

Network & Communication Services Unit

University of Peradeniya Sri Lanka

Annual NOC Meeting - 2018

Outline

- ❖ NOC status
- ❖ NOC services
- ❖ University network topology
- ❖ IPv6 deployment
- ❖ Telephone system
- ❖ Network monitoring and Security
- ❖ LibreNMS
- ❖ Snort
- ❖ Network Related Issues
- ❖ Future Development Plans

NOC status – Human resources

❖ NOC

- Network & Communication Services Unit (NCSU)
- 5 staff members
 - Director
 - Systems Analyst / Programmer
 - 2 Technical officers
 - Staff assistant

NOC status - Infrastructure

❖ University Link bandwidth - 750 Mbps

❖ Network Infrastructure

- Routers (1)
- L3 switches (8)
- L2 switches (300+)
- Wireless (2 Controllers + 120 APs)
- IP phones (600+)
- Analogue phones (1200+)

NOC Status - Systems & Software

- ❖ Operating systems : FreeBSD, CentOS, Ubuntu
- ❖ Web Server : Apache HTTPD
- ❖ Database : MySQL
- ❖ Mail : Postfix
- ❖ Proxy Server : Squid
- ❖ Authentication : Open LDAP
- ❖ IP PBX : Asterisk
- ❖ Private cloud : Nextcloud
- ❖ Monitoring : Snort, LibreNMS

NOC services

- ❖ Internet & Email
- ❖ Internal web application hosting
- ❖ VOIP/Analog phone system
- ❖ Network maintenance
- ❖ Network Upgrade
- ❖ VPS hosting
- ❖ Eduroam

