

Aruba Central Licensing Guide

aruba

a Hewlett Packard
Enterprise company

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This document describes the Aruba Central Foundation and Advanced Licenses and provides detailed information about the different license types, the features and devices supported in each license type, and how to manage the devices and services. In addition, this guide also helps you to migrate from the legacy licensing model to the Aruba Central Foundation or Advanced Licenses.

Intended Audience

This guide is intended for network administrators who are responsible for adding and assigning licenses to devices in Aruba Central.

Related Documents

In addition to this document, see the [Aruba Central Help Center](#) for more details about Aruba SD-Branch and Aruba Central.

Conventions

[Table 1](#) lists the typographical conventions used throughout this guide to emphasize important concepts.

Table 1: *Typographical Conventions*

Type Style	Description
<i>Italics</i>	This style is used to emphasize important terms and to mark the titles of books.
System items	This fixed-width font depicts the following: <ul style="list-style-type: none">■ Sample screen output■ System prompts
Bold	<ul style="list-style-type: none">■ Keys that are pressed■ Text typed into a GUI element■ GUI elements that are clicked or selected

The following informational icons are used throughout this guide:



Indicates helpful suggestions, pertinent information, and important things to remember.



Indicates a risk of damage to your hardware or loss of data.



Indicates a risk of personal injury or loss of life.

Terminology Change

As part of advancing HPE's commitment to racial justice, we are taking a much-needed step in overhauling HPE engineering terminology to reflect our belief system of diversity and inclusion. Some legacy products and publications may continue to include terminology that seemingly evokes bias against specific groups of people. Such content is not representative of our HPE culture and moving forward, Aruba will replace racially insensitive terms and instead use the following new language:

Usage	Old Language	New Language
Campus Access Points + Controllers	Master-Slave	Conductor-Member
Instant Access Points	Master-Slave	Conductor-Member
Switch Stack	Master-Slave	Conductor-Member
Wireless LAN Controller	Mobility Master	Mobility Conductor
Firewall Configuration	Blacklist, Whitelist	Denylist, Allowlist
Types of Hackers	Black Hat, White Hat	Unethical, Ethical

Contacting Support

Table 2: *Contact Information*

Main Site	arubanetworks.com
Support Site	asp.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

Overview of Aruba Central Foundation and Advanced Licenses

As part of the shift to an Edge-to-Cloud Platform-as-a-Service organization, Aruba has introduced the Aruba Central Foundation and Advanced Licenses (Aruba Central Licenses). This is a uniform software subscription licensing model that will be extended to all products under the Aruba Central-managed portfolio. The new 1, 3, 5, 7, and 10-year fixed-term licenses offer you the flexibility to choose services and device operations that are most meaningful to the type of business that you own.

This licensing model provides different licenses for APs, switches, and gateways.



The licenses for APs, switches, and gateways cannot be used interchangeably. For example, you cannot use an AP Foundation License on a gateway. Similarly, if you have an Aruba 25xx Switch but the license available is for an Aruba 29xx Switch, the Aruba 29xx Switch license cannot be applied to the Aruba 25xx Switch.

The features that are available in both the Foundation and Advanced Licenses have different monitoring and configuration options depending on the licensing tier. For more information, see [Supported Features](#).

This licensing model provides the following types of licenses depending on the devices:

- Switches:
 - **Foundation**—This license provides all the features included in the legacy Device Management tokens.



-
- Aruba Central does not provide Switch Advanced Licenses.
 - Mobility Access Switch (MAS) license will get converted to Switch Foundation 61xx/25xx license and continue to work.
-

- Access Points (APs):
 - **Foundation**—This license provides all the features included in the legacy Device Management tokens and some additional features that were available as value-added services for APs and switches in the earlier licensing model.
 - **Advanced**—This license provides all the features included in the Foundation License, with additional features related to AI Insights and WLAN services.
- SD-Branch Gateways:
 - **Foundation**—This license provides all features required for SD-Branch functionality in branch or headend deployments.
 - **Foundation Base**—This license provides all the features included in a Foundation License, but can support only up to 75 client devices per branch site.
 - **Foundation with Security**—This license provides all features required for SD-WAN functionality in branch or headend deployments and some additional security features.
 - **Foundation Base with Security**—This license provides all the features included in a Foundation with Security License, but can support only up to 75 client devices per branch.
 - **Advanced**—This license provides all the features included in a Foundation License, with additional features related to SaaS Express and AI Insights.

- **Advanced with Security**—This license provides all the features of an Advanced License, with additional security features related to IPS and IDS, security dashboard, and anti-malware.
- **Virtual Gateway (VGW) License**—This license is available for AWS, Azure, and ESXi platforms and is licensed based on the bandwidth required. The license types available for VGW are, VGW-500M, VGW-2G, and VGW-4G.

For more information, see [SD-WAN Ordering Guide](#).



The Foundation and Advanced Licenses for APs, switches, and SD-Branch gateways are different and cannot be used interchangeably.

For a detailed list of the features supported in each type of license, see [Supported Features](#).

For more information about evaluation licenses, see [Starting Your Free Trial](#).

Changes to the Legacy Licensing Model

For existing Aruba Central customers, please note that the previous Device Management and Service Token model is changed to the new licensing model, which provides a uniform licensing structure for all types of devices such as APs, switches, and gateways.

The following list provides information about important aspects of the legacy licensing model:

- **Device Management Token**—This is a mandatory token which allows you to manage and monitor your APs and switches from Aruba Central.
- **Service Token**—This token allows you to enable value-added services for APs managed from Aruba Central. These services include UCC, AirGroup, Wi-Fi Connectivity Dashboard (formerly, Clarity), Cloud Guest, WebCC, and Presence Analytics.
- **Subscription Key**—A valid subscription key allows you to manage, profile, and analyze your devices using Aruba Central. A subscription key is a 14-character alphanumeric string provided for either a device management or service token.

The new Aruba Central Licenses simplify the existing subscription-based licensing model. With the introduction of this licensing model, the existing Device Management tokens for APs and switches are no longer available. Similarly, the Service tokens for value-added services on the APs are unavailable. Instead, APs and switches have adopted the current Gateway Foundation and Advanced licensing model.

Supported Devices

The Aruba Central Licenses are supported for APs, switches, and gateways. For more information on the individual device models supported, refer to the next sections. The pricing structure for Foundation and Advanced Licenses for the hardware devices may differ based on the types of models.

APs and IAPs

All AP and IAP models that are currently being shipped are supported. See [Supported Instant APs](#).

Switches

Aruba Central supports AOS-Switch and AOS-CX switches.

AOS-Switches

The following AOS-Switches are supported:

- Aruba 2530 Switch Series
- Aruba 2540 Switch Series
- Aruba 2920 Switch Series
- Aruba 2930F Switch Series
- Aruba 2930M Switch Series
- Aruba 3810 Switch Series
- Aruba 5400R Switch Series

For more information, see [Supported AOS-Switch Platforms](#).

AOS-CX Switches

The following AOS-CX switches are supported:

- AOS-CX 6200 Switch Series
- AOS-CX 6300 Switch Series
- AOS-CX 6400 Switch Series
- AOS-CX 8320 Switch Series
- AOS-CX 8325 Switch Series
- AOS-CX 8360 Switch Series
- AOS-CX 8400 Switch Series

For more information, see [Supported AOS-CX Platforms](#).

Gateways

Aruba Central supports SD-Branch Gateways based on the license type.

For more information, see [Supported SD-Branch Components](#).

Gateway Foundation and Advanced License

The Gateway Foundation and Advanced License can be assigned to the following gateways:

- Aruba 70xx Series
- Aruba 72xx Series
- Aruba 90xx Series

This license does not have a capacity limit for client devices.

Gateway Foundation Base License

The Gateway Foundation Base License can be assigned to the following gateways:

- Aruba 7005, 7008, 9004, 9004-LTE, 9012

This license includes all the features available in the Gateway Foundation License. However, this license can support only up to 75 client devices per branch.

When the client capacity reaches the threshold, Aruba Central triggers an alert to indicate the Gateway Base License capacity limit has exceeded. If the notification option for the license capacity limit exceeded alert is configured, Aruba Central sends an email notification with a list of Aruba gateways that exceed the client-capacity threshold. You can also configure alerts to trigger an incident using Webhook. For more information, see [Gateway Alerts](#).

Gateway Foundation, Foundation Base, and Advanced with Security License

The Gateway Foundation with Security License can be assigned to the following gateways:

- Aruba 9004 Gateway
- Aruba 9004-LTE Gateway
- Aruba 9012 Gateway

Virtual Gateway (VGW) License (VPNC only)

The Virtual Gateway License is available on AWS, Azure, and ESXi platforms and are licensed based on bandwidth required: 500 Mbps, 2 Gbps, or 4 Gbps.

Aruba Virtual Gateway is a virtual instance of the headend gateway for ArubaSD-Branch. Aruba Central supports licenses based on the bandwidth capacity for virtual gateways. All license assignments are undertaken by the virtual gateway orchestration app.

The following are the options available for Virtual Gateway Licenses:

- License duration—1 year, 3 years, and 5 years
- Available bandwidths—500 Mbps, 2 Gbps, and 4 Gbps
- Available Aruba Virtual Gateways based on the bandwidth—VGW-500M for 500 Mbps, VGW-2G for 2 Gbps, and VGW-4G for 4Gbps

Aruba Central maintains a pool of Virtual Gateway Licenses. When a Virtual Gateway License expires and there are no available Virtual Gateway Licenses, the expired license is unassigned from the Aruba Central account. The availability of SKUs is dependent on the installation consuming the license. If a Virtual Gateway License expires and there is a similar new license available, the new license is assigned to the Virtual Gateway, provided that the **Auto-Assign Licenses** option is enabled.

For more information about the **Auto-Assign Licenses** option, see [Enabling the Auto-Assign Licenses Option](#).

For an Aruba Central evaluation account, four licenses of each base SKU are assigned to the account. These evaluation licenses are valid for 90 days.

You can track licenses on the **Key Management** page or the **License Assignment** page available from the **Account Home** page.

The list of licenses available against consumed licenses is also displayed during the deployment of a Virtual Gateway.

When the client capacity reaches the threshold, Aruba Central triggers an alert to indicate the Gateway Base License capacity limit has exceeded. If the notification option for the license capacity limit exceeded alert is configured, Aruba Central sends an email notification with a list of Aruba gateways that exceed the client-capacity threshold. You can also configure alerts to trigger an incident using Webhook. For more information, see [Gateway Alerts](#).

For more information, see [SD-WAN Ordering Guide](#).

Supported Features

This section includes detailed information about the different configuration and monitoring options available for Aruba Central features tied to Foundation and Advanced Licenses.

AP Foundation and Advanced License

The AP Foundation and Advanced License for Aruba Central includes the following features:

Feature Category	Foundation License Features	Advanced License Features
Configuration	<ul style="list-style-type: none"> ■ UI- and template-based group configuration <ul style="list-style-type: none"> ○ SSID (Bridge Mode) ○ IAP VPN ■ Auto-commit ■ Configuration audit 	All the features in Foundation
Monitoring and Reporting	<ul style="list-style-type: none"> ■ Network Health, Summary, Wi-Fi Connectivity Dashboards ■ Network Topology View ■ Visual RF Floorplans ■ Client List and Details ■ AP List and Details ■ Go Live mode for Client, AP ■ Application Visibility ■ WebCC Firewall rules, visualization by reputation and category ■ Access to all monitoring data for up to 30 days ■ Access to reporting data for up to 90 days ■ Access to historical Client Summary Report data for up to one year ■ Audit Trail ■ Alerts and Events ■ Access, Spectrum, Monitor mode of radio operations ■ UXI Sensor Integration 	<ul style="list-style-type: none"> ■ All the features in Foundation ■ AirSlice <ul style="list-style-type: none"> ○ Visibility and Prioritization of applications <p>NOTE: AirSlice is supported in this release as Early-Access features. Contact your Aruba SE or Account Manager to enable these in your Aruba Central account.</p>
AI Operations	<ul style="list-style-type: none"> ■ AI Search ■ AI Insights <ul style="list-style-type: none"> ○ Connectivity—Wi-Fi ○ Wireless Quality ○ Availability—Access Points ○ Class and Company Baselines ■ AI Assist <ul style="list-style-type: none"> ○ Dynamic logs <p>NOTE: Dynamic Logs is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.</p>	<ul style="list-style-type: none"> ■ All the features in Foundation ■ AI Insights—Wireless Quality <ul style="list-style-type: none"> ○ Outdoor clients impacting Wi-Fi performance ○ Coverage Hole Detection ○ Transmit power optimization ■ AI Assist <ul style="list-style-type: none"> ○ Aruba support notification <p>NOTE: Aruba support notification is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.</p>
Troubleshooting	<ul style="list-style-type: none"> ■ Network Check, CLI commands ■ Live Events for Client and AP, Packet Capture 	All the features in Foundation

Feature Category	Foundation License Features	Advanced License Features
Services	<ul style="list-style-type: none"> ■ AirGroup (In InstantOS-based APs, the service is hosted on the IAP Virtual controller and all services are supported.) <p>NOTE: AirGroup is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.</p> <ul style="list-style-type: none"> ■ RF Management Services <ul style="list-style-type: none"> ○ Adaptive Radio Management (ARM) ○ ClientMatch ■ Presence Analytics 	<ul style="list-style-type: none"> ■ All the features in Foundation ■ UCC <p>NOTE: UCC is supported in this release as Early-Access features. Contact your Aruba SE or Account Manager to enable these in your Aruba Central account.</p>
Security	<ul style="list-style-type: none"> ■ Guest Access ■ Clients Profile ■ Rogues ■ WIPS/WIDS <p>NOTE: CPDI-based Client Profile and Rogues are supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable these in your Aruba Central account.</p>	All the features in Foundation
API	Northbound (NB) API: 1000 API calls/day per customer	<ul style="list-style-type: none"> ■ All the features in Foundation ■ Streaming API

Switch Foundation License

The Switch Foundation License for Aruba Central includes the following features:



Aruba Central does not support Switch Advanced License.

