

Country Codes

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Information About Configuring Country Codes

Controllers and access points are designed for use in many countries with varying regulatory requirements. The radios within the access points are assigned to a specific regulatory domain at the factory (such as -E for Europe), but the country code enables you to specify a particular country of operation within that regulatory domain (such as FR for France or ES for Spain). Configuring a country code ensures that each radio's broadcast frequency bands, interfaces, channels, and transmit power levels are compliant with country-specific regulations.

The following are some guidelines for configuring country codes:

- Generally, you configure one country code per controller, the one matching the physical location of the controller and its access points. However, you can configure more than one country code per controller. Prior to Release 8.2, you could configure up to 20 country codes per controller; from Release 8.2 onwards, you can configure up to 110 country codes per controller. This multiple-country support enables you to manage access points in various countries from a single controller.

Note

- The 2.4-GHz band radio regulations are the same for the EU and China. Hence, under the 2.4-GHz radio band, it is possible to see -H domain configured APs (China) with the -E AP list in the controller.
- Release 8.5.140.0 and later 8.5.x releases support –E domain access points with controller country code set up for Morocco (MA).

- For a complete list of country codes supported per product, see https://www.cisco.com/c/dam/assets/prod/wireless/wireless-compliance-tool/index.html.
- When the multiple-country feature is being used, all controllers that are going to join the same RF group must be configured with the same set of countries, configured in the same order.

- When multiple countries are configured and the RRM auto-RF feature is enabled, the RRM assigns the channels that are derived by performing a union of the allowed channels per the AP country code. The APs are assigned channels by the RRM based on their PID country code. APs are only allowed to use legal frequencies that match their PID country code. Ensure that your AP's country code is legal in the country that it is deployed.

Information About Japanese Country Codes

Country codes define the channels that can be used legally in each country. These country codes are available for Japan:

- JP: Allows only –J radios to join the controller
- J2: Allows only –P radios to join the controller
- J3: Uses the –U frequencies, but allows –U, –P, and –Q (other than 1550/1600/2600/3600) radios to join the controller
- J4: Allows 2.4G JPQU and 5G PQU to join the controller.

Note The 1550, 1600, 2600, and 3600 APs require J4.

See the Channels and Maximum Power Settings for Cisco Aironet Lightweight Access Points document for the list of channels and power levels supported by access points in the Japanese regulatory domains.

Restrictions for Configuring Country Codes

- APs can only operate on the channels for the countries that they are designed for.

Note If an AP was already set to a higher legal power level or is configured manually, the power level is limited only by the particular country to which that AP is assigned.

Configuring Country Codes (GUI)

Procedure

Step 1 Disable the 802.11 networks as follows:

a) Choose **Wireless** > **802.11a/n/ac** > **Network**.
b) Uncheck the **802.11a Network Status** check box.
c) Click **Apply**.
d) Choose **Wireless** > **802.11b/g/n** > **Network**.

e) Uncheck the **802.11b/g Network Status** check box.
f) Click **Apply**.

Step 2 Choose **Wireless** > **Country** to open the Country page.

Step 3 Select the check box for each country where your access points are installed. If you selected more than one check box, a message appears indicating that RRM channels and power levels are limited to common channels and power levels.

Step 4 Click **OK** to continue or **Cancel** to cancel the operation.

Step 5 Click **Apply**.

If you selected multiple country codes in *Step 3*, each access point is assigned to a country.

Step 6 See the default country chosen for each access point and choose a different country if necessary as follows:

Note
If you remove a country code from the configuration, any access points currently assigned to the deleted country reboot and when they rejoin the controller, they get re-assigned to one of the remaining countries if possible.

a) Perform one of the following:
   - Leave the 802.11 networks disabled.
   - Reenable the 802.11 networks and then disable only the access points for which you are configuring a country code. To disable an access point, choose **Wireless** > **Access Points** > **All APs**, click the link of the desired access point, choose **Disable** from the Status drop-down list, and click **Apply**.

b) Choose **Wireless** > **Access Points** > **All APs** to open the All APs page.
c) Click the link for the desired access point.
d) Choose the **Advanced** tab to open the All APs > Details for (Advanced) page.
   The default country for this access point appears in the Country Code drop-down list.
e) If the access point is installed in a country other than the one shown, choose the correct country from the drop-down list. The box contains only those country codes that are compatible with the regulatory domain of at least one of the access point's radios.
f) Click **Apply**.
g) Repeat these steps to assign all access points joined to the controller to a specific country.
h) Reenable any access points that you disabled in *Step a*.

Step 7 Reenable the 802.11 networks if you did not enable them in *Step 6*.

Step 8 Click **Save Configuration**.

Configuring Country Codes (CLI)

Procedure

Step 1 See a list of all available country codes by entering this command:

show country supported

Step 2 Disable the 802.11 networks by entering these commands:

config 802.11a disable network

config 802.11b disable network

Step 3 Configure the country codes for the countries where your access points are installed by entering this command:

config country *code1*[,*code2*,*code3*,...]

If you are entering more than one country code, separate each by a comma (for example, **config country US,CA,MX**).

Step 4 Enter **Y** when prompted to confirm your decision.

Step 5 Verify your country code configuration by entering this command:

show country

Step 6 See the list of available channels for the country codes configured on your controller by entering this command:

show country channels

Step 7 Save your changes by entering this command:

save config

Step 8 See the countries to which your access points have been assigned by entering this command:

To see a summary of specific access point you can specify the access point name. You can also use wildcard searches when filtering for access points.

show ap summary

Step 9 If you entered multiple country codes in *Step 3*, follow these steps to assign each access point to a specific country:

a) Perform one of the following:

- Leave the 802.11 networks disabled.
- Reenable the 802.11 networks and then disable only the access points for which you are configuring a country code. To Reenable the networks, enter this command:

  config 802.11{**a** | **b**} **enable network**

  To disable an access point, enter this command:

  config ap disable *ap_name*

b) To assign an access point to a specific country, enter this command:

config ap country *code* {*ap_name* | **all**}

Make sure that the country code you choose is compatible with the regulatory domain of at least one of the access point's radios.

Note
If you enabled the networks and disabled some access points and then run the **config ap country** *code* **all** command, the specified country code is configured on only the disabled access points. All other access points are ignored.

c) To reenable any access points that you disabled in *Step a*, enter this command:

config ap enable *ap_name*

Step 10 If you did not reenable the 802.11 networks in *Step 9*, enter these commands to reenable them now:

config 802.11{**a** | **b**} **enable network**

Step 11 Save your changes by entering this command:

save config