

# DataSet REST API

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# Module Objectives

In this module, you will learn:

- The DataSet REST API
  - Interactions with DataSets using HTTP
  - Creating and Truncating Tables
  - Reading, Writing, Incrementing and Deleting Data
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## DataSet REST API

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

You can:

- create Tables
- truncate Tables
- read, write, modify and delete data

For DataSets other than Tables, you can only truncate DataSets using this API

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# Creating a new Table

To create a new table, issue an HTTP PUT method to the URL:

```
PUT <base-url>/tables/<table-name>
```

## Parameter

<table-name>

## Description

Name of the Table to be created

## HTTP Responses

### Status Code : *Description*

200 OK : The event was successfully received and the Table was either created or already exists  
409 Conflict : A DataSet of a different type already exists with the given name

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## Creating a new Table: Example

PUT <base-url>/tables/streams/mytable

Create a new Table named *mytable*

### Comments

- Creates a Table with the name given by <table-name>
  - Table names should only contain ASCII letters, digits and hyphens
  - If a Table with the same name already exists, no error is returned, and the existing Table remains in place
  - If a DataSet of a different type exists with the same name—for example, a key/value Table or KeyValueTable—this call will return a 409 Conflict error
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## Writing Data to a Table

To write to a table, send an HTTP PUT method to the table's URI:

```
PUT <base-url>/tables/<table-name>/rows/<row-key>
```

### Parameter

<table-name>

### Description

Name of the Table to be written to

### Parameter

<row-key>

### Description

Row identifier

HTTP Responses

### Status Code : *Description*

200 OK : The event was successfully received and the Table was successfully written to  
400 Bad Request : The JSON String map is not well-formed or cannot be parsed as a map from String to String  
404 Not Found : A Table with the given name does not exist

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## Writing Data to a Table: Example

PUT <base-url>/tables/mytable/rows/status

Write to the existing Table named *mytable* in a row identified as *status*

### Comments

In the body of the request, you must specify the columns and values that you want to write to the Table as a **JSON String map**:

```
{ "x": "y", "y": "a", "z": "1" }
```

This writes three columns named *x*, *y*, and *z* with values *y*, *a*, and *1* respectively

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# Reading Data from a Table

To read data from a Table, address the row that you want to read directly in an HTTP GET method to the table's URI:

```
GET <base-url>/tables/<table-name>/rows/<row-key>[?<column-identifier>]
```

## Parameter

<table-name>

## Description

Name of the Table to be read from

## Parameter

<row-key>

## Description

Row identifier

## Parameter

<column-identifiers>

## Description

An optional combination of attributes and values such as:  
start=<column-id> | stop=<column-id> | columns=<column-id>,<column-id>

## HTTP Responses

### Status Code : *Description*

200 OK : The event was successfully received and the Table was successfully read from  
400 Bad Request : The column list is not well-formed or cannot be parsed  
404 Not Found : A Table with the given name does not exist



## Reading Data from a Table: Example

GET <base-url>/tables/mytable/rows/status

Read from an existing Table named *mytable*, a row identified as *status*

### Comments

The response will be a JSON String representing a map from column name to value

Reading the row that was written in the previous example the response is:

```
{"x": "y", "y": "a", "z": "1 "}
```

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## Reading Data from a Table: Selected Columns

Can specify a list of columns explicitly or give a range of columns

To return only columns x and y:

```
GET ... /rows/<row-key>?columns=x,y
```

To return all columns equal to or greater than (inclusive) c5:

```
GET ... /rows/<row-key>?start=c5
```

To return all columns less than (exclusive, not including) c5:

```
GET ... /rows/<row-key>?stop=c5
```

To return all columns equal to or greater than (inclusive) c2 and less than (exclusive, not including) c5:

```
GET ... /rows/<row-key>?start=c2&stop=c5
```

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# Incrementing Data in a Table

To perform an atomic increment of cells of a Table's row, and receive back the incremented values, issue an HTTP POST method to the row's URL:

```
POST <base-url>/tables/<table-name>/rows/<row-key>/increment
```

## Parameter

<table-name>

## Description

Name of the Table to be read from

## Parameter

<row-key>

## Description

Row identifier of row to be read

## HTTP Responses

### Status Code : *Description*

200 OK : The event successfully incremented the row of the Table 400 Bad Request : The JSON String is not well-formed; or cannot be parsed as a map from a String to a Long; or one of the existing column values is not an 8-byte long value 404 Not Found : A table with the given name does not exist

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## Incrementing Data in a Table: Example (1 of 2)

POST <base-url>/streams/mytable/rows/status/increment

To increment the columns of *mytable*, in a row identified as *status*, by 1

### Comments

- In the body of the method, you must specify the columns and values that you want to increment them by as a JSON map from Strings to Long numbers:

```
{ "x": 1, "y": 7 }
```

- Same effect as the corresponding Java Table Increment method
  - If successful, the response contains a JSON String map from the column keys to the incremented values.
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## Incrementing Data in a Table: Example (2 of 2)

For example, if the existing value of column x was 4, and column y did not exist, then the response would be:

```
{"x":5,"y":7}
```

Column y is newly created

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# Deleting Data from a Table

To delete from a table, submit an HTTP DELETE method:

```
DELETE <base-url>/tables/<table-name>/rows/<row-key>[?<column-identifier>]
```

## Parameter

<table-name>

## Description

Name of the Table to be deleted from

## Parameter

<row-key>

## Description

Row identifier

## Parameter

<column-identifiers>

## Description

An optional combination of attributes and values such as:  
start=<column-id> | stop=<column-id> | columns=<column-id>,<column-id>

## HTTP Responses

### Status Code : *Description*

200 OK : The event successfully deleted the data of the Table  
404 Not Found : A table with the given name does not exist

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## Deleting Data from a Table: Example

GET <base-url>/tables/mytable/rows/status

Deletes from an existing Table named *mytable*, a row identified as *status*

### Comments

Similarly to *Reading Data from a Table*, explicitly list the columns that you want to delete by adding a parameter of the form `?columns=<column-key,...>`.

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## Deleting Data from a DataSet

To clear a dataset of all data, submit an HTTP POST request:

```
POST <base-url>/datasets/<dataset-name>/truncate
```

### Parameter

<dataset-name>

### Description

Name of the DataSet to be truncated

### HTTP Responses

#### Status Code : *Description*

200 OK : The event successfully deleted the data of the DataSet 404 Not Found : A DataSet with the given name does not exist

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## Deleting Data from a DataSet: Example

POST <base-url>/datasets/mydataset/truncate

Deletes all of the data from an existing DataSet named *mydataset*

### Comments

This works not only for Tables but with other DataSets, including user-defined Custom DataSets

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## Module Summary

You should now understand the DataSet REST API and:

- Interactions with DataSets using HTTP
  - Creating and Truncating Tables
  - Reading, Writing, Incrementing and Deleting Data
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## Module Completed