

CSU's Subnet Managers Meeting  
Wednesday, Sept. 21, 2011

Enjoy the Equinox!

## Agenda

- Information Systems update – Alan Hill
- Campus Cloud – Ed Peyronnin
- RamCT Update – Kevin Nolan
- Licensing Update – Diane Noren
- VOIP on Campus – Kyle Haefner
- Middleware Update – Randy Miotke
- Windows Update – Joe Volesky
- Network Update – Greg Redder
- Security Updates – Steve Lovaas

## Technical Demo

- Implementing Echo 360 Lecture Capture Solution
  - Dave Carpenter & Aaron Darnell, CAHS

## Information Systems – Alan Hill

- Systems that will have updates in spring 2012:
  - Kuali, Banner, HR
  - ODS upgrade by year end
- FAMweb and CSU login
  - Live last month
  - Parents login to see their student's transcripts, grades, pay bills, etc.
  - They create a user name to login
- IS hardware migration- servers to VM cluster that will be managed by ACNS

## VOIP - Kyle Haefner

- Current State:
  - ~350 phones
    - IDRC
    - Engines Lab
    - Denver
    - Sterling

## VoIP – con't

### Progress:

- Cost Model
- Training
- Ordering (Phones and Data)
- Help/Support
- Network Infrastructure

## Campus Cloud

- Ed Peyronnin presented a DRAFT overview on Data Center Consolidation project.

## RamCT Update – Kevin Nolan

- Moving to RamCT Blackboard Learn 9.1  
May/summer term 2012
  - Hosted with BB
- Pilot – spring 2012
- Migrating approx. 5,000 sections
- Communications
- Training



## RAMTech Licensing – Diane Noren

- Acrobat Pro Site License
  - Need FTE counts by end of Month
  - Estimated Cost \$8.00 per FTE
- Symantec Anti-virus
  - Year 3 of 3 year contract
  - Cost \$3.61 per computer
- ChemOffice
  - Will be contacting Departments for billing
- Microsoft Campus Agreement
  - Will be going to bid this year
  - Need any changes for the bid
  - If you have not paid for MCA, I will be contacting you

# Apple

- OS X-Lion
  - Only way to purchase with out paying tax  
VOLUME purchase of 20 + (1 activation code)
  - We need to pool orders
- App Store Purchases-iPad & iPhone
  - Purchase Voucher @RAMtech (\$100, \$200 etc.)
  - Each department that wants to purchase Apps needs to set up a Facilitator account not associated with a credit card or specific user.  
<http://support.apple.com/kb/HT2534>
  - The Program Manager will then send each facilitator access codes to use the Vouchers.
  - [CSUappst@colostate.edu](mailto:CSUappst@colostate.edu) is the Program Manager email

## ACNS Middleware – Randy Miotke

- Level of Assurance (LoA) at CSU
- Central authorization services – Grouper

## Level of Assurance (LoA)

- LoA 1: Little or **no confidence** exists in the asserted identity
- LoA 2: **Confidence** exists that the asserted identity is accurate
- LoA 3: There is **high confidence** in the asserted identity's accuracy
- LoA 4: There is **very high confidence** in the asserted identity's accuracy

# Level of Assurance (LoA)



## Level of Assurance (LoA)

- Accuracy of an identity
- Strength of the authentication token
- Reliability of the controls and procedures that protect the credential store

## Level of Assurance (LoA)

- InCommon Federation Requirements
  - Bronze equivalent is LoA 1
  - Silver equivalent is LoA 2

## Level of Assurance (LoA)

- Silver needed for access to Federal resources
- Collaborative efforts between, Human Resources, Research, Information Systems and ACNS
- Policies being developed this fall
- Technology and process in place for a pilot in Spring 2012



## Central Authorization Services

- Discovery work on central authZ
- Test instance of Grouper being built
- Manage groups, roles, permissions
- Delegated administration
- Substantially reduced security risks

## Update on Exchange Search Issues

- Ongoing problem with Exchange “Content Index” corruption continues
  - Outlook/OWA users \*not in Cached Exchange Mode\* experience incorrect/incomplete/no results
- Case with Microsoft was opened on July 20
  - Difficult to troubleshoot
  - Many red herrings found – eventually disproven
  - Escalated to highest level within Microsoft Support
  - Interim Update / Update Rollup 5 – both dead ends