Feature Category	AOS-Switch Features	AOS-CX Features
Configuration	<ul style="list-style-type: none"> ■ UI- and template-based group configuration ■ Auto-commit ■ Configuration audit 	<ul style="list-style-type: none"> ■ UI-, Template-, and MultiEdit-based group configuration ■ Configuration audit
Monitoring and Reporting	<ul style="list-style-type: none"> ■ Network Health, Summary Dashboards ■ Network Topology View ■ Client List and Details ■ Switch List and Details ■ Access to all monitoring data for up to 30 days 	<ul style="list-style-type: none"> ■ Network Health, Summary Dashboards ■ Network Topology View ■ Client List and Details ■ Switch List and Details ■ Access to all monitoring data for up to 30 days

Feature Category	AOS-Switch Features	AOS-CX Features
	<ul style="list-style-type: none"> ■ Access to reporting data for up to 90 days ■ Access to historical Client Summary Report data for up to one year ■ Audit Trail ■ Alerts and Events 	<ul style="list-style-type: none"> ■ Access to reporting data for up to 90 days ■ Access to historical Client Summary Report data for up to one year ■ Audit Trail ■ Alerts and Events
AI Operations	<ul style="list-style-type: none"> ■ AI Search ■ AI Insights <ul style="list-style-type: none"> ○ Availability – Switch ○ Class and Company Baselines 	<ul style="list-style-type: none"> ■ AI Search ■ AI Insights <ul style="list-style-type: none"> ○ Availability – Switch ○ Class and Company Baselines
Troubleshooting	<ul style="list-style-type: none"> ■ Network Check, Device Check, CLI commands ■ Live Events and Packet Capture for wired client 	Network Check, Device Check, CLI commands
API	Northbound (NB) API: 1000 API calls/day per customer	Northbound (NB) API: 1000 API calls/day per customer

Gateway Foundation, Foundation Base, and Advanced License

The Gateway Foundation, Foundation Base, and Advanced License for Aruba Central includes the following features:



The Foundation Base License provides all the features included in the Foundation License, but this license can support only up to 75 client devices per branch.

Feature Category	Foundation and Foundation Base License Features	Advance License Features
SD-Branch	<ul style="list-style-type: none"> ■ Branch Gateway and VPNC Management ■ Stateful Firewall ■ IPsec VPN ■ Client VPN ■ Static and Dynamic Routing (BGP, OSPF, RIPv2) ■ SD-WAN Route and Tunnel orchestration ■ Orchestrated Cloud IaaS connectivity (AWS, Azure) ■ Orchestrated SASE Integration ■ Dynamic Path Steering ■ Link Redundancy ■ 4 WAN links plus 1 LTE link ■ Application-based policies ■ High Availability (Active-Standby or Active-Active) ■ Web content filtering ■ Role-based Access Policy ■ Full SD-LAN Control ■ CPDI-based Client Profile 	All the features in Foundation

Feature Category	Foundation and Foundation Base License Features	Advance License Features
Configuration	<ul style="list-style-type: none"> ■ UI- and template-based group configuration ■ Configuration audit 	All the features in Foundation
Monitoring and Reporting	<ul style="list-style-type: none"> ■ Network, WAN Health, Summary Dashboards ■ Network Topology View ■ Client List and Details ■ Gateway List and Details ■ Go Live mode for Client ■ Application Visibility ■ WebCC Firewall rules, visualization by reputation and category ■ Access to all monitoring data for up to 30 days ■ Access to reporting data for up to 90 days ■ Access to historical Client Summary Report data for up to one year ■ Audit Trail ■ Alerts and Events 	All the features in Foundation
AI Operations	<ul style="list-style-type: none"> ■ AI Search ■ AI Insights <ul style="list-style-type: none"> ○ Availability – Gateways ○ Class and Company Baselines ■ AI Assist <ul style="list-style-type: none"> ○ Dynamic logs <p>NOTE: Dynamic Logs is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.</p>	All the features in Foundation
Troubleshooting	Network Check, CLI commands	All the features in Foundation
API	Northbound (NB) API: 1000 API calls/day per customer	Streaming API
Services	Not Applicable	SaaS Express

Gateway Foundation, Foundation Base, and Advanced License with Security

The Gateway Foundation, Foundation Base, and Advanced License with Security for Aruba Central includes the following features:

Foundation and Foundation Base with Security	Advanced with Security
All the features in Foundation	All the features in Advanced
<ul style="list-style-type: none"> ■ Intrusion Detection and Prevention (IDS/IPS) ■ Anti-malware ■ Security Dashboard 	<ul style="list-style-type: none"> ■ Intrusion Detection and Prevention (IDS/IPS) ■ Anti-malware ■ Security Dashboard

Virtual Gateway (VGW) License

The Virtual Gateway (VGW) License for Aruba Central includes the following features:

Feature Category	VGW License Features
SD-Branch	<ul style="list-style-type: none"> ■ VPNC Management ■ Stateful Firewall ■ IPsec VPN ■ Client VPN ■ GRE Tunnel ■ Static and Dynamic Routing (BGP, OSPF, RIPv2) ■ VGW orchestration in public cloud ■ SD-WAN Route and Tunnel orchestration ■ Orchestrated Cloud IaaS connectivity (AWS, Azure) ■ Orchestrated SASE integration ■ Link Redundancy ■ High Availability (Active-Standby or Active-Active)
Configuration	<ul style="list-style-type: none"> ■ UI- and template-based group configuration ■ Configuration audit
Monitoring and Reporting	<ul style="list-style-type: none"> ■ Network, WAN Health, Summary Dashboards ■ Network Topology View ■ Access to all monitoring data for up to 30 days ■ Access to reporting data for up to 90 days ■ Access to historical Client Summary Report data for up to one year ■ Audit Trail ■ Alerts and Events
AI Operations	<ul style="list-style-type: none"> ■ AI Search ■ AI Insights <ul style="list-style-type: none"> ○ Availability – Gateways ○ Class and Company Baselines ■ AI Assist <ul style="list-style-type: none"> ○ Dynamic logs <p>NOTE: Dynamic Logs is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.</p>
Troubleshooting	Network Check, CLI commands
API	Northbound (NB) API: 1000 API calls/day per customer

For more information about the features supported, see [Aruba Central Licenses Feature Details](#).

A license key is an alphanumeric string with 9 to 14 characters; for example, PQREWD6ADWERAS. Aruba Central can manage a device only if the corresponding license key of the device is added to Aruba Central. License keys can either be evaluation license keys that map to evaluation licenses or paid license keys that map to paid licenses. The evaluation license key is valid for 90 days.

To use Aruba Central for managing, profiling, analyzing, and monitoring your devices, you must ensure that you have a valid license key and that the license key is listed in the **Account Home > Global Settings > Key Management** page.

Evaluation License Key

The evaluation license key is enabled for trial users by default. It allows you to add up to a total of 60 devices. For an evaluation user, a set of evaluation keys is generated.

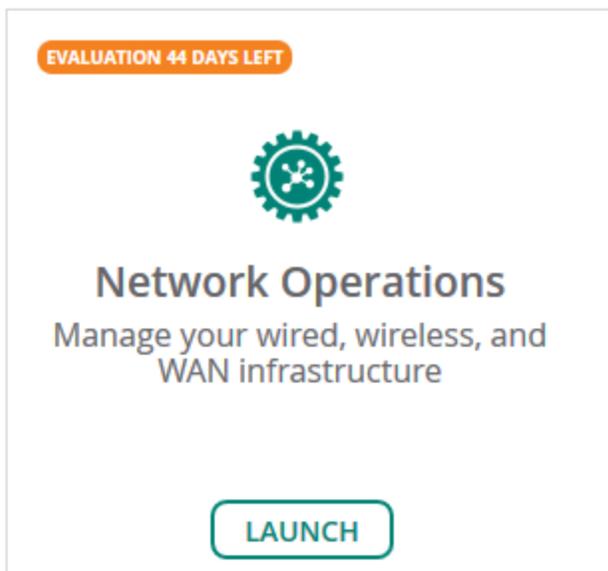
The **Account Home > Global Settings > Key Management** page displays the license expiration date in the **Key Management** table. You will receive license expiry notifications through email 30, 15, and 1 day before the license expiry and on day 1 after the license actually expires. The number of days left for license expiry is also displayed in the respective app under the **Apps** section of the **Account Home** page.

Upgrading to a Paid Account

If you have purchased a license for an AP, a switch, or a gateway, then upgrade your account by completing the following steps:

1. On the **Account Home** page, in the **Network Operation** app, click the link that shows the number of days left for the evaluation to expire.

Figure 1 *Network Operations Evaluation Account*



The **Add a New License** window is displayed.

2. Enter the new license key that you purchased from Aruba.
3. Click **Add License**.

After you upgrade your account, you can add more devices, enable services, and continue using Aruba Central.

Paid License Key

If you have purchased a license key, you must ensure that your license key is added to Aruba Central. If you are logging in for the first time, Aruba Central prompts you to add your license key to activate your account. Ensure that you add the license key before on-boarding devices to Aruba Central.

The **Account Home > Global Settings > Key Management** page displays the license expiration date. You receive the license expiry notifications through email 90, 60, 30, 15, and 1 day before expiry and two notifications each day on day 1 and day 2 after the license expires.

When you upgrade or renew your license, or purchase another license key, you must add the key details in the **Account Home > Global Settings > Key Management** page to avail the benefits of the new license.

Adding a License Key

1. On the **Account Home** page, under **Global Settings**, click **Key Management**.

The **Key Management** page is displayed.

2. Enter your license key.
3. Click **Add Key**.

The license key is added to Aruba Central and the contents of the license key are displayed in the **Manage Keys** table. Review the license details.

If you add a **Device Management** token, the key is listed in the **Convert Deprecated Licenses** page. For more information, see [Converting Legacy Tokens to New Licenses](#).

Viewing License Key Details

To view the license key details, navigate to **Account Home > Global Settings > Key Management**.

The **Key Management** page provides information about license keys available for the devices and their details such as license tier, expiration date, and quantity of licenses. The **Key Management** sections are described in the next topics.

License Summary

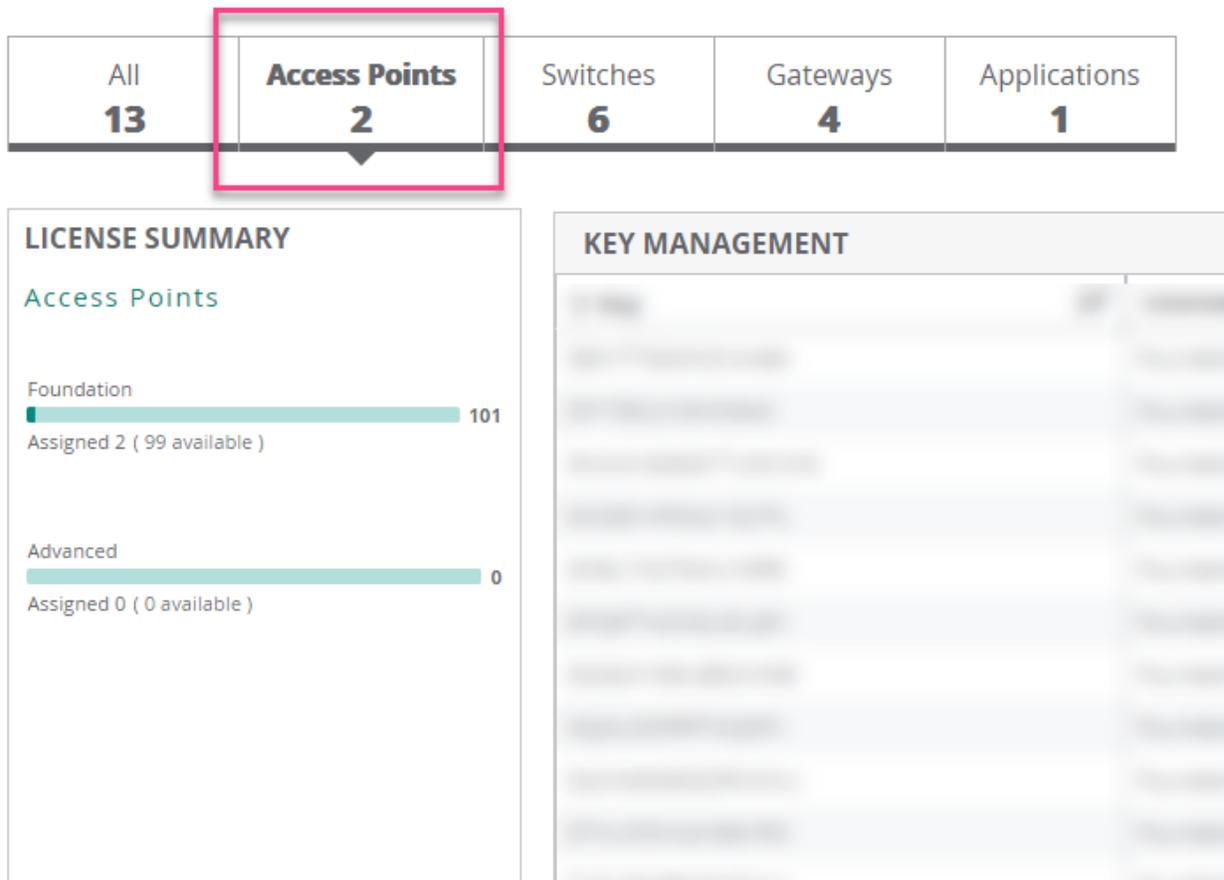
For the selected device type or app, or for all devices, the **License Summary** section lists down all the available licenses, the total number of licenses, the number of assigned licenses, and the number of unassigned licenses.

