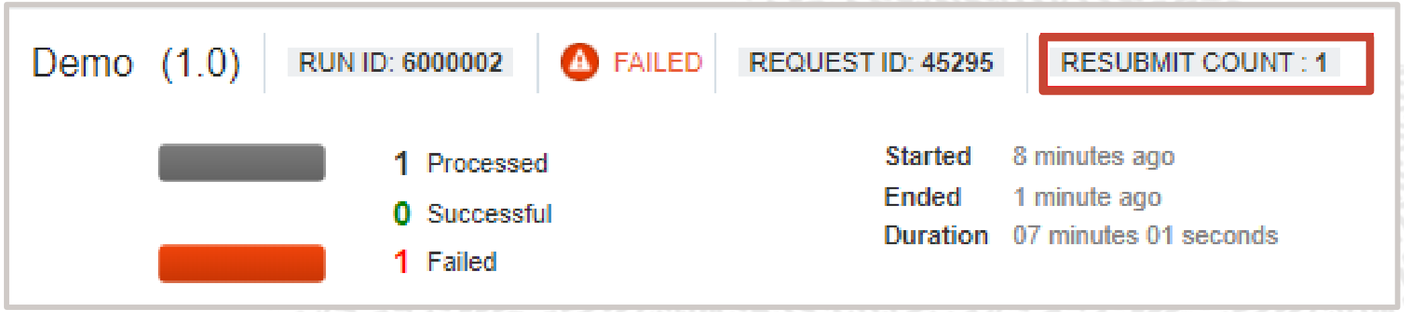


Resubmitting Failed Runs

Navigate to the **Monitoring** console and select **Runs**. Locate the integration run on the Track Runs page.

- Click the **Resubmit** icon to execute that scheduled integration instance.
- If the resubmission fails, the run status is updated with a resubmit count.

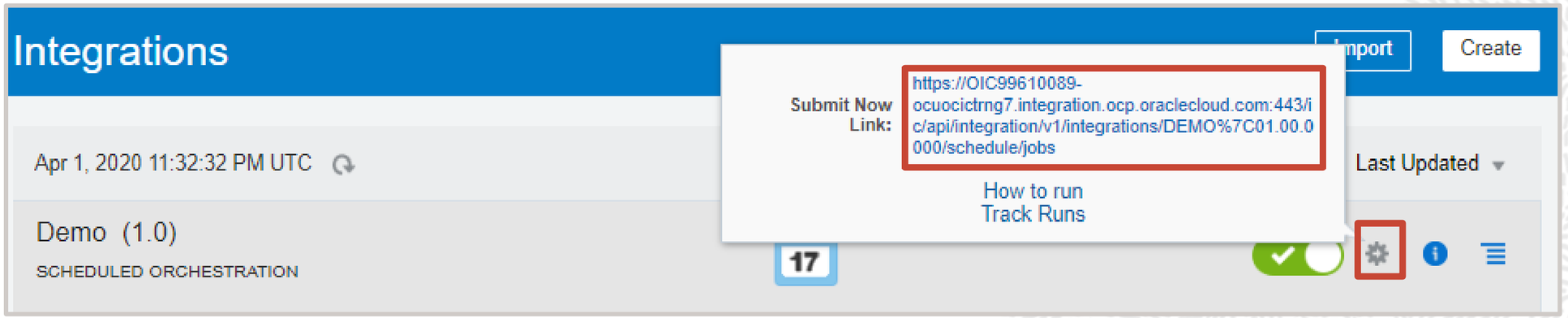




Initiating Runs Using the Integration's REST API

Leverage this feature for use in client applications that could be designed to invoke a scheduled run based on dynamic business use cases.

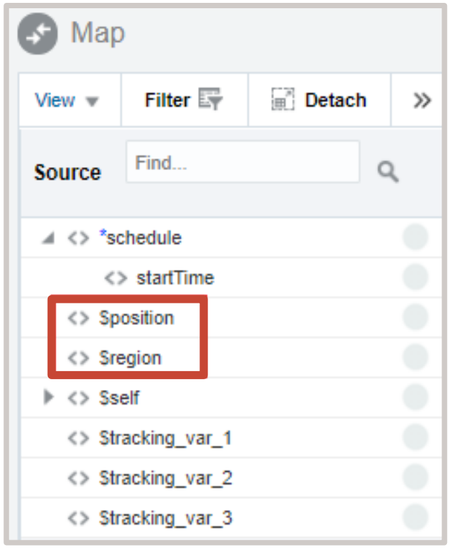
1. Locate the scheduled integration on the **Integrations** page.
2. Click the **Gear** icon on the far right.
3. Copy the URL from **Submit Now Link** and provide it to the client application.
   - The application will also need OIC credentials with the *ServiceInvoker* role.
4. Develop the application logic to start the run as required.

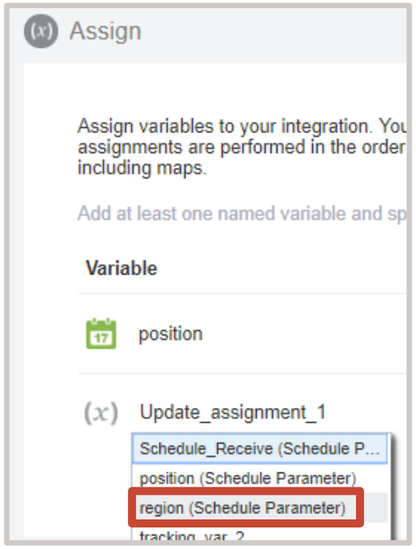


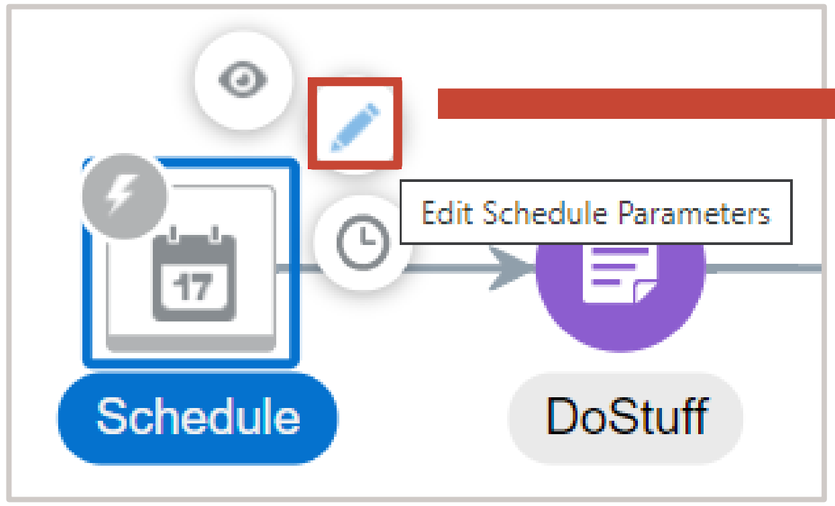
Using Schedule Parameters

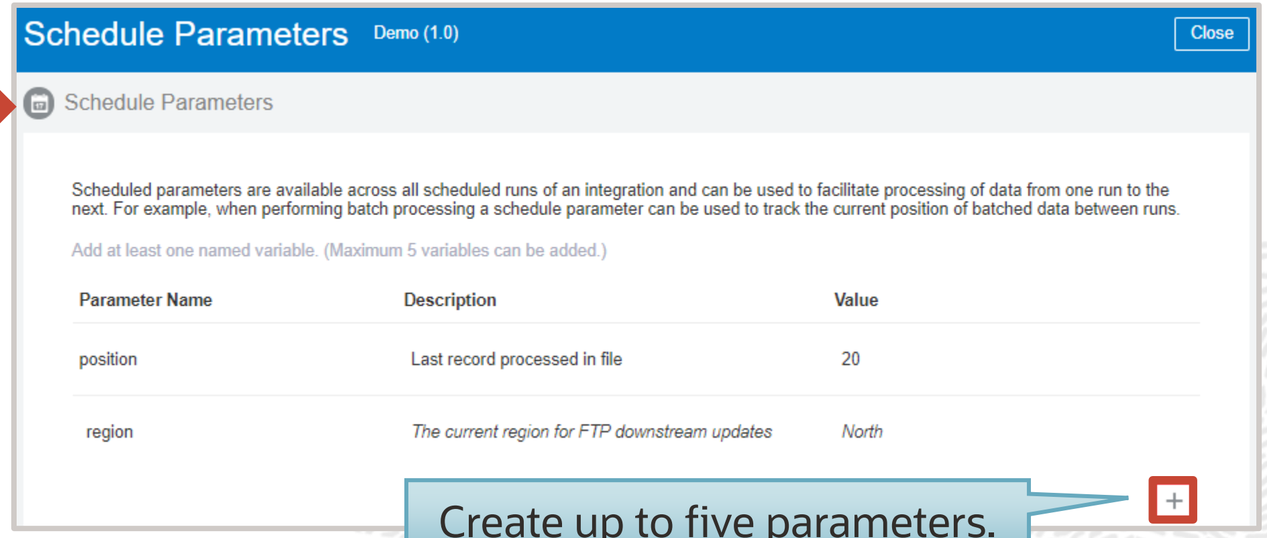
Create and update scalar parameters for scheduled orchestrations.

