Wl command

Contents

Usage

Most of the wireless options can be accessed using the program "wl" via the console window. This program has many more options than our WRT is able to process. Some can only be used in Client Mode and others only in Access Point (AP) Mode.

```
Usage: wl [-a|i <adapter>] [-hu] <command> [arguments]
 -a, -i       adapter name or number
 -h, -u       this message

Examples:
~ # wl ssid
~ # wl txpwr1 -o -m 35
```

Note For NEWD-2 builds, you must specify the interface when performing a command.

Example:

~ # wl -i eth1 status

If you have multiple radios, then each one will have it's own interface, i.e eth2, eth3

Common Tasks

Toggle radio on/off, restart, etc

- ~ # wl up

reinitialize adapter and mark as up

- ~ # wl down

reset adapter and mark as down

- ~ # wl out

mark adapter down but do not reset hardware.

- ~ # wl radio

toggle radio on/off

```
~ # wl radio
radio is on (WL_RADIO_SW_DISABLE 0 WL_RADIO_HW_DISABLE 0)
~ # wl radio off
~ # wl radio
radio is off (WL_RADIO_SW_DISABLE 1 WL_RADIO_HW_DISABLE 0)
~ # wl radio on
```

- ~ # wl restart

restart the driver. (Driver must already be down)

Alphabetical list of commands

aciargs

Get/Set various aci tuning parameters. Choices are:

```
enter:  CRS glitch trigger level to start detecting ACI
exit:   CRS glitch trigger level to exit ACI mode
```

glitch Seconds interval between ACI scans when glitchcount is continuously high
spin: Num microsecs to delay between rssi samples
Usage: wl aciargs [enter x][exit x][spin x][glitch x]

addwep

Set an encryption key.

The key must be 5, 13 or 16 bytes long, or
10, 26, 32, or 64 hex digits long. The encryption algorithm is
automatically selected based on the key size. keytype is accepted
only when key length is 16 bytes/32 hex digits and specifies
whether AES-OCB or AES-CCM encryption is used. Default is ccm.
addwep <keyindex> <keydata> [ocb | ccm] [notx] [xx:xx:xx:xx:xx:xx]

aes

Set AES options.

wl aes [options]
[on|enable|1] enable AES
[off|disable|0] disable AES
[sw|software] perform AES in software
[hw|hardware] perform AES in hardware

antdiv

Sets which antenna to use to receive on.

0 - force use of antenna 0
1 - force use of antenna 1
3 - automatic selection of antenna diversity

Note: can be used in conjunction with 'wl txant' to set the transmit antenna.

ap

Set AP mode: 0 (STA) or 1 (AP)

assoc

Print information about current network association. (also known as "status")

SSID: "XXXX"
Mode: Managed RSSI: -48 dBm noise: -97 dBm Channel: 6
BSSID: XX:XX:XX:XX:XX:XX Capability: ESS
Supported Rates: [1(b) 2(b) 5.5 11]

assoclist

AP only: Get the list of associated MAC addresses.

atten

Set the transmit attenuation for B band.

Args: bb radio txctl1.
auto to revert to automatic control

authe_sta_list

Get authenticated sta mac address list

autho_sta_list

Get authorized sta mac address list

authorize

Restrict traffic to 802.1X packets until 802.1X authorization succeeds

band

Returns or sets the current band

auto - auto switch between available bands (default)
a - force use of 802.11a band
b - force use of 802.11b band

bands

Return the list of available 802.11 bands

bssid

Get the BSSID value, error if STA and not associated

cap

Display WL Capabilities

ap sta wet led wme pio 802.11d 802.11h rm cqa afterburner

channel

Set the channel:

valid channels for 802.11b/g (2.4GHz band) are 1 through 14
valid channels for 802.11a (5 GHz band) are:
36, 40, 44, 48, 52, 56, 60, 64,
100, 104, 108, 112, 116,120, 124, 128, 132, 136, 140,
149, 153, 157, 161,
184, 188, 192, 196, 200, 204, 208, 212, 216

channel_qa

Get last channel quality measurment

channel_qa_start

Start a channel quality measurment

clk

set board clock state. return error for set_clk attempt if the driver is not down

