CSU Subnet Managers
2016 Meeting

How did you like last week’s “snow making” tech demo??
Agenda

• Information Systems Update – Josh Clark

• VoIP – Kyle Haefner

• Software Licenses – Diane Noren

• Middleware – Randy Miotke
Agenda (cont.)

• LMS/Canvas – Kevin Nolan

• Listserv email move – Dave Hoffman

• Security – Steve Lovaas

• Network Operations – Greg Redder
Information Systems

Josh Clark, IS

• Banner/KFS/HR
• AIX to Linux Conversion
• AAR Page
• eThority Update – funding not approved.
VoIP Update

Kyle Haefner, ACNS
# Upcoming Buildings

<table>
<thead>
<tr>
<th>Building Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTH/DMC</td>
<td>Done</td>
</tr>
<tr>
<td>Glover -Engineering Side</td>
<td>May 2016</td>
</tr>
<tr>
<td>Engineering Buildings</td>
<td>Q3 2016- Q4 2016</td>
</tr>
<tr>
<td>Yates</td>
<td>Q1 2017- Q3 2017</td>
</tr>
<tr>
<td>GSB</td>
<td>Q1 2017- Q3 2017</td>
</tr>
<tr>
<td>CEMML</td>
<td>Q1 2017- Q3 2017</td>
</tr>
<tr>
<td>Weber</td>
<td>Q1 2017- Q3 2017</td>
</tr>
<tr>
<td>Clean Up</td>
<td>Q4 2017</td>
</tr>
</tbody>
</table>
Reminders

• Moving Phones – Don’t!
  – Telecom will move them for FREE
  – We now send a friendly email 😊

• No Building Power = No network = No Phone
Licensing

Diane Noren, ACNS/RAMTech

• Microsoft Select changes
  – Previously purchased from a state contract.
  – No longer meet the minimum quantities
  – We went from Price Level A to Price level D
  – NO Select Contract

• EES- Enrollment for Education Solutions
  – CSUs current subscription based model-Office 365
  – Renews in June
  – Can add previous select products to EES

3/10/2010
Microsoft Licensing Presentation

Date: April 13
Location: Lory Student Center
Room: 304/306
Time: 9:00 am to 11:00 am
Microsoft presenters: Kris Swanson & Chris Galli
Dell presenters: Eli Stephens & Audrey Thompson

Email questions to Diane.Noren@colostate.edu by April 6 at 5:00 pm.
RAMtech

• Apple
  – Taking orders for new 9.7 inch IPad Pro
  – Will not ship until after March 31

Apple order form on RAMtech Website
  – RAMtech delivers to your office
Middleware Update

Randy Miotke, ACNS

• Recent/upcoming eID modifications
• New Shibboleth identity provider
• Other Identity Activities
• Web Accessibility
eID Self-Service Updates

• eID Registration process modifications
  – InCommon Silver Assurance requirement
  – Address of record verification
• eID password recovery
• eID Admin two-factor authentication
To establish an eIdentity you must supply your CSUID and Date of Birth

CSUID: 
Last Name: 
Date of Birth as mm/dd/yyyy:

Continue

If you do not know your CSUID, contact the following:

**Applicants:** Contact the Office of Admissions at (970) 491-6909.

**Current Students:** Contact the Registrar's office at (970) 491-4860 and explain that you need your CSUID.

**Faculty, Staff and Associates:** Contact your department’s Human Resource representative.

Need Help? Contact the Help Desk at (970) 491-7276
To establish an eIdentity you must supply your CSUID along with the personal email address you provided when you registered.

Enter Personal Email

Enter your CSUID

I'm not a robot

Submit

If you do not know your CSUID, contact the following:

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**Current Students:** Contact the Registrar's office at (970) 491-4860 and explain that you need your CSUID.

**Faculty, Staff, and Associates:** Contact your department's Human Resource representative.

Need Help? Contact the Help Desk at (970) 491-7276
You have requested to create a Colorado State University EID. Please use the following link (https://dev.eid.colostate.edu/eIDCreate/Logintoken.aspx?token=165deb63-1146-41bb-a7f3-41d4bbf45071) to change it. The link will expire in 48 hours or one use.
eID Password Recovery Addition

Your recovery email is a personal email address used to identify you. If you don't have a recovery email setup, you can use recovery questions to reset your password.
You have requested to change your Colorado State University EID password. Please use the following link (https://dev.eid.colostate.edu/eIDPasswordHelp/PasswordReset.aspx?token=48b35356-ea11-4898-b97a-99470bb02e6f) to change it. The link will expire in 48 hours or after one use.
Forgotten Password Help

Set your Password Recovery Email

Please set a personal recovery email, if you have not already done so. The recovery email will be used to verify your identity if you forget your ePassword or CSUID. The email must be a personal email (email cannot include @rams or @colostate). You can leave the field blank if you choose not to set a personal recovery email.