- Parameter values are available within the **Source** section of mappers and expression editors.
- Updates to parameter values in **Assign** actions persist on to the next run instance of the integration.



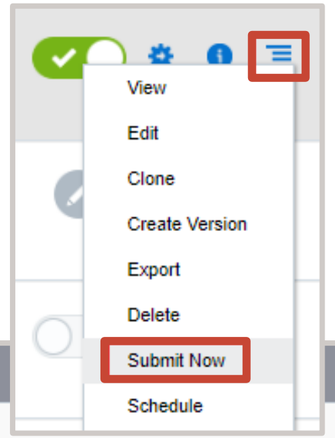






Overriding Schedule Parameters

When you start a schedule (*or submit a manual ad hoc request*), you will be prompted to accept the current values or choose to provide a new value manually prior to execution.

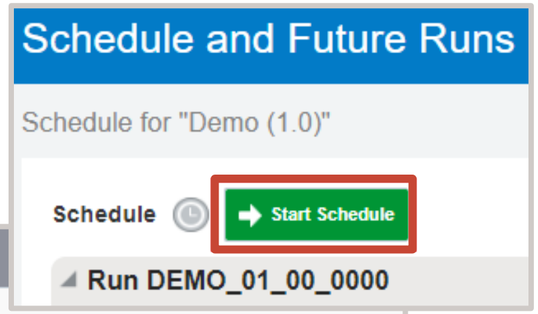


Submit Now : Configure Schedule Parameters

Configure values for Schedule Parameters. **New Value** replaces the currently stored value and will be used for the new run. **Current Value** indicates the currently stored value.

Parameter Name	Default Value	Current Value	New Value
position	20	40	Enter new value
region	"North"	"North"	Enter new value

Submit | Cancel



Scheduled Run : Configure Schedule Parameters

Configure values for Schedule Parameters. **New Value** replaces the currently stored value and will be used for the new run. **Current Value** indicates the currently stored value.

Parameter Name	Default Value	Current Value	New Value
position	20	40	1
region	"North"	"South"	"West"

Start Schedule | Cancel

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- Creating Scheduled Integrations
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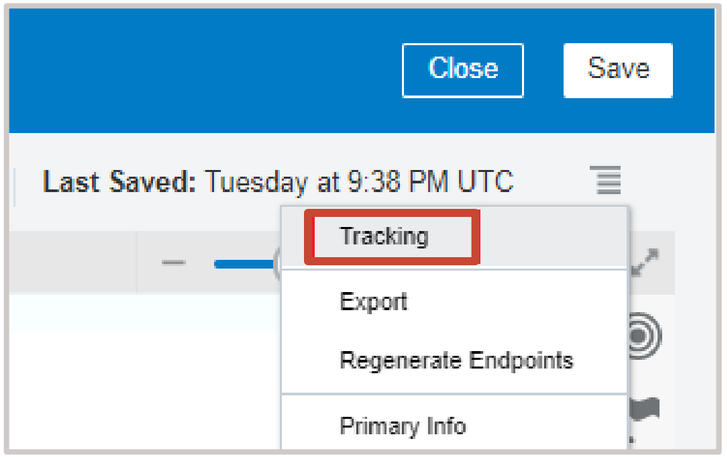
- Managing Error Instances and Troubleshooting
- OIC REST API Overview

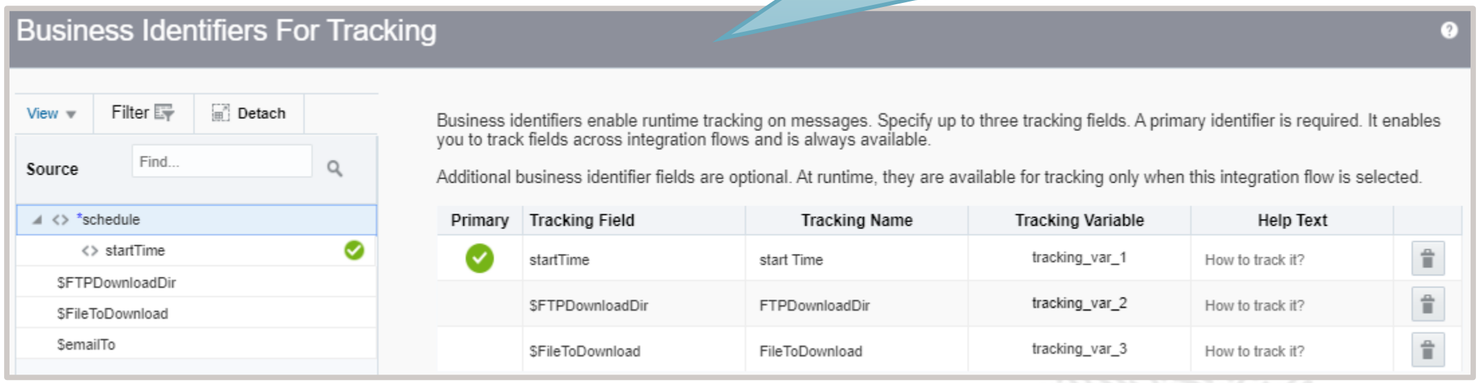
Business Identifiers (Review)

You must configure at least one Tracking Field to complete the integration's configuration.

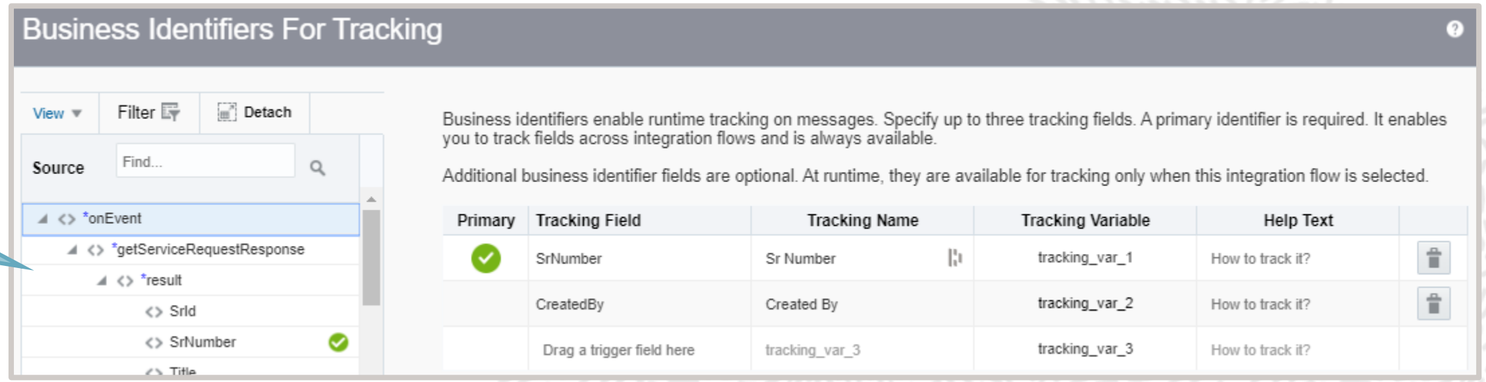
Define up to three tracking fields per integration.

