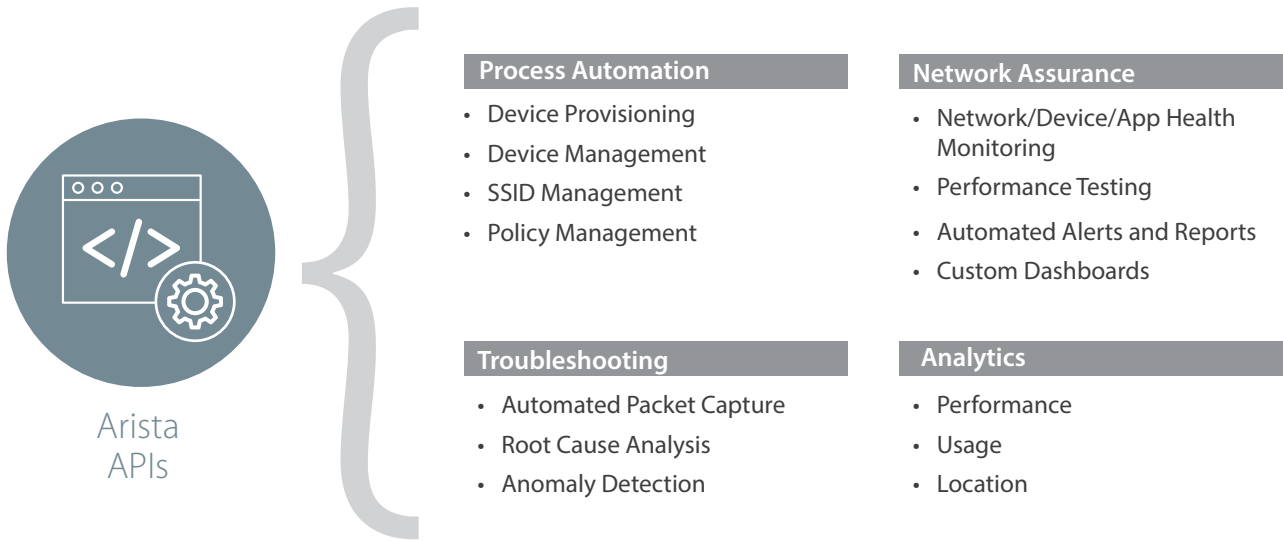


Introduction to Arista CloudVision CUE API

Enterprise Wi-Fi networks have traditionally been managed via a centralised GUI. Common tasks such as configuration management, software upgrades, monitoring and troubleshooting of Wi-Fi Access Points are carried out by IT administrators using GUI-based workflows. Access Point CLI is also used sometimes for troubleshooting by experienced engineers. In both cases, a common factor is that the interface is man-machine. In other words, manual intervention is required for these tasks. With workflow automation becoming more prevalent in most IT-driven systems across all industries, Wi-Fi network management is also evolving in the same direction. This has given rise to Network DevOps (also referred to as NetDevOps) as an important aspect of Wi-Fi network management. The basic idea is to utilise programmatic interfaces for interacting with the network. This can be achieved with the help of APIs exposed by the network.

Arista CV-CUE APIs Overview

Arista's CV-CUE Access Points are managed using a set of services deployed in a public cloud (e.g. AWS, GCP) or on an on-premises server. For routine tasks such as AP configuration, policy management, network monitoring, etc., a customer uses the CV-CUE to access these services. Most of these services are also exposed through REST APIs, as illustrated below.

