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Basic info

- [Buffalo product page](#)
- Same board as Buffalo's [WHR-HP-G54](#), but missing a WAN port [\[1\]](#).

Adding a WAN port

It is possible to change one of the 4 default LAN ports into a WAN port. The typical disclaimers apply; messing with this stuff could brick your unit.

Preliminary

This procedure was tested using v24-SP2, release 08/07/10 (SVN revision: 14896), with the VPN build.

Facts you should know:

- `eth0` is the interface to access all physical network ports
- `eth1` is the wireless network interface
- `vlan0` is the virtual network device that represents LAN ports. Its "real" device is `eth0`.
- `vlan1` is the virtual network device that represents WAN ports. Its "real" device is *also* `eth0`.

Procedure

1. Install dd-wrt, turn on the SSH server, and set your public key.
2. SSH into the router.
3. Update the boardflags from `0x3658` to `0x3758` (add `0x0100`):

```
root@wli-tx4-g54hp:~# nvramp get boardflags
0x3658
root@wli-tx4-g54hp:~# nvramp set boardflags="0x3758"
root@wli-tx4-g54hp:~# nvramp commit
```

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Adding `0x0100` is necessary because the hardware doesn't have a WAN port and the firmware is initially configured without VLAN support. I tried this because the hardware is basically the same as the WHR-HP-G54, which supports VLANs and has `0x3758` by default. This is the crucial step; otherwise, everything is set up to use `eth0`, which treats all physical network ports the same.

4. Reboot. After booting, there should now be a "VLAN" tab under "Setup" and there should be two new interfaces in the "Networking" tab: `vlan0` and `vlan1`.

After this point, the remaining steps configure the router to be just like other routers that have a WAN port, with one exception: we map an additional port to the WAN network since there is no WAN port (`vlan1`).

5. In the Setup > VLAN tab of the web interface, change the assigned bridge of the first line (`vlan0`) to "LAN".

6. Uncheck port 4 from the first line (`vlan0`), and check it in the second line (`vlan1`). This configures port 4 as a WAN port and the others as LAN ports.

7. Save and open the Setup > Networking tab.

8. Under "Port Setup", set the "WAN Port Assignment" to `vlan1`.

9. Save and reboot the router.

10. SSH into the router.

11. Make some final changes that can't be done through the GUI. Specifically, remove `eth0` from the bridge and replace it with `vlan0`. This bridges the LAN ports with the wireless network.

```
root@wli-tx4-g54hp:~# nvramp get ifnames
eth0 eth1
root@wli-tx4-g54hp:~# nvramp set ifnames="vlan0 eth1"
root@wli-tx4-g54hp:~# nvramp commit
```

12. Reboot and port 4 should be a WAN port!

Troubleshooting

Port to VLAN map

I'm not entirely sure that the GUI changes above will correctly change port 4 to WAN rather than LAN. I did these steps, but I was also mucking around with `nvramp` variables at the time. To make sure, check the `vlan0ports` and `vlan1ports` variables [\[2\]](#). `vlan0ports` should be "1 2 3 5*" and `vlan1ports` should be "0 4 5":

```
root@wli-tx4-g54hp:~# nvramp get vlan0ports
1 2 3 5*
root@wli-tx4-g54hp:~# nvramp get vlan1ports
0 4 5
```

Otherwise, set them to the above and reboot:

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```
root@wli-tx4-g54hp:~# nvram set vlan0ports="1 2 3 5*"
root@wli-tx4-g54hp:~# nvram set vlan1ports="0 4 5"
root@wli-tx4-g54hp:~# nvram commit
root@wli-tx4-g54hp:~# reboot
```

Other VLAN related settings

Other settings to check are related to VLANs. I made sure mine were copied from another working Buffalo router running DD-WRT. Make sure they look like these:

```
root@wli-tx4-g54hp:~# nvram show | grep vlan | sort
dtag_vlan8=0
lan_ifnames=vlan0 eth1
port0vlans=1 18 19
port1vlans=1 18 19
port2vlans=0 18 19
port3vlans=0 18 19
port4vlans=0 18 19
port5vlans=0 1 16
pppoe_ifname=vlan1
pppoe_wan_ifname=vlan1
vlan0_bridged=1
vlan0_mtu=1500
vlan0_multicast=0
vlan0_nat=1
vlan0hwname=et0
vlan0ports=2 3 4 5*
vlan1_bridged=1
vlan1_mtu=1500
vlan1_multicast=0
vlan1_nat=1
vlan1hwname=et0
vlan1ports=0 1 5
vlan_tagcount=0
vlan_tags=
vlans=1
wan_default=vlan1
wan_iface=vlan1
wan_ifname2=vlan1
wan_ifname=vlan1
wan_ifnames=vlan1
wl0_vlan_prio_mode=off
```

See also

- [Default Configuration Overview](#) - Understanding this will save a lot of trouble. It explains the default VLANs and interfaces.
- [More on boardflags](#). The relevant one for this article is:

```
#define BFL_ENETVLAN 0x00000100 /* Board has VLAN capability */
```