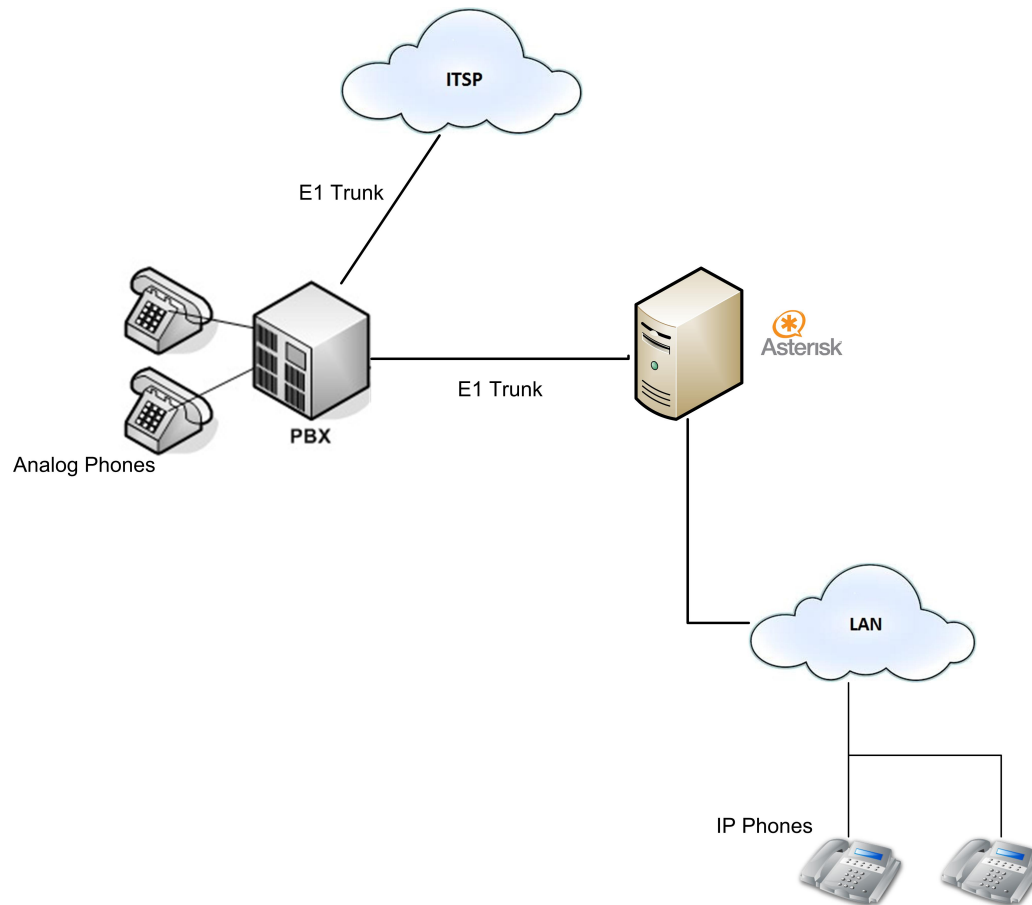
IPv6 deployment

❖ University Reserved Subnet - 2401:dd00:30::/48

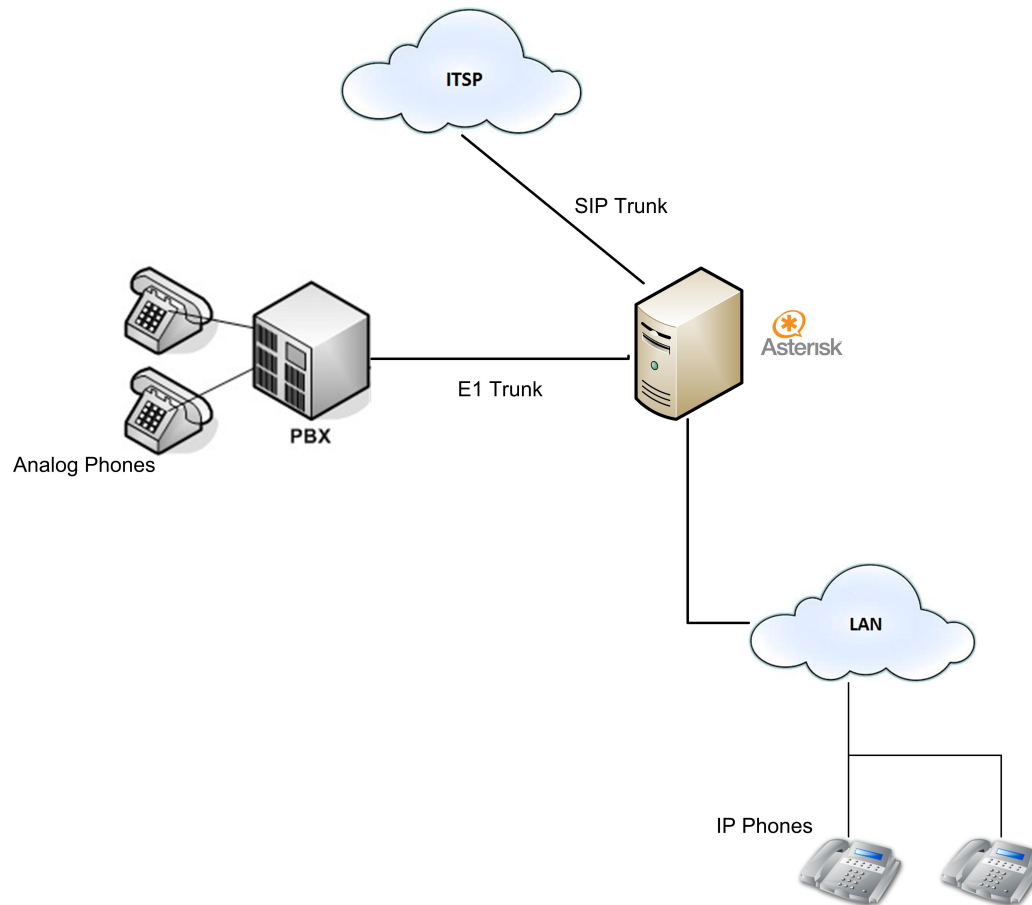
❖ Subnetting Plan:

- 2401:dd00:0030:**XYYZ**::/64
- **X** - Faculty
- **YY** - Department (max 256)
- **Z** - Department Unit / Section / Lab (max 16)