Scheduled orchestrations can use the startTime and scheduled parameters.



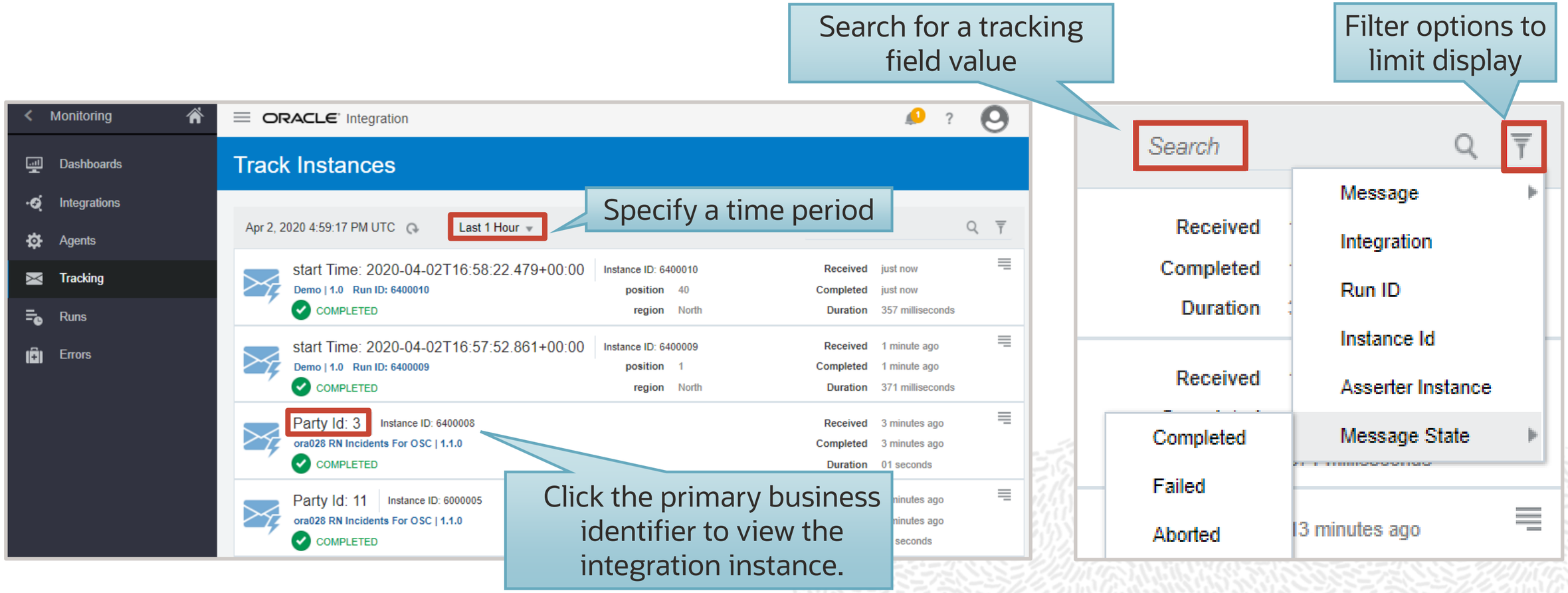


App Driven orchestrations can use any inbound source data field.



Filtering and Tracking Business Identifiers

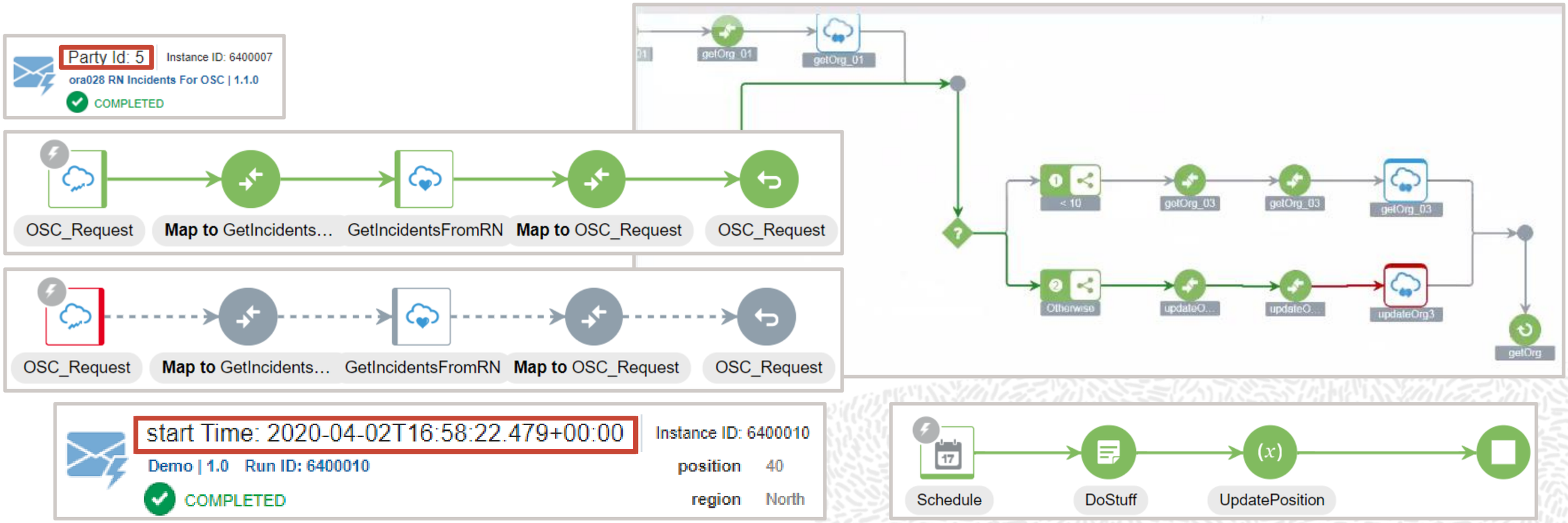
Click **Tracking** in the Monitoring portal to view any integration instance.



Viewing the Integration Instance

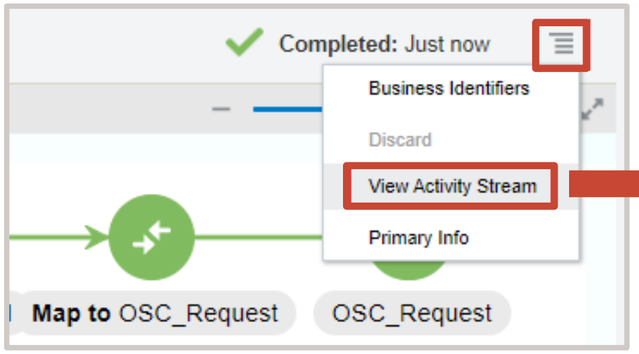
Click the business identifier to view the message flow.

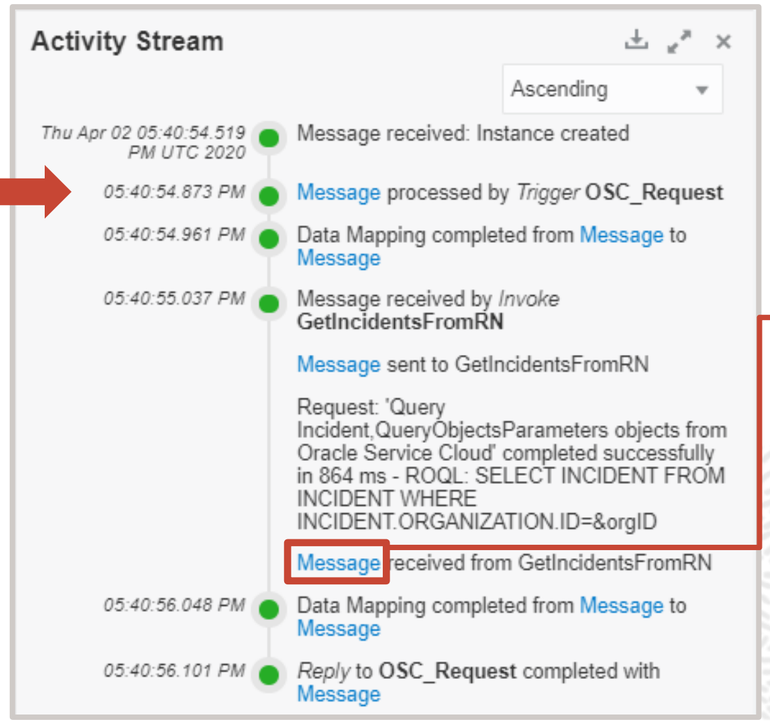
- A successful message flow is indicated with green arrows all the way to the end.
- Message flow errors will be indicated in red at the error location.

