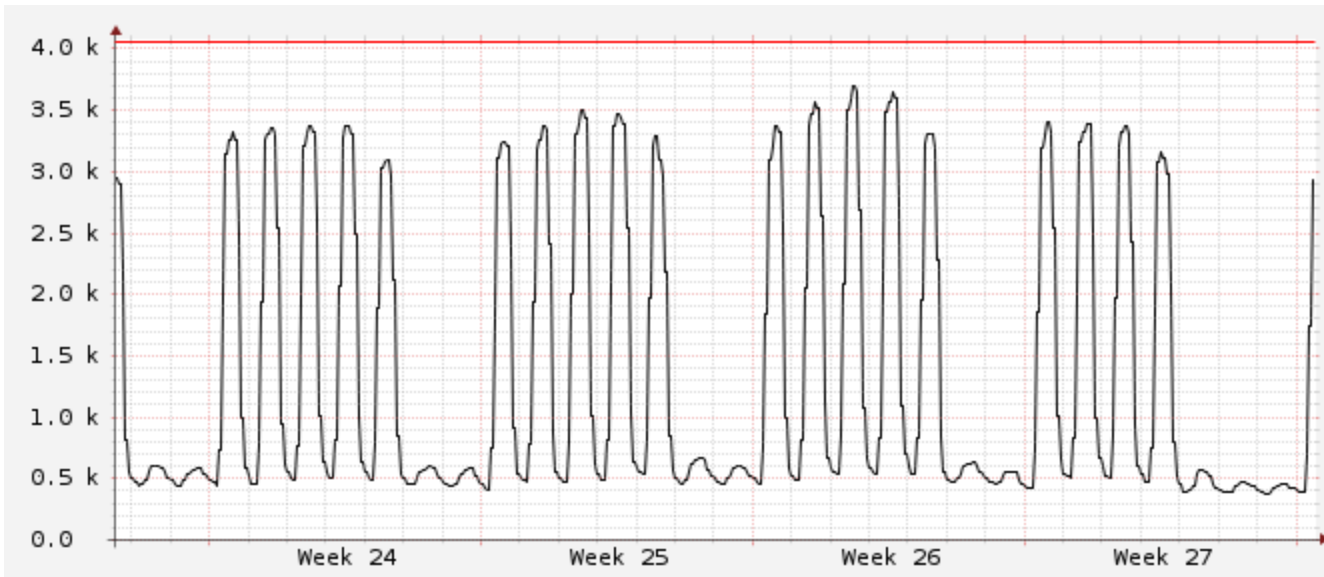# **Wireless Router Upgrade**
(AS 63331)

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LBLnet Services Group
July 2015

Goals

- Provision more IPv4 address space
  (hit 367 free of 4049 leases on 24-June)
  - Existing: 198.128.192.0/20
  - Added: 198.128.208.0/20
  - Total: 198.128.192.0/19

Goals cont.

