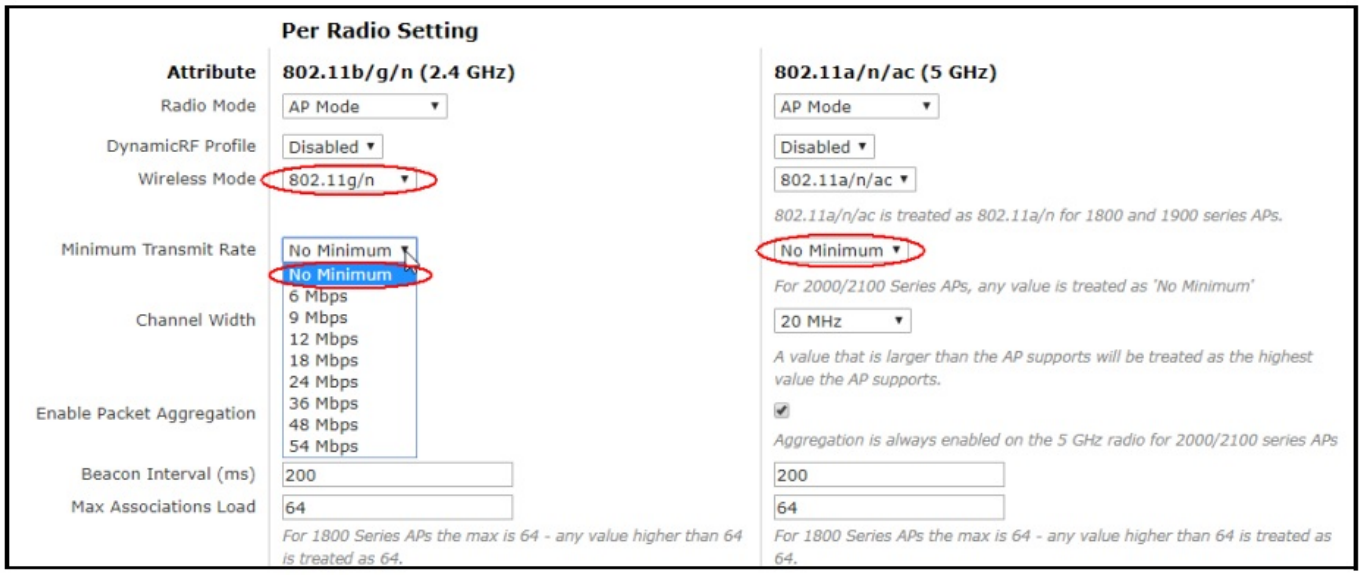
ADTRAN 6PCDCG0004-29B Bluesocket vWLAN Best Practices and Recommended Settings User Guide

Contents

ADTRAN 6PCDCG0004-29B Bluesocket vWLAN Best Practices and Recommended Settings



Product Information

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- **Document Title:** vWLAN Best Practices & Recommended Settings
- **Document Number:** 6PCDCG0004-29B
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INSTRUCTION

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Document Revision History

- Rev A October 2017 Initial release.
- Rev B December 2021 Updated document template, reorganized material, and updated recommendations.

Overview

There are certain default settings recommended for use with any generalized deployment of a (Virtual Wireless Local Area Network) vWLAN. This guide lists the ADTRAN recommended settings for AP templates, SSIDs,

wireless domains, and other vWLAN features, explaining why a setting is recommended and providing instructions for configuring the settings in the wireless access point (AP).