## Exchange Search - Workaround

- Users experiencing this issue have two options:
  - Turn on Cached Exchange Mode
    - Note that Windows Search must be configured to index OST files – we've seen instances where this isn't set!
    - [http://help.mail.colostate.edu/tt\\_indexing\\_options.aspx](http://help.mail.colostate.edu/tt_indexing_options.aspx)
  - Request that mailbox be moved to a mailbox database where Content Indexing is disabled
    - Note that in this case, search no longer works from OWA
    - We have a workaround for this, but it requires user action: [http://help.mail.colostate.edu/tt\\_search\\_folders.aspx](http://help.mail.colostate.edu/tt_search_folders.aspx)

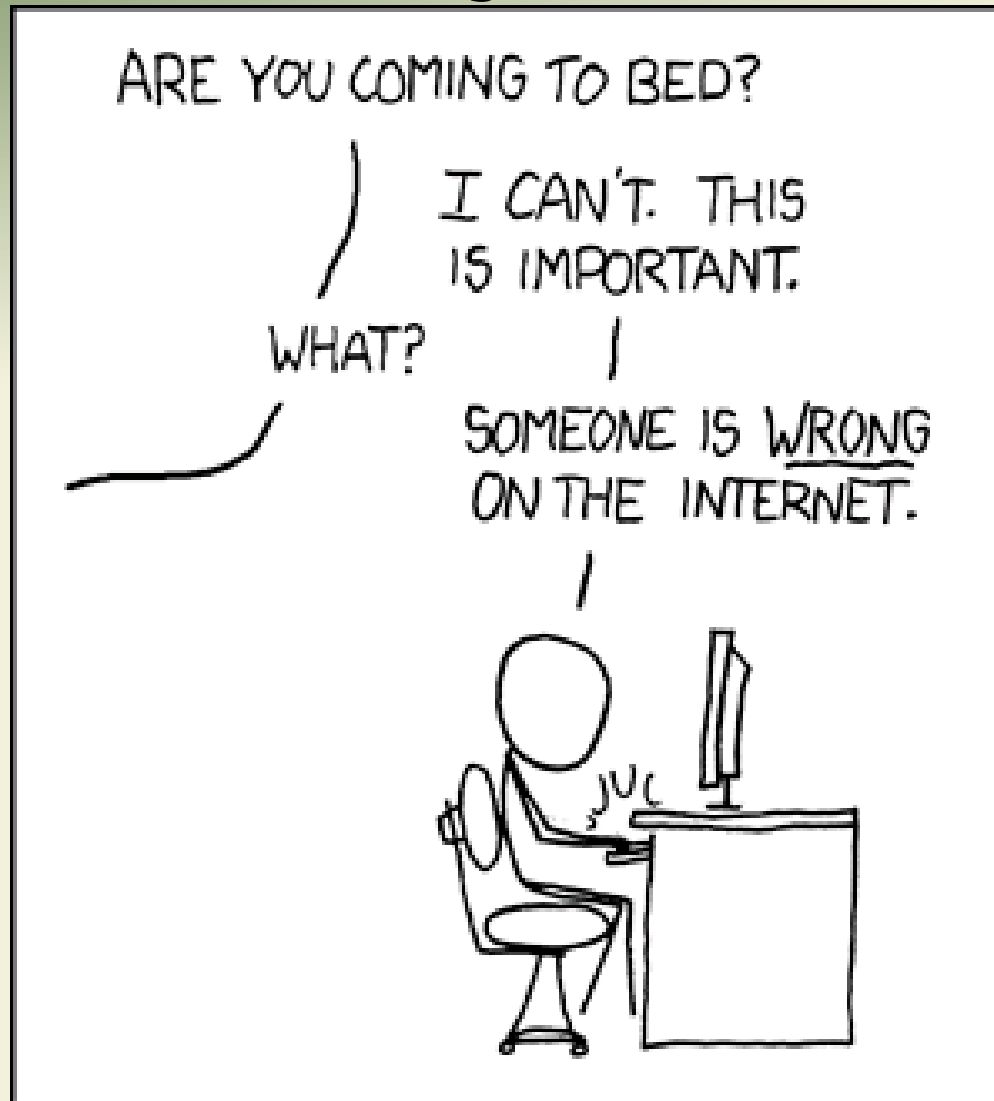
## Windows Advisory Group – Joe Volesky

- Next meeting scheduled for Oct 12, 2011
- Windows 8 will be one of the topics
- Additional agenda items should be sent to [Joe.Volesky@colostate.edu](mailto:Joe.Volesky@colostate.edu)

## UTFAB – Jason Huitt

- University Technology Fee Advisory Board is taking proposals for 2011 – 2012 projects.
- Fill out the UTFAB Supplemental Proposal Form
  - <http://utfab.colostate.edu/page/UTFAB-Supplemental-Proposal-Form.aspx>.
  - Funding criteria located on web page above.

