

Configuration Guide

How to Configure the AP Profile on the DWC-1000



Overview

This guide describes how to configure the DWC-1000 D-Link Unified Controller's AP profile for batch AP management.

D-Link[®]

Though an AP profile, users can set up the same configuration on multiple Unified Access Points (UAPs) just by one click. The AP Profile includes three major settings: Radio, SSID, and QoS.

Radio: The radio settings include radio status, power, channels, utilization/maximum clients per radio, station isolation, etc.

SSID: This refers to the Virtual Access Point (VAP) settings associated with the selected AP profile. Each VAP is identified by its network number and Service Set Identifier (SSID).

QoS: Quality of Service (QoS) provides you with the ability to specify parameters on multiple queues for increased throughput and better performance of differentiated wireless traffic like Voice-over-IP (VoIP), other types of audio, video, and streaming media as well as traditional IP data over the D-Link Unified Controller.

In addition to commonly used settings such as radio, SSID, and QoS, AP Profile also provides advanced applications such as L2 roaming, Auto-channel, Auto-power/Auto-healing, and WLAN load balancing.

Situation note

To provide a good quality wireless environment, it is essential to set appropriate parameters on the AP profile. The various parameters depend on the RF coverage, the density of users, and the activities that are being done on the network.

The configuration in the example below is for a network in a medium-sized company:

1. Set two SSIDs, dlink_staff and dlink_guest.
2. Broadcast SSID dlink_staff on both 2.4 GHz and 5.0 GHz; broadcast SSID dlink_guest on 2.4 GHz only.
3. Assign separated VLANs for the traffic from SSID dlink_staff and SSID dlink_guest. Associate VLAN1 and VLAN2 with the SSIDs dlink_staff and dlink_guest, respectively.
4. Set WPA/WPA2 Personal wireless security for SSID dlink_staff.
5. Enable AP L2 roaming for SSID dlink_staff.
6. Enforce webpage redirect to www.dlink.com when a guest accesses the SSID dlink_guest to surf the Internet for the first time.
7. Define the maximum number of associated clients to be 10 STAs per radio.
8. Restrict the maximum utilization per radio to 60%.



NOTE: The screenshots in this guide are from the DWC-1000's firmware version 4.1.0.10_10260W. If you are using an earlier version of the firmware, the screenshots may not be identical to what you see on your browser.

Configuration steps

1. Create VLANs. Navigate to SETUP> VLAN Settings> Available VLAN. Click **Add**. As VLAN1 is the default VLAN, create VLAN2 to be the guest VLAN. Click **Save Settings**.

- Set VLAN1 and VLAN2 on port 1. Navigate to SETUP> VLAN Settings> Port VLAN, tick the box next to Port 1 and click **Edit**.

Select Mode to be “General” and click **Apply**. After applying the setting, the system will return to the Port VLANs list. Tick the box next to Port 1 and click **Edit** again. This will take you back to VLAN Configuration. Tick the box “2” next to VLAN Memberships in VLAN Membership Configuration and click **Apply**.

D-Link

DWC-1000 // SETUP ADVANCED TOOLS STATUS HELP

Wizard

WLAN Global Settings

AP Management

WLAN Visualization

Internet Settings

Network Settings

QoS

GVRP

VPN Settings

VLAN Settings

DMZ Setup

USB Settings

VLAN CONFIGURATION LOGOUT

This page allows user to configure the port VLAN.

VLAN Configuration

Port Name: Port 1

Mode: General

PVID: 1

Apply Cancel

VLAN Membership Configuration

VLAN Membership: 1 2

Apply Cancel

Helpful Hints...

The VLAN mode is an important setting to determine how VLAN traffic is passed through the router. In Access mode the port is a member of a single VLAN (and only one). In Trunk mode all data going into and out of the port is tagged, and untagged coming into the port is not forwarded, except for the default VLAN with PVID=1, which is untagged. In General mode, the port sends and receives data that is tagged or untagged with a VLAN ID.

More...