The available devices are APs, switches, and gateways.

The **Applications** tab currently lists the license keys for the Network Operations app and the Clear Pass Device Insight app (where applicable).

Click a single or multiple licenses in the **License Summary** section to display the details of the license type in the **Key Management** table. To unselect the license, click the selected license type again.

Figure 2 License Summary Details for APs



The preceding screenshot shows the following details:

- Total number of AP Foundation Licenses = 101
- Assigned AP Foundation Licenses = 2
- Unassigned AP Foundation Licenses = 99
- Total number of AP Advanced Licenses = 0

Key Management Table Details

The following table describes the contents of the **Key Management** table:

Table 3: License Key Details

Data Pane Item	Description
Key	License key number.
License Tier Type	Type of the license. Aruba Central supports the following types of licenses: <ul style="list-style-type: none"> ■ Foundation ■ Advanced The Foundation and Advanced licenses for APs, switches, and SD-WAN gateways are different from each other and cannot be used interchangeably.
Expiration	Expiration date for the license key.

Data Pane Item	Description
License Quantity	Number of licenses available.

To arrange the rows in ascending or descending order, use the sorting icon () in the table header rows.

You can also use the row header indicated by the filter icon () to type in search queries to refine the search.

License Expiry Date

The **Key Management** table displays the expiration date for each license.

As the licenses expiration date approaches, users receive expiry notifications. The users with evaluation license receive license expiry notifications through email 30, 15, and 1 day before the license expiry and on day 1 after the license actually expires.

The users with paid licenses receive license expiry notifications through email 90, 60, 30, 15, and 1 day before expiry and two notifications per day on day 1 and day 2 after the license expires.

If a license for the particular device expires, Aruba Central no longer manages that device. Currently, Aruba Central does not give an option to remove the expired licenses from the UI. The expired licenses are displayed in the **Key Management** table with the expired date.

Converting Legacy Tokens to New Licenses

The conversion of unassigned Device Management tokens to Foundation Licenses for APs, switches, and gateways is a one-time operation for the selected Device Management tokens. The Device Management token can either be an evaluation token or a purchased token.

The Service Management tokens are not converted into the Aruba Central Licenses.

If you do not convert the unassigned Device Management tokens by 31 December 2021, all the tokens are automatically converted to AP Foundation Licenses. If you wish to revert a conversion, you must contact Aruba Technical Support.



To complete the license conversion:

1. On the **Account Home** page, go to **Global Settings > Key Management**.
The **Key Management** page is displayed.
2. Click **Click here to complete license conversion**.
The **Convert Deprecated Licenses** page is displayed.
3. Select the key that you want to convert and click **Convert** on the row.
The **Convert Deprecated Licenses** window is displayed.
4. Select the option to which you want to convert the unassigned device license for the key.
5. Click **Convert**.
The **Convert** button is available only when all the licenses are assigned for the selected key.
6. View **Global Settings > License Assignment** page.
A list of new licenses assigned for the deprecated keys is displayed.

Download Conversion Logs

This option provides information about how legacy Device Management and Services subscription keys are converted to Aruba Central Licenses either using automatic or manual license assignment.

The information can be downloaded as a PDF document. The document contains a table which provides following information:

- **Conversion Time**—Date and time when the legacy keys are converted to Aruba Central Licenses.
- **SKU Type**—Legacy key type as Device Management or Service subscription.
- **Subscription Key**—Legacy subscription key details.
- **Start Date**—Start date of the legacy subscription.
- **End Date**—End date of the legacy subscription.
- **Remaining Unassigned Quantity**—Number of Aruba Central Licenses that are not yet assigned (after the legacy subscription keys are converted).
- **Converted Subscriptions**—Information about the Aruba Central Licenses to which the legacy keys are converted.

Aruba offers two tiers of device licenses as part of the Aruba Central Licenses. The two tiers are Foundation and Advanced Licenses. The devices in Aruba Central that offer Foundation and Advanced Licenses include the following:

- APs
- Switches
- SD-Branch Gateways

The value-added services that previously required service subscriptions are now packaged as part of either a Foundation or an Advanced License. To know more about the different types of licenses available for the devices, and the services packaged with each license, see [Overview of Aruba Central Foundation and Advanced Licenses](#).

Before proceeding with the license assignment, ensure that all the license keys are available in Aruba Central. For more information on how to add license keys to Aruba Central, see [Managing License Keys](#).



For more information about MSP Licenses, see [Managing MSP Licenses](#).

Licensing Workflow in the Initial Setup Wizard

To enable automatic assignment of licenses from the Initial Setup Wizard:

1. Verify that you have valid license key.
2. Ensure that you have successfully added your devices to the device inventory.
3. In the **Assign License** tab, turn on the **Auto Assign License** toggle switch.

Licensing Workflow for a New User

If you are a new user in Aruba Central, you can avail of either the evaluation license or a paid license.

For an evaluation user, see the workflow at [Starting Your Free Trial](#).

For a paid user, see the workflow at [Setting up Your Aruba Central Instance](#).

If you are a new user in Aruba Central and have purchased one or several licenses, ensure that all of your license keys are added to Aruba Central.

For license assignment to devices, you can avail of one of the following options:

- Use the **Auto-Assign Licenses** option
- Manually assign, update, or unassign licenses

Enabling the Auto-Assign Licenses Option

The **Auto-Assign Licenses** option in Aruba Central enables automatic assignment of available licenses to all of the devices available in the inventory. When you enable this option, you must specify the preferred

license type as either Foundation or Advanced. You cannot manually assign licenses to devices if the **Auto-Assign Licenses** option is enabled.



The licenses for APs, switches, and gateways cannot be used interchangeably. For example, you cannot use an AP Foundation License on a gateway. Similarly, if an Aruba 25xx Switch is in the inventory but the license available is for an Aruba 29xx Switch, the Aruba 29xx Switch license cannot be applied to the Aruba 25xx Switch. Before enabling the Auto-Assign License option for a specific device type, ensure that there are sufficient available licenses for the specific device type.

To enable automatic assignment of licenses from the License Assignment page:

1. On the **Account Home** page, under **Global Settings**, click **License Assignment**.
The **License Assignment** page is displayed.
2. Select the device type to assign the license.
The available tabs are Access Points, Switches, and Gateways. The total number of devices for each device type is displayed for each of the tabs.
3. On the device tab, slide the **Auto-Assign Licenses** toggle switch to the On position.
The **Manage License Assignment (Auto)** window is displayed.
4. Select the appropriate license type, **Foundation** or **Advanced**, from the drop-down menu, and then click **Update**.
All the unassigned devices of the selected type in the inventory are enabled for automatic assignment of license.

Manually Assigning, Updating, or Unassigning Licenses

The License Assignment page enables you to assign, update, or even unassign a license from a device. Aruba Central monitors devices with a valid license only.



The licenses for APs, switches, and gateways cannot be used interchangeably. For example, you cannot use an AP Foundation License on a gateway. Similarly, if an Aruba 25xx Switch is in the inventory but the license available is for an Aruba 29xx Switch, the Aruba 29xx Switch license cannot be applied to the Aruba 25xx Switch.

To manually assign licenses to devices or to change the existing license assignment:

1. On the **Account Home** page, under **Global Settings**, click **License Assignment**.
The **License Assignment** page is displayed.
2. Select a device type tab.
The available tabs are **Access Points**, **Switches**, and **Gateways**. The total number of devices for each device type is displayed for each of the tabs.
3. Under **License Summary**, ensure that the **Auto-Assign Licenses** option is disabled.
You cannot manually assign licenses if the Auto-Assign Licenses option is enabled.
4. Select the device for which you want to assign or update the license.
Clicking on a device type displays two additional sub-tabs: **Licensed** and **Unlicensed**.



To manually assign or update licenses for all devices of a type, click **Select All**. You can also select devices at random.

5. Click **Manage**.
The **Manage License Assignment (Manual)** window is displayed.
6. Do one of the following:
 - a. To update or assign a license: Select the appropriate license from the drop-down menu and click **Update**.
 - b. To unassign a license: Select **Unassign** to remove the existing license from that device.

Migration Workflow for an Existing User

Whether you are an evaluation user or a user with purchased licenses, the following is the migration workflow to the new Aruba Central Licenses:



Any existing rules set about Service Management tokens through APIs are discarded during the migration.

1. For all existing APs and switches that are already assigned licenses in the legacy system, the licenses are automatically converted to device-specific Foundation Licenses in the new model. The gateway licenses remain unchanged.
2. To check how the migration was done, and to learn more about the new license keys and corresponding licenses, in the **Account Home** page, go to **Global Settings > Key Management**. For more information about the **Key Management** page, see [Managing License Keys](#).
3. To check how the legacy licenses were converted, navigate to **Account Home > Global Settings > Key Management** page, and click the **Download Conversion Logs** link.
4. If there are unassigned evaluation or purchased Device Management tokens, you can convert the legacy tokens to license keys for the new Aruba Central Licenses.



Service Management tokens are not converted. Instead, the AP licenses are pre-packaged with additional services.

To know more about converting unassigned Device Management tokens, see [Converting Legacy Tokens to New Licenses](#).

5. If you had the auto-licensing option enabled before migration, in the new licensing model the **Auto-Assign Licenses** option is automatically enabled for APs, switches, and gateways. The **Auto-Assign Licenses** option for APs and switches is set with the corresponding device-specific Foundation Licenses.



The **Auto-Assign Licenses** option for gateways is not enabled during the migration.

For more information about the **Auto-Assign Licenses** option, see [Enabling the Auto-Assign Licenses Option](#).

6. If you had the auto-licensing option disabled before migration, this option is also disabled in the new licensing system.

Viewing the License Assignment Details

The License Assignment page consists of three sections for the type of device selected from the tabs. The device can be **Access Points**, **Switches**, or **Gateways**,

License Summary

A summary about the type of licenses available for the selected device type, the number of licenses available, and number of licenses assigned.

The available devices for Aruba Central include APs, switches, and gateways. Clicking on a device type displays two additional sub-tabs: **Licensed** and **Unlicensed**.

Clicking on one or more license type in the License Summary section displays the details of the license type in the License Management section. To deselect the license, click the selected license type again.

License Assignment

The **License Assignment** section provides detailed information about all the devices in the inventory and license status for each of the device. This table provides following information about each device in the inventory:

- Type
- Serial Number
- MAC address
- Model
- Customer
- Assigned License

Use the sorting icon () in the table header row to arrange the rows in ascending or descending order. You can also use the row header indicated by the filter icon () to type in search queries to refine the search.

Renewing License Assignments

To renew your license, contact your Aruba Sales team.

Automatic License Assignment Workflow

The **Auto-Assign Licenses** option can be set to either **Foundation** or **Advanced**. This option enables Aruba Central to automatically assign licenses to all the available APs, switches, and gateways. This section explains how the **Auto-Assign Licenses** option works with the help of a sample Aruba Central account.

Sample Aruba Central Account Details

Assume an Aruba Central account with the following devices:

- APs - 10
- Aruba 90xx Series Gateway and 1 Aruba 70xx Series Gateway - 1
- Aruba 29xx Series Switches - 2

Now assume that you have the following licenses:

- AP Foundation Licenses - 5
- AP Advanced Licenses - 10
- Gateway Foundation Base Licenses - 5
- Gateway Advanced with Security Licenses - 5
- Switch Foundation Licenses for 6200/29xx - 5

Here are the available scenarios for the **Auto-Assign Licenses** option. Note that only one can be chosen during actual installation.

- [Auto-Assign Licenses Option Set to Foundation](#)
- [Auto-Assign Licenses Option Set to Advanced](#)



If you have an Aruba Central account with legacy Device Management tokens, the tokens are utilized during the automatic license assignment workflow if and when there is no availability of licenses. The legacy tokens are converted to Foundation Licenses of the required type and assigned to the devices that did not have any licenses mapped. For more information, see [Using Legacy Device Management Tokens](#).