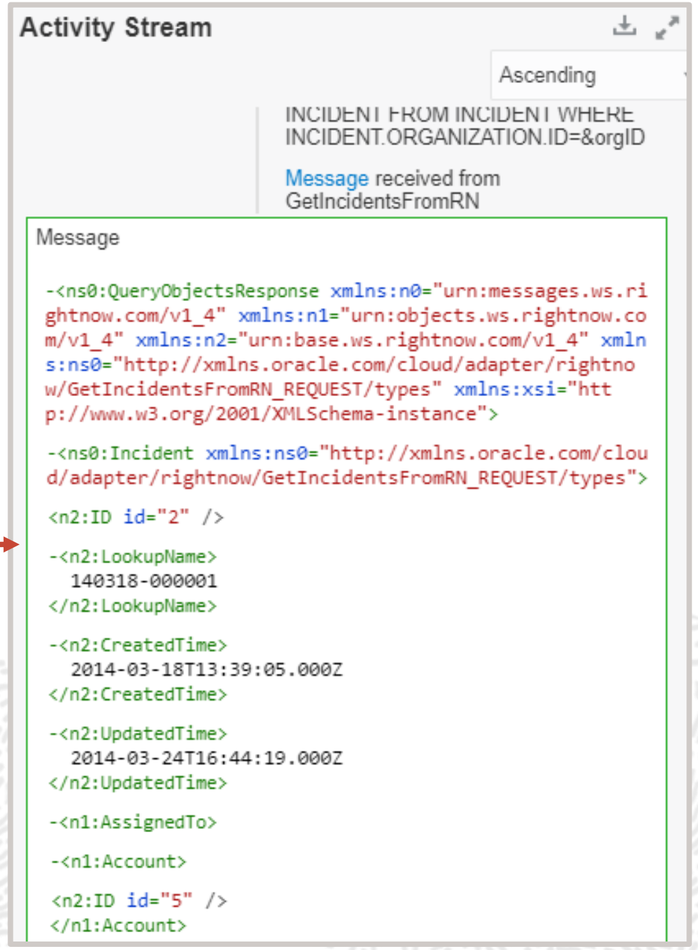


Viewing Instance Details

- From the Actions menu, click **View Activity Stream**.
- To view a specific payload, click the corresponding **Message** link.







Agenda

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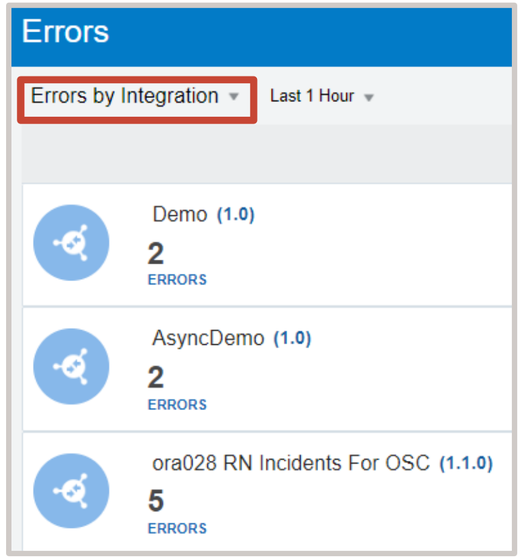
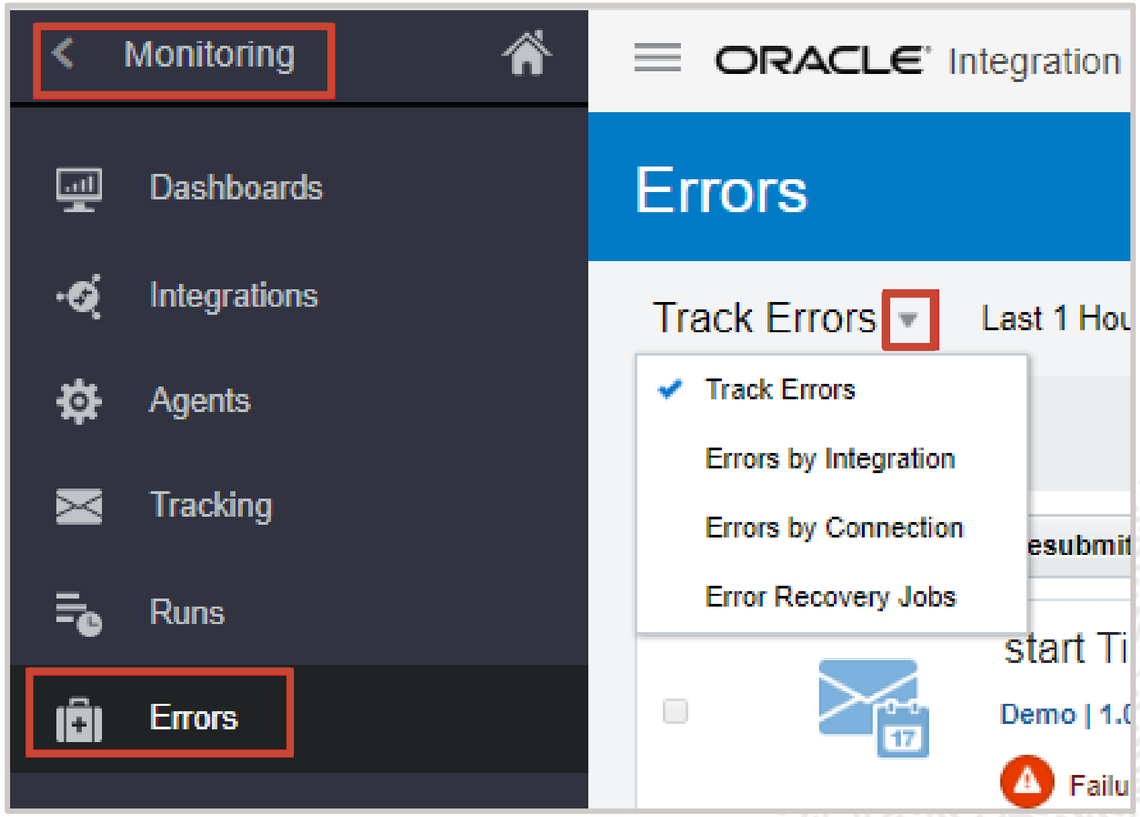
Monitoring and Managing Errors

You can locate and manage errors from the **Errors** page using the following filters:

- All Integration Instances
- Errors by Integration
- Errors by Connection
- Error Recovery Jobs