Recovery Email:
rmiotke

Password Rules:

Colorado State University enforces password restrictions to help increase security. Your password must follow these guidelines to be accepted:
eID Admin Two-Factor Authentication

• All access to eID Admin will require two-factor
• Duo Security
• Initially Duo accounts will be created by NOC Security
• Duo account registration module will be added to eID Admin
eID WebAuth

• ACNS will no longer support eID WebAuth after June 30, 2017
• Shibboleth/SAML is the replacement
• Expanded training materials to support transition available in summer
Shibboleth

• Shibboleth identity provider version 3.x live on May 23, 2016
• Staging V3 IdP available for testing soon
• Duo two-factor added for InCommon Silver Assurance requirements
Other Identity Activities

• Campus UID for Unix/Linux systems
  – Driven by Unix Advisory Group
  – Presented to IAC
  – Use of Banner PIDM (incremental number) proposed
Web Accessibility

• Upcoming meeting for web developer community

• Current state of compliance for public-facing sites – 3 layers deep.
  – WCAG 2.0
    • https://www.w3.org/TR/WCAG20/
  – Section 508 of the Rehabilitation Act of 1973
    • http://www.section508.gov/section-508-of-the-rehabilitation-act
LMS/Canvas

Kevin Nolan, ACNS

• New UI will roll out May 23, 2016
  – Consistent look/feel for all devices.
  – Will communicate with instructors and students.

• Number of small pilots
  – Content repository – share content across institutions.
  – Learning Analytics (LoudCloud)
  – Engage – digital text platform
  – YouSeeU – video assignments/feedback

• Did we mention old RamCT Bb is going away? May 31, 2016
Improving Listserves at CSU

Dave Hoffman, ACNS
Optimize All You Want

“We can't solve problems by using the same kind of thinking we used when we created them.”
- Albert Einstein
Step 1: Listproc -> Mailman

• Definitely a move in the right direction

• Still adjusting, but overall quite successful
  – Working on enhanced documentation and FAQs
  – Seeking input regarding specific pain points, etc.

• Migrating from CREN’s Listproc was a necessary move, but not sufficient...
Goals

• Decrease the hop count of messages sent to @colostate addresses that are ultimately delivered to O365 mailboxes.
  – Speeds delivery & reduces failed delivery attempts

• Make Office 365 “authoritative” for email sent to the colostate.edu domain name space
  – Improved efficiency, reliability

• Provide Office 365/Resource Coordinators a self-service tool to request email aliases
Proposal

• Create a new sub-domain for Listserves

• Migrate listserv email addresses from LIST_NAME@colostate.edu to LIST_NAME@lists.colosate.edu
Benefits

• Simplifies email system
  – Reduced complexity means improved reliability
  – Similar to other email subdomains on campus
    • Scan for spam/virus, then hand off to campus server

• Reduced hop count for alias@colostate.edu
  – Improved delivery time and success rate

• Ability to include various aliases, including listservs, in the Office 365/Exchange GAL
Sounds good, what’s the catch?

The email address of every legacy campus Listserve list would have to change
Strategies for Transition

• Sunset ListName@colostate.edu format
  – Suggest end calendar year 2016

• Communicate name change to Listserve users
• Monitor traffic, send target communications
  – Old address will stop working on this date...
  – Get more aggressive over time, as required

• In January, 2017, mail sent to old address will bounce back; delivery failed, please use this new address
Questions and Comments

• Are most welcome
Security Update

Steve Lovaas
University Information Security Officer
Academic Computing & Networking Services
March 23, 2016
Outline

• Security FYIs: Pulse, PCI/SIPA, Border firewall rule refresh

• Vulnerability scanning

• OS versions

• HTTPS: TLS and SHA versions
Security FYIs

• Pulse Connect Secure re-addressed

• PCI: SIPA project
  – state and ecommerce site.

• Border firewall annual rule refresh
  – Underway
Vulnerability Scanning

• Full 129.82 space since last fall
  – 20 days each month, approaching 100 GB each month on disk

• Revised notification process
  – Mail attachment and OneDrive share
  – Feedback on process

• Response
  – Please notify the ACNS Security Team (soc@colostate.edu) about actions for Critical findings
  – We’ll reach out regarding High findings and important Medium ones
OS Versions

• XP is a security policy violation – upgrade/retire/remove
• Vista end-of-support April 2017 (and no TLS 1.1)
  – No longer supported on CSU network
• Windows server 2003 outdated.

• Windows 8 – no more Microsoft support (upgrade to 8.1 or 10)

• Mac – support for 10.9 ending soon

• Recommendations
  – www.acns.colostate.edu/policies/desktopsoftware
  – Windows 7 or 10
  – Server 2008 R2 or 2012 R2
  – Mac OS X 10.10 or 10.11
SSL/TLS Servers and Certificates

• We’ve issued over 1000 InCommon/Comodo server certs!