Auto-Assign Licenses Option Set to Foundation

If you enable the **Auto-Assign Licenses** option and set the preference to **Foundation**, this is how the device-to-license mappings are done:

- **For APs**—First, the Foundation Licenses for APs are used. Since there are five AP Foundation License, five APs are assigned with the Foundation Licenses. For the remaining five APs, the Advanced License pool for APs is used and the five remaining APs are assigned Advanced Licenses.
- **For Gateways**—First, the Foundation Base Licenses for gateways are used. Since there are only two gateways and the Foundation Base Gateway Licenses are applicable to both the Aruba 70xx Series and 90xx Series Gateways, two Foundation Base Licenses for gateways are assigned.
- **For Switches**—First, the Foundation Licenses for switches are used. Since there are only two 29xx Series Switches and two Foundation Licenses for 29xx Series Switches are available, these are assigned.

The following is the final device-to-license mapping:

- APs (10) - Five AP Foundation Licenses and five AP Advanced Licenses
- Gateways (2) - Two Gateway Foundation Base Licenses
- Switches (2) - Two Switch Foundation Licenses for 6200/29xx

Auto-Assign Licenses Option Set to Advanced

If you enable the **Auto-Assign Licenses** option and set the preference to **Advanced**, this is how the device-to-license mappings are done:

- **For APs**—First, the Advanced Licenses for APs are used. Since there are five AP Advanced Licenses, five APs are assigned with the Advanced License. For the remaining five APs, the Foundation License pool for APs is used and the five remaining APs are assigned Foundation Licenses.
- **For Gateways**—First, the Advanced with Security Licenses for gateways are used. Since there are only two gateways and the Advanced with Security Licenses are applicable to both the Aruba 70xx Series and 90xx Series Gateways, two Advanced with Security Licenses for gateways are assigned.
- **For Switches**—There are no Advanced Licenses for switches available. Hence, the Foundation Switch Licenses for 6200/29xx are used. Since there are only two switches, two Foundation Licenses for switches are assigned.

The following is the final device-to-license mapping:

- APs (10) - Five AP Advanced Licenses and five AP Foundation Licenses
- Gateways (2) - Two Gateway Advanced with Security Licenses
- Switches (2) - Two Switch Foundation Licenses

Using Legacy Device Management Tokens

When you enable the **Auto-Assign Licenses** option, and there are no available Foundation or Advanced Licenses left to assign, Aruba Central has the option of checking if legacy Device Management tokens are available and use those tokens instead. The legacy tokens are converted to Foundation Licenses of the required type and assigned to the devices that did not have any licenses mapped.

Assume that you have the following devices:

- APs - 20
- Gateways - 2
- Switches - 2



For the sake of simplicity, the gateway and switch model types are omitted from this example.

Now assume that you have the following licenses:

- AP Foundation Licenses - 5
- AP Advanced Licenses - 10
- Legacy Device Management Tokens - 20

If you enable the **Auto-Assign Licenses** option and set the preference to **Foundation Licenses**, this is how the device to license mappings are done:

- **For APs**—First, the Foundation Licenses for APs are used. Since there are five AP Foundation License, five APs are assigned with the Foundation Licenses. Next, the 10 AP Advanced Licenses are assigned. For the remaining five APs, there are no licenses available. Aruba Central then converts five legacy Device Management tokens to five AP Foundation Licenses and assigns them to the remaining five APs. There are now 15 legacy Device Management tokens available.
- **For Gateways**—There are no available gateway licenses. Aruba Central converts two legacy Device Management tokens to two Gateway Foundation Licenses and assigns them to the two gateways. There are now 13 legacy Device Management tokens available.
- **For Switches**—There are no available switch licenses. Aruba Central converts two legacy Device Management tokens to two Switch Foundation Licenses and assigns them to the two switches. There are now 11 legacy Device Management tokens available.

The following is the final device to license mapping:

- APs (20) - 10 AP Foundation Licenses, five AP Advanced Licenses
- Gateways (2) - Two Gateway Foundation Licenses
- Switches (2) - Two Switch Foundation Licenses
- Legacy Device Management Tokens left - 11

Aruba Central in the Managed Service Provider (MSP) mode supports the following types of licenses for APs, switches, and gateways:

- **Foundation**—Allows you to manage and monitor the APs, switches, and gateways of your customers or tenants through the Aruba Central MSP mode. This license provides all the features included in the legacy Device Management subscription and some additional features that were available as a value-added services for APs in the earlier licensing model.
- **Advanced**—This license provides all the features of a Foundation License, with additional features related to AI Insights.



The licenses for APs, switches, and gateways cannot be used interchangeably. For example, you cannot use an AP Foundation License on a gateway. Similarly, if an Aruba 25xx Switch is in the inventory but the license available is for an Aruba 29xx Switch, the Aruba 29xx Switch license cannot be applied to the Aruba 25xx Switch. Before enabling the Auto-Assign License option for a specific device type, ensure that there are sufficient available licenses for the specific device type.

For more information on the different types of available licenses, see [Aruba Central License Feature Details](#).

A license key is an alphanumeric string with 9 to 14 characters; for example, PQREWD6ADWERAS. Aruba Central can manage a device only if the corresponding license key of the device is added to Aruba Central. License keys can either be evaluation license keys that map to evaluation licenses or paid license keys that map to paid licenses. The evaluation license key is valid for 90 days.

To use Aruba Central for managing, profiling, analyzing, and monitoring your devices, you must ensure that you have a valid license key and that the license key is listed in the **Account Home > Global Settings > Key Management** page.



The license keys are not mapped directly to devices. Before assigning a license key to a device, the system only checks whether there are licenses available in the pool for the device.

All license keys that are added to an MSP account goes to a license pool and devices are licensed from this MSP license pool. Licenses can be assigned to devices only when the devices are already mapped to customer accounts. In the MSP mode, all the hardware and licenses are owned by the MSP. The MSP temporarily assigns devices and their corresponding licenses to customers for the duration of the managed service contract. When the contract ends, the devices and the licenses are returned back to the common pool of resources of the MSP and can be reassigned to another customer.

You can either enable automatic assignment of licenses or manually assign licenses for devices added in Aruba Central MSP mode.

Enabling Automatic License Assignments

If you, as an MSP administrator, want to enable automatic assignment of licenses to the devices mapped to your customer accounts, note the following points:

- Aruba Central assigns licenses only if the devices are mapped to a customer account.
- When a device is moved from a customer account back to the MSP pool, Aruba Central removes the license assigned to this device.
- When the automatic license assignment is enabled, Aruba Central disables the device-specific and customer-specific overrides.
- When the automatic license assignment is enabled, all the existing customers and newly created customers in the MSP account inherit the license assignment settings. Subsequently, Aruba Central assigns licenses to the customers and their respective devices.
- If you migrate from the Standard Enterprise mode to the MSP mode, Aruba Central retains your license settings.
- If the devices are no longer mapped to a customer account, MSP administrators cannot assign licenses to these devices.
- If auto-assignment is enabled and the device license expires, you are notified about the license expiry. Aruba Central checks if an equivalent license of the same tier or capacity is available and reassigns that license to the device automatically. If an equivalent license is unavailable, Aruba Central un-assigns a set of devices to match the number of expiring licenses and you are notified that the device license is updated.

You can configure automatic license assignment either during initial setup or later from the **Account Home** page.

Automatic License Assignment from the Initial Setup Wizard

To enable automatic assignment of licenses from the Initial Setup Wizard:

1. Verify that you have a valid license key.
2. Ensure that you have successfully added your devices to the device inventory.
3. In the **Assign License** tab, slide the **Auto-Assign Licenses** toggle switch to the On position.

Automatic License Assignment from Account Home

To enable automatic assignment of licenses from the **License Assignment** page:

1. On the **Account Home** page, under **Global Settings**, click **License Assignment**.
The **License Management** page is displayed.
2. In the **Assign License** tab, slide the **Auto-Assign Licenses** toggle switch to the On position.
All the devices in your inventory are selected for automatic assignment of licenses. You can edit the list by clearing the existing selection and re-selecting devices.

When a license assigned to a device expires, or is canceled, Aruba Central checks for the available licenses in your account and assigns an available license of the longest validity to the device. If your account does not have an adequate number of licenses, you may have to manually assign licenses to as many devices as possible. To view the license utilization details and the number of licenses available in your account, go to the **Account Home > Global Settings > Key Management** page.



NOTE

Enabling Manual License Assignments

You can disable the **Auto-assign License** option and manually assign licenses to devices. Licenses can be assigned only for devices which are mapped to a customer account.

To manually assign licenses to devices or override the current assignment:

1. In the **Account Home** page, under **Global Settings**, click **License Assignment**.
The **License Management** page is displayed.
2. Ensure that the **Auto-Assign Licenses** toggle switch is turned off.
When you turn off the **Auto-Assign Licenses** toggle switch:
 - Automatic assignment of licenses for all the existing customers, including the MSP devices, are disabled.
 - All device licenses assigned to devices are preserved.
 - Devices must be assigned to customer accounts before assigning a license to it. If a license is assigned to a device that is not mapped to any specific customer account, Aruba Central displays the following error message: **Please assign this device to a customer before licensing it. Customer assignment can be performed in the Device Inventory page.**
3. Click one of the tabs for **Access Points**, **Switches**, or **Gateways**.
Each of the device tabs has two sub-tabs: **Unlicensed** and **Licensed**.
4. You can use the **Customer** filter to display a specific customer.
5. In the **Unlicensed** tab, you can select one or multiple devices and click **Manage** or **Manage Assignment**.
The **Manual License Assignment (Manual)** window is displayed.
6. From the **Choose License Type** drop-down menu, select a suitable license and click **Update** to assign a license.
If the license update is successful, you get a notification and the device is not listed anymore under the **Unlicensed** tab.

Removing or Updating a License from a Device

You can remove a license from a device or change the license assigned to a device from the **License Assignment** window.

1. In the **Account Home** page, under **Global Settings**, click **License Assignment**.
Ensure that the **Auto-Assign License** toggle is turned off.
2. Click one of the tabs for **Access Points**, **Switches**, or **Gateways**.
Each of the device tabs has two sub-tabs: **Unlicensed** and **Licensed**.
3. You can use the **Customer** filter to display a specific customer.
4. In the **Licensed** tab, you can select one or multiple devices for which you want to either update or remove a license.
5. Click **Manage** or **Manage Assignment**.
The **Manual License Assignment (Manual)** window is displayed.
6. You can do one of the following:
 - To remove a license, click **Unassign**.
The devices with unassigned licenses are no longer listed in the **Licensed** tab.
 - To update to a new license, from the **Choose License Type** drop-down menu, select a suitable license and click **Update**.
If the license update is successful, you get a notification and the **Licensed** tab displays the updated licenses.

Acknowledging License Expiry Notifications

In the **Account Home** page, under **Global Settings**, click **Key Management**. The **Key Management** page displays the expiration date for each license.

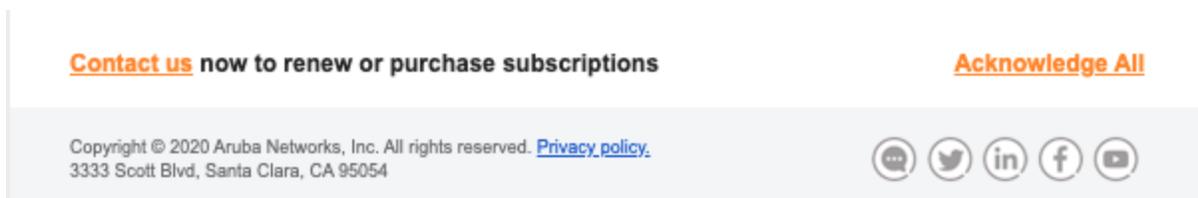
As the licenses expiration date approaches, users receive expiry notifications. The users with an evaluation license receive license expiry notifications through email 30, 15, and 1 day before the license expiry and on day 1 after the license actually expires.

The users with paid licenses receive license expiry notifications through email 90, 60, 30, 15, and 1 day before expiry and two notifications per day on day 1 and day 2 after the license expires.

Acknowledging Notifications through Email

If the user has multiple licenses, a consolidated email with the expiry notifications for all licenses is sent to the user. Users can acknowledge these notifications by clicking the **Acknowledge All** link in the email notification.

Figure 3 *Acknowledging Notifications through Email*



Acknowledging Notifications in the UI

If a license has already expired, or is about to expire within 24 hours, a license expiry notification message is displayed in a pop-up window when the user logs in to Aruba Central.

To prevent Aruba Central from generating expiry notifications, click **Acknowledge**.

Renewing Licenses

To renew your licenses, contact Aruba Sales team.

Aruba Central offers a 90-day evaluation license for customers who want to try the solution for managing their networks.

The evaluation license allows you to use the functions described in the following table:

Table 4: *Evaluation features*

Application	Function
Network Operations	<ul style="list-style-type: none">■ 10 Advanced AP Licenses■ 5 Foundation Switches 6100 / 25xx / low density (16 ports or less) Licenses■ 5 Foundation Switches 6200 / 29xx Licenses■ 5 Foundation Switches 6300 / 3810 Licenses■ 5 Foundation Switches 8xxx / 6400 / 5400 Licenses■ 5 Advanced 90xx Gateways with security feature Licenses■ 10 Advanced 70xx Gateways Licenses■ 2 Advanced 72xx Gateways Licenses
ClearPass Device Insight	Discover, monitor, and automatically classify new and existing devices that connect to a network.