NOC  
(Network Operations Center)  
Greg Redder



## Agenda

- Traffic updates
- Building updates
- Statistics and Monitoring tools
- Switch labeling and color codes
- Wireless Tips and Tricks

## Traffic Update

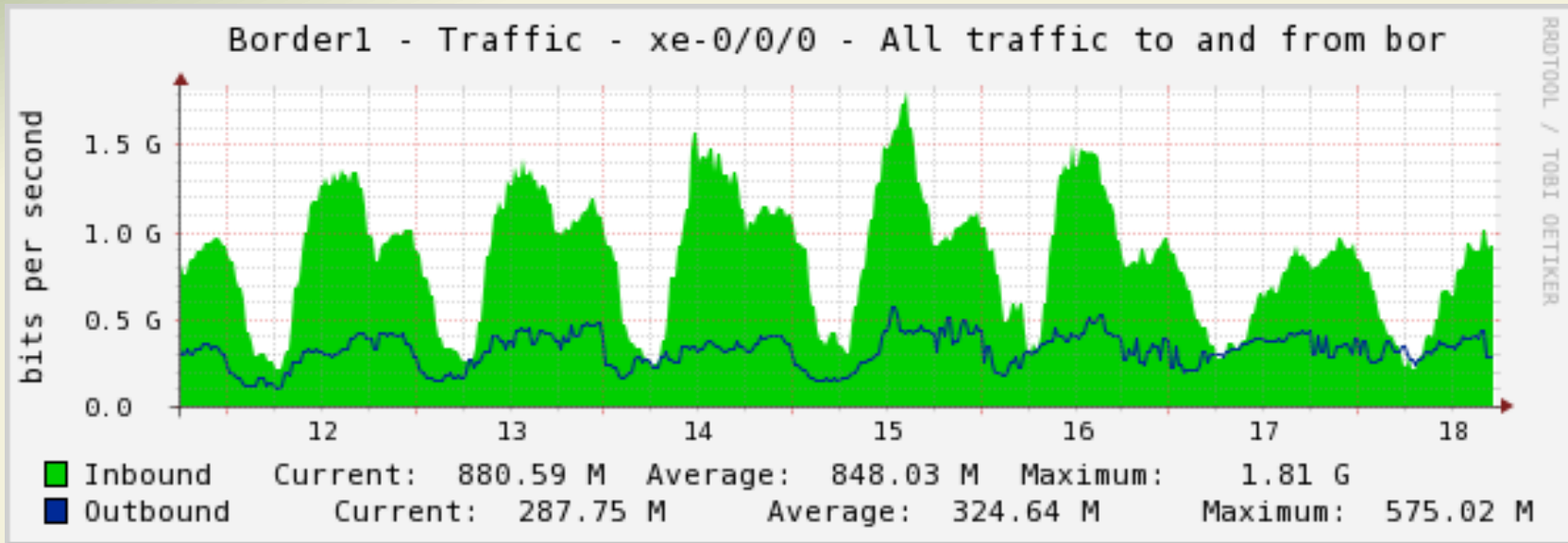
- Internet Traffic
- “Outages”
- Changes at FRGP and on campus...



# Internet Traffic

## Broke 1.8G last week

Daily stats from last week:

