Configuring VLAN Groups

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

Prerequisites for VLAN Groups

A VLAN should be present in the switch to be able to add it to the VLAN group.

Restrictions for VLAN Groups

The number of VLANs mapped to a VLAN group is not limited by Cisco IOS Software Release. But if the number of VLANs in a VLAN group exceed the recommended value of 32, the mobility behavior is unexpected and in the VLAN group, L2 multicast breaks for some VLANs. So it is the responsibility of the administrator to configure feasible number of VLANs in a VLAN group. When a VLAN is added to a VLAN group mapped

to a WLAN which already has 32 VLANs, a warning is generated. But when a new VLAN group is mapped to a WLAN with more than 32 VLANs, an error is generated.

For expected behavior of the VLAN group, the VLANs mapped in the group must be present in the switch. The static IP client behavior is not supported.

Information About VLAN Groups

Whenever a wireless client connects to a wireless network (WLAN), the client is placed in a VLAN that is associated with the WLAN. In a large venue such as an auditorium, a stadium, or a conference room where there are numerous wireless clients, having only a single WLAN to accommodate many clients might be a challenge.

The VLAN group feature uses a single WLAN that can support multiple VLANs. The clients can get assigned to one of the configured VLANs. This feature maps a WLAN to a single VLAN or multiple VLANs using the VLAN groups. When a wireless client associates to the WLAN, the VLAN is derived by an algorithm based on the MAC address of the wireless client. A VLAN is assigned to the client and the client gets the IP address from the assigned VLAN. This feature also extends the current AP group architecture and AAA override architecture, where the AP groups and AAA override can override a VLAN or a VLAN group to which the WLAN is mapped.

Related Topics

Creating VLAN Groups (CLI), on page 2

How to Configure VLAN Groups

Creating VLAN Groups (CLI)

SUMMARY STEPS

1. **configure terminal**
2. **vlan group** *WORD* **vlan-list** *vlan-ID*
3. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Switch# configure terminal`	Enters global command mode.

	Command or Action	Purpose
Step 2	**vlan group** *WORD* **vlan-list** *vlan-ID* **Example:** `Switch(config)#vlan group vlangrp1 vlan-list 91-95`	Creates a VLAN group with the given group name (vlangrp1) and adds all the VLANs listed in the command. The VLAN list ranges from 1 to 4096 and the recommended number of VLANs in a group is 32.
Step 3	**end** **Example:** `Switch(config)#end`	Exits the global configuration mode and returns to privileged EXEC mode. Alternatively, press **CTRL-Z** to exit the global configuration mode.

Related Topics

Information About VLAN Groups, on page 2

Removing VLAN Group (CLI)

SUMMARY STEPS

1. **configure terminal**
2. **vlan group** *WORD* **vlan-list** *vlan-ID*
3. **no vlan group** *WORD* **vlan-list** *vlan-ID*
4. **end**

DETAILED STEPS

Step 1 **configure terminal**

Example:
`Switch# configure terminal`
Enters global command mode.

Step 2 **vlan group** *WORD* **vlan-list** *vlan-ID*

Example:
`Switch(config)#vlan group vlangrp1 vlan-list 91-95`
Creates a VLAN group with the given group name (vlangrp1) and adds all the VLANs listed in the command. The VLAN list ranges from 1 to 4096 and the recommended number of VLANs in a group is 32.

Step 3 **no vlan group** *WORD* **vlan-list** *vlan-ID*

Example:
`Switch(config)#no vlan group vlangrp1 vlan-list 91-95`

Removes the VLAN group with the given group name (vlangrp1).

Step 4 **end**

Example:

```
Switch(config)#end
```

Exits the global configuration mode and returns to privileged EXEC mode. Alternatively, press **CTRL-Z** to exit the global configuration mode.

Creating VLAN Groups (GUI)

To create a VLAN group using the switch web UI, you must:

Step 1 Choose **Configuration > Controller > System > VLAN** > **VLAN Group.**
The VLAN Group page appears. You must provide values for all parameters listed in the VLAN Group window.

Parameter	Description
VLAN Group Name	Group name for the VLANs.
VLAN List	The VLAN list to configure the mesh access point (MAP) access port.

Step 2 Click **Apply**.

Adding a VLAN Group to WLAN (CLI)

SUMMARY STEPS

1. **configure terminal**
2. **wlan** *WORD number*
3. **client vlan** *WORD*
4. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Switch# configure terminal`	Enters global command mode.
Step 2	**wlan** *WORD number* **Example:** `Switch(config)#wlan wlanname 512`	Enables the WLAN to map a VLAN group using an identifier. The WLAN identifier values range from 1 to 512.
Step 3	**client vlan** *WORD* **Example:** `Switch(config-wlan)#client vlan vlangrp1`	Maps the VLAN group to the WLAN by entering the VLAN identifier, VLAN group, or the VLAN name.
Step 4	**end** **Example:** `Switch(config-wlan)#end`	Exits the global configuration mode and returns to privileged EXEC mode . Alternatively, press **CTRL-Z** to exit the global configuration mode.