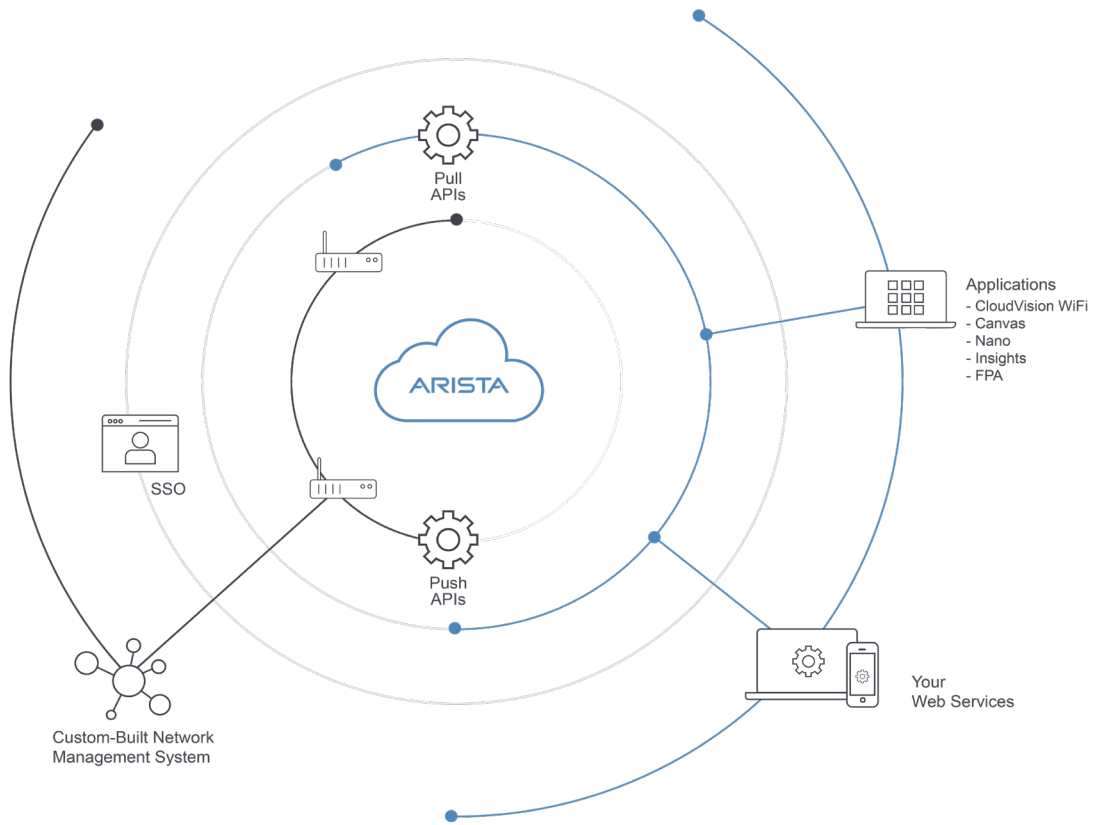


Like most REST API implementations, the Arista APIs perform CRUD operations through the HTTP methods

POST **GET** **PUT** and **DELETE** on the various resources.

Use Cases

Arista enables customers to build their own applications on top of the extensible Arista Cloud using push and pull APIs.



The table below lists some sample use cases where APIs can be used.

Use Case	Description
Integrate with 3rd party network monitoring dashboards	API-based access to the Location/AP/client/application related data from the Wireless Manager
Configuration Management	Managed Service Provider builds a mobile/web app to configure APs for Wi-Fi hotspots such as cafes.
Guest Management	Co-working space provider integrates its visitor management system with the Guest Manager to generate credentials for Wi-Fi access to visitors.
Green AP	A building management solutions provider uses information obtained from the WM to selectively turn off APs in no/low activity periods.
Site Provisioning	An MSP develops a solution to automatically provision APs for each new location/customer and apply a standard configuration with pre-defined customization (e.g. different SSID name for each location).
SSID Scheduling	The IT team in a University integrates the academic calendar with SSID Scheduler to turn on APs in lecture halls only when a lecture is scheduled.
On-demand SSID	The IT team develops an application to create limited duration SSIDs for special events such as walk-in interviews.
Network Assurance	The IT team develops an application to execute Client Connectivity Tests daily on a set of randomly selected APs at each location and raises alerts if one or more APs fail the test.

