

# Introduction to the Continuity Reactor REST API

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# Module Objectives

In this module, you will look at the basic elements of Continuuity Reactor through its REST API:

- REST API Conventions
  - Streams
  - Flows
  - DataSets
  - Procedures
  - Reactor Applications and Lifecycle Management
  - Logs
  - Metrics
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# Continuity REST API

The Continuity Reactor has an HTTP interface for:

- **Streams:** sending data events to a Stream, or to inspect the contents of a Stream
- **Flows:** query and setting number of instances
- **DataSets:** interacting with DataSets (currently limited to Tables)
- **Procedures:** sending queries to a Procedure
- **Reactor:** deploying and managing Applications
- **Logs:** retrieving Application logs
- **Metrics:** retrieving metrics for system and user Applications (user-defined metrics)

Note: The HTTP interface binds to port 10000

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# Continuity Reactor REST API Conventions

All URLs referenced in the API have this base URL:

```
http://<gateway>:10000/v2
```

where <gateway> is the URL of the Continuity Reactor. The base URL is represented as:

```
<base-url>
```

For example:

```
PUT <base-url>/streams/<new-stream-id>
```

means

```
PUT http://<gateway>:10000/v2/streams/<new-stream-id>
```

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# Streams and Flows

Stream API supports:

- Creating Streams
- Sending events to a Stream
- Reading single events from a Stream
- Streams may have multiple consumers (e.g., multiple Flows), each of which may be a group of different agents (e.g., multiple Flowlet instances)
- To read events from a Stream, client application must first obtain a consumer (group) id, which is passed to subsequent read requests

Flows API supports:

- Query and set the number of instances executing a given Flowlet
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# DataSets

The Data API allows you to interact with Continuity Reactor Tables (the core DataSets) through HTTP:

- Create Tables
- Read data
- Write data
- Modify data
- Delete data

Note: Deleting or dropping tables is not possible through this API, though you can truncate the DataSet using this API

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## Procedures

The REST API supports sending queries to the methods of an Application's procedures:

- Send the method name as part of the request URL
  - Send the arguments as a JSON string in the body of the request
  - Used to retrieve results from the Reactor
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# Reactor Applications and Lifecycle Management

Use the Reactor Client HTTP API to:

- Deploy or delete Applications
  - Manage the life cycle of Flows, Procedures and MapReduce Jobs
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## Logs

You can download the logs that are emitted by any of the elements running in the Continuity Reactor

Logs are emitted by:

- Flows
  - Procedures
  - MapReduce Jobs
  - WorkFlows
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# Metrics

As Applications process data, the Continuuity Reactor collects metrics about the Application's behavior and performance

Some Metrics are the same for every Application and are called **System** or **Reactor** metrics:

- How many events are processed
  - How many data operations are performed
  - etc.
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## Metrics: User-defined

Other metrics are **User-defined** and differ from Application to Application:

- Embed user-defined metrics in the methods defining the elements of your application
  - They will then emit their metrics
  - Retrieve them using the Continuuity Reactor's REST interfaces
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# Module Summary

You should now be familiar with:

- Reactor REST API Convention
  - Streams and Flows
  - DataSets
  - Procedures
  - Reactor Applications and Lifecycle Management
  - Logs
  - Metrics
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# Module Completed

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