# Infrastructure Technologies Advisory Group

Agenda/Notes

# September 3, 2020

# **Present: Greg Sparks, Jonas McCoy, Kirk Main, Aaron Peeler, Chris Allen, Daniel Deter, David Goodwin, David Ladrie, Dustin Duckwall, Ed Rogers, Eric Sills, Franklin Finch, Gary Li, Mike Kastellec, Ralph Castanza, Vijay Tailor, Keith Boswell,Mark Williams, Greg James,**

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# **Welcome**

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

**COVID-19**

* Tents ready just in time for disassembly - Fountain, Case, Oval to remain

**Server Infrastructure**

* Addressing recent DC2 VMware ESXi network related issues
  + Applying firmware updates
  + DC2 VMware clusters moving to 10G where applicable
  + Upgrading to Vsphere 6.7 U3 - in planning stages
  + vCenter upgrade to 6.7 3G scheduling for 10/10/2020

**Storage Infrastructure**

* OIT Storage and VM rate refresh FY20-21 published
  + [Storage Rates](https://oit.ncsu.edu/campus-it/oit-general-storage-services/)
  + [VM hosting rates](https://oit.ncsu.edu/campus-it/virtual-hosting/pricing-and-billing/)
* NAS replication between DC2 and EDC Isilons activated, working with OIT teams to test and identify critical data/shares
* AFS to AuriStor
  + The remaining BP file server in DCI has been moved to a VM to give a little more time to discover lingering references before shutting down all BP cells.

**Software Infrastructure**

* VCL - Azure Windows Virtual Desktop (WVD)
  + VCL - Access to legacy VCL windows images disabled 8/31 for non-vdi users
  + Microsoft WVDStats added to VCL statistics page
  + Most colleges have a WVD lab environment now or have applications in the NCSU general WVD environment
  + Linux Lab machine brokering
* Microsoft VDA general site license expired 8/31/2020- VDA (Virtual Desktop Access)
  + [Software Lic. FAQ](https://software.ncsu.edu/faqs/microsoft-vdi-faqs/)
  + [Original sysnews post](https://sysnews.ncsu.edu/news/5e5ffcbc)
  + [VCL FAQ](https://vcl.ncsu.edu/windows-applications-moving-to-azure-wvd-for-students/)
  + VDA dependency outside of VCL - Student RDP into research or lab machines.
  + [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).
  + Colleges will go through OIT Software Licensing to get individual VDA licenses (and ensure compliance) after that. More information is provided by [Software team in FAQ](https://software.ncsu.edu/faqs/microsoft-vdi-faqs/)
    - Per Bill Coker -**The VDA license (now referred to as VDI-Windows E3) can be purchased for $16.52 per named user. To purchase, please send a request, along with Project ID and bookkeeper's name, to software@ncsu.edu.**
* RedHat Licensing
  + OIT evaluation of Oracle Enterprise Linux (OEL) has gone well. No major technical issues so far.
  + **We would like to invite campus IT units to participate in the OEL envluation**. Contact Gary Li if interested. We are getting additional licenses for this.
  + No decision has been made between Red Hat and Oracle. Campus inputs will be a critical part of that decision.
* EPS for Linux desktops and laptops
  + Drafting instructions / documentation, targeting IT support resources without much Linux administration experience.
  + Fleshing out areas where major technical work is needed.
  + Slow progress because of competing priorities and staffing issues.
* Sysnews Monitoring and Paging
  + The current SSL CERT tool will continue to exist under the new systools link at<https://systools.oit.ncsu.edu/>
  + CSI is also supporting a CERT checker for customers on Zabbix that are using the product
  + Currently ingesting the remainder of CSI, IWS, and Library objects into Zabbix production
  + We are ready to accept more groups interested in getting systems in and testing. To onboard, send a ServiceNow ticket to the 'LINUX' group with your current Nagios on call group. If you are not already a customer in Sysnews Nagios, just send a good contact that we can work with to get your group into the new system.
* Working with Operations group on getting them into Zabbix, working with how they will interact with, and support customers in off hours
* Automating backups and restoration of database and Metadata( templates, dashboards, etc )
* Setting up a PoC external to NCSU networks to monitor the new system.
* Goal at this point is to be fully production on the new system in early November and finally take down the current system in March 2021.
* Both the current Sysnews Nagios and the Zabbix / ONCALL system will run in parallel for time while groups are moving over, testing, and going live.

**Campus Network**

* Developing a solution for remote site connectivity outside of Wake County - no new updates or testing on this
* Verified Carter Finley networking in case there is a football season with fans
* Now focusing on core firewall upgrade - two Palo Alto 7050 chassis are installed in lab, NCSU-1 will be first context to migrate off of ASAs.
* Backbone updates - Investigating requirements and implementation standards
* Life Safety Centrex Replacement
  + NMDF and SMDF zones - cutovers in progress
  + CMDF - construction in progress
  + WMDF - design in progress
* Redundant fiber entrances - SMDF zone - cabling in progress
* 2806 Hillsborough, Milton Small bldg, Turner House - Construction in progress
* New Greek Village fiber X-connect - PZA Hut building under construction

**Access Layer**

* TUNAMELT project - 3560x switches - designs completed (26%)

