

SIUC Computing Advisory Committee

SIU Student Center, Vermillion Room

February 5, 2016

Opening

The regular meeting of the SIUC Computing Advisory Committee was called to order at 9:00am on February 5, 2016 in the Vermillion Room of the SIU Student Center by Bill Bruns.

CAC Members and SIU IT Employees in Attendance

- Bill Bruns, Chair (Civil Service Council)
 - Scott Bridges (CIO, Information Technology ex-officio)
 - Norman Carver (Graduate Council)
 - JP Dunn (AP Staff Council)
 - Sam Goodin (AP Staff Council)
 - Tom Imboden (ISAT)
 - John McCall (Faculty Senate)
 - Tom Whittington (Civil Service Council)
 - Preston Yun (Undergraduate Student Government)
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- Linda Hubbs (Information Technology)
 - Jim Jones (Internal Auditor, SIU)
 - Arden Lockwood (Information Technology)
 - Michael Shelton (Information Technology)

CAC Members Not in Attendance

- Richard Beach (Library Affairs)
- Tom Furby (Law School)
- Dimitrios Parhas (Graduate Student Association)
- Travis Rotheiser (Undergraduate Student Government)
- Andy Wang (Dean's Council)
- Michelle Zhu (Computer Science)

Discussion of Information Technology's Future and Ongoing projects selected for discussion:

Supplements that were provided are attached.

<p>1) IT Day Conference August 10, 2016 Need assistance now</p>	<p>Notes: SIU is hosting I.T. Day on August 10th. Faculty, staff, and community members are encouraged to participate. There will be interesting speakers, workshops, and other tech focused events. Anyone interested in participating in the event as a speaker/workshop leader or suggesting topics should contact Linda Hubbs. More info and registration will be available in the future here: http://itday.siu.edu/ .</p>	
<p>Description: IT Day is a campus-wide event, open to staff, faculty, students, community, and other learning institutions to learn about technology trends and network with technology professionals. This annual event has a strong line-up of experts speaking about and/or leading breakout sessions in topics important to our staff, faculty, students, and community. IT Day brings 300+ technology people and vendors to campus. IT strongly encourages anyone with an interest in technology to attend.</p> <p>Action:</p> <ul style="list-style-type: none"> • Provide input on topics for IT Day. • Provide specific contact information to invite to It Day. • Communicate the value/importance of IT Day to your constituents. 		
<p>2) Identify Appropriate IT Communication Channels</p>	<p>Campus IT is working hard to develop a communication strategy to effectively and efficiently relay important and useful information to the campus community. Several approaches are being considered and the CAC members are asked to relay important IT communications to their constituencies.</p>	
<p>Description: IT recognizes the needs and intends to provide improved communication to campus users.</p> <p>Action:</p> <ul style="list-style-type: none"> • Recommend item-types to be communicated. • Identify specific contacts within your area(s) and around campus for distributions of essential technology information so IT can communicate with constituents. 		
<p>3) One Wireless SSID (eduroam) In place Fall 2016</p>	<p>Campus IT will be phasing out the SIU-Indoor WIFI network SSID in favor of the new EDUROAM SSID in the near future. WIFI users will be encouraged to connect to the EDUROAM SSID before the other is disconnected. This can be done now to save future service interruptions when the SIU-Indoor SSID is removed. This change will improve performance and allow for SIU employees to seamlessly connect to WIFI networks at many other colleges and other institutions that are part of the EDUROAM consortium. Instructions available here: http://oit.siu.edu/wireless/eduroam/ .</p>	
<p>Description: IT plans to eliminate the SIU-indoor SSID and use eduroam only. eduroam (education roaming) is the secure, world-wide roaming access service developed for the international research and education community. eduroam will allow SIUC faculty, staff, students, and researchers Internet connectivity across campus and at other other participating institutions with their SIUC Wi-Fi credentials. Switching to eduroam</p>		

also allows for specific needs in Plant and Service Operation (PSO) as well as other campus areas; increases Wi-Fi performance across campus; and simplifies SSID access, use, and support.

Action:

- Recommend additional considerations.
- Identify specific communication channels for constituents affected by this project/effort.
- Communicate the benefits of eduroam to you campus constituents.
- Assist with change management in your organization.