- Replace aging visitor wireless router
  - 1x Cisco 6500 (wr1gw)
- With redundant wireless routers
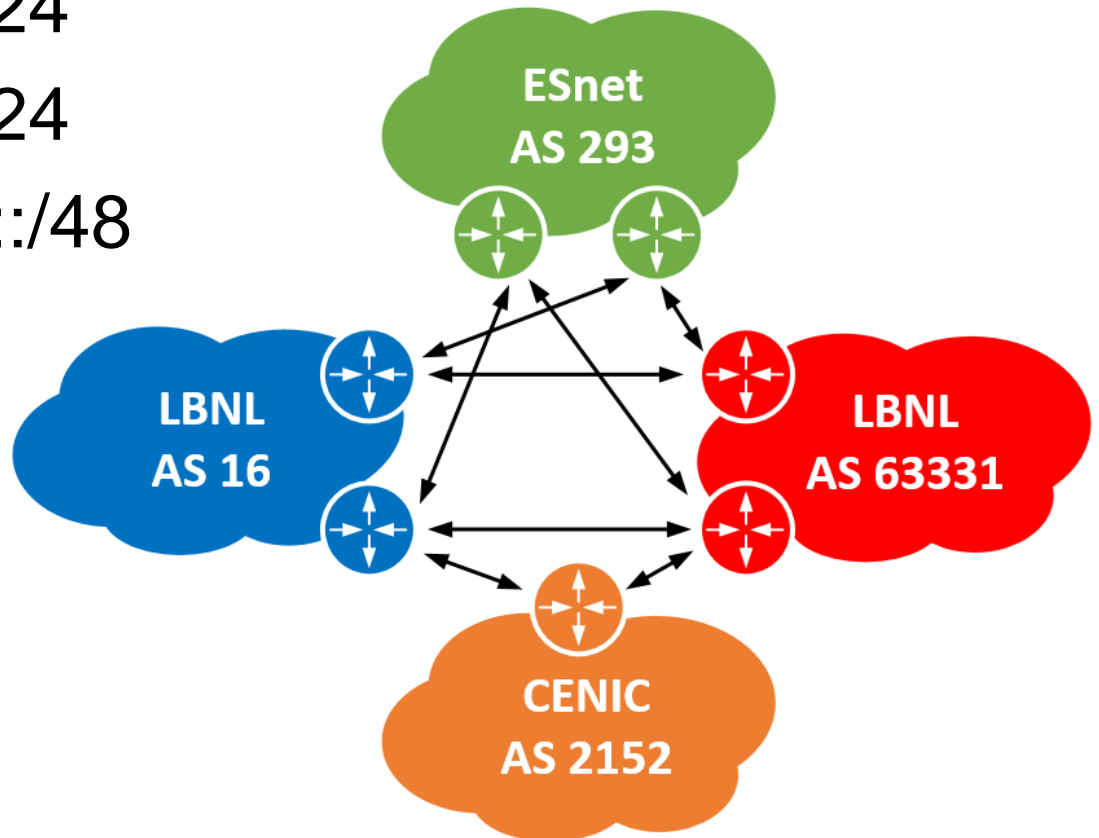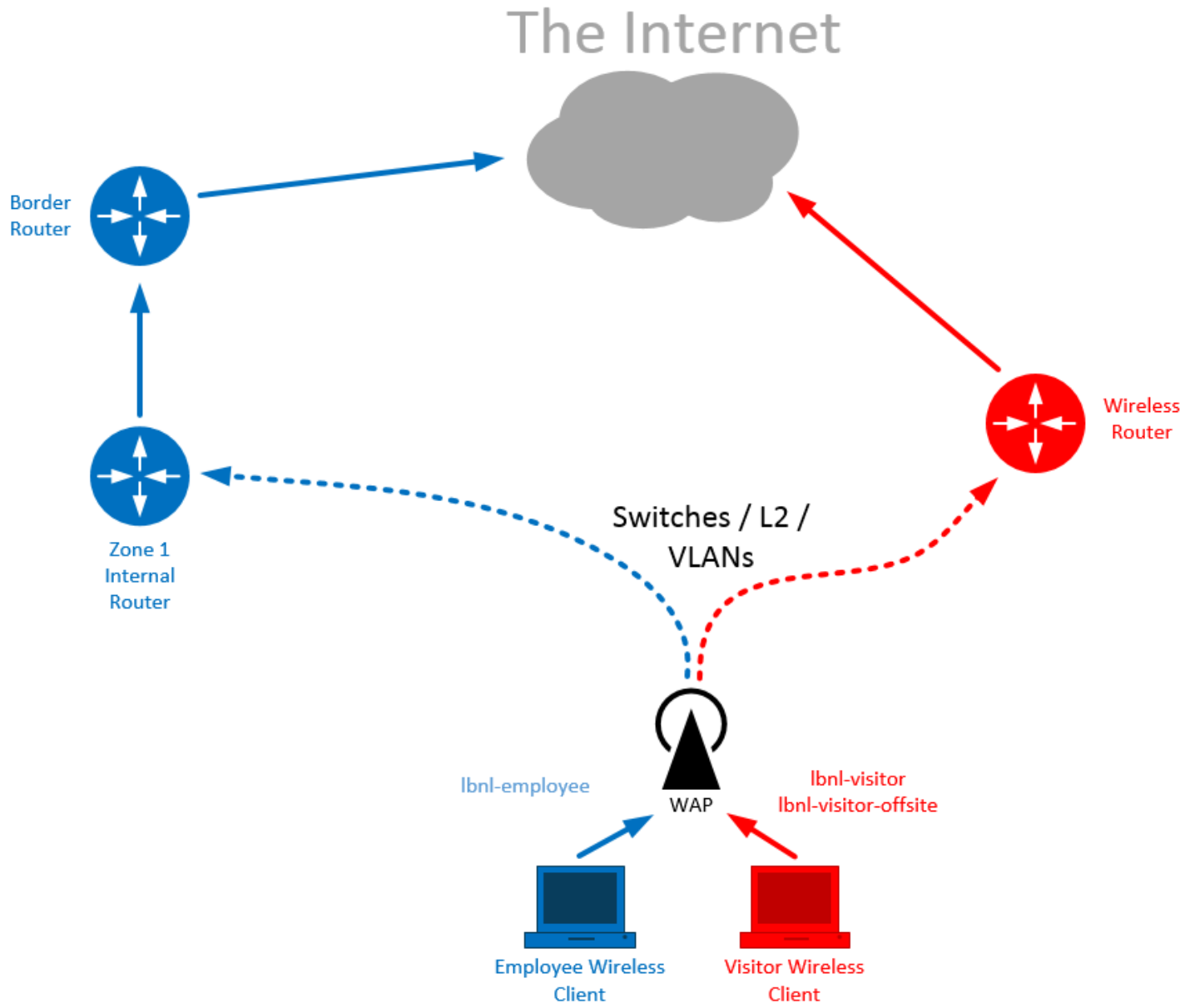 - 2x Juniper MX5s (wr1-n1, wr2-n1)

Goals cont.

- Add redundant links to ESnet (IPv4, IPv6)
  - Physical link to LBL-MR2
  - VLAN on 100G link to SUNN-CR5
- Add redundant link to CENIC (IPv6 only)
- Take shorter path to LBNL "internal" nets
  - Wireless Routers peering with Border Routers

Goals cont.

