Spectralink VIEW Certified Configuration Guide

Cisco Meraki

Meraki Cloud-Controlled APs MR20 MR26, MR30H, MR32, MR33, MR34, MR36, MR42, MR45, MR46, MR52, MR53, MR55, MR56, MR70, MR72, MR74, MR84

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Contact Information

US Location
+1 800-775-5330

Spectralink Corporation
2560 55th Street
Boulder, CO 80301
USA

info@spectralink.com

Denmark Location
+45 7560 2850

Spectralink Europe ApS
Bygholm Soepark 21 E Stuen
8700 Horsens
Denmark

infoemea@spectralink.com

UK Location
+44 (0) 20 3284 1536

Spectralink Europe UK
329 Bracknell, Doncastle Road
Bracknell, Berkshire, RG12 8PE
United Kingdom

infoemea@spectralink.com

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Chapter 1: Introduction

Spectralink's Voice Interoperability for Enterprise Wireless (VIEW) Certification Program is designed to ensure interoperability and high performance between Spectralink Wireless Telephones and wireless LAN (WLAN) infrastructure products. The Cisco Meraki products listed have been tested in the Spectralink lab and found to be interoperable as noted. The settings in the Cisco Meraki Wireless Voice Deployment Guide were employed where possible.

Certified Product Summary

Manufacturer:	Cisco Meraki
Certified products:	Cisco Meraki Cloud-Controlled APs MR20, MR26, MR30H, MR32, MR33, MR34, MR36, MR42, MR45, MR46, MR52, MR53, MR55†, MR56†, MR70, MR72, MR74, MR84
AP Radio(s):	2.4 GHz (802.11b/g/n), 5 GHz (802.11a/n/ac)
Security:	None, WEP, WPA-PSK, WPA2-PSK, WPA2-Enterprise (EAP-FAST††, PEAPv0/MSCHAPv2, and PEAP) with OKC, 802.11r(FT-enabled)
QoS:	Wi-Fi Standard for Spectralink 84 series, PIVOT, Versity92/95/96
Network topology:	Bridged
Version approved:	25.3 and later

† Only MR55 and MR56 were tested on Versity 92/95/96 Series smartphones

†† EAP-FAST is not supported on Versity 92/95/96 Series smartphones

Handset models tested:*	*Spectralink*			*Smartphone (Versity)*
Handset radio mode:	802.11b	802.11b/g	802.11bgn	802.11a & 802.11an
Meets VIEW minimum call capacity per AP**	8	8	8	10

Handset models tested:*	*Spectralink*			*Smartphone (PIVOT)*
Handset radio mode:	802.11b	802.11b/g	802.11bgn	802.11a & 802.11an
Meets VIEW minimum call capacity per AP**	8	8	8	10

Handset models tested:	*Spectralink*			*Wireless Telephone (84-Series)*
Handset radio mode:	802.11b	802.11b/g	802.11bgn	802.11a & 802.11an

Handset models tested:	*Spectralink*			*Wireless Telephone (84-Series)*
Meets VIEW minimum call capacity per AP**	8	8	8	10

*****Spectralink handset models and their OEM derivatives are verified compatible with the WLAN hardware and software identified in the table. Throughout the remainder of this document they will be referred to collectively as "Spectralink Wireless Telephones", "phones" or "handsets".

** Maximum calls tested per the VIEW Certification Test Plan. The certified product may actually support a higher number of maximum calls.

Known Limitations

- Cisco Meraki products are controlled from the Meraki dashboard. This means that access to the internet is necessary for product configuration. In general, the APs continue to provide service when disconnected from the Internet. When the internet is unavailable, operation limitations are described in AP Connection Loss to Cisco Meraki Cloud.
- The Cisco Meraki system was tested with its default system of multicast-to-unicast. To facilitate group announcements through PTT (Push-to-talk), the number of access points and phones must support a one-way call to every phone at the same time.
- Cisco Meraki access points do not provide the WMM-AC feature using TSPECs to ensure voice quality.
- Cisco Meraki recommends no more than 3 SSIDs to be enabled on any one AP.
- Fast Transition roaming using adaptive mode (802.11r) is implemented in the Versity 95/96 smartphones as of R2.1.1. SSIDs are compatible with all models if FT is enabled and multiple radio buttons are checked in the WLAN>Security section, as described in this manual.

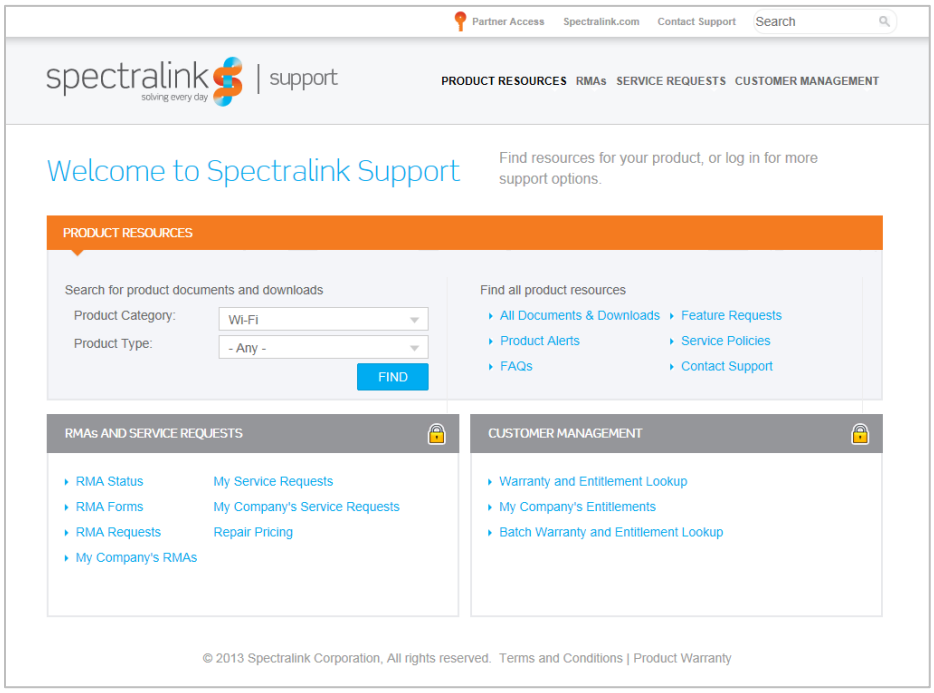
  Ensure FT is set to enabled on the VQO app to gain 802.11r functionality.

  CCKM is not supported by Cisco Meraki Access Points.

  Versity 92 supports FT but does not support 802.11r Adaptive. However it is compatible with it in that it will use legacy roaming mechanism when Adaptive is enabled.

Spectralink References

Spectralink documents are available at http://support.spectralink.com.



To go to a specific product page:

Select the Product Category and Product Type from the dropdown lists and then select the product from the next page. All resources for that particular product are displayed by default under the All tab. Documents, downloads and other resources are sorted by the date they were created so the most recently created resource is at the top of the list. You can further sort the list by the tabs across the top of the list to find exactly what you are looking for. Click the title to open the link.

Support Documents

Spectralink Versity software and support documents are available on the Spectralink support site at http://support.spectralink.com/versity.

PIVOT by Spectralink Configuration Guide The PIVOT Configuration Guide provides detailed information about PIVOT menu items that have been developed specifically for the PIVOT handset.

Spectralink 87-Series Wireless Telephone Deployment Guide The Deployment Guide provides sequential information for provisioning and deploying the handsets. It covers deployment using the SLIC tool and CMS as well as manual deployment.

The *Spectralink 84-Series Wireless Telephone Administration Guide* provides a comprehensive list of every parameter available on Spectralink 84-Series Wireless Telephones.

The *Spectralink 84-Series Deployment Guide* is your essential reference for provisioning and deploying Spectralink 84-Series handsets in any environment.

The *Web Configuration Utility User Guide* explains how to use a web browser to configure the Spectralink 84-Series handsets on a per handset basis.

*Best Practices for Deploying Spectralink 87-Series Hand*sets provides detailed information on wireless LAN layout, network infrastructure, QoS, security and subnets.

White Papers

Spectralink White Papers are available at http://www.spectralink.com/resources/white-papers.

For the Spectralink 84-Series Wireless Telephones, please refer to *Best Practices Guide for Deploying Spectralink 84-Series Handsets* for detailed information on wireless LAN layout, network infrastructure, QoS, security and subnets.

For additional details on RF deployment please see *The challenges of ensuring excellent voice quality in a Wi-Fi workplace* and *Deploying Enterprise-Grade Wi-Fi Telephony*.

These White Papers identify issues and solutions based on Spectralink's extensive experience in enterprise-class Wi-Fi telephony. It provides recommendations for ensuring that a network environment is adequately optimized for use with Spectralink Wireless Telephones.

Product Support

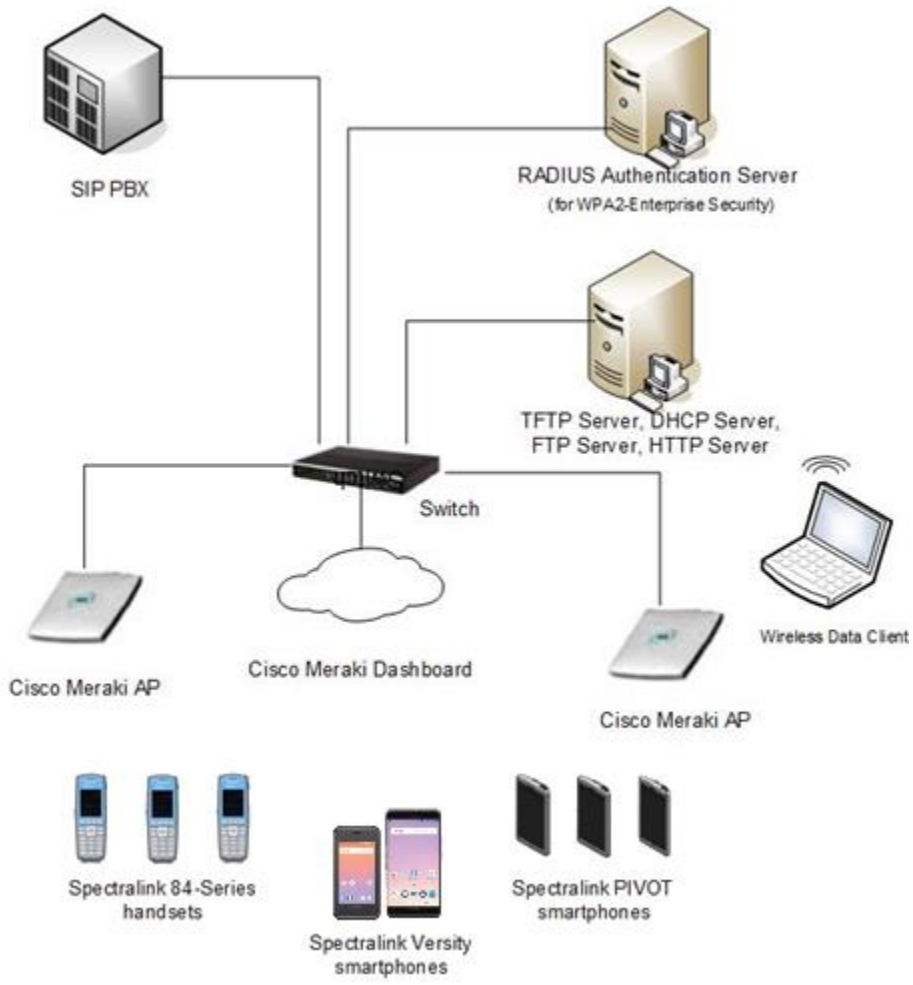
Spectralink support can be reached at support.spectralink.com.