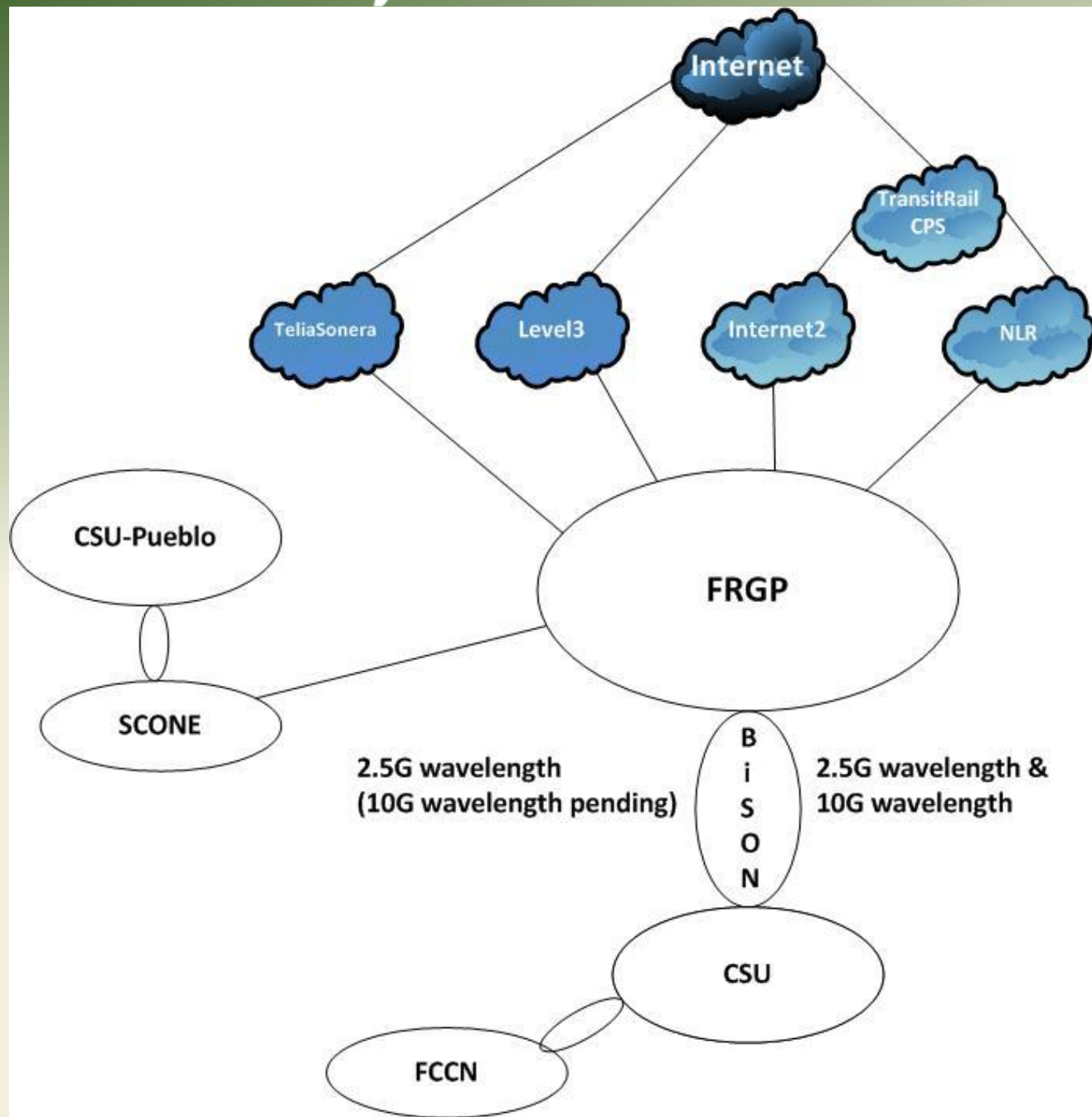


## “Outages”

- Wednesday, July 6, 7:20AM-8:05AM:
  - Level3 stopped sending default route some weeks/months earlier. This went unnoticed. So, when we tested dropping the Qwest link, campus lost default route.
  - Default routing oversight fixed by relying on FRGP to send default route, not providers!
    - This should prove more reliable as there is a better communication path and FRGP Engineers have a vested interest in ensuring default route exists to customers more so than Level3 did!
  - Previously 15 months of 100% uptime for Internet access!

## FRGP and campus changes

- Qwest no longer a provider for FRGP
- TeliaSonera is now an Internet provider for FRGP
- Internet2 Commercial Peering Service and NLR TransitRail merging...
- 2<sup>nd</sup> 10G “landed” at CSU, but not installed as production



## Building updates

- CIC
- Departmentally funded
- Construction

## CIC

### CIC Phase 1 (FY 11 funding)

- OT
- Clark A
- Clark C
- Shepardson
- ARBL
- VTH
- A/Z
- NESB

## CIC

### CIC Phase 2 (FY 11 funding)

- Eddy
- Aylesworth
- Rockwell
- Weber
- CS (10G)
- CMAPP (10G)
- Gifford (by end of September)
- Plant Sci (10G, by end of September)

## Departmentally funded

- Rec Center – due soon, pending fiber
- Spruce/Routt – DCE upgrade for distance learning
- Admin – at 100M, waiting on dual 1G links
- Gibbons – pending funding
- Yates – network chargeback, eliminated 1 more large campus router!
- 1G backup links to rows 8 and 9 at E7



## Construction

- Morgan remodel (ongoing)
- Alder Hall
- Washington Elementary

## Statistics and Monitoring tools

- Traffic graphs and switch access now available via:

**[secure.colostate.edu/subnetmgrs](https://secure.colostate.edu/subnetmgrs)**

E-mail [noc@colostate.edu](mailto:noc@colostate.edu) with questions and for login information.

Nagios monitoring tool to be available soon!

