



# **Ruckus Wireless™ SmartCell Insight™ 2.1 API User Guide**

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# SmartCell Insight Overview

SmartCell Insight (SCI) is a Big Data analytics and reporting engine that provides deep visibility into the performance and operational statistics of your Ruckus Wireless WiFi infrastructure.

SmartCell Insight (SCI) is designed to collect data from Ruckus network equipment, analyze that data, and then present it using a wide variety of standard and custom reports. SCI provides visibility, analytics and reports about network transmission statistics, equipment status and user traffic. It also provides details about the devices and applications that are used on the network, so that decision-makers can make better informed decisions about what types of devices and content their customers are using and will be using more of in the future.

SCI provides a rich set of APIs to access the various functionality provided by the core SCI engine.

## Accessing the API

You can access the API after you log into the SCI User Interface. You can access most of the reports mentioned in this section using the user interface, but if you require a detailed report at a granular level you can query the API which pulls the data from the core engine. Also the user interface limits the reports to top 100, if you require more than that you can access the API and procure them.

## Navigating to the UI

To log into the SCI User Interface, use the following URL and the credentials.

1. Enter <https://<yourSCI IP address>/explorer> in your web browser.
2. Log in using the following default credentials:  
Username: admin  
Password: admin

This page exposes all the APIs from the SCI core engine. If you have changed the default password, please use the new password accordingly.

## Generating Access Token

You can access these APIs after you generate an access token.

To generate the access token:

1. Go to the section **Users** > **Login**. The following screenshot illustrates the same.

Figure 1: User Login

Method	Endpoint	Description
DELETE	/users/{id}/accessTokens	Deletes all accessTokens of this model.
GET	/users/{id}/accessTokens/{fk}	Find a related item by id for accessTokens.
PUT	/users/{id}/accessTokens/{fk}	Update a related item by id for accessTokens.
DELETE	/users/{id}/accessTokens/{fk}	Delete a related item by id for accessTokens.
GET	/users/{id}/accessTokens/count	Counts accessTokens of user.
GET	/users/{id}/exists	Check whether a model instance exists in the data source.
GET	/users/change-stream	Create a change stream.
POST	/users/change-stream	Create a change stream.
GET	/users/confirm	Confirm a user registration with email verification token.
GET	/users/count	Count instances of the model matched by where from the data source.
GET	/users/findOne	Find first instance of the model matched by filter from the data source.
POST	/users/login	Login a user with username/email and password.
POST	/users/logout	Logout a user with access token.
POST	/users/reset	Reset password for a user with email.
POST	/users/update	Update instances of the model matched by where from the data source.

- In the **credentials** section, enter the user credentials you used to log into the user interface.  
 Username: admin  
 Password: admin  
 Input in string in the format `{"username":"admin", "password":"admin"}`

- Click **Try it out!** tab

Figure 2: Credentials

Response Content Type: application/json

Parameter	Value	Description	Parameter Type	Data Type
<b>credentials</b>	<code>{"username":"admin", "password":"admin"}</code>		body	Model   Model Schema { }
include		Related objects to include in the response. See the description of return value for more details.	query	string

Parameter content type: application/json

[Try it out!](#) [Hide Response](#)

You will get your access token in the **Response body** of the curl script as displayed below.

Figure 3: Access Token

**Curl**

```
curl -X POST --header "Content-Type: application/json" --header "Accept: application/json" -d '{"username":"rsa", \
```

**Request URL**

```
https://rsa-staging.ruckuslbs.com/api/users/login?access_token=Jn4mgkNl8dIEFAAR4nvtwGFJ6KuCedGTxZ5uZFnSS0ZdLFJ3gApGbwjE
```

**Response Body**

```
{
  "id": "tn33XDf40CsAiWmPOhXUu3I1KNUTwtUVlf8MJ9aUwmqoIZTzjmahD9GNvLDORbTb",
  "ttl": 1209600,
  "created": "2016-07-21T02:39:03.265Z",
  "userId": 1
}
```

4. Copy this access token and paste it in the **Token Set.** field displayed at the top of the SCI user interface.
5. Click **Set Access Token**

Figure 4: Set Access Token

**StrongLoop API Explorer** Token Set.  **Set Access Token**

Now you can access all the API reports in the system.

**Note:** You might not get the whole report in the Response Body if it is huge amount of data. You can access the reports by using:

- Request URL. Paste this URL in a web browser to access the reports.
- curl script to SSH on to your machine and direct those reports to a desired location.

# Using the API Dialog Box

By using the API dialog box, you can view and modify the messages to generate your API reports. On clicking each of the parameters and the resource URL the API dialog box is displayed.