AP Template Settings

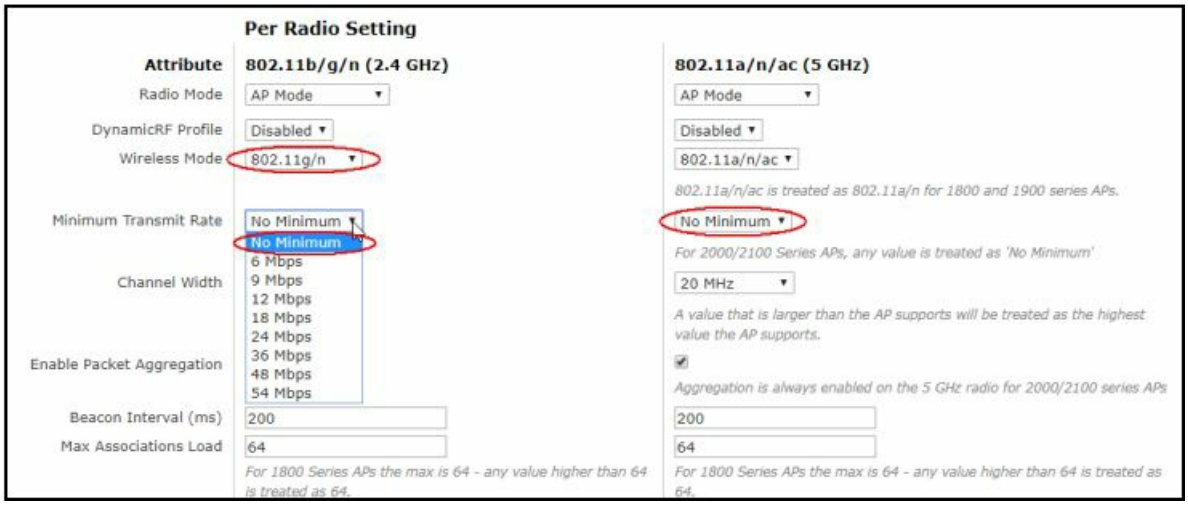
AP templates are templates used to configure multiple APs to the same parameters. Large installations or multi-site deployments of vWLAN require the ability to group APs to apply a similar configuration to them, which is accomplished in vWLAN by AP templates. Each template has its own unique configuration for settings, radios, firmware, and SSIDs. Each AP is associated to an AP template, and inherits the configuration contained within in the template. If an AP is moved to a different template, then the AP inherits the configuration from the new template. By default, each AP connected to the vWLAN is configured with a default template.

The following sections cover the recommended settings for specific portions of AP template configuration. Included in this section are the recommended Minimum Transmit Rate, Beacon, Packet Aggregation, and AP mode settings. All AP template configurations are accessed by navigating to the Configuration tab, and then selecting Wireless > AP Templates.

Minimum Transmit Rate (MTR)

The MTR should be set to No Minimum on each radio. MTR can have large impacts on roaming behavior, but not all client devices work well with this setting. A minimum rate should only be set in specific circumstances when there are roaming behavior problems on site. Unless a distinct benefit is observed when a minimum rate is set, it should be disabled.

From the Configuration tab, select Wireless > AP Templates, and select the name of the AP template assigned to the target APs. Under Per Radio Settings is a row labeled Minimum Transmit Rate, and a corresponding drop-down selection box in each of the 2.4 GHz and 5 GHz columns. Select No Minimum as shown below.



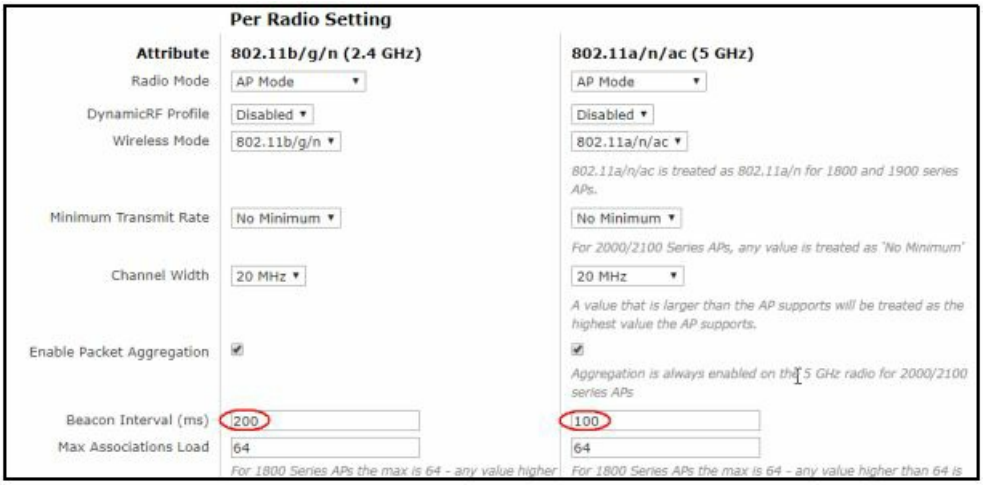
NOTE: It is also recommended that the Wireless Mode for the 2.4 GHz radio be set to 802.11g/n (disabling 802.11b).
Enabling DynamicSteering and having smaller coverage cells will have a more positive effect on roaming than this setting in most cases.

