

WebLCM – Linux Platform

WB45NBT and WB50NBT

Application Note

v2.0

INTRODUCTION

Laird’s WebLCM is the web server that is integrated into the WB45NBT/WB50NBT Linux host platform. The WebLCM interface provides the same functionality as the SCU and LCM used with other Laird Wi-Fi radios, including status updates, configurations, and more. This application note explains how to use this web server to configure Laird’s WB45NBT or WB50NBT. The default login username and password for WebLCM are the same as the Linux login credentials.

The following main pages/tabs are implemented in WebLCM:

- [Status](#)
- [Wi-Fi](#)
- [Wi-Fi Global](#)
- [Interfaces](#)
- [Advanced](#)
- [About](#)

STATUS

The Status tab provides status information about the WB45NBT and WB50NBT:

Table 1: Status Elements

Active profile name and SSID
Radio status – Down (not recognized), Disabled, Not Associated, Associated, or Authenticated
Client information – Name, IP address, MAC address
AP information – Name, IP address, MAC address, beacon period, DTIM interval
Connection information – Channel, data rate, transmit power, signal strength

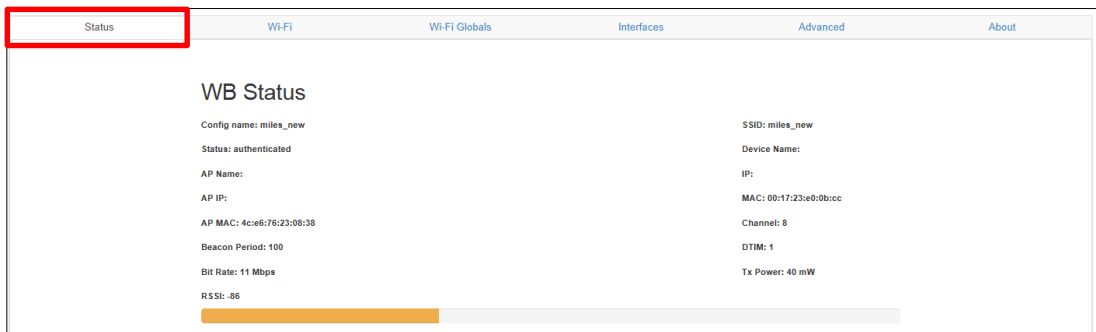


Figure 1: Status tab

Wi-Fi

The Wi-Fi page provides Wi-Fi profile settings and configuration.

Profile settings are radio and security settings that are stored in the system as part of a configuration profile. When a profile is selected as the active profile in this page, the settings for the profile become active. Up to 20 profiles can be stored on the device. You can add, edit and delete profiles from this page.

Table 2: Wi-Fi Elements

Edit Profile	Tap to edit the profile.
Add Profile	Tap to create a new profile.
Show Profile	Tap to display the profile’s settings.
Rename	Tap to change the profile’s unique name.
Delete	Tap to delete a non-active profile.
Scan	Tap to scan for access points within range.