API Access

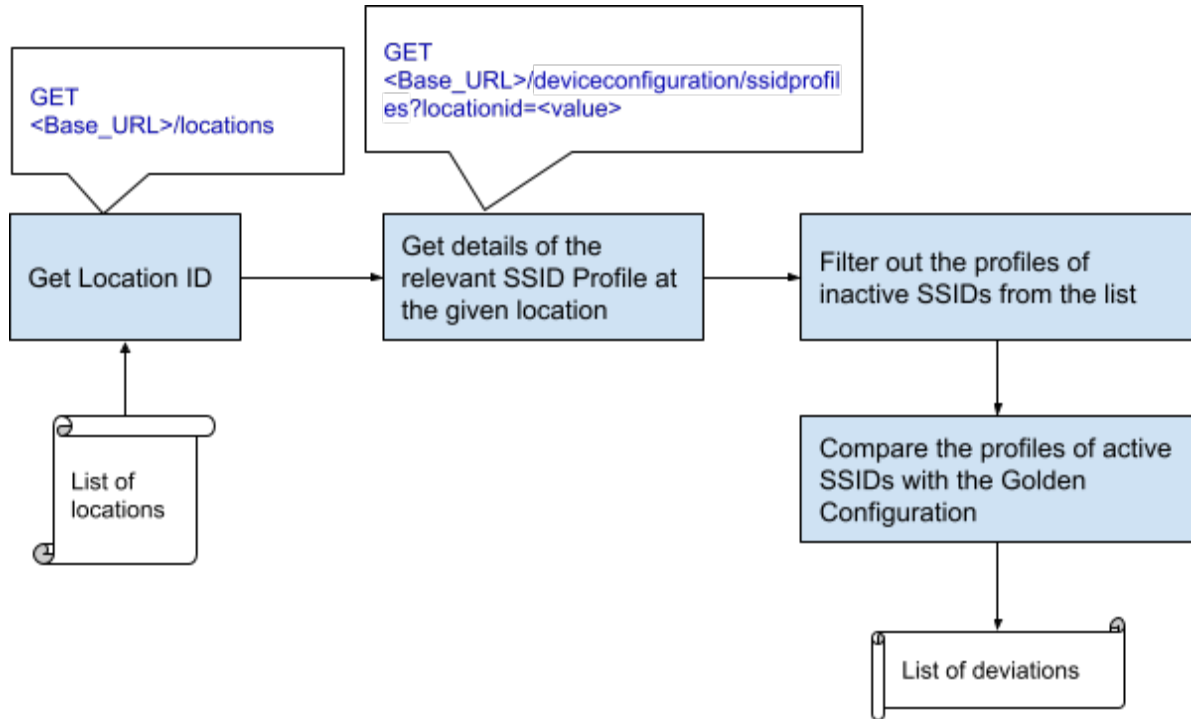
Access to the Arista APIs is controlled through a secure login mechanism. Arista Cloud provides support for a Key Validation Service (KVS). With KVS support, Arista Cloud users can generate key-value pairs and assign appropriate service privileges on this key-value pair. This key-value pair can then be used to access services through REST APIs and perform various actions. The key-value pair cannot be used to log into a service from UI and is exclusively for accessing the services through APIs. The API calls are made over HTTPS, thereby adding another layer of security.

Once logged in, a user can make any number of API calls during a single session. The idle session timeout can be configured during the login process. The session duration can be as long as the session is kept alive by making API calls before the idle timeout. As the API is web-based, it is OS and client agnostic. In addition, the resources or objects utilized by these services are represented in JSON (JavaScript Object Notation) format. Hence, it is easy to build cross-platform applications.