Beacon Settings

The Beacon Interval should be set to 200 ms on the 2.4 GHz range and 100 ms on the 5 GHz range. Some clients are influenced by this behavior and will lean towards connecting in the 5 GHz range, which provides a better overall experience for all wireless users in a given area. Connecting in the 5GHz range generally results in better performance and a more stable connection.

NOTE: Only set the beacon interval to 100 if you do not have three or more SSIDs.

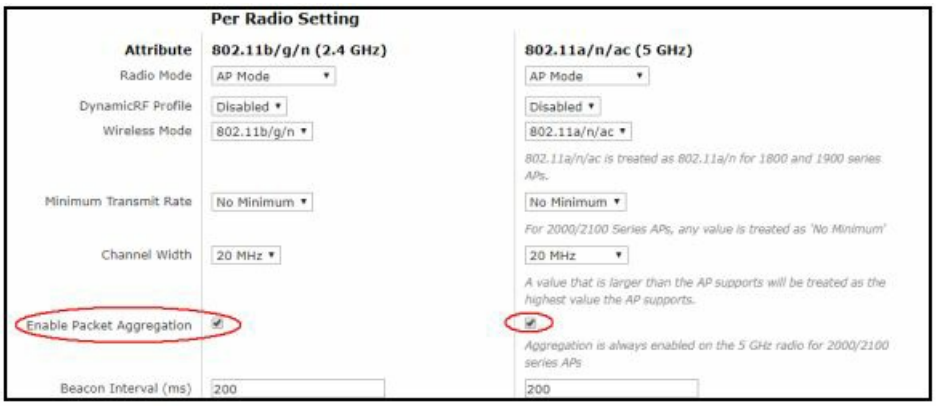
From the Configuration tab, select Wireless > AP Templates, and then select the AP template assigned to the target APs. Under Per Radio Settings is a row labeled Beacon Interval (ms) and a corresponding text box in each of the 2.4 GHz and 5 GHz columns. Enter the values into the fields as shown below.



Packet Aggregation

ADTRAN recommends that packet aggregation always be enabled. Disabling packet aggregation can significantly reduce the throughput of wireless client connections. From the Configuration tab, select Wireless > AP Templates > and then select the AP template assigned to the target APs. Under Per Radio

Setting is a row labeled Enable Packet Aggregation and a corresponding check box in each of the 2.4 GHz and 5 GHz columns. Ensure that both check boxes are filled in, as shown below,



AP Mode

The radio mode for both radios on the AP should be set to AP Mode, indicating that the radio services clients in the 802.11 infrastructure. In some cases, the AP radio may be set to AP/Sensor Client Aware Mode by default, so ADTRAN recommends that you verify the radio setting in the AP template is set to AP Mode.

From the Configuration tab, select Wireless > AP Templates > and then select the AP template assigned to the target APs. In the Per Radio Setting menu, verify that the Radio Mode is set to AP Mode as shown below. If a different radio mode is specified, select AP Mode from the Radio Mode drop-down menu to change the radio mode. The radio modes are set independently for each radio and will need to be specified in each of the 2.4 GHz and 5 GHz columns.