## Traffic graphs

Colorado State University

Home Meetings Preferences Session 07:59:29 Help Sign Out

Browse (tips)

Welcome to the Secure Access SSL VPN for Subnet Managers, redder. You last signed in on Wed, 07-Sep-2011 11:53:40 MDT from 10.84.8.54

Files

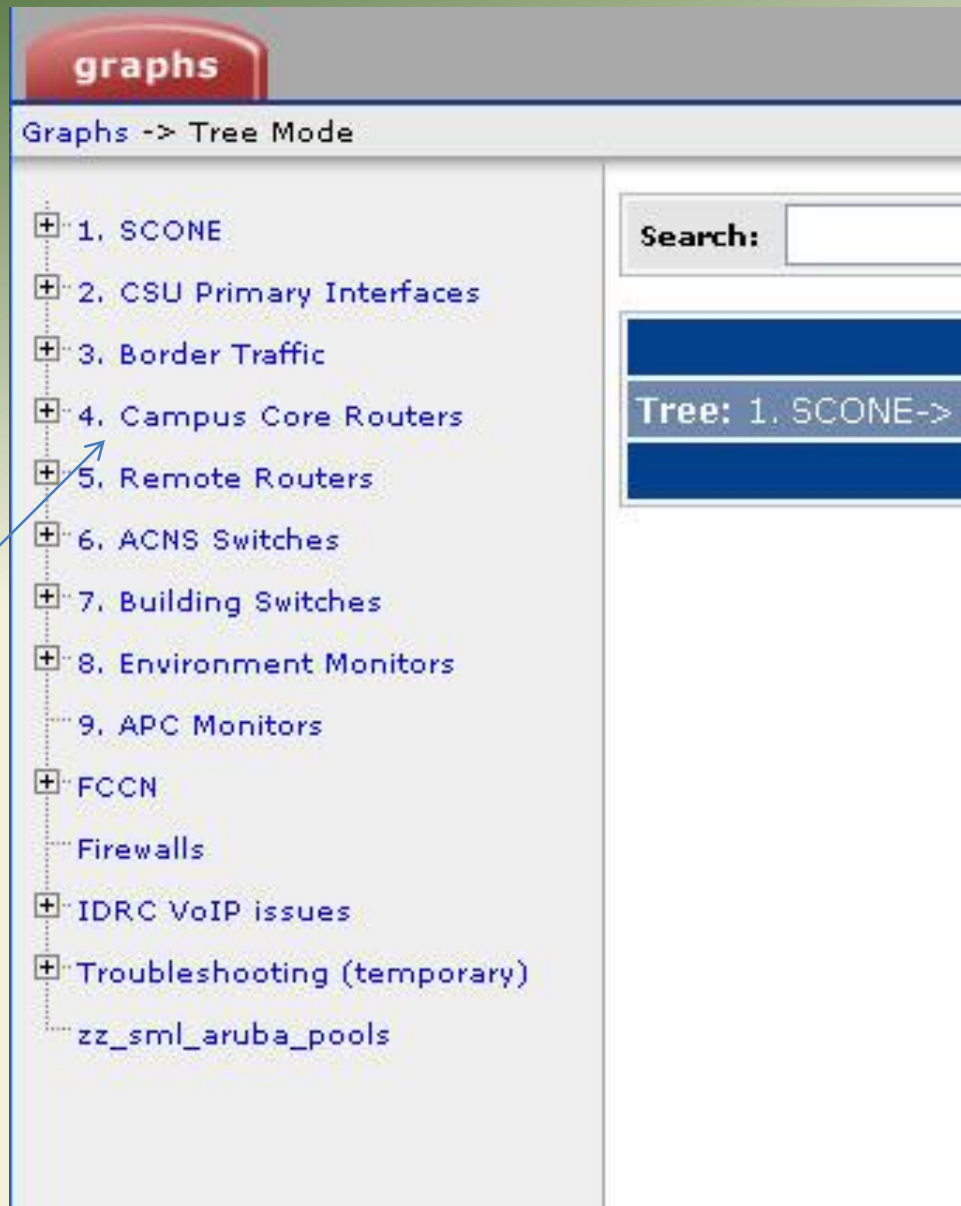
Windows Files

Scan results folders

Terminal Sessions

Web Bookmarks

Cacti



The screenshot shows a web-based network management interface. At the top, there is a red button labeled "graphs". Below it, the page title is "Graphs -> Tree Mode". The main area is a tree view of network components, each with a plus sign icon to its left. A blue arrow points to the plus sign next to "5. Remote Routers". To the right of the tree view, there is a search box labeled "Search:" and a blue button labeled "Tree: 1. SCONE-> L".