0: clock off
1: clock on

cmds

Lists all the wl commands available

Origional German Generiert eine Komando-Kurtzübersicht Die meisten wirreless-Optionen können über das Programm "wl" auch über die Console eingestellt und überwacht werden
Eine übersicht über alle wl- Comandos erhält man mit der Eingabe von:

```
~ # wl cmds
ver             cmds            up              down
out             clk             restart         reboot
```

```
ucflags         radio           dump            srdump
nvdump          nvset           nvget           revinfo
msglevel        PM              wake            promisc
monitor         frag            rts             cwmin
cwmax           srl             lrl             rate
mrate           infra           ap              bssid
channel         tssi            txpwr           txpwr1
txpathpwr       txpwrlimit      powerindex      atten
phyreg          radioreg        shmem           macreg
antdiv          txant           plcphdr         phytype
scbdump         ratedump        rateparam       wepstatus
primary_key     addwep          rmwep           wep
tkip            aes             keys            tsc
wsec_test       tkip_countermeasures wsec_restrict    eap
authorize       deauthorize     deauthenticate  wsec
wpa_auth        set_pmk         scan            passive
regulatory      spect           scanresults     assoc
status          disassoc        chanlist        channels
channels_in_country curpower        scansuppress    evm
rateset         roam_trigger    roam_delta      roam_scan_period
suprates        scan_channel_time scan_unassoc_time
scan_home_time
scan_passive_time scan_nprobes    prb_resp_timeout  channel_qa
channel_qa_start  country         locale          join
ssid            mac             macmode         wds
lazywds         noise           fqacurcy        crsuprs
int             lbt             band            bands
phylist         shortslot       shortslot_override shortslot_restrict
ignore_bcns     pktcnt          upgrade         gmode
gmode_protection  gmode_protection_control
gmode_protection_cts gmode_protection_override
legacy_erp      scb_timeout     assoclist       rssi
isup            fasttimer       slowtimer       glacialtimer
radar           rssidump        interference    aciargs
frameburst      pwr_percent     wet             dtim
wds_remote_mac  wds_wpa_role_old  wds_wpa_role
authe_sta_list
autho_sta_list  measure_req     quiet           csa
constraint      rm_req          rm_rep          wme
sta_info        cap
~ #
```

This program has many more options than our WRT is able to process.
Some can only be used in Client Mode and others only in Access Point (AP) Mode.

country

Select Country code for use with 802.11d

Use either long name or abbreviation from ISO 3166.
Use 'wl country list [band(a or b)]' for the list of supported countries

constraint

Send an 802.11h Power Constraint IE

Usage: wl constraint 1-255 db

crsuprs

Manufacturing test: set carrier suppression mode.

carriersuprs syntax is: crsuprs <channel>
Arg is channel number 1-14, or 0 to stop the test.

csa

Send an 802.11h channel switch anouncement

Usage wl csa <mode> <when (in TBTTs)> <channel>

cwmin

Set the cwmin. (integer [1, 255])

cwmax

Set the cwmax. (integer [256, 2047])

disassoc

Disassociate from the current BSS/IBSS.

dtim

Get/Set DTIM

dump

print driver software state and chip registers to stdout

```
~ # wl dump
wl0: Aug  2 2004 14:32:51 version 3.60.13.0

resets 27
perm_etheraddr 00:90:4c:xx:xx:xx cur_etheraddr
00:12:17:xx:xx:xx
board 0x101, board rev 1.0
wsec 0 auth 0 wsec_index -1 wep_algo 0
rate_override 0
antdiv_override 1 txant 1
current_bss.BSSID 00:fb:dd:xx:xx:xx
current_bss.SSID "www.fbn-dd.de (HSS)"
assoc_state 0 associated 1
~ #
```

deauthenticate

Deauthenticate a STA from the AP with optional reason code (AP ONLY)

deauthorize

Do not restrict traffic to 802.1X packets until 802.1X authorization succeeds

eap

Restrict traffic to 802.1X packets until 802.1X authorization succeeds

0 - disable
1 - enable

chanlist

Return valid channels for the current settings is nice.

channels

Return valid channels for the current settings.

channels_in_country

Return valid channels for the country specified.

Arg 1 is the country abbreviation

Arg 2 is the band(a or b) (editors note: only b seems to be recognized in dd-wrt v22)
Example: wl channels_in_country JP b

curpower

Return current tx power settings

evm

Start an EVM test on the given channel, or stop EVM test.