• 2 years since Heartbleed (ShellShock, POODLE, Freak, DROWN)

• Government (NIST) and industry (CA/Browser Forum)
  – Schedule to abandon old SSL/TLS versions
  – Schedule to move to SHA-2 hashing algorithm
  – Active attacks; regulatory compliance; browser functionality
TLS Versions

- SSL v2 (1995) officially deprecated; SSL v3 (1996) is broken
- TLS 1.2 minimum OS level
  - Windows 7, Server 2008 R2 (not on by default)
  - Max OS X 10.9
  - Linux depends on installed (OpenSSL) version
- TLS 1.0 deprecated for Federal systems (TLS 1.2 support mandatory)
SHA Versions

• Secure Hashing Algorithm for security certificates
  – SHA-1 from 1995 (theoretically broken since 2005)
  – SHA-2 from 2001 (several versions since then)
  – SHA-3 approved in 2012

• Recent attacks spurred CA/Browser Forum to push upgrades
  – Agreed timeline to force SHA-2 by January 1, 2017
  – After this deadline, not just a warning but no functionality for SHA-1 sites
  – 40% of our certs are still SHA-1 (presumably planning on upgrading by 12/31)
  – Google, Mozilla, and Microsoft are now all considering **July 1, 2016**
Web Server Standards Page

- Developed by IAC web security subcommittee last year
- [www.acns.colostate.edu/Policies/webserverstandards](http://www.acns.colostate.edu/Policies/webserverstandards)
Summary Recommendations

• Act on all Nessus Critical findings

• Upgrade old OS versions

• Web servers up to date
  – Upgrade your SHA-1 certificates by June
  – Move to TLS 1.2 across the board (with updated cipher suites)
Questions?
Li-Fi has just been tested in the real world, and it's 100 times faster than Wi-Fi – 224Gb/sec!
Agenda

• Wireless

• Network Updates:
  – Border
  – Core
  – Edge
Wireless

Recently completed:

– 802.11AC – Morgan, Clark, Glover

As a reminder:

– All GA classrooms are 802.11ac. Buildings with GA classrooms are targeted for 802.11ac throughout pending UTFAB funding.
## Wireless

In progress (survey, tuning, fill-in):

<table>
<thead>
<tr>
<th>Academic &amp; Training Center</th>
<th>Laurel Hall</th>
<th>Univ Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmos Hill</td>
<td>MRB</td>
<td>USC</td>
</tr>
<tr>
<td>Aylesworth</td>
<td>Pathology (except 2\textsuperscript{nd} floor due to construction)</td>
<td>VocEd (CEMML)</td>
</tr>
<tr>
<td>Engineering</td>
<td>Rockwell</td>
<td>222 Laurel</td>
</tr>
<tr>
<td>Fum McGraw</td>
<td>South College Gym</td>
<td>1302 &amp; 1304 S. Shields</td>
</tr>
</tbody>
</table>
Wireless

After that:

<table>
<thead>
<tr>
<th>Atmos Sim Lab</th>
<th>Physiology*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC</td>
<td>Guggenheim*</td>
</tr>
<tr>
<td>SBB*</td>
<td>MRB*</td>
</tr>
<tr>
<td>Mil Sci*</td>
<td>Forestry*</td>
</tr>
</tbody>
</table>

* = General Assignment classroom building – will get 802.11AC throughout
Wireless

Printers: They are making bad choices!

How long can this last?

RIP

2.4GHz
Wireless

Ionizing vs Non-ionizing radiation

• Wireless access points are non-ionizing radiation – concern would be getting cooked, not getting cancer.

• Wireless access points meet or exceed safety regulations.
Wireless

10.83.0.0/16 added as dhcp pool for wireless.

Note: 10.0.0.0/8 is fair game for campus!
Border Network Update: DDoS!

• 8.5Gb/s – 9Gb/s aimed at Poudre School District

• Slowed campus wired links

• Wireless was not as affected

• CSU can now block a destination IP/device from upstream providers.
Core Network Update

• New core router status
  – Crashed first Saturday of Spring Semester – code upgrade completed

  – IP Proxy-ARP removed yesterday (Tuesday, 3/22/16)
Core Network Update

Average Peak Number of Devices per Year

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>73848</td>
<td>90658</td>
<td>110937</td>
<td>118332</td>
</tr>
</tbody>
</table>

Number of Devices

Year
Core Network Update

Average Number of Devices per Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>33871</td>
</tr>
<tr>
<td>2014</td>
<td>43217</td>
</tr>
<tr>
<td>2015</td>
<td>54314</td>
</tr>
<tr>
<td>2016</td>
<td>57791</td>
</tr>
</tbody>
</table>
Edge Network Update

Completed since last meeting:

Dual 10G links:
- Weber

Infrastructure upgrades as part of VOIP project:
- Yates
- Morgan – redo, 1G to edge, 10G interswitch links
VOIP/Infrastructure upgrades in progress (including dual 10G):

- VocEd (CEMML)
- Glover
- Engineering (A-E)

*Wired/wireless work preceded by notification to network managers, facilities and often building proctors.*
Edge Network Update "Closet of Shame"
Before
Edge Network Update "Closet of Shame"
After
Edge Network Update: UPSs

- Removing ones older than 15 years!