D-Link

DWC-1000 // SETUP ADVANCED TOOLS STATUS HELP

Wizard

WLAN Global Settings

AP Management

WLAN Visualization

Internet Settings

Network Settings

QoS

GVRP

VPN Settings

VLAN Settings

DMZ Setup

Operation succeeded

PORT VLANs LOGOUT

This page allows user to configure the port VLANs. A user can choose ports and can add them into a VLAN.

Port VLANs

	Port Name	Mode	PVID	VLAN Membership
<input type="checkbox"/>	Port 1	General	1	1, 2
<input type="checkbox"/>	Port 2	Access	1	1
<input type="checkbox"/>	Port 3	Access	1	1
<input type="checkbox"/>	Port 4	Access	1	1

Edit

Helpful Hints...

In order to tag all traffic through a specific LAN port with a VLAN ID, you can associate a VLAN to a physical port. The VLAN Port table displays the port identifier, the mode setting for that port and VLAN membership information. Go to the Available VLAN page to configure a VLAN membership that can then be associated with a port

More...

2. Set SSIDs. Navigate to ADVANCED> SSIDs. Create two new SSIDs. Type “dlink_staff” for the SSID name and click **Add**.

Wireless Network Configuration

SSID : dlink_staff

Add

VLAN1 is the default setting for a new SSID. Keep it as VLAN1. To enable L2 roaming, select “Enable” in the pull-down box for “L2 Distributed Tunneling Mode”.

Peer Controllers

AP Profile

SSIDs

WIDS Security

Captive Portal

Client

WDS Configuration

Application Rules

Website Filter

Firewall Settings

IPv6

Advanced Network

Routing

Certificates

Users

IP/MAC Binding

NETWORKS LOGOUT

Each network is identified by its Service Set Identifier (SSID), which is an alphanumeric key that identifies a wireless local area network. You can configure up to 64 different networks on the Unified Wireless Controller.

Wireless Network Configuration

SSID

Hide SSID

Ignore Broadcast

VLAN (1 to 4093)

MAC Authentication Local Radius Disable

Redirect None HTTP

Redirect URL

Wireless ARP Suppression Mode

L2 Distributed Tunneling Mode

Each network can have a unique SSID, or you can configure multiple networks with the same SSID. Use Hide SSID to hide the SSID broadcast to discourage stations from automatically discovering your access point.

[More...](#)

Select WPA/WPA2 Personal for Security and type the WPA Key. Click **Save Settings**.

Security None WEP WPA/WPA2

WPA Personal WPA Enterprise

WPA Versions WPA WPA2

WPA Ciphers TKIP CCMP (AES)

WPA Key Type ASCII

WPA Key

Bcast Key Refresh Rate(seconds) (0 to 86400)

Create the other SSID. Type “dlink_guest” for the SSID name and click **Add**.

Wireless Network Configuration

SSID :

Set VLAN 2 to be associated with this SSID. Enable the Redirect function by clicking HTTP, and type the URL of the webpage you would like the UAP to redirect a user to when the user accesses the Internet for the first time on the network, for example, <http://www.dlink.com>. Click **Save Settings**.

The screenshot shows the D-Link DWC-1000 web interface. The top navigation bar includes 'DWC-1000', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'HELP'. The left sidebar lists various configuration options, with 'AP Profile' selected. The main content area is titled 'NETWORKS' and contains a 'LOGOUT' link. Below this, there is a section for 'Wireless Network Configuration' with the following settings:

- SSID: dlink_guest
- Hide SSID:
- Ignore Broadcast:
- VLAN: 2 (1 to 4093)
- MAC Authentication: Local Radius Disable
- Redirect: None HTTP
- Redirect URL: http://www.dlink.com
- Wireless ARP Suppression Mode: Disable
- L2 Distributed Tunneling Mode: Disable

3. Create an AP Profile. Navigate to **ADVANCED**> **AP Profile**. First, create a new profile by typing the profile name, for example "Profile1". Choose "Any" in Hardware Type for both single and dual radio access points. Click **Save Setting**.