Arg 1 is channel number 1-14, or "off" or 0 to stop the test.
Arg 2 is optional rate (1, 2, 5.5 or 11)

frameburst

Disable/Enable frameburst mode

fasttimer

Get/Set High frequency watchdog timeout (tx_power) [15 sec]

frag

Set the fragmentation threshhold. (integer [256, 2346])

fqacurcy

Manufacturing test: set frequency accuracy mode.

freqacuracy syntax is: fqacurcy <channel>
Arg is channel number 1-14, or 0 to stop the test.

glacialtimer

Get/Set Very Low frequency watchdog timeout (measurelo) [120 sec]

gmode

Set the 54g Mode

LegacyB|Auto||GOnly|BDeferred|Performance|LRS|Afterburner

- LegacyB -

- Auto [default]
- BDeferred -
- Performance -
- LRS - Limited Rate Support used to improve compatibility with older 802.11b cards.
- Afterburner -

gmode_protection

Get G protection mode.

0 - disabled
1 - enabled

gmode_protection_control

Get/Set 11g protection mode control alg.

(0=always off, 1=monitor local association, 2=monitor overlapping BSS)

gmode_protection_cts

Get/Set 11g protection type to CTS

(0=disable, 1=enable)

gmode_protection_override

Get/Set 11g protection mode override.

(-1=auto, 0=disable, 1=enable)

ignore_bcns

AP only (G mode): Check for beacons without NONERP element (0=Examine beacons, 1=Ignore beacons)

int

Interrupt Test - remember to precede by 'wl down' and follow by 'wl up'

interference

Get/Set interference mitigation mode. Choices are:

0 = none
1 = non wlan
2 = wlan manual
3 = wlan automatic

infra

Set Infrastructure mode: 0 (ad-hoc IBSS) or 1 (managed BSS)

isup

Get driver operational state (0=down, 1=up)

join

Join a specified network SSID.

Join syntax is:

join <ssid> [key xxxxx] [imode bss|ibss] [amode open|shared|wpa|wpapsk|wpanone]

keys

Prints a list of the current WEP keys

lazywds

Set or get "lazy" WDS mode (dynamically grant WDS membership to anyone).

lbt

Loopback Test - remember to precede by 'wl down' and follow by 'wl up'

legacy_erp

Get/Set 11g legacy ERP inclusion (0=disable, 1=enable)

locale

OBSOLETE: use "wl country"

Select the country:
Worldwide
Thailand

Israel
Jordan
China
Japan
USA/Canada/ANZ
Europe
USAlow
JapanHigh
All

lrl

lrl Set the long retry limit. (integer [1, 255])

mac

Set or get the list of source MAC address matches.

wl mac xx:xx:xx:xx:xx:xx [xx:xx:xx:xx:xx:xx ...]
To Clear the list: wl mac none

macmode

Set the mode of the MAC list.

0 - Disable MAC address matching.
1 - Deny association to stations on the MAC list.
2 - Allow association to stations on the MAC list.

macreg

Get/Set any mac registers(include IHR and SB)

macreg offset size[2,4] [value]

measure_req

Send an 802.11h measurement request.

Usage: wl measure_req <type> <target MAC addr>
Measurement types are: TPC, Basic, CCA, RPI
Target MAC addr format is xx:xx:xx:xx:xx:xx

monitor

set monitor mode

0 - disable
1 - enable active monitor mode (interface still operates)

mrate

force a fixed multicast rate:

valid values for 802.11a are (6, 9, 12, 18, 24, 36, 48, 54)
valid values for 802.11b are (1, 2, 5.5, 11)
valid values for 802.11g are (1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54)
-1 (default) means automatically determine the best rate

- After using wl mrate set the multicast rate, how to check if it has been correctly setted? How to get the current mrate value? Skygunner

msglevel

set driver console debugging message bitvector

type 'wl msglevel ?' for values

noise

Get noise (moving average) right after tx in dBm

nvdump

print nvram variables to stdout No function. Use **nvram show**!

nvget

get the value of an nvram variable

nvset

set an nvram variable

name=value (no spaces around '=')

passive

Puts scan engine into passive mode

phylist

Return the list of available phytypes

phyreg

Get/Set a phy register.

radioreg

Get/Set a radio register.

phytype

Get phy type

pktcnt

Get the summary of good and bad packets.

plcphdr

Set the plcp header.

"long" or "auto" or "debug"

PM

set driver power management mode:

0: CAM (constantly awake)
1: PS (power-save)
2: FAST PS mode

powerindex

Set the transmit power for A band(0-63).

-1 - default value

prb_resp_timeout

Get/Set probe response timeout

primary_key

Set or get index of primary key

promisc

set promiscuous mode ethernet address reception

0 - disable
1 - enable

pwr_percent

Get/Set power output percentage

quiet

Send an 802.11h quiet command.

