# Infrastructure Technologies Advisory Group

Notes

# September 5, 2019

# **Present: None of us - meeting was canceled but recent updates are being provided in this document**

# **Welcome**

Reminder: Google group… [group-intag@ncsu.edu](mailto:group-intag@ncsu.edu)

**Staffing Update**

**Campus Network**

* Next firewall project is the site to site hardware upgrade - Hardware on-site, working on migration plans and new configuration
* Cisco VPN upgrade - Completed 2/20
  + Lab environment set up and now ready for 2FA testing
    - Testing released to names below on July 29.
    - SBL and SAML do not appear to work well together
    - Test group provided by CITD
      * Dan Green
      * Billy Beaudoin
      * ITECS - Ryan Hoekstra
      * Tih-Yuan Wang, twang2 (Design)
      * Nathan Snodgrass (Extension)
      * Libraries - Adit Burkule
      * HPC/VCL (Eric/Andy K./Lisa Lowe/Josh T.)
      * OIT S&C: Darren Fallis
      * Help Desk/OITMD - Nik Davlantis
      * Brian Fields - CALS/CAAT
      * Chris Bettini - CVM
      * CHASS - Zack Dean,Daniel Henninger
    - Concerns raised about the impact this will have for international travelers - ie, making sure they have a second factor with them
    - Current 2FA testing is focused on DUO LDAP implementation
    - Potential issue in that some linux users are using open source
  + Full tunnel testing is now available for individuals identified above.
    - Go live is 9/18
    - [full tunnel testing](https://docs.google.com/document/d/1qvaOtTOdkBvI-l7NYvBqWBR5UdMcoukY0r6K_em87pw/edit#heading=h.m3qa5syidf5b)
    - Could IT staff request on behalf of end user and then have form route to user to accept policies? Good news: Users or admins can submit form. Bad news: mappings aren’t there to reliably implement notifications to admins when users submit. Will take a cursory look to see if there are alternate data sources to map users to depts/admins
    - Please help temper expectations within your community--Full Tunnel VPN will not necessarily solve everyone’s international access problems
    - Exploring whether session limits for VPN/full tunnel VPN connections might be appropriate. Will consult with S&C for a recommendation. Will gather some metrics to identify frequency of long-running sessions on current infrastructure.
      * At this time there will be no session limits set for Full Tunnel connections.
* Life Safety Centrex Replacement
  + NMDF - planning for cutover underway
  + SMDF - cable testing to be completed in Sept
  + CMDF - design complete
* Backbone updates - Investigating requirements and implementation standards
* Redundant fiber entrances - SMDF zone - design in progress
* I-440 Widening: phase 1 - 512 Brickhaven - Sept 2019
* Hillsborough St. crossings - design complete

**Access Layer**

* TUNAMELT project - 3560x switches - 73 buildings - design in progress

**Data Center**

* DC1 Decommissioning
  + First round of equipment for testing is operational
  + Expecting production ready environment this month
  + Target date for completion is currently March/April 2020
* EDC - almost go-live
* Intake processes being refined starting in Sept
* Cost model for rack space being refined

**CATV**

* Housing/ComTech working together on RFP for streaming/CATV combo for 20/21 academic year.

**MDFs**

* NMDF - design started for elec/mech upgrade.
* Poe. No date yet to remove non-ComTech equipment but will be after processes are in place for hosting non-OIT equipment in DC2/EDC

**Infrastructure Records**

* Fiber inventory - inside cables (85%)
* New PLA ground wireless maps 1255/3023 AP’s done (42%).

**Building Infrastructure Projects**

* Design – Partners 2, West Dunn, Creamery, Env. Health & Safety
* Construction – Dabney, Polk, DH Hill Academic Success, Research 3, Hodges, Biological Resources Facility
* Completed: Lambda Chi Alpha

**Cellular/mobile**

* Indoor - Spidercloud - 3 buildings turned over to Verizon, 3 more in construction. next group (DH Hill, Terry, CVM Main) in negotiation
  + List: [SpiderCloud](https://docs.google.com/spreadsheets/d/16ZpdmpP7JNH1_P2tvzCISjmNXMzE-VyaEY1KrZv3uPc/edit?usp=sharing)

**IT Strategic Planning**

* Implementation team is meeting in August and then moving to quarterly meetings
* Matrix of initiatives is fleshed out and needs a last polishing before publishing later this summer
* Service Planning
  + CMDB - discovery process is ramping up
  + Change Management - team has submitted plan and will begin as soon as we recruit new change mgmt position

**Unified Communications**

* Partner Updates: UNCG, App State, NC A&T, Pembroke
* New Partner Development: NC DIT -- Tools, Training, Support
* Life Safety rollout -- VOIP equipment ordered for 3 MDFs
* Centrex to VOIP conversion
* Centrex rates post December 2020

**Systems & Development**

* Tools Updates
  + Eduroam with AD Certificates / Radius
  + Automation for switch provisioning
* Thresholds and Alerts
* New version of the PLA ground
  + Real time reporting
  + Mobile
  + More granular access levels
* Mobile management tool for Life Safety lines