Examples

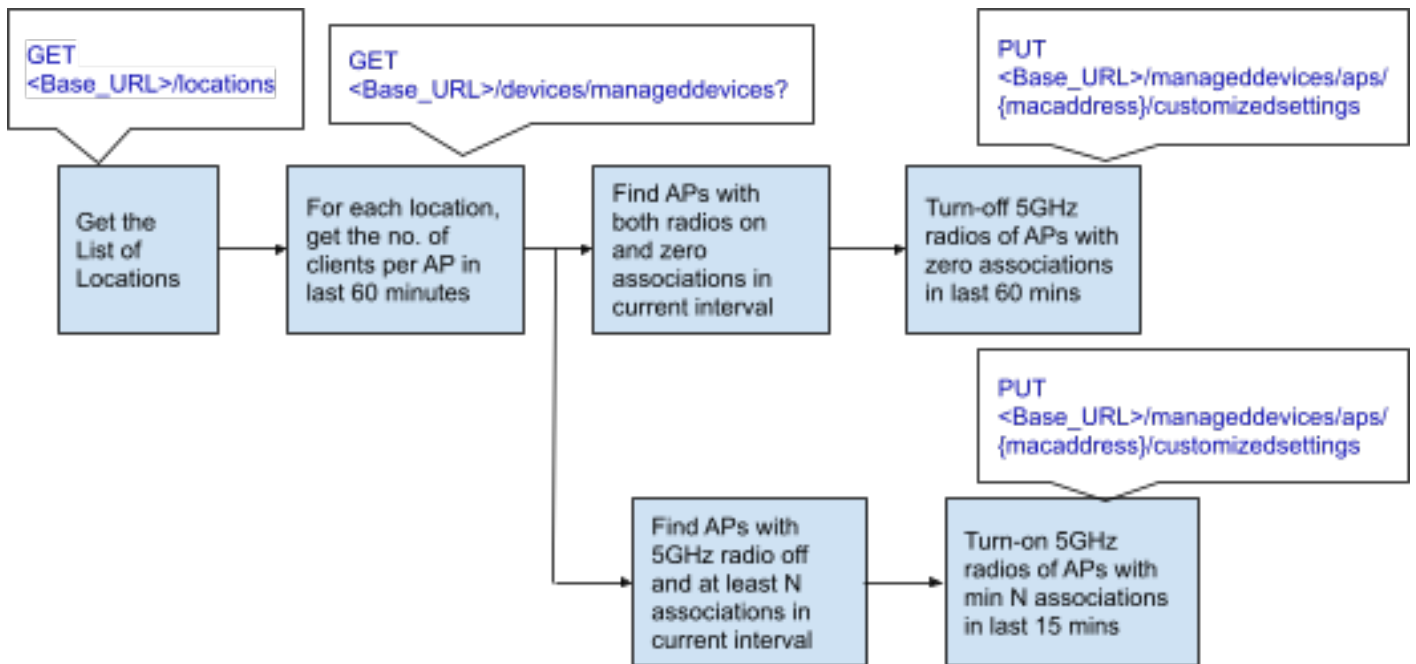
SSID Configuration Audit

Consider a scenario where an administrator wants to compare the SSID profiles at different corporate locations against a so-called 'Golden Configuration' to find out if there are any deviations.