- + 1. SCONE
- + 2. CSU Primary Interfaces
- + 3. Border Traffic
- + 4. Campus Core Routers
- + 5. Remote Routers
- + 6. ACNS Switches
- + 7. Building Switches
- + 8. Environment Monitors
- 9. APC Monitors
- + FCCN
- Firewalls
- + IDRC VoIP issues
- + Troubleshooting (temporary)
- zz\_sml\_aruba\_pools

Search:

Tree: 1. SCONE-> L

## Switch access

Colorado State University

Home Meetings Preferences Session 07:59:29 Help Sign Out

<http://10.100.x.y> Browse (tips)

Welcome to the Secure Access SSL VPN for Subnet Managers, redder. You last signed in on Wed, 07-Sep-2011 11:53:40 MDT from 10.84.8.54

Files

[Windows Files](#)

[Scan results folders](#)

Terminal Sessions

Web Bookmarks

[Cacti](#)

## Patch Cord Cable Information

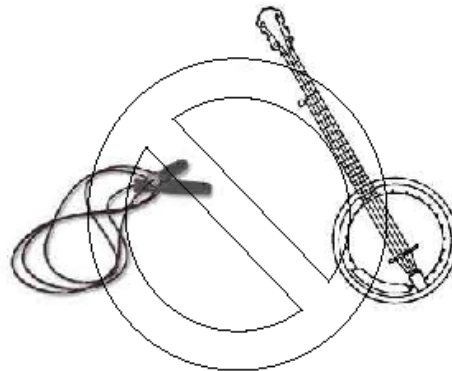
- Type, Colors
- NEW → Labeling!
- Switch names
- IDF/MDF notes

## MDF/IDF Patch Cord Color Standards:

- Do  
Not  
Move* {
- **Red/Grey: Data**
  - **White: VOIP**
  - **Green: Security Cameras, CardKey, Meters, EMS, Facilities**
  - **Yellow: Wireless**
  - **Violet: A/V**
  - **Orange: Switch-switch links**
  - **Light blue: Departmental specific**

Please...use the proper length cable. (Place a data service order if at all possible, please.)

No “jump ropes” or “banjos”



## Labeling

- Green, yellow and orange cables labeled at switch with switch and port information along with description of what is on other end, i.e.:

**148.245 port A21  
EMS unit**



## Switch names

### **15 characters:**

- **Characters 1-3:**

- Bldg name in small letters padded with trailing underscores if building is only 2 letters. Example: "cs\_" for Computer Science or "lsc" for Lory Student Center

- **Character 4:**

- Floor. "0"=basement, "1"=first, etc.

- **Characters 5-9:**

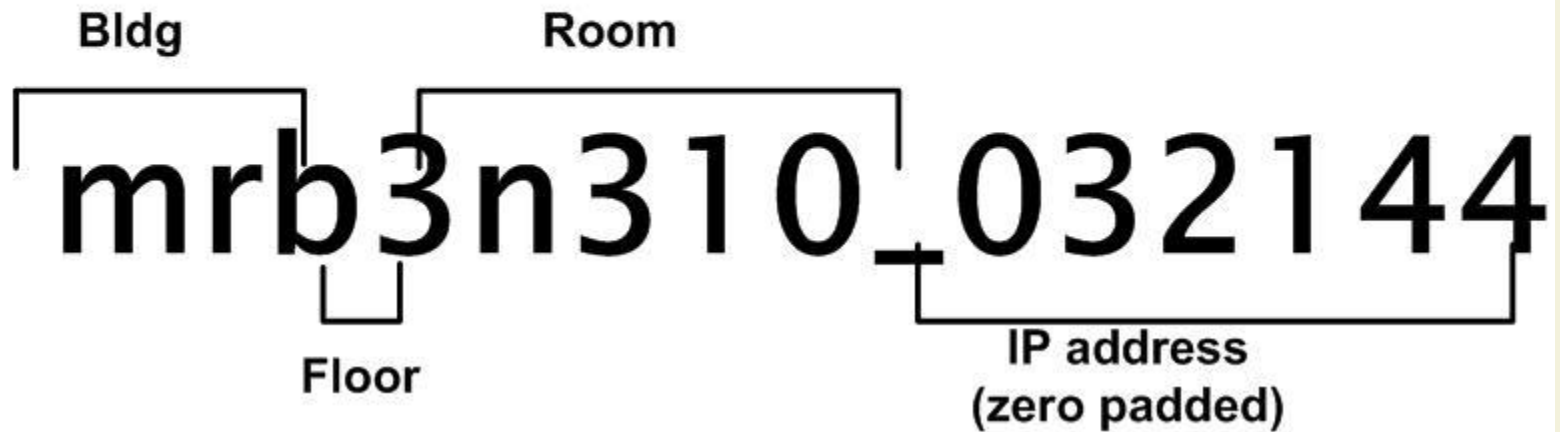
- MDF/IDF Room# padded with leading and trailing underscores. Use trailing or leading underscore to pad 4 characters (whichever makes it more clear) use trailing and leading to pad 3 characters. Examples: "n317\_" for room N317 or "\_W05\_" for room W5

