



WRT54G MESH LAB

Old Routers. New Purpose.

Turn six DD-WRT WRT54G routers into your networking, mesh, and embedded Linux laboratory.

WHAT ARE WRT54GS GOOD FOR NOW?

Ham-Radio
Mesh
Networking

Network
Laboratory
& Education

Wi-Fi Repeater
/ Extender
(Limited)

IoT / Legacy
Network
Isolation

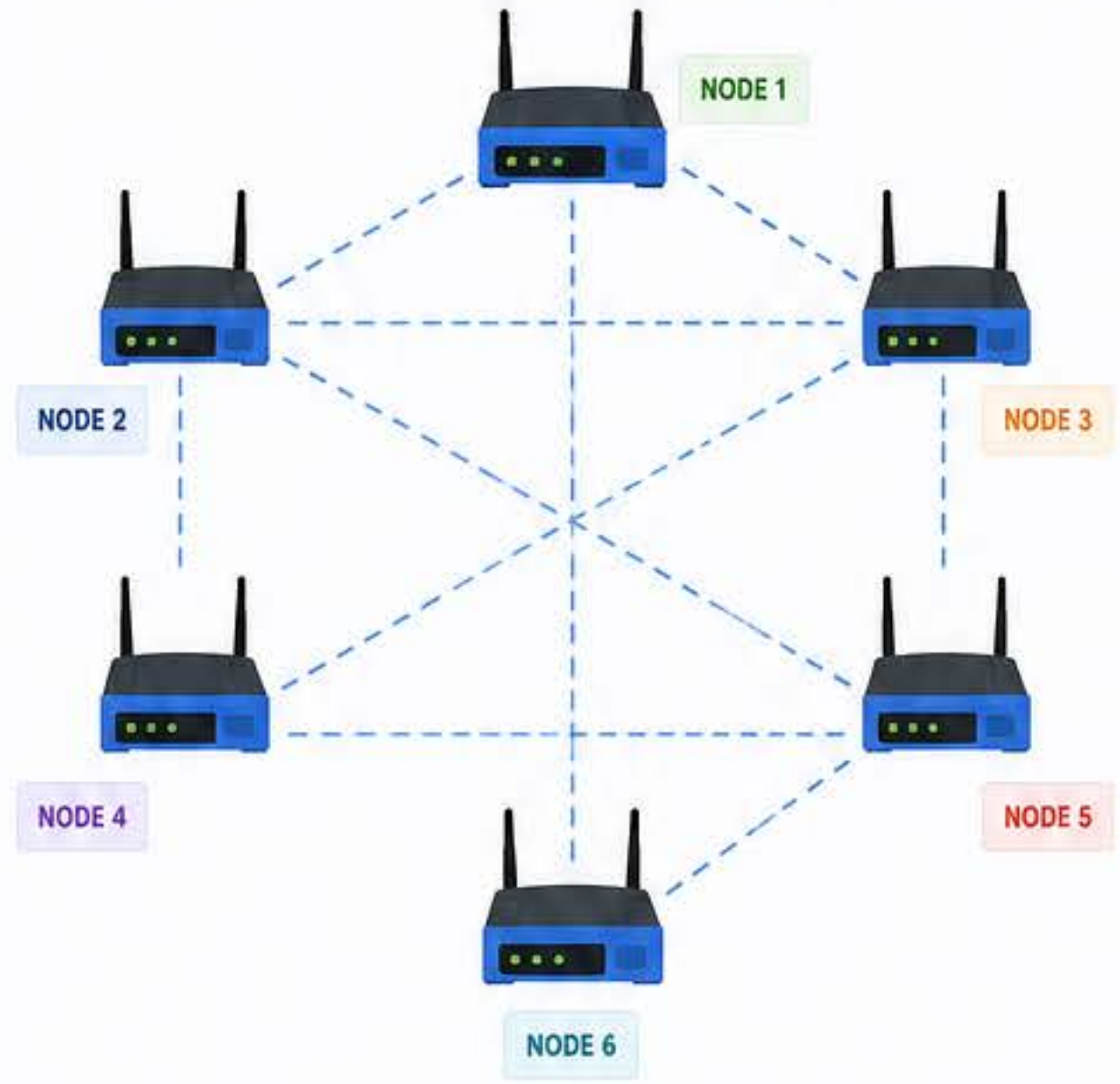
Embedded
Linux / Serial
Experimentation

Protocol &
Failure
Testing

THE HARD LIMITS

 Wi-Fi 802.11b/g	 Max Wi-Fi Rate 54 Mbps	 Real Throughput 20-25 Mbps	 Ethernet 10/100 Mbps
 Frequency 2.4 GHz	 MIMO No	 5 GHz / 11n/ac/ax No	 CPU ~200 MHz
 RAM 16 MB	 Flash 4 MB	 Security Legacy Only	 Open Support Ended 2022

SIX NODE MESH LAB EXAMPLE TOPOLOGY



Layer 2 Experiments

- Bridging, WDS, VLANs
- Wireless / Client Bridging

Layer 3 Experiments

- Static Routes, RIP
- Policy Routing

Wireless Experiments

- Channels, Antennas, Distance
- Interference, Throughput, Latency

Failure Testing

- Pull a Node - Observe Impact
- Redundancy & Convergence

Services & Tunneling

- VPN, GRE, Tunnels
- DHCP, DNS, NAT, QoS

Monitoring & Logging

- Packet Loss, Metrics
- Syslog, SNMP, RRD

WHERE THEY ARE OBSOLETE

Modern Internet
Gateway
(Bottleneck at 100 Mbps)