Usage: wl quiet <TBTTs until start>, <duration (in TUs)>, <offset (in TUs)>

radar

Enable/Disable radar

radio

When used without arguments, toggles radio on/off.

Arguments:
up - reinitialize adapter and mark as up
down - reset adapter and mark as down
out - mark adapter down but do not reset hardware
restart -

Examples:
wl radio
wl radio up

rate

force a fixed rate:

valid values for 802.11a are (6, 9, 12, 18, 24, 36, 48, 54)
valid values for 802.11b are (1, 2, 5.5, 11)
valid values for 802.11g are (1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54)
-1 (default) means automatically determine the best rate

ratedump

print driver rate selection tunables and

per-scb state to stdout, valid scb values are
0 through NSCB-1

rateparam

set driver rate selection tunables

arg 1: tunable id
arg 2: tunable value

rateset

Returns or sets the supported and basic rateset.

(b) indicates basic
With no args, returns the rateset. Args are
rateset "default" | "all" | <arbitrary rateset>
default - driver defaults
all - all rates are basic rates
arbitrary rateset - list of rates
List of rates are in Mbps and each rate is optionally followed
by "(b)" or "b" for a Basic rate. Example: 1(b) 2b 5.5 11
At least one rate must be Basic for a legal rateset.

reboot

Reboot platform

revinfo

get hardware revision information

```
~ # wl revinfo
vendorid: 0x14e4
deviceid: 0x4320
radiorev: 0x22050000
chipnum: 0x4712
chiprev: 0x1
corerev: 0x7
boardid: 0x101
boardvendor: 0x14e4
boardrev: 0x10
driverrev: 0x33c0d00
ucoderev: 0x1180016
bus: 0x0
~ #
```

regulatory

Get/Set regulatory domain mode (802.11d). Driver must be down.

roam_delta

Set the roam candidate qualification delta. (integer)

rm_rep

Get current radio measurement report

rm_req

Request a radio measurement of type basic, cca, or rpi

specify a series of measurement types each followed by options.
example: wl rm_req cca -c 1 -d 50 cca -c 6 cca -c 11
Options:
-t n numeric token id for measurement set or measurement
-c n channel
-d n duration in TUs (1024 us)
-p parallel flag, measurement starts at the same time as previous
Each measurement specified uses the same channel and duration as the
previous unless a new channel or duration is specified.

rmwep

Remove the encryption key at the specified key index.

roam_scan_period

Set the roam candidate qualification delta. (integer)

roam_trigger

Set the roam trigger RSSI threshold. (integer)

rssi

Get the current RSSI (signal strength) value.

In AP mode, you must specify the mac address of the wireless card who's signal signal you wish to monitor. You can use wl assoclist to get the client mac list.

```
wl rssi <MAC_ADDR_OF_CLIENT>
```

In client mode there is no need to specify the MAC address of the AP as it will just use the AP that you are associated with.

See also: Signal Strength on the Script Examples page for a one line script to display a bar graph of the current signal level.

rssidump

Dump rssi values from aci scans

rts

Set the RTS threshhold. (integer [0, 2347])

scan_channel_time

Get/Set scan channel time

scan_home_time

Get/Set scan home channel dwell time

scan_nprobes

Get/Set scan parameter for number of probes to use per channel scanned

scan_passive_time

Get/Set passive scan channel dwell time

scan_unassoc_time

Get/Set unassociated scan channel dwell time

scanresults

Return results from last scan.

scansuppress

Suppress all scans for testing.

0 - allow scans
1 - suppress scans

scb_timeout

AP only: inactivity timeout value for authenticated stas

scbdump

print driver scb state to stdout

scan

Initiate a scan.

Default an active scan across all channels for any SSID.
Optional arg: SSID, the SSID to scan.
Options:
-s S, --ssid=S SSID to scan
-t ST, --scan_type=ST [active|passive] scan type
--bss_type=BT [bss/infra|ibss/adhoc] bss type to scan
-b MAC, --bssid=MAC particular BSSID MAC address to scan, xx:xx:xx:xx:xx:xx
-n N, --nprobes=N number of probes per scanned channel
-a N, --active=N dwell time per channel for active scanning
-p N, --passive=N dwell time per channel for passive scanning
-h N, --home=N dwell time for the home channel between channel scans
-c L, --channels=L comma or space separated list of channels to scan

NOTE: 'wl scan' does not work in AP Mode. To scan please use:

wl ap 0
wl scan
wl scanresults
wl ap 1 (back to AP mode)

set_pmk

Set passphrase for PMK in driver-resident supplicant.

shmem

Get/Set a shared memory location.

shortslot

Get/Set 11g Short Slot Timing mode. (-1=auto, 0=long, 1=short)

shortslot_override

Get/Set 11g Short Slot Timing mode override. (-1=auto, 0=long, 1=short)

shortslot_restrict

Get/Set AP Restriction on associations for 11g Short Slot Timing capable STAs.

