Chemistry IT's use of 10-space

Characterizing the use of 10-space within Chemistry and Physics.

See also

CIT's proxy server's listing of proxied services:

- https://transproxy.cit.cornell.edu:9443/Proxied/
- Service is managed by IT Security Office (ITSO).
- This service is running on really old hardware, and Oliver understands that it also has some scaling limitations so adding new allowed services
- **Question:** What is the proxy service being used by RedRover/ eduroam, if different? And if different, what services are be proxied?
  - Answer: 2/16/16, per Michael's email conversation with GlennFFL: Yes, "proxy" service used by RedRover/ eduroam is different:
    - Traffic from EduRoam, RedRover, dorm networks, Access Nets, and a few other places is sent through a different Fortinet firewall infrastructure, and run through a NAT where it goes off-campus.
      Since *all* off-campus traffic is handled this way, there's no need for proxying, let alone the selective proxying provided by Transproxy.
      CIT Infrastructure provides this service - if you have issues or questions about the service, the IT Service Desk (itsd@, x5-5500) is probably the place to start.
- **Question:** Couldn't one just use the new proxy-cabable devices currently being used by RedRover/ eduroam, etc., and get rid of old Transproxy hardware?
  - Answer: 2/23/16, per Oliver's brief phone conversation with LaurieC: Yes, services are redundant at a technical level. ITSO to consider migrating service to new Fortinet hardware, to our edge. Nothing scheduled yet, since migrating from ACLs to Managed Firewall is currently a key project they are focusing on, understandably. Long-term, such a change will put the Transproxy on a robust, scalable service platform. (ed. And 10-space can then continue to be relied on as a safe place to put vulnerable computers that need updates or file share access, but don't need full internet access.)

Used primarily for two reasons:

1. Easy, powerful protection

Easy protection for devices not needing a public IP but benefiting from being on Cornell's network.

- Simpler and more bomb-proof network protection than a firewall.
- 10.Space systems are blocked from accessing general internet / web sites. This minimizes risks of malware or data breaches from these systems.
- Computers still get:
  1. network access to group file shares.
  2. Active Directory and other campus computing management access
  3. Patching and updates: OS, apps, anti-virus.
  4. Network-based anti-virus reporting.
- Printing from RedRover/ eduroam, which is not normally allowed in, is enabled by opening port 9100.
  - No VPN required.
- Small Routers on 10 space used to isolate clusters and systems with obsolete OS from other network devices, while allowing network access.

On occasion the device may need a public IP temporarily. Such a change requires modifying the DNSDB record.

- This is usually simpler and faster than making changes to CU's ACLs or firewall services.

Use cases in Chemistry

As of Jan. 12, 2016:

- All (100%) of Chemistry and Physics networked printers: **129**
  - 87 of those are on Research networks.
- Many, many computers hooked up to instrument systems and most servers: **74**
  - 49 of those are on Research networks.
- 10 Space routers, allowing access for multiple systems

For context. other numbers:

- Public IPs for all Chemistry and Physics systems: **260***
  - Count does not include Physics Grad lab, with 61 public IPs assigned.
- Systems on "zero" space: 22

2. Optimizes use of limited IP space

Affords twice the number of IPs on a network than if 10-space numbers were converted to public IP addresses (and presumably similarly blocked at the network layer via firewall or ACL).

- Many of our computers are outdated, and will never be able to utilize ipV6.

Caution: Ensure CU's proxy server configured with necessary off-campus access

- Cornell's private network (10-space)

Source info in Chemistry IT

Excel file called "DNSDB 10-space counts 1-12-16" located:

- R:\Chem IT\Infrastructure\Networking