Figure 5: API Dialog Box

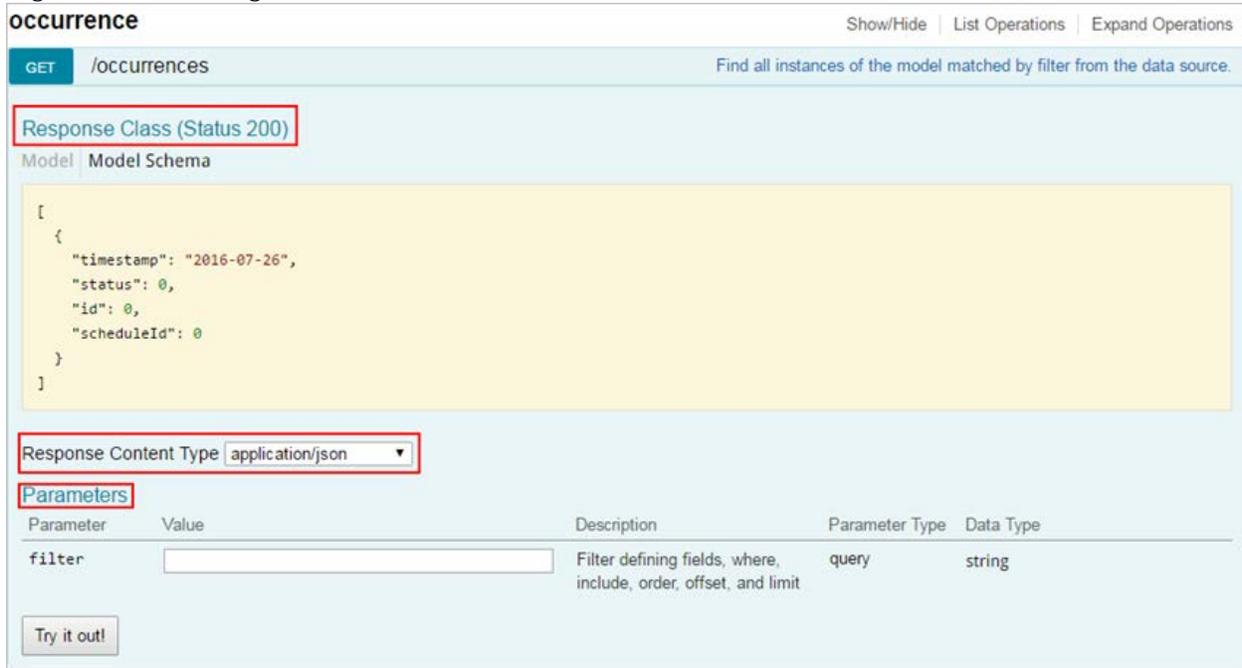


Table 1: API Dialog Box

<i>Name</i>	<i>Description</i>
Response Class	The Response interface of the API represents the response to a request.
Response Content Type	Content-type: application/json; designates the content to be in JSON format. This is the default type.
<i>Parameters</i>	
Parameter	Use the filter parameter, to supply a dimension you want to filter on, followed by the filter expression.
Value	The Parameter Value contains the value to be included in the request.
Description	Auto displays the parameter description
Parameter Type	Lists the API parameter types that you can use in the path or query parameters for your backend API methods, and the types you can use as method return types or request body types.

<i>Name</i>	<i>Description</i>
Data Type	Lists the data types used in API parameters and notification message fields.
Try it out	Click on this icon to view the response body based on the parameters set.
Curl	Curl is a command line tool and library for transferring data with URL syntax. Use the curl command to simulate HTTP verbs such as HEAD, GET, POST, PUT and DELETE request calls to the API.
Request URL	Contains the URL of the response.
Response Body	The response interface represents the response to a request.
Response Code	Contains the status code of the response. For example, 200 for a success.
Response Header	Contains the headers object associated with the response.

# Report Types

## Occurrence

This provides the API report related to the retrieval of occurrence records based on the scheduler. (Refer to the SCI User Guide for details).

## Report

Report type is for various reports available in the application such as Network, WLAN, and Clients.

## Schedule

This is to schedule automatic report generation and delivery. You can also specify occurrences for a particular schedule. (Refer to the SCI User Guide for details).

## Setting

This report type is for system level settings including SMTP settings.

## System

This report type is based on all the controllers that report to the SCI as data sources.

## User

The user usage report returns activities pertaining to SCI across the user's accounts.

## ZDXML

This report type is Zone Director's specific calls.

# Common Tasks

SCI's API allows you to build your custom specified reports, based on the available parameters. Each of these parameters has the following tasks, which is common.

## Show / Hide

This toggle command shows or hides the rows dynamically in a table.

## List Operations

This command displays the list of HTTP verbs such as GET, PUT, POST, HEAD or DELETE row dynamically in a table.

## Expand Operations

This command expands the API dialog box for each listed operation. Use List Operations to contract the view.

Figure 6: Common tasks

<b>occurrence</b>	Show/Hide	List Operations	Expand Operations
<b>report</b>	Show/Hide	List Operations	Expand Operations
<b>schedule</b>	Show/Hide	List Operations	Expand Operations
<b>setting</b>	Show/Hide	List Operations	Expand Operations
<b>system</b>	Show/Hide	List Operations	Expand Operations
<b>user</b>	Show/Hide	List Operations	Expand Operations
<b>zdXml</b>	Show/Hide	List Operations	Expand Operations

# Parameters for Generating API Reports

The below table is a sample of the parameters available in generating a report pertaining to occurrence. Similarly, an array of parameters are available for different report types.