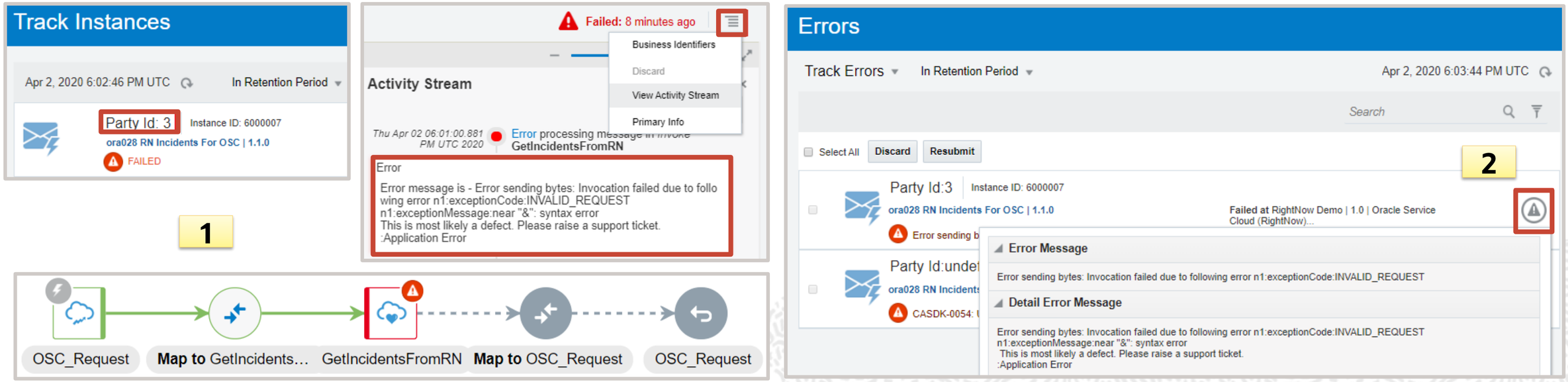




Viewing Errors

To view a specific error message, you have two options:

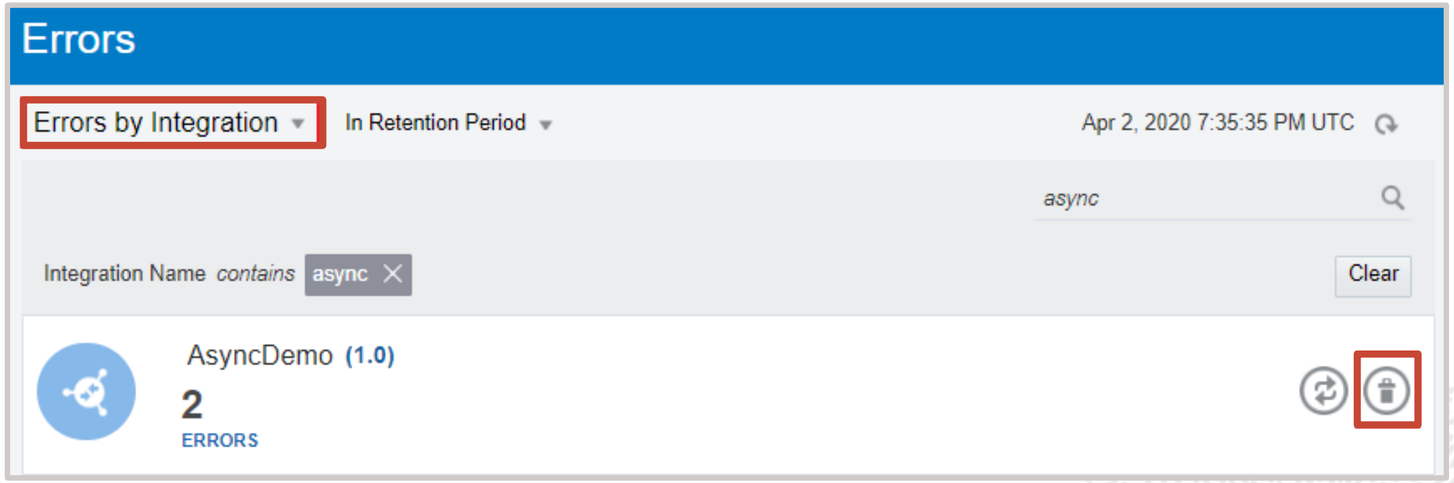
1. Locate the failed instance on the **Track Instances** page, and then view it in the Activity Stream.
2. Locate the instance on the **Errors** page, and then click the **View Error** icon.

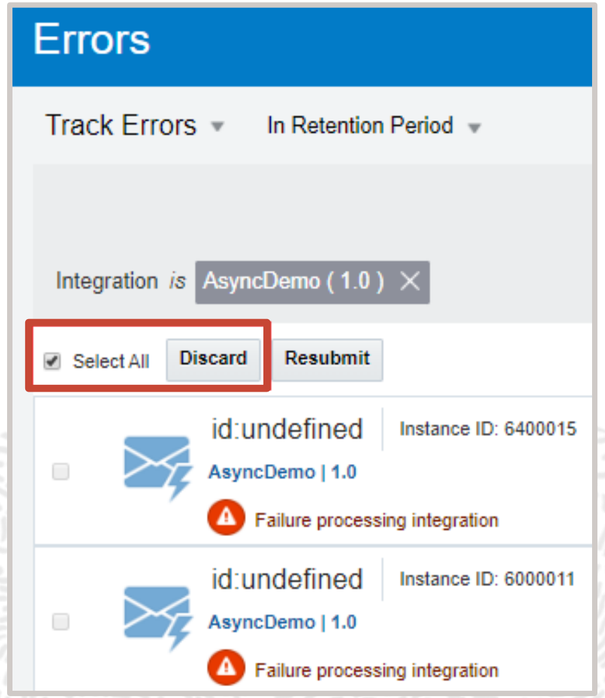


Discarding Errors

After viewing or resolving error information, you can discard one or more errors.

- Discard all specific integration errors, or select one or more specific error instances.
- Discarded errors are removed from the **Errors** page but can still be seen on the **Tracking** page in the discarded state.