Adding a VLAN Group to WLAN (GUI)

To add a VLAN group to WLAN using the switch web UI, you must follow the steps defined in this procedure.

Step 1 To add a VLAN group to a WLAN, choose **Configuration > Wireless > WLANs > WLAN Profile > General.** The general parameter page of the WLAN group appears.

Step 2 Select the VLAN group values listed in the **Interface/Interface Group** drop-down list to associate the selected WLAN profile to a VLAN group.

Step 3 Click **Apply.**

Removing VLAN Groups (GUI)

To remove a VLAN groups using the switch web UI, you must:

Step 1 Choose **Configuration > Controller > System > VLAN** > **VLAN Group.**
The VLAN Group page appears, listing the following details of the VLAN groups associated with the switch.

Parameter	Description
VLAN Group Name	Group name for the VLANs.
VLAN List	The VLAN list to configure the mesh access point (MAP) access port.

Step 2 Check the checkbox of the VLAN group you need to delete from the VLAN group names displayed in the VLAN group list .
You will receive a confirmation message confirming deletion of the selected VLAN group.

Step 3 Click **Ok**.

Viewing VLANs in VLAN Groups (CLI)

Commands	Description
`show vlan group`	Displays the list of VLAN groups with its name and the VLANs that are available.
`show vlan group group-name` **`<group_name>`**	Displays the specified VLAN group details.
`show wireless vlan group` **`<group_name>`**	Displays the specified wireless VLAN group details.

Viewing VLAN Groups (GUI)

To view a VLAN groups using the switch web UI, you must:

Step 1 Choose **Configuration > Controller > System > VLAN** > **VLAN Group.**
The VLAN Group page appears, listing the following details of the VLAN groups associated with the switch.

Parameter	Description
VLAN Group Name	Group name for the VLANs.
VLAN List	The VLAN list to configure the mesh access point (MAP) access port.

Step 2 Click **Apply**.

Where to Go Next

After configuring VLAN groups, you can configure the following:

- VLANs
- VLAN Trunking Protocol (VTP)
- VLAN trunks
- Voice VLANs

Additional References

Related Documents

Related Topic	Document Title
For complete syntax and usage information for the commands used in this chapter.	*VLAN Command Reference (Catalyst 3650 Switches)* *Layer 2/3 Command Reference (Catalyst 3650 Switches)*
VLAN access-maps	*Security Configuration Guide (Catalyst 3650 Switches)* *Security Command Reference (Catalyst 3650 Switches)*
VLAN and Mobility Agents	*Mobility Configuration Guide, Cisco IOS XE Release 3SE (Catalyst 3650 Switches)*
Cisco Flexible NetFlow	*Cisco Flexible NetFlow Configuration Guide, Cisco IOS XE Release 3SE (Catalyst 3650 Switches)* *Flexible Netflow Configuration Guide, Cisco IOS XE Release 3SE (Catalyst 3650 Switches)*
IGMP Snooping	*IP Multicast Routing Command Reference (Catalyst 3650 Switches)* *IP Multicast Routing Configuration Guide (Catalyst 3650 Switches)*
IPv6	*IPv6 Configuration Guide (Catalyst 3650 Switches)* *IPv6 Command Reference (Catalyst 3650 Switches)*
SPAN	*Network Management Command Reference (Catalyst 3650 Switches)* *Network Management Configuration Guide (Catalyst 3650 Switches)*

Related Topic	Document Title
Platform-independent configuration information	*Identity Based Networking Services Configuration Guide, Cisco IOS XE Release 3SE (Catalyst 3650 Switches)*

Error Message Decoder

Description	Link
To help you research and resolve system error messages in this release, use the Error Message Decoder tool.	https://www.cisco.com/cgi-bin/Support/Errordecoder/index.cgi

Standards and RFCs

Standard/RFC	Title
RFC 1573	Evolution of the Interfaces Group of MIB-II
RFC 1757	Remote Network Monitoring Management
RFC 2021	SNMPv2 Management Information Base for the Transmission Control Protocol using SMIv2

MIBs

MIB	MIBs Link
All supported MIBs for this release.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	http://www.cisco.com/support

Feature History and Information for VLAN Groups

Release	Modification
Cisco IOS XE 3.3SE	This feature was introduced.
Cisco IOS XE 3.3SE	VLAN GUI support.