<p>4) Wireless for Housing In place Fall 2016</p>	<p>IT is piloting a Virtual Desktop Infrastructure (VDI) program in hopes of expanding across campus in two years. VDI will allow IT to centrally administer virtual desktops and provide access to them via low cost, heterogeneous computing types. The pilot with several different departments starts this semester with a wider deployment in fall and full adoption (where feasible) the next year. A quick explanation of VDI is available here: https://www.citrix.com/glossary/vdi.html .</p>	
<p>Description: IT is moving toward totally wireless connectivity in all student housing. Relatively few students still require/request wired connectivity. The option for these students is access via a wireless dongle. Conversely, upgrading the housing towers will cost \$3M and is an expenditure on housing scheduled to be demolished within 5-10 years.</p> <p>Action:</p> <ul style="list-style-type: none"> • Recommendation of additional considerations. • Identification of specific communications channels for constituents affected by this project/effort. • Communicate the benefits of wireless connectivity/and wired options to you campus constituents. • Communicate the \$\$\$ waste associated with upgrading the towers. • Assistance with change management in your organization. 		
<p>5) Final Cut-over from Google Apps Moving forward now</p>	<p>SIU Google Apps and GMail service is going to be discontinued. SIU has maintained Google Apps accounts for several years after migrating to Microsoft Exchange and Office 365. Email from SIU.EDU GMail accounts has already been migrated but it will be each individual user's responsibility to save or transfer anything saved in an SIU.EDU Google App, Docs, or Drive. Be aware that Google could have been used to sign into other non-Google services and those services should be modified to a different login type. For example, a tool like Survey Monkey can use Google accounts to login instead of setting up a standalone account. If that service is not modified before the Google Apps discontinuation, access might be lost.</p>	
<p>Description: IT is in the final stages of eliminating Google Apps. This process has been ongoing for several years. Some campus users have not made the transition and continue to store documents in Google docs.</p>		

The final transition will eliminate access for these users. IT would contact these users to give them final notice to move remaining documents from Google Docs. Many of the people no longer check their Google accounts and cannot be contacted. There seems to be no middle ground, holding pattern to eliminate access while maintaining these accounts in the event the user finally recognizes their account is no longer active and wants to retrieve the documents.

Action:

- Understand the necessity to complete this transition and the consequences of not making the transition.
- Communicate this transition to constituents is considered important and assistance is requested.
- Suggestions for contacting remaining, but “invisible” users can be discussed.

6) Compliance with Information Security Program

Fall 2016

- Protecting Sensitive Information (Identity Finder)
- Desktop Encryption
- Rogue Devices (start with access points)
- SCCM
- Security Training

IT is considering options for information security training for employees. The details on the type of training, who is required to take it, and how often are to be determined, but CIO Scott Bridges requests CAC support the proposed training before proceeding further. The CAC was in favor of proceeding with the stipulation that any training be in an interesting and useful format. The recent VAWA video training was specifically mentioned by multiple committee members as an example of how not to approach any potential information security training

Description: Campus cyber and telecom security is critical. Just this last week we had a phishing incident in the IT organization. IT needs to implement methods to help disseminate information regarding cyber- and tele-security according to the Board-approved plan.

Action:

- Review the Board-approved security plan.
- Understand the necessity to implement security methods and initiate security training.
- Communicate the importance of cyber security to constituents and support for training.

Item	Questions for follow up	Agreed
<p>7) Voucher replacing tablet initiative Proof-of-concept Summer 2016 Voucher to students Fall 2016</p>		
<p>Description: As of Fall 2016 the tablet initiative will be replaced with \$100 voucher to all incoming students (freshmen/transfers) to purchase any technology device. A consideration with this voucher program is that the campus is moving to virtual desktop (VDI) capability; students can access <u>any</u> relevant software for classes on <u>any</u> personal device. This \$100 represents ½ the cost of a new device such as the Chromebook. VDI technology will eventually replace the need for subject-specific labs at a tremendous savings to the university. IT is currently working on the proof-of-concept (POC) for the program.</p> <p>Action:</p> <ul style="list-style-type: none"> • Understand the concept of VDI technology and the amazing capability/convenience this technology offers. • See the POC in action (when viable). • Communicate benefits to constituents. • Develop advocates to move the project forward across campus. 		

All items were discussed and support was given without objection.

Old Business: None.

New Business:

Proposal by Bill Bruns of the formation of an Agenda Committee, consisting of four members of the CAC, appointed by the Chair, which will meet prior to each full meeting of the CAC with the CIO and his staff to review proposed and ongoing projects and decided which most need discussion, review and communication to constituency groups.

Agreed and passed without objection.

The meeting was adjourned at 10:40am.

Wireless Only Approach to Residential Hall Networking

Current January 22, 2016

Summary

The campus residence hall data network, known as RezNet, is aging and due for upgrades. RezNet has two major components: hardware and cabling. Both hardware and cabling are in need of upgrades if they are to continue to be a functional and reliable part of the data network.