- Provider Independent Address Space
  - 192.12.173.0/24
  - 192.58.231.0/24
  - 204.62.155.0/24
  - 2620:83:8001::/48
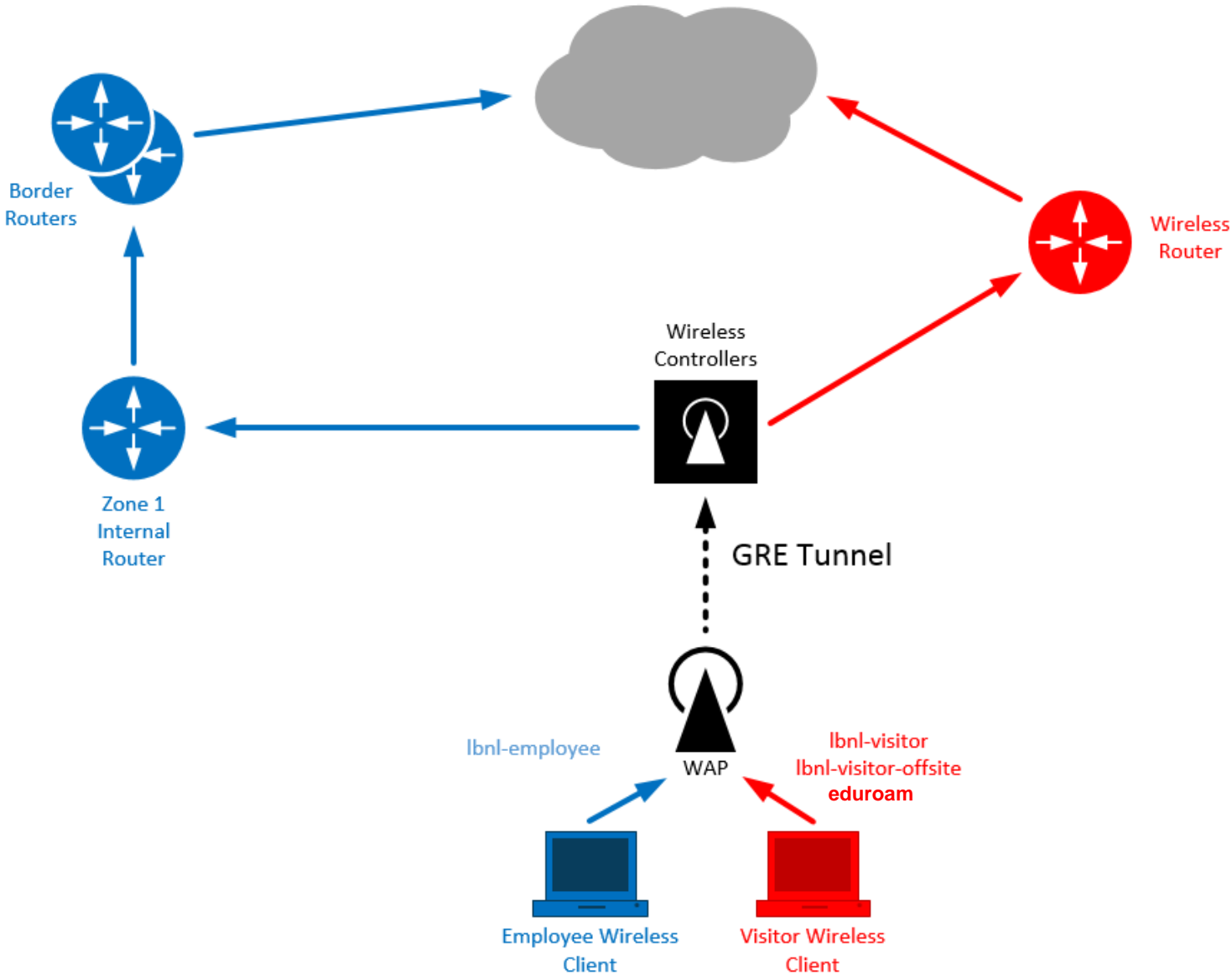- And