

Network Infrastructure & Services - Fall 2016 Update

Building Aggregation Router (BAR) Project

Basics:

- Provides routing to campus buildings
- Multiple 1 to 10 Gbps redundant links
- Replaces legacy distribution routers
 - Over a decade of service (2005)

Benefits:

- Improved network reliability and stability
 - Separates control traffic from user 'data plane' traffic
 - Protects routing and other critical processes from being affected by user traffic
 - Reduced dependencies between various processes
 - High speed connections to multiple core routers
- Bigger, Better, Faster
 - 9.6Tbps of backplane capacity vs 720Gbps
- Migration Schedule
 - Owens area completed
 - Cassell area in progress
 - Shanks area November
 - Burruss area November/December
 - Hillcrest area December/January
 - ISB area January

Wireless Device Registration Pilot

- Allows for connection of 'commodity' devices to VirginiaTech SSID

- Not intended for laptops/smart phones -- these stay on eduroam
- Limited to residential halls during pilot
- 1500 devices currently registered
- Users register and manage their own devices
- When will it be available campus wide?
 - “It’s not good enough” at this time
 - Multiple constraints inherent to the product
 - Will require significant software development
 - **“Tentative”** for Fall 2017 - but much assessment/work to do before we can be confident of this date



You may register up to 5 devices by MAC address to use the **VirginiaTech** wireless network.

This service is intended for gaming consoles, media streaming devices, etc.

Do not register smart phones, laptops and tablets. These devices should use [eduroam](#).

This service is a pilot available only in the Virginia Tech residence halls. Devices registered here will not connect to the network elsewhere on campus.

| Quick Help | | Create | | |
|-----------------|-------------------|--------|--------------------|--|
| Device name | MAC Address | State | Expiration | |
| Roku | 00-99-77-AB-CA-22 | Active | 2017-07-29 19:44 | |
| XboxOne | 00-00-99-00-AA-38 | Active | 2017-08-07 00:37 | |
| Samsung SmartTV | 00-00-99-00-AA-34 | Active | 2017-08-07 00:16 | |
| Refresh | | 1 | Showing 1 – 3 of 3 | |
| | | | 20 rows per page | |

[Back to quests](#)

[Back to main](#)

WiFi Enhancements

- Over 7000 AP's

- 80% support 802.11ac
- Unified communications project will upgrade wired and wireless in the following buildings
 - Norris Hall
 - Derring Hall
 - Litton Reaves Hall
 - War Memorial Gym
- Distributing wireless controllers across campus - December 2016
 - Keep traffic local
 - Improved roaming experience

Fall 2016 Wireless Issues

- User churn during classroom change times
 - Lots of clients across campus associating during a small window of time
 - Resource contention - controllers, campus AAA servers, eduroam federation servers
 - Actively working with vendor
 - Added additional AAA servers

- Analyzing architecture to gain more efficiencies
- Where'd my connection go?
 - DFS - Dynamic Frequency Collection
 - Some channels in 5GHz share spectrum with radar systems
 - If radar is detected, AP's must change channels
 - Very disruptive to connected clients
 - Seeing too many false positives
 - Again, actively working with vendor
 - Workaround is to avoid those channels
 - Not ideal, as this means less spectrum for WiFi on campus

NetRecon v1.0

- Produce of Log Analysis Archive project
- Gather and archive network access information
 - IP addresses
 - MAC addresses
 - Portals
 - Wireless and VPN
 - NAT translation mappings

- Data used for network reconnaissance purposes
- Why?
 - Quicker identification/resolution of problems/issues
 - Additional tool for network event troubleshooting
 - Trending analysis

RAS-VPN Updates

- Coming soon
 - IPv6 support on 'All Traffic' profile
 - 2 Factor Authentication - DUO

Unified Communications Updates

- Cable plant upgrade
 - Derring, War Memorial, Litton-Reaves, and Norris
- Data Center Network upgrade
 - Merged with cloud infrastructure initiative
 - Pilot/proof-of-concept projects in progress
- New version of Avaya Communicator soft-client available
 - Available at no additional cost to voice subscribers
 - Windows, Mac OS, IOS, Android
- Collaborating with CALS to expand UC services to additional remote offices

- Kentland Farms
- Blackstone AREC

VT Alerts

- Annunciator channel implemented and tested
 - Leverages existing fire alarm systems
 - Supported in 7 buildings
 - Ambler-Johnston, Classroom, Derring, Litton-Reaves, Shanks, Sterrett, Surge
 - Compliments classroom sign channel