The screenshot shows the D-Link DWC-1000 web interface. The top navigation bar includes 'DWC-1000', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'HELP'. The left sidebar lists various configuration options, with 'AP Profile' selected. The main content area is titled 'AP PROFILES SUMMARY' and contains a 'LOGOUT' link. Below this, there is a section for 'AP Profile Global Configuration' with the following settings:

- Profile Name: profile1
- Hardware Type: Any
- Wired Network Discovery VLAN ID: 1 (1 to 4093)

Notice that if you choose “Single Radio b/g/n”, such as DWL-2600AP and DWL-3600AP, on Hardware Type, the settings on Radio and SSID would only allow you to select radio 802.11 b/g/n, and not radio 802.11 a/n.

The screenshot shows the 'AP Profile Global Configuration' page in the DWC-1000 web interface. The left sidebar contains navigation options: Global, Peer Controllers, AP Profile, SSIDs, WIDS Security, Captive Portal, Client, WDS Configuration, Application Rules, Website Filter, and Firewall Settings. The main content area has a top navigation bar with 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'HELP'. Below this is the 'AP PROFILES SUMMARY' section with a 'LOGOUT' link and a description: 'This page is used to configure a variety of global settings for a new or existing AP profile.' There are 'Save Settings' and 'Don't Save Settings' buttons. The 'AP Profile Global Configuration' section includes:

- Profile Name:** profile2
- Hardware Type:** A dropdown menu is open, showing options: DWL-2600AP Single Radio b/g/n (selected), Any, DWL-8600AP Dual Radio a/b/g/n, DWL-3600AP Single Radio b/g/n, DWL-6600AP Dual Radio a/b/g/n, and DWL-2600AP Single Radio b/g/n.
- Wired Network Discovery VLAN ID:** (empty field)

 A 'Helpful Hints...' sidebar on the right explains that when a new profile is added, the page is populated with default AP settings and that no special characters are allowed for the Profile Name. A 'More...' link is also present.

The screenshot shows the 'AP Profile VAP Configuration' page in the DWC-1000 web interface. The left sidebar is the same as in the previous screenshot. The main content area has the same top navigation bar. Below this is the 'AP PROFILES SUMMARY' section with a 'LOGOUT' link and a description: 'This page displays the virtual access point (VAP) settings associated with the selected AP profile. Each VAP is identified by its network number and Service Set Identifier (SSID).' There are 'Save Settings' and 'Don't Save Settings' buttons. The 'AP Profile VAP Configuration' section includes:

- AP Profile:** AP Profile 3-profile2
- Radio Mode:** Radio buttons for '1-' (selected) and '2-802.11b/g/n'.

 Below this is the 'List of SSID' section, which is a table with the following columns: Network, VLAN, Hide SSID, Security, and Redirect. The table contains one row with a checkbox in the 'Network' column and a 'Submit' button next to it. A 'Helpful Hints...' sidebar on the right explains that up to 16 VAPs can be configured and enabled per radio on each physical access point. A 'More...' link is also present.

Associate SSIDs with the AP Profile “profile1”. Select “profile1” and click **Configure SSID**. Then, associate SSID dlink_staff on 2.4 GHz and 5 GHz, and associate SSID dlink_guest on 2.4 GHz. Select 802.11a/n as the Radio Mode for the SSID dlink_staff and select 802.11b/g/n as the Radio Mode for both SSID dlink_staff and dlink_guest.

The screenshot shows the D-Link DWC-1000 web interface. The top navigation bar includes 'DWC-1000', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'HELP'. The left sidebar lists various configuration categories. The main content area is titled 'AP PROFILES SUMMARY' and includes a 'LOGOUT' link. Below this, there is a description of the page and two buttons: 'Save Settings' and 'Don't Save Settings'. The 'AP Profile VAP Configuration' section shows 'AP Profile: AP Profile 2-profile1' and 'Radio Mode: 1-802.11a/n' (selected). The 'List of SSID' table is as follows:

	Network	VLAN	Hide SSID	Security	Redirect
<input checked="" type="checkbox"/>	18 - dlink_sta Edit	1-default	Disabled	WPA Personal	None