0 - Do not restrict association based on ShortSlot capability
1 - Restrict association to STAs with ShortSlot capability

slowtimer

Get/Set Low frequency watchdog timeout (nrssislope) [60 sec]

spect

Get/Set 802.11h Spectrum Management mode.

0 - Off
1 - Loose interpretation of spec - may join non-11h APs
2 - Strict interpretation of spec - may not join non-11h APs

srdump

print contents of SPROM to stdout (Functions neither in AP, nor nor in Client mode ~or something~)??? *Origional German: (weder im AP, noch im Client-Modus eine Ausgabe)???*

srl

srl Set the short retry limit. (integer [1, 255])

ssid

Set or get the current SSID.

Setting will initiate an assoication attempt if in infrastructure mode,

or join/creation of an IBSS if in IBSS mode,
or creation of a BSS if in AP mode.

sta_info

wl sta_info <xx:xx:xx:xx:xx:xx>

status

Print information about current network association. (also known as "assoc")

suprates

Returns or sets the 11g override for the supported rateset.

With no args, returns the rateset. Args are a list of rates,
or 0 or -1 to specify an empty rateset to clear the override.
List of rates are in Mbps, example: 1 2 5.5 11

tkip

Set TKIP options.

wl tkip [options]
[on|enable|1] enable TKIP
[off|disable|0] disable TKIP
[sw|software] perform TKIP in software
[hw|hardware] perform TKIP in hardware

tkip_countermeasures

Enable or disable TKIP countermeasures (TKIP-enabled AP only)

0 - disable
1 - enable

tsc

Print Tx Sequence Couter for key at specified key index.

tssi

Get the tssi value from radio

txant

Set the transmit antenna

0 - force use of antenna 0
1 - force use of antenna 1
3 - use the RX antenna selection that was in force during the most recently received good PLCP header

Note: can be used in conjunction with 'wl antdiv' to set the receive antenna

txpathpwr

Turn the tx path power on or off on 2050 radios

txpwr

Set transmit power in milliwatts. Range [1, 84]. (Deprecated: Use txpwr1 instead)

This can be set to a value above 84, but it may damage your hardware especially over prolonged use -- use with caution.

txpwr1

Set tx power in in various units. Choose one of (default: dbm):

-d dbm units
-q quarter dbm units
-m milliwatt units

Can be combined with:

-o turn on override to disable regulatory and other limitations

txpwrlimit

Return current tx power limit

ucflags

Get/Set ucode flags

upgrade

Upgrade the firmware on an embedded device

ver

Version information

```
~ # wl ver
wl:     3.60 RC13.0
       wl0: Aug  2 2004 14:32:51 version 3.60.13.0
~ #
```

wake

set driver power-save mode sleep state:

0: core-managed
1: awake

wds

Set or get the list of WDS member MAC addresses.

Set using a space separated list of MAC addresses.
wl wds xx:xx:xx:xx:xx:xx [xx:xx:xx:xx:xx:xx ...]

wds_remote_mac

Get WDS link remote endpoint's MAC address

wds_wpa_role

Get/Set WDS link local endpoint's WPA role

wds_wpa_role_old

Get WDS link local endpoint's WPA role (old)

wep

Set WEP options.

wl wep [options]
[on|enable|1]   enable WEP
[off|disable|0] disable WEP
[sw|software]   perform WEP in software
[hw|hardware]   perform WEP in hardware

wepstatus

Set or Get WEP status

wepstatus [on|off]

wet

Get/Set wireless ethernet bridging mode

wsec

Wireless security bit vector

1 - WEP enabled
2 - TKIP enabled
4 - AES enabled
8 - WSEC in software

wsec_test

Generate wsec errors

wsec_test <test_type> <keyindex|xx:xx:xx:xx:xx:xx>
type 'wl wsec_test ?' for test_types

wme

Set WME (Wireless Multimedia Extensions) mode (0=off, 1=on)

wsec_restrict

Drop unencrypted packets if WSEC is enabled

0 - disable
1 - enable

wpa_auth

WPA authorization mode

[none|0] none
[unspecified|1] WPA 802.1X
[psk|2] WPA PSK
[disable|255] disable WPA