Primary Wi-Fi
(Much slower than modern Wi-Fi)

Security Appliance
(Not suitable for modern security)

High-Speed Applications
(Too old & limited)

HOW TO USE YOUR SIX UNITS

1

Ham-Radio / Mesh Node

- Long range links
- Directional antennas
- Multi-hop routing

2

Network Lab Router

- Static / Dynamic Routing
- VLANs, DHCP, DNS

3

Wireless Bridge / Repeater

- Client Bridge
- WDS / Repeater (Experiment)

4

IoT / Legacy Gateway

- Isolated VLAN
- Legacy or IoT devices

5

Embedded / Serial Experiment Box

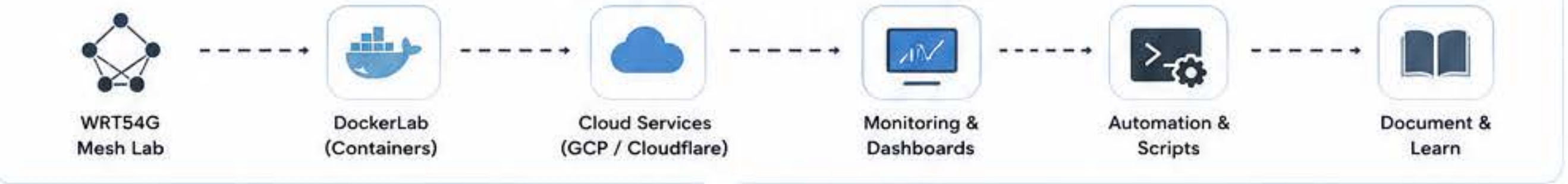
- Serial Console
- Firmware / Bootloader Experiments

6

Spare / Recovery / Parts

- Backup unit
- Parts for repairs

INTEGRATE WITH YOUR EXISTING LAB



HARDWARE QUICK FACTS

- ✓ Model: Linksys WRT54G / WRT54GL
 - ✓ Wi-Fi: 802.11b/g (2.4 GHz only)
 - ✓ Max Wi-Fi Rate: 54 Mbps (PHY)
 - ✓ Real Throughput: ~20-25 Mbps
- ✓ Ethernet: 10/100 Mbps
 - ✓ RAM: 16 MB | Flash: 4 MB
 - ✓ CPU: ~200 MHz Broadcom MIPS
 - ✓ Release Date: Dec 2002

REMEMBER

Use in isolated networks. Not for critical or secure production use.

KEEP, EXPERIMENT, LEARN

Six old routers can become a powerful, hands-on laboratory for networking, mesh, radio, and embedded Linux.