## Wireless

* LAN Admins raised a use case for non-enterprise APs - how prevalent/legit is this need?
* Classroom wireless
  + [Classroom Coverage](https://docs.google.com/spreadsheets/d/1EM_YfPCHXV7BNHRdlUaj0_x6E75tMZblSppfhlmfJgQ/edit#gid=2136708155) - current list
  + Future: need to begin discussion on [210 classrooms](https://docs.google.com/spreadsheets/d/1yVdsyNn6NCxZP0-EqBjrgDTIbVt40nwf_-fps2aLG1I/edit#gid=1005195878) funding
* Outdoor Wireless (Stafford Commons, Arboretum, Plant Sciences) working on Wi-Fi pole model
* Beacon focus group - met 2/27/19 - pace of needs and technology appears to be aligning well - will meet again roughly same time 2020
* EDUROAM (secure SSID) -
  + [Wifi.ncsu.edu](http://wifi.ncsu.edu) is now live with links to SecureW2 for eduroam
  + William/Billy/Michael met regarding AD certs - Now doing testing on machine certificates.
  + Need to determine best plan for migrating Cloudpath customers over to SecureW2.
* Now tracking wireless metrics as part of overall [monthly metrics](https://oit.ncsu.edu/campus-it/campus-data-network/communication-technologies-metrics/)
* In process of purchasing CAPE sensors for wireless troubleshooting.
  + Sensors ordered, looking at creating a troubleshooting kit with CAPE sensor and spectrum analyzer. Also need to look into handheld analyzer.
  + Look at practicality of loaning out to departmental staff

**Storage Infrastructure**

* Tony Copeland and Aaron Peeler meet with various groups (every 2 weeks until the end of the year) to discuss storage. Here are the current top 3 topics from the discussion.
  + Tools for Data Management
  + Cloud based storage
  + Data growth
* NAS Migration(DC2 Isilon) - Because of compliance requirements, there is increased urgency in completing the migration of at least the oldest NAS shares as soon as possible. We are reaching out to the involved units.
* AFS to AuriStor - Working on migrating BP cell to Unity cell, resolving conflicts.
* NetApp encryption testing in the lab was successful. Will add license to DC2 NetApp and run some additional testing.
* Testing of applying encryption to the backup storage environment has been successful, database backup testing is actively in progress and expected to be done this week. Planning to enable encryption to production environment Wednesday 9/11.
* Proposal to not automatically create NCSU b-drive directories for students has been tabled - hoping that currently queued account deletes will resolve the issue with number of available q-trees on legacy arrays. Once we migration to the Isilon the creation process will need to change slightly.
* Research storage allocation methodology is changing:
  + 1TB per faculty researcher
  + Allocations for awarded grants based on grant requirement and retention based on data management plan - so far as practicable will not charge.. however, beyond some amount there will have to be some cost recovery - hopefully will be clear ‘unlike circumstance’ and be able to pay from direct grant funds
* Proposal being forwarded to ORI for some additional research storage resources; increased curation support from Libraries, additional security analyst, additional systems position for storage refresh in 2021 (would also provide backup to HPC systems position)

**Server Infrastructure**

* Coordinating with Dell to setup the new HCI equipment no that most dependencies are resolved.

**Software Infrastructure**

* Legacy Realm Linux infrastructure retirement [has been announced](https://sysnews.ncsu.edu/news/5d408295) for 12/31/2019
  + Owners of all systems still contacting the legacy configuration management have been identified. Detailed lists of systems have been provided to the owners.
  + Here is [a summary with counts](https://docs.google.com/spreadsheets/d/1xrizqMOE0iRKa5RxBSivO2zkCtIolrp9e4mnpeLzbK8/edit?usp=sharing) of remaining systems. Please make plans to migrate the systems before the end of 2019.
* VCL - Azure Windows Virtual Desktop (WVD) proof of concept.
  + It looks technically possible for VCL to move away from VDA dependency
* VDA dependency outside of VCL - Student RDP into research or lab machines.
  + Will campus units purchase and manage specific VDA licenses?
  + [This Google sheet was created to get an estimate on the overall VDA license need on campus](https://docs.google.com/spreadsheets/d/1bltTnkH_yUZBfRI6wJmdfXpVLPsJUItk012iGq08fPI/edit#gid=0). Please provide estimates for your area so that we can move the conversation to the next stage. At some point, we have to make a decision whether to drop campus-wise VDA license.

### Governance Revamp

### Still need to figure out future of ITSAC-I and any relationship to this group

* + Quarterly?? More of a ComEx?

**Budget**

* Reminder: Centrex lines are now being billed to departments at actual cost - have shared list of lines with CITD. Current contract ends December 2020 and prices are expected to raise to at least $40/line/month. Working to migrate lines ahead of that unless technical/compliance constraints.

### Parking Lot Items

* Routing licenses at the BDF level – when and how much should occupants pay? Interim solution is 50/50 when “desired”, ComTech funds when required
* “virtual data center” – 4/5/18 conversation confirms there’s still some need for “flat” networks (even outside the data center)

## Upcoming Meeting Dates

* Next InTAG Meeting – November 7, 2019