SSID Settings

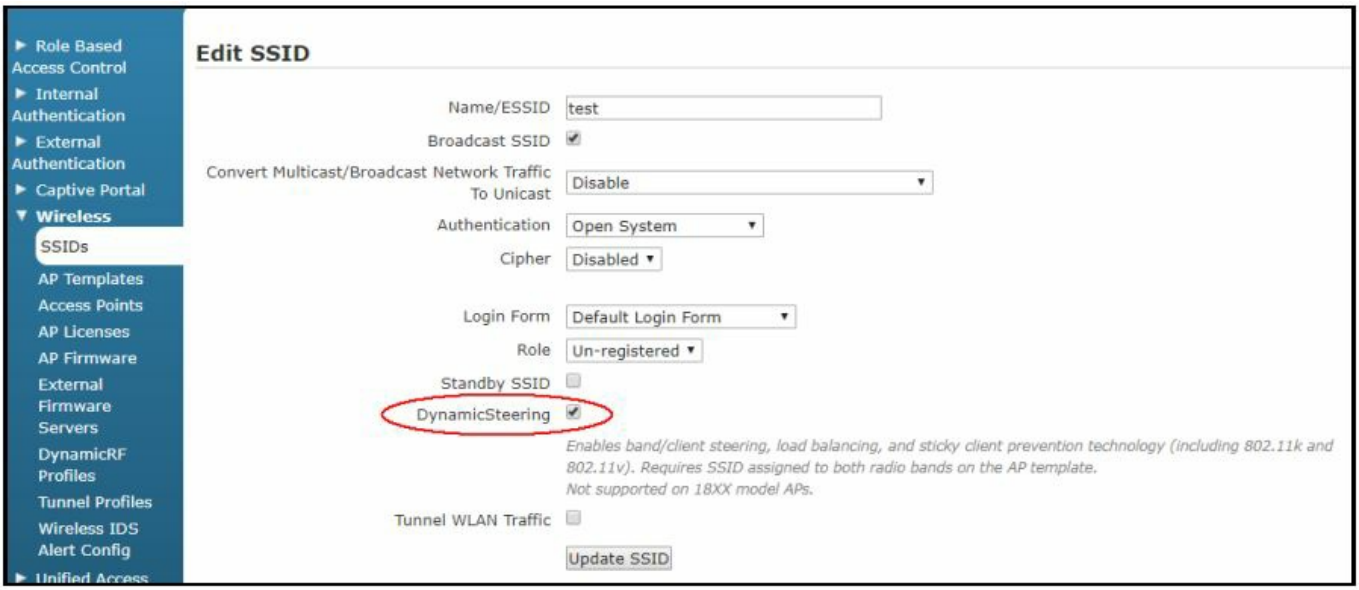
SSIDs represent a particular 802.11 wireless LAN. In vWLAN, there can be up to 16 SSIDs per AP (8 per radio). An SSID provides a unique set of connection parameters by broadcasting independent security attributes. An SSID can be configured for both radios, for the 2.4 Ghz radio only, for the 5 GHz radio only, or for neither radio. In addition, SSIDs can be linked to the login page viewed by customers, allowing you to specify a specific login page based on SSID.

The following sections cover the recommended settings for specific portions of SSID configuration. Included in this section are the recommended DynamicSteering and Multicast to Unicast conversion settings. All AP template configurations are accessed by navigating to the Configuration tab, and then selecting Wireless > SSIDs.

DynamicSteering

DynamicSteering is ADTRAN's band steering technology. This feature helps clients make dual band radio load balancing decisions based on channel utilization and can help roaming situations where clients are sticking to an AP with a low signal.

From the Configuration tab, select Wireless > SSIDs, and select the name of the SSID you want to configure. Ensure that there is a check mark next to the option DynamicSteering.