- **Characters 10-15:**

- Last 2 octets of IP address, zero padded, no period. Example: 201011 for 10.100.201.11

## Switch names

### IDF example



## IDF/MDF notes

- Cable types:
  - Systimax (by Commscope)
  - Red & Light blue (Grey is historic) available through RamTech
  - Yellow, Green, White, Orange, Violet – installed by Telecom
  - Anything non Systimax voids warranty

**IDFs/MDFs to be kept locked, not propped open, please.**

## Wireless tips & tricks

- The restaurant is so crowded that "...no one goes there anymore." – Yogi Berra
- 5000+ simultaneous users on a regular basis.

## More wireless tips & tricks

- CSU-NET clients will have a 10.84.x.x address, so everyone intending to offer services to “on-campus” IPs should allow 10.84.0.0/16
- If CSU-NET works, but you can’t reach some resources on campus, please let us know... it’s probably unintentional (see #1)
- For traffic headed off campus (to the internet), NAT will assign a 129.82 address
  - (so don’t be confused if you use something like [whatismyip.com](http://whatismyip.com) for troubleshooting an internal connectivity problem)
- Border firewall rules for these NAT addresses are exactly like the 129.82 range, including outbound SMTP blocking
- CSU-NET is authenticated and encrypted, so you don’t need to run the Cisco VPN client or the Juniper SSL gateway
  - (plus, we’ve seen some problems with iPads running the Junos Pulse client AND connecting to a secure wireless network)