Cisco Meraki support can be reached from the dashboard at https://dashboard.meraki.com from the help dropdown menu. Support may be reached at https://meraki.com.com/support prior to obtaining a dashboard login.

Chapter 2: Overview

The following configuration was tested during VIEW certification.

Network Topology



Note: Example configuration shown

This is a modified diagram and not all components are shown for every system type.

Note: Radius server setup

The setup for a Radius server for Enterprise security is outside the scope of this document. Helpful setup documents for using a Cisco Meraki cloud-based Radius server and external servers are available on the Cisco Meraki website.

Chapter 3: Initial Network Creation

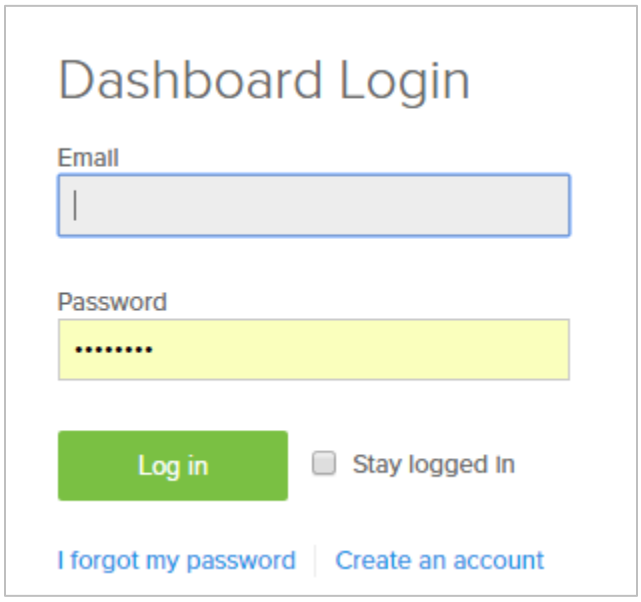
Initial network setup is performed when APs and cloud support are purchased from Meraki. The dashboard is used to log in, licenses are added, a network is created, and APs are added to the network.

Note: Use an incognito window

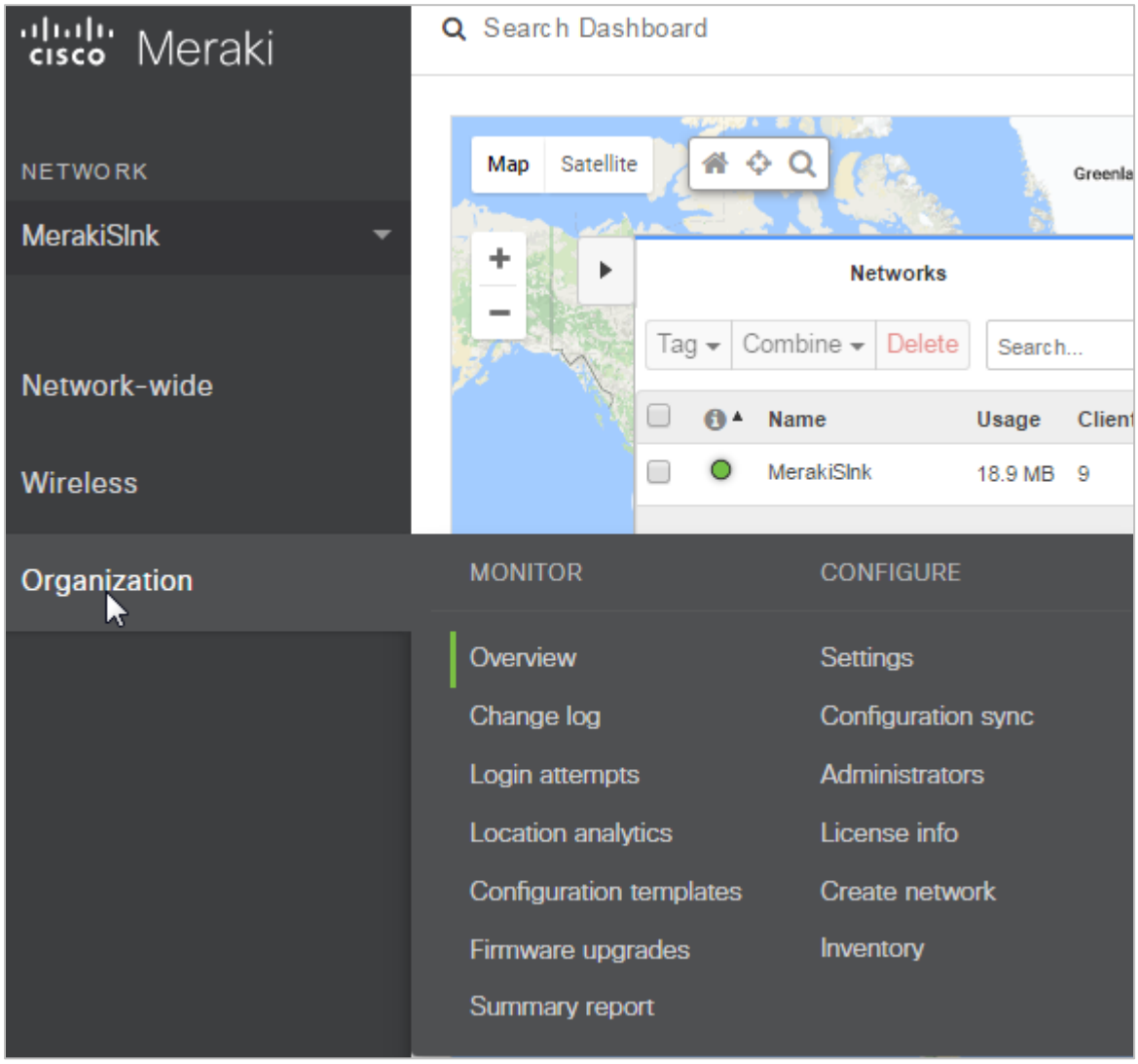
An “incognito window” must be used with some web browsers to avoid confusing field entry behavior. Touch the browser “More” menu (3 vertical dots) and select “Use an incognito window”.

Login and Licensing

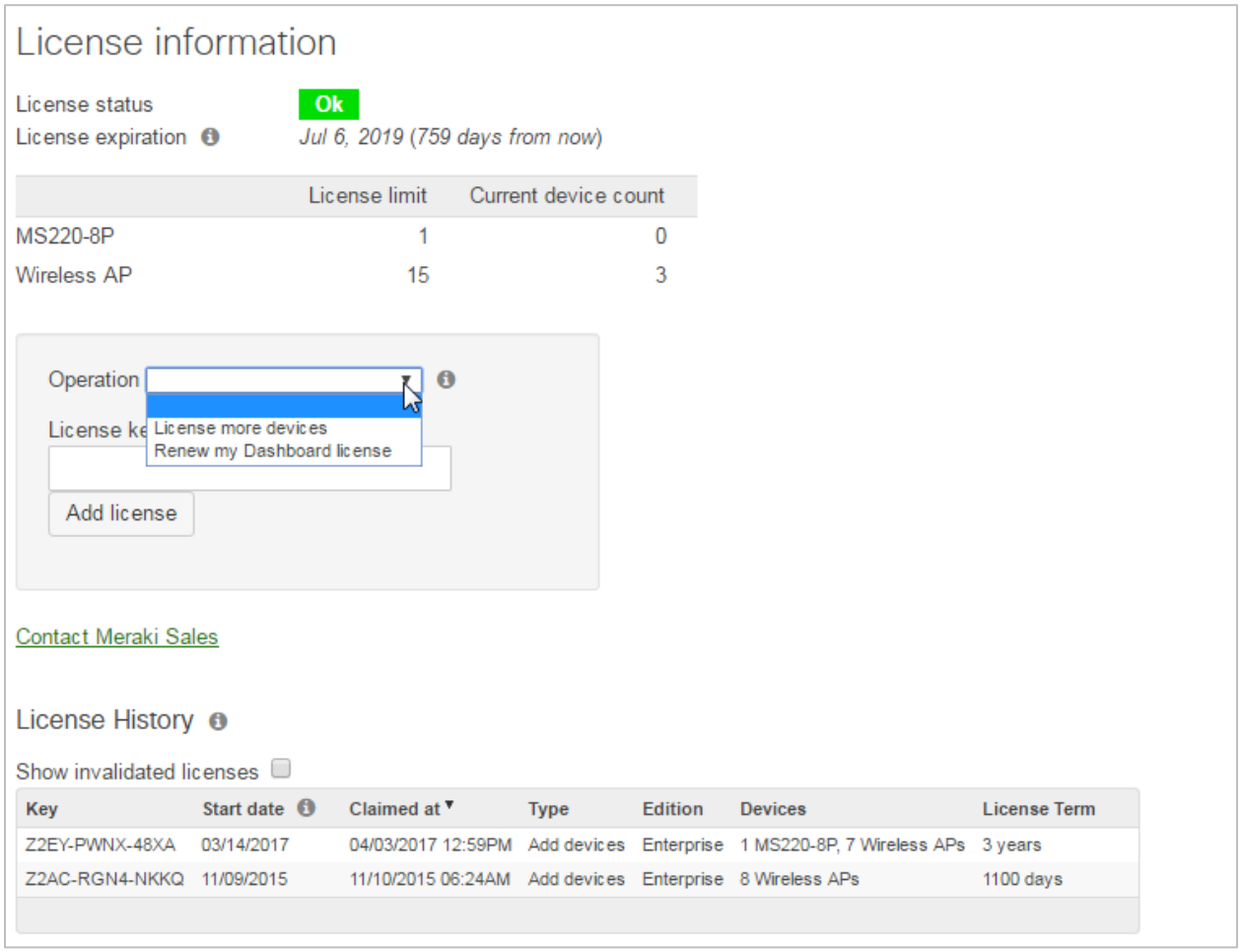
1 Navigate to https://dashboard.meraki.com for an initial login. Examine the e-mail received from Meraki to obtain the e-mail and password created for the login. Enter these values into the screen shown.