Complete the following steps to evaluate Aruba Central:

- [Step 1: Getting Started with the Initial Setup](#)
- [Step 2: Viewing Subscription Details \(Optional\)](#)
- [Step 3: Adding Devices](#)
- [Step 4: Assigning Subscriptions](#)
- [Step 5: Organizing Your Devices into Groups](#)
- [Step 6: Assigning Sites and Labels \(Optional\)](#)
- [Step 7: Configuring Your Network](#)
- [Step 8: Monitoring Your Network and Devices](#)
- [Step 9: Canceling or Upgrading Your Subscription \(Optional\)](#)

Step 1: Getting Started with the Initial Setup

To get started with the trial:

1. Register for evaluating Aruba Central. For more information, see [Creating an Aruba Central Account](#).
2. Log in to Aruba Central. For more information, see [Accessing Aruba Central Portal](#).
 - If you signed up to evaluate only the **Network Operations** app, the **Welcome to Aruba Central** page is displayed.
 - Click **Evaluate Now**. The **Get Started With Aruba Central** page guides you through the onboarding steps.

- Click through the steps to set up your account and start using Aruba Central. If you want to exit the wizard and complete the onboarding steps on your own, click **Exit Workflow**.



The Initial Setup wizard is displayed only when you log in to Aruba Central for the first time. The wizard is not available for Aruba Central users in the MSP mode.

- If you signed up to evaluate both **Network Operations** and **ClearPass Device Insight**, the **Network Operations** page is displayed.

For more information, see [ClearPass Device Insight Information Center](#).

Step 2: Viewing Subscription Details (Optional)

At your first login, the **Initial Setup** wizard displays the details of the evaluation license details. After you exit the wizard, you can view the license details on the **Account Home > Global Settings > Key Management** page.

Viewing Subscription Key Details

The following table shows the typical contents of a license key:

Table 5: *License Key Details*

Keys	Subscription key number
Type	Type of the license. Aruba Central supports the following types of licenses: <ul style="list-style-type: none"> ■ Foundation—This license provides all the features included in the Device Management subscription and some additional features that were available as value-added services for APs in the earlier licensing model. ■ Advanced—This license provides all the features of a Foundation license, with additional features related to AI insights
Expiration Date	Expiration date for the license key.
Quantity	Number of licenses available.
Status	Status of the license key. For example, if you are a trial user, Aruba Central displays the status of subscription key as Eval .

Step 3: Adding Devices

To manage devices from Aruba Central, trial users must manually add the devices to Aruba Central's device inventory.

You can add up to 60 devices. The devices can be APs, switches, or gateways. For details about how many device licenses of each type are available, see [Table 4](#).

Use one of the following methods to add devices to Aruba Central:

- [Using the Initial Setup Wizard](#)
- [Using the Device Inventory Page](#)

Using the Initial Setup Wizard

1. In the **Add Devices** tab of the Initial Setup wizard, click **Add Device**.
2. Enter the serial number and MAC address of your devices.
You can find the serial number and MAC address of Aruba devices on the front or back of the hardware.
3. Click **Done**.
4. Review the devices in your inventory.

Using the Device Inventory Page

1. In the **Account Home** page, under **Global Settings**, click **Device Inventory**.
The **Device Inventory** page is displayed.
2. Click **Add Devices**.
The **Add Devices** pop-up window is displayed.
3. Enter the serial number and the MAC address of each device.
You can find the serial number and MAC address of Aruba devices on the front or back of the hardware.
4. Click **Done**.
5. Review the devices in your inventory.

Step 4: Assigning Subscriptions

By default, an evaluation license key is assigned for users who sign up for a free trial of Aruba Central. The evaluation license key allows you to manage up to 60 devices from Aruba Central.

You can either enable automatic assignment of license or manually assign Foundation and Advanced licenses to your devices. By default, the automatic license assignment is disabled.

Enabling Automatic Assignment of Subscriptions

Use one of the following options to enable automatic assignment of licenses:

In the Initial Setup Wizard

1. Verify that you have a valid license key.
2. Ensure that you have successfully added your devices to the device inventory.
3. In the **Assign License** tab, slide the **Auto License** toggle switch to the On position.

From the License Assignment Page

1. In the **Account Home** page, under **Global Settings**, click **License Assignment**.
2. Under **Device Licenses**, slide the **Auto License** toggle switch to the On position. All the devices in your inventory are selected for automatic assignment of a license. You can edit the list by clearing the existing selection and re-selecting devices.

Manually Assigning Subscriptions

Use one of the following options to manually assign subscriptions:

In the Initial Setup Wizard

1. In the **Assign License** tab, ensure that the **AutoLicense** toggle switch is turned off.
2. Select the devices in the list for which you want to manually assign licenses.
3. Click **Update Licenses**.

From the Subscription Assignment Page

1. In the **Account Home** page, under **Global Settings**, click **License Assignment**.
2. On the **License Assignment** page, ensure that the **Auto License** toggle is turned off.
3. Select the devices to which you want to assign licenses.
4. Click **Update Licenses**.

For more information on subscriptions, see [Managing Licenses](#).

Step 5: Organizing Your Devices into Groups

A group in Aruba Central functions as a configuration container for devices added in Aruba Central.

Why Should You Use Groups?

Groups allow you to create a logical subset of devices and simplify the configuration and device management tasks. Groups offer the following functions and benefits:

- Combining different types of devices under a group. For example, a group can have APs and switches. Aruba Central allows you to manage configuration of these devices in separate containers (wireless and wired management) within the same group. Any new device that is added to a group inherits the current configuration of the group.
- Assigning multiple devices to a single group. For example, a group can consist of multiple Instant AP Virtual Controllers (VCs). These VCs can share common configuration settings and push the configuration updates to member Instant APs in their respective clusters. For example, you can apply a common security policy for the devices deployed in a specific geographical location.
- Cloning an existing group allows you to create a base configuration for the devices and customize it as per your network requirements.

You can also use groups for filtering your monitoring dashboard content, generating reports, and managing software upgrades.



A device can be part of only one group at any given time.
Groups in Aruba Central are independent and do not follow a hierarchical model.

For more information on groups and group configuration workflows, see [Groups for Device Configuration and Management](#).

Assigning Devices to Groups

After you successfully complete the onboarding workflow, the **Initial Setup** wizard prompts you to assign your devices to a group. You can click **Assign Group** and assign your devices to a group. You can also use one of the following methods to assign your devices to groups:

To assign a device to a group, in the **Account Home** page, under **Global Settings**, click **Device Inventory**.

1. Select the device that you want to assign to a group.
2. Click **Assign Group**. The **Assign Group** pop-up window opens.
3. Select the group to which you want to assign.
4. Click **Assign Device(s)**.

To assign a device to a group from the **Groups** page:

1. In the **Network Operations** app, set the filter to **Global**.
The dashboard context for the selected filter is displayed.
2. Under **Maintain**, click **Organization**.
By default, the **Groups** page is displayed.
3. From the devices table on the right, select the device that you want to assign to a new group.
4. Drag and drop the device to the group to which you want to assign the device.

Step 6: Assigning Sites and Labels (Optional)

A site in Aruba Central refers to a physical location where a set of devices are installed; for example, campus, branch, or venue. Aruba Central allows you to use sites as a primary navigation element. For example, if your devices are deployed in a campus, you can create a site called CampusA. You can also tag the devices within CampusA using labels. If your campus consists of multiple buildings, the devices deployed in the campus can be labeled as **Building1** or **Lobby**.

For more information on sites and labels and how to assign devices to sites and labels, see [Managing Sites](#) and [Managing Labels](#).

Step 7: Configuring Your Network

If you have added Instant APs as part of your evaluation, you can configure an employee and guest wireless network. If you have Switches or SD-Branch or SD-WAN Gateways, configure wired access network or SD-WAN respectively.

For more information, see [Device Configuration and Network Management](#).

Step 8: Monitoring Your Network and Devices

Use [monitoring dashboards](#) to view the health of the device and network. You can also [run reports](#), [configure alerts](#), and [view client details](#).

Step 9: Canceling or Upgrading Your Subscription (Optional)

During the trial period or after you complete your trial, if you want to continue using Aruba Central for managing your devices, contact Aruba Customer Support to upgrade your license.

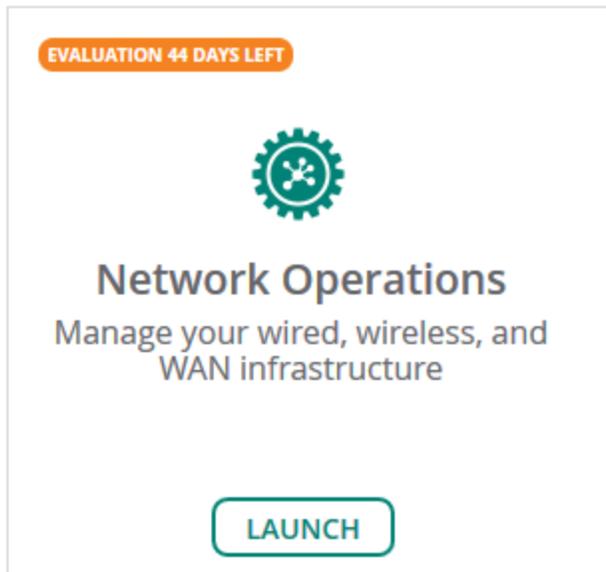
If you do not want to continue, contact Aruba support team to cancel your license or wait until the trial expires. When the trial period expires, your devices can no longer be managed from Aruba Central.

Upgrading to a Paid Account

If you have purchased a license for an AP, a switch, or a gateway, then upgrade your account by completing the following steps:

1. On the **Account Home** page, in the **Network Operation** app, click the link that shows the number of days left for the evaluation to expire.

Figure 4 *Network Operations Evaluation Account*



The **Add a New License** window is displayed.

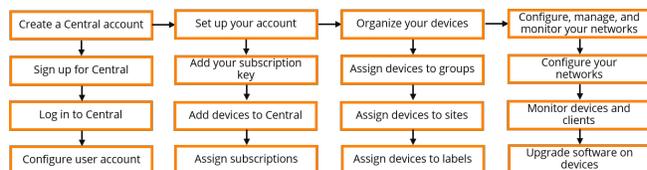
2. Enter the new license key that you purchased from Aruba.
3. Click **Add License**.

After you upgrade your account, you can add more devices, enable services, and continue using Aruba Central.

If you have purchased a license key to manage your devices and networks from Aruba Central, get started with steps described in this topic.

[Figure 5](#) illustrates the steps required for setting up your Aruba Central instance:

Figure 5 *Getting Started Workflow*



Getting Started with Aruba Central

Complete the following steps to start using Aruba Central for managing your devices and setting up your networks.

- [Step 1: Getting Started](#)
- [Step 2: Adding a Subscription Key](#)
- [Step 3: Adding Devices](#)
- [Step 4: Assigning Subscriptions](#)
- [Step 5: Organizing Your Devices into Groups](#)
- [Step 6: Assigning Sites and Labels \(Optional\)](#)
- [Step 7: Configuring Users](#)
- [Step 8: Configuring and Managing Networks](#)
- [Step 9: Monitoring Your Network and Devices](#)
- [Step 10: Upgrading Software Images on Devices](#)
- [Step 11: Running Diagnostic Checks and Troubleshooting Issues](#)

Step 1: Getting Started

To get started:

1. Sign up to create your Aruba Central account. For more information, see [Creating an Aruba Central Account](#).
2. If you already have an Aruba Central account, log in to Aruba Central with your credentials. When you log in for the first time, the **Initial Setup** wizard opens and guides you through the onboarding workflow.
3. Click **Get Started**.
4. Click through the wizard to complete the onboarding workflow. If you want to exit the wizard and complete the onboarding steps on your own, click **Exit and go to Aruba Central**.



The Initial Setup wizard is displayed only when you log in to Aruba Central for the first time. The wizard is not available for Aruba Central users in the MSP mode.

Step 2: Adding a Subscription Key

At your first login, the **Initial Setup** wizard prompts you add your license key.

If you are not using the wizard, complete the following steps to add your license key.

1. On the **Account Home** page, under **Global Settings**, click **Key Management**.
The **Key Management** page is displayed.
2. Enter your license key.
3. Click **Add Key**.

