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Chapter 1 Commands for WDS

1.1 AC configuration command

1.1.1 wds-mode rootap

Command: wds-mode rootap

Function: Configure WDS mode for network. Enable WDS function for AC and set it to Root AP mode.

Parameters: rootap: WDS mode is Root AP.

Default: Disabled.

Command Mode: Network Config.

Usage Guide: Enable WDS function for network and set it to Root AP mode.

Example:

Configure Root AP mode for network 100

AC(config-network)#network 100

AC(config-network)#wds-mode rootap

The Network has been enabled WDS rootap mode.

1.1.2 no wds-mode

Command: no wds-mode

Function: Disable WDS mode of network.

Parameters: None.

Default: Disabled wds mode.

Command Mode: Network Config.

Usage Guide: Disable wds function of network and reset wds configuration of network at same time.

Example: Disable wds mode of network 100.

AC(config-network)#network 100

AC(config-network)#no wds-mode

1.1.3 wds-remote-vap <macaddr>

Command: wds-remote-vap <macaddr>

Function: Configure wds remote vap mac of network. If root ap configured it, root ap can

only create wds connection withstatellite ap that remote mac correspond.

Parameters: <macaddr>: the remote ap WDS linked is used for link vap mac address of wds.

Default: None.

Command Mode: Network Config.

Usage Guide: Configure remote VAP mac address for create wds link for network, and notice users that the root ap only can create WDS link with the remote VAP.

Example:

Configure the wds remote vap mac as 00-03-0f-26-18-60 for network 100

```
AC(config-wireless)#network 100
```

```
AC(config-network)#wds-remote-vap 00-03-0f-26-18-60
```

The root AP will only be able to build WDS link with this remote AP..

1.1.4 no wds-remote-vap

Command: no wds-remote-vap

Function: Delete remote VAP MAC that used for create WDS in network.

Parameters: None.

Default: None.

Command Mode: Network Config.

Usage Guide: Delete remote VAP MAC address created WDS in network.

Example: Delete remote VAP MAC address created WDS in network 100.

```
AC(config-wireless)#network 100
```

```
AC(config-network)#no wds-remote-vap
```

1.1.5 ssid <name>

Command: ssid <name>

Function: Configure the SSID of WDS function. One WDS link must configure a SSID which at least have a character, the AC is configured none by default. If AC sends empty SSID, AP will enable the default ssid configuration.

Parameters: <name>, represent the network SSID, the length is 1-32 characters, including numbers, letters and special characters such as “-_+”.

Default: None.

Command Mode: Network Config.

Usage Guide: Configure wds ssid for network.

Example: Set t wds as the ssid of network

AC(config-network)#ssid wds

1.1.6 security mode {none | wpa-personal}

Command: security mode {none | wpa-personal}

Function: Configure authentication and encipher way network supported. WDS mode only supports none mode and wpa-personal mode.

Parameters: {none | wpa-personal}, none represents laws password, it means that it have none wireless authentication and encipher configuration. Wpa-personal represents configure security way as wpa-personal.

Default: none, namely laws password.

Command Mode: Network Config

Usage Guide: When configure wpa-personal as security way, wpa-key must be configured.

Example: Configure none as network authentication way.

AC(config-network)#security mode none

Configure wpa-personal as network authentication mode.

AC(config-network)#security mode wpa-personal

1.1.7 no security mode

Command: no security mode

Function: Delete configured authentication and encipher mode that network supported.

Parameters: None.

Default: none.

Command Mode: Network Config

Usage Guide: Set the authentication and encipher mode of network is default, namely laws password, and save configuration.

Example: Recover authentication and encipher mode of network to laws password.

AC(config-network)#no security mode

1.1.8 wpa key <value>

Command: wpa key <value>

Function: Configure WPA share key of network.

Parameters: <value> is a character string which include 8-63 characters.

Default: None.

Command Mode: Network Config

Usage Guide: Configure wpa key of network and save configuration. When configuring wpa-personal as security mode, users must configure wpa key.

Example: Set up wpa key of network as 12345678

AC(config-network)#wpa key 12345678

1.1.9 no wpa key

Command: no wpa key

Function: Delete configured network WPA share key.

Parameters: None.

Default: None.

Command Mode: network config

Usage Guide: Delete configured network wpa key and save configuration.

Example: Delete configured network wpa key.

