Aruba Central Application Programming Interface

aruba

a Hewlett Packard
Enterprise company

Reference Guide

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Contents 3

About this Guide 5

Contacting Support 5

API Gateway 6

API Gateway and NB APIs 6

Accessing API Gateway 7

Domain URLs 8

Viewing Swagger Interface 9

List of Supported APIs 9

Creating Application and Token 11

Using OAuth 2.0 for Authentication 12

Access and Refresh Tokens 12

Obtaining Access Token 12

Accessing APIs 13

Viewing and Revoking Tokens 14

Adding a New Token 14

Obtaining Token Using Offline Token Mechanism 15

Obtaining Token Using OAuth Grant Mechanism 15

Step 1: Authenticate a User and Create a User Session 15

Example 16

Step 2: [Optional] Generating Client Credentials 17

Example 17

Step 3: Generate Authorization Code 17

Example 18

Step 4: Exchange Auth Code for a Token 19

Example 20

Step 5: Refreshing a Token 20

Example 21

Step 6: Deleting a Token 21

Example 21

Viewing Usage Statistics 22

Webhooks 23

Creating and Updating Webhooks Through the UI 24

Refreshing Webhooks Token Through the UI 25

Creating and Updating Webhooks Through the API Gateway 25

List of Webhooks APIs 26

Sample Webhooks Payload Format for Alerts 27

Access Point Alerts—Sample JSON 28

Switch Alerts—Sample JSON 35

Gateway Alerts—Sample JSON 40

Miscellaneous Alerts—Sample JSON 47

Chapter 1
About this Guide

This guide describes how to use Aruba Central Application Programming Interface (API) to configure your applications.

Contacting Support

Table 1: *Contact Information*

Main Site	arubanetworks.com
Support Site	support.arubanetworks.com
Airheads Social Forums and Knowledge Base	community.arubanetworks.com
North American Telephone	1-800-943-4526 (Toll Free) 1-408-754-1200
International Telephone	arubanetworks.com/support-services/contact-support/
Software Licensing Site	lms.arubanetworks.com
End-of-life Information	arubanetworks.com/support-services/end-of-life/
Security Incident Response Team	Site: arubanetworks.com/support-services/security-bulletins/ Email: aruba-sirt@hpe.com

Chapter 2
API Gateway

Aruba Central supports a robust set of REST APIs to enable users to build custom applications and integrate the APIs with their applications. The Aruba Central API framework uses OAuth protocol to authenticate and authorize third-party applications, and allows them to obtain secure and limited access to an Aruba Central service.

This section includes the following topics:

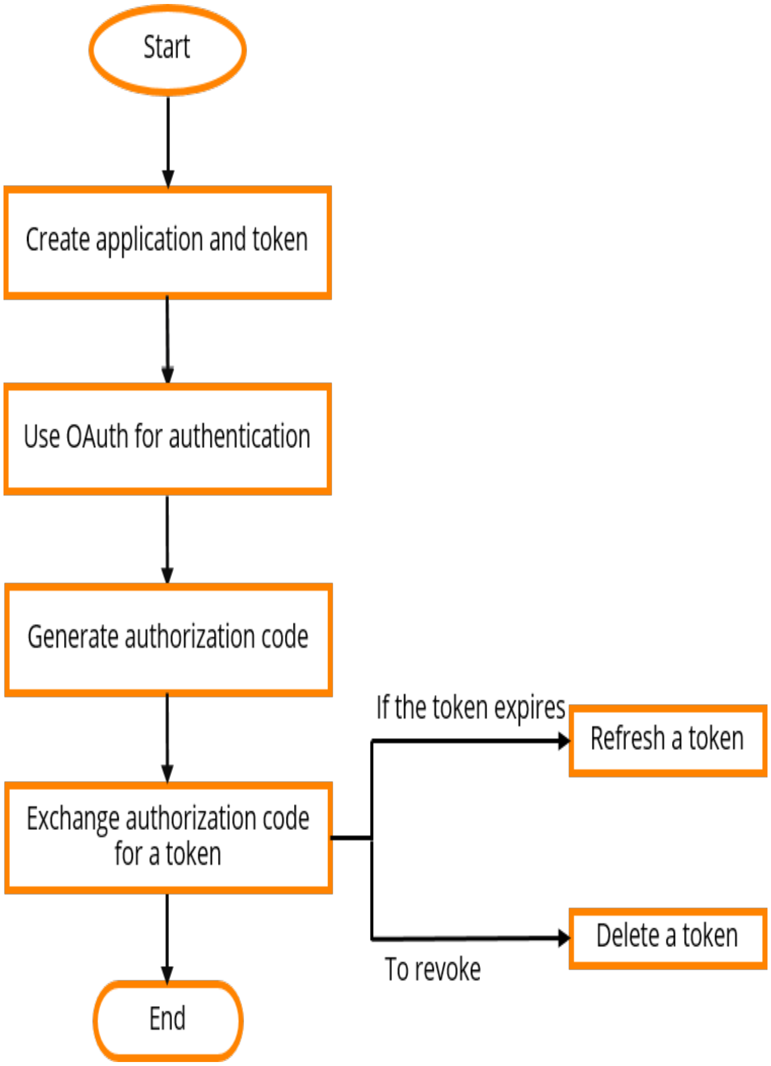
- API Gateway and NB APIs on page 6
- Accessing API Gateway on page 7
- Viewing Swagger Interface on page 9
- List of Supported APIs on page 9

API Gateway and NB APIs

The **API Gateway** feature in Aruba Central supports the REST API for all Aruba Central services. This feature allows Aruba Central users to write custom applications, embed, or integrate the APIs with their own applications. The REST APIs support HTTP GET and POST operations by providing a specific URL for each query. The output for these operations is returned in the JSON format.

For secure access to the APIs, the Aruba Central API Framework plug-in supports OAuth protocol for authentication and authorization. The access tokens provide a temporary and secure access to the APIs. The access tokens have a limited lifetime for security reasons and the applications should use the refresh API to obtain new tokens periodically (every 2 hours).

The following figure illustrates the API gateway workflow for the users:

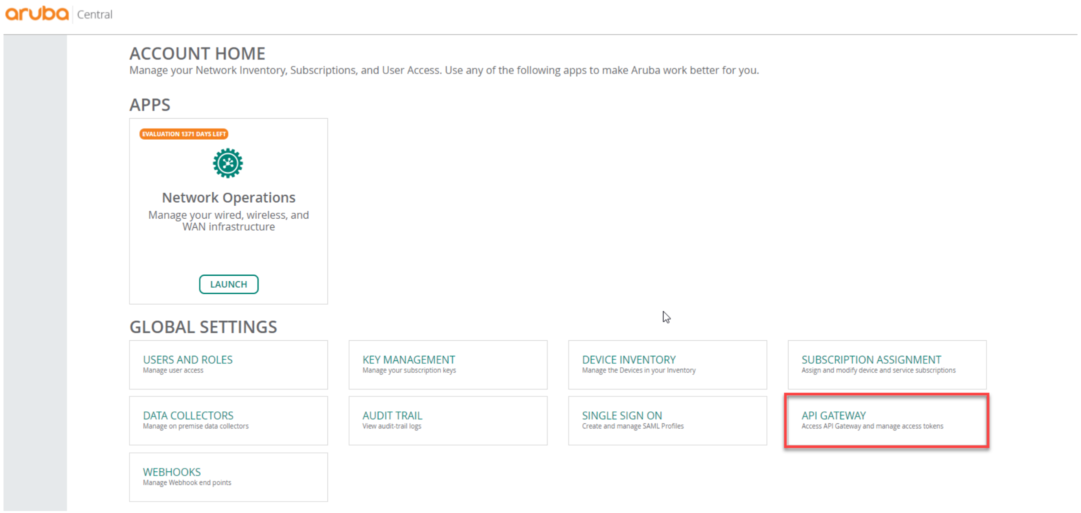

Start
Create application and token
Use OAuth for authentication
Generate authorization code
Exchange authorization code for a token
If the token expires
Refresh a token
To revoke
Delete a token
End

Accessing API Gateway

To access the API Gateway:

1. In the **Account Home** page, under **Global Settings**, click **API Gateway**.

   The **API Gateway** page is displayed. You can get new tokens and refresh old tokens. To obtain a new token application, you must set authentication parameters for a user session.


aruba Central
ACCOUNT HOME
Manage your Network Inventory, Subscriptions, and User Access. Use any of the following apps to make Aruba work better for you.
APPS
EVALUATION 1371 DAYS LEFT
Network Operations
Manage your wired, wireless, and WAN infrastructure
LAUNCH
GLOBAL SETTINGS
USERS AND ROLES
Manage user access
KEY MANAGEMENT
Manage your subscription keys
DEVICE INVENTORY
Manage the Devices in your Inventory
SUBSCRIPTION ASSIGNMENT
Assign and modify device and service subscriptions
DATA COLLECTORS
Manage on premise data collectors
AUDIT TRAIL
View audit-trail logs
SINGLE SIGN ON
Create and manage SAML Profiles
API GATEWAY
Access API Gateway and manage access tokens
WEBHOOKS
Manage Webhook end points

Important Points to Note

- The admin user profile of MSP has **System Apps & Tokens** tab which displays all the apps and tokens generated locally in the admin user profile. This tab also displays all the apps created in the non-admin user profiles. Clicking these apps lists out all the associated tokens created for the non-admin user profile.
- Administrator role is specific to an app and hence the administrator account related RBAC library APIs and decorators must contain the application name as one of the parameters in the access verification query.
- The decorators associated with **Account Home**, **Network Operations**, or **ClearPass Device Insight** must contain **account_setting**, **central**, or **optik** as app names respectively, as one of the parameters.

Domain URLs

The following table shows the region-specific domain URLs for accessing API Gateway:

Table 2: *Domain URLs for API Gateway Access*

Region	Domain Name
US-1	app1-apigw.central.arubanetworks.com
US-2	apigw-prod2.central.arubanetworks.com
EU-1	eu-apigw.central.arubanetworks.com
Canada-1	apigw-ca.central.arubanetworks.com
China-1	apigw.central.arubanetworks.com.cn
APAC-1	api-ap.central.arubanetworks.com
APAC-EAST1	apigw-apaceast.central.arubanetworks.com
APAC-SOUTH1	apigw-apacsouth.central.arubanetworks.com

NOTE

The procedures described in this article use app1-apigw.central.arubanetworks.com as an example. Ensure that you use the appropriate domain URL when accessing API Gateway or generating tokens.

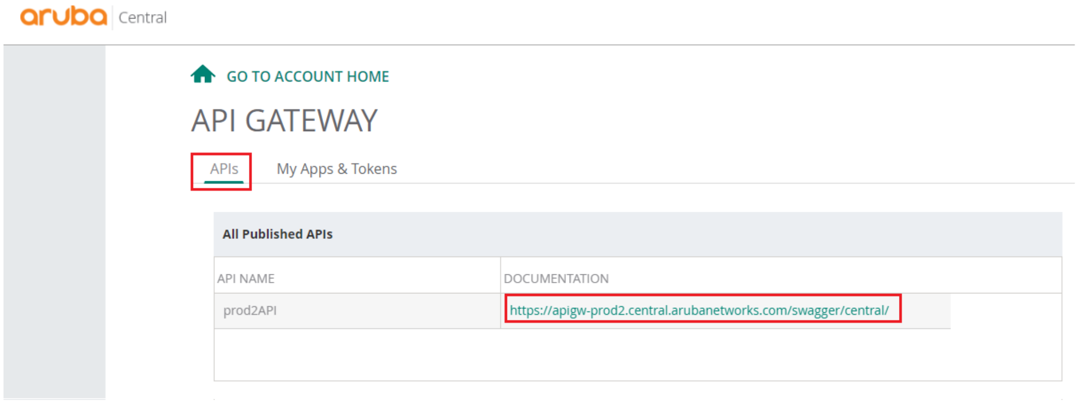
Viewing Swagger Interface

To view the APIs managed through Aruba Central, complete the following steps:

1. In the **Account Home** page, under **Global Settings**, click **API Gateway**.

   The **API Gateway** page with the list of published APIs is displayed.