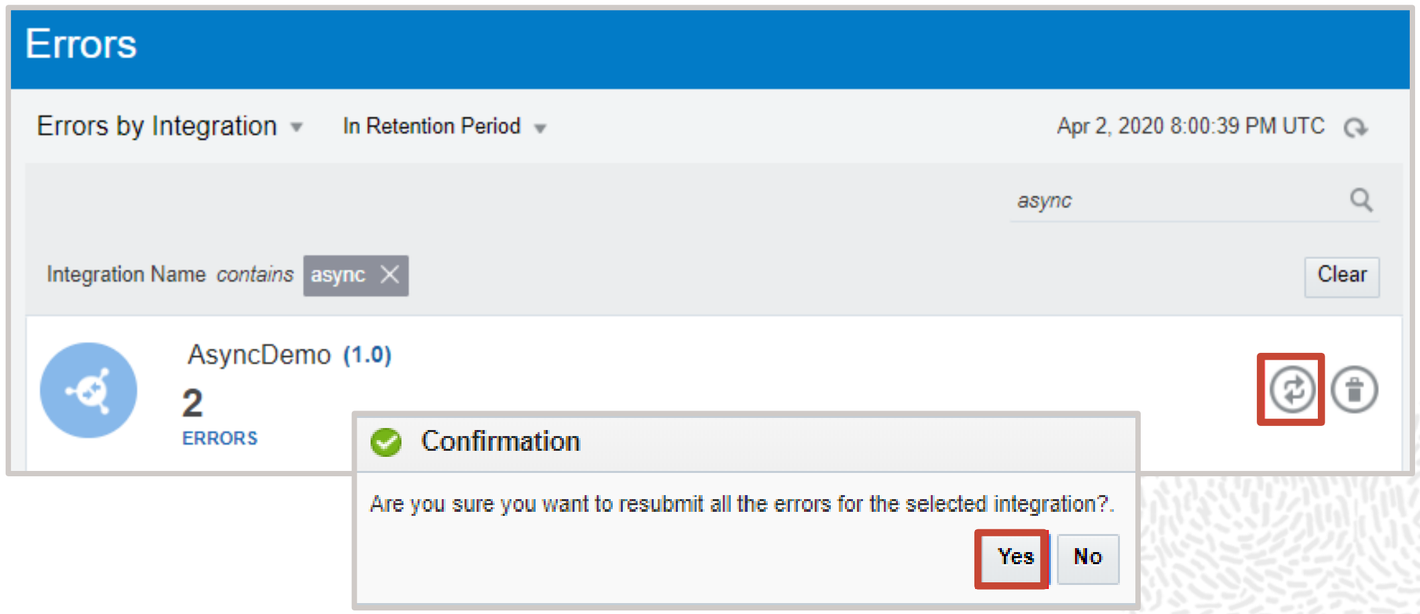


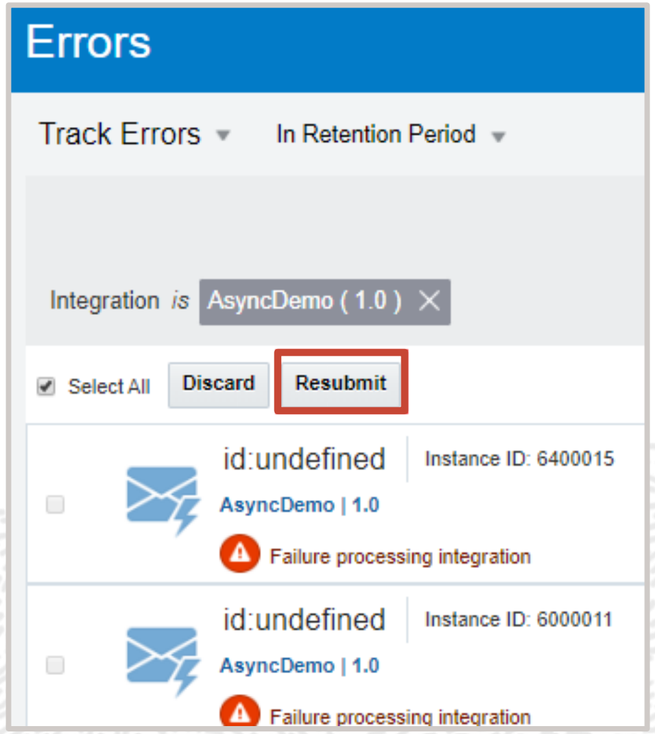


Resubmitting Failed Instances

For recoverable errors, if the external issue can be resolved, you can choose to manually resubmit a single instance or execute a bulk resubmission.

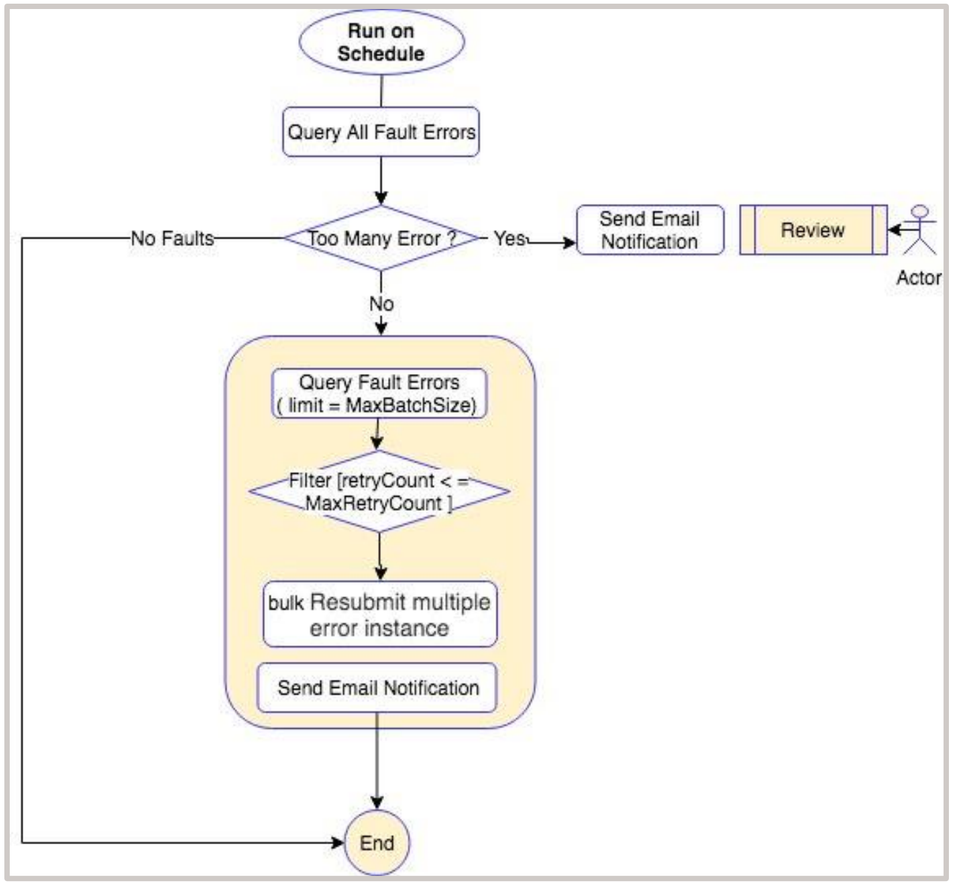
- Resubmitted error instances that are successful will be removed from the error list.





Automated Bulk Recovery

A dynamic solution would be to create one or more integration flows designed to automatically resubmit faulted instances in bulk at specified intervals. High-level steps include the following:



- Create a scheduled orchestration flow.
- Add schedule parameters to define:
  - Min/Max Batch Sizes
  - An Error Query Filter
  - Retry Count
- Use the REST API to retrieve error instances.
- Use the REST API to resubmit error instances.
- Create appropriate email notifications.
- Define a schedule to run (*i.e. once per hour*).
- Activate the integration and monitor.

Define which specific subset of faulted instances to process.

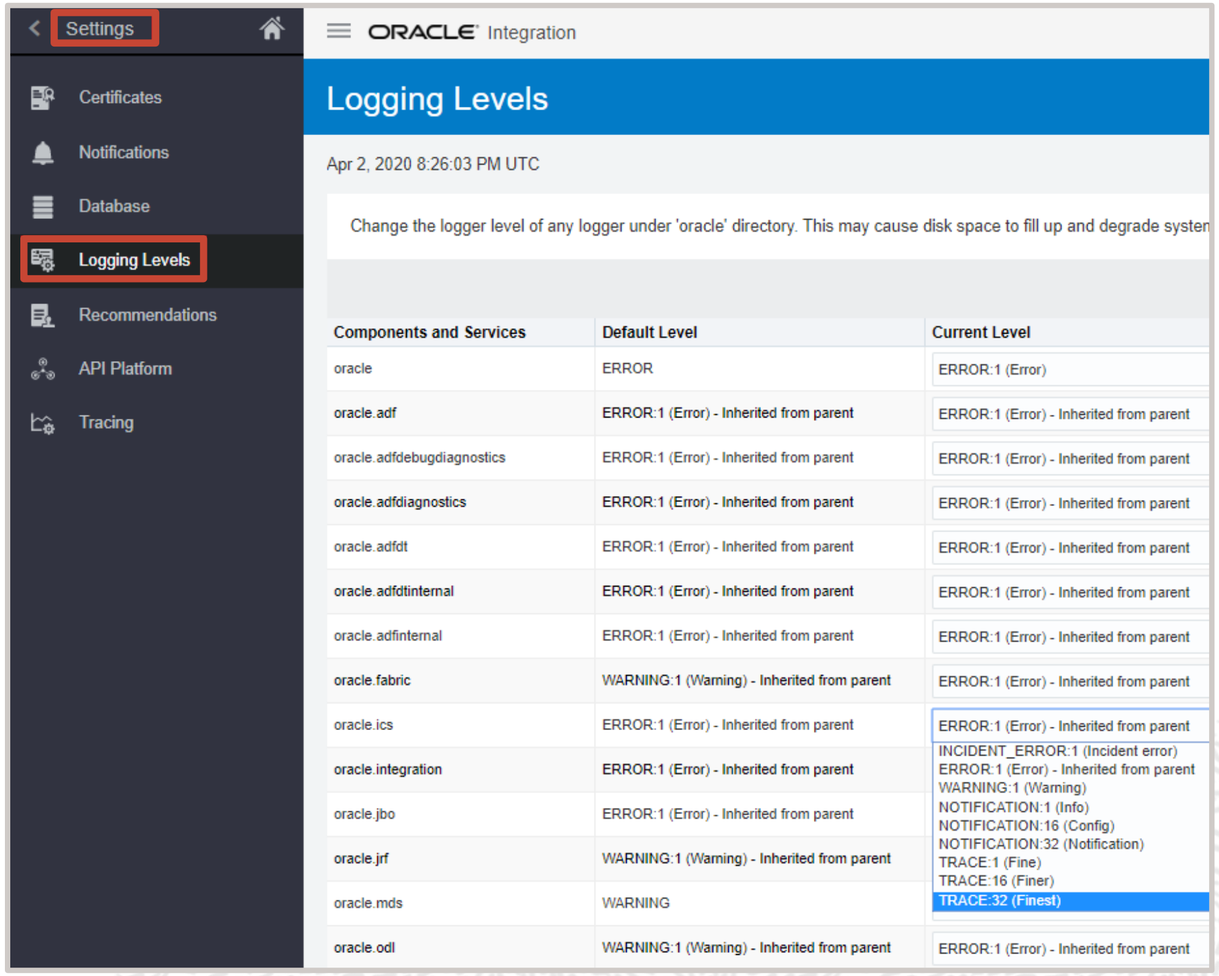
Setting Logging Levels

For additional troubleshooting assistance, you may wish to increase logging levels for content sent to the diagnostic logs.