Hardware consists of wired and wireless components as well as a network admission control system (NAC) from Cisco. Cabling consists of both copper and fiber cable.

A change in service offerings from a wired **and** wireless network to a wireless-only option is to forego the expense of these upgrades. It is also a move that keeps pace with the industry trends, which are moving away from wired networking and toward wireless systems. An ancillary, yet important consideration is the need to address the changing expectations of student residents. Today's students expect quick, easy, reliable access to on- and off-campus e-resources.

The wireless-only service offering in RezNet address these issues and help keep costs low.

Change Justification

Hardware

There are multiple hardware components in RezNet:

- Ethernet switches
- Wireless access points
- Cisco NAC

The age of this equipment varies, but with a few exceptions, all is at least five years old. The industry standard for hardware replacement, as determined by the vendor, is five years. SIU tends to stretch the hardware lifespan to six or seven years and sometimes longer. Stretching this window jeopardizes reliability and performance.

Wireless connectivity is the trend for networking in residence halls and elsewhere. The RezNet *wireless need* is to upgrade the aging hardware and to move towards 802.11AC. There are no concrete plans to replace the wireless system to date, but in general, the plan is for a replacement cycle over a five to seven-year period which accomplishes a constant technology refresh and also allows Housing to budget appropriately.

Ethernet switches are used largely for desktop computer and game station console connectivity. Because students are bringing fewer desktop computers to the residence halls and game station manufacturers prefer wireless over wired connectivity there is significantly less need for wired networking in RezNet. There are still two general uses for Ethernet switches: 1) to support student-owned devices that do not have a wireless option, and 2) to support the university-owned wireless. For the student-owned devices, the new recommendation is the purchase of a wireless dongle. A wireless dongle costs less than the mini-hub students currently purchase to allow more than one device per room to be connected. Nonetheless, Ethernet switches are needed to support the university-owned wireless network and should be upgraded on a regular replacement cycle in unison with wireless access point upgrades.

The end-of-life date for Cisco NAC is July 2016. Cisco has developed a new product line to replace NAC, but it lacks a key capability: bandwidth control on a per-login basis. The lack of this key feature prompts investigation of other products. NAC, as it is deployed in RezNet, is used on the wired network only.

Change Justification

Hardware (cont.)

Movement from a wired ethernet service eliminates the need for NAC, at least in the “wired only” capacity that it is currently deployed. Bandwidth control is accomplished on the wireless network via the wireless LAN controllers.

Change Justification

Cabling

SIU Carbondale residence halls have Cat 3, Cat 5 and Cat 6 station cabling for customer use. Cat 5 and Cat 6 are capable of gigabit to the desktop, but the Cat 3 is not. If the plan were to continue to provide wired network service, it would be necessary to upgrade the Cat 3 cable to meet the customer bandwidth expectations.

- The cost of cable upgrades in the high-rise buildings would likely exceed \$500k each.
- The cost for the eleven Thompson point buildings would likely exceed \$125k each.

NOTE: Figures provided are educated guesses and are not based on a thorough evaluation of the actual cost.

It is also important to note that the Housing Master Plan includes demolition of the three high-rise buildings. It is inappropriate to invest in conduit and cable for these buildings if the life-span of these structures is five years or less.

RezNet utilizes fiber cable between buildings and between wiring closets, where much of this fiber is multi-mode. The industry is rapidly moving toward single-mode fiber. Accordingly, the fiber cable should be upgraded/replaced with single-mode. Fiber replacement should be part of the larger plan to upgrade wireless access points and ethernet switches.

Expected Results and Issues to Consider

Resistance to Change

Resistance to change is inevitable, however, most residents will not notice this change because they don't use the wired network. There will be a handful of residents who prefer a wired networked connection; these students may purchase a wireless dongle. The current plan is to leave the ethernet switches in the closet with the ethernet ports turned off so that any imperative need can be satisfied. One caveat: wired network speed is/will be limited to 10 megabits per second due to the Cat 3 station cable limitation.

Encryption

As part of this change to wireless only, the plan is to have an SSID with the standard WPA2-Enterprise encryption and a second SSID with WPA2-PSK. The primary SSID will be EDUROAM and the goal behind WPA2-Enterprise encryption is to provide both a secure transmission of confidential data but also the Information Security Team insight into device hardware by virtue of the ID and password requirement. The EDUROAM SSID is intended for devices such as laptops, tablets and mobile devices that support WPA2-Enterprise and that have the interface for an ID and password to be entered. The second SSID will also require MAC address registration and will allow access for those devices that do not support WPA2-Enterprise and that do not have an interface to enter an ID and password. Examples of such devices includes smart watches, streaming devices and game consoles.