2 On the dashboard, navigate to **Organization> CONFIGURE> License info**.



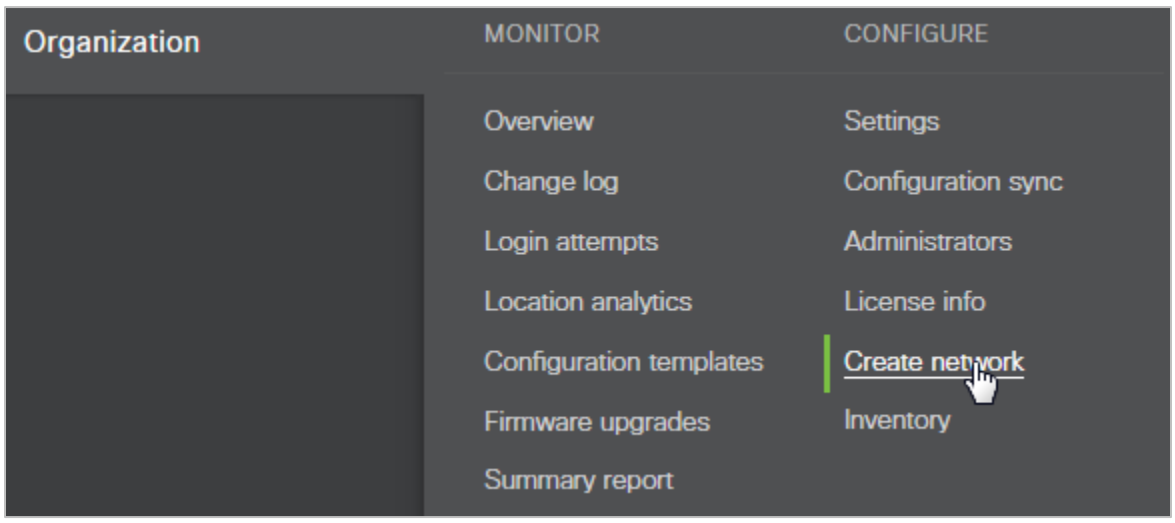
3 Enter the license keys and functions received from Meraki to activate the system.



Create a Network

Create a network to organize the APs.

1 Navigate to **Organization>CONFIGURE>Create network**.

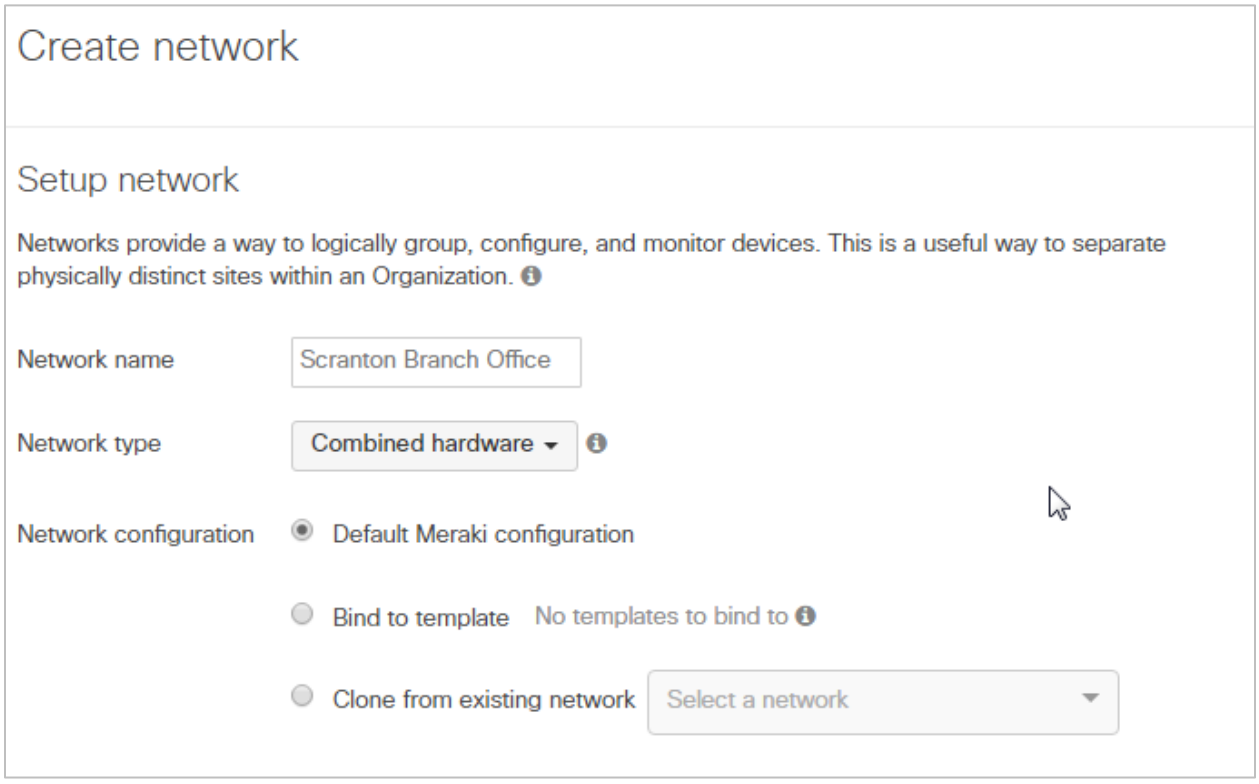


On the **Create network** screen:

2 Enter a name for the network

3 Choose **Combined hardware** for the network type (laptops and phones will both be in the network).

4 Start with the **Default Meraki configuration**. If another network exists, it can be cloned to copy SSID definitions and settings if desired.

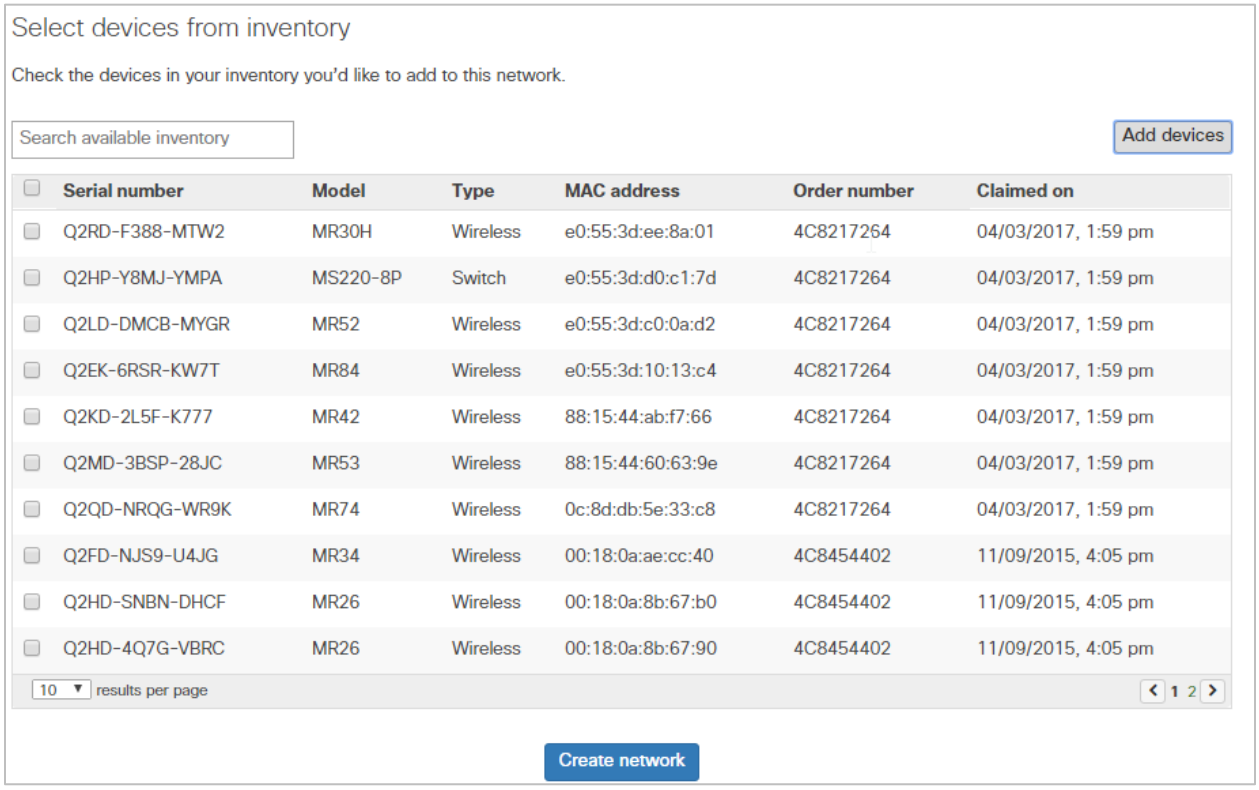

Create network
Setup network
Networks provide a way to logically group, configure, and monitor devices. This is a useful way to separate physically distinct sites within an Organization.
Network name
Scranton Branch Office
Network type
Combined hardware
Network configuration
Default Meraki configuration
Bind to template
No templates to bind to
Clone from existing network
Select a network

Add APs to the Network

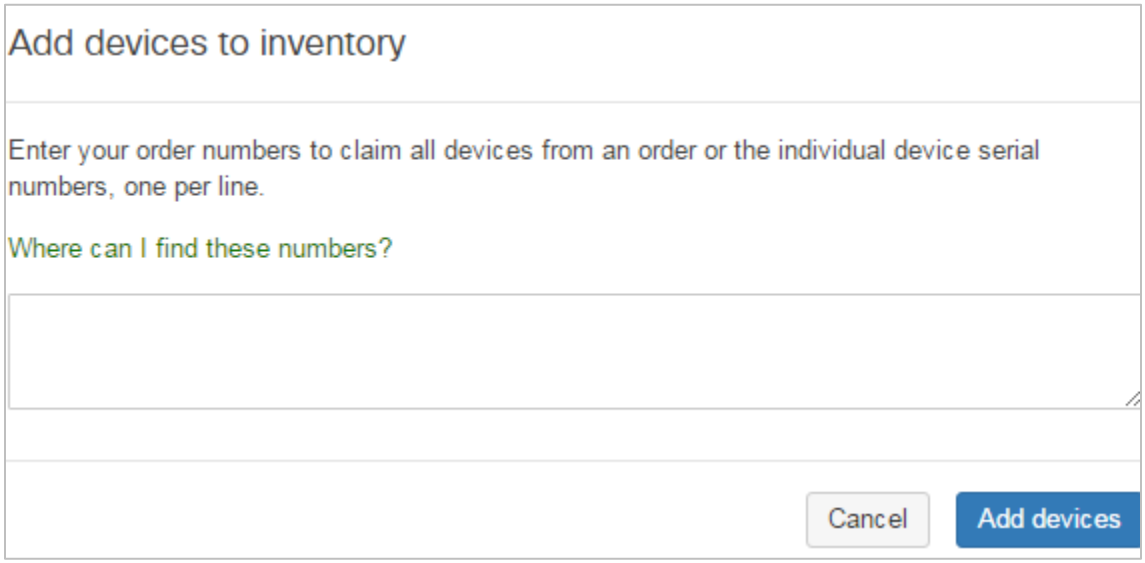
Now that the network has been created, APs need to be added to the system.

The devices are selected using the lower part of the **Organization> CONFIGURE> Create network** screen.