2. To view the Swagger interface, click the link in the **Documentation** column next to the specific published API name. The documentation is displayed in a new window.



All Published APIs

API NAME	DOCUMENTATION
prod2API	https://apigw-prod2.central.arubanetworks.com/swagger/central/

List of Supported APIs

Aruba Central supports the following APIs for the managed devices.

Table 3: *APIs and Description*

API	Description
Monitoring	Gets network, client, and event details. It also allows you to manage labels and switches.
Configuration	Allows you to configure and retrieve the following: ■ Groups ■ Templates ■ Devices
AppRF	Gets Top N AppRF statistics.
Guest	Gets visitor and session details of the portal.
MSP	Allows you to manage and retrieve the following: ■ Customers ■ Users ■ Resources ■ Devices Aruba has enforced a request limit for the following APIs: ■ **GET /msp_api/v1/customers** ■ **GET /msp_api/v1/customers/{customer_id}/devices** ■ **GET /msp_api/v1/devices** ■ **PUT /msp_api/v1/customers/{customer_id}/devices** The maximum limit is set to 50 per API call. If you exceed this limit, the API call returns the HTTP error code 400 and the following error message: **LIMIT_REQUEST_EXCEEDED**.
User Management	Allows you to manage users and also allows you to configure various types of users with a specific level of access control.

Table 3: *APIs and Description*

API	Description
Audit Event Logs	Gets a list of audit events and the details of an audit event.
Device Inventory	Gets device details and device statistics.
Licensing	Allows you to manage and retrieve subscription keys.
Presence Analytics	Allows you to configure the Presence Analytics application. It also retrieves site and loyalty data.
Device Management	Allows you to manage devices.
Firmware	Allows you to manage firmware.
Troubleshooting	Gets a list of troubleshooting commands for a specific type of device.
Notification	Gets notification alerts generated for events pertaining to device provisioning, configuration, and user management.
Unified Communications	Retrieves data for all sessions for a specific period of time. It also retrieves the total number of clients who made calls in the given time range and gets the Lync/Skype for Business URL for the Aruba Central cluster that you are using.
Refresh API Token	Allows you to refresh the API token.
Reporting	Gets the list of configured reports for the given customer ID.
WAN Health	Allows you to the following: ■ Get list of configured WAN health policies. ■ Create a new WAN health policy. ■ Delete an existing WAN health policy. ■ Get the details of any specific WAN health policy. ■ Update an existing WAN health policy. ■ Get policy schedule details. ■ Create a schedule for a WAN health policy. ■ Get statistics for WAN health cookie generated for a site. ■ Get WAN health test results. ■ Get WAN health test results for a specific site.
Network Health	Allows you to get data for all the labels and sites.
Webhook	Allows you to add, or delete Webhooks, and get or refresh Webhook tokens. See Webhooks on page 23 for further details on Webhook.
VisualRF	Allows you retrieve information on floor plans, location of APs, clients and rogue devices.
DPS Monitoring	Gets DPS compliance and session statistics for all the links of a device belonging to a specific policy.

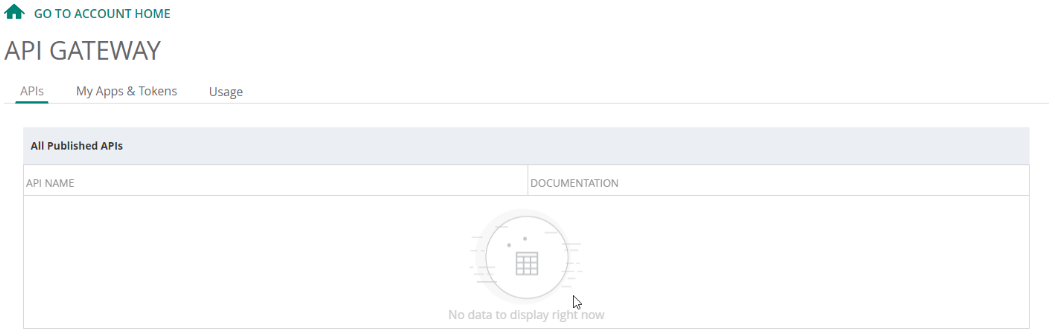
For a complete list of APIs and the corresponding documentation, see https://app1-apigw.central.arubanetworks.com/swagger/central.

Creating Application and Token

To create an application, complete the following steps:

1. In the **Account Home** page, under **Global Settings**, click **API Gateway**.

   The **API Gateway** page is displayed.



All Published APIs

API NAME	DOCUMENTATION

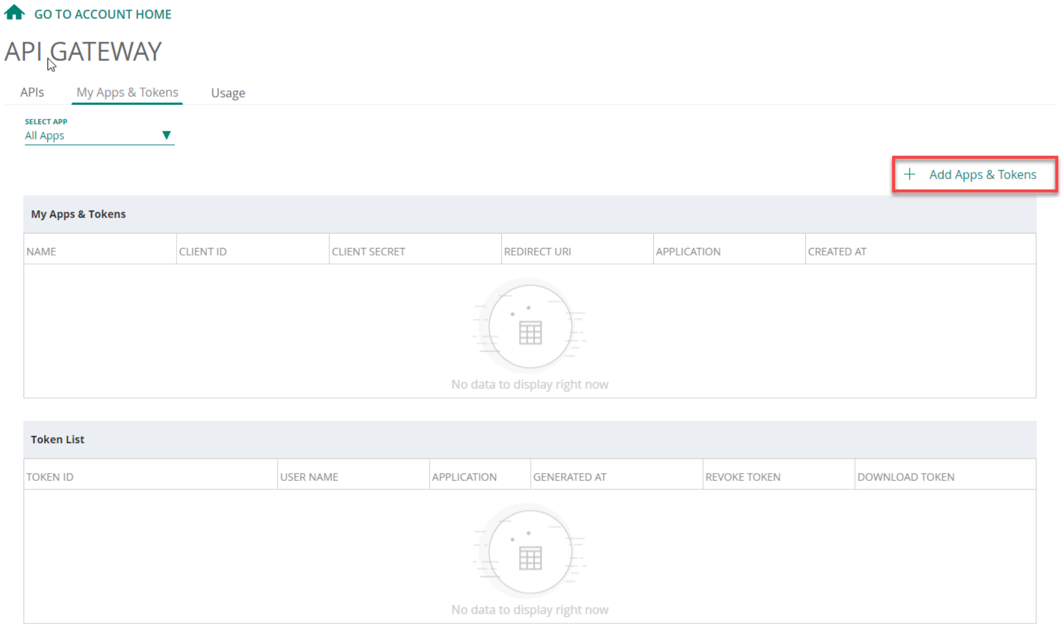
No data to display right now

2. Click the **My Apps & Tokens** tab.

NOTE

The admin user will be able to create new apps for all the non-admin user by clicking **+ Add Apps & Tokens** in the **System Apps & Tokens** tab.

3. Click **+ Add Apps & Tokens**.



My Apps & Tokens

NAME	CLIENT ID	CLIENT SECRET	REDIRECT URI	APPLICATION	CREATED AT

No data to display right now

Token List

TOKEN ID	USER NAME	APPLICATION	GENERATED AT	REVOKE TOKEN	DOWNLOAD TOKEN

No data to display right now

4. In the **New Token** pop-up window, do the following:

   a. Enter the application name. In non-admin user profile, the **Application Name** field contains the logged-in user name and is non-editable.

   b. In the **Redirect URI** field, enter the redirect URL.

   c. From the Application drop-down list, select the application.

   d. Click **Generate**. A new application is created and added to the **My Apps & Tokens** table. The **My Apps & Tokens** table displays the following details:

- **Name**—Name of the application. In non-admin user profile, the **Application Name** field contains the logged-in user name and is non-editable. Any new tokens generated in non- admin user profile is associated with the same application name.
- **Client ID**—Unique ID for each application.
- **Client Secret**—Unique secret ID for each application.
- **Redirect URI**—Redirect URL.
- **Application**—Name of the application. For example, Network Operations.
- **Tokens**—Token created for the application. The option is available to admin user profile only.
- **Created At**—Date on which the application was created.

5. To delete the added application, click delete 🗑 icon on the row corresponding to an application and click **Yes** to delete that application.

NOTE

Only admin users will be able to generate tokens with multiple application names. In non-admin user profile, the **Application Name** field contains the user name and is non-editable. Any new tokens generated in non- admin user profile is associated with the same application name. However, all the multiple application names and the associated tokens in non-admin user profiles from the earlier versions is retained in the **Token List** table.

Using OAuth 2.0 for Authentication

For secure access to the APIs, the Aruba Central API Framework plug-in supports OAuth protocol for authentication and authorization. OAuth 2.0 is a simple and secure authorization framework. It allows applications to acquire an access token for Aruba Central through a variety of work flows supported within the OAuth 2.0 specification.

All OAuth 2.0 requests must use the SSL endpoint available at https://app1-apigw.central.arubanetworks.com.

Access and Refresh Tokens

The access token is a string that identifies a user, app, or web page and is used by the app to access an API. The access tokens provide a temporary and secure access to the APIs.

The access tokens have a limited lifetime. If the application uses web server or user-agent OAuth authentication flows, a refresh token is provided during authorization that can be used to get a new access token.

If you are writing a long running applications (web app) or native mobile application you should refresh the token periodically. For more information, see Refreshing a token.

This section includes the following topics:

- Obtaining Access Token
- Accessing APIs
- Viewing and Revoking Tokens
- Adding a New Token

Obtaining Access Token

Users can generate the OAuth token using one of the following methods:

- Obtaining Token Using Offline Token Mechanism
- Obtaining Token Using OAuth Grant Mechanism

Accessing APIs

To access the API, use the following URL:

https://app1-apigw.central.arubanetworks.com/.

This endpoint is accessible over SSL and the HTTP (non-SSL) connections are redirected to the SSL port.

Table 4: *Accessing the API*

URL	Description
https://app1-apigw.central.arubanetworks.com/	The API gateway URL. All APIs can be accessed from this URL by providing a correct access token.

The query parameters for the API are as follows:

Table 5: *Query Parameters for the API*

Parameter	Value	Description
`request_path`	URL Path	URL path of an API, for example, to access monitoring APIs, use the path */monitoring/v1/aps*.
`access_token`	access_token	Pass the token string in URL parameter that is obtained in step 2.

Example

Request Method: GET

https://app1-apigw.central.arubanetworks.com/monitoring/v1/aps?access_token=e325c0fb3f1547b5b735de3221690c2f

Response:

```
{
"aps": [
   {
   "firmware_version": "6.4.4.4-4.2.3.1_54637",
   "group_name": "00TestVRK",
   "ip_address": "10.29.18.195",
   "labels": [
   "Filter_242",
   "Ziaomof",
   "roster",
   "242455",
   "Diegso"
   ],
   "macaddr": "6c:f3:7f:c3:5d:92",
   "model": "AP-134",
   "name": "6c:f3:7f:c3:5d:92",
   "radios": [
   {
   "band": 0,
   "index": 1,
   "macaddr": "6c:f3:7f:b5:d9:20",
   "status": "Down"
   },
   {
   "band": 1,
   "index": 0,
    "macaddr": "6c:f3:7f:b5:d9:30",
    "status": "Down"
    }
    ],
    "serial": "AX0140586",
    "status": "Down",
    "swarm_id": "e3bf1ba201a6f85f4b5eaedeead5e502d85a9aef58d8e1d8a0",
    "swarm_master": true
    }
    ],
"count": 1
}
```

Viewing and Revoking Tokens

To view or revoke tokens, complete the following steps:

1. In the **Account Home** page, under **Global Settings**, click **API Gateway**.

   The **API Gateway** page is displayed.

