



Ruckus Wireless™ SmartCell Insight™ 2.1.1

API User Guide

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About This Guide

This *SmartCell Insight API User Guide* provides instructions about how the Ruckus Wireless™ SmartCell Insight (SCI) APIs work to access the various functionalities provided by the core SCI engine.

This guide is written for service operators and system administrators who are responsible for managing, configuring, and troubleshooting Wi-Fi networks. It assumes basic working knowledge of local area networks, wireless networking, and wireless devices.

NOTE Refer to the release notes shipped with your product to be aware of certain challenges when upgrading to this release.

Most user guides and release notes are available in Adobe Acrobat Reader Portable Document Format (PDF) or HTML on the Ruckus Wireless Support Web site at <https://support.ruckuswireless.com/contact-us>.

Document Conventions

[Table 1: Text conventions](#) on page 4 and [Table 2: Notice conventions](#) on page 5 list the text and notice conventions that are used throughout this guide.

Table 1: Text conventions

| Convention | Description | Example |
|--------------------------------|--|---|
| message phrase | Represents messages displayed in response to a command or a status | [Device Name] > |
| user input | Represents information that you enter | [Device Name] > set ipaddr 10.0.0.12 |
| user interface controls | Keyboard keys, software buttons, and field names | Click Create New |
| Start > All Programs | Represents a series of commands, or menus and submenus | Select Start > All Programs |
| ctrl+V | Represents keyboard keys pressed in combination | Press ctrl+V to paste the text from the clipboard. |
| screen or page names | | Click Advanced Settings . The Advanced Settings page appears. |
| command name | Represents CLI commands | |

| Convention | Description | Example |
|----------------------|---|---------------------------|
| parameter name | Represents a parameter in a CLI command or UI feature | |
| <i>variable name</i> | Represents variable data | {ZoneDirectorID} |
| filepath | Represents file names or URI strings | http://ruckuswireless.com |

Table 2: Notice conventions

| Notice type | Description |
|-----------------|--|
| NOTE | Information that describes important features or instructions |
| CAUTION! | Information that alerts you to potential loss of data or potential damage to an application, system, or device |
| WARNING! | Information that alerts you to potential personal injury |

Related Documentation

For a complete list of documents that accompany this release, refer to the Release Notes.

Documentation Feedback

Ruckus Wireless is interested in improving its documentation and welcomes your comments and suggestions.

You can email your comments to Ruckus Wireless at: docs@ruckuswireless.com

When contacting us, please include the following information:

- Document title
- Document part number (on the cover page)
- Page number (if appropriate)

SmartCell Insight Overview

1

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://<your SCI 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

The screenshot shows the StrongLoop API Explorer interface. At the top, there is a header with the StrongLoop logo, the text "StrongLoop API Explorer", a "Token Set." dropdown menu set to "accessToken", and a "Set Access Token" button. Below the header is a list of API endpoints, each with a method (DELETE, GET, PUT, POST), a path, and a description. The endpoint `POST /users/login` is highlighted with a red rectangular box. A mouse cursor is visible over the `POST` method of this endpoint.

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

2. In the **credentials** section, enter the user credentials you used to log into the user interface.

Username: admin

Password: admin

Input a string in the format `{"username":"admin", "password":"admin"}`

3. Click the **Try it out!** tab

Figure 2: Credentials

SmartCell Insight Overview

Accessing the API

The screenshot shows the 'Parameters' section of an API Explorer. At the top, 'Response Content Type' is set to 'application/json'. Below, a table lists parameters:

| Parameter | Value | Description | Parameter Type | Data Type |
|-------------|---|---|----------------|---|
| credentials | <pre>{\"username\":\"admin\", \"password\":\"admin\"}</pre> | | body | Model Model Schema <pre>{}</pre> Click to set as parameter value |
| include | <input type="text"/> | Related objects to include in the response. See the description of return value for more details. | query | string |

At the bottom, there are buttons for 'Try it out!' and 'Hide Response'.