1 Click **Add devices**.

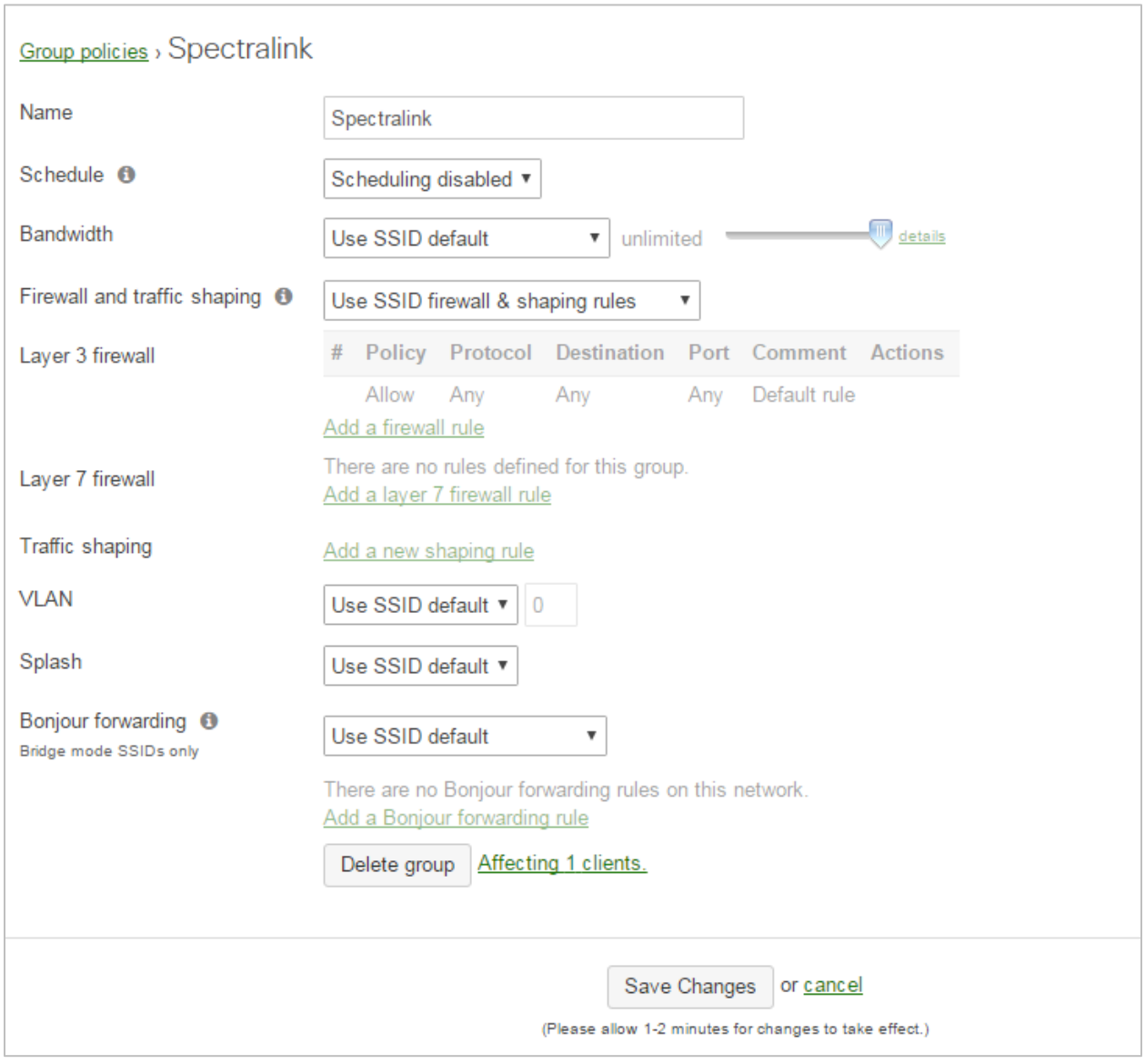


2 Add purchased devices to the inventory. These may be added by entering an order number. If there are multiple APs purchased in that order, they will all be added. Otherwise, individual serial numbers may be entered.



Assign a Group Policy to the Network

1. As recommended in the Cisco Meraki Wireless Voice Deployment Guide, navigate to **Network-wide> CONFIGURE> Group policies** and create a group policy
2. Give the policy a name.
3. Set the **Use SSID default** for all firewall and shaping rules. These will be defined in the sections to follow.



Chapter 4: Configure Wireless

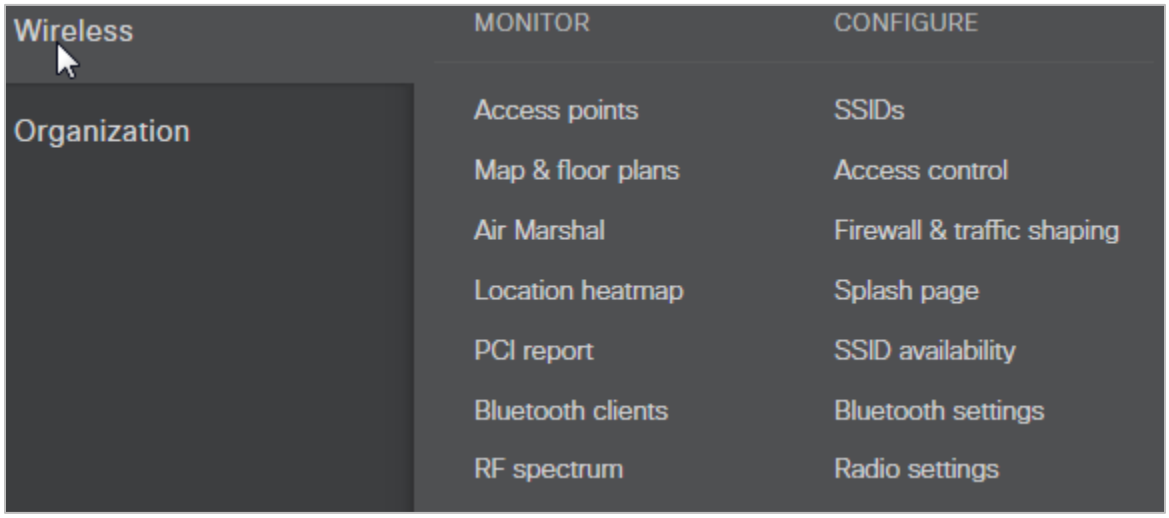
The wireless settings are configured by defining the SSIDs and then the radio settings on the APs.

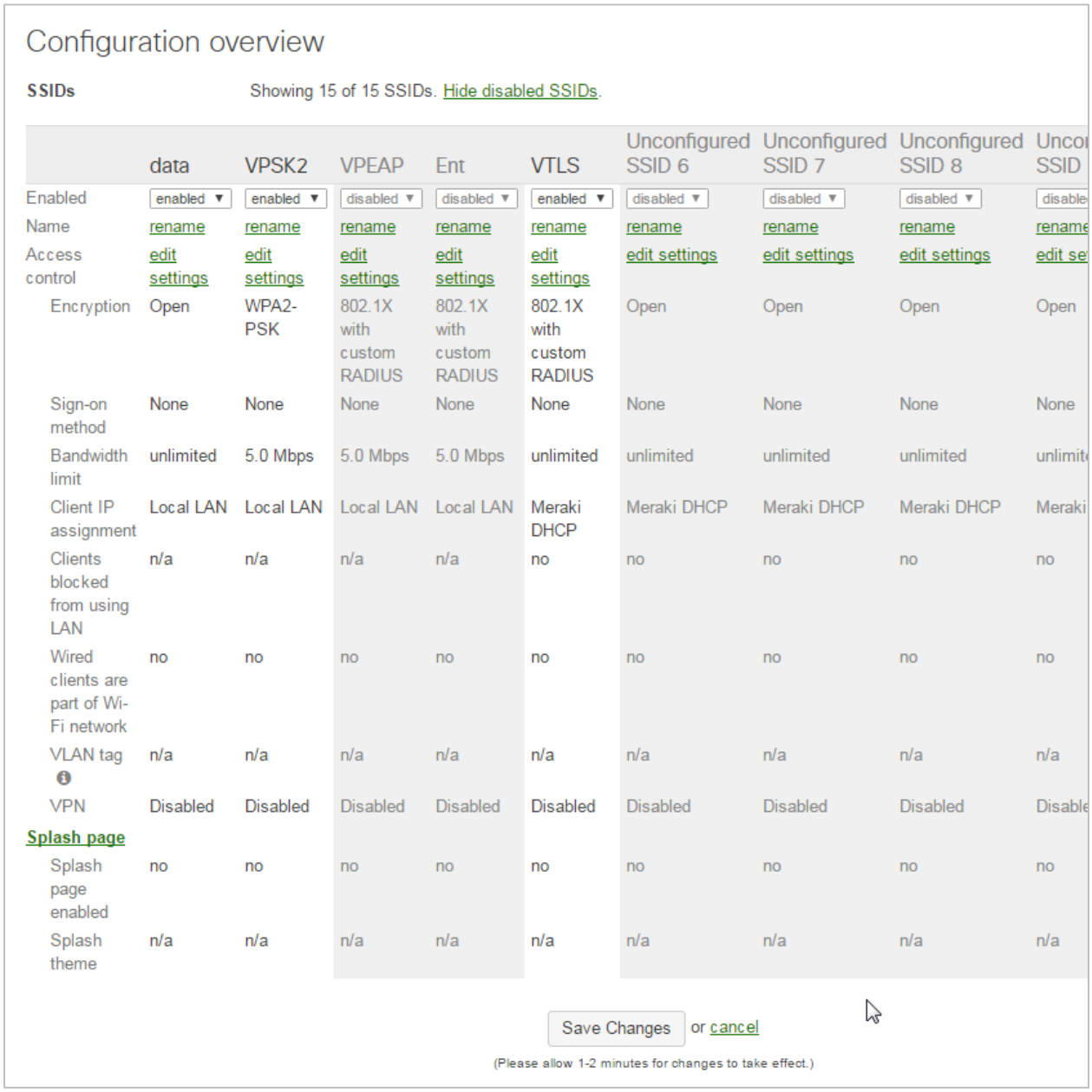
Define the SSIDs

Note: 3 enabled SSIDs per AP recommended

Cisco Meraki recommends enabling a maximum of 3 SSIDs per AP.

1 Navigate to **Wireless> CONFIGURE> SSIDs**.





Configuration overview

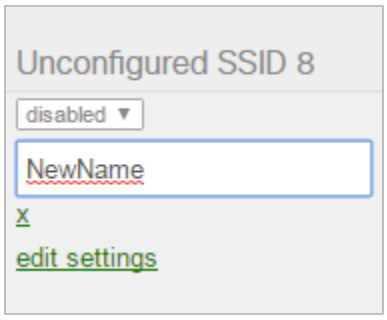
SSIDs Showing 15 of 15 SSIDs. Hide disabled SSIDs.

	data	VPSK2	VPEAP	Ent	VTLS	Unconfigured SSID 6	Unconfigured SSID 7	Unconfigured SSID 8	Uncon SSID
Enabled	enabled ▼	enabled ▼	disabled ▼	disabled ▼	enabled ▼	disabled ▼	disabled ▼	disabled ▼	disable
Name	rename	rename	rename	rename	rename	rename	rename	rename	rename
Access control	edit settings	edit settings	edit settings	edit settings	edit settings	edit settings	edit settings	edit settings	edit se
Encryption	Open	WPA2-PSK	802.1X with custom RADIUS	802.1X with custom RADIUS	802.1X with custom RADIUS	Open	Open	Open	Open
Sign-on method	None	None	None	None	None	None	None	None	None
Bandwidth limit	unlimited	5.0 Mbps	5.0 Mbps	5.0 Mbps	unlimited	unlimited	unlimited	unlimited	unlimit
Client IP assignment	Local LAN	Local LAN	Local LAN	Local LAN	Meraki DHCP	Meraki DHCP	Meraki DHCP	Meraki DHCP	Meraki
Clients blocked from using LAN	n/a	n/a	n/a	n/a	no	no	no	no	no
Wired clients are part of Wi-Fi network	no	no	no	no	no	no	no	no	no
VLAN tag	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
VPN	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disable
Splash page									
Splash page enabled	no	no	no	no	no	no	no	no	no
Splash theme	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Save Changes or cancel

(Please allow 1-2 minutes for changes to take effect.)