2. Click **My Apps & Tokens**. The **Token List** table displays the following:

- **Token ID**—Token ID of the application.
- **User Name**—Name of the user to whom this token is associated to. An application can be associated to multiple users.
- **Application**—Name of the application to which this token is associated to. For example, Network Operations.
- **Generated At**—Date on which the token was generated.
- **Revoke Token**—Click **Revoke Token** and click **Yes** to revoke the token associated to a particular user. For example, if two users are associated to an application and if you want to remove access to a particular user, revoke the token associated to that user.
- **Download Token**—Click **Download Token** to download the token.

> NOTE
>
> In MSP mode, the admin user profile has **System Apps & Tokens** tab which displays all the apps and tokens generated in all non-admin user profiles in addition to the apps and tokens created in the admin user profile. To view all the tokens of admin and non-admin user, go to **Account Home > Global Settings > API Gateway > System Apps & Tokens**.

Adding a New Token

To add a new token, complete the following steps:

1. In the **Account Home** page, under **Global Settings**, click **API Gateway**.

   The **API Gateway** page is displayed.

2. Click **My Apps & Tokens**.

> NOTE
>
> The admin user can create new tokens for all non-admin users by clicking **+ Add Apps & Tokens** in the **System Apps & Tokens** tab.

3. Click **+ Add Apps & Tokens** to add a new token.
4. Enter the application name in the **Application Name** box and click **Generate**.

> NOTE
>
> If you have registered a custom URI when creating a new app under **System Apps and Tokens**, the **Redirect URI** option is disabled for you in the **My Apps and Tokens** tab **> Add Apps and Tokens > New Token** . In such cases, the **Redirect URI** option in **Add Apps and Tokens > New Token** under **My Apps and Tokens** populates your already registered URI.

Obtaining Token Using Offline Token Mechanism

To obtain tokens using the offline token method, complete the following steps:

1. In the **Account Home** page, under **Global Settings**, click **API Gateway**.

   The **API Gateway** page is displayed.
2. Click **My Apps & Tokens**.

NOTE

In the MSP mode, the admin user profile can view the **System Apps & Tokens** tab which displays all the apps and tokens generated in all the non-admin user profiles in addition to the apps and tokens created in the admin user profile.

3. Click **+ Add Apps & Tokens**. The **New Token** pane is displayed.
4. Enter the application name and redirect URI in the **Application Name** and **Redirect URI** fields respectively.
5. Choose the application from the **Application** drop-down list and click **Generate** to generate a new token.
6. The **Token List** table displays the following:

- **Token ID**—Token ID of the application.
- **User Name**—Name of the user to whom this token is associated to. An application can be associated to multiple users.
- **Application**—Name of the application to which this token is associated to. For example, Network Operations.
- **Generated At**—Date on which the token was generated.
- **Revoke Token**—Click **Revoke Token** and click **Yes** to revoke the token associated to a particular user. For example, if two users are associated to an application and if you want to remove access to a particular user, revoke the token associated to that user.
- **Download Token**—Click **Download Token** to download the token.

Obtaining Token Using OAuth Grant Mechanism

The following section describes the steps for obtaining the access token and refresh token using the authorization code grant mechanism:

- Step 1: Authenticate a User and Create a User Session
- Step 2: [Optional] Generating Client Credentials
- Step 3: Generate Authorization Code
- Step 4: Exchange Auth Code for a Token
- Step 5: Refreshing a Token
- Step 6: Deleting a Token

Step 1: Authenticate a User and Create a User Session

The following API authenticates a user and returns a user session value that can be used to create future requests for a client with the specified username and password. It is assumed that you already have a client ID for your application. For more information on how to create an application and obtain tokens, see Creating Application and Token.

Domain URLs allow you to log in to the API gateway server and to establish the user session. This endpoint is accessible over SSL, and HTTP (non-SSL) connections are redirected to SSL port. The following table lists the region specific domain URLs for accessing the API gateway.

If user authentication is successful, the request will return HTTP code 200 and the response header will include the following attributes.

Table 6: *Authentication and User session Response Codes*

Header Key	Values	Description

https://app1-apigw.central.arubanetworks.com/oauth2/token	csrftoken=xxxx;
	session=xxxx
		The server returns a CSRF token and identifies the user session, which must be used for all subsequent HTTP requests.

Example

Request Method: POST

URL: https://app1- apigw.central.arubanetworks.com/oauth2/authorize/central/api/login?client_id=<client_id> HTTP/1.1

Host: app1-apigw.central.arubanetworks.com

Request Header:

Accept: application/json

Content -Type: application/json

POST Request Body(JSON):

```
{
 "username": "xxxxx",
 "password": "xxxxx"
}
```

Error Response:

```
400: Bad Request
```

Response Body (JSON):

```
 {
  "extra": {},
  "message": "<error string>"
 }
401: Auth failure
```

Response Body (JSON):

```
 {
  "message": "Auth failure",
  "status": false
 }
```

Success Response:

```
200: OK
```

Response Body (JSON):

```
 {
  "status": true
 }
```

Response Header:

```
  Set-Cookie: csrftoken=xxxx;session=xxxx;
```

NOTE

The **csrf token** value received in the successful response message must be used as a parameter for all subsequent POST/PUT requests. The **session** value must also be used for all subsequent requests to maintain the user session context.

Step 2: [Optional] Generating Client Credentials

The following API can be used to generate client credentials for a specific tenant using your Managed Service Provider (MSP) Client ID.

Table 7: *URL to Generate Client Credentials*

URL	Description
https://app1-apigw.central.arubanetworks.com/oauth2/authorize/central/api/client_credentials?client_id=<msp_client_id>	The **<msp_client_id>** variableis the client ID given from Central to that a Managed Service Provider that user registered the application.

Example

Request Method: POST

URI—https://app1-apigw.central.arubanetworks.coms/oauth2/authorize/central/api/client_credentials?client_id=<msp_client_id>

POST Request Body(JSON):

```
{
 "customer_id": "<tenant_id>"
}
```

Request Header: (Values from login API request)

```
 Set-Cookie: csrftoken=xxxx;session=xxxx;
```

Response Body(JSON):

```
{
 "client_id": "<new-client-id>",
 "client_secret": <new-client-secret>"
}
```

Step 3: Generate Authorization Code

After the user is authenticated and you have a valid session for that user, use this API to get authorization code. The authorization code is valid only for 5 minutes and must be exchanged for a token within that time.

Table 8: *URL for to Generate an Authorization Code*

URL	Description
https://app1 apigw.central.arubanetworks.com/oauth2/authorize/central/api	The endpoint is a POST call to get an authorization code.

Query parameters for this API are as follows:

Table 9: *Query Parameters for the Auth Code API*

Parameter	Values	Description
client_id	**client_id** is a unique hexadecimal string	The **client_id** is a unique identifier that identifies the caller. Application developers obtain a client ID and a client secret when they register with the API gateway admin.
response_type	**code**	Use **code** as the response type to get the authorization code that can be exchanged for token
scope	**all** or **read**	Requested API permissions may be either **all** (for both read and write access) or **read** for read-only access.

Example

Request Method: POST

URL: https://app1 - apigw.central.arubanetworks.com/oauth2/authorize/central/api/?client_id=<client_id>&response_type=code&scope=all HTTP/1.1

Host: app1-apigw.central.arubanetworks.com

Request Header:

Accept: application/json Cookie: “session=xxxx” X-CSRF-Token: xxxx

Content -Type: application/json

POST Request Body(JSON):

```
{
 "customer_id": "xxxxx"
}
```

Error Response:

```
400: Bad Request
```

Response Body (JSON):

```
 {
  "extra": {},
  "message": "<error string>"
 }
401: Auth failure
```

Response Body (JSON):

```
 {
  "message": "Auth failure",
  "status": false
 }
```

Success Response:

```
200: OK
```

Response Body (JSON):

```
 {
  " auth_code ": “xxxx”
 }
```

NOTE

Pass the **csrf-token** value you obtained in step one in the request header, otherwise the request will be rejected. Note the **auth_code** value in the response, as you will use this code to obtain an OAuth token.

Response Header:

```
  Set-Cookie: csrftoken=xxxx;session=xxxx;
```

Step 4: Exchange Auth Code for a Token

Once you have an authorization code, you just use that code to request an access from the server. The exchanges should be done within 300 seconds of obtaining the auth code from the previous step, or the API will return an error.

Table 10: *URL for to Generate an Auth Token*

URL	Description
https:// app1- apigw.central.arubanetworks.com/oauth2/token	The endpoint is a POST call to get an access token using the authorization code obtained from the server.

Query parameters for this API are as follows:

Table 11: *Query Parameters for the Auth Code API*

Parameter	Values	Description
client_id	**client_id** is a unique hexadecimal string	The **client_id** is a unique identifier that identifies the caller. Application developers obtain a client ID and a client secret when they register with the API gateway admin.
client_secret	**client_secret** is a unique hexadecimal string	The **client_secret** is a unique identifier provided to each developer at the time of registration. Application developers can obtain a client ID and client secret when they register with the API gateway admin.
grant_type	**authorization_ code**	Use **code** to get the authorization code that can be exchanged for the token.
code	**auth_code** received from step 1	The authorization code received from the authorization server.
redirect_uri	string	The redirect URI must be the same as the one given at the time of registration. This is an optional parameter.

The response to this API query is a JSON dictionary with following values:

Table 12: *Auth Token Values*

Parameter	Values	Description
token_type	bearer	Identifies the token type. Central supports only the bearer token type (See https://tools.ietf.org/html/rfc6750)
refresh_ token	string	Refresh tokens are credentials used to renew or refresh the access_token when it expires without repeating the complete authentication flow. A refresh token is a string representing the authorization granted to the client by the resource owner.
expires_in	seconds	The lifetime, in seconds, of the access token.
access_ token	string	Access tokens are credentials used to access protected resources. An access token is a string representing an authorization issued to the client.

Example

Request Method: POST

URL: https: //apigw-prod2.central.arubanetworks.com/oauth2/token?client_id=<Ccentral-API-app-clientid>&client_secret=xxxx&grant_type=authorization_code&code=xxxx \

Content -Type: application/json

Responce:

```
{
 "refresh_token": "xxxx",
 "token_type": "bearer",
 "access_token": "xxxx",
 "expires_in": 7200
}
```

Step 5: Refreshing a Token

You can use the refresh token obtained in the previous step to update the access token without repeating the entire authentication process.

Table 13: *URL to Refresh a Token*

URL	Description
https://app1-apigw.central.arubanetworks.com/oauth2/token	The endpoint is a POST call to refresh the access token using the refresh token obtained from the server

Query parameters for this API are as follows:

Table 14: *Query Parameters for Refresh Tokens*

Parameter	Value	Description
client_id	**client_id** is a unique hexadecimal string	The **client_id** is a unique identifier that identifies the caller. Application developers obtain a client ID and a client secret when they register with the API gateway admin.
client_secret	**client_secret** is a unique hexadecimal string	The **client_secret** is a unique identifier provided to each developer at the time of registration. Application developers obtain a client ID and a client secret when they register with the API gateway admin.
grant_type	**refresh_token**	Specify **refresh_token** as the grant type to request that an authorization code be exchanged for a token
refresh_token	string	A string representing the authorization granted to the client by the resource owner.

The response to this API query is a JSON dictionary with following values:

Parameter	Value	Description
token_type	bearer	Identifies the token type. Only the bearer token type is supported. For more information, see https://tools.ietf.org/html/rfc6750.
refresh_ token	string	Refresh tokens are credentials used to renew or refresh the access token when it expires without going through the complete authorization flow. A refresh token is a string representing the authorization granted to the client by the resource owner.
expires_in	seconds	The expiration duration of the access tokens in seconds.
access_ token	string	Access tokens are credentials used to access the protected resources. An access token is a string representing an authorization issued to the client.