The screenshot shows the D-Link DWC-1000 web interface. The top navigation bar includes 'DWC-1000', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'HELP'. The left sidebar lists various configuration categories. The main content area is titled 'AP PROFILES SUMMARY' and includes a 'LOGOUT' link. Below this, there is a description of the page and two buttons: 'Save Settings' and 'Don't Save Settings'. The 'AP Profile VAP Configuration' section shows 'AP Profile: AP Profile 2-profile1' and 'Radio Mode: 2-802.11b/g/n' (selected). The 'List of SSID' table is as follows:

	Network	VLAN	Hide SSID	Security	Redirect
<input checked="" type="checkbox"/>	18 - dlink_sta Edit	1-default	Disabled	WPA Personal	None
<input checked="" type="checkbox"/>	17 - dlink_gue Edit	2-guest vlan	Disabled	None	HTTP

4. Configure the Radio for the AP Profile “profile1”. Select “profile1” and click **Configure Radio**.

First, enable “Load Balancing” and set the “Load Utilization”. Load utilization, also called bandwidth utilization, is the percentage of the achieved throughput compared to the net bitrate in bit/s of a channel. You can limit the network utilization level allowed on an AP to prevent wireless clients from experiencing slower network speeds. Tick the box next to “Load Balancing” and set the “Load Utilization” rate, for example to 60%.

Next, specify the maximum number of stations allowed to associate with the UAP. For example, set 10 on “Maximum Client” on Radio Configuration.

DWC-1000	SETUP	ADVANCED	TOOLS	STATUS	HELP
Global	AP PROFILES SUMMARY LOGOUT				Helpful Hints... AP can support up to two radios. By default, Radio 1 operates in the IEEE 802.11b/g/n mode, and Radio 2 operates in the IEEE 802.11a/n mode. The difference between these modes is the frequency in which they operate. IEEE 802.11b/g/n operates in the 2.4 GHz frequency, and IEEE 802.11a/n operates in the 5 GHz frequency of the radio spectrum. More...
Peer Controllers	This page contains several fields that are not available for the default AP Profile. <div style="text-align: center;"> <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/> </div>				
AP Profile	AP Profile Radio Configuration				
SSIDs	AP Profile: AP Profile 2-profile1 Radio Mode: <input checked="" type="radio"/> 1-802.11a/n <input type="radio"/> 2-802.11b/g/n				
WIDS Security	Radio Configuration				
Captive Portal	State: <input checked="" type="radio"/> On <input type="radio"/> Off				
Client	RTS Threshold: 2347 (0 to 2347) (Bytes)				
WDS Configuration	Load Balancing: <input checked="" type="checkbox"/>				
IPv6	Load Utilization: 60 (1 to 100) (%)				
Routing	Maximum Clients: 10 (0 to 200)				
Certificates					
Users					
IP/MAC Binding					
Radius Settings					
Switch Settings					

Enable “Auto-channel” and “Auto-Power”.

To trigger the “RF Self-Healing” function, it is necessary to set the Initial Power (%) lower than 100%, for example 60%. The automatic power algorithm will not reduce the power below the Initial Power (%). By default, the power level is at 100%.

Therefore, even if automatic power has been enabled, the RF signal power will not decrease. Click **Save Settings**.

Repeat the same settings for Radio Mode 802.11b/g/n.

Intel® AMT	DTIM Period: 10 (1 to 255) (# Beacons) Beacon Interval: 100 (20 to 2000) (Msecs) Automatic Channel: <input checked="" type="checkbox"/> Automatic Power: <input checked="" type="checkbox"/> Initial Power: 60 (1 to 100) (%) APSD Mode: Enable
------------	--

5. Discover and manage an AP from the network. Please refer to the “How to Configure Layer 2 Discovery on the DWC-1000” and “How to Configure Layer 3 Discovery on the DWC-1000” guide. Select “profile1”, which you just created, on the AP profile to manage it.

D-Link[®]

www.dlink.com

D-Link, D-Link logo, D-Link sub brand logos and D-Link product trademarks are trademarks or registered trademarks of D-Link Corporation and its subsidiaries.
All other third party marks mentioned herein are trademarks of the respective owners.

Copyright © 2013 D-Link Corporation. All Rights Reserved.