2 Click **rename** on one of the Unconfigured SSID definitions. Enter the SSID name entered on the handsets. Click **Save Changes**.

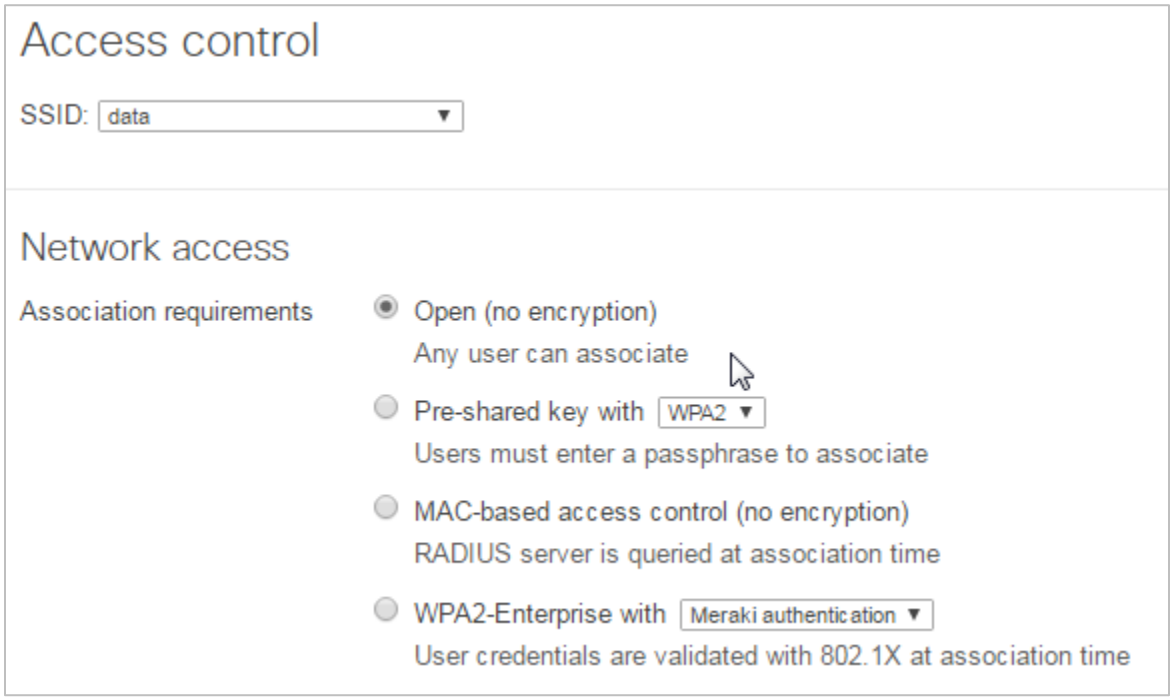


Access control

The **Access control** settings for an SSID vary depending on the type of security desired.

No security

1 For no security, click on the **Open** radio button.



WEP

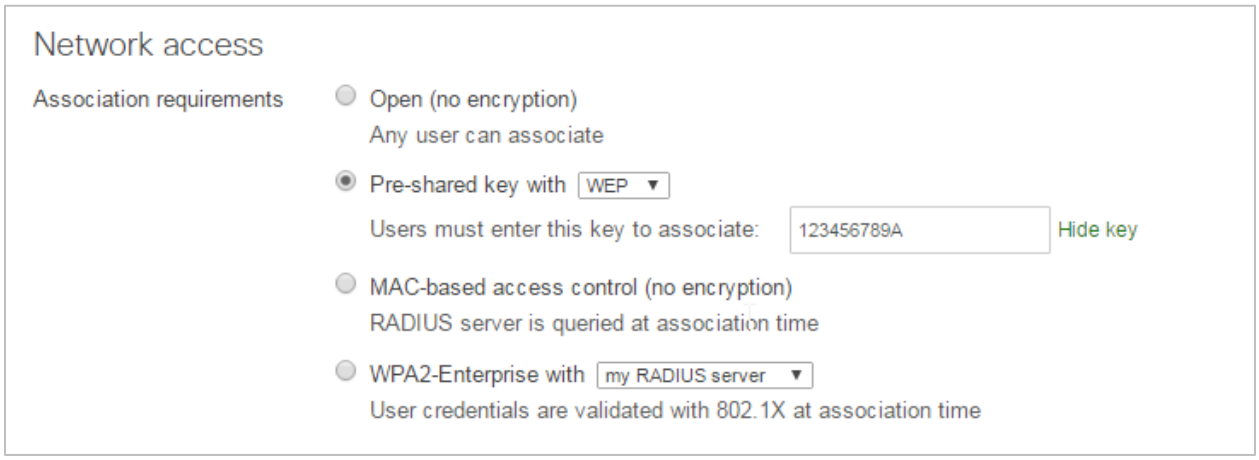
Note: WEP is insecure

Spectralink and Meraki do not recommend the user of WEP security due to its security weaknesses.

Note: Only one WEP SSID per network.

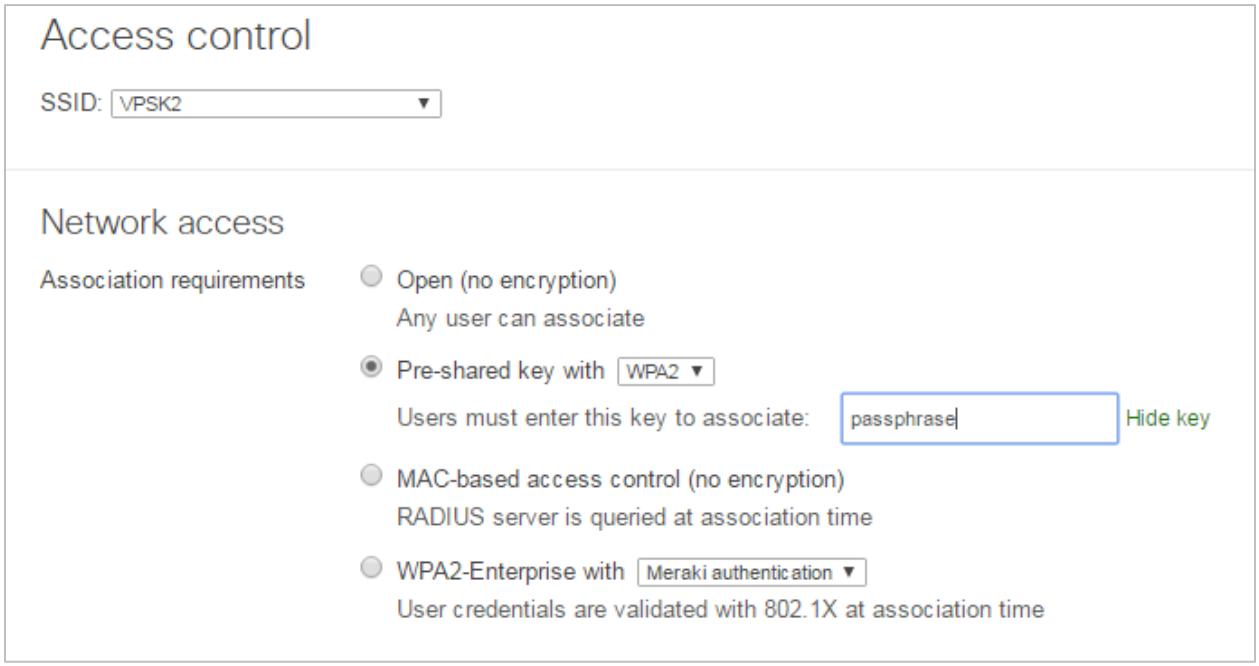
Cisco Meraki software only allows one enabled WEP SSID per network.

1. Select the **Pre-shared key with** and choose **WEP** from the dropdown menu.
2. Enter a 10 or 26 hex character key in the **User must enter this key to associate** box. This same key must be entered in the WEP key fields on the phones.



WPA2-PSK

1. Select the **Pre-shared key with** and choose **WPA2** from the dropdown menu.
2. Enter an ASCII passphrase in the **User must enter this key to associate** box. This same key must be entered in the password or passphrase fields on the phones.



Enterprise securities (PEAP, EAP-TLS, EAP-FAST††)

†† EAP-FAST is not supported on Versity 92/95/96 Series smartphones

Note: Radius server setup

The setup for a Radius server for Enterprise security is outside the scope of this document. Helpful setup documents for using a Cisco Meraki cloud-based Radius server and external servers of various types are available on the Cisco Meraki website.

1. Choose the radio button WPA2-Enterprise.
2. Choose **my Radius server** from to dropdown box to enter an external Radius server or **Meraki authentication** to use Meraki cloud-based authentication services.

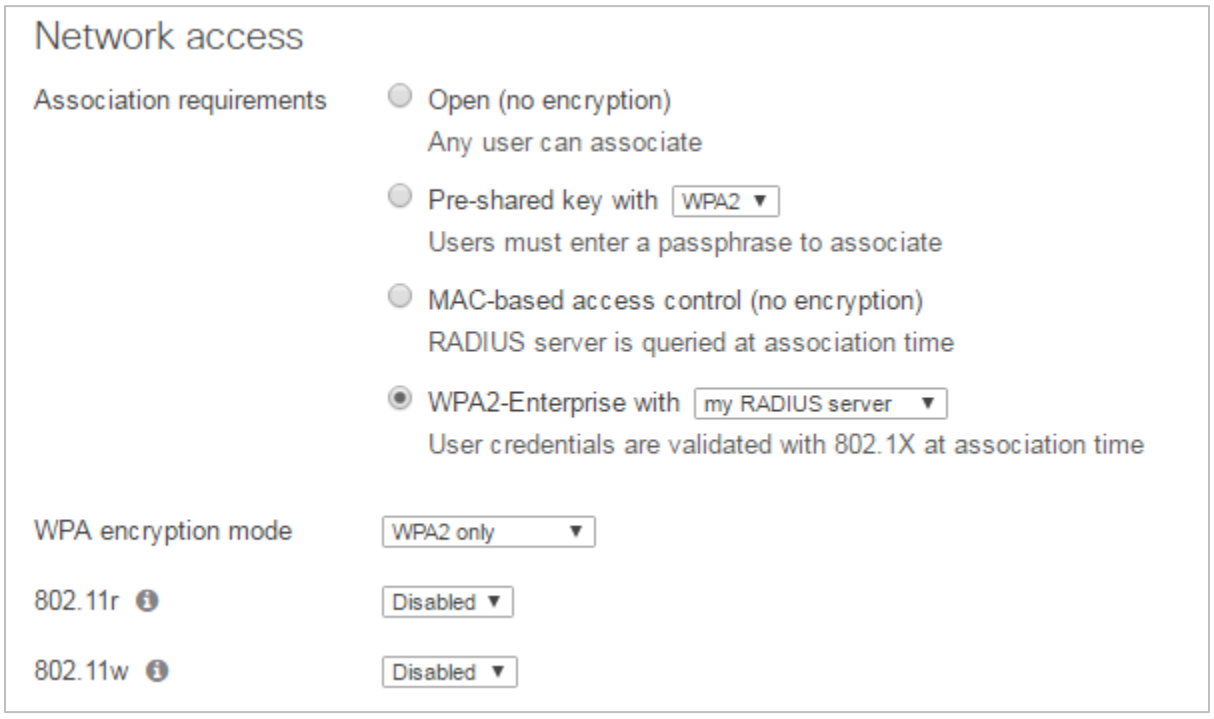
Note: Meraki cloud-based authentication services not tested

The Meraki authentication option was not tested by Spectralink during VIEW program testing.