a new Autonomous System (AS)
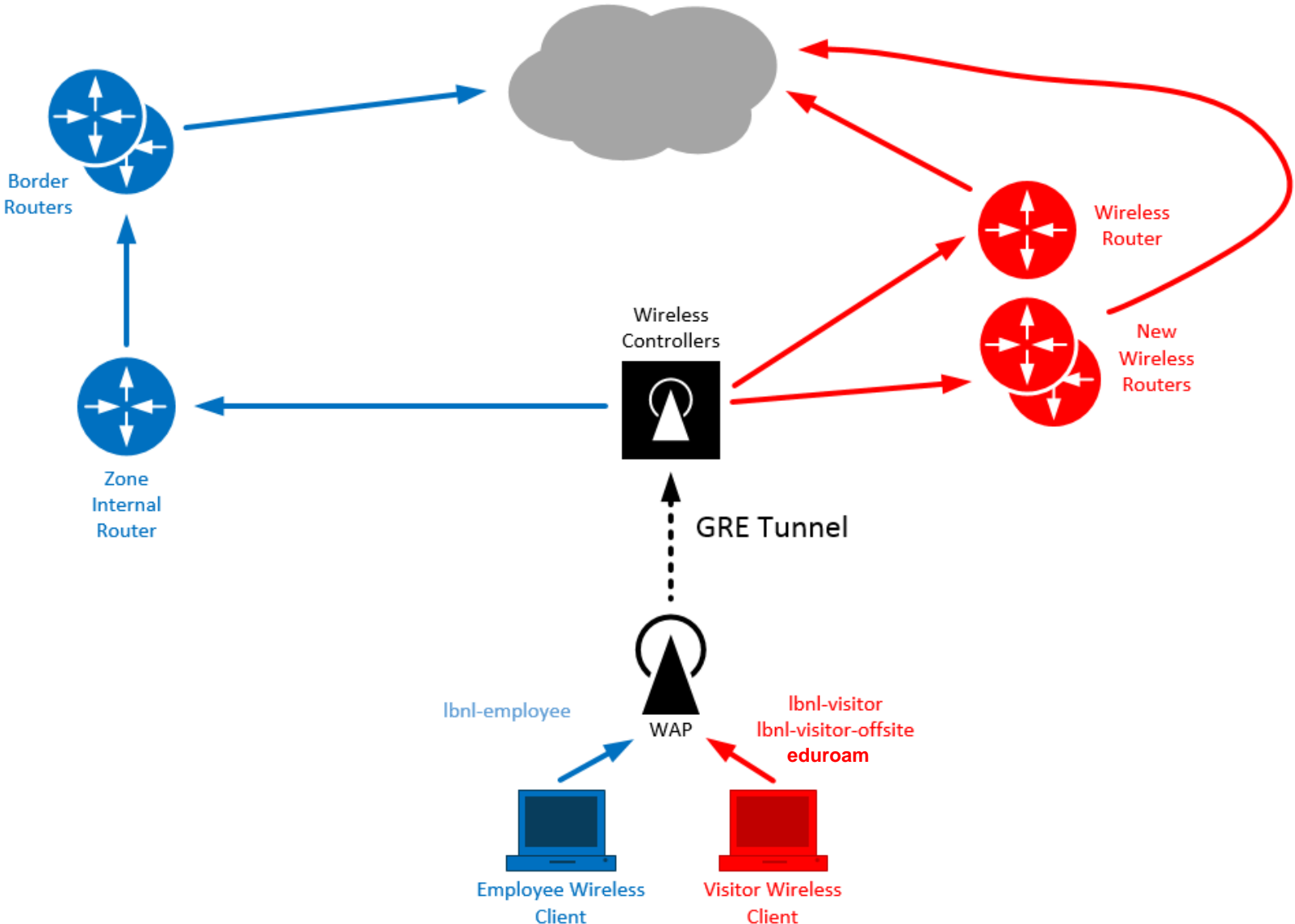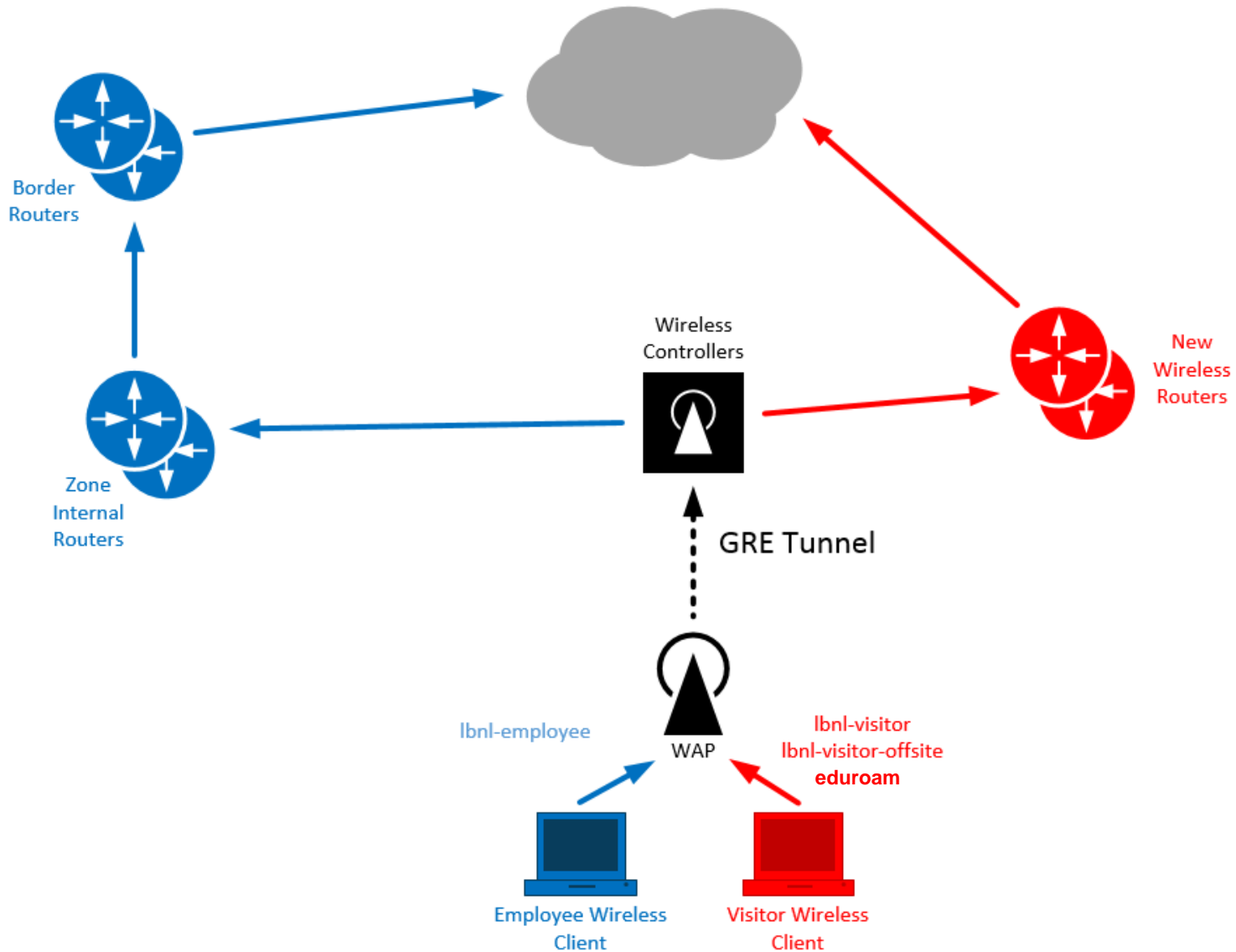
Old Routing and Cisco APs