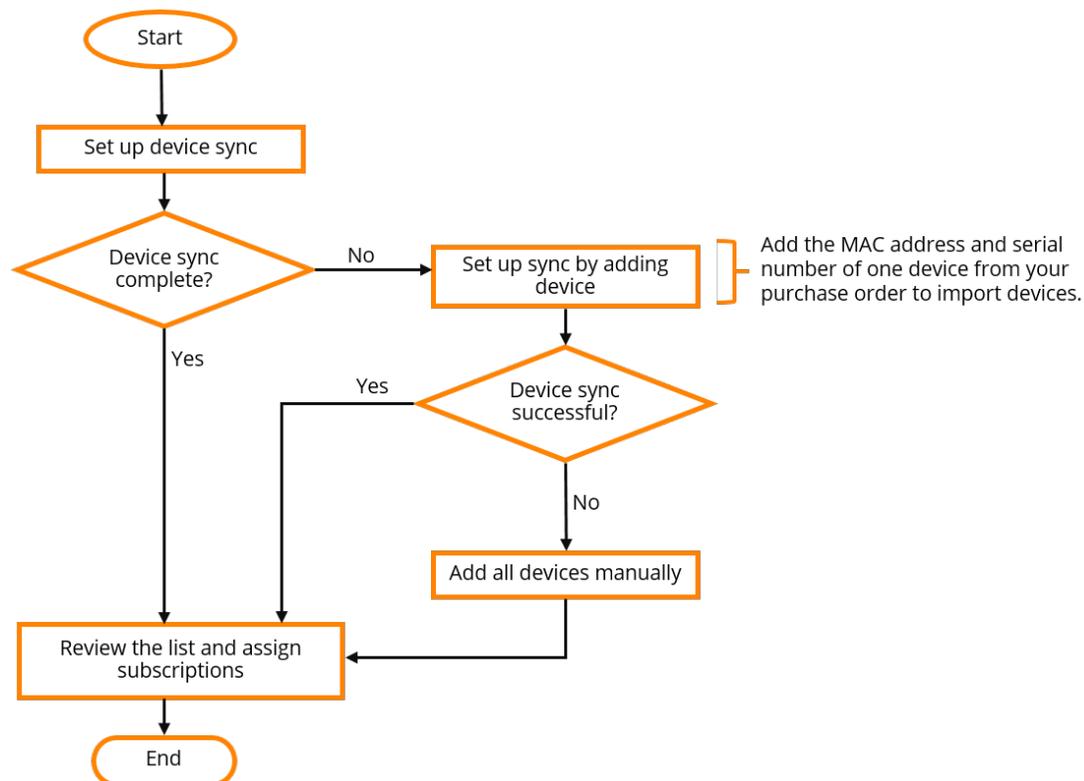
The license key is added to Aruba Central and the contents of the license key are displayed in the **Manage Keys** table. Review the license details.

If you add a **Device Management** token, the key is listed in the **Convert Deprecated Licenses** page. For more information, see [Converting Legacy Tokens to New Licenses](#).

Step 3: Adding Devices

If you have a paid license, you can automatically import devices from the Activate database to the Aruba Central device inventory.

Figure 6 Typical Workflow for Device Sync Setup



Setting up Device Sync for Automatic Device Addition

To set up device sync, use one of the following methods:

- [In the Initial Setup Wizard](#)
- [From the Device Inventory Page](#)

In the Initial Setup Wizard

1. Ensure that you have added a license key and click **Next**.
2. In the **Add Devices** tab, enter the serial number and MAC address of any one device from your purchase order.
Most Aruba devices have the serial number and MAC address on the front or back of the hardware.
3. Click **Add Device**. Aruba Central imports all other devices mapped to your purchase order.
4. Review the devices in your inventory.
5. Perform the following options:
 - **Add Devices Manually**—Manually add devices by entering the MAC address and serial number of each device.
 - **Add Via Mobile App**—Add devices from the Aruba Central mobile app. You can download the Aruba Central app from Apple App Store on iOS devices and Google Play Store on Android devices.
 - **Contact support**—Contact Aruba Technical Support.

From the Device Inventory Page

1. In the **Account Home** page, under **Global Settings**, click **Device Inventory**.
The **Device Inventory** page is displayed.



Aruba Central imports only devices associated with your account from Activate.

2. Do any one of the following:
 - Click **Sync Devices**. Enter the serial number and MAC address and click **Add Device**.
 - Click **Add Devices** to manually add devices by entering the MAC address and serial number of each device.
 - If you are a paid subscriber, you can add devices using a CSV file. Click **Import Via CSV** and select the CSV file. For a sample CSV file, click **Download sample CSV file**.



Manual addition of devices using a CSV file is restricted to 100 devices or to the number of available device management tokens. An error message is displayed if more than 100 devices are imported using the CSV file. You can view the status of the CSV upload in the **Account Home > Audit Trail** page.

3. Review the devices in your inventory.
4. Perform the following options:
 - **Add Devices Manually**—Manually add devices by entering the MAC address and serial number of each device.
 - **Add Via Mobile App**—Add devices from the Aruba Central mobile app. You can download the Aruba Central app from Apple App Store on iOS devices and Google Play Store on Android devices.
 - **Contact support**—Contact Aruba Technical Support.

Manually Adding Devices

To add devices using MAC address and serial number, use any one of the following methods:

- [In the Initial Setup Wizard](#)
- [From the Device Inventory Page](#)

In the Initial Setup Wizard

If you are using the Initial Setup wizard:

1. In the **Add Devices** tab of the Initial Setup wizard, click **Add Device**.
2. Enter the serial number or the MAC address of your device.
3. Click **Done**.
4. Review the list of devices.

From the Device Inventory Page

To add devices from the **Device Inventory** page:

1. In the **Account Home** page, under **Global Settings**, click **Device Inventory**.
The **Device Inventory** page is displayed.
2. Perform one of the following:
 - Click **Add Devices** to manually add devices by entering the MAC address and serial number of each device.
 - If you are a paid subscriber, you can add devices using a CSV file. Click **Import Via CSV** and select the CSV file. For a sample CSV file, click **Download sample CSV file**.



Manual addition of devices using a CSV file is restricted to 100 devices or to the number of available device management tokens. An error message is displayed if more than 100 devices are imported using the CSV file. You can view the status of the CSV upload in the **Account Home > Audit Trail** page.

3. Click **Done**.
4. Review the devices added to the inventory.



When you add the serial number and MAC address of one AP from a cluster or a switch stack member, Aruba Central imports all devices associated in the AP cluster and switch stack respectively.

For more information on adding devices, see [Onboarding Devices](#).

Step 4: Assigning Subscriptions

Aruba Central supports the following types of licenses:

- **Foundation**—This license provides all the features included in the Device Management subscription and some additional features that were available as a value-added services for APs in the earlier licensing model.
- **Advanced**—This license provides all the features of a Foundation License, with additional features related to AI insights.

You can either enable automatic assignment of license or manually assign licenses to your devices. By default, the automatic license assignment is disabled.

Enabling Automatic Assignment of Licenses

Use any one of the following options to enable automatic assignment of licenses:

- [In the Initial Setup Wizard](#)
- [From the License Assignment Page](#)

In the Initial Setup Wizard

1. Verify that you have a valid license key.
2. Ensure that you have successfully added your devices to the device inventory.
3. In the **License Assignment** tab, slide the **Auto Assign Licenses** toggle switch to the On position.

From the License Assignment Page

1. In the **Account Home** page, under **Global Settings**, click **License Assignment**.
2. Under **Device Subscriptions**, toggle the **Auto Assign Licenses** slider to ON. All the devices in your inventory are selected for automatic assignment of licenses. You can edit the list by clearing the existing selection and re-selecting devices.
For more information on how auto licensing works, see [Automatic License Assignment Workflow](#).

Manually Assigning Licenses

Use any one of the following methods to manually assign the licenses:

- [In the Initial Setup Wizard](#)
- [From the License Assignment Page](#)

In the Initial Setup Wizard

1. In the **Assign License** tab, ensure that the **Auto License** toggle switch is turned off.
2. Select the devices in the list for which you want to manually assign subscriptions.
3. Click **Update License**.

From the License Assignment Page

1. In the **Account Home** page, under **Global Settings**, click **License Assignment**.
2. On the **License Assignment** page, ensure that the **Auto License** toggle is turned off.
3. Select the devices to which you want to assign licenses.
4. Click **Update License**.

For more information on subscriptions and how to assign network service and SD-WAN Gateway subscriptions, see [Managing License Assignments](#).

Step 5: Organizing Your Devices into Groups

A group in Aruba Central functions as a configuration container for devices added in Aruba Central.

Why Should You Use Groups?

Groups allow you to create a logical subset of devices and simplify the configuration and device management tasks. Groups offer the following functions and benefits:

- Combining different types of devices under a group. For example, a group can have Instant APs and Switches. Aruba Central allows you to manage the configuration of these devices in separate containers (wireless and wired management) within the same group. Any new device that is added to a group inherits the current configuration of the group.

- Assigning multiple devices to a single group. For example, a group can consist of multiple Instant AP Virtual Controllers (VCs). These VCs can share common configuration settings and push the configuration updates to member Instant APs in their respective clusters. For example, you can apply a common security policy for the devices deployed in a specific geographical location.
- Cloning an existing group allows you to create a base configuration for the devices and customize it according to your network requirements.

You can also use groups for filtering your monitoring dashboard content, generating reports, and managing software upgrades.



A device can be part of only one group at any given time.
Groups in Aruba Central are independent and do not follow a hierarchical model.

For more information on groups and group configuration workflows, see [Groups for Device Configuration and Management](#).

Assigning Devices to Groups

After you successfully complete the onboarding workflow, the **Initial Setup** wizard prompts you to assign your devices to a group. You can click **Assign Group** and assign your devices to a group. You can also use any one of the following methods to assign your devices to groups.

To assign a device to a group, in the **Account Home** page, under **Global Settings**, click **Device Inventory**.

1. Select the device that you want to assign to a group.
2. Click **Assign Group**. The **Assign Group** pop-up window opens.
3. Select the group to which you want to assign.
4. Click **Assign Device(s)**.

To assign a device to a group from the **Groups** page:

1. In the **Network Operations** app, set the filter to **Global**.
The dashboard context for the selected filter is displayed.
2. Under **Maintain**, click **Organization**.
By default, the **Groups** page is displayed.
3. From the devices table on the right, select the device that you want to assign to a new group.
4. Drag and drop the device to the group to which you want to assign the device.

Step 6: Assigning Sites and Labels (Optional)

A site in Aruba Central refers to a physical location where a set of devices are installed; for example, campus, branch, or venue. Aruba Central allows you to use sites as a primary navigation element. For example, if your devices are deployed in a campus, you could create a site called CampusA. You can also tag the devices within CampusA using labels. If your campus consists of multiple buildings, the devices deployed in the campus can be labeled as **Building1** or **Lobby**.

For more information on sites and labels and how to assign devices to sites and labels, see [Managing Sites](#) and [Managing Labels](#).

Step 7: Configuring Users

Add system users, assign user roles, and configure role-based access control.

For more information, see [Configuring System Users](#).

Step 8: Configuring and Managing Networks

To start configuring your network setup:

1. Connect your devices to Aruba Central. For more information, see [Connecting Devices to Aruba Central](#).
2. Provision Instant APs, switches, or gateways to set up your WLAN, wired access, and SD-WAN network.

Step 9: Monitoring Your Network and Devices

Use [monitoring dashboards](#) to view the health of the device and network.

You can also [run reports](#), [configure alerts](#), and [view client details](#).

Step 10: Upgrading Software Images on Devices

View software images available for the devices provisioned in your account, run a compliance check for the recommended software version, and upgrade devices.

For more information and step-by-step instructions, see [Managing Software Upgrades](#).

Step 11: Running Diagnostic Checks and Troubleshooting Issues

Run diagnostic checks and troubleshooting commands to analyze network connectivity, latency issues, and debug device issues, if any. For more information and step-by-step instructions, see [Using Troubleshooting Tools](#).

This section provides a description about the different configuration and monitoring options available for Aruba Central features tied to Foundation and Advanced Licenses.

Configuration

AP Configuration

License Applicability: AP configuration is available for AP Foundation License.

Network administrators can manage APs through the Aruba Instant UI, Aruba Central, or AirWave management system. Templates in Aruba Central refer to a set of configuration commands that can be used by the administrators for provisioning devices in a group. Configuration templates enable administrators to apply a set of configuration parameters simultaneously to multiple devices in a group and thus automate AP deployments.

For template-based provisioning, APs must be assigned to a group with template-based configuration method enabled.

AOS-Switch Configuration

License Applicability: AOS-Switch configuration is available for Switch Foundation License.

Network administrators can manage AOS-Switches through the Aruba Central UI menu options. Templates in Aruba Central refer to a set of configuration commands that can be used by the administrators for provisioning devices in a group. Configuration templates enable administrators to apply a set of configuration parameters simultaneously to multiple devices in a group and thus automate AOS-Switch deployments.

AOS-CX Configuration

License Applicability: AOS-CX configuration is available for Switch Foundation License.

Network administrators can manage AOS-CX switches through the Aruba Central UI menu options and the MultiEdit mode. The MultiEdit mode in Aruba Central provides a single window for viewing and editing the configuration for one or more AOS-CX switches. In this mode, viewing and editing the configuration is performed using the CLI syntax.

Templates in Aruba Central refer to a set of configuration commands that can be used by the administrators for provisioning devices in a group. Configuration templates enable administrators to apply a set of configuration parameters simultaneously to multiple devices in a group and thus automate AOS-CX deployments.

Auto-Commit

License Applicability: Auto-Commit is available for Foundation and Advanced Licenses for APs, switches, and gateways.

Aruba Central supports a two-staged configuration commit workflow for Instant APs. When the auto-commit state is enabled for a group, the configuration changes are instantly applied to all devices where the auto-commit state is enabled.

Configuration Audit

License Applicability: Configuration Audit is available for Foundation and Advanced Licenses for APs, switches, and gateways.

In Aruba Central, the Configuration Audit page provides an audit dashboard for reviewing configuration changes of the devices provisioned in the UI and template groups. The Configuration Audit page allows you to view configuration push errors, template synchronization errors, configuration sync, and device-level configuration overrides.

Gateway Configuration

License Applicability: Gateway configuration is available for Gateway Foundation and Foundation Base Licenses.