Example

Method: POST

https: //apigw-prod2.central.arubanetworks.com/oauth2/token?client_id=<Ccentral-API-app-clientid>&client_secret=xxxx&grant_type=authorization_code&code=xxxx \

Response

```
{
 "refresh_token": "xxxx",
 "token_type": "bearer",
 "access_token": "xxxx",
 "expires_in": 7200
}
```

Step 6: Deleting a Token

To delete the access token, access the following URL:

Table 15: *URL to Delete a Token*

URL	Description
https://app1-apigw.central.arubanetworks.com/oauth2/token	This endpoint is accessible over SSL. The HTTP (non-SSL) connections are redirected to SSL port. Customer ID is a string.

Example

Method : DELETE

URL:https://app1-apigw.central.arubanetworks.com/oauth2/api/tokens

JSON Body:

```
{
 "access_token": "<access_token_to_be_deleted>",
 "customer_id": "<customer_id_to_whom_token_belongs_to>"
}
```

Headers:

Content-Type: application/json

X-CSRF-Token: <CSRF_token_obatained_from_login_API>

Cookie: "session=<session_obatained_from_login_API>"

Viewing Usage Statistics

The **API Gateway** page includes the **Usage** tab that displays the API usage. The **Usage** tab is available only for administrators and the usage data is stored only for the previous 30 days. The following details are displayed:

- Assigned rate limit.
- Total usage.
- Per user usage.
- MSP and tenant usage if you are in MSP mode.

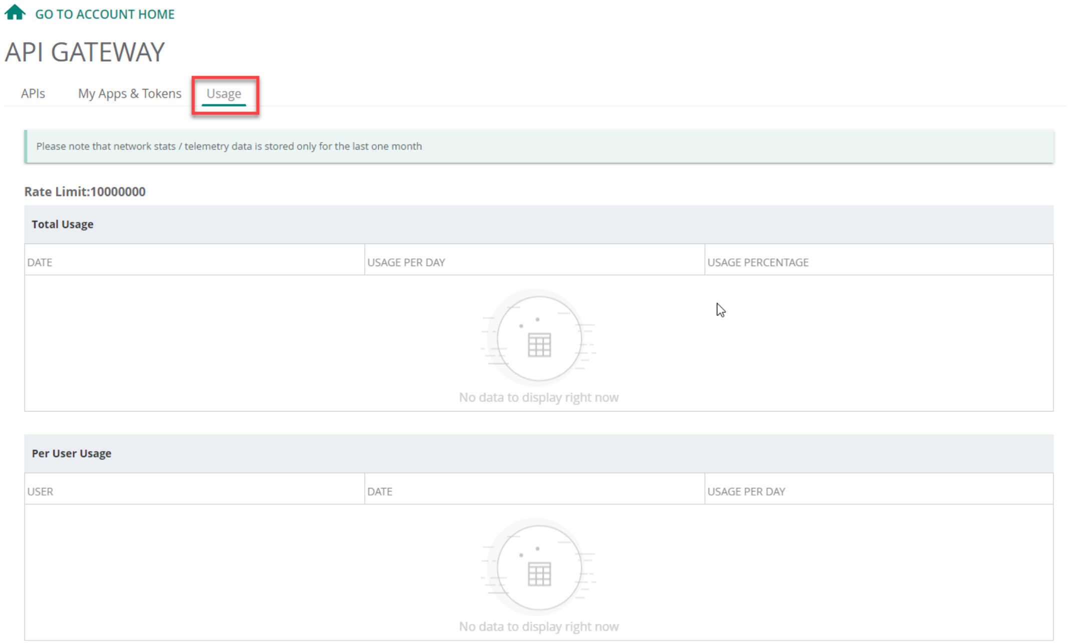
The administrator receives an alert through text message or email when the API usage reaches a threshold. You can set the threshold to 75% of the rate limit value.

To view the usage statistics for users of API Gateway, complete the following steps:

1. In the **Account Home** page, under **Global Settings**, click **API Gateway**.

   The **API Gateway** page is displayed.

2. Click **Usage**. The following details are displayed:



Please note that network stats / telemetry data is stored only for the last one month

Rate Limit:10000000

Total Usage

DATE	USAGE PER DAY	USAGE PERCENTAGE

No data to display right now

Per User Usage

USER	DATE	USAGE PER DAY

No data to display right now

- **Rate Limit**—The total rate limit assigned for API calls for a month.
- **Total Usage**:
  - **Date**—The date of usage.
  - **Usage Per Day**—Usage per day.
  - **Usage Percentage**—Usage percentage for a specific date.
- **Per User Usage**:
  - **User**—The name of the user.
  - **Date**—The date on which the application was accessed.
  - **Usage Per Day**—The total usage by the user per day. This is derived based on the total number of API calls made on a per day basis. This is an aggregate across all customers.
- If you are in MSP mode, the **MSP & Tenant Usage** table is displayed:
  - **Tenant ID**: ID of the tenant account.
  - **Date**: The date on which the application was accessed.

- **Usage Per Day**: The total usage by the tenant account per day. This is derived based on the total number of API calls made on a per day basis.

NOTE

The **Usage** tab is only available for administrators and the usage data is stored only for the previous 30 days.

Webhooks

Webhooks allow you to implement event reactions by providing real-time information or notifications to other applications. Aruba Central allows you to create Webhooks and select Webhooks as the notification delivery option for all alerts.

Using Aruba Central, you can integrate Webhooks with other third-party applications such as ServiceNow, Zapier, IFTTT, and so on.

You can access the Webhooks service either through the Aruba Central UI or API Gateway. Aruba Central supports creating up to 10 Webhooks. To enable redundancy, Aruba Central allows you to add up to three URLs per Webhook.

From Aruba Central, you can add, list, or delete Webhooks; get or refresh Webhooks token; get or update Webhooks settings for a specific item; and test Webhooks notification.

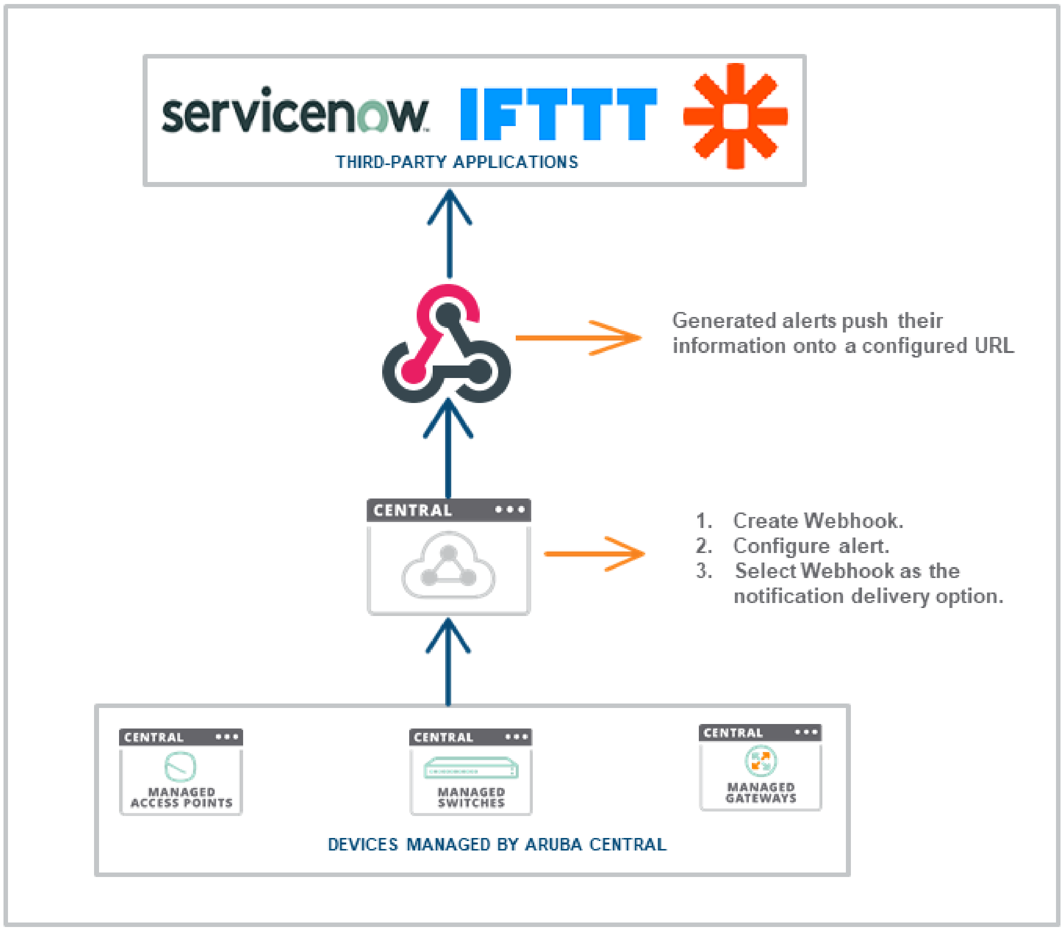
This section includes the following topics:

- Creating and Updating Webhooks Through the UI on page 24
- Refreshing Webhooks Token Through the UI on page 25
- Creating and Updating Webhooks Through the API Gateway on page 25
- List of Webhooks APIs on page 26
- Sample Webhooks Payload Format for Alerts on page 27

In the **Alerts & Events** page, click the **Configuration** icon to configure and enable an alert. In the **Notification Options**, select **Webhooks** as the notification delivery option.

The following figure illustrates how Aruba Central integrates with third-party applications using Webhooks.

Figure 1 *Webhooks Integration*



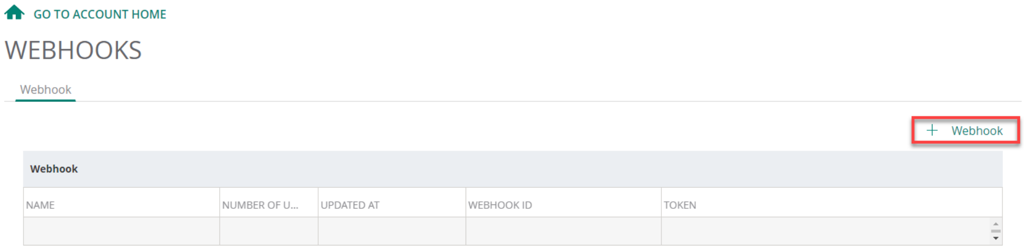
Creating and Updating Webhooks Through the UI

To access the Webhooks service from the UI:

1. In the **Account Home** page, under **Global Settings**, click **Webhooks**.

   The **Webhooks** page is displayed.

2. In the **Webhook** tab, click **+Webhook**.



Webhook

NAME	NUMBER OF U...	UPDATED AT	WEBHOOK ID	TOKEN

   a. **Webhook Name**—Enter a name for the Webhook

   b. **URLs**—Enter the URL. Click + to enter another URL. You can add up to three URLs.

3. Click **Save**. The Webhooks is created and listed in the **Webhook** table.

The **Webhook** table displays the following information and also allows you to edit or delete Webhooks:

- **Name**—Name of the Webhooks.
- **Number of URL Entries**—Number of URLs in Webhooks. Click the number to view the list of URLs.
- **Updated At**—Date and time at which Webhooks was updated.
- **Webhook ID**—Webhooks ID.
- **Token**—Webhooks token. Webhooks token enables header authentication and the third-party receiving service must validate the token to ensure authenticity.
- **Edit**—In the **Webhook** table, select the Webhook from the list and click ✏ icon to edit the Webhook. You can refresh the token and add URLs. Click **Save** to save the changes.
- **Delete**—In the **Webhook** table, select the Webhook from the list and click 🗑 icon and click **Yes** to delete the Webhook.

