

Three Dumb Routers

(based on Security Now! Episode 545)

Primary References

- TWiT podcast:** <https://twit.tv/shows/security-now/episodes/545>
YouTube: https://www.youtube.com/watch?v=uVBP30nd6_Q#t=1h06m45s
Transcript: <https://www.grc.com/sn/sn-545.pdf>
- TWiT podcast:** <https://twit.tv/shows/security-now/episodes/546>
YouTube: <https://www.youtube.com/watch?v=rqIzPVENkfE#t=1h48m32s>
Transcript: <https://www.grc.com/sn/sn-546.pdf>

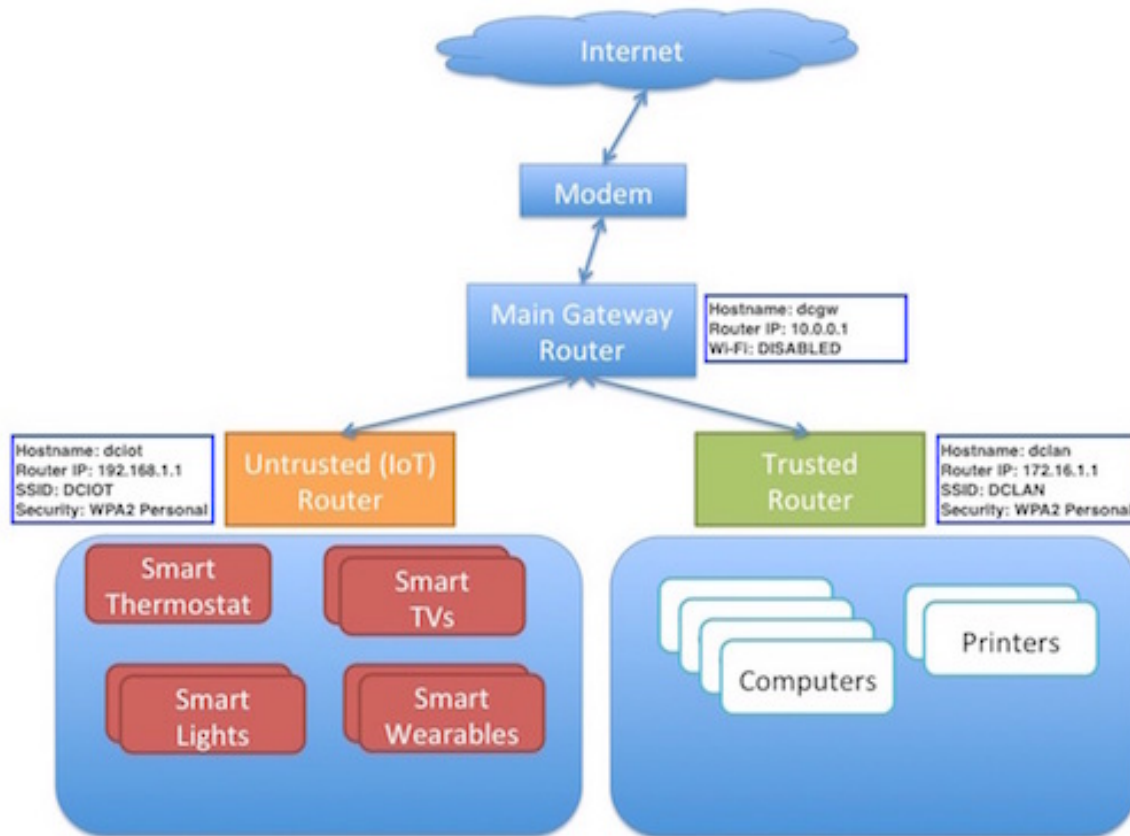
Supporting “How To” Articles

- **Three dumb routers are coming to a home network near you**
<http://www.securityperspectives.com/three-dumb-routers-are-coming-to-a-home-network-near-you/>
- **Steve Gibson's Three Router Solution to IOT Insecurity**
<https://www.pcper.com/reviews/General-Tech/Steve-Gibsons-Three-Router-Solution-IOT-Insecurity>
- **Nerd Cave - Router Configuration**
<http://nerdcave.littlebytesofpi.com/router-configuration/>

All “Not-So-Quiet” on the IOT Front

- **A Hacker Just Pwned Over 150,000 Printers Left Exposed Online**
<https://www.bleepingcomputer.com/news/security/a-hacker-just-pwned-over-150-000-printers-left-exposed-online/>
- **IoT Calamity: the Panda Monium**
http://www.verizonenterprise.com/resources/reports/rp_data-breach-digest-2017-sneak-peek_xg_en.pdf
- **Norse Live Attacks Map**
<http://map.norsecorp.com/#/>

Three Dumb Router Diagram



Three Dumb “Blue-Box” Routers Used Today

- Reset all routers to Factory Default
- Linksys Support site does not have any firmware for 2 of the 3 routers
“No firmware/driver download available”
- Configured each router to be a separate, non-routable IP address ranges

Notes

1) Clients of the DCLAN and DCIOT routers can **not** reach each other because their IP addresses are **non-routable**.

2) SpeedTest (<http://www.speedtest.net>) showed no degradation having clients beneath two layers of routing.

3) Non-routable IP Address Ranges

- 10.0.0.0 - 10.255.255.255
- 172.16.0.0 - 172.31.255.255
- 192.168.0.0 - 192.168.255.255

Alternative Router Firmware Sources

- **DD-WRT** - <http://www.dd-wrt.com/site/index>
- **OpenWrt** - <https://openwrt.org>
- **Tomato** - <http://www.polarcloud.com/tomato>

NEW Router Recommendations

* * * As a general rule, replace any router that is **older than 5 years** * * *

Router #1: Main Gateway (or Border) Router

- **Ubiquiti EdgeRouter X** - \$49 (on Amazon)
<https://www.ubnt.com/edgemax/edgerouter-x/>

Router #2: Secure LAN / Wireless Router

- **GOOD: ASUS RT-ACRH13** - \$69.99 (on Amazon)
<https://www.asus.com/us/Networking/RT-ACRH13/>
- **BETTER: Synology RT1900ac** - \$149.99 (on Amazon)
<https://www.synology.com/en-us/products/RT1900ac>
- **BEST: Synology RT2600ac** - \$239.95 (on Amazon)
<https://www.synology.com/en-us/products/RT2600ac>

Router #3: Internet of Things (IOT) LAN / Wireless Router

- **ASUS RT-ACRH13** - \$69.99 (on Amazon)