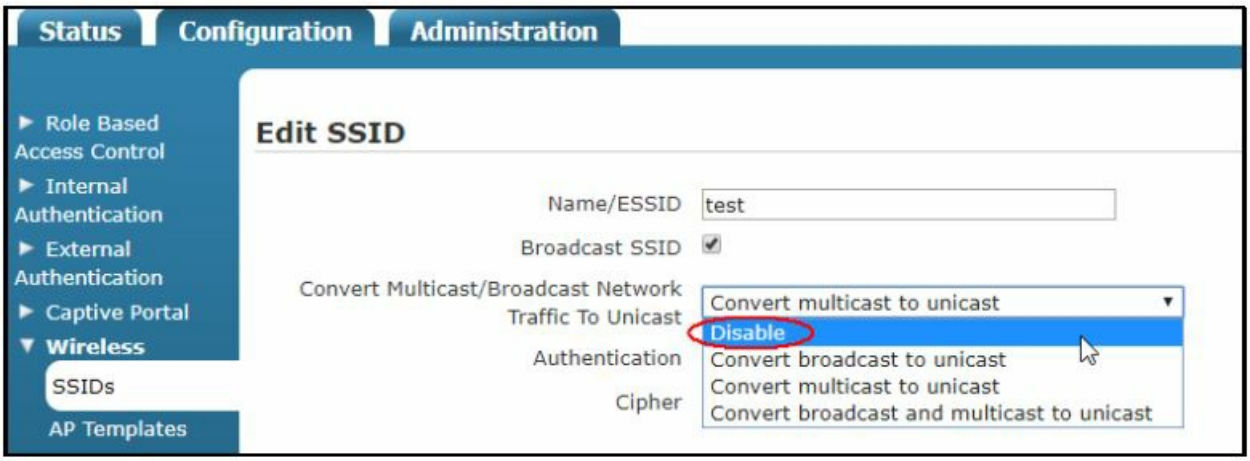


Multicast to Unicast Conversion

The Convert Multicast/Broadcast Network Traffic to Unicast setting should be disabled. ADTRAN recommends that this setting be disabled because it can have a detrimental impact on client connectivity and throughput.

From the Configuration tab, select Wireless > SSIDs, and select the name of the SSID you want to configure.

Select Disable from the drop-down menu next to Convert Multicast/Broadcast Network Traffic to Unicast.



NOTE: Refer to the Enabling Multicast Support for vWLAN 2.3 and Later configuration guide available in the ADTRAN Support Community for more in depth information regarding this feature.

Domain System Settings

Domains are separate management domain partitions within the vWLAN instance that are used to subdivide the vWLAN management. You can specify certain actions based on whether users or devices are authenticated or not within each domain.

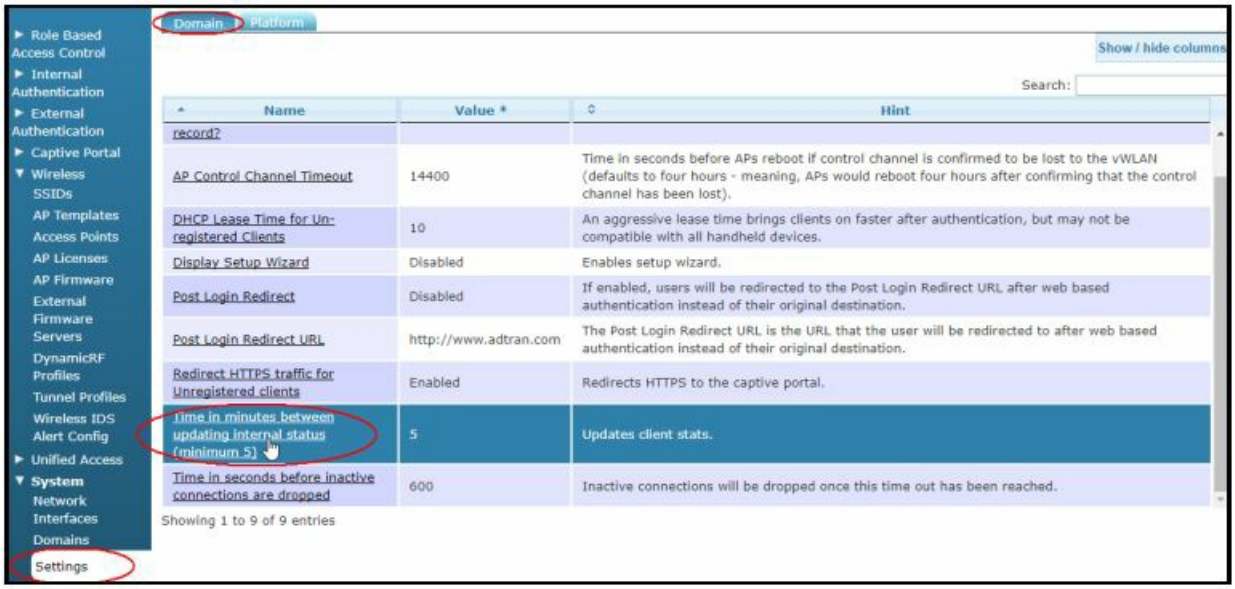
The following sections cover the recommended settings for specific portions of domain system configurations. Included in this section are the recommended internal status timer and HTTPS redirect settings. All domain system configurations are accessed by navigating to the Configuration tab, and selecting System > Settings, and then selecting the Domain tab.