Aruba APs

New Routing

Long Term

Peering - Old
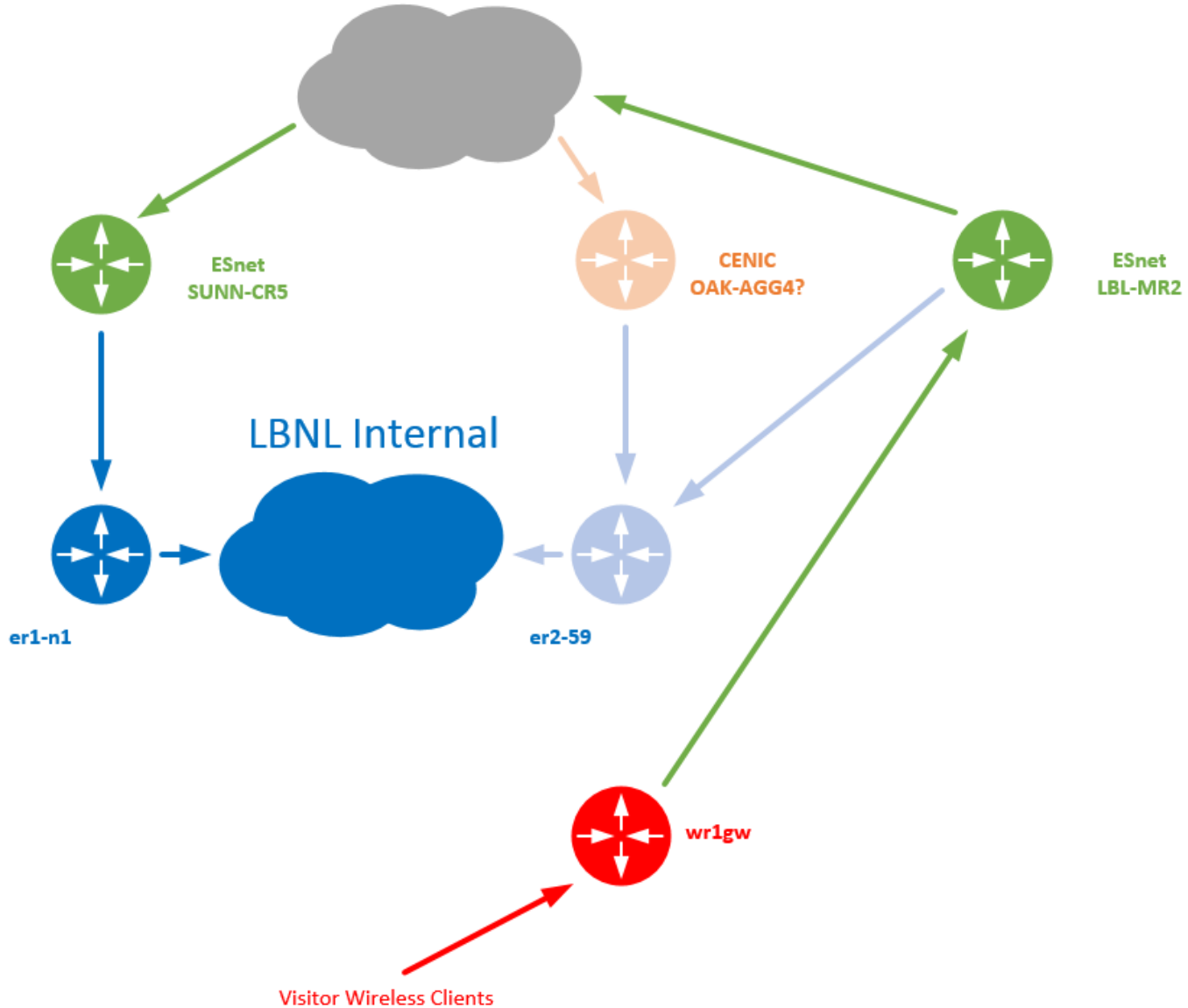
Peering - New

The Internet

ESnet
SUNN-CR5

CENIC
OAK-AGG4?
IPv6 only
(IPv4 in emergency)

