A “Research” ISP for Experiments, Insight, & Research

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Recent Challenge

• Setup an IPv4 / IPv6 dual-stack relay server
• Institution had IPv6 peering only with Internet2
• No IPv6 through backbone to our lab net
• Couldn’t perform 2002::/32,48,64 announcements
• Setup tunnelbroker.net on lab node
  • Ongoing lab VM cluster/node problems
• Experiment coordination and administration
  • Significant lag time between request and action
• **ARGH**: jtk uses ops role net/sys to do all this work
Basic Idea

- A commercial-looking ISP run by netops for R&E
  - Access to BGP, addressing, servers, locales
- AUP aligned to research purposes
- For TX experiments safe for the Internet
- To RX whatever the net cares to deliver
- Data, data, data
  - flows, BMP, pcap, syslog, traps
- Teaching, training, testing opportunities
- Use the existing net, not try to build a new one
What We Might Do

- Run an anycast environment
- Obtain transit/peering with certain IX or net
- Run Tor exit node, IRC server, UUCP, SMTP, etc.
- TX/RX “magic bits” filtered by institution policy
- Selectively announce BGP routes / attributes
- Sinkholes, black holes, sensors, honey pots
- Provide addressing, connectivity, and hosting
  - For downstream researchers and students
  - Provisioning tools and methods research
This is Not

• Internet++
• High-speed drag racing
• R&E institution/lab interconnect
DataPlane.org

- 100+ VMs / servers around the world
- Sensors for providing threat intelligence
  - Customized listeners: ssh/dns/http/vnc/sip/…
  - Geographic and IPv4 /8 diversity
  - Low cost, some admin burden
  - Feeds widely used by threat sharing orgs
- Acquire PI ASN(s)/addresses
- Acquire distributed hosting space and connectivity
- Community RTBH/flow-spec service