Refreshing Webhooks Token Through the UI

To refresh Webhooks token through the UI:

1. In the **Account Home** page, under **Global Settings**, click **Webhooks**.

   The **Webhooks** page is displayed.

2. In the **Webhook** table, select the Webhook from the list and click ✏ icon to edit.
3. In the pop-up window, click the refresh icon next to the token. The token is refreshed.

Creating and Updating Webhooks Through the API Gateway

The following HTTP methods are defined for Aruba Central API Webhooks resource:

- **GET**
- **POST**
- **PUT**
- **DELETE**

You can perform CRUD operation on the Webhooks URL configuration. The key configuration elements that are required to use API Webhooks service are Webhooks URL and a shared secret.

A shared secret token is generated for the Webhooks URL when you register for Webhooks. A hash key is generated using SHA256 algorithm by using the payload and the shared secret token. The API required to refresh the shared secret token is provided for a specific Webhooks configuration. You can choose the frequency at which you want to refresh the secret token.

To access and use the API Webhooks service:

1. In the **Account Home** page, under **Global Settings**, click **API Gateway**.

   The **API Gateway** page is displayed.

2. In the **APIs** tab, click the **Swagger** link under the **Documentation** header. The Swagger website opens.
3. In the Swagger website, from the **URL** drop-down list, select **Webhook**. All available Webhooks APIs are listed under **API Reference**.

NOTE

For more information on Webhooks APIs, refer to https://app1-apigw.central.arubanetworks.com/swagger/central.

List of Webhooks APIs

Aruba Central supports the following Webhooks APIs:

- **GET /central/v1/webhooks**—Gets a list of Webhooks.

  The following is a sample response:

  ```
  {
    "count": 1,
    "settings": [
      {
        "wid": "e26450be-4dac-435b-ac01-15d8f9667eb8",
        "name": "AAA",
        "updated_ts": 1523956927,
        "urls": [
          "https://example.org/webhook1",
          "https://example.org/webhook1"
        ],
        "secure_token": "KEu5ZPTi44UO4MnMiOqz"
      }
    ]
  }
  ```

- **POST /central/v1/webhooks**—Creates Webhooks.

  The following is a sample response:

  ```
  {
    "name": "AAA",
    "wid": "e829a0f6-1e36-42fe-bafd-631443cbd581"
  }
  ```

- **DELETE /central/v1/webhooks/{wid}**—Deletes Webhooks.

  The following is a sample response:

  ```
  {
    "wid": "e26450be-4dac-435b-ac01-15d8f9667eb8"
  }
  ```

- **GET /central/v1/webhooks/{wid}**—Gets Webhooks settings for a specific item.

  The following is a sample response:

  ```
  {
    "wid": "e26450be-4dac-435b-ac01-15d8f9667eb8",
    "name": "AAA",
    "updated_ts": 1523956927,
    "urls": [
      "https://example.org/webhook1",
      "https://example.org/webhook1"
    ],
    "secure_token": "KEu5ZPTi44UO4MnMiOqz"
  }
  ```

- **PUT /central/v1/webhooks/{wid}**—Updates Webhooks settings for a specific item.

  The following is a sample response:

  ```
  {
    "name": "AAA",
    "wid": "e829a0f6-1e36-42fe-bafd-631443cbd581"
  }
  ```

- **GET /central/v1/webhooks/{wid}/token**—Gets the Webhooks token for the Webhooks ID.

  The following is a sample response:

```
{
  "name": "AAA",
  "secure_token": "[{\"token\": \"zSMrzuYrblgBfByy2JrM\", \"ts\": 1523957233}]"
}
```

- **PUT /central/v1/webhooks/{wid}/token**—Refreshes the Webhooks token for the Webhooks ID.

  The following is a sample response:

  ```
  {
    "name": "AAA",
    "secure_token": "[{\"token\": \"zSMrzuYrblgBfByy2JrM\", \"ts\": 1523957233}]"
  }
  ```

- **GET /central/v1/webhooks/{wid}/ping**—Tests the Webhooks notification and returns whether success or failure.

  The following is a sample response:

  ```
  "Ping Response [{'url': 'https://example.org', 'status': 404}]"
  ```

Sample Webhooks Payload Format for Alerts

```
URL POST <webhook-url>
```

Custom Headers

```
Content-Type: application/json
X-Central-Service: Alerts
X-Central-Event: Radio-Channel-Utilization
X-Central-Delivery-ID: 72d3162e-cc78-11e3-81ab-4c9367dc0958
X-Central-Delivery-Timestamp: 2016-07-12T13:14:19-07:00
X-Central-Customer-ID: <########>
```

Refer to the following topics to view sample JSON content:

- Access Point Alerts—Sample JSON
- Switch Alerts—Sample JSON
- Gateway Alerts—Sample JSON
- Miscellaneous Alerts—Sample JSON

Access Point Alerts—Sample JSON

This section includes sample JSON content for the following alerts:

AP Disconnected

```
{
  "alert_type": "AP disconnected",
  "description": "AP with Name 84:d4:7e:c5:c8:8c and MAC address 84:d4:7e:c5:c8:8c
disconnected, Group:unprovisioned",
  "timestamp": 1564326129,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-4",
  "state": "Open",
  "nid": 4,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "conn_status": "disconnected",
    "params": [
      "84:d4:7e:c5:c8:8c",
      "84:d4:7e:c5:c8:8c"
    ],
    "time": "2019-07-28 15:02:09 UTC"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5Gm2zVQO1ZtiGF20e",
  "severity": "Critical"
}
```

AP Connected Clients

```
{
  "alert_type": "AP_CONNECTED_CLIENTS",
  "description": "Number of Clients connected to AP with name 84:d4:7e:c5:c8:8c has been
above 1 for about 5 minutes
     since 2019-07-29 12:26:00 UTC.",
  "timestamp": 1564326128,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-1255",
  "state": "Open",
  "nid": 1255,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "name": "84:d4:7e:c5:c8:8c",
    "duration": "5",
    "threshold": "1",
    "time": "2019-07-28 15:02:08 UTC"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5Gm1zVGH9ZtiGF20d",
  "severity": "Major"
}
```

AP CPU Over Utilization

```
{
  "alert_type": "AP_CPU_OVER_UTILIZATION",
  "description": "CPU utilization for AP 84:d4:7e:c5:c8:8c with serial CT0779239 has been
above 10% for about 5 minutes
```

```
     since 2019-07-28 14:21:00 UTC.",
  "timestamp": 1564323960,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-1250",
  "state": "Open",
  "nid": 1250,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "name": "84:d4:7e:c5:c8:8c",
    "duration": "5",
    "time": "2019-07-28 14:21:00 UTC",
    "threshold": "10",
    "ds_key": "201804170291.CT0779239.cpu_utilization.5m",
    "serial": "CT0779239",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw4-VVrVQO1ZtiGFkZ3",
  "severity": "Critical"
}
```

AP Memory Over Utilization

```
{
  "alert_type": "AP_MEMORY_OVER_UTILIZATION",
  "description": "Memory utilization for AP iap-303-iphone456-offline with serial CNGHKGX004
has been above 40% for about 5 minutes
     since 2019-07-24 07:11:00 UTC.",
  "timestamp": 1563952560,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-1251",
  "state": "Open",
  "nid": 1251,
  "details": {
    "_rule_number": "1",
    "group": "3",
    "name": "iap-303-iphone456-offline",
    "labels": "3,118",
    "duration": "5",
    "time": "2019-07-24 07:11:00 UTC",
    "threshold": "40",
    "ds_key": "201804170291.CNGHKGX004.memory_utilization.5m",
    "serial": "CNGHKGX004",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CNGHKGX004",
  "id": "AWwi1jihVQO1ZtiGThDA",
  "severity": "Major"
}
```

AP Radio Noise Floor

```
{
  "alert_type": "AP_RADIO_NOISE_FLOOR",
  "description": "Noise floor on AP iap-303-iphone456-offline operating on Channel 10 and
serving 0 clients has been above -110 dBm
     for about 10 minutes since 2019-07-24 07:06:00 UTC.",
  "timestamp": 1563952560,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-1253",
  "state": "Open",
  "nid": 1253,
  "details": {
    "_rule_number": "0",
    "group": "3",
    "name": "iap-303-iphone456-offline",
    "_radio_num": "1",
    "client_count": "0",
    "labels": "3,118",
    "_band": "0",
    "duration": "10",
    "time": "2019-07-24 07:06:00 UTC",
    "threshold": "110",
    "ds_key": "201804170291.CNGHKGX004.radio.noisefloor",
    "serial": "CNGHKGX004",
    "channel": "10"
  },
  "operation": "create",
  "device_id": "CNGHKGX004",
  "id": "AWwi1jjgVQO1ZtiGThDB",
  "severity": "Critical"
}
```

AP Radio Over Utilization

```
{
  "alert_type": "AP_RADIO_OVER_UTILIZATION",
  "description": "Radio utilization on AP 84:d4:7e:c5:c8:8c operating on Channel 36E and 
serving 0 clients has been above 1%
     for about 5 minutes since 2019-07-28 14:31:00 UTC.",
  "timestamp": 1564324560,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-1252",
  "state": "Open",
  "nid": 1252,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "name": "84:d4:7e:c5:c8:8c",
    "_radio_num": "0",
    "client_count": "0",
    "_band": "1",
    "duration": "5",
    "unit": "%",
    "time": "2019-07-28 14:31:00 UTC",
    "threshold": "1",
    "ds_key": "201804170291.CT0779239.radio.busy64",
    "serial": "CT0779239",
    "channel": "36E"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5An08VQO1ZtiGFpgm",
  "severity": "Critical"
}
```

Client Attack detected

```
{
  "alert_type": "Client attack detected",
  "description": "An AP (NAME iap-303-iphone456-o and MAC 90:4c:81:cf:27:74 on RADIO 1) 
detected an unencrypted frame
     between a valid client (88:63:df:bb:2a:9d) and access point (BSSID 90:4c:81:72:77:55) 
with source 88:63:df:bb:2a:9d
     and receiver ff:ff:ff:ff:ff:ff SNR value is 55",
  "timestamp": 1564392710,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-13",
  "state": "Open",
  "nid": 13,
  "details": {
    "group": "3",
    "labels": "3,142,141",
    "params": "None",
    "_rule_number": "0",
    "time": "2019-07-29 09:31:50 UTC"
  },
  "operation": "create",
  "device_id": "CNGHKGX004",
  "id": "AWw9EmBxVQO1ZtiGO1Q8",
  "severity": "Critical"
}
```

Connected Clients

```
{
  "alert_type": "CONNECTED_CLIENTS",
  "description": "Number of Clients connected to swarm with name SetMeUp-CA:35:56 has been
above 1 for about 5 minutes
     since 2019-07-29 12:26:00 UTC.",
  "timestamp": 1564403460,
  "webhook": "68612ee3-3ee9-4da4-b07b-13977a350344",
  "setting_id": "b8be21720dc04a8e9f0028374b6a9bbd-1254",
  "state": "Open",
  "nid": 1254,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "name": "SetMeUp-CA:35:56",
    "duration": "5",
    "aggr_context": "swarm",
    "time": "2019-07-29 12:26:00 UTC",
    "threshold": "1",
    "ds_key": "b8be21720dc04a8e9f0028374b6a9bbd.cluster.156.device.clients.5m",
    "serial": "156"
  },
  "operation": "create",
  "device_id": "156",
  "id": "AWw9tmhNVQO1ZtiGQR5U",
  "severity": "Critical"
}
```