- Navigate to **Settings** > **Logging Levels**
- Select a level for one or more loggers.
- Restore back to defaults once your troubleshooting is completed.

Changing from the default values can fill up disk space and degrade system performance.

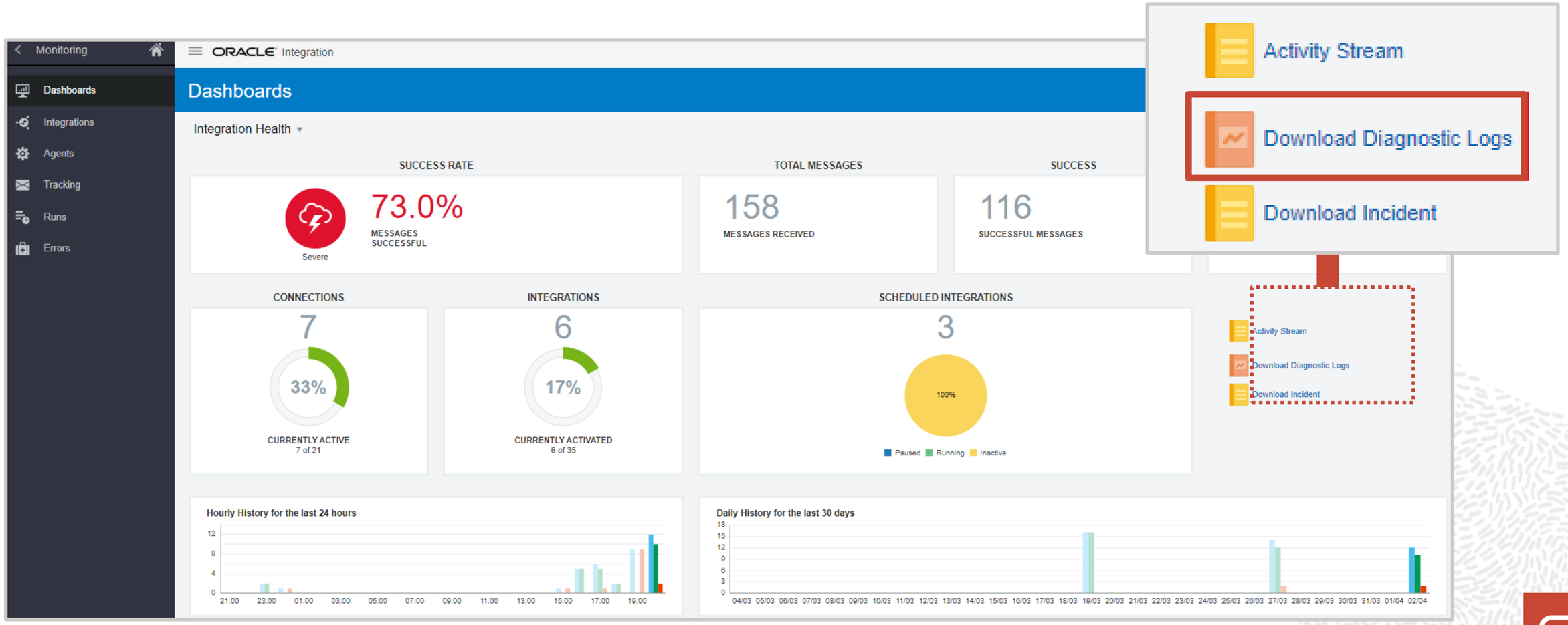
Note: *Loggers & diagnostic log access is no longer supported with newer OCI Generation 2–provisioned OIC instances.*



Accessing Logs

Note: *Loggers & diagnostic log access is no longer supported with newer OCI Generation 2–provisioned OIC instances.*

In the **Monitoring** portal, click the ***Download Diagnostic Logs*** link on the **Dashboards** page.

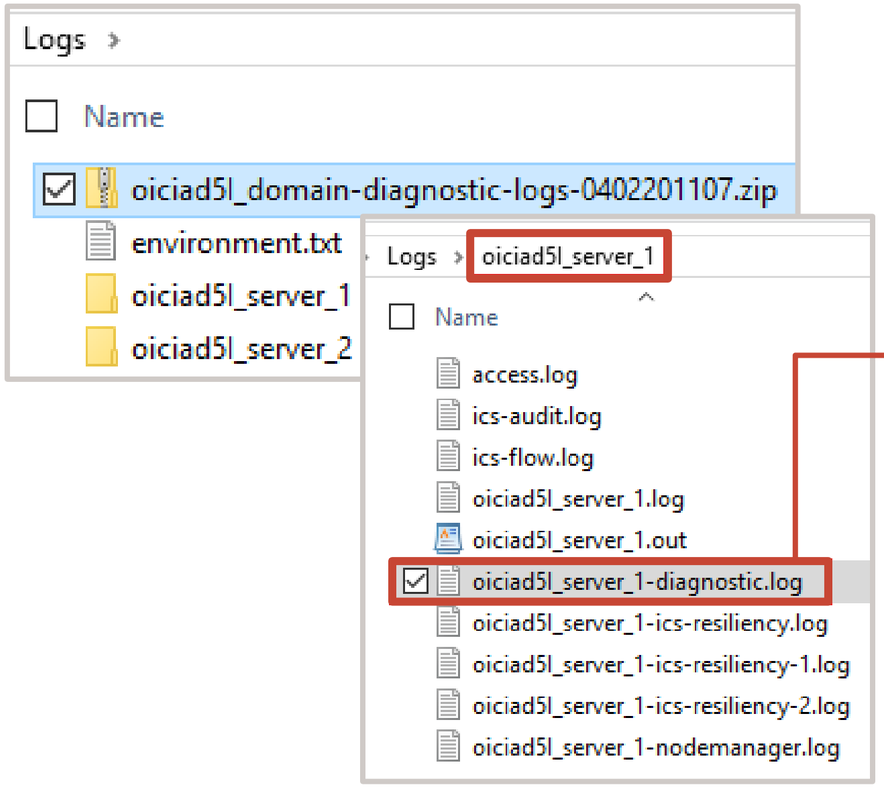


Downloaded Contents

Note: *Loggers & diagnostic log access is no longer supported with newer OCI Generation 2–provisioned OIC instances.*

The extracted archive will include folders containing the log files for each WebLogic Server instance for this OIC environment (*WLS domain*).

- The `_server_x_diagnostic.log` file is used for all OIC loggers.
- Each log entry uses the standard Oracle logging format.