3. Leave the 802.11r and 802.11w settings set to Disabled.

Note: 802.11r is supported

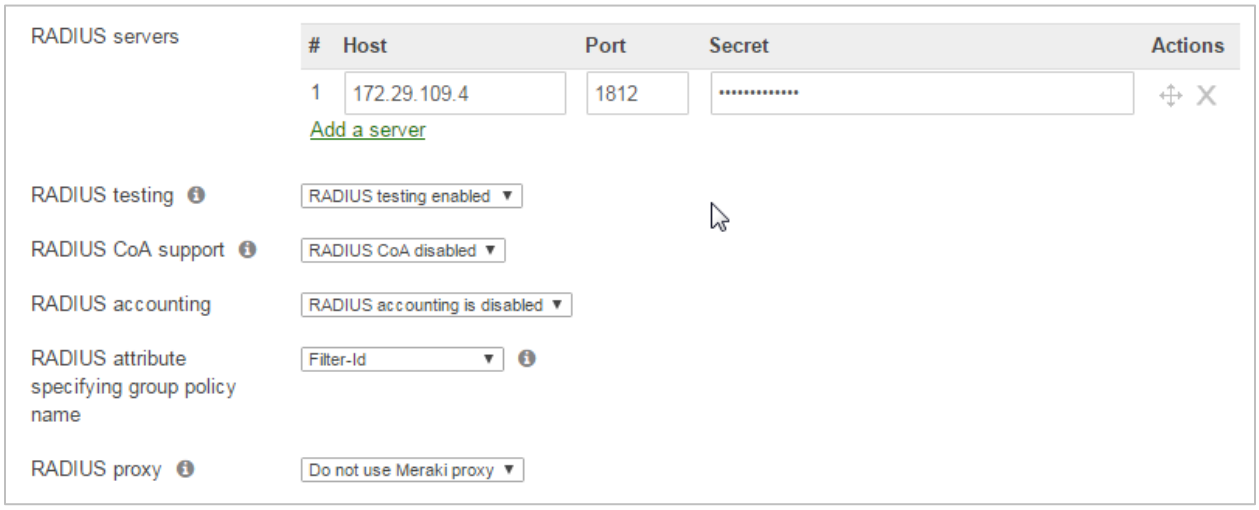
An unexpected anomaly in Android 10 created an incompatibility in Fast Transition, Adaptive mode which has been corrected in Versity R2.2.1.x



4 If an external Radius server is used:

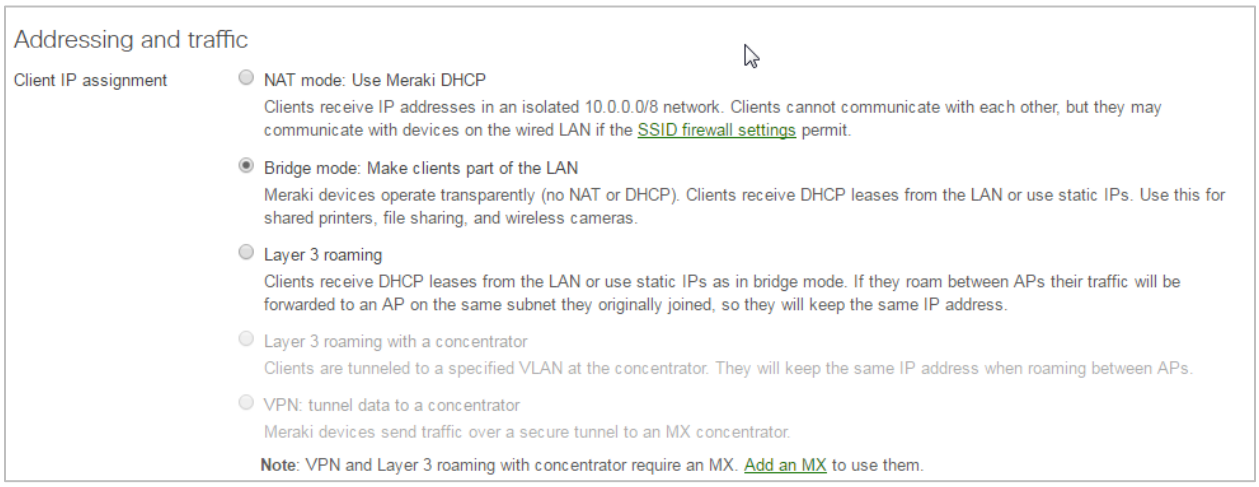
a Click **Add a server**.

b Enter the **Host** IP Address or DNS name, the **Port**, and the **Secret** entered on the Radius server.

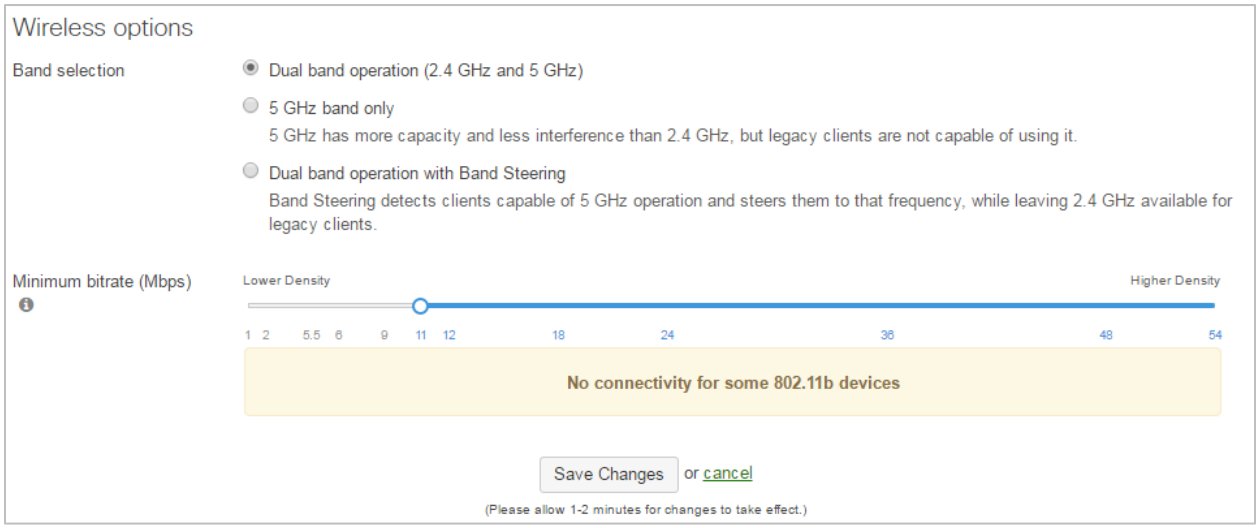


SSID common settings (applied to all security types)

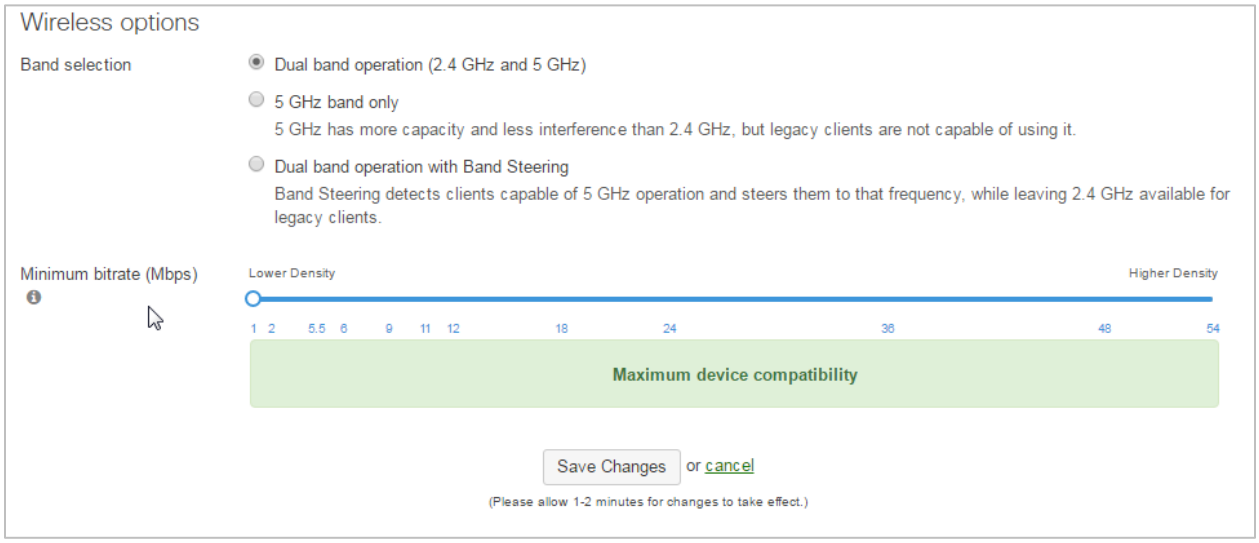
1 Select the **Bridge mode** in the **Addressing and traffic** part of the page.



2 As recommended by Cisco Meraki Wireless Voice Deployment Guide, in the **Wireless options** section for SSIDs to be used primarily for voice, set the Minimum bitrate to 11 Mbps. Note: the Spectralink phones are 802.11g devices, so the 11 Mbps rate was left enabled.



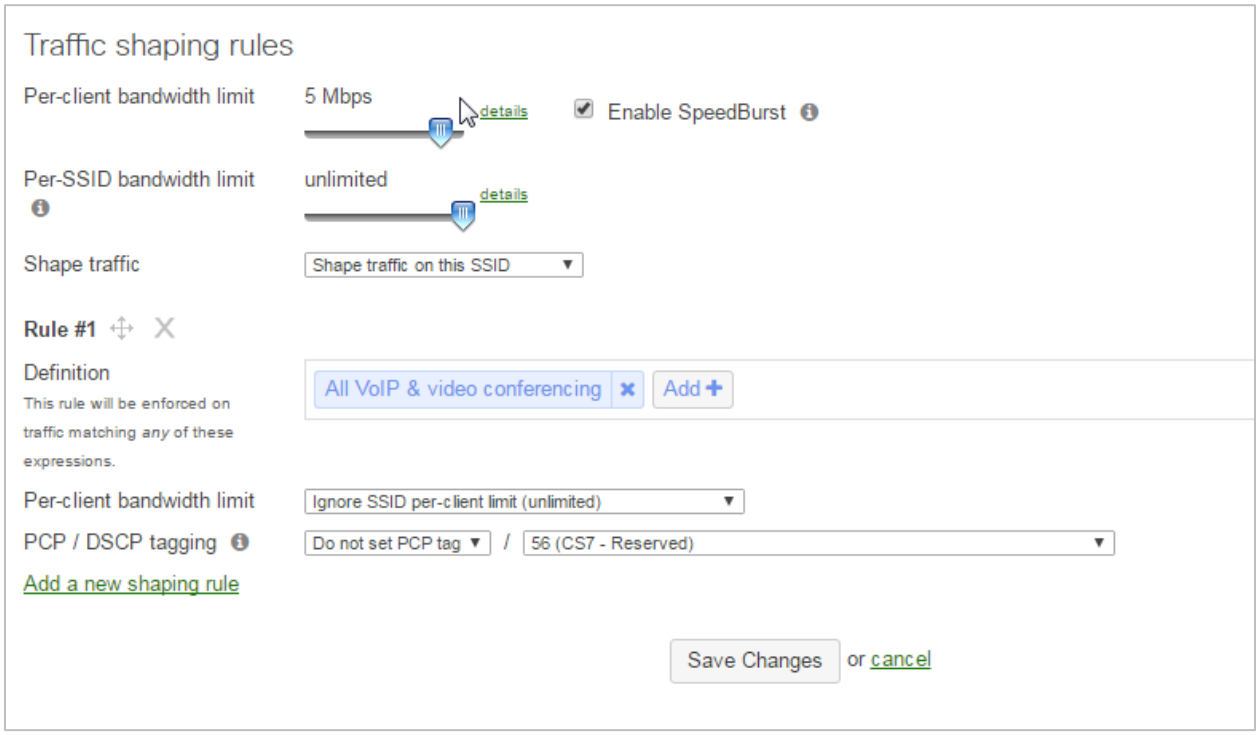
3 If the SSID is to be used primarily for data, the lowest possible **Minimum bitrate** is configured.