AC(config-network)#no wpa key

1.1.10 agetime wds-list <value>

Command: agetime wds-list <value>

Function: Set the agetime of wds items.

Parameters: <value>, it ranges from 0 to 300, measured in minutes and 0 stands for no ageing.

Default: 60 minutes.

Command Mode: Wireless Config

Usage Guide: Configure the agetime of wds items, measured in minutes. The items that no update over agetime will be deleted automatically.

Example: Set the wds items agetime as 30 minutes.

AC(config-wireless)#agetime wds-list 30

1.1.11 no agetime wds-list

Command: no agetime wds-list

Function: Recover the default of wds items agetime, the default is 60 minutes.

Parameters: None.

Default: 60 minutes.

Command Mode: Wireless Config

Usage Guide: Set wds agetime is 60 minutes and save configuration. Users can check by

command show wireless agetime.

Example: Set the default of wds agetime.

AC(config-wireless)#no agetime wds-list

1.1.12 clear wireless wds list

Command: clear wireless wds list

Function: Clear the wds information AP sent.

Parameters: None.

Default: None.

Command Mode: Privileged EXEC

Usage Guide: All ap, link data related with wds will be cleared.

Example: Clear WDS information AP sent.

AC#clear wireless wds list

Process with clear wireless wds list? [Y/N] y

All WDS entries cleared.

1.2 Show Command

1.2.1 show wireless network [<1-1024>]

Command: show wireless network [<1-1024>]

Function: Show the parameters of network configuration. if it has not parameters, it will display main configuration of all configuration, otherwise it will display detailed configuration including related configuration of WDS mode, remote MAC and authentication way.

Parameters: [<1-1024>], network number, it is optional.

Default: None.

Command Mode: Privileged EXEC

Usage Guide: Check network configuration and display wds related configuration parameters.

Example: Display network configuration of network 100.

AC(config-wireless)#sho wireless network 100

Network ID..... 100

SSID..... wds-wpa

WDS Mode..... RootAP
WDS Remote VAP MAC..... ----
Interface ID..... 0
Default VLAN..... 1
M2u Threshold..... 6
Hide SSID..... Disable
Deny Broadcast..... Disable
L2 Distributed Tunneling Mode..... Disable
Bcast Key Refresh Rate..... 1000
Session Key Refresh Rate..... 0
Wireless ARP Suppression..... Disable
Wireless Proxy ARP..... Disable
Wireless DHCP Suppression..... Disable
Security Mode..... WPA Personal
MAC Authentication..... Disable
RADIUS Authentication Server Name..... Default-RADIUS-Server
RADIUS Authentication Server Status..... Not Configured
RADIUS Accounting Server Name..... Default-RADIUS-Server
RADIUS Accounting Server Status..... Not Configured
RADIUS Use Network Configuration..... Enable
RADIUS Accounting..... Disable
RADIUS Accounting Update Interval (seconds).... 300
WPA Versions..... WPA
WPA Ciphers..... CCMP
WPA Key Type..... ASCII
WPA Key..... *****
WPA2 Pre-Authentication..... Disable
WPA2 Pre-Authentication Limit..... 0
WPA2 Key Caching Holdtime (minutes)..... 0
WEP Authentication Type..... Open System
WEP Key Type..... HEX
WEP Key Length (bits)..... 128
WEP Transfer Key Index..... 1
WEP Key 1..... ----
WEP Key 2..... ----
WEP Key 3..... ----
WEP Key 4..... ----
Network Igmp Snooping M2u..... Disable


```

Network AP B2u..... Disable
QoS Max Bandwidth Down..... 0
QoS Max Bandwidth Up..... 0
Client QoS Mode..... Disable
Client QoS Bandwidth Limit Down..... 0
Client QoS Bandwidth Limit Up..... 0
Client QoS Access Control Down..... ----
Client QoS Access Control Up..... ----
Client QoS Diffserv Policy Down..... ----
Client QoS Diffserv Policy Up..... ----
Maximum Clients..... 0
Station-isolation..... Disable
Offline-detect..... Disable
Idle-timeout (seconds)..... 300
Threshold (bytes)..... 0
RADIUS Accounting-Delay..... Disable
RADIUS Accounting-Delay Logoff..... Disable
RADIUS Accounting-Delay Time..... 10
device-finger function..... Disable

```

1.2.2 show wireless wds link status

Command: show wireless wds link status

Function: Display WDS topology.