ESnet
LBL-MR2

LBNL Internal

er1-n1

er2-59

wr1-n1
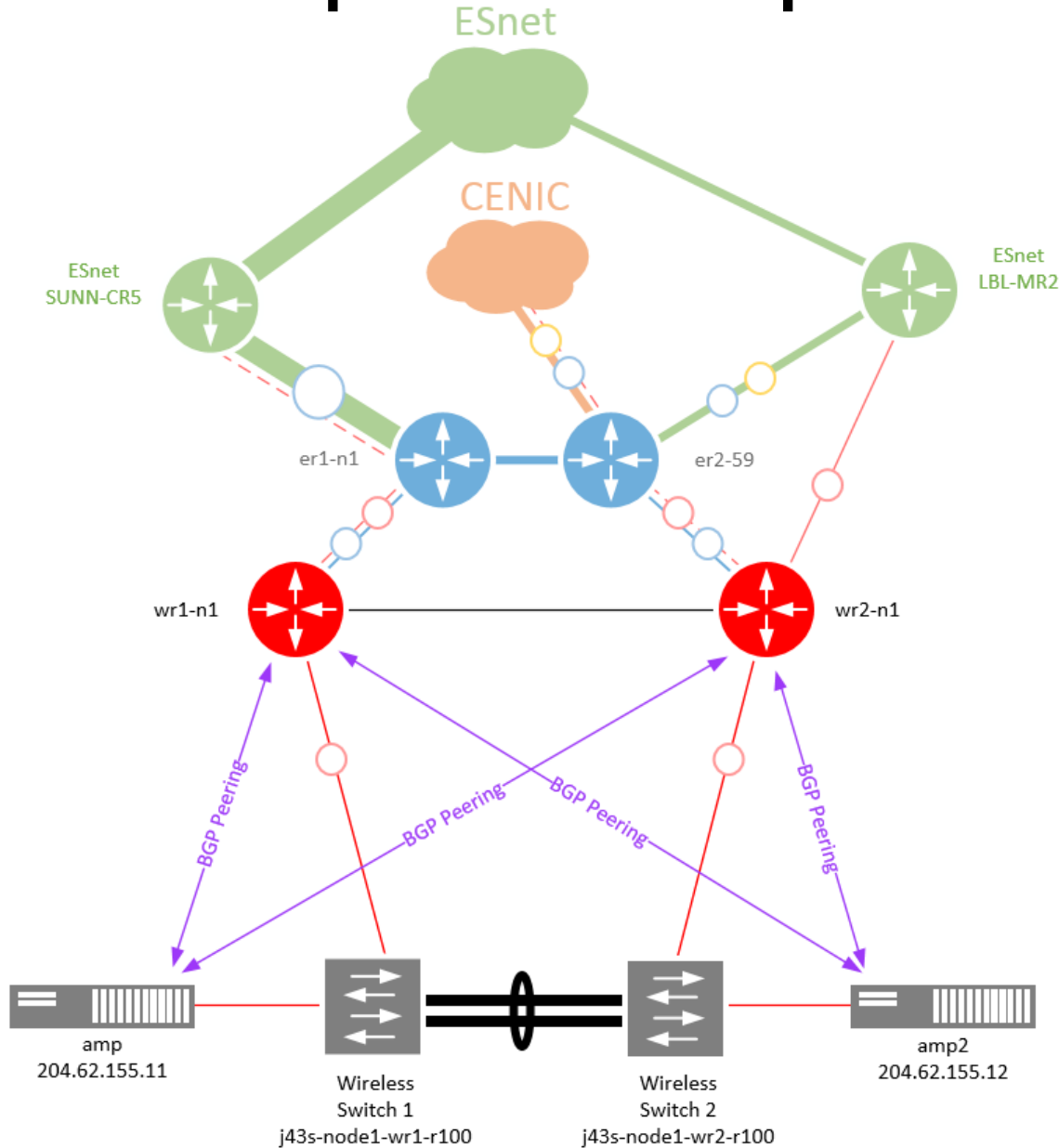
wr2-n1

Visitor Wireless Clients