Implementation Strategy

1. Regular communications with SalukiTech and Housing
2. Implement/test MAC registration and other required systems
3. Update documentation
4. Inform the spring 2016 residents that only wireless networking will be available in fall 2016
5. Inform any incoming fall 2016 residents that only wireless network will be available in fall 2016
6. Turn off the wired network during summer 2016

Communications

The SalukiTech Help Desk is already aware of all planned changes, but we continue to communicate changes and updates to these plans because SalukiTech provides Tier 1 support for these systems. It has been, and will continue to be important to keep in touch with Housing Director of IT, Jeff Miller for planning reasons, and because Campus Housing established mechanisms for existing residents and with incoming freshmen via both e-mail and USPS mail.

Estimated Savings

There are several cost savings to be appreciated wireless-only solution:

- Ethernet switches: Moving to a wireless-only network eliminates the need to replace the majority of the aging switch hardware. RezNet has 174 access layer switches and SIU is currently purchasing Dell 24 switches for about \$1800 each. Distribution layer switches, where the wireless access points connect, will still be needed and replaced on a regular cycle.

Estimated savings: \$313,200

- Annual Maintenance: Annual maintenance contracts in the past three to four years have been limited to critical RezNet components only. Eliminating NAC eliminates the need for an annual maintenance contract.

Estimated annual savings: \$42,000

- Cat 3 Cabling: Moving to a wireless-only network eliminates the need to replace the aging Cat 3 cable (other cable would have to be replaced periodically). A rough estimate for replacing this cable is \$500K for each high-rise building and \$125K for the 11 Thompson Point buildings.

Estimated savings: \$2,875,000

A key benefit of changing to a wireless-only network is eliminating the above costs.

NOTE Figures provided are educated guesses and are not based on a thorough evaluation of the actual cost.

Ancillary Information

“RezNet” is defined as the buildings that are currently provided SIU network connectivity. Two residence facilities owned by Campus Housing are not provided connectivity via the campus area network. Those locations are Evergreen Terrace and the Elizabeth Street apartments. These locations are included in the plans in this document.

EDUROAM SSID to Replace SIU-indoor

Current January 22, 2016

Summary

SIU currently deploys the SIU-indoor, SIU-indoor-Instructions, SIU-guest, and eduroam SSIDs on campus and the RezNet and RezNet-Instructions SSIDs in the residence halls. Information Technology's (IT) Network Engineering Team plans to eliminate the SIU-indoor SSID and RezNet SSID and use eduroam only. This change would allow for specific needs in Plant and Service Operation (PSO) as well as other campus areas; increase Wi-Fi performance across campus; and simplify wireless access, use, and support.

Change Justification

Accommodate PSO Needs

PSO is exploring the use of electronic door access systems. These systems use Wi-Fi for authentication to periodically report/upload the transaction log to a server. The PSO technical staff approached IT to discuss the possibility of adding an SSID to accommodate this system. Michael Shelton (IT) spoke with PSO about some technical issues and also expressed a reluctance to add fifth SSID because of a degradation in performance. He also discussed the possibility of using the guest SSID. The discussion will continue if/when PSO makes a formal request.

Increase Wi-Fi Performance

Wireless access points send beacon frames per each SSID configured. Each additional SSID results in more beacon frames, and subsequently a greater utilization of the available bandwidth. Wi-Fi performance is critical to good customer satisfaction.

Simplify Access for all Users

Having fewer SSIDs makes use easier for students, faculty, staff, and guests. New students and faculty will not need to wonder which SSID to use. SalukiTech and LAN administrators will have fewer configuration options to remember and set up. When SIU students, faculty, and staff visit other EDUROAM ready campuses, their devices will automatically connect to the host-campus' system.

Expected Results and Issues to Consider

Positive Results

- Makes navigating the SIU Wi-Fi easier.
- Improves Wi-Fi performance.

Issues to Consider

- Resistance to change.
- Increased workload for SalukiTech and campus LAN admins (most significant in the fall 2016 semester).
- Settings on mobile devices, tablets, laptops, etc. must be changed to the eduroam settings and SIU-indoor SSID must be deleted.

Implementation Strategy

These changes will be accomplished in several phases.