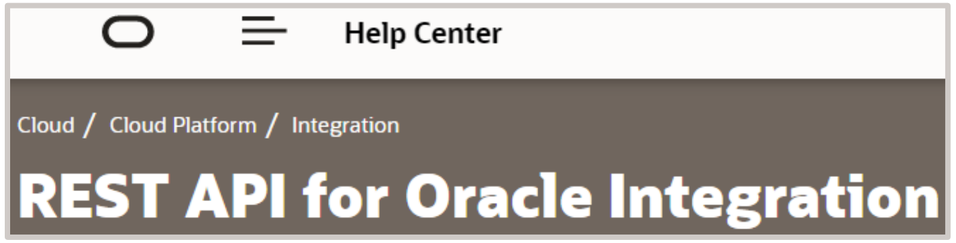

```
value:RichPanelGroupLayout[UIXFacesBeanImpl, id=dc_cli_pgl19] for
key:PropertyKey[usagePql]
[2020-03-31T19:23:29.788+00:00] [oiciad5I_server_1] [ERROR] []
[oracle.cloud.cpi.agent.transport.AQChannel] [tid: pool-124-
thread-1] [userId: ora028] [ecid: 665fc7b5-1801-4176-8c52-
f31bd31312eb-000e73f6,0:2] [APP: icswebapp] [partition-name:
DOMAIN] [tenant-name: GLOBAL] No response received within
response time out window. Connectivity Agent may not be running,
or temporarily facing connectivity issues to Oracle Integration
Cloud Service. Please check the health of the Connectivity Agent
in Agent Monitoring page. For additional insight into request
a22c7fc98d210948e053345b080a5095 processing refer to the
Connectivity Agent logs.
[2020-03-31T19:23:37.727+00:00] [oiciad5I_server_1] [WARNING] []
[org.apache.myfaces.trinidad.component.UIXComponentBase] [tid:
```

Agenda

- Creating Scheduled Integrations
- Monitoring Instances and Message Tracing
- Managing Error Instances and Troubleshooting
- OIC REST API Overview

REST API for Oracle Integration

- Leverage the OIC REST APIs to automate administration and operations tasks.
- All REST API operations:
  - Are executed over secure sockets layer (SSL)
  - Provide detailed documentation with example usage



Connections

- Delete a Connection
- Refresh Metadata for a Connection
- Retrieve a Connection
- Retrieve Connection Property Attachment
- Retrieve Connections
- Test a Connection
- Update a Connection
- Upload Connection Property Attachment
- Validate a Connection

Packages

- Delete a Package
- Export a Package
- Import Sample Packages
- Import(Add) a Package
- Import(Replace) a Package
- Retrieve a Package
- Retrieve Packages

Monitoring

- Discard an Error Integration Instance
- Discard Error Integration Instances
- Download a Log File
- Download an Incident
- Resubmit an Error Integration Instance
- Resubmit Error Integration Instances
- Retrieve Activated Integrations
- Retrieve an Activated Integration
- Retrieve an Error Integration Instance
- Retrieve an Integration Instance
- Retrieve Audit Records
- Retrieve Error Integration Instances
- Retrieve Integration Instances
- Retrieve the Activity Stream

Integrations

- Clone an Integration
- Delete an Integration Version
- Export an Integration
- Import(Add) an Integration
- Import(Replace) an Integration
- Retrieve an Integration
- Retrieve Integration Activation Errors
- Retrieve Integrations
- Update(Activate/Deactivate) an Integration

Scheduled Integrations

- Pause an Integration Schedule
- Resume an Integration Schedule
- Retrieve Scheduled Integration Run Status
- Run a Scheduled Integration Now
- Start an Integration Schedule
- Stop an Integration Schedule
- Update Scheduled Integration Parameters

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Example Use Cases

- Activating/deactivating integrations
- Exporting/importing integrations
- Updating connection URL or security credentials
- Downloading log files

Each use case is supported with specific documentation details:

Update(Activate/Deactivate) an Integration

POST

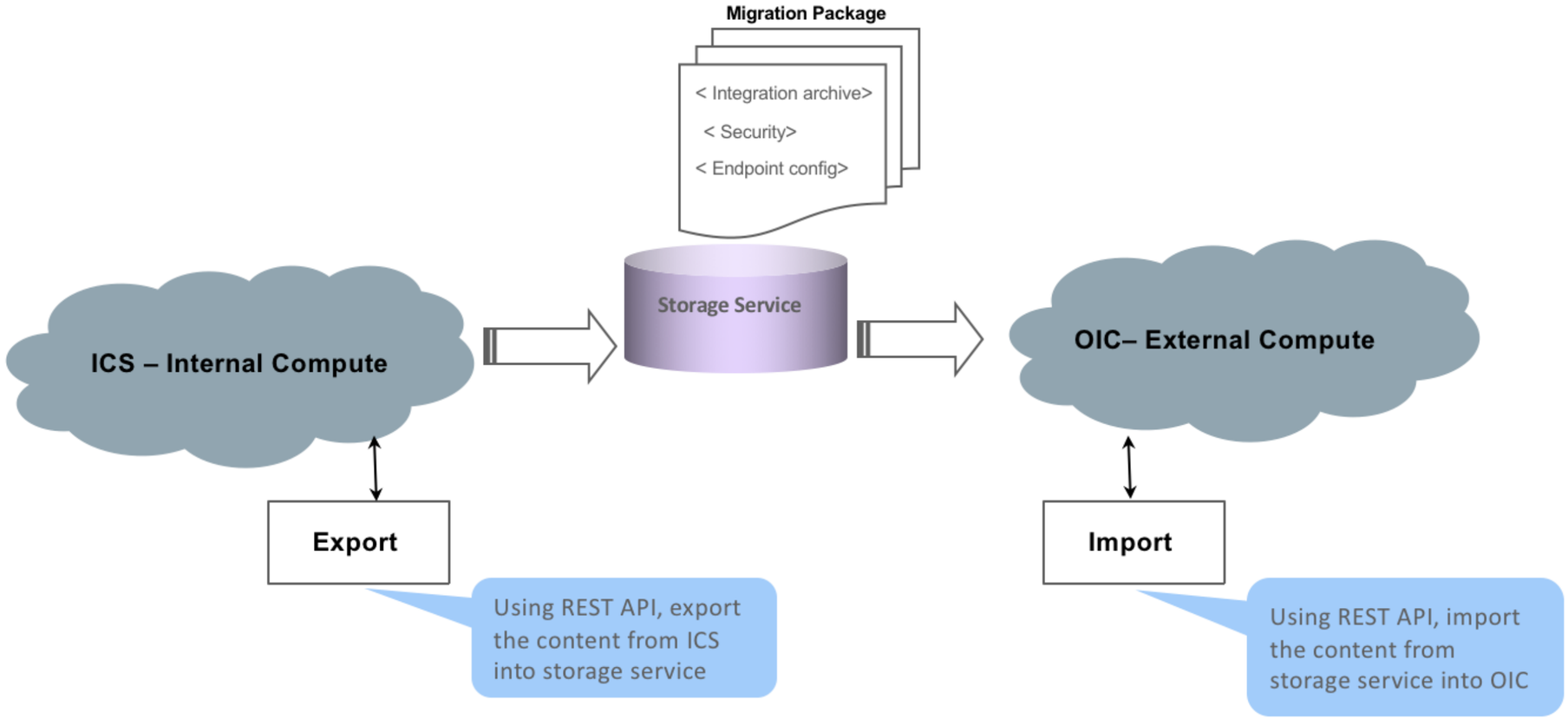
/ic/api/integration/v1/integrations/{id}

Moving Assets Between Environments

- You can export OIC data objects as an archive and import that archive into another OIC instance.
- Activated integrations in OIC do not need to manually configure connection endpoints and passwords – integration activations can occur automatically.

Oracle Integration Cloud **Oracle Integration Cloud**

Migration Overview



Export REST API: **`POST /ic/api/common/v1/exportServiceInstanceArchive`**

Import REST API: **`POST /ic/api/common/v1/importServiceInstanceArchive`**

Summary

In this lesson, you should have learned how to:

- Define basic and advanced schedules for a scheduled orchestration
- Execute scheduled or ad hoc runs in scheduled orchestrations
- Resubmit failed scheduled orchestration run instances
- Leverage schedule parameters for multiple run instances
- Monitor integration instances and message details
- View, resubmit, or discard integration error instances
- Access diagnostic logs for troubleshooting
- Describe the OIC REST API capabilities

Practice 10-1: Creating a Scheduled Orchestration

This practice includes:

- Defining a new Scheduled Orchestration
- Asynchronously Invoking an App Driven Orchestration
- Executing and Monitoring an Ad Hoc Run