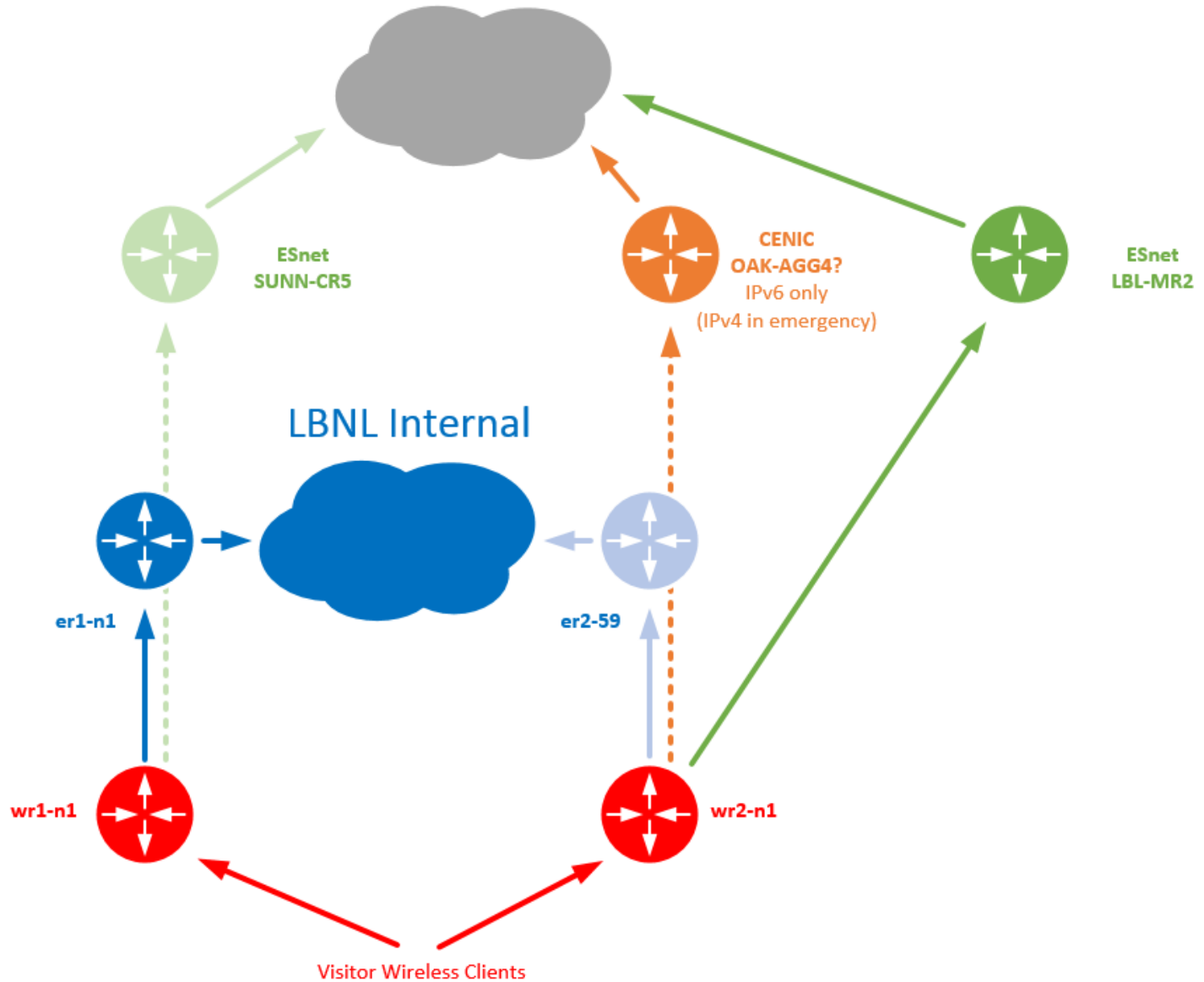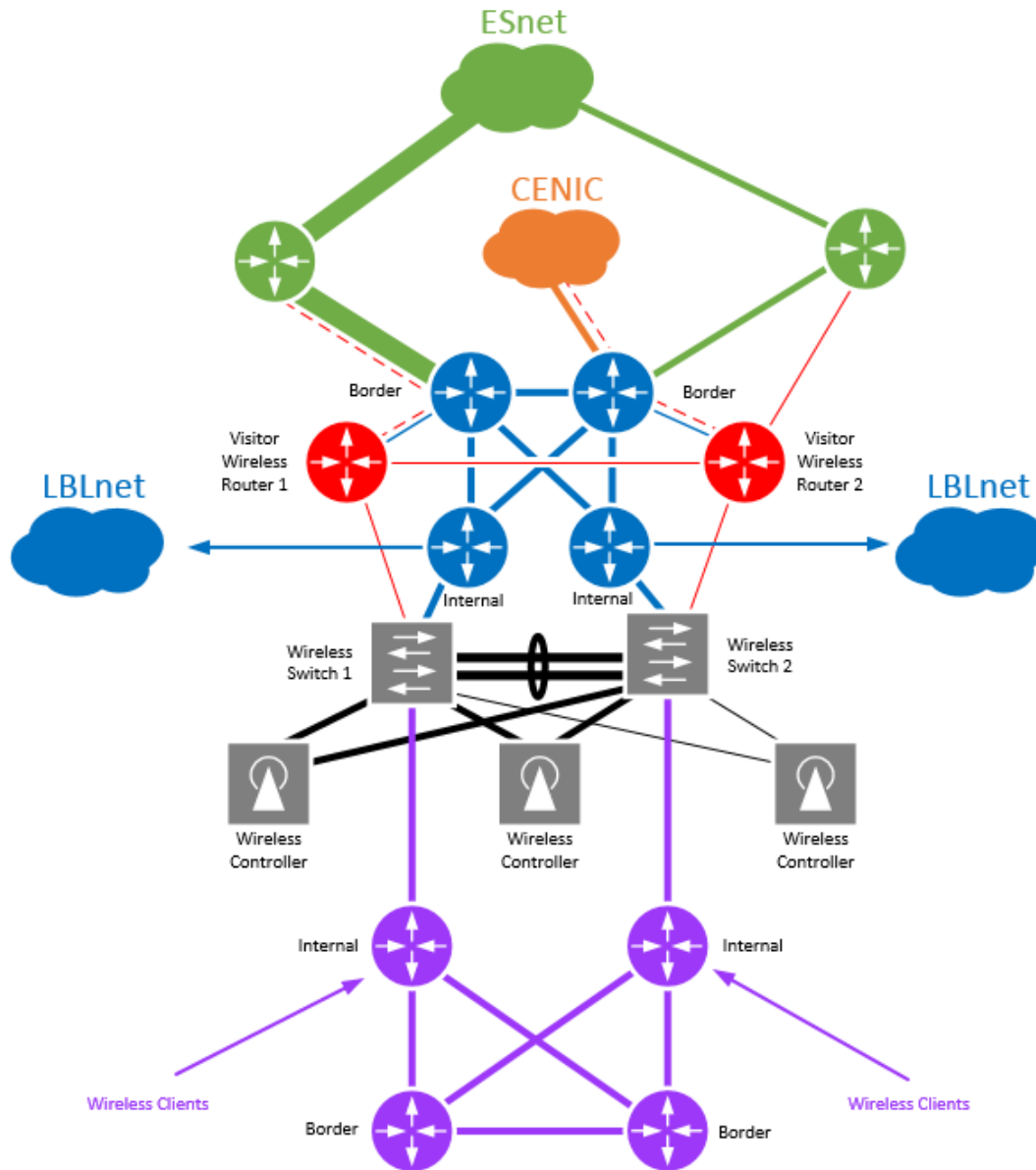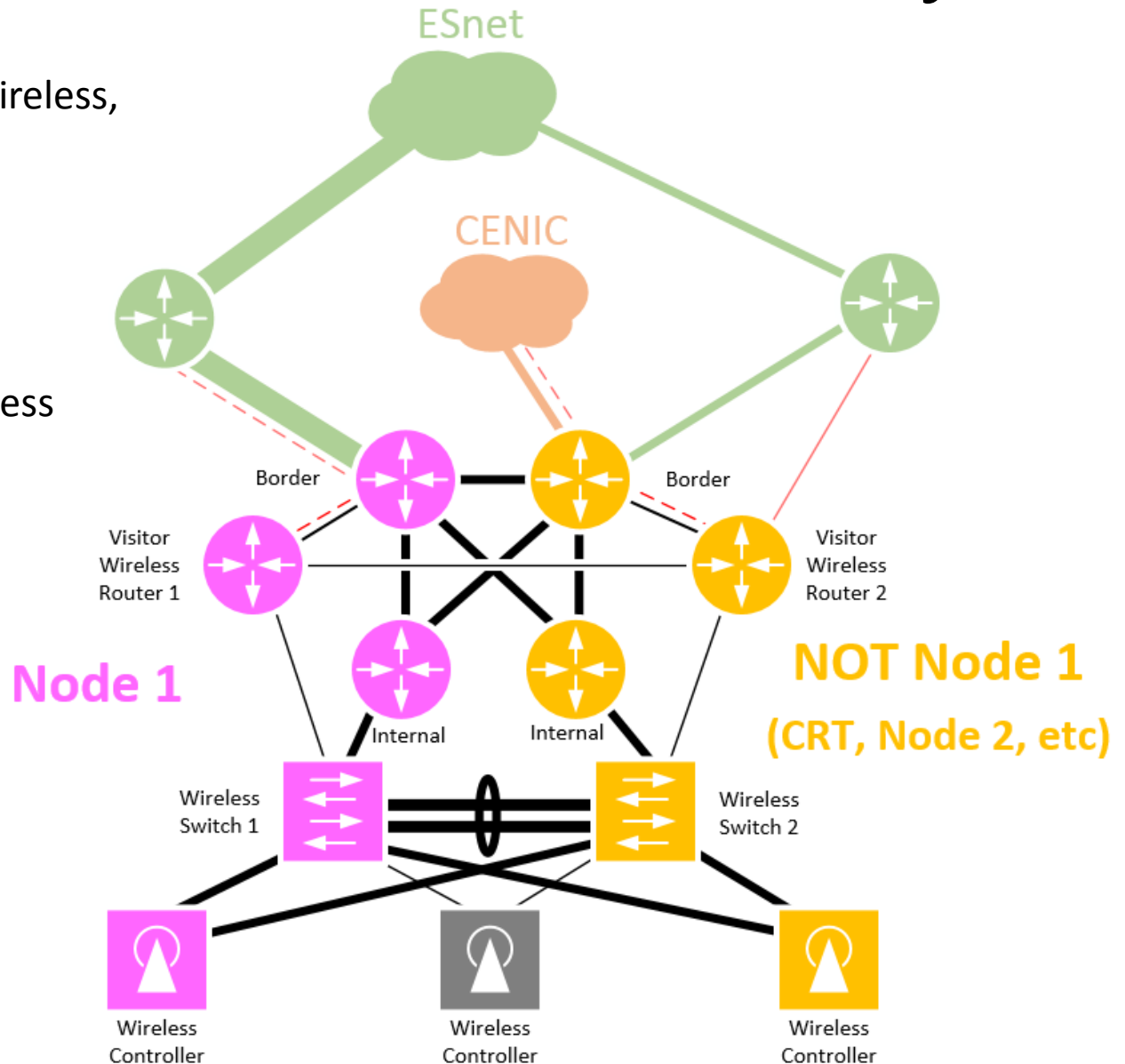
Redundancy