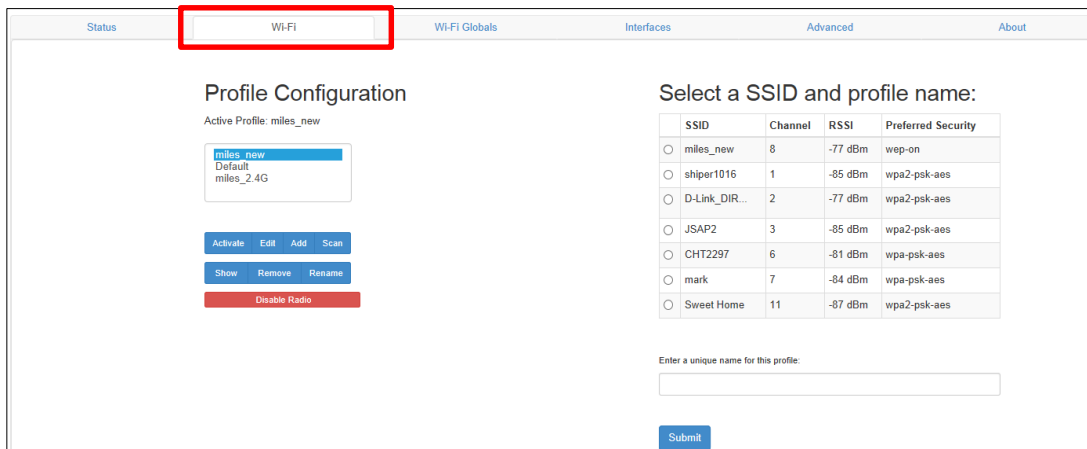


Figure 2: Wi-Fi tab

WI-FI GLOBAL SETTINGS

Global settings include radio and security settings that apply across all profiles.

Table 3: Wi-Fi Global Elements

Parameters	Description	Value
A Channel Set	Sets a specific set of channels to operate on in the 5 GHz band. Valid operating channels are constrained by the configured regulatory domain.	Valid channels vary depending on selected regulatory domain. FCC: 36,40,44,48,52,56,60,64,100,104,108,112,116,120,124,128,132,136,140,149,153,157,161,165, Full or 0 (0 disables all) Note: Enter channels as a comma-separated list with no spaces.

Parameters	Description	Value
Auth Server Type	Indicates the type of authentication server being used for EAP	Type 1 or Type 2
Auto profile	Enable/Disables auto profile for the current profile	Enable or Disable
Beacon Miss Time	Indicates the beacon missed time in TUs before considering to switch to a different BSS	1000-5000 TUs
BG Channel Set	Sets a specific set of channels to operate on in the 2.4 GHz band. Valid operating channels are constrained by the configured regulatory domain	1,2,3,4,5,6,7,8,9,10,11,12,13,14, Full or 0 (0 disables all channels) Note: Enter channels as a comma-separated list with no spaces.
BT Coexist	Enables or disables Bluetooth coexistence	On or Off
CCX Features	CCX features	Full or Off
Certificate store	Used to change the path of the certificate store	String
Date Check	Validates certificates against the system date and time	On or Off
Default Adhoc Channel	Indicates the channel to be used for an ad hoc connection if the active profile has a Radio Mode value of Ad Hoc	Integer
DFS Channel	Indicates support (or lack of support) for 5 GHz (802.11a) channels where DFS is required	Full or off
FIPS	Turns FIPS compatibility on (Supporting FIPS requires additional integration efforts)	On or Off
Ignore Null SSID	If enabled, the radio does not connect to the first available open AP if its SSID is blank	Enable or Disable
PMK Caching	Indicates the type of PMK caching to use with a WPA2 encryption type	Standard or OPMK
Probe Delay	The number of seconds before the next scan	2-120 (s)
Roam Delta	The signal strength (RSSI) of the new AP has to be <roam-delta> (in dBm) better than the current AP before the client attempts to move to the new AP.	5,10,15,20,25,30,35
Roam Period (ms)	The amount of time between roam scans. Roam scans occur after the radio has fallen below the roam trigger.	10 - 60000

Parameters	Description	Value
Roam Trigger	The signal strength (RSSI) (in dBm) at which the radio scans for an access point with a better signal strength.	50,55,60,65,70,75,80,85,90
RTS Threshold	The packet size above which RST/CTS is required on link.	0-2347
Scan DFS Time	Indicates the dwell (listen) time when passively scanning on a DFS channel.	20-500 (ms)
TTLS Inner Method	Indicates the authentication method that is used within the secure tunnel created by EAP-TTLS.	AUTO MSCHAPv2 MSCHAP PAP CHAP EAP_MSCHAPv2
Txmax	Maximum transmission power.	0-100 (%)
WMM	Enables WMM.	On or Off