Infrastructure Attack Detected

```
{
  "alert_type": "Infrastructure attack detected",
  "description": "An AP (NAME iap-303-iphone456-o and MAC 90:4c:81:cf:27:74 on RADIO 1)
detected that the Access Point with
     MAC f0:5c:19:23:56:10 and BSSID f0:5c:19:23:56:10 has sent a beacon for SSID tan This
beacon advertizes channel 149
     but was received on channel 161 with SNR 50 ",
  "timestamp": 1564400165,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-12",
  "state": "Open",
  "nid": 12,
  "details": {
    "group": "3",
    "labels": "3,142,141",
    "params": "None",
    "_rule_number": "0",
    "time": "2019-07-29 11:36:05 UTC"
  },
  "operation": "create",
  "device_id": "CNGHKGX004",
  "id": "AWw9hCLAVQO1ZtiGP1ig",
  "severity": "Critical"
}
```

Insufficient Power Alert

```
{
  "alert_type": "INSUFFICIENT_POWER_ALERT",
  "description": "Insufficient inline power supplied to AP-205 with name 04:bd:88:c3:b6:f0",
  "timestamp": 1564403450,
  "webhook": "68612ee3-3ee9-4da4-b07b-13977a350344",
  "setting_id": "b8be21720dc04a8e9f0028374b6a9bbd-21",
  "state": "Open",
  "nid": 21,
  "details": {
    "group": "0",
    "name": "04:bd:88:c3:b6:f0",
    "labels": [],
    "label_site_desc": "",
    "time": "2019-07-29 12:30:50 UTC",
    "serial": "CM0381143",
    "group_name": "default",
    "ap_model": "AP-205"
  },
  "operation": "create",
  "device_id": "CM0381143",
  "id": "AWw9tkNGVQO1ZtiGQRz-",
  "severity": "Major"
}
```

Modem Plugged

```
{
  "alert_type": "Modem Plugged",
  "description": "Modem plugged to ap with name 84:d4:7e:c5:c8:8c'and MAC address
84:d4:7e:c5:c8:8c",
  "timestamp": 1564326128,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-18",
  "state": "Open",
  "nid": 18,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "params": [
      "84:d4:7e:c5:c8:8c",
      "84:d4:7e:c5:c8:8c"
    ],
    "time": "2019-07-28 15:02:08 UTC"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5Gm1zJKL90tiGF20d",
  "severity": "Critical"
}
```

Modem Unplugged

```
{
  "alert_type": "Modem Unplugged",
  "description": "Modem unplugged from ap with name 84:d4:7e:c5:c8:8c'and MAC address
84:d4:7e:c5:c8:8c",
  "timestamp": 1564326128,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-19",
  "state": "Open",
  "nid": 19,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "params": [
      "84:d4:7e:c5:c8:8c",
      "84:d4:7e:c5:c8:8c"
    ],
    "time": "2019-07-28 15:02:08 UTC"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5Gm1zVQO1ZtiGF20d",
  "severity": "Critical"
}
```

New AP Detected

```
{
  "alert_type": "New AP detected",
  "description": "New AP with Name 84:d4:7e:c5:c8:8c and MAC address 84:d4:7e:c5:c8:8c
detected, Group:unprovisioned",
  "timestamp": 1564326128,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-3",
  "state": "Open",
  "nid": 3,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "params": [
      "84:d4:7e:c5:c8:8c",
      "84:d4:7e:c5:c8:8c"
    ],
    "time": "2019-07-28 15:02:08 UTC"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5Gm1zVQO1ZtiJH56e",
  "severity": "Major"
}
```

New Virtual Controller Detected

```
{
  "alert_type": "New Virtual Controller detected",
  "description": "New Virtual Controller with Name SetMeUp-CA:51:D6, Version 8.4.0.0_69847
and IP address 10.29.43.70
     detected, Group:unprovisioned",
  "timestamp": 1564326128,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-1",
  "state": "Open",
  "nid": 1,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "params": [
      "SetMeUp-CA:51:D6",
      "8.4.0.0_69847",
      "10.29.43.70"
    ],
    "time": "2019-07-28 15:02:08 UTC"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5Gm1zVQO1ZtiJH56j",
  "severity": "Critical"
}
```

Rogue AP Detected

```
{
  "alert_type": "Rogue AP detected",
  "description": "An AP (NAME 84:d4:7e:c5:c8:8c and MAC address 84:d4:7e:c5:c8:8con RADIO 1)
detected an access point
     (BSSID  0c:00:01:34:69:62 and SSID ssid1 on CHANNEL 52) as rogue",
  "timestamp": 1564326128,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-10",
  "state": "Open",
  "nid": 10,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "params": [
      "84:d4:7e:c5:c8:8c",
      "84:d4:7e:c5:c8:8c",
      "1",
      "0c:00:01:34:69:62",
      "ssid1",
      "52"
    ],
    "time": "2019-07-28 15:02:08 UTC"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5Gm1zVQO1ZtiJK89l",
  "severity": "Critical"
}
```

Uplink Changed

```
{
  "alert_type": "Uplink Changed",
  "description": "Uplink changed from 0 to 1 for ap'with name {params[2]} and MAC address
{params[3]}",
  "timestamp": 1564326128,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-17",
  "state": "Open",
  "nid": 17,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "params": [
      "0",
      "1",
      "84:d4:7e:c5:c8:8c",
      "84:d4:7e:c5:c8:8c"
    ],
    "time": "2019-07-28 15:02:08 UTC"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5Gm1zVQO1ZtiGF20d",
  "severity": "Critical"
}
```

Virtual Controller Disconnected

```
{
  "alert_type": "Virtual controller disconnected",
  "description": "Virtual Controller with Name SetMeUp-CA:51:D6, Version 8.4.0.0_69847 and IP
address 10.29.43.70
```

```
    disconnected, Group:unprovisioned",
  "timestamp": 1564326128,
  "webhook": "780c65a0-10b6-4eb1-b725-21b0d52aa432",
  "setting_id": "201804170291-2",
  "state": "Open",
  "nid": 2,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "conn_status": "disconnected",
    "params": [
      "SetMeUp-CA:51:D6",
      "8.4.0.0_69847",
      "10.29.43.70"
    ],
    "time": "2019-07-28 15:02:08 UTC"
  },
  "operation": "create",
  "device_id": "CT0779239",
  "id": "AWw5Gm1zVQO1ZtiGF20d",
  "severity": "Critical"
}
```

Switch Alerts—Sample JSON

This section includes sample JSON content for the following alerts:

Switch Disconnected

```
{
  "alert_type": "Switch Disconnected",
  "description": "Switch with serial CN8AHKW095, MAC address 54:80:28:b8:f6:20 IP address
10.22.41.3 and
    Hostname Aruba-2930F-24G-PoEP-4SFPP disconnected, Group:unprovisioned",
  "timestamp": 1569475139,
  "webhook": "f8b021a2-8127-4c28-a755-8ee6e01ada66",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-203",
  "state": "Open",
  "nid": 203,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "labels": "",
    "conn_status": "disconnected",
    "params": [
      "CN8AHKW095",
      "54:80:28:b8:f6:20",
      "10.22.41.3",
      "Aruba-2930F-24G-PoEP-4SFPP"
    ],
    "time": "2019-09-26 05:18:59 UTC"
  },
  "operation": "create",
  "device_id": "CN8AHKW095",
  "id": "AW1sAhfAYu0OgJ2anzUD",
  "severity": "Major"
}
```

New Switch Connected

```
{
  "alert_type": "New Switch Connected",
  "description": "New Switch with serial CN8AHKW095, MAC address 54:80:28:b8:f6:20 IP address
10.22.41.3 and
     Hostname Aruba-2930F-24G-PoEP-4SFPP connected, Group:unprovisioned",
  "timestamp": 1569476559,
  "webhook": "f8b021a2-8127-4c28-a755-8ee6e01ada66",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-201",
  "state": "Open",
  "nid": 201,
  "details": {
    "group": "1",
    "labels": "",
    "params": [
      "CN8AHKW095",
      "54:80:28:b8:f6:20",
      "10.22.41.3",
      "Aruba-2930F-24G-PoEP-4SFPP"
    ],
    "_rule_number": "0",
    "time": "2019-09-26 05:42:39 UTC"
  },
  "operation": "create",
  "device_id": "CN8AHKW095",
  "id": "AW1sF8IGYu0OgJ2an0Aq",
  "severity": "Major"
}
```

Switch Memory Over Utilization

```
{
  "alert_type": "SWITCH_MEMORY_OVER_UTILIZATION",
  "description": "Memory utilization for Switch Aruba-2930F-24G-PoEP-4SFPP with serial
CN8AHKW095 has been above 10% for about 5 minutes
     since 2019-09-26 05:48:00 UTC",
  "timestamp": 1569477180,
  "webhook": "f8b021a2-8127-4c28-a755-8ee6e01ada66",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1301",
  "state": "Open",
  "nid": 1301,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "name": "Aruba-2930F-24G-PoEP-4SFPP",
    "duration": "5",
    "time": "2019-09-26 05:48:00 UTC",
    "threshold": "10",
    "ds_key": "e344d961bccd411dbd279bf92f61b989.CN8AHKW095.memory_utilization.5m",
    "serial": "CN8AHKW095",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CN8AHKW095",
  "id": "AW1sITrfYu0OgJ2an0UP",
  "severity": "Critical"
}
```

Switch CPU Over Utilization

```
{
  "alert_type": "SWITCH_CPU_OVER_UTILIZATION",
  "description": "CPU utilization for Switch Aruba-2930F-48G-PoEP-4SFPP with serial
CN88HKX1CR has been above 5% for about 5 minutes
     since 2019-09-26 06:07:00 UTC.",
  "timestamp": 1569478320,
  "webhook": "f8b021a2-8127-4c28-a755-8ee6e01ada66",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1300",
  "state": "Open",
  "nid": 1300,
  "details": {
    "_rule_number": "0",
    "group": "41",
    "name": "Aruba-2930F-48G-PoEP-4SFPP",
    "duration": "5",
    "time": "2019-09-26 06:07:00 UTC",
    "threshold": "5",
    "ds_key": "e344d961bccd411dbd279bf92f61b989.CN88HKX1CR.cpu_utilization.5m",
    "serial": "CN88HKX1CR",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CN88HKX1CR",
  "id": "AW1sMqB4Yu0OgJ2an055",
  "severity": "Critical"
}
```

Switch Interface Rx Rate

```
{
  "alert_type": "SWITCH_INTERFACE_RX_RATE",
  "description": "Receive rate for Interface 15 on Switch Aruba-2930F-24G-PoEP-4SFPP has been
above 1 % for about 5 minutes
     since 2019-09-26 13:18:00 UTC.",
  "timestamp": 1569504180,
  "webhook": "4d588353-3355-487d-81af-c97f62b0abb0",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1303",
  "state": "Open",
  "nid": 1303,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "name": "Aruba-2930F-24G-PoEP-4SFPP",
    "max_value_for_percentage": "1000.0",
    "threshold": "1",
    "intf_name": "15",
    "time": "2019-09-26 13:18:00 UTC",
    "duration": "5",
    "ds_key": "e344d961bccd411dbd279bf92f61b989.CN8AHKW095.intf.rx_utilization.5m",
    "serial": "CN8AHKW095",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CN8AHKW095",
  "id": "AW1tvTgBYu0OgJ2 aoCgl",
  "severity": "Critical"
}
```

Switch Interface Tx Rate

```
{
  "alert_type": "SWITCH_INTERFACE_TX_RATE",
  "description": "Transfer rate for Interface 19 on Switch Aruba-2930F-24G-PoEP-4SFPP has
been above 1 % for about 5 minutes
     since 2019-09-26 13:18:00 UTC.",
  "timestamp": 1569504180,
  "webhook": "4d588353-3355-487d-81af-c97f62b0abb0",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1302",
  "state": "Open",
  "nid": 1302,
  "details": {
    "_rule_number": "0",
    "group": "1",
    "name": "Aruba-2930F-24G-PoEP-4SFPP",
    "max_value_for_percentage": "1000.0",
    "threshold": "1",
    "intf_name": "19",
    "time": "2019-09-26 13:18:00 UTC",
    "duration": "5",
    "ds_key": "e344d961bccd411dbd279bf92f61b989.CN8AHKW095.intf.tx_utilization.5m",
    "serial": "CN8AHKW095",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CN8AHKW095",
  "id": "AW1tvTgBYu0OgJ2aoCgk",
  "severity": "Critical"
}
```

Switch POE Utilization

```
{
  "alert_type": "SWITCH_POE_UTILIZATION",
  "description": "PoE utilization for Switch Aruba-2930F-24G-PoEP-4SFPP with serial
CN69HKW05T MAC address e0:07:1b:c4:8d:80
     and IP address 10.22.182.78 has been above 1%",
  "timestamp": 1569505920,
  "webhook": "4d588353-3355-487d-81af-c97f62b0abb0",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1307",
  "state": "Open",
  "nid": 1307,
  "details": {
    "group": "0",
    "name": "Aruba-2930F-24G-PoEP-4SFPP",
    "ip": "10.22.182.78",
    "labels": [],
    "mac": "e0:07:1b:c4:8d:80",
    "time": "2019-09-26 13:52:00 UTC",
    "threshold": "1",
    "serial": "CN69HKW05T"
  },
  "operation": "create",
  "device_id": "CN69HKW05T",
  "id": "AW1t18ccYu0OgJ2aoDYw",
  "severity": "Critical"
}
```

Switch Interface Input Errors

```
{
  "alert_type": "SWITCH_INTERFACE_INPUT_ERRORS",
  "description": "Input errors for Interface 19 on Switch Aruba-2930F-24G-PoEP-4SFPP has been
above 90% for about
     30 minutes since 2019-09-26 06:07:00 UTC .",
  "timestamp": 1569505920,
  "webhook": "4d588353-3355-487d-81af-c97f62b0abb0",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1307",
  "state": "Open",
  "nid": 1307,
  "details": {
    "group": "0",
    "name": "Aruba-2930F-24G-PoEP-4SFPP",
    "ip": "10.22.182.78",
    "labels": [],
    "mac": "e0:07:1b:c4:8d:80",
    "time": "2019-09-26 13:52:00 UTC",
    "threshold": "1",
    "serial": "CN69HKW05T"
  },
  "operation": "create",
  "device_id": "CN69HKW05T",
  "id": "AW1t18ccYu0OgJ2aoDYw",
  "severity": "Critical"
}
```

Switch Interface Output Errors

```
{
  "alert_type": "SWITCH_INTERFACE_OUTPUT_ERRORS",
  "description": "Output errors for Interface 19 on Switch Aruba-2930F-24G-PoEP-4SFPP has
been above 90% for about
     30 minutes since 2019-09-26 06:07:00 UTC.",
  "timestamp": 1569505920,
  "webhook": "4d588353-3355-487d-81af-c97f62b0abb0",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1307",
  "state": "Open",
  "nid": 1307,
  "details": {
    "group": "0",
    "name": "Aruba-2930F-24G-PoEP-4SFPP",
    "ip": "10.22.182.78",
    "labels": [],
    "mac": "e0:07:1b:c4:8d:80",
    "time": "2019-09-26 13:52:00 UTC",
    "threshold": "1",
    "serial": "CN69HKW05T"
  },
  "operation": "create",
  "device_id": "CN69HKW05T",
  "id": "AW1t18ccYu0OgJ2aoDYw",
  "severity": "Critical"
}
```

Switch Mismatch Config

```
{
  "alert_type": "Switch Mismatch Config",
  "description": "Config mismatch occurred in switch with serial CN69HKW05T MAC address
e0:07:1b:c4:8d:80 and
     IP address 10.22.182.78 and Hostname Aruba-2930F-48G-PoEP-4SFPP ",
  "timestamp": 1569505920,
  "webhook": "4d588353-3355-487d-81af-c97f62b0abb0",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1307",
  "state": "Open",
  "nid": 1307,
  "details": {
    "group": "0",
    "name": "Aruba-2930F-24G-PoEP-4SFPP",
    "ip": "10.22.182.78",
    "labels": [],
    "mac": "e0:07:1b:c4:8d:80",
    "time": "2019-09-26 13:52:00 UTC",
    "threshold": "1",
    "serial": "CN69HKW05T"
  },
  "operation": "create",
  "device_id": "CN69HKW05T",
  "id": "AW1t18ccYu0OgJ2aoDYw",
  "severity": "Critical"
}
```

Switch Hardware Failure

```
{
  "alert_type": "SWITCH_HARDWARE_FAILURE",
  "description": "Switch with serial CN8AHKW095 : Fan 1 failed ",
  "timestamp": 1569505920,
  "webhook": "4d588353-3355-487d-81af-c97f62b0abb0",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1307",
  "state": "Open",
  "nid": 1307,
  "details": {
    "group": "0",
    "name": "Aruba-2930F-24G-PoEP-4SFPP",
    "ip": "10.22.182.78",
    "labels": [],
    "mac": "e0:07:1b:c4:8d:80",
    "time": "2019-09-26 13:52:00 UTC",
    "threshold": "1",
    "serial": "CN69HKW05T"
  },
  "operation": "create",
  "device_id": "CN69HKW05T",
  "id": "AW1t18ccYu0OgJ2aoDYw",
  "severity": "Critical"
}
```

Switch Interface Duplex Mode

```
{
  "alert_type": "SWITCH_INTERFACE_DUPLEX_MODE",
  "description": "Interface 19 on switch Aruba-2930F-24G-PoEP-4SFPP with serial CN8AHKW095 is
operating at Half-Duplex mode",
  "timestamp": 1569901561,
  "webhook": "c71404f4-00c1-4241-8bf4-c8d3f981caa2",
  "setting_id": "e344d961bccd411dbd279bf92f61b989-1306",
  "state": "Open",
  "nid": 1306,
  "details": {
    "group": "1",
    "name": "Aruba-2930F-24G-PoEP-4SFPP",
    "labels": "",
    "mode": "Half",
    "intf_name": "19",
    "time": "2019-10-01 03:46:01 UTC",
    "serial": "CN8AHKW095"
  },
  "operation": "create",
  "device_id": "CN8AHKW095",
  "id": "AW2FbMiOYu0OgJ2asaWh",
  "severity": "Critical"
}
```

Gateway Alerts—Sample JSON

This section includes sample JSON content for the following alerts:

WAN Uplink Flap

```
{
  "alert_type": "WAN_UPLINK_FLAP",
  "description": "Uplink link1_inet link status flapped 1% on device with CNHHKLB031 for
about 15 minutes
     since 2019-07-25 12:36:00 UTC.",
  "timestamp": 1564059060,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1600",
  "state": "Open",
  "nid": 1600,
  "details": {
    "status": "DOWN",
    "_rule_number": "0",
    "group": "77",
    "labels": "8,661",
    "current_status": "UP",
    "duration": "15",
    "intf_name": "link1_inet",
    "time": "2019-07-25 12:36:00 UTC",
    "threshold": "1",
    "ds_key": "abce082bef4a428bb31366f6d6ff223f.CNHHKLB031.uplink.flap.5m",
    "serial": "CNHHKLB031",
    "uplink_tag": "link1_inet",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwpL0fvVQO1ZtiGh-2_",
  "severity": "Critical"
}
```

WAN Tunnel Flap

```
{
  "alert_type": "WAN_TUNNEL_FLAP",
  "description": "Tunnel data-vpnc-00:1a:1e:03:83:30-link1_inet status flapped 1%
    on device CNHHKLB031 for about 15 minutes since 2019-07-25 12:26:00 UTC.",
  "timestamp": 1564058460,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1601",
  "state": "Open",
  "nid": 1601,
  "details": {
    "alias_map_name": "data-vpnc-00:1a:1e:03:83:30-link1_inet",
    "_rule_number": "0",
    "group": "77",
    "dst_ip": "172.168.101.9",
    "labels": "8,661",
    "src_ip": "192.168.51.254",
    "duration": "15",
    "time": "2019-07-25 12:26:00 UTC",
    "threshold": "1",
    "ds_key": "abce082bef4a428bb31366f6d6ff223f.CNHHKLB031.uplink.tunnel.flap.5m",
    "serial": "CNHHKLB031",
    "uplink_tag": "link1_inet",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwpJiAiVQO1ZtiGh5tw",
  "severity": "Critical"
}
```

WAN Auto Negotiation Flap

```
{
  "alert_type": "WAN_AUTO_NEGOTIATION_FLAP",
  "description": "Uplink GE0/0/1 speed flapped 1% on device CNHHKLB031 for about
    15 minutes since 2019-07-25 12:32:00 UTC.",
  "timestamp": 1564058820,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1602",
  "state": "Open",
  "nid": 1602,
  "details": {
    "new_speed": "Auto",
    "group": "77",
    "labels": "8,661",
    "duration": "15",
    "_rule_number": "0",
    "intf_name": "GE0/0/1",
    "time": "2019-07-25 12:32:00 UTC",
    "threshold": "1",
    "ds_key": "abce082bef4a428bb31366f6d6ff223f.CNHHKLB031.uplink.speed.flap.5m",
    "serial": "CNHHKLB031",
    "speed": "1000",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwpK55sVQO1ZtiGh8zr",
  "severity": "Minor"
}
```

WAN IPsec SA Establishment Failed

```
{
  "alert_type": "WAN_IPSEC_SA_ESTABILSHMENT_FAILED",
  "description": "IPSec Tunnel Establishment from 192.168.51.254 to 172.168.101.9 failed
     on device CNHHKLB031 at 2019-07-25 12:49:56 UTC",
  "timestamp": 1564058996,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1550",
  "state": "Open",
  "nid": 1550,
  "details": {
    "alias_map_name": "data-vpnc-00:1a:1e:03:83:30-link1_inet",
    "group": "77",
    "name": "None",
    "labels": [
      "8",
      "661"
    ],
    "src_ip": "192.168.51.254",
    "link_tag": "link1_inet",
    "time": "2019-07-25 12:49:56 UTC",
    "dst_ip": "172.168.101.9",
    "serial": "CNHHKLB031"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwpLlB0VQO1ZtiGh-WS",
  "severity": "Minor"
}
```

WAN IPsec SA Down

```
{
  "alert_type": "WAN_IPSEC_SA_DOWN",
  "description": "IPSec tunnel from 192.168.52.254 to 172.168.101.9 is DOWN on device
CNHHKLB031.
     Reason: Administrator cleared IPSEC SA at 2019-07-25 12:40:22 UTC",
  "timestamp": 1564058422,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1551",
  "state": "Open",
  "nid": 1551,
  "details": {
    "alias_map_name": "data-vpnc-00:1a:1e:03:83:30-link2_mpls",
    "group": "77",
    "name": "None",
    "labels": [
      "8",
      "661"
    ],
    "src_ip": "192.168.52.254",
    "reason": "Administrator cleared IPSEC SA",
    "time": "2019-07-25 12:40:22 UTC",
    "dst_ip": "172.168.101.9",
    "serial": "CNHHKLB031",
    "uplink_tag": "link2_mpls"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwpJY4aVQO1ZtiGh5c-",
  "severity": "Minor"
}
```

WAN IPsec SA All Down

```
{
  "alert_type": "WAN_IPSEC_SA_ALL_DOWN",
  "description": "All IPSec SAs down for device CNHHKLB031 at 2019-07-25 12:40:22 UTC",
  "timestamp": 1564058446,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1552",
  "state": "Close",
  "nid": 1552,
  "details": {
    "serial": "CNHHKLB031",
    "labels": [
      "8",
      "661"
    ],
    "group": "77",
    "name": "None",
    "time": "2019-07-25 12:40:22 UTC"
  },
  "operation": "update",
  "device_id": "CNHHKLB031",
  "id": "AWwpJY3NVQO1ZtiGh5c9",
  "severity": "Critical"
}
```

CFG Set Advertisement Failure

```
{
  "alert_type": "CFG_SET_ADVERTISEMENT_FAILURE",
  "description": "CFG-Set advertisement failure for Gateway with CNHHKLB031 on tunnel data-
vpnc-00:1a:1e:03:83:30-link1_inet
     from 192.168.51.254 to 172.168.101.9",
  "timestamp": 1564059635,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1554",
  "state": "Open",
  "nid": 1554,
  "details": {
    "alias_map_name": "data-vpnc-00:1a:1e:03:83:30-link1_inet",
    "group": "77",
    "name": "None",
    "labels": [
      "8",
      "661"
    ],
    "src_ip": "192.168.51.254",
    "time": "2019-07-25 13:00:35 UTC",
    "map_name": "data-vpnc-00:1a:1e:03:83:30-link1_inet",
    "dst_ip": "172.168.101.9",
    "serial": "CNHHKLB031"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwpOBCVVQO1ZtiGiD0f",
  "severity": "Major"
}
```

Controller CPU Over Utilization

```
{
  "alert_type": "CONTROLLER_CPU_OVER_UTILIZATION",
  "description": "CPU utilization for Gateway Aruba9004_40_0C_28 with serial CNHHKLB031 has
been above 1% for about 15 minutes
     since 2019-07-25 09:30:00 UTC.",
  "timestamp": 1564047900,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1351",
  "state": "Open",
  "nid": 1351,
  "details": {
    "_rule_number": "0",
    "group": "77",
    "name": "Aruba9004_40_0C_28",
    "labels": "8,661",
    "duration": "15",
    "time": "2019-07-25 09:30:00 UTC",
    "threshold": "1",
    "ds_key": "abce082bef4a428bb31366f6d6ff223f.CNHHKLB031.cpu_utilization.5m",
    "serial": "CNHHKLB031",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwohP4LVQO1ZtiGgfbQ",
  "severity": "Critical"
}
```

Controller Memory Over Utilization

```
{
  "alert_type": "CONTROLLER_MEMORY_OVER_UTILIZATION",
  "description": "Memory utilization for Gateway Aruba9004_40_0C_28 with serial CNHHKLB031
has been above 1% for about 10 minutes
     since 2019-07-25 09:30:00 UTC.",
  "timestamp": 1564047600,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1352",
  "state": "Open",
  "nid": 1352,
  "details": {
    "_rule_number": "0",
    "group": "77",
    "name": "Aruba9004_40_0C_28",
    "labels": "8,661",
    "duration": "10",
    "time": "2019-07-25 09:30:00 UTC",
    "threshold": "1",
    "ds_key": "abce082bef4a428bb31366f6d6ff223f.CNHHKLB031.memory_utilization.5m",
    "serial": "CNHHKLB031",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwogGqYVQO1ZtiGgc2L",
  "severity": "Major"
}
```

Controller OSPF Session Error

```
{
  "alert_type": "CONTROLLER OSPF SESSION ERROR",
  "description": "OSPF session state change for Gateway with hostname GSK_VPNC2 and serial
CW0003307 from Init State to Down State
     for neighbor 1.0.0.2 on interface 100 with reason No hello packets received from
neighbour.Inactivity timer fired",
  "timestamp": 1564121712,
  "webhook": "60785e88-9513-4352-94d6-ec25fedbeddc",
  "setting_id": "b27f67fa44234c51a890fccea7c9b83e-1354",
  "state": "Open",
  "nid": 1354,
  "details": {
    "dst_state": "Down State",
    "neighbour_ip": "1.0.0.2",
    "group": "4",
    "uniq_identifier": "100-16777218",
    "labels": [
      "2",
      "11",
      "12",
      "15",
      "13",
      "8"
    ],
    "src_state": "Init State",
    "reason": "No hello packets received from neighbour.Inactivity timer fired",
    "time": "2019-07-26 06:15:12 UTC",
    "interface": "100",
    "serial": "CW0003307",
    "hostname": "GSK_VPNC2"
  },
  "operation": "create",
  "device_id": "CW0003307",
  "id": "AWws60Yxon2R5PyMmUU4",
  "severity": "Major"
}
```

Gateway Base License Capacity Exceeded

```
{
  "alert_type": "GATEWAY_BASE_LICENSE_CAPACITY_EXCEEDED",
  "description": "Base license capacity limit exceeded for Gateway with name: Dev-BR1-GW-
Kafka, serial: CP0015859",
  "timestamp": 1564141290,
  "webhook": "1348bcc4-ce00-4180-b314-32849c3638a1",
  "setting_id": "2fb4b8a7e77c496395950510a1d270bc-1356",
  "state": "Open",
  "nid": 1356,
  "details": {
    "serial": "CP0015859",
    "labels": [],
    "group": "1",
    "name": "Dev-BR1-GW-Kafka",
    "time": "2019-07-26 11:41:30 UTC"
  },
  "operation": "create",
  "device_id": "CP0015859",
  "id": "AWwuFgZqnGtA5yFV0hCr",
  "severity": "Critical"
}
```

DHCP Pool Consumption Alert

```
{
  "alert_type": "DHCP_POOL_CONSUMPTION_ALERT",
  "description": "DHCP Pool Consumption on Gateway CNHHKLB031 is 12% at 2019-07-25 13:02:39
UTC for 192.168.53.0/24",
  "timestamp": 1564059759,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1510",
  "state": "Open",
  "nid": 1510,
  "details": {
    "subnet": "192.168.53.0/24",
    "group": "77",
    "name": "None",
    "labels": "8,661",
    "time": "2019-07-25 13:02:39 UTC",
    "threshold": "12",
    "serial": "CNHHKLB031",
    "unit": "%"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwpOfQAVQO1ZtiGiE2H",
  "severity": "Critical"
}
```

WAN Auto Negotiation

```
{
  "alert_type": "WAN_UPLINK_AUTONEGOTIATION_STATE_CHANGE",
  "description": "WAN ports autonegotiaton speed changed from 1000 Mbps to Auto Mbps for
device with CNHHKLB031 for
     uplink GE0/0/1 at 2019-07-25 12:46:36 UTC",
  "timestamp": 1564058796,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1506",
  "state": "Open",
  "nid": 1506,
  "details": {
    "new_speed": "Auto",
    "group": "77",
    "name": "None",
    "labels": [
      "8",
      "661"
    ],
    "intf_name": "GE0/0/1",
    "time": "2019-07-25 12:46:36 UTC",
    "serial": "CNHHKLB031",
    "speed": "1000"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwpK0IxVQO1ZtiGh8oh",
  "severity": "Minor"
}
```

WAN Uplink Status Change

```
{
  "alert_type": "WAN_UPLINK_STATUS_CHANGE",
  "description": "Uplink port link1_inet status change UP -&gt; DOWN for device with
CNHHKLB031 at 2019-07-25 09:22:31 UTC",
  "timestamp": 1564046551,
  "webhook": "394c7a3c-ca41-4476-8afc-857e54aa4b3b",
  "setting_id": "abce082bef4a428bb31366f6d6ff223f-1505",
  "state": "Open",
  "nid": 1505,
  "details": {
    "status": "UP",
    "group": "77",
    "name": "None",
    "labels": [
      "8",
      "661"
    ],
    "current_status": "DOWN",
    "intf_name": "link1_inet",
    "time": "2019-07-25 09:22:31 UTC",
    "serial": "CNHHKLB031",
    "uplink_tag": "link1_inet"
  },
  "operation": "create",
  "device_id": "CNHHKLB031",
  "id": "AWwocGtYVQO1ZtiGgT03",
  "severity": "Major"
}
```

Miscellaneous Alerts—Sample JSON

This section includes sample JSON content for the following alerts:

Device Config Change Detected

```
{
  "alert_type": "DEVICE_CONFIG_CHANGE_DETECTED",
  "description": "Config change detected on group nbapi_test for device type Switch by user
     example@hpe.com.\n\nSerial: None, \nMacAddress: None,
     \nConfig Content: Template Updated
     \nmodel: ALL\nversion: ALL\ndevice_type: HPPC\ntemplate changes: \n @@ -18,6 +18,6
@@\n\n\n
     ip address dhcp-bootp\n\n exit\n\n vlan 13\n\n- name \"vlan_8888\"\n\n+ name \"vlan_
44\"\n\n no ip address\n\n exit ",
  "timestamp": 1564383294,
  "webhook": "272eda1a-f79b-4192-ad6f-b35da11515bc",
  "setting_id": "715e45fe3ff8453da355cd34aff2afa5-2000",
  "state": "Open",
  "nid": 2000,
  "details": {
    "config_change": "Template Updated\nmodel: ALL\nversion: ALL\ndevice_type: HPPC\ntemplate
changes: \n @@ -18,6 +18,
     6 @@\n\n\n ip address dhcp-bootp\n\n exit\n\n vlan 13\n\n- name \"vlan_8888\"\n\n+ name
\"vlan_44\"\n\n no ip address\n\n exit ",
    "macaddr": "None",
    "group": "8",
    "dev_type": "Switch",
    "labels": "None",
    "group_name": "nbapi_test",
    "_rule_number": "0",
    "params": "None",
    "user": "example@hpe.com",
    "time": "2019-07-29 06:54:54 UTC",
    "serial": "None"
  },
  "operation": "create",
  "device_id": "",
  "id": "AWw8grSBeZ6A6PlBvMk4",
  "severity": "Warning"
}
```

User Account Deleted

```
{
  "alert_type": "User account deleted",
  "description": "User with name v@gmail.com deleted.",
  "timestamp": 1569234480,
  "webhook": "057b0a95-9f06-4a0f-b4bf-149a28d749b3",
  "setting_id": "573b0412517a41c8a73a80f3e74ff0d2-15",
  "state": "Open",
  "nid": 15,
  "details": {
    "group": "-1",
    "labels": "None",
    "params": [
      "v@gmail.com"
    ],
    "_rule_number": "0",
    "time": "2019-09-23 10:28:00 UTC"
  },
  "operation": "create",
  "device_id": "",
  "id": "AW1dqe6rYu0OgJ2alXzT",
  "severity": "Major"
}
```

New User Account Added

```
{
  "alert_type": "New User account added",
  "description": "User account setting updated for user: newuser@gmail.com with language:en_
US and idle timeout: 1800",
  "timestamp": 1569234534,
  "webhook": "057b0a95-9f06-4a0f-b4bf-149a28d749b3",
  "setting_id": "573b0412517a41c8a73a80f3e74ff0d2-14",
  "state": "Open",
  "nid": 14,
  "details": {
    "group": "-1",
    "labels": "None",
    "params": [],
    "_rule_number": "0",
    "time": "2019-09-23 10:28:54 UTC"
  },
  "operation": "create",
  "device_id": "",
  "id": "AW1dqr6nYu0OgJ2alX1l",
  "severity": "Major"
}
```

User Account Edited

```
{
  "alert_type": "User account edited",
  "description": "User with Name newuser@gmail.com, role readwrite and access [] updated.",
  "timestamp": 1569235100,
  "webhook": "057b0a95-9f06-4a0f-b4bf-149a28d749b3",
  "setting_id": "573b0412517a41c8a73a80f3e74ff0d2-16",
  "state": "Open",
  "nid": 16,
  "details": {
    "group": "-1",
    "labels": "None",
    "params": [
      "newuser@gmail.com",
      "readwrite",
      "[]"
    ],
    "_rule_number": "0",
    "time": "2019-09-23 10:38:20 UTC"
  },
  "operation": "create",
  "device_id": "",
  "id": "AW1ds2LcYu0OgJ2alYM2",
  "severity": "Major"
}
```