Aruba Central supports the following methods to configure Gateway groups and Gateways in SD-Branch deployments:

- **Guided Setup**—You can use the Guided Setup to quickly configure basic and essential parameters on Aruba Gateways for deploying the SD-WAN solution. The Guided Setup provides a wizard-based workflow for provisioning Gateways.
- **Basic Mode**—Allows you to configure your Gateways in a non-linear fashion. This mode allows you to make configuration changes after you provision your gateways for the first time using a Guided setup.
- **Advanced Mode**—Allows you to configure advanced features for SD-WAN deployments.

Template groups in Aruba Central allow network administrators to create a common configuration output by using a combination of CLI commands and variables, and apply this configuration to the other Gateway devices provisioned in that group.

Monitoring and Reporting

Access, Spectrum, Monitor Mode of Radio Operations

License Applicability: The Access, Spectrum, and Monitor modes of the radios of an access point are available for AP Foundation and Advanced Licenses.

In the Access mode, the Instant AP serves clients, while also monitoring for rogue Instant APs in the background. In the Monitor mode, the Instant AP acts as a dedicated monitor, scanning all channels for rogue Instant APs and clients. In the Spectrum mode, the Instant AP functions as a dedicated full-spectrum RF monitor, scanning all channels to detect interference, whether from the neighboring Instant APs or from non Wi-Fi devices such as microwaves and cordless phones.

Alerts and Events

License Applicability: Alerts and events for APs, Gateways, and switches is part of Foundation License and does not require any extra configuration. This tab shows data for all devices irrespective of device license type.

The **Alerts and Events** dashboard displays a list of alerts and events generated for events pertaining to device provisioning, configuration, and user management. You can view the alerts and events in the **List** view and **Summary** view. **Configuration** view is used to configure alerts and is available only at the **Global** context.

Application Visibility

License Applicability: The Application Visibility feature is a part of a Foundation License. However, as API streaming is available for Advanced Licenses only, the Application Visibility streaming service is supported only for APs with an Advanced License.

Application Visibility is a custom-built Layer-7 firewall capability in Aruba Central that allows you to create firewall policies based on the types of applications in IAPs. Application Visibility provides features like deep packet inspection, application monitoring, and AirSlice Policy.

Audit Trail

License Applicability: Audit Trail logs for APs, gateways, and switches, is part of Foundation License and does not require any extra configuration. This tab shows data for all devices irrespective of device license type.

The **Audit Trail** page in Aruba Central shows the total number of logs generated for all device management, configuration, and user management events triggered in the network.

Client List and Details

License Applicability: Clients monitoring is available for the Foundation License of AP, switch, and gateway.

The **Clients** page is also called the unified clients list and it provides a list of all clients that are connected to access points, switches, or gateways in the network. The List and Summary views under the Clients tab serve as dashboards. It displays details about the network performance, client connection status, instantaneous client refresh, Go Live (only AP), and other information required for monitoring the clients.

Floorplans

License Applicability: Floorplans is available for AP and gateway Foundation Licenses. Floorplans allow you to plan sites, create and manage floorplans, and provision access points. Floorplans provide a real-time picture of the radio environment of your wireless network and the ability to plan the wireless coverage of new sites.

Reports

License Applicability: Reports is available for the Foundation License.

The Reports feature enables you to generate reports for the Clients, Infrastructure, Security Compliance, and Applications categories. The **Reports** feature is present under the **Analyze** section of the **Network Operations** app. The functionalities present are creating a report, generating a report, scheduling the report generation, previewing a report, and downloading a report in PDF and CSV formats. The **Custom range** for the Summary report is available for the last one year, except the current date (today). All other reports are available for 90 days in Aruba Central 2.5.3.

Topology

License Applicability: Topology is available for Foundation and Advanced Licenses for APs, switches, and gateways.

In Aruba Central, the Topology tab in the site dashboard provides a graphical representation of the site, including the network layout, details of the devices deployed, and the health of the WAN uplinks and tunnels. The topology map provides information about third-party devices and devices that are not managed by Aruba. It also provides information about orphan and offline third-party devices, and the VLANs configured on switches running AOS-Switch and AOS-CX software.

Web Content Classification (WebCC)

License Applicability: The WebCC feature is available for Foundation Licenses for APs and gateways.

The WebCC allows you to classify website content based on reputation and take measures to block malicious sites. It fetches information about website content classification and geolocation of IPs. The IP reputation database contains known IP addresses associated with various malicious activities or threats such as botnet, DOS, and spam sources. The geolocation IP database contains the geographical location of the IP address from where the traffic is received or to which the traffic is sent. This provides geolocation and reputation filtering as part of the security suite.

The table below lists the features supported for AP and gateway licenses:

AP Foundation	Gateway Foundation and Foundation Base
WebCC Firewall rules, visualization by reputation and category	WebCC Firewall rules, visualization by reputation and category

Wi-Fi Connectivity

License Applicability: The Wi-Fi Connectivity dashboard for APs is part of Foundation License and does not require any extra configuration.

The **Wi-Fi Connectivity** page displays an overall view of the connection details for all clients that are connected to or tried to connect to each connection phase. The connection phases include the following:

- **All**—Displays the aggregated success percentage of Association, Authentication, and DHCP for all clients connected to the network.
- **Association**—Displays the percentage of successful attempts made by a client to connect to the network.
- **Authentication**—Displays the percentage of successful attempts of client authentication.
- **DHCP**—Displays the percentage of successful attempts of DHCP requests and responses when onboarding a client.
- **DNS**—Displays the percentage of successful attempts in the detected DNS resolutions, when a client is connected to the network.

AI Operations

AI Insights

License Applicability: AI Insights is available for Foundation and Advanced Licenses for APs, switches, and gateways. The Insights that require an Advanced License are marked as Advanced in the UI.

The AI Insights dashboard displays a report of network events that could possibly affect the quality of the overall network performance. These are anomalies observed at the access point, connectivity, and client level for the selected time range. Each insight provides specific details on the occurrences of these events for easy debugging.

Different types of insights are generated by Aruba Central and they can be accessed from different contexts such as Global, Site, Clients, and Device. Some of the insights are part of an Advanced License only and they are marked as Advanced in the user interface.

The following figure displays various AI Insights available and some are marked as Advanced.

Figure 7 AI Insights List

Severity	Description	Category	Impact
High	Access Point transmit power can be optimized	Wireless Quality	11 dBm Delta
High	Coverage Hole Detected	Wireless Quality	88 Client Devices
High	Outdoor clients are impacting Wi-Fi performance	Wireless Quality	2809127 Outdoor Minutes (48.57 %), 380332 Indoor Minutes (0.95 %)
High	Dual-band (2.4/5 GHz) capable clients primarily used 2.4 GHz	Wireless Quality	6 (75 %) Impacted Clients, 8 Total Clients
High	Access Points had an excessive number of channel changes	Wireless Quality	40 Channel Changes, 2 (100 %) Impacted Radios, 2 Total Radios
High	Clients had excessive 802.1X authentication failures	Connectivity - Wi-Fi	9 Impacted Clients (100 % of 9), 3551 Failures (99.02 % of 3586)
High	Clients had excessive Wi-Fi security key-exchange failures	Connectivity - Wi-Fi	1 Impacted Clients (100 % of 1), 11 Failures (68.75 % of 16)
High	Clients had problems authenticating with the Captive Portal	Connectivity - Wi-Fi	1 Impacted Clients (100 % of 1), 6 Failures (100 % of 6)
High	Access Points had a high number of reboots	Availability - Access Point	5 (62.5 %) Impacted Access Points, 8 Total Access Points, 5 Reboots.
High	DNS server(s) rejected a high number of queries	Connectivity - Wi-Fi	606 (88.08 %) Failed Requests, 688 Total Requests
High	DNS request/responses were significantly delayed	Connectivity - Wi-Fi	14956 Average Delay (ms)
High	PVOS Switches had unusually high CPU utilization	Availability - Switch	4 (40 %) Impacted Switches, 10 Total Switches
High	PVOS Switches had unusually high memory usage	Availability - Switch	4 (40 %) Impacted Switches, 10 Total Switches
High	Gateways had unusually high CPU utilization	Availability - Gateway	13 Gateways
High	Gateways had high memory usage	Availability - Gateway	1 Gateways
High	Gateway tunnels failed to get established	Availability - Gateway	5 Tunnels Down
Medium	Clients had a significant number of Low SNR minutes	Wireless Quality	10 (40 %) Impacted Clients, 25 Total Clients
Medium	Clients had DHCP server connection problems	Connectivity - Wi-Fi	3 Impacted Clients (33.33 % of 9), 1851 Failures (95.27 % of 1943)
Medium	Clients had a high number of Wi-Fi Association failures	Connectivity - Wi-Fi	3 Impacted Clients (37.5 % of 8), 9 Failures (9.57 % of 94)
Medium	Clients had an unusual number of MAC authentication failures	Connectivity - Wi-Fi	4 Impacted Clients (36.36 % of 11), 21 Failures (25.17 % of 72)
Medium	Access Points had unusually high CPU utilization	Availability - Access Point	3 (30 %) Impacted Access Points, 10 Total Access Points
Medium	Access Points were impacted by high 2.4 GHz usage	Wireless Quality	8 (40 %) Impacted Access Point Radios, 20 Total Access Point Radios
Medium	Access Points were impacted by high 5 GHz usage	Wireless Quality	8 (40 %) Impacted Access Point Radios, 20 Total Access Point Radios
Medium	Access Point radios changed their transmit power frequently	Wireless Quality	357 Power Changes, 2 (50 %) Impacted Radios, 4 Total Radios
Medium	DNS queries failed to reach or return from the server	Connectivity - Wi-Fi	1146 (6.78 %) Lost Requests, 16900 Total Requests
Medium	PVOS Switches had an unusual number of port errors	Availability - Switch	1 (20 %) Impacted Switches, 5 Total Switches
Medium	Access Points with unusually high memory usage were found	Availability - Access Point	10 (10.1 %) Impacted Access Points, 99 Total Access Points
Low	Information (telemetry) was not received from APs/Radios	Availability - Access Point	21 (1.87 %) Impacted Access Point Radios, 1124 Total Access Point Radios

The table below lists the features supported for AP, switch, and gateway licenses:

AP Foundation License	AP Advanced License	Switch Foundation	Gateway Foundation, Foundation Base, and VGW
<ul style="list-style-type: none"> Connectivity—Wi-Fi Wireless Quality Availability—Access Points Class and Company Baselines 	<ul style="list-style-type: none"> Wireless Quality <ul style="list-style-type: none"> Outdoor clients impacting Wi-Fi performance Coverage Hole Detection Transmit power optimization 	<ul style="list-style-type: none"> Availability—Switch Class and Company Baselines 	<ul style="list-style-type: none"> Availability—Gateways Class and Company Baselines



In this release, all AI Insights are available irrespective of the user role or Aruba Central subscription. In the upcoming Aruba Central release, AI Insights marked as **Advanced** in the user interface would require an advanced subscription.

AI Search

License Applicability: AI Search feature is available for Foundation License for AP, switch, and gateway.

The AI search feature in Aruba Central enables you to search for clients, devices, and infrastructure connected to the network. Using the search results, you can navigate to the configuration and troubleshooting pages. The search also retrieves relevant documentation to help you efficiently operate your networks. The search engine uses Natural Language Processing (NLP) to analyze queries and return relevant search results.

Dynamic Logs

License Applicability: Dynamic Log is available for both Foundation and Advanced Licenses for APs and gateways.

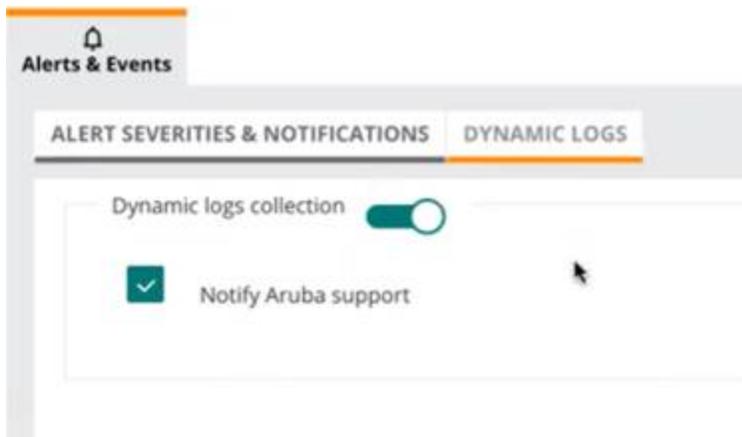
The Dynamic Logs feature enables Aruba Central to dynamically run CLI show commands on APs and gateways, and collect the output as logs. You can also enable Aruba support notification option to notify TAC support regarding the logs generated. These logs can be used to troubleshoot the APs and gateways.



Dynamic Logs is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.

The following figure displays the available options for Dynamic Logs.

Figure 8 *Dynamic Logs Option*



For devices assigned with the Foundation License, the Dynamic Logs feature only supports the log collection activity. Even if you enable the **Notify Aruba Support** option, the option is not activated for devices licensed with Foundation License.

For devices assigned with Advanced Licenses, Dynamic Logs support both log collection and the Aruba support notification option.

For example, assume an Aruba Central account with Dynamic Logs enabled, where you configure a group of three Access Points (APs), AP1, AP2, and AP3. AP1 has a Foundation License while AP2 and AP3 have Advanced Licenses. For this group, both **Dynamic logs collection** and **Notify Aruba Support** options are enabled. However, the Aruba support notification option is only applicable for AP2 and AP3, which have Advanced Licenses.