Telephone System - Current



Telephone System – Future Plan

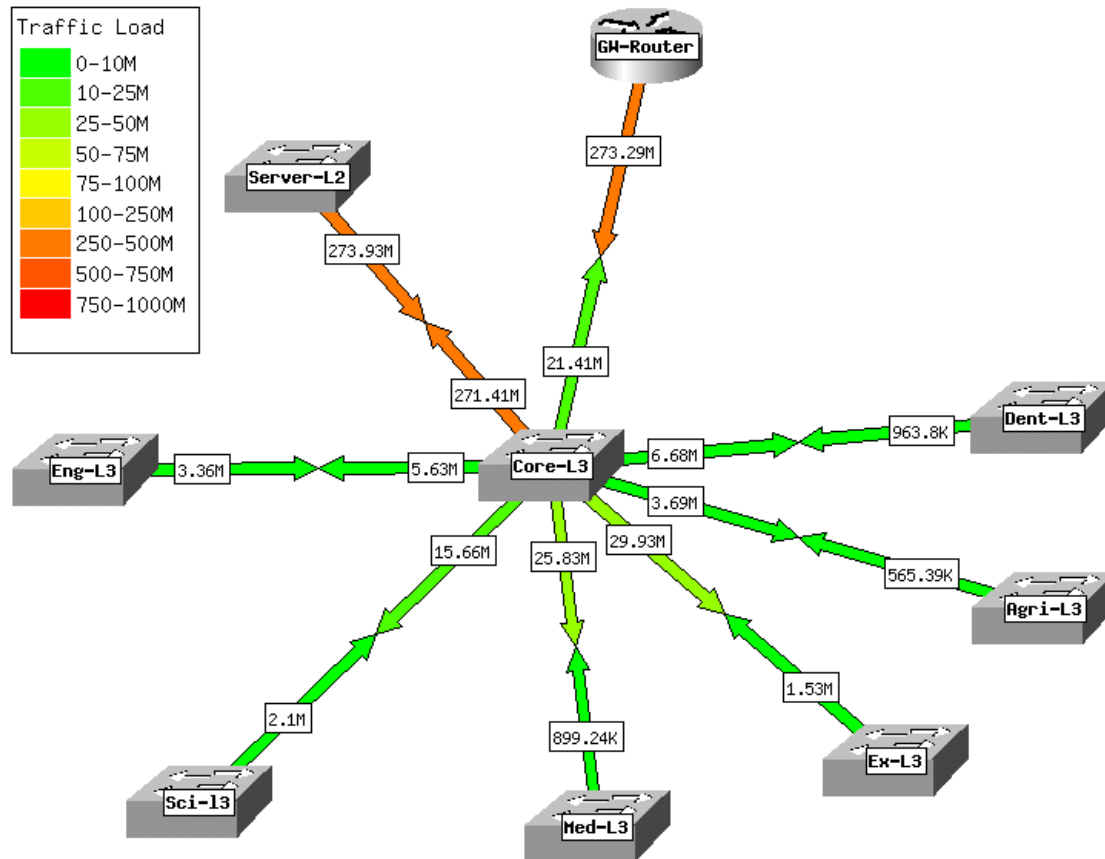


Network monitoring and Security

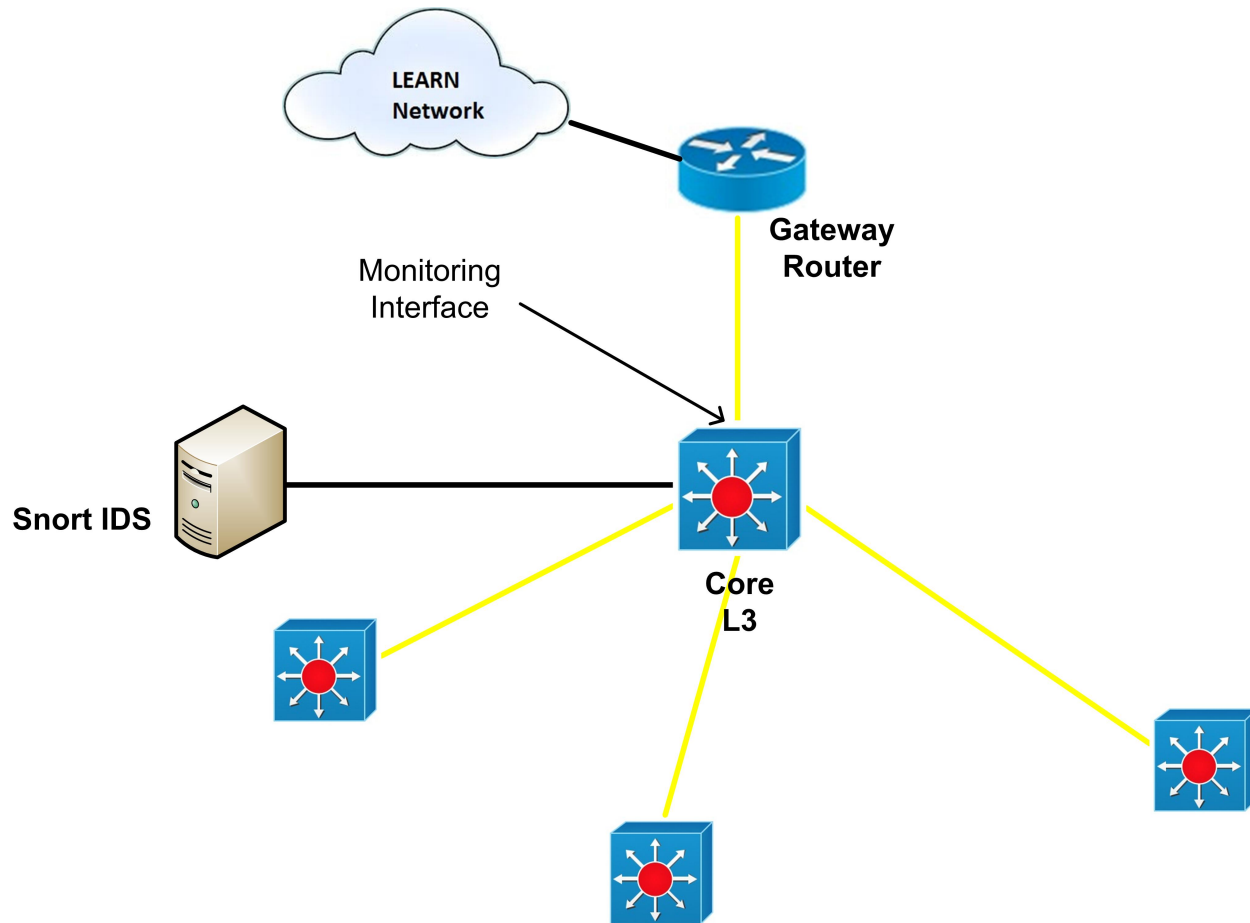
- ❖ LibreNMS
- ❖ Snort IDS
- ❖ Free-sa log processor for squid proxy

LibreNMS - Weathermap

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Snort

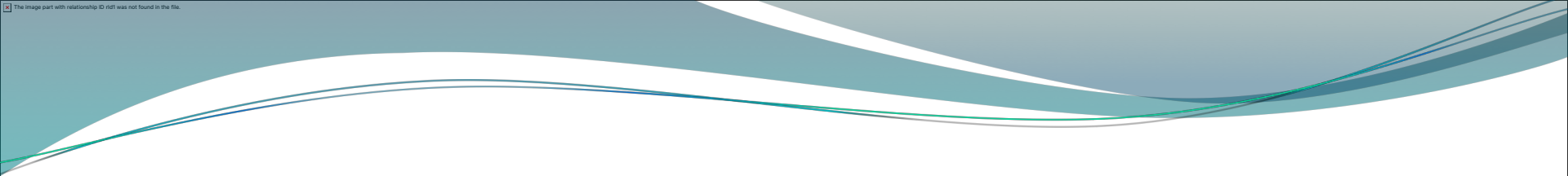


Network Related Issues

- ❖ Old types of Fiber and low bandwidth capacity
 - OM1,OM2
- ❖ Outdated network devices
 - Speed limits
- ❖ Daisy chains of network devices
- ❖ Media converters
 - Point of failures
- ❖ Use of unauthorized network devices
 - Hubs and Wi-Fi routers

Future development plans

- ❖ Upgrading the network
 - Backbone network to 40 Gigabit
 - Distribution layer network to 10 Gigabit
 - Upgrade of L3,L2 switches
 - Replace all multimode fibers with singlemode
- ❖ Implementing University-wide Wi-Fi network
 - Currently covers 2 faculties (out of 9)
- ❖ Extending internet connectivity to hostels



Thank You !