- Central funds takes care of MDF: 15-20 minutes runtime

- If powering any central gear (VOIP, Alarms, Cameras, Controls) needs to be managed by ACNS in standard configuration.

- IDF UPS and batteries must meet the above, but financial responsibility of Department/College.
<table>
<thead>
<tr>
<th>Location</th>
<th>Temp</th>
<th>Batt</th>
<th>Load</th>
<th>Run Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1302 Shields</td>
<td>86°F</td>
<td>1</td>
<td>14%</td>
<td>86m</td>
</tr>
<tr>
<td>1304 Shields</td>
<td>63°F</td>
<td>1</td>
<td>6%</td>
<td>153m</td>
</tr>
<tr>
<td>2537 Research</td>
<td>68°F</td>
<td>1</td>
<td>40%</td>
<td>30m</td>
</tr>
<tr>
<td>2537 2nd</td>
<td>71°F</td>
<td>1</td>
<td>6%</td>
<td>156m</td>
</tr>
<tr>
<td>475 17th St</td>
<td>68°F</td>
<td>1</td>
<td>23%</td>
<td>72m</td>
</tr>
<tr>
<td>475 17th/2nd</td>
<td>n/a</td>
<td>1</td>
<td>8%</td>
<td>102m</td>
</tr>
<tr>
<td>475 17th/3rd</td>
<td>n/a</td>
<td>1</td>
<td>18%</td>
<td>55m</td>
</tr>
<tr>
<td>475 17th/4th</td>
<td>n/a</td>
<td>1</td>
<td>11%</td>
<td>109m</td>
</tr>
<tr>
<td>475 17th/7th</td>
<td>76°F</td>
<td>1</td>
<td>9%</td>
<td>121m</td>
</tr>
<tr>
<td>475 17th/15th</td>
<td>68°F</td>
<td>1</td>
<td>15%</td>
<td>64m</td>
</tr>
<tr>
<td>555 Howes</td>
<td>86°F</td>
<td>1</td>
<td>34%</td>
<td>38m</td>
</tr>
<tr>
<td>ACC N112</td>
<td>n/a</td>
<td>1</td>
<td>38%</td>
<td>10m</td>
</tr>
<tr>
<td>ACRC Core</td>
<td>82°F</td>
<td>1</td>
<td>21%</td>
<td>119m</td>
</tr>
<tr>
<td>AECOM</td>
<td>81°F</td>
<td>1</td>
<td>11%</td>
<td>72m</td>
</tr>
<tr>
<td>AIDL</td>
<td>77°F</td>
<td>1</td>
<td>13%</td>
<td>57m</td>
</tr>
<tr>
<td>ARBL (SML)</td>
<td>71°F</td>
<td>1</td>
<td>19%</td>
<td>38m</td>
</tr>
<tr>
<td>ARBL e100</td>
<td>n/a</td>
<td>1</td>
<td>3%</td>
<td>56m</td>
</tr>
<tr>
<td>ARBL wn117</td>
<td>82°F</td>
<td>1</td>
<td>36%</td>
<td>27m</td>
</tr>
<tr>
<td>ARDEC</td>
<td>76°F</td>
<td>1</td>
<td>7%</td>
<td>140m</td>
</tr>
</tbody>
</table>
Edge Network Update: Switches

- http/https turned off – ssh access supported (Secure gateway access being fixed after its IP change.)

- 2-factor authentication pending

- DHCP snooping coming: Way cool! If you opt in: let NOC know if you are going to move DHCP server, please!

- Jacks put into default private network in buildings (Please note otherwise on service order...or end up filling out a second order.)

- Building access: ACNS students/staff doing “audits”. Wireless team during surveys. Sometimes taking pictures of equipment.
Edge Network Update: Amazon

• Network gear on Amazon: If it’s cheaper, it is likely grey market or remanufactured. Often only have 90-day warranty.

• Per Mark at GovConnection:
  “If we can get close with a used product as well....why would the client want to depend on this company for support and warranty replacement? I have seen so many of these come and go.”
Thank you.

**noc@colostate.edu**

New NOC staff:

– Andy Gregory
– Chase Cope
Other Questions/Comments?

Our next Subnet Managers meeting:

Wednesday, May 18, 2016
10 am – noon
LSC Grey Rock Room (rm. 290)