**Data Center**

* DC1 Decommissioning
  + All of ComTech network services evacuated from DC1
  + All VMs migrated
  + Legacy unity services (e.g. LVS, SysNews, and Nagios) have been moved out of DC1 and onto VMs via P2V
  + All remaining devices are expecting to be decommissioned by Oct.
* DC2 Elec/Mech upgrade - designer to present revised design strategy and budget next week
* Parking lot item - “virtual data center” – 9/3/20 conversation confirms there’s still some need for “flat” networks outside the data center (new fabric facilitates this among data centers).
* General service offering for colo - COVID has slowed this a bit but we’re handling needs on an “as needed” basis
  + Intake processes being refined -- email jdperry5@ncsu.edu for intake
  + Cost model for rack space being finalized - [current draft](https://docs.google.com/spreadsheets/d/1MQhV3Q25NK4AuoIJWamuWuV-yl7auDlI6IqyqLAdaUg/edit#gid=826436317) - these costs will hold through June 2021
  + Special challenges of tape libraries - need to change tapes on a regular basis, etc

**CATV**

**MDFs**

* NMDF - design in progress (90%) for elec/mech upgrade. (Server snipe hunt)
* Lake Wheeler MDF - going to BofG meeting this month for funding authority

**Infrastructure Records**

* Outside plant inventory project - creating database and drawings for 500+ manholes
* Fiber jumper inventory - in planning

**Building Infrastructure Projects**

* Design – Alpha Delta Pi, Student Health
* Construction – West Dunn, Materials Mgmt., Sigma Kappa, Zeta Tau Alpha, Carmichael Pool and 1987 Wings
* Substantial Completion - DH Hill Academic Success, Kappa Alpha Theta, Dabney
* UPS RFP - final 3 vendors in lab evals
* Lake Wheeler Campus - Island 1 (Swine Unit) - design in progress

**Cellular/mobile**

* Small cell consultant RFP - list narrowed to three
* Indoor - Spidercloud - Talley complete. Next group in negotiation with VZW.
  + List: [SpiderCloud](https://docs.google.com/spreadsheets/d/16ZpdmpP7JNH1_P2tvzCISjmNXMzE-VyaEY1KrZv3uPc/edit?usp=sharing)

**IT Strategic Planning**

* Awaiting next University Strategic Plan - task force [reports posted](https://mail.google.com/mail/u/0/#search/strategic+planning/FMfcgxwJXfnhgKCGRcbtptBsHdvCptTn) this week
* Service Planning
  + CMDB - discovery process is ramping up
    - Where are others related to CMDB desires?
      * Leaning towards requiring CMDB entries for all items in enterprise data centers to aid with compliance (UNC 1400.3)
  + Event Management - postponing for now but will gradually ease into early process work
  + Planning for Change Management moving along well
    - Working to move from QuickBase to SNow

**Unified Communications**

* Investigation of options for spam blocking and text messaging
* Moving UC Servers from DC1 to MDF
* Renewing Cisco EA -- negotiated pricing to be in line with what was budgeted
  + Finalizing documents with purchasing for EA
* Partner Updates: UNCG, App State, NC A&T, Pembroke
  + App State SIP trunk RFP evaluation
* NC DIT -- Tools, Training, Support
  + Singlewire Informacast pilot
* Life Safety rollout underway
* Phone replacement of 6900, 7900 series phones

**Systems & Development**

* Tools Updates
  + Integrating 9300 stack architecture into all current tools
  + Starting to work on integrating Firewall tools with Palo Alto
  + Eduroam with AD Certificates / Radius
* Transitioning final servers out of DC1 -- final few servers
* Mobile management tool for Life Safety lines
* Pulling outside plant copper into EPIC

## Wireless

* Wi-Fi 6 Project - Priority list [FY20-21 Priority List.xlsx](https://docs.google.com/spreadsheets/d/19lc181qUq-C9jAZNUReJMCt06ranuePI/edit#gid=1206202891) - need to finalize
* Projects in construction: King Village, Fitts-Woolard, 210 Classrooms (180)
* Projects in design: New Carmichael building
* Outdoor Wireless: custom pole approved by OUA, need to decide if to proceed on Stafford Commons, Wolf Plaza, Brickyard, Court of NC
* EDUROAM (secure SSID) -
  + [Wifi.ncsu.edu](http://wifi.ncsu.edu) is now live with links to SecureW2 for eduroam
  + AD certs - KB article presented at CITD meeting.
  + Now tracking wireless metrics as part of overall [monthly metrics](https://oit.ncsu.edu/campus-it/campus-data-network/communication-technologies-metrics/)
* Look at practicality of loaning out to departmental staff - No movement on testing more handheld devices
* Grassroots effort by University of Delaware to build an [EDUROAM map](https://wifi-map.hpc.udel.edu/) for available wifi

**Budget**

* Reminder: Centrex lines are now being billed to departments at actual cost - have shared a list of lines with CITD. **Contract has been extended 3 years (Dec 2023)**. Working to migrate lines ahead of that unless technical/compliance constraints.
* ResNet shortfall (as much as ~$2 million depending on Spring ‘20) will have some impact on academic/admin due to backbone contribution. Meeting later today to talk through details

### 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

## Upcoming Meeting Dates

* Next InTAG Meeting – October 1, 2020 9:30am