

Network & Communication Services Unit
University of Peradeniya

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Outline

- Current status
- Services
- Network Topology
- Network Related Issues
- Systems & Software
- IPv6 Deployment
- VOIP Status
- Personal Experience
- Challenges
- Successful stories
- Future Development Plans

Current status

- NOC
 - Network & Communication Services Unit (NCSU)
 - 4 staff members
 - Director
 - Network engineer
 - Technical officer
 - Staff assistant
 - + Voluntary lecturers



Current status

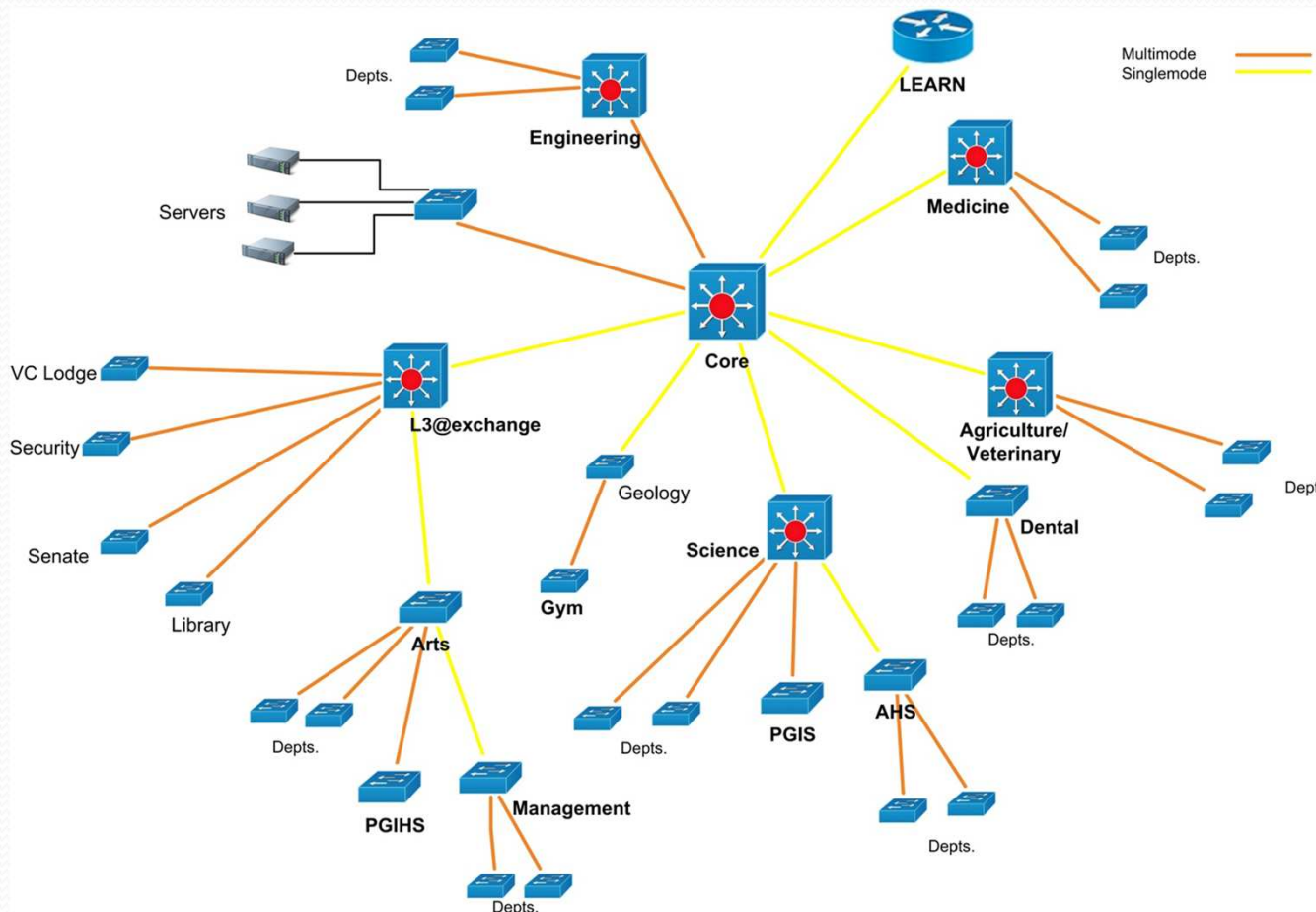
- University Link bandwidth - 750 Mbps
- Number of ethernet connections – 4000
- Network Infrastructure
 - Routers (1)
 - L3 switches (6)
 - L2 switches (175)
 - Wireless (1 Controller + 13 APs)
 - IP phones (600)
 - Analogue phones (1260)



Services

- Internet/Web access
 - Wired/Wireless(Engineering + SLT)
- Email
- Web application hosting
- VOIP/Analog phone system
- Network design and requirements specifications
- Network maintenance
- Network services for special events

Network topology





Network Related Issues

- Institutional Wi-Fi Access points/hubs
- Daisy chains of fiber/copper network
- Fiber capacity
- Outdated infrastructure (UPS, switches)
- Media converters
- Network upgrades in ad hoc manner



Systems & Software

- Run with 5 moderate servers
- OS: FreeBSD
 - Web Server : Apache HTTPD
 - Database : MySQL
 - SMTP : Postfix
 - Proxy Server : Squid
 - Authentication : Open LDAP
 - IP PBX : Asterisk
 - Various auxiliary tools and packages



IPv6 Deployment

- Partially deployed
- IPv6 enabled
 - DNS, Web, Mail relay/server, Proxy
- Running with IPv4
 - Database, LDAP
- Currently used within a single VLAN.
 - IPv6 space not sub-netted
- Observation : higher ping time compared to ipv4



VOIP Status

- IP PBX software : Asterisk
- Around 600 IP phones
- Issues
 - Constant analog to VOIP connectivity failure
 - Currently running old version in a old server
- Looking forward to replace with FreeSWITCH

Personal Experience

- Network
 - Optical fiber
 - HP switches
- Systems
 - FreeBSD/jails
 - Postfix
 - Squid
 - Asterisk



Challenges

- Lack of NOC staff
 - Currently 4 nos, requested for 11 nos
- Problems in support structure
 - responsibility delegation
 - lack of technical experts
- Computer literacy of community
 - unexpected number of requests
 - subjected to phishing attacks
 - incoming and outgoing spam

Successful stories (from 2014 Jan)

- Engineering Wi-Fi (Partial)
- Fiber path to AHS
- Fiber path to PGIHS
- Increased Infrastructure (L2 Switches, IP phones)
- Server Upgrades

Future development plans

- Upgrading the Entire University Network
 - Engineering Faculty about to commence
 - Master plan to upgrade fiber optic backbone
- Implementing University-wide Wi-Fi network
 - Engineering Faculty - called for Proposals
 - The rest: identifying funding sources!
- Extending wired connectivity to hostels
- Test framework for services
- Ticketing system
- VM provisioning



Thank You !