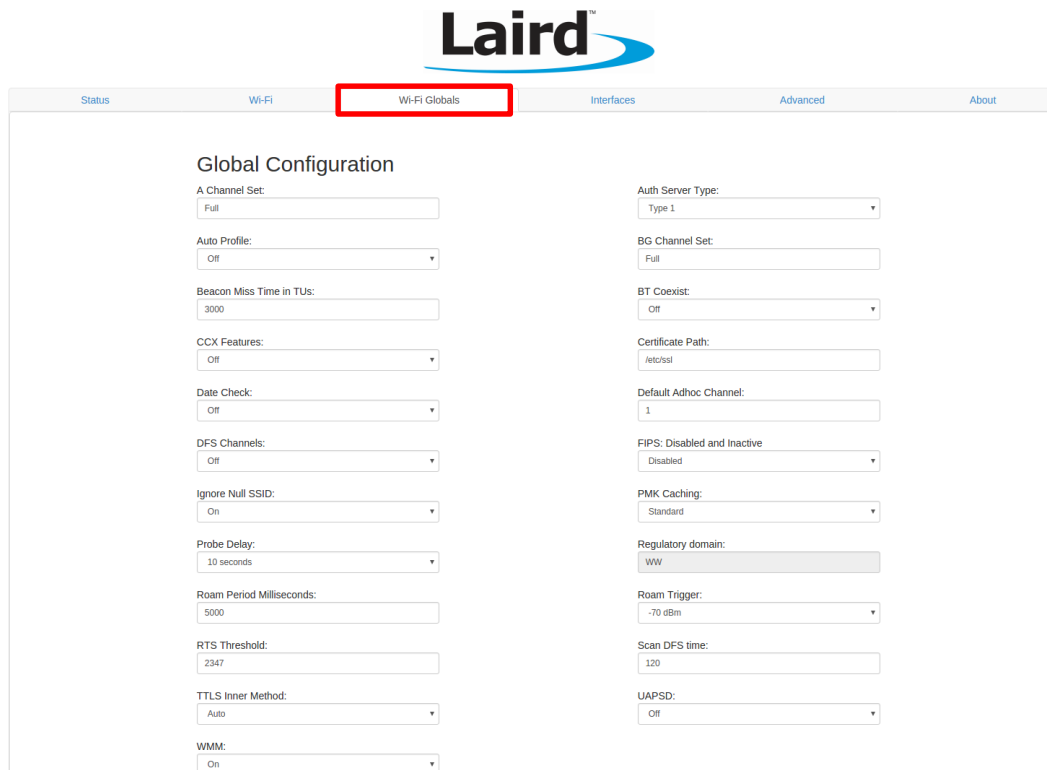


Figure 3: Wi-Fi Globals tab

INTERFACES

Note: The supplicant only has a log if debugging is turned on. Debugging is turned on by adding the `-d(d*)` switch to the launch command of `sdcc_supp`. The more d's you add, the more debug detail you receive. For example, `-ddd` sets the debug level to level 3.

The output goes to the location that you've set. By default, debug is directed to `stdout`. To capture to a file, redirect the output file as desired. Alternatively, if you are using `syslog`, you can have the log sent there via the use of the `-s` option.

This page allows you to control the following five interfaces that are supported in the WB45NBT/WB50NBT:

Table 4: Interface Elements

	Controls the Ethernet port of the WB45NBT/WB50NBT. The following settings can be configured:
eth0	▪ Address Acquisition – DHCP, Static IP, or unmanaged
	▪ Address – IP address of the Ethernet interface. Only valid if address acquisition is a static setting.
	▪ Netmask – Netmask of the Ethernet interface. Only valid if address acquisition is a static setting.
	▪ Gateway – Gateway of the Ethernet interface. Only valid if address acquisition is a static setting.
	▪ Broadcast – Broadcast address of the Ethernet interface. Only valid if address acquisition is a static setting.
	▪ Name server – DNS server of the Ethernet interface. Only valid if address acquisition is a static setting.
ppp0	Controls a ppp connection in the WB45NBT/WB50NBT. Settings are the same as the Ethernet interface.
wl0	Controls the WLAN port of the WB45NBT/WB50NBT. Settings are the same as the Ethernet interface.
br0	Controls the bridge setting in the WB45NBT/WB50NBT. Settings are the same as the Ethernet interface plus one the additional bridge interface setting.
usb0	Controls the USB port of the WB45NBT/WB50NBT. Settings are the same as the Ethernet interface.



Figure 4: Interfaces tab

ADVANCED

From this page, system-related features (such as login credential, certificate upload, AP mode enable/disable, Import/Export, restore to default, etc.) can be configured.

Table 5: Advanced Elements

Password	Change the password for the <code>root</code> login.
Upload Certificate	Load the client certificate to the WB45NBT/WB50NBT.

AP Mode	Client mode and AP mode are both supported in the WB45NBT/WB50NBT. When AP mode is on, Client mode is off. A maximum of five clients can be associated with AP mode.
Export	Export global settings and all profiles to a file that can then be transferred to a different device.
Import	Import global settings and all profiles from a file (first created using the Export tool) to the WB45NBT/WB50NBT.
Remote Update Path	Indicates the file path for a remote firmware upgrade.

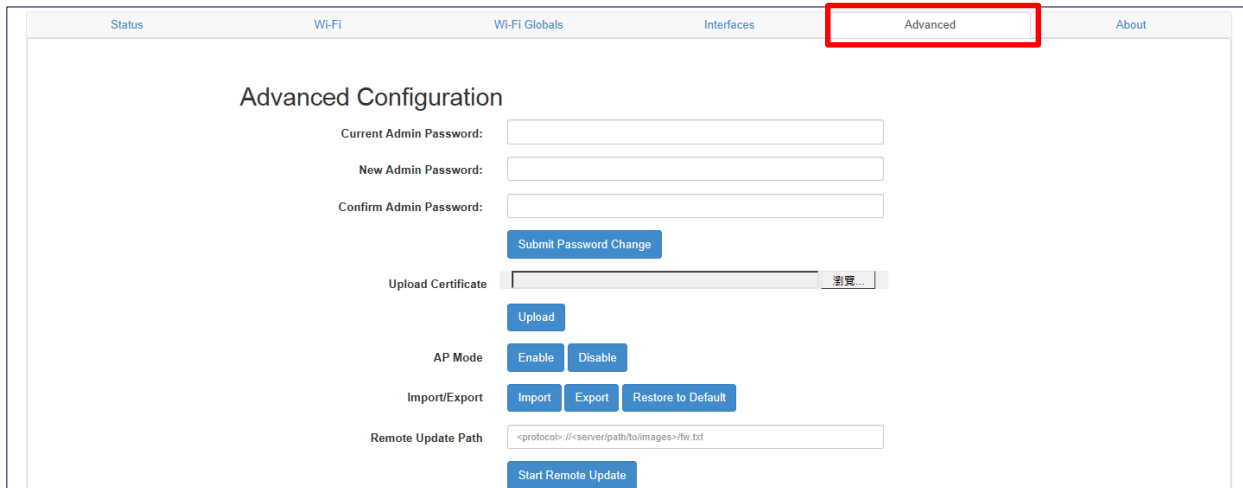


Figure 5: Advanced tab

ABOUT

This page provides information about this WB45NBT/WB50NBT device, such as the software version of WebLCM, CLI, SDK, driver, firmware, supplicant, and build. The output path for logs and dmesg are also displayed on this page.

REVISION HISTORY

Version	Date	Notes	Approver
1.0		Initial Release	Jay White
2.0	06 April 2016	Updated for 50 series	Joe Conley

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