Troubleshooting

Live Events

Licensing Applicability: Live Events for clients, APs and switches is part of Foundation License and does not require any extra configuration.

The clients **Live Events** page shows information required to troubleshoot issues related to a client or a site in real time for detailed analysis. Aruba Central also allows to troubleshoot issues related to access points. The AP Live Events feature is similar to client live troubleshooting, but in this case we can enable Live Events at the AP level. Currently, users can subscribe to Radio, VPN, and Spectrum events.

Live Packet Capture (PCAP)

Licensing Applicability: Live PCAP for APs and switches is part of Foundation License and does not require any extra configuration.

Aruba Central allows users to interact and launch a targeted packet capture on a client connected to a specific AP or a switch. When the user starts packet capture from the UI, Aruba Central notifies the AP and the switch. The default packet capture duration is 15 minutes.

Troubleshooting Tools

License Applicability: Troubleshooting for APs, gateways, and switches is part of Foundation License and does not require any extra configuration.

The **Tools** menu option allows network administrators and users with troubleshooting permission to perform troubleshooting or diagnostics tests on devices and networks managed by Aruba Central.

The **Tools** page is divided into the following tabs:

- **Network Check**—Allows you to run diagnostic checks on networks and troubleshoot client connectivity issues.
- **Device Check**—Allows you to run diagnostic checks and troubleshoot switches.
- **Commands**—Allows you to perform network health check on devices at an advanced level using command categories.

Services

AirGroup

License Applicability: AirGroup is available for both AP Foundation and Advanced Licenses.

AirGroup is a zero-configuration networking protocol that enables service discovery, address assignment, and name resolution for desktop computers, mobile devices, and network services. It is designed for flat, single-subnet IP networks such as wireless networking at home. AirGroup supports both wired and wireless devices.



AirGroup is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.

In InstantOS-based APs, the service is hosted on the IAP Virtual controller and all services are supported.

AirMatch

License Applicability: AirMatch is available for AP Foundation License.

AirMatch channel planning evens out channel distributions in any size of network and in any subset of the contiguous network. AirMatch also minimizes channel coupling where adjacent radios are assigned to the same channel.

AirSlice

License Applicability: The AirSlice feature is available for only AP Advanced Licenses.

The AirSlice feature allows network operators to build virtual networks suitable for specific application requirements. It allows network operators to monitor applications used by clients and supports multiple services such as gaming, IoT, voice, video, and so on.



AirSlice is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.

For devices that have Advanced Licenses, the AirSlice feature supports unlimited applications and provides prioritization of custom-applications with visibility and configuration.

The table below lists the features supported for AP licenses:

Advanced
<ul style="list-style-type: none">■ Visibility and prioritization of applications■ Maximum number of applications as supported by the Aruba Central platform

ClientMatch

License Applicability: ClientMatch is available for AP Foundation License.

ClientMatch continually monitors the RF neighborhood for each client to provide ongoing client band steering, load balancing, and enhanced AP reassignment for roaming mobile clients.

Presence Analytics

License Applicability: Presence Analytics is available for Foundation AP License.

Presence Analytics enables businesses to collect and analyze user presence data in public venues, enterprise environments, and retail hubs. Presence Analytics also enables businesses to collect real-time data on user footprints within the wireless network range.

SaaS Express

License Applicability: SaaS Express is available for Advanced Gateway License and Advanced with Security Gateway License only.

The SaaS Express feature, on SD-WAN Gateways, enables discovery of the SaaS application servers, monitors application performance, and steers traffic to the best-available servers, and thus provides an improved user experience.

Unified Communications

License Applicability: Unified Communications is available for AP Advanced Licenses.

The Unified Communications feature enables a seamless user experience for voice calls, video calls, and application-sharing when using communication and collaboration tools. It allows you to actively monitor voice, video, and application-sharing sessions, provide traffic visibility, prioritize the required sessions, and provide rich visual metrics for analytical purposes.



Unified Communications is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.

Security

Cloud Guest

License Applicability: Cloud Guest is available for the AP Foundation License.

The Cloud Guest access enables the guest users to connect to the network. This is provided through the splash page profile that is created by the administrators for the guest users in the **Guests** tab under **Manage**. The **Summary** page in the **Manage > Guest Access** application is the monitoring dashboard that displays the number of guests, guest SSID, client count, type of clients, and guest connection. Cloud Guest deals with the AP, so the license that is assigned to the AP is also applicable to Cloud Guest. By default, the Foundation License is applicable. The Advanced License features will also be available if the Cloud Guest is assigned to it.

ClearPass Device Insight-Based Clients Profile

License Applicability: ClearPass Device Insight (CPDI) based Clients Profile is available for Foundation License for APs and gateways..

The CPDI-based Clients Profile enables network and security administrators to discover, monitor, and automatically classify new and existing devices that connect to a network. You can identify devices that include IoT devices, medical devices, printers, smart devices, laptops, VoIP phones, computers, gaming consoles, routers, servers, switches, and so on.



CPDI-based Clients Profile is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.

The table below lists the features supported for AP and gateway licenses:

Foundation	Advanced
<ul style="list-style-type: none"> ■ Basic client MAC Classification based on telemetry data ■ Client Family, Client Category, Client OS ■ Cloud Auth Integration 	<ul style="list-style-type: none"> ■ Access to Collector support in Central (not including physical collector costs) ■ ML-based client classification ■ Advanced Security Features (Risk / Posture / Vulnerability) ■ Security baseline of device behavior with Firewall recommendation

Intrusion Detection and Prevention (IDS or IPS)

License Applicability: IDS and IPS is available for Foundation with Security Gateway License, Foundation Base with Security Gateway License, and Advanced with Security Gateway License.

The IDS and IPS monitors, detects, and prevents threats in the inbound and outbound traffic. Aruba IDS or IPS adds an extra layer of security that focuses on users, applications, network connections, and can be integrated with the Aruba SD-Branch solution.

RAPIDS

License Applicability: RAPIDS is available for Foundation and Advanced Licenses for APs.

The RAPIDS feature enables Aruba Central to quickly identify and act on interfering APs in the network that can be later considered for investigation, restrictive action, or both. Once the interfering APs are discovered, Aruba Central sends alerts for security events to the network administrators about the possible threat and provides essential information needed to locate and manage the threat.



RAPIDS is supported in this release as an Early-Access feature. Contact your Aruba SE or Account Manager to enable it in your Aruba Central account.

This feature is part of the AP Foundation License. However, as API streaming is available for Advanced License only, Aruba Central would not stream any security events for APs with Foundation License. For APs with Advanced License, API streaming of security events is available for further diagnosis and threat management.

API

Streaming APIs

License Applicability: The Streaming API service requires that devices such as IAPs and gateways are assigned with Advanced License.

The Streaming API feature enables you to subscribe to a select set of services, instead of polling the NB API to get an aggregated state, or statistics of the events, pertinent to the monitoring activities of Aruba Central. With Streaming API, you can write value-added applications based on the aggregated context.

For example, with Streaming API, you are notified about the following types of events:

- The UP and DOWN status of the devices
- Change in location of stations

The Streaming API feature in Aruba Central is enabled only when any one of the devices in the account has an Advanced License. If the account has devices with only Foundation License, the Streaming API tab is not displayed in Aruba Central.

If the Streaming API feature is enabled, and the account has a mix of Foundation License and Advanced License for devices, the devices that are assigned with Foundation License do not stream any data for any topics.

SD-Branch

Application-based Policy

License Applicability: The application-based policy configuration is available for Foundation License for Branch Gateways.

The Application-based policy configuration helps in deep packet inspection of application usage by clients. Using this configuration, you can define applications, security, and service aliases. You can configure Access Control Lists (ACLs) to restrict user access to an application or application category.

Dynamic Path Steering

License Applicability: Dynamic Path Steering is available for Gateway Foundation and Foundation Base License.

In the **Path Steering** tab, you can view traffic path steering details for the Dynamic Path Steering policies configured on the Branch Gateway. This tab also displays the number of policies that are compliant along with the total number of policies configured on the Branch Gateway.

Full SD-LAN Control

License Applicability: SD-LAN monitoring is available for Foundation License for Branch Gateways.

The LAN Summary page displays a graphical representation of the LAN link availability of a Branch Gateway. It also provides a summary of all the LAN interfaces and port details.

IPsec VPN

License Applicability: IPsec VPN is available for Gateway Foundation and Foundation Base License.

An IPsec tunnel is configured to ensure that the data flow between the networks is encrypted. When configured, the IPsec tunnel to the controller secures corporate data. You can configure an IPsec tunnel from virtual controller using Aruba Central.

Role-based Access Policy

License Applicability: Role-based Access Policy configuration is available for Foundation License for Branch Gateways.

The Role-based Access Policy determines client access based on the user roles assigned to a client. Each user or device connected to the branch network is associated with a user role. Once the role is assigned, traffic and security policies are applied to devices based on the role.

SD-WAN Overlay

License Applicability: SD-WAN Overlay monitoring is available for Gateway Foundation License.

The SD-WAN Overlay is an orchestrator service for branch deployments, which is done by setting up IPsec tunnels between the Branch Gateways and VPN Concentrators. This is achieved through **Tunnel** and **Route** orchestration. The tunnel configuration between the branch and hub sites is automatic and the route configuration is done by redistributing the routing information learnt from the branch in a dynamic way. The **Map** and **Grid** views of the **Tunnel** and **Route** tabs under **SD-WAN Overlay** serve as dashboards for monitoring purpose, providing information about the tunnels and routes configured for an individual Branch Gateway.

Stateful Firewalls

License Applicability: Stateful Firewalls is available for Gateway Foundation and Foundation Base License.

Aruba Gateways support stateful firewall for stateful inspection of packets. Stateful firewalls provide an additional layer of security by tracking the state of network connections and using the state information from previous communications to monitor and control new communication attempts. To protect your network from external attacks and unauthorized communication attempts, you can configure match conditions and packet filtering criteria for the Aruba Gateways.

Web Content Filtering

License Applicability: Website content filtering is available for Foundation License for Branch Gateways.

Aruba Gateways enhance branch security by providing real-time web content and reputation filtering. The Website Content Classification feature on Branch Gateways allows you to classify website content based on reputation and take measures to block malicious sites.

What happens to my assigned Device Management tokens in the new licensing model?

Device Management tokens are instantly migrated to Foundation License in the new licensing model. It includes all features of the existing Device Management tokens, with no disruption to current feature set, network connectivity, or existing configurations.

What happens to my Service tokens during migration to the new licensing model?

Value-added services provided by Service Tokens are available as part of the Foundation License after migration.

The Foundation License includes Service Token features like Wi-Fi Connectivity Health, Guest Access, Presence Analytics, and basic AirGroup features.

You will also receive the WebCC (content filtering) filtering service for no additional charge.

All customers who have applied a Service token for UCC in smaller deployments of less than 50 APs and for larger deployments of 60% or more of APs will continue to receive access to the service through the remainder of their subscription term. Contact Aruba Sales team if you have additional questions.

What happens to my unassigned Device Management tokens?

You will have the option to convert any unassigned Device Management tokens to any AP or Switch Foundation license through end of 2021. After this date, all existing tokens will be automatically upgraded to the AP Foundation license.

Can I still purchase Device Management tokens and Service tokens?

Yes, Aruba will continue to sell the previous tokens.

What happens to any feature marked Beta or Advanced?

Features that have been flagged as **Beta** or **Advanced** in the UI will generally no longer be available.

What services are available with the evaluation license?

The following evaluation licenses are available:

- 10 Advanced APs
- 5 Foundation Switches 6100 / 25xx / low density (16 ports or less)
- 5 Foundation Switches 6200 / 29xx
- 5 Foundation Switches 6300 / 3810
- 5 Foundation Switches 8xxx / 6400 / 5400
- 5 Advanced with security 90xx Gateway Licenses
- 10 Advanced 70xx Gateway Licenses
- 2 Advanced 72xx Gateway Licenses

What is the validity of the evaluation license?

The evaluation license is valid for 90 days.

What happens after my evaluation license expires?

When the evaluation license expires, the devices cannot be managed by Aruba Central.

Multiple alerts via the web UI and email are sent before the license expiry date to keep you informed about the upcoming operational impacts. Once a license expires, a device continues to remain operational;

however, it stops getting managed by Aruba Central. No additional grace periods are provided after the evaluation license expires.

What happens when I assign a Device Management token through the API Gateway?

In Aruba Central, when you assign a Device Management token to a device through the API Gateway dashboard, Aruba Central assigns a Foundation License to the device. If the Foundation License is not available, Aruba Central assigns an Advanced License to the device.

Can I transfer Foundation and Advanced Licenses, and Device Management and Service tokens between APs, switches, and gateways?

Once a token has been converted to an AP or Switch Foundation License, no additional transfers are supported. Tokens are only used for APs and switches. AP Foundation Licenses can be transferred between APs. However, Switch Foundation Licenses are series-specific and cannot be used for switches in other license tiers. Gateway licensing also requires a separate purchase. Additional SKU requests will be evaluated on a per-customer basis with Aruba Customer Support.

Does the licensing model support Mobility Access Switches (MAS)?

MAS license will get converted to Switch Foundation 61xx/25xx license and continue to work.