Tapping
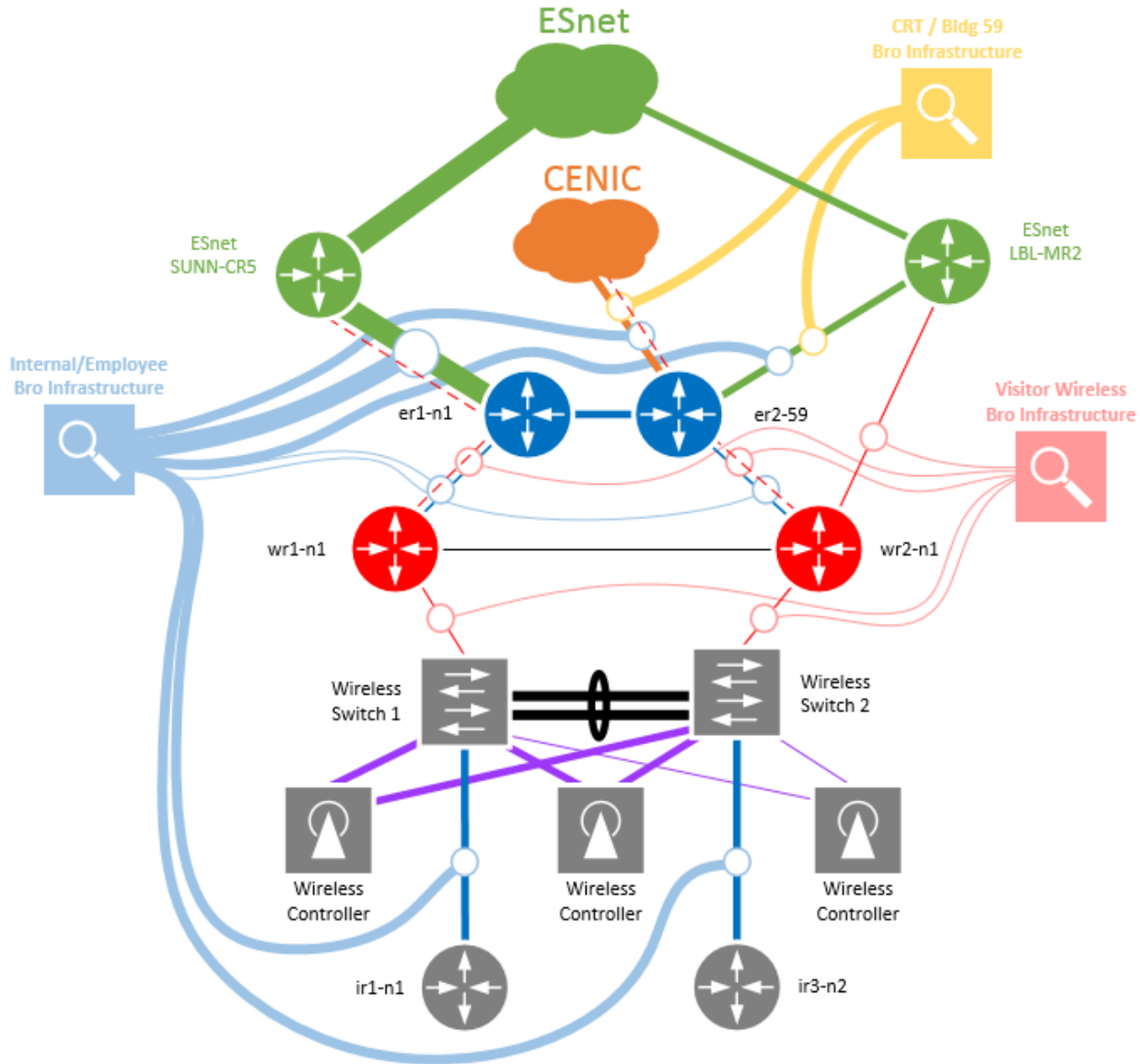
amp and amp2

Longer Term Goals

Longer Term - Redundancy

- HSRP for employee wireless, AP subnets, etc.

- Redundant wireless controller chassis

- Relocate Visitor Wireless router and switch

- Relocate amp2

Longer Term - Bandwidth

- Some existing 10G links already

- Others are 1G links, but can become Nx1G just by adding cables/optics

- ESnet SUNN-CR5 and CENIC external peerings are VLANs on larger links (100G, 10G) already
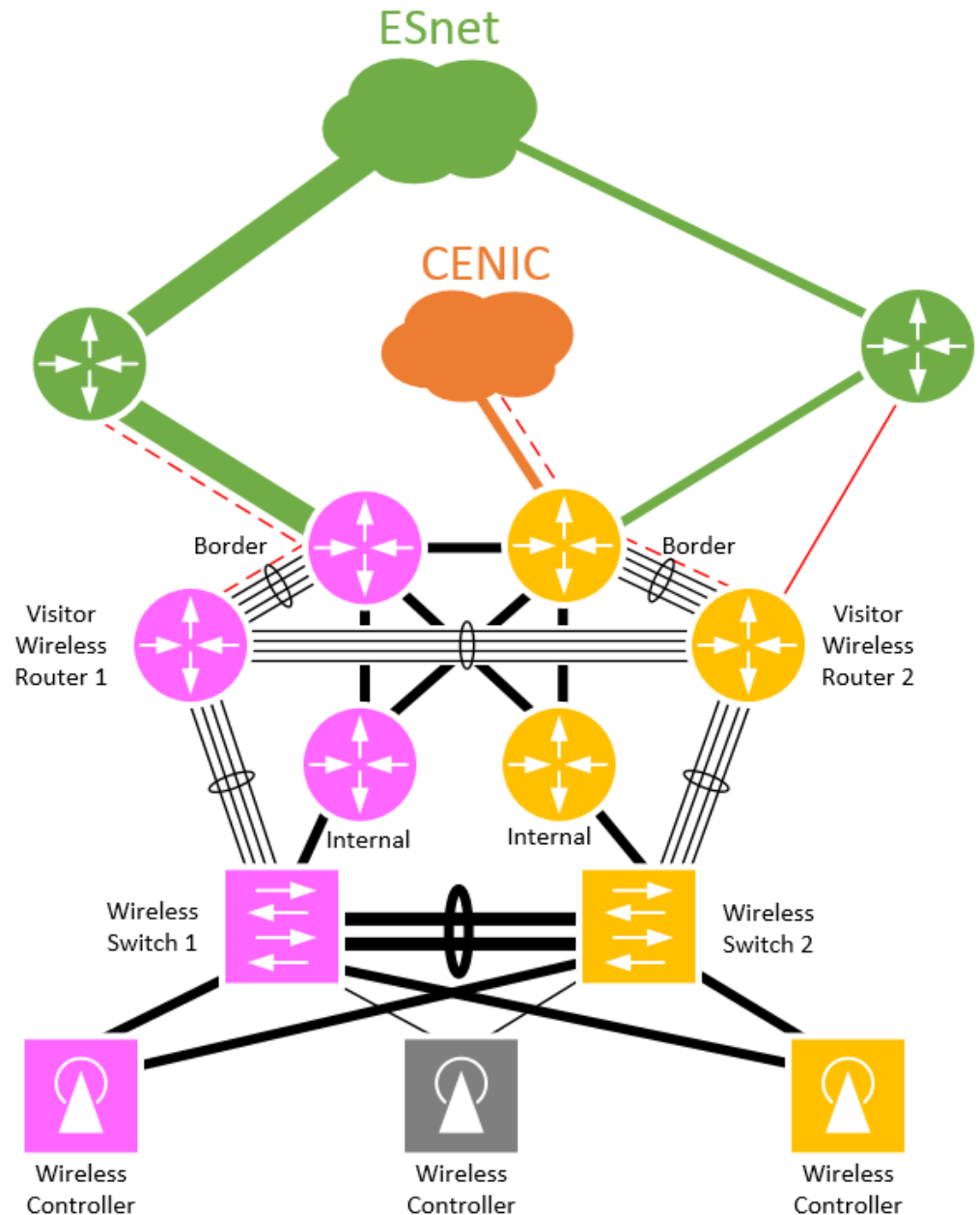
Map of Current Visitor Wireless

Concept of New Visitor Wireless (Not Final)