Internal Status Timer

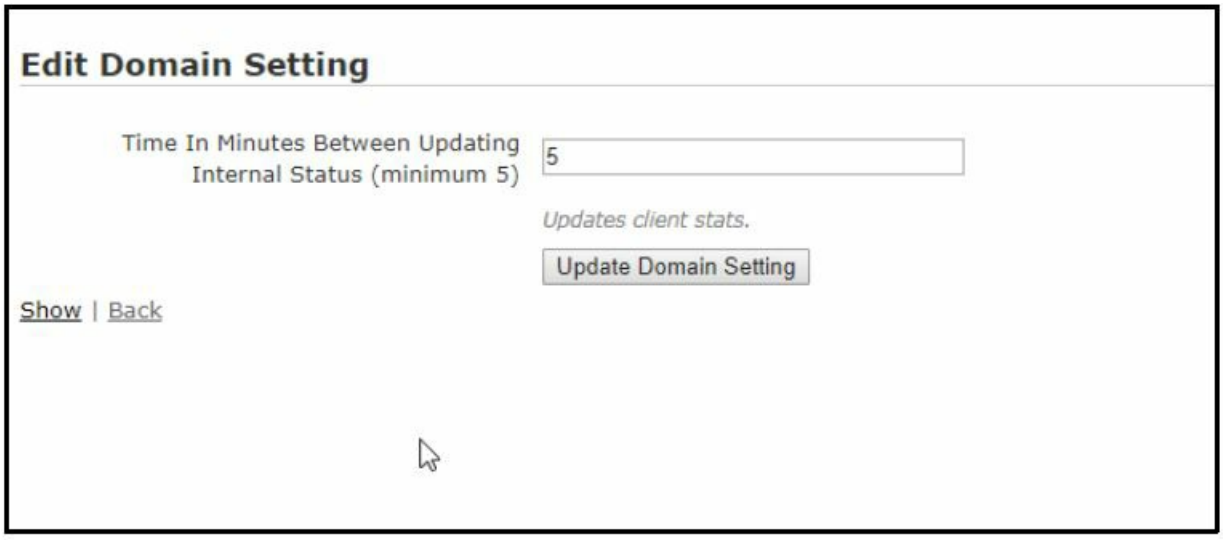
This internal status timer is related to the frequency that the vWLAN server polls the APs for client statistics. The recommended setting and default value for the internal status timer is 5 minutes. The only time this setting should be increased is for heavily utilized servers. If a server has more than 500 APs or is servicing more than 1000 clients, and there is noticeable sluggishness in the UI, then it may be beneficial to increase this value to 10 or 15 minutes.

NOTE: If you increase the status timer interval and is there is no noticeable change, then ADTRAN recommends that this setting be reverted back to 5 minutes.

From the Configuration tab, select System > Settings. Under the Domain tab, select the entry titled Time in minutes between updating internal status (minimum 5).

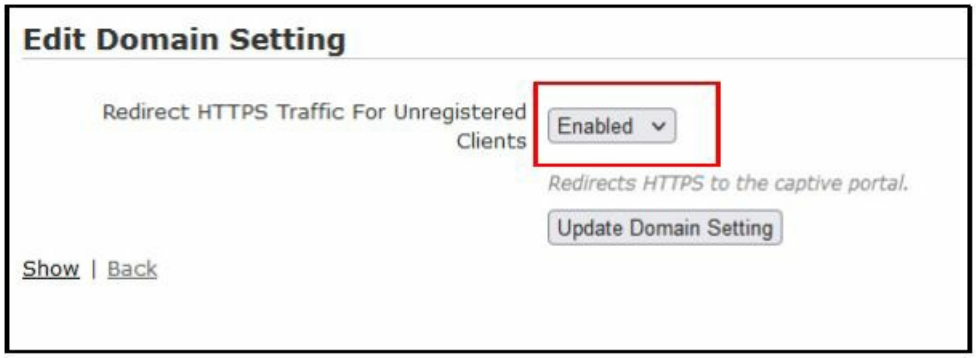


Verify that the value for the internal status time is set to 5.



Redirect HTTPS Traffic for Unregistered Clients
ADTRAN recommends that redirection of HTTPS traffic for unregistered clients be enabled. When HTTPS redirects are enabled, unregistered clients will be redirected to a configured Captive Portal before being allowed to connect to the wireless network. From the Configuration tab, select System > Settings. Under the Domain tab, select the entry titled Redirect HTTPS traffic for Unregistered clients.