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

Figure 3: Access Token

The screenshot displays the 'Curl' section with the following command:

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

The 'Request URL' section shows:

```
https://rsa-staging.ruckuslbs.com/api/users/login?access_token=Jn4mgkNl8dIEFAAR4nvtwGFJ6KuCedGTxZ5uZFnSS0ZdLFJ3gApGbWj3
```

The 'Response Body' section shows the following JSON response:

```
{  
  "id": "tn33XDf40CsAiWmPOhXUu3I1KNUTwtUVlf8MJ9aUwmqoIZTzimahD9GNvLD0RbTb",  
  "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



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:

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

Using the API Dialog Box

Use the API dialog box to 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

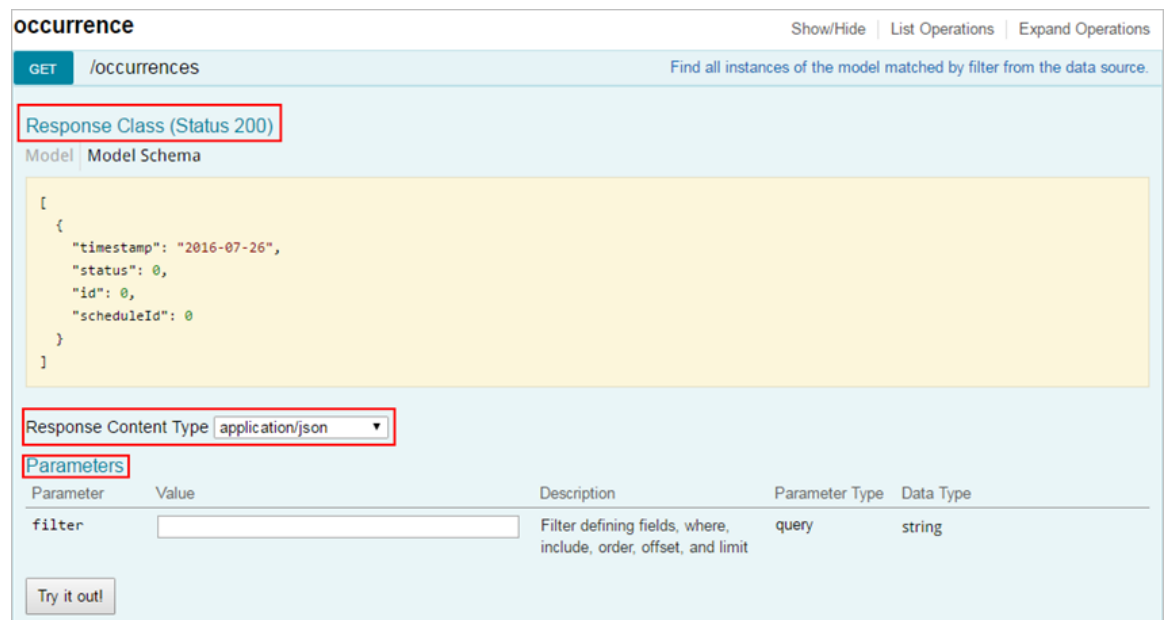


Table 3: API Dialog Box

| Name | Description |
|----------------|---|
| Response Class | The Response interface of the API represents the response to a request. |

| Name | Description |
|-----------------------|--|
| Response Content Type | Content-type: application/json; designates the content to be in JSON format. This is the default type. |
| Parameters | |
| 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. |
| 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

2

This section lists and describes the report types available in SCI.

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

| | |
|-------------------|---|
| occurrence | Show/Hide List Operations Expand Operations |
| report | Show/Hide List Operations Expand Operations |
| schedule | Show/Hide List Operations Expand Operations |
| setting | Show/Hide List Operations Expand Operations |
| system | Show/Hide List Operations Expand Operations |
| user | Show/Hide List Operations Expand Operations |
| zdXml | Show/Hide List Operations Expand Operations |

Parameters for Generating API Reports

This section lists the parameters available to generate a report pertaining to occurrence. Similarly, an array of parameters are available for different report types.

The table below contains a sample of the parameters available in generating a report pertaining to occurrence.

Table 4: 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. |

Report Types

Parameters for Generating API Reports

| Resource URL | Method | Response | Description |
|--------------------------|--------|--|--|
| /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. |

| Resource URL | Method | Response | Description |
|----------------------------|--------|--|---|
| /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. |
| /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. This section contains the available options and how to use them.

The options are:

Report Types

Accessing and Retrieving Data

- Find the ID of the report
- Find the ID of the section
- Query the data endpoint

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 default Parameters 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 at 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: application/json

Parameters

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

[Try it out!](#)

Query the Data Endpoint

You can query the data endpoint with the report ID, section ID and other required parameters.

Figure 9: Query Data Endpoint

Report Types

Generating API Reports

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.

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