Parameters: None.

Default: None.

Command Mode: Privileged EXEC

Usage Guide: Sending ap's mac, radio ID, VAP ID, base mac of remote vap, radio ID of remote ap and vap id of remote ap will be key words to display wds topology.

Example: Display wds topology.

AC#sho wir wds link status

Rootap MAC	Rootap Radio	Rootap Vap	Satelliteap MAC	Satelliteap Radio	Satelliteap VAP	Rootap linked	Satelliteap linked
-----	-----	-----	-----	-----	-----	-----	-----
00-03-0f-27-21-70	1	0	00-03-0f-27-94-e0	1	0	Yes	Yes

Age

0d:00:00:00

1.2.3 show wireless wds ap <macaddr> status

Command: show wireless wds ap <macaddr> status

Function: Display wds status information of specified ap, including wds mode is Root AP or Statellite AP, radio and vap of creating wds connection, mac address of remote ap, wds connection status, vap port of wds clash with vap of user access or not and so on.

Parameters: <macaddr>, base-mac of rootap or satelliteap.

Default: None.

Command Mode: Privileged EXEC

Usage Guide: Display specified AP created all wds connection information. If it created wds connection with more ap, it will display one by one.

Example: Display ap's wds connection information which mac is 00-03-0f-80-50-20.

```
AC#show wireless wds ap 00-03-0f-80-50-20 status
AP MAC Address..... 00-03-0f-80-50-20
AP WDS Radio Interface Id..... 1
AP WDS VAP Interface Id..... 1
AP WDS Mode..... RootAP
Remote VAP MAC Address..... 00-03-0f-20-d8-c1
AP Managed Status..... Managed
WDS Link Connection Status..... Connected
Age..... 0d:00:00:01
```

1.2.4 show wireless wds {link |(ap < macaddr >) statistics

Command: show wireless wds link |(ap < macaddr >) statistics

Function: Display all or specified AP's wds statistical information.

Parameters: <macaddr>, it is specified ap's mac address.

Default: None.

Command Mode: Privileged EXEC

Usage Guide: If command is not specified ap mac, display all ap of sending wds statistic information which including connection status and send or receive data packets numbers. If commands specific ap's mac, only display wds statistic information specified ap sent.

Example: Display ap's wds statistic information that mac is 00-03-0f-26-18-60.

AC#sho wir wds ap 00-03-0f-26-18-60 statistics

```
AP MAC Address..... 00-03-0f-26-18-60
AP WDS Radio Interface Id..... 1
AP WDS VAP Interface Id..... 1
AP WDS Mode..... SatalliteAP
Remote VAP MAC Address..... 00-03-0f-80-50-21
AP WDS Packets Sent..... 34782
AP WDS Bytes Sent..... 16596707
AP WDS Packets Received..... 145136
AP WDS Bytes Received..... 145136
```

```
AP MAC Address..... 00-03-0f-26-18-60
AP WDS Radio Interface Id..... 1
AP WDS VAP Interface Id..... 7
AP WDS Mode..... RootAP
Remote VAP MAC Address..... 00-00-00-00-00-00
AP WDS Packets Sent..... 0
AP WDS Bytes Sent..... 0
AP WDS Packets Received..... 747
AP WDS Bytes Received..... 747
```

1.3 Debug Command

1.3.1 [no]debug wireless wds {info| error | packet-receive | packet-send}

Command: [no]debug wireless wds {info| error | packet-receive | packet-send}

Function: Open /Close the debug information on the WDS module, it can display debug information when UWS deal with WDS information or operation.

Parameters:

info: open/ close WDS functional debug information on AC

error: open/ close WDS related functional abnormality debug information on WDS

packet-receive: open/ close the debug information during the AC deal with the data package that receiving from WDS

packet-send: open / close the debug information which is AC deal with the data

package that sending from WDS

Default: Debuginformation is not open

Command Mode: Privileged EXEC

Usage Guide:

Example: Open/close the debug information on the WDS module

AC#debug wireless wds error

error WD_LEVEL_DEFAULT debug is on

AC#debug wireless wds info

internal WD_LEVEL_LOG debug is on

AC#debug wireless wds packet-receive

Packet WD_LEVEL_WIRELESS_WDS_AP_MSG_PKT_RX

debug is on

AC#debug wireless wds packet-send

packet WD_LEVEL_WIRELESS_WDS_AP_MSG_PKT_TX

debug is on

1.3.2 no debug all

Command: no debug all

Function: When using the no debug all function, it will close debug information on WDS function at the same time

Parameter:

Default: Disable.

