LEARN NOC Meeting, 2023

UNIVERSITY OF VAVUNIYA,

14.12.2023

K.Pratheepan

System Engineer Gr.I

Outline

- UOV - University of Vavuniya

- UOV NOC Hardware Resources

- UOV NOC Human Resources

- UOV NOC on Premise Services

- UOC NOC on Cloud Services

- UOV Network Infrastructure

- Network Related Issues

- Future Development Plan

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University of Vavuniya

- Vavuniya Campus of the University of Jaffna was established in 1997.

- Elevated to a Separate State University as University of Vavuniya in 2020..

- After this migration we had to separate each and every domain names, server configurations from vau.jfn.ac.lk. to vau.ac.lk,

   1.We had separate web servers on both domains

   2.We had separate IAM servers on both domains then removed previous domain

   3.We had both IRS Servers then removed previous domain.

   4.We have G-Suite in both domains

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UOV NOC Hardware Resources

- NOC Located at DPS (Resources are shared with ITC)

- LEARN SLT Link @ 500Mbps

- LEARN Dialog Backup Link @ 100Mbps

- Physical Servers in use – 12

- Firewall on Pfsense (DMZ, VPN, VLAN & Bandwidth Control….)

- Core Switch HPE Flexnetworks 5510 -02

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UOV NOC Hardware Resources Continue….

- L2 Manageable Switches as Distribution & Access Switch – 42.

  (Cisco, HP, Juniper, Aruba…)

- We are connected basic access switches in UOV network -25 (D-Links, TP-Links…)

- Wireless Controller on Cloud – Cambium

- Wireless Access Points - Cambuim 43, Aruba 12

- Power Sources
    1. 10KW APC SMART UPS – 01
    2. 6KW APC SMART UPS – 01
    3. 3KW EATON UPS - 06
    4. Auto Power Generator – 01

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UOV NOC Human Resources

- Head - Physical Science -01

- Director - IT Centre -01

- System Engineer -01

- System Analyst -01

- Assistant Network Manager -01 (On Vacant)

- Technical Officers -02 (On Call)

- Attendant -01 (On Call)

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UOV NOC on Premise Services

- Pfsense Firewall for Internet Services, VPN, DMZ & VLAN Controlling

- Web Services on Containers (VAU, FAS,FBS, FTS, Apps)

- VLE Services (VAU, FAS)

- VLAN Services

- Open LDAP for Zoom & EDUROAM Services

- AD Services for Student's Local Login

- IDP for Zoom Services

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UOV NOC on Premise Services Continue ….

- EDUROAM Services

- Koha Library Management System Services

- Digital Resource Repository on DPACE

- MIS Services

- Payment Gateway Services

- Wi-Fi Coverage to Entire University Premises

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UOV NOC on Cloud Service

- Cambium Wireless Cloud Controller

- G-Suite Account to Staff & Students for e-mail, G-Drive, Calendar, ClassRooms….

- Microsoft Dreams Park Account (vau.jfn.ac.lk Subscriptions Expired)

- Microsoft Account to Staff & Students on vau.jfn.ac.lk domain name

- Microsoft Account to Staff & Students on ms.vau.ac.lk domain (Under Review)

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Access Restrictions on pfsense Firewall

- Only Certain Ports and Services are allowed with in VLAN

- MGT VLAN has access to all VLAN but other VLAN has no

- VPN users only allowed to login pfsense and servers in DMZ

VLAN Controlled in pfsense

Network Infrastructure of the University of Vavuniya
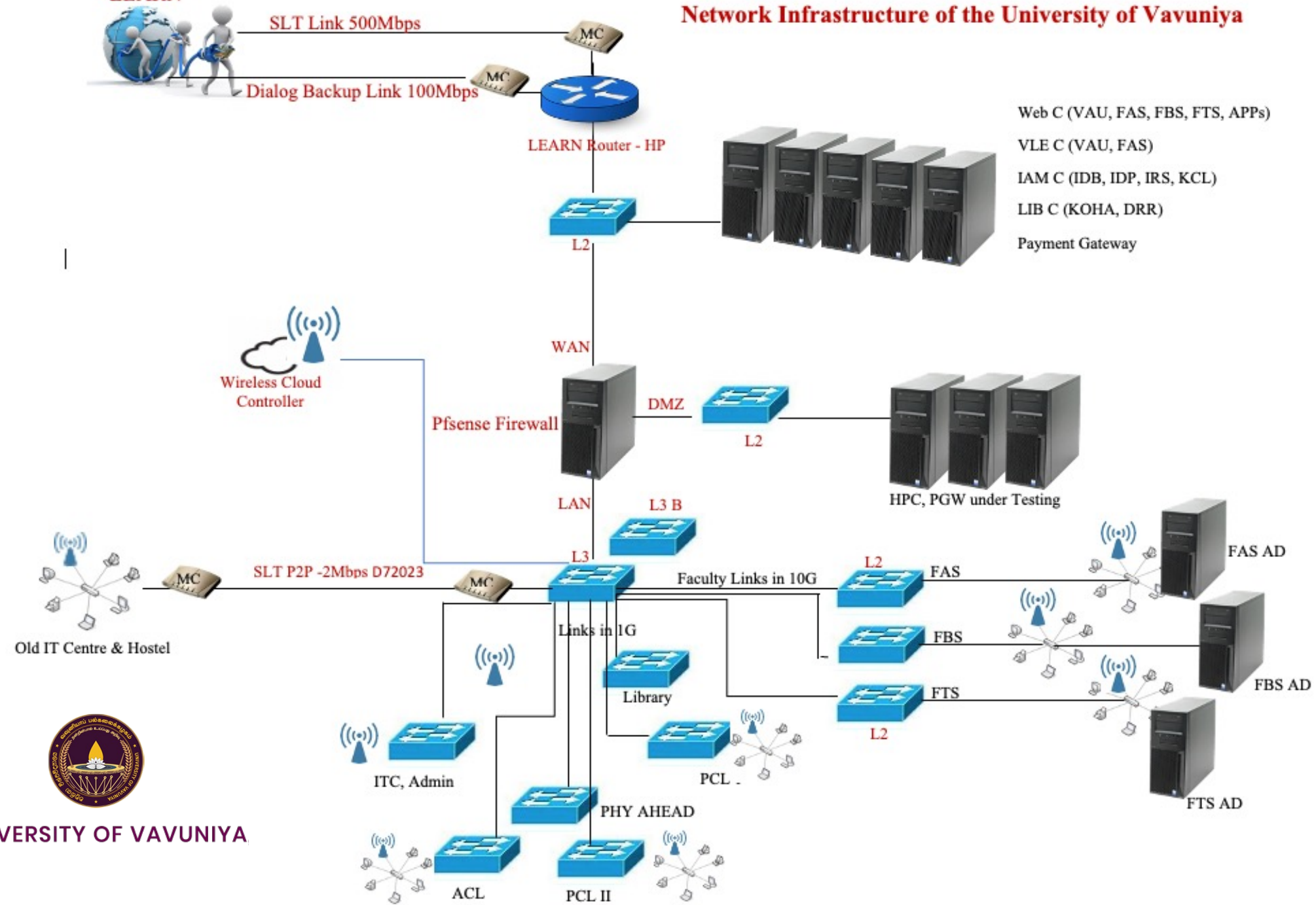