1. Write documentation
2. Implement discrete system change
3. Notify campus users
4. Change SIU-indoor to the hidden SSID
5. Turn off SIU-indoor
6. Provide user support through SalukiNet

Implementation Strategy (cont.)

Implementation Strategy Details

Documentation for this change has begun.

The IT Network Engineering Team is researching and planning the preliminary configuration changes.

To counteract resistance to change, IT will start an awareness campaign to explain the coming change to the campus community. This communication effort includes e-mails to LAN-admins, an informative article in the IT newsletter, an informative article in SIU Today, direct contact with special needs/special interest groups on campus, and other targeted communications. This campaign is scheduled to start in February 2016.

SIU-indoor SSID will remain active and during the spring 2016 semester. During this time, SalukiTech, LAN administrators, and others will begin changing the devices they support to configure the eduroam SSID and delete the SIU-indoor SSID.

At the end of the spring 2016 semester, the SIU-indoor SSID will be “hidden.” Devices already configured for SIU-indoor will continue to function properly; however, newcomers to campus/to the campus wireless network will not see SIU-indoor.

SIU-indoor SSID will be completely disabled during the summer 2016 semester. From that point forward, all incoming students would use eduroam. Returning students will have to reconfigure their devices when they return in the fall.

The goal of this multiple-step approach is to give the campus community sufficient time to make the necessary configuration changes on their Wi-Fi devices.

Ancillary Information

Discrete Changes

SIU uses a wireless auto-configuration tool called Xpress Connect from Cloudpath. Changes to Xpress Connect will eliminate SIU-indoor configuration on the February start date.

Additionally, campus RADIUS servers will need to be reconfigured to communicate with the EDUROAM servers. The EDUROAM RADIUS servers will need to be updated to recognize all campus RADIUS servers. The campus wireless LAN controllers will also require changes

EDUROAM Configuration Requirements

EDUROAM can be configured on customer devices for the SIU Wi-Fi network only or can be configured for use with the EDUROAM SSID on other campuses/locations. The EDUROAM SSID configuration can also be set to allow log-ins using home credentials (SIU Dawg Tag and password) from non-SIU Wi-Fi networks. This access requires just one additional setting to standard configuration. Xpress Connect will be configured for this additional setting and SalukiTech and others will be provided documentation that includes this additional setting.

Additional Reference

For more information about EDUROAM, see:

<https://www.EDUROAM.us/>

<https://en.wikipedia.org/wiki/EDUROAM>

SIUC Transition from Google Apps

Prior to Fall 2013, SIUC used Google Apps for email and calendar services. During this past year, SIUC has finished migrating the last of the "@siu.edu" email accounts from Google Apps to Microsoft Office 365. At the end of the Spring 2016 semester, the "@siu.edu" Google Apps domain will be deleted. This will not affect your email or contacts, which should have already been migrated to Office 365. If you use your "@siu.edu" address to access other Google services, however, such as Google Drive (which used to be called Google Docs), Sites, Youtube, Picasa, Voice, or Wallet, you will need to take steps to migrate your files or settings for these services to a regular (not "@siu.edu") Google account.

While in most cases there are no direct methods for transferring data and account information from one Google account to another, it is possible to download a copy of your data to your local hard drive. Google has provided information on how to migrate data from Google Apps applications at:

<https://support.google.com/a/answer/100458?hl=en>

For example, to download a copy of all of your Google Drive (Google Docs) files you can first access your Google Drive account at:

<https://www.google.com/drive>

and sign in with your "@siu.edu" address and Google password. While signed in to Google Drive, you can then access the Google download utility at:

<https://www.google.com/takeout>

You can select to download only files for Google Drive product, and then click "NEXT" and "CREATE ARCHIVE". An email will be sent to your "@siu.edu" address with a link to download your archive (in zip file format) when it is ready. Once downloaded and unzipped, you will have a complete copy of your Google Drive folders and documents, which you can then upload to your SIUC OneDrive account:

<https://saluki-my.sharepoint.com/>

SIUC Onedrive users are provided 1 terabyte of storage, or over 30 times that provided by Google Drive. There are a number of options for uploading files to Microsoft OneDrive. Microsoft provides How-to information on using OneDrive at:

<https://onedrive.live.com/about/en-us/support/>

Note that your Google Apps password is separate from the Network ID password you use for Single Signon applications such as SalukiNet or Office 365. More information on Google Apps accounts and a link to reset your Google Apps password can be found at:

<https://google.siu.edu>

More information on Office 365 for SIUC, and contact information and hours of operation for SalukiTech support can be found at:

<http://oit.siu.edu/salukitech/>