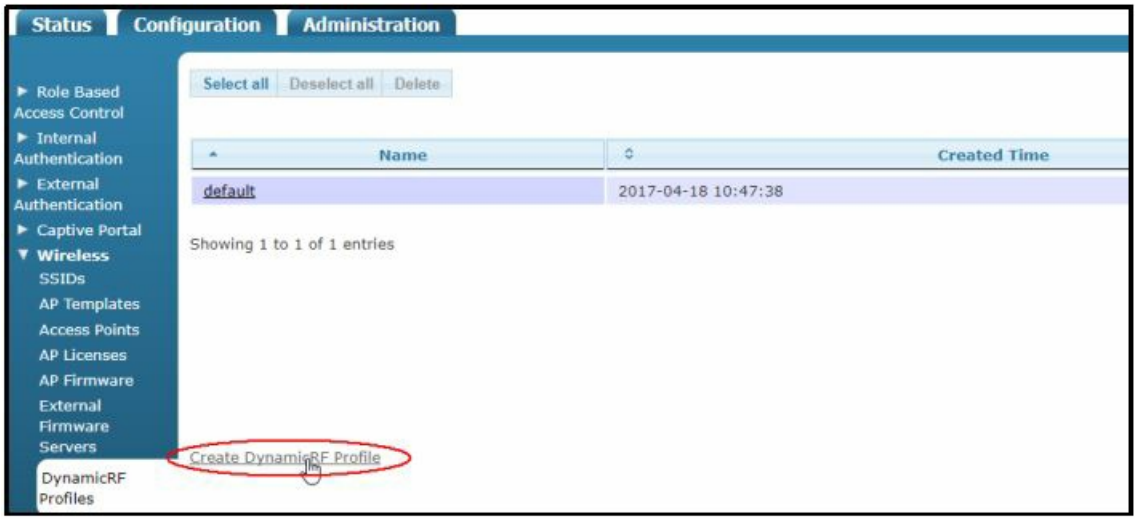
Verify that the Redirect HTTPS Traffic for Unregistered Clients is set to Enabled. If it is set to Disabled (default value), select Enabled from the drop-down menu and then select Update Domain Setting to save the changes.



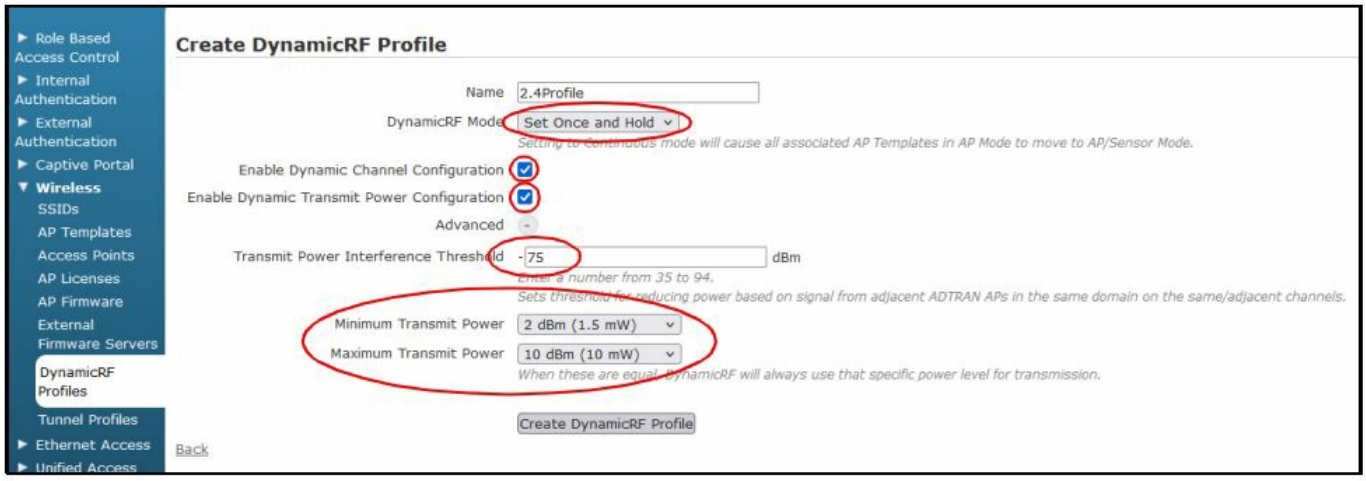
DynamicRF Template Settings

CAUTION: ADTRAN does not recommend using DynamicRF if you already have a stable wireless plan including static channel assignments and transmit power levels. DynamicRF is not intended to replace any intentional design plans.