Wireless options
Band selection
Dual band operation (2.4 GHz and 5 GHz)
5 GHz band only
5 GHz has more capacity and less interference than 2.4 GHz, but legacy clients are not capable of using it.
Dual band operation with Band Steering
Band Steering detects clients capable of 5 GHz operation and steers them to that frequency, while leaving 2.4 GHz available for legacy clients.
Minimum bitrate (Mbps)
Lower Density
Higher Density
1 2 5.5 6 9 11 12 18 24 36 48 54
Maximum device compatibility
Save Changes
or cancel
(Please allow 1-2 minutes for changes to take effect.)

Traffic shaping

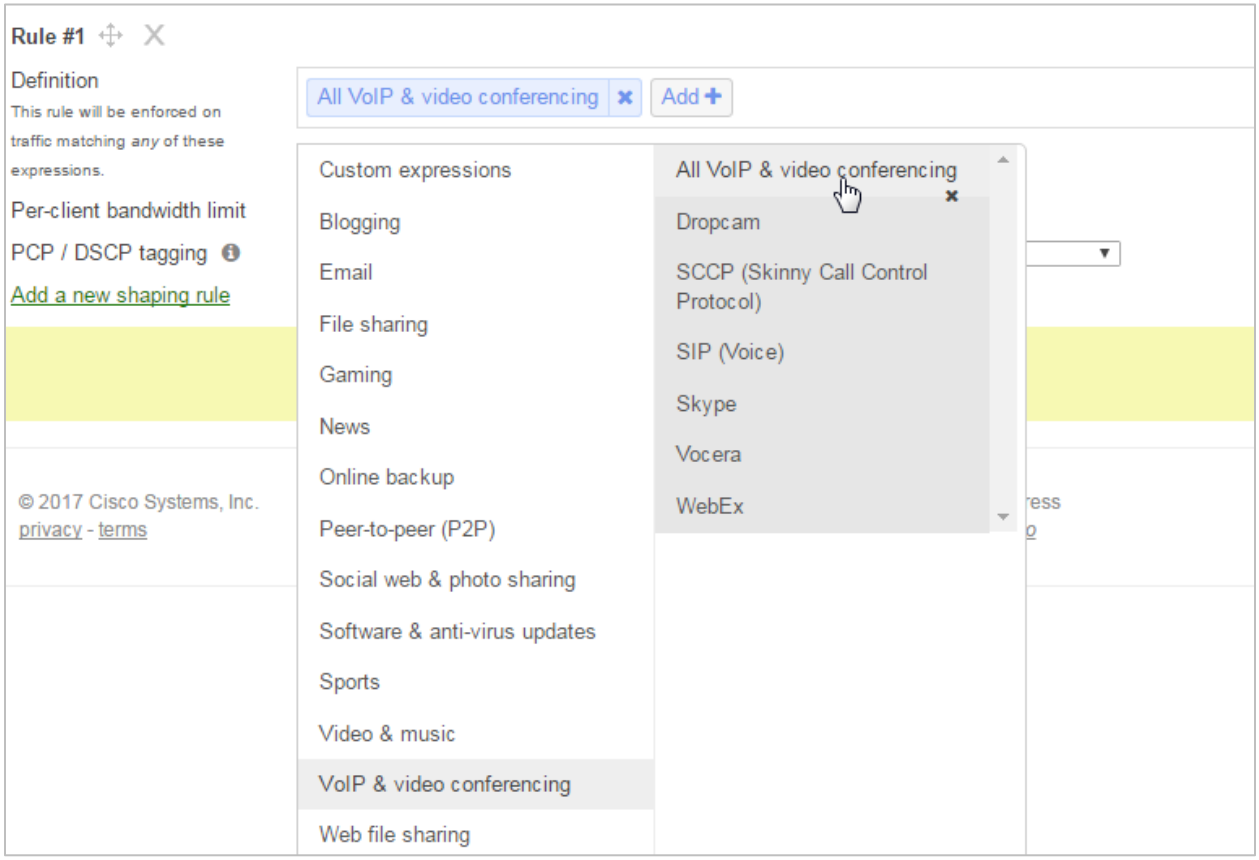
As recommended in the Cisco Meraki Wireless Voice Deployment Guide, the voice network was found to have better performance when the following traffic shaping procedures were followed.

1. Navigate to **Wireless> CONFIGURE> Firewall & traffic shaping.**
2. Select each SSID that will have voice traffic, one at a time, from the dropdown list by **SSID**.
3. Set the Per-client bandwidth limit to 5 Mbps.
4. Check the radio button to **Enable SpeedBurst**.
5. Ensure that the **Per-SSID bandwidth limit** is set to unlimited.
6. Ensure that **Shape traffic** is set to **Shape traffic on this SSID.**
7. For a VLAN that has no tagging, the **PCP** is not able to be tagged.
8. Set the **DSCP** tagging to 56 or whatever voice and video should have for the call server the phones are using.



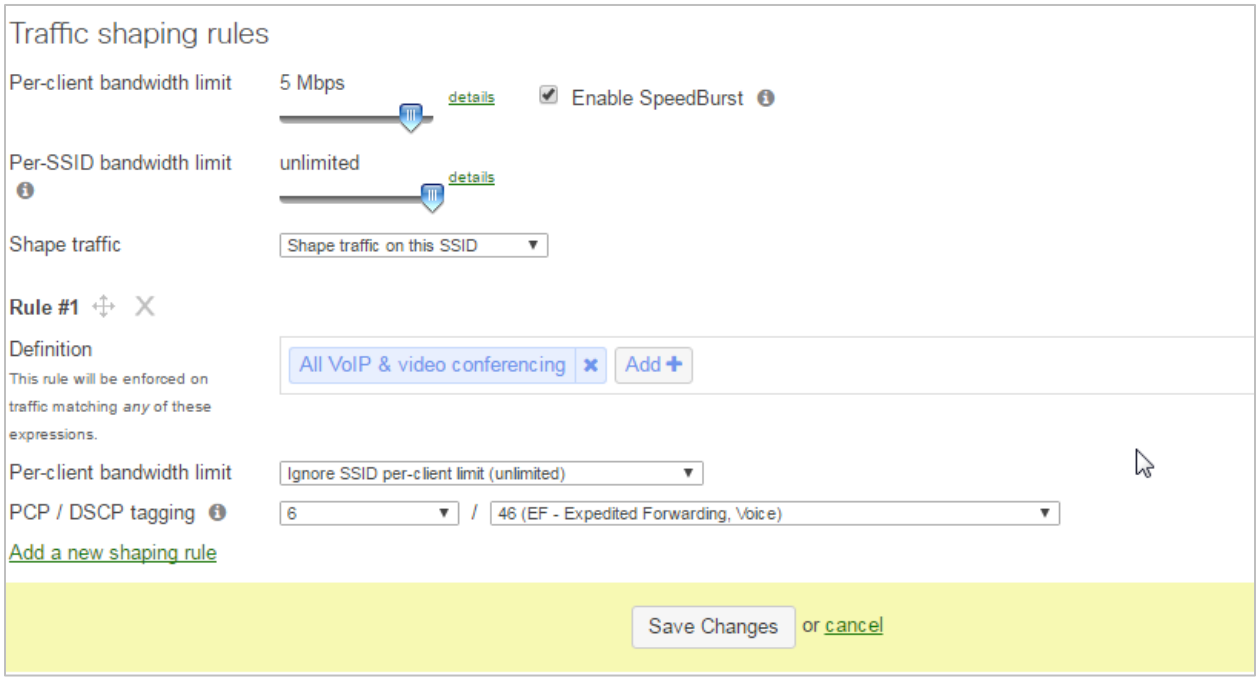
To define a rule:

1. Click **Add a new shaping rule**.
2. From the dropdown on the left, choose **VoIP & video conferencing** and from the dropdown on the right choose **All VoIP & video conferencing** and click on it**.**