Command Mode: Privileged EXEC

Usage Guide: None.

Example: Closing all debug information on AC

AC#no debug all

all possible debugging has been turned off

1.4 Configuration Command on AP

1.4.1 set wds wds<vap-id> wds-mode

{rootap|satelliteap|none}

Command: set wds wds<vap-id> wds-mode {rootap|satelliteap|none}

Function: Set or delete the wds mode of vap---satelliteap mode.

Parameters: <vap-id>: ID number of vap, single radio ranges from 0 to 15, double radio ranges from 0 to 31.

Default: None.

Usage Guide: One radio only configures one vap to be satelliteap, it will have notice when configure more.

Example: Configure vap1 of ap as Satellitemode.

```
WLAN-AP# set wds wds1 wds-mode satelliteap
```

1.4.2 set wds wds<vap-id> wds-status {up|down}

Command: set wds wds<vap-id> wds-status <up|down>

Function: Open or close wds mode.

Parameters: <vap-id>: ID number of vap, single radio ranges from 0 to 15, double radio ranges from 0 to 31.

Default: down

Usage Guide: Users can open or close wds mode by this command.

Example: Open wds mode of vap1.

```
WLAN-AP#set wds wds1 wds-status up
```

1.4.3 set wds wds<vap-id> wds-ssid

Command: set wds wds<vap-id> wds-ssid

Function: Configure ssid used when create wds connection.

Parameters: <vap-id>: ID number of vap, single radio ranges from 0 to 15, double radio ranges from 0 to 31

<word>: the length is within 1-32 characters, including numbers, characters, spaces and special characters such as “_+”.

Default: The default wds-ssid is vap's default ssid.

Usage Guide: Users can set wds-ssid before create wds link, but the configuration of root ap and satelliteap ap must be same otherwise wds can not create. If wds had created, wds link will be broken after change wds-ssid.

Example: Configure ssid to wds when create wds link in satelliteap ap.

```
WLAN-AP# set wds wds1 wds-ssid wds
```

1.4.4 set wds wds<vap-id> remote-mac <macaddr>

Command: set wds wds<vap-id> remote-mac <macaddr >

Function: Configure vap mac address of remote ap when create wds link.

Parameters: < vap-id>: ID number of vap, single radio ranges from 0 to 15, double radio ranges from 0 to 31.

<macaddr>: ap corresponding vap mac address of the remote created wds link.

Default: The default mac is 00:00:00:00:00:00

Usage Guide: If administrator configure it in satellite ap before create wds link, users must be sure that one satellite ap only can link to a corresponding root ap .

Example: Configure the remote mac is 00:03:0f:80:50:20 when vap1 create wds link.

WLAN-AP# set wds wds1 remote-mac 00:03:0f:80:50:20

1.4.5 set wds wds<vap-id> wds-security-policy { wpa-personal | plain-text }

Command: set wds wds<wds-id> wds-security-policy { wpa-personal | plain-text }

Function: Configure authentication and encipher way of wds communication messages.

Parameters: < vap-id>: ID number of vap, single radio ranges from 0 to 15, double radio ranges from 0 to 31.

<wpa-personal> : Configure to be wpa-personal and users can configure password.

<plain-text>: It will not configure password after configure it, and it will be open.

Default: Plaintext form.

Usage Guide: WDS link will be created until configured encipher form and password of satelliteap and rootap is same.

Example: Configure encipher form of vap1 WDS communication messages to be wpa-personal.

WLAN-AP# set wds wds1 wds-security-policy wpa-personal

1.4.6 set wds wds<vap-id> wds-wpa-personal-key <word >

Command: set wds wds<vap-id> wds-wpa-personal-key <word >

Function: Configure the encipher form of WDS communication messages.

Parameters: < vap-id>: ID number of vap, single radio ranges from 0 to 15, double radio ranges from 0 to 31.

<word> : It is a character string which include 8-63 characters.

Default: None.

Usage Guide: When configure WDS communication messages encipher, users also can

configure encipher password at the same time. The two password must be same when create wds link.

Example: Configure the encipher password of vap1 WDS to be 12345678

WLAN-AP# set wds wds1 wds-wpa-personal-key 12345678