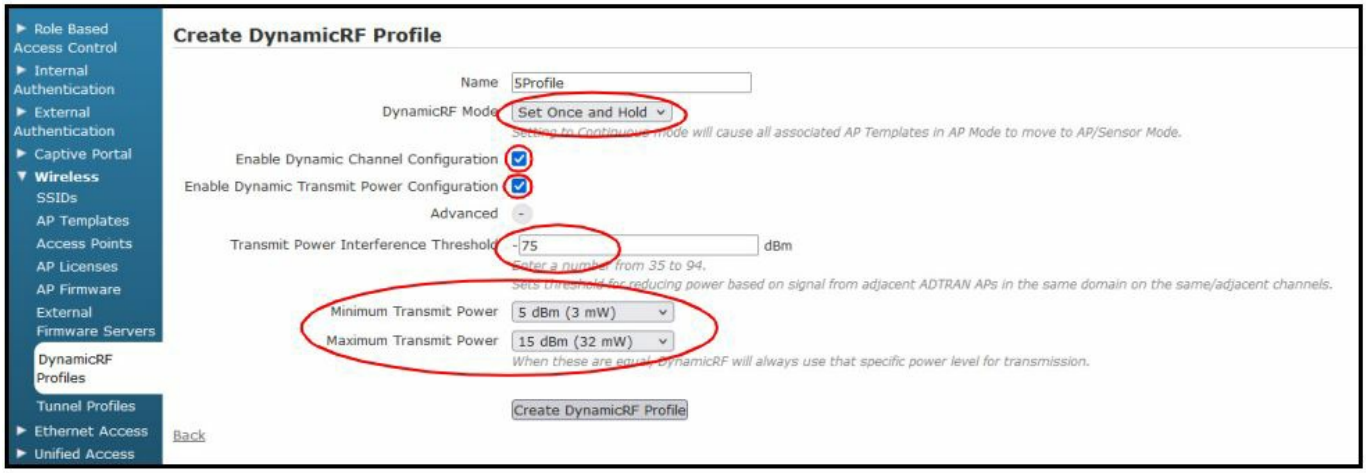
By default ADTRAN recommends a DynamicRF Profile be defined for the 2.4 GHz and 5 GHz radios independently. You will need to create two separate profiles. Start with the profile for 2.4G Hz. From the Configuration tab, select Wireless > DynamicRF Profiles > Create DynamicRF Profile (or select the name of an existing profile that you would like to modify).



DynamicRF Mode should be set to Set Once and Hold, and both Dynamic Channel Configuration and Dynamic Transmit Power Configuration should be enabled. Under the Advanced section for the 2.4 GHz Profile, it is recommended to set the Transmit Power Interference Threshold to -75dB, the Minimum Transmit Power to 2 dBm and the Maximum Transmit Power to 10 dBm.



Repeat the previous process to create a 5 GHz profile. Under the Advanced section for the 5 GHz Profile, it is recommended to set the Transmit Power Interference Threshold to -75dBm, the Minimum Transmit Power to 5 dBm and the Maximum Transmit Power to 15 dBm.



NOTE: The recommended values for the Dynamic RF profiles have been specified based on suggestions from independent vendor-neutral sources and are designed to provide the best potential outcome for the algorithm. Alterations beyond what is specified should only be made on an AP-by-AP basis. If the maximum value does not provide an adequate result at your site, ADTRAN recommends reaching out to your local sales resource to inquire about our Predictive Analysis and Site Survey offerings.

Contact Information

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References

- My Adtran Log In
- Warranty Information
- ADTRAN University
- Home - Adtran Support Community
- Home - Adtran Support Community
- Enabling Multicast Support for vWLAN 2.3 and Later - Adtran Support Community

- Enabling Multicast Support for vWLAN 2.3 and Later - Adtran Support Community
- Training