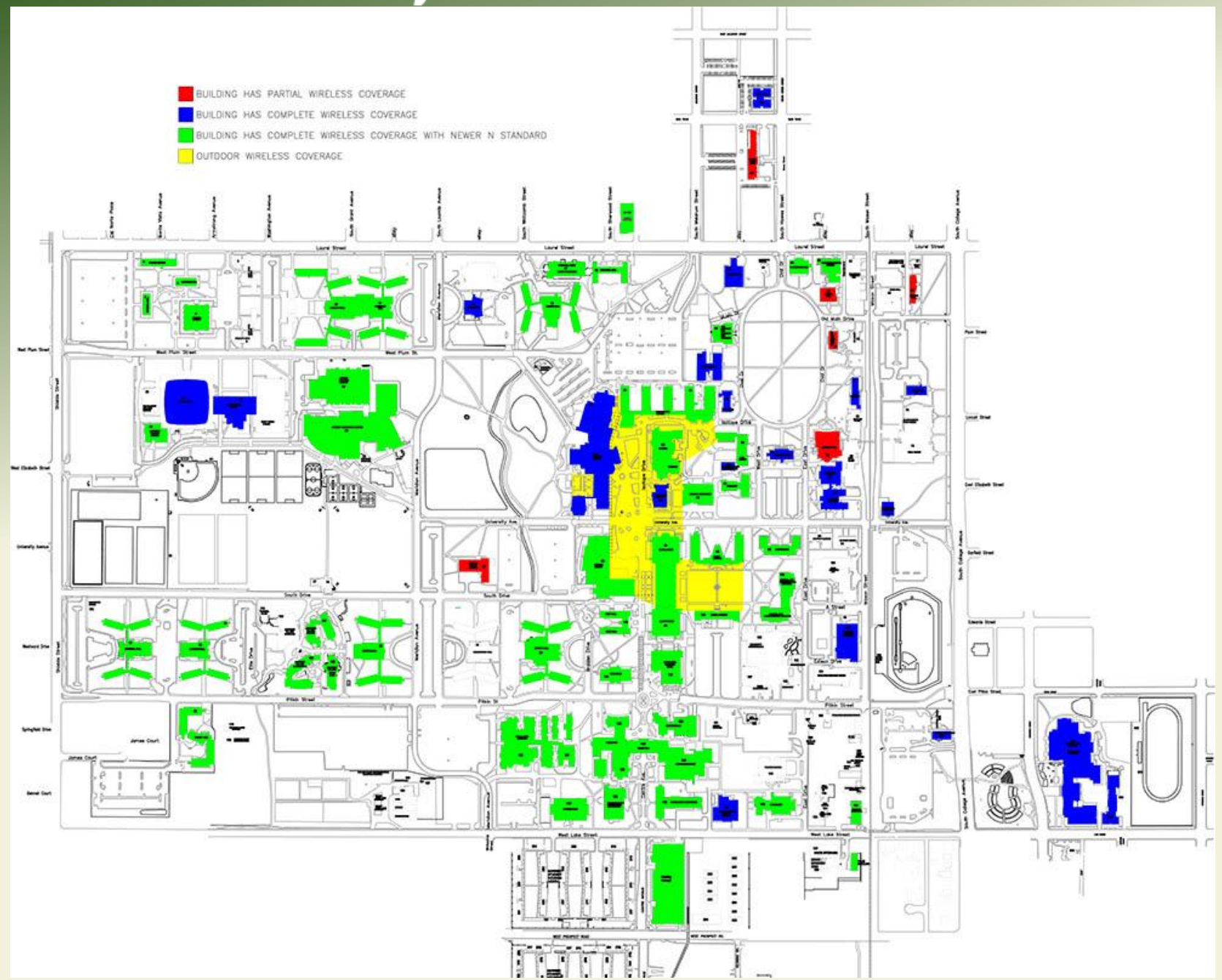
## More wireless tips & tricks

- Macs and wireless: sleep/awaken issues!
  - Toggle wireless on/off
  - Re-enter IP configuration information
  - Reboot
  - Clear out keychain entry
- Lion: Need latest Lion update
- Wireless in non-GA areas (non-UTFAB funded) are not redundant.
- Finally: verify set-up, especially XP/Vista: use documents at <http://www.acns.colostate.edu/Connect/CSU-NET>

## Even more wireless tips & tricks

- 2.4 Ghz phones – bad!

	Port	Location 1 - Short (Mbps)				Location 2 - Long (Mbps)			
		Run 1	Run 2	Average	% of Baseline	Run 1	Run 2	Average	% of Baseline
<b>Baseline</b>	5001	10.60	10.40						
	5002	10.30	10.40	10.43					
<b>Microwave Oven</b>	5001	3.88	3.68			4.67	4.77		
	5002	3.79	4.24	3.90	37.39%	5.09	5.21	4.94	47.34%
<b>TDD Phone</b>	5001	0.00	0.00			0.00	0.00		
	5002	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%
<b>Wi-Fi</b>	5001	0.22	0.99			4.26	1.17		
	5002	2.15	1.00	1.09	10.44%	3.35	1.56	2.59	24.80%
<b>DECT</b>	5001	9.08	8.42			9.57	9.23		
	5002	8.16	8.39	8.51	81.65%	9.61	9.25	9.42	90.31%
<b>Video Camera</b>	5001	0.00	0.00			1.64	7.26		
	5002	0.00	0.00	0.00	0.00%	1.87	7.17	4.49	43.02%
<b>BT Headset</b>	5001	8.40	8.10			9.34	8.42		
	5002	9.00	8.07	8.39	80.50%	8.42	8.44	8.66	83.02%





- ...Questions?
- Thank you!

## Security – Steve Lovaas

- Passwords
  - Heads up: students will be required to change
  - Still working on details of who, when, how... more to come
  - Also want to talk about length/strength/change tradeoff for faculty/staff

## Security – con't

- Firewalls
  - Cisco Firewall Services Modules will be replacing ACLs on core routers
  - Exploring possibilities of Cisco FWSM and distributed manageability
  - Cleaning up old border firewall rules – please review yours
  - Looking into Juniper SRX line to replace SSG firewall series

## Security – con't

- Anti-malware
  - Symantec contract up for evaluation (extend, replace, augment, ...)
  - Convening a group to evaluate our options
  - Please email me if interested
  - SEP v12 running on the server, clients gradually migrating
  - SAV v10 no longer supported
  - Testing of a basic v12 setup works better than v10 on old machines
  - If you run your own instance, talk to Scott Dawson first for advice

## Security - con't

- Juniper SSL gateway
  - Upgraded to new hardware and software this summer
  - Several pending projects for Windows, Citrix, DFS
  - Will be adding Shibboleth option soon
  - Junos Pulse client for iOS (iPhone, iPad) – like NetConnect
  - Junos Pulse for Android – waiting on Google for VPN functionality
  - Mac/Linux native connection to Windows RDP

## Technical Demo

- Implementing Echo 360 Lecture Capture Solution
  - Dave Carpenter, CAHS