Table 2: Parameter table

Resource URL	Method	Response	Description
/occurrence	GET	Timestamp Status ID Schedule ID	Finds all instances of the model matched by filter from the data source.
/occurrences	PUT	Timestamp Status ID Schedule ID	Updates an existing model instance or inserts a new model into the data source.
/occurrences	POST	Timestamp Status ID Schedule ID	Creates a new instance of the model and persist it into the data source.
/occurrences/{id}	GET	Timestamp Status ID Schedule ID	Finds a model instance by identifier from the data source.
/occurrences/{id}	HEAD	Exists	Checks if a model instance exists in the data source.
/occurrences/{id}	PUT	Timestamp Status ID Schedule ID	Updates attributes for a model instance and persist it into the data source.
/occurrences/{id}	DELETE		Deletes a model instance by identifier from the data source.
/occurrences/{id}/exists	GET	Exists	Checks whether a model instance exists in the data source.
/occurrences/{id}/schedule	GET	Name Filter Format Frequency Day Hour Enabled Timezone Recipients ID Report ID	Retrieves the relation schedule.
/occurrences/change-stream	GET		Finds a change stream.
/occurrences/change-stream	POST		Creates a change stream.

<b>Resource URL</b>	<b>Method</b>	<b>Response</b>	<b>Description</b>
/occurrences/count	GET	Count	Counts the instances of models matched based on data source.
/occurrences/findOne	GET	Timestamp Status ID Schedule ID	Finds the first instance of the model matched by filter from the data source.
/occurrences/update	POST		Updates instances of the models matched based on the data source.

# Accessing and Retrieving Data

You can access and retrieve data for different sections of the Ruckus Smart Analytics using the following options:

## Find the ID of the Report

You can click on this link to search for a report using the ID.

Figure 7: Report

**report** Show/Hide List Operations Expand Operations

**GET** /reports Find all instances of the model matched by filter from the data source.

**Response Class (Status 200)**

Model | Model Schema

```
[
  {
    "title": "string",
    "urlSegmentName": "string",
    "filterDataSource": "string",
    "id": 0,
    "facetId": 0
  }
]
```

Response Content Type:

**Parameters**

Parameter	Value	Description	Parameter Type	Data Type
filter	<input type="text"/>	Filter defining fields, where, include, order, offset, and limit	query	string

## Find the ID of the Section

You can search using the report ID you are interested in. Take note of the defaultParameters attribute, it specifies the required parameters for the section.

You can browse to the section for which you want the report using this link.

**Example:** If you enter 3 as the ID you get the respective information in the **Response Content Type** section.

Figure 8: Search by ID of the Section

Response Class (Status 200)

Model | Model Schema

```
[
  {
    "order": 0,
    "title": "string",
    "queryName": "string",
    "component": "string",
    "defaultParameters": {},
    "layout": {},
    "url": "string",
    "id": 0,
    "reportId": 0
  }
]
```

Response Content Type

Parameters

Parameter	Value	Description	Parameter Type	Data Type
filter	<input type="text"/>		query	string
id	<input type="text" value="3"/>	PersistedModel id	path	string

## Query the Data Endpoint

You can query the data endpoint with the report id, sectionId and other required parameters.

Figure 9: Query Data Endpoint

Implementation Notes

For the **filter** field below, an example would be

```
{ "type": "or", "fields": [{ "type": "selector", "dimension": "apMac", "value": "000000000000" }]}
```

Response Class (Status 200)

Model | Model Schema

```
{
  "data": [
    {}
  ],
  "metadata": {}
}
```

Response Content Type

Parameters

Parameter	Value	Description	Parameter Type	Data Type
id	<input type="text" value="(required)"/>	Report Id	path	string
sectionId	<input type="text" value="(required)"/>	Section Id	path	string
start	<input type="text" value="(required)"/>	2016-04-06T16:04:46+00:00	formData	string
end	<input type="text" value="(required)"/>	2016-04-07T16:04:46+00:00	formData	string
granularity	<input type="text"/>	fifteen_minute, thirty_minute, hour, day	formData	string

**Note:** You have to specify the mandatory parameters such as id, sectionId, start, and end as string values.

For each of the steps, click **Try it out!** to query the API server.

# Generating API Reports

Based on report type you can generate various reports. The following is an illustration of generating reports based on the report identifier.

1. Navigate to the **URL - GET /reports**
2. Click **Try it out!** which displays all the reports along with its report identifier
3. Navigate to the **GET /reports/{id}**
4. Enter the parameter identifier
5. Click **Try it out!** which displays the reports pertaining to the identifier
6. Use the curl command or the request URL to view the report.