3 If the VLAN is tagged, choose **6** for the **PCP** value as shown below.

4 Click **Save Changes** for each SSID configured.

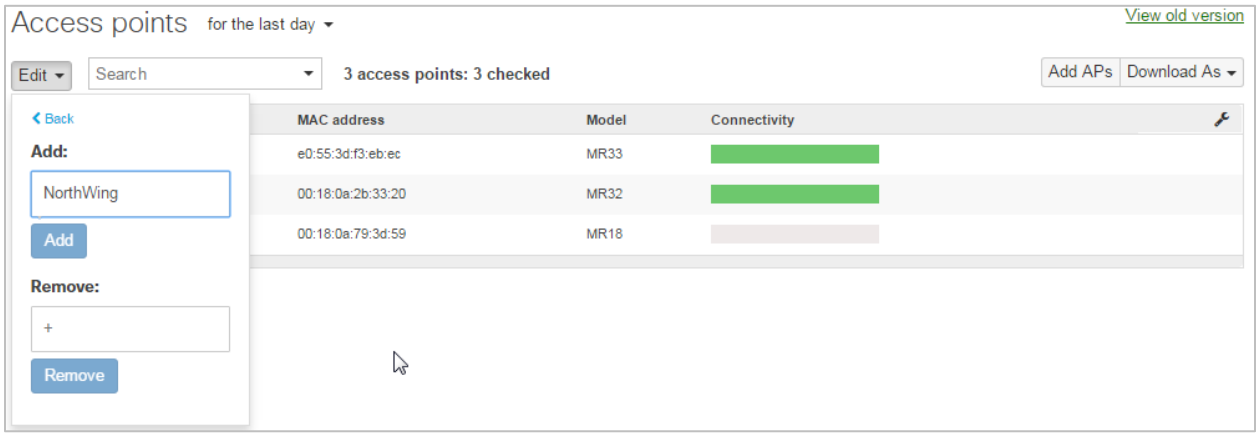


Assigning SSIDs to Access Points

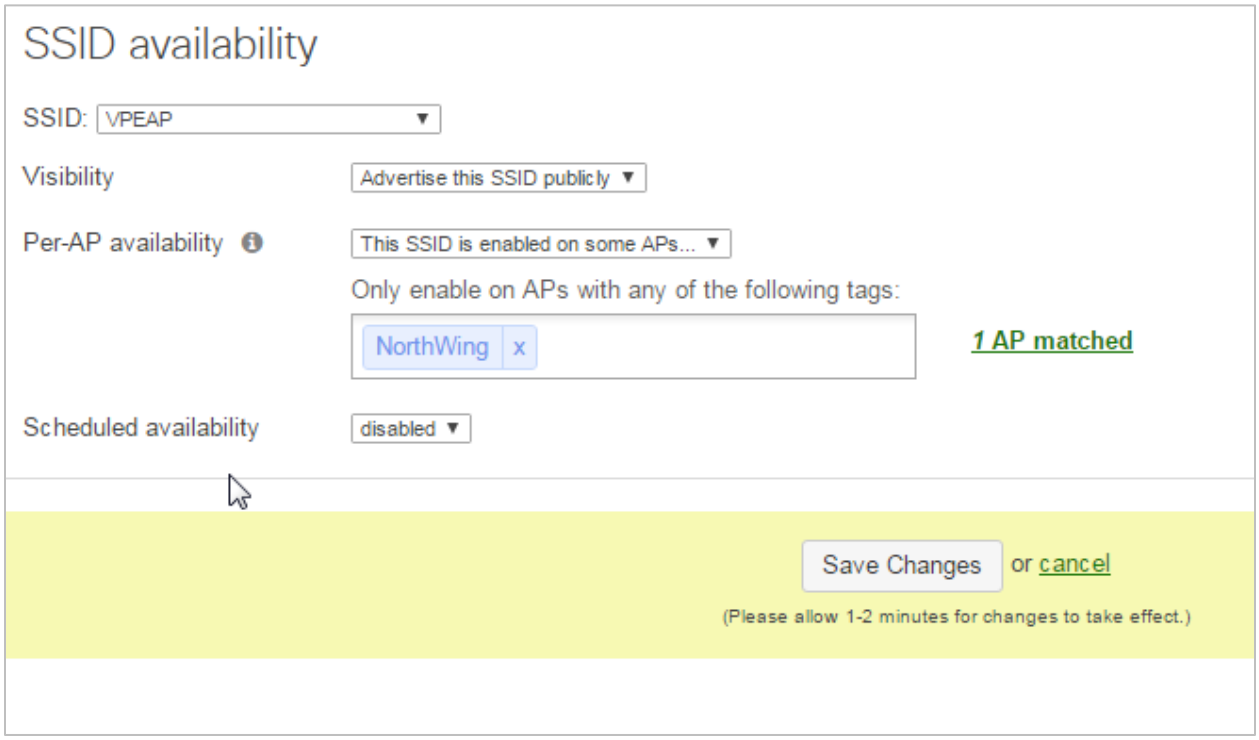
All SSID's that are enabled are assigned to all SSID's in the network by default.

If it is desired to have some SSID's present on only some access points, the access points may be tagged.

1. Navigate to **Wireless> MONITOR> Access points.**
2. Check the box(es) of the AP(s) you'd like to tag.
3. Select **Tag** from the **Edit** dropdown list.
4. In the **Add** box, enter a name for the tag you are creating. (Similarly, tags can be removed if desired.)



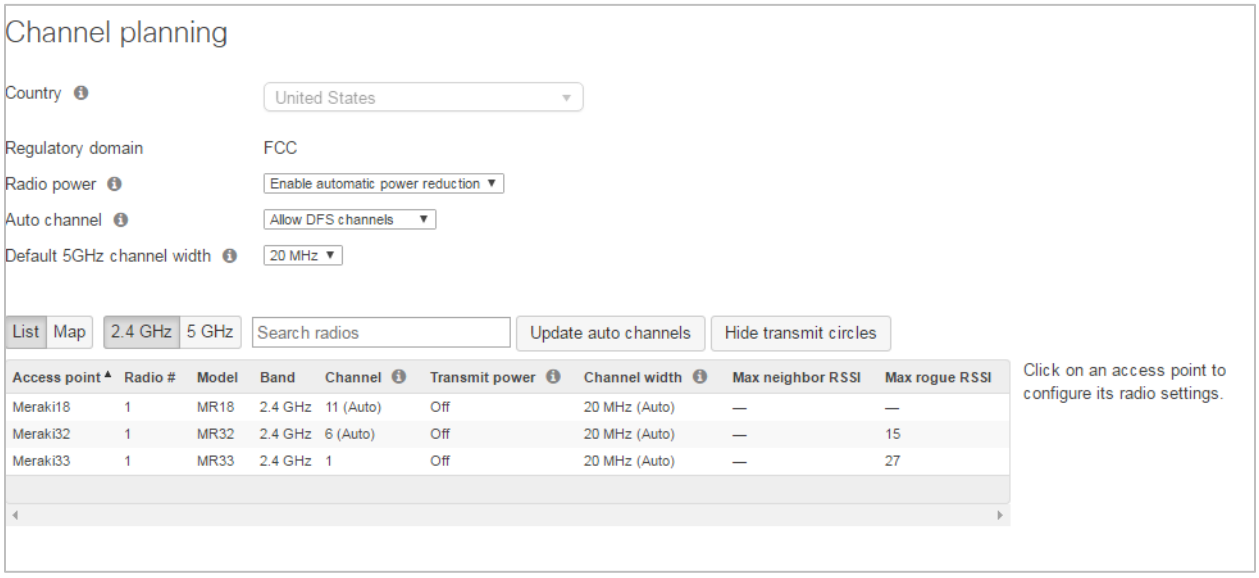
5. Navigate to **Wireless> CONFIGURE> SSID availability**.
6. Select each AP in turn from the dropdown list.
7. If desired, set the **Per-AP availability** to **This SSID is enabled on some APs.**
8. Enter the tags to select the correct APs from the dropdown list in the **Only enable on APs with any of the following tags:** box.
9. Click on the **Save Changes** box.


SSID availability
SSID: VPEAP
Visibility
Advertise this SSID publicly
Per-AP availability
This SSID is enabled on some APs...
Only enable on APs with any of the following tags:
NorthWing x
1 AP matched
Scheduled availability
disabled
Save Changes
or cancel
(Please allow 1-2 minutes for changes to take effect.)

Radio settings

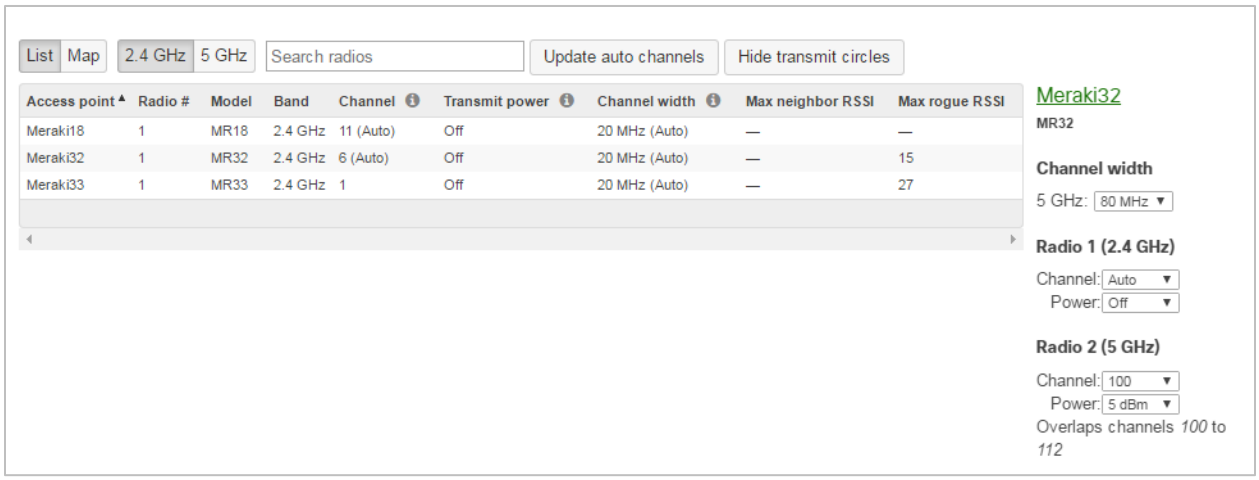
The radio settings for each AP must be set.

1. Navigate to **Wireless> CONFIGURE> Radio settings**.
2. Click on an access point name in the list.



3. Click the 2.4 GHz or 5 GHz tab in the heading of the list as necessary.

4 From the settings list that appears on the right, choose channels and power settings as desired.



Note: Actual channel may be different than the manual channel setting

Due to radar or interference detection, the system may change the AP's channel.

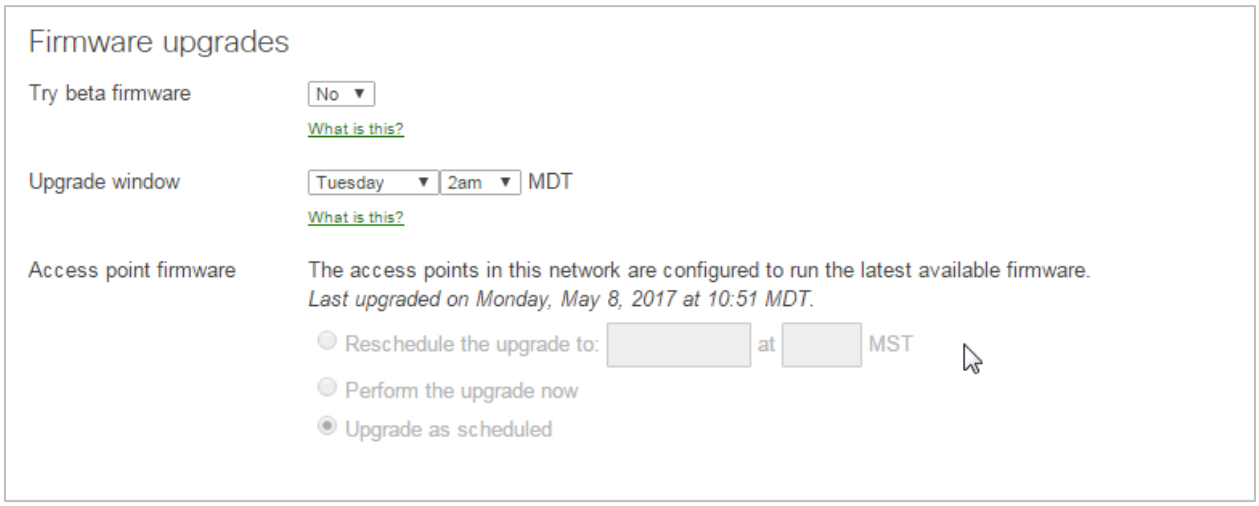
The actual channel of an AP may be viewed by navigating to **Wireless> MONITOR> Access points** and clicking on the name of an access point.

Chapter 5: Firmware Upgrades

Cisco Meraki strives to minimize the administrative overhead of its systems. One of the ways this is accomplished is by centrally managing the software upgrade process.

1. To set up the timing of the upgrade, navigate to **Network-wide> CONFIGURE> General.**
2. Scroll to the **Firmware upgrades** sections and enter settings as desired. More information about this feature is available on CiscoMerakiFirmwareFAQ.

   Note that the time of the last upgrade is displayed.



3. To see the currently installed firmware version and determine which version changes are available, navigate to **Organization> Firmware upgrades** and choose the tab **All networks**. The use of this screen is described in Managing_Firmware_Upgrades.

****END OF DOCUMENT****