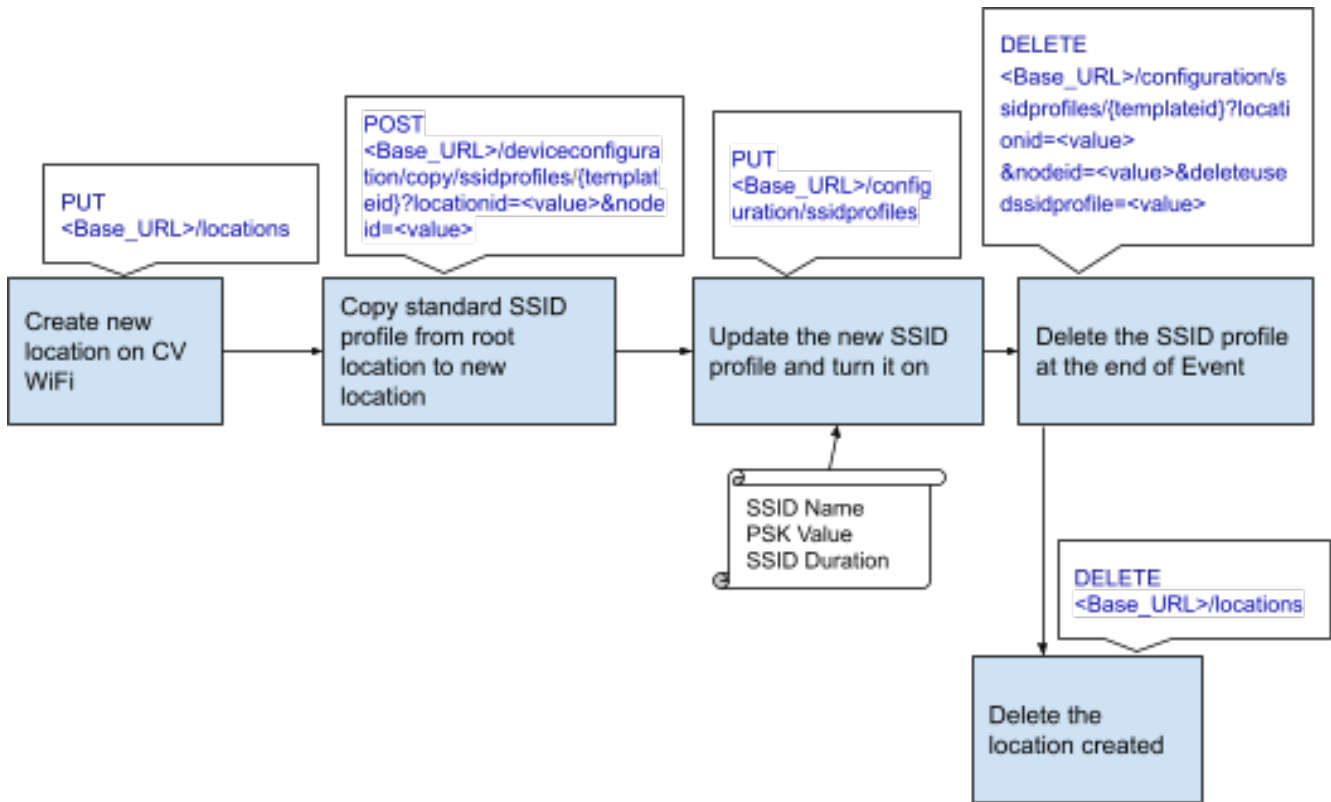
Green AP

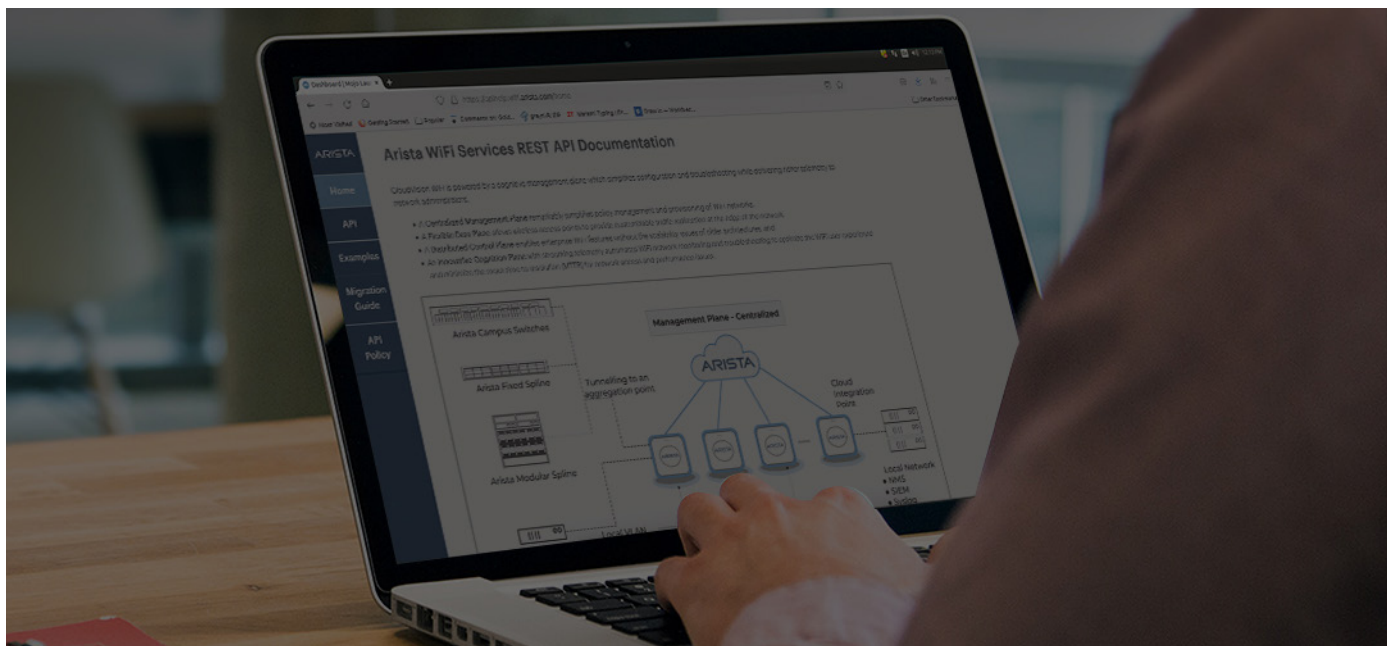
In off-peak hours, when the number of users is very low or zero, there’s no need to keep all the Wi-Fi AP radios on. This can be used as an energy-saving mechanism. CV-CUE allows turning AP radios on/off on a per-AP basis. Manually turning a bunch of radios on/off daily from the UI can be tedious if the number of APs is large. This process can be automated using Arista CV-CUE APIs.



On Demand SSID

Pop-up or on-demand SSIDs are required for various reasons. For example, a convention center in a hotel hosts events on a regular basis. Such events take place over a short period of time, for example hours or a couple of days. Typically, the event organisers want a custom SSID name but most of the parameters remain the same. If PSK is used, then a new PSK may also be required for each event. The hotel IT team can use Arista CV-CUE API to generate a short-term SSID profile using a default template with a few customizations.





Conclusion

Arista CV-CUE is built upon an open, programmable architecture. This is exemplified by the rich set of APIs available for interacting with CV-CUE. These APIs can be leveraged by customers, MSPs etc to manage all aspects of a Wi-Fi network such as configuration management, monitoring, network assurance and troubleshooting. It also allows easy integration with 3rd party systems, e.g NAC, Guest Manager etc. The APIs can also be used to extend the functionality of existing services like CV-CUE, for example, by developing a voice-based interface.

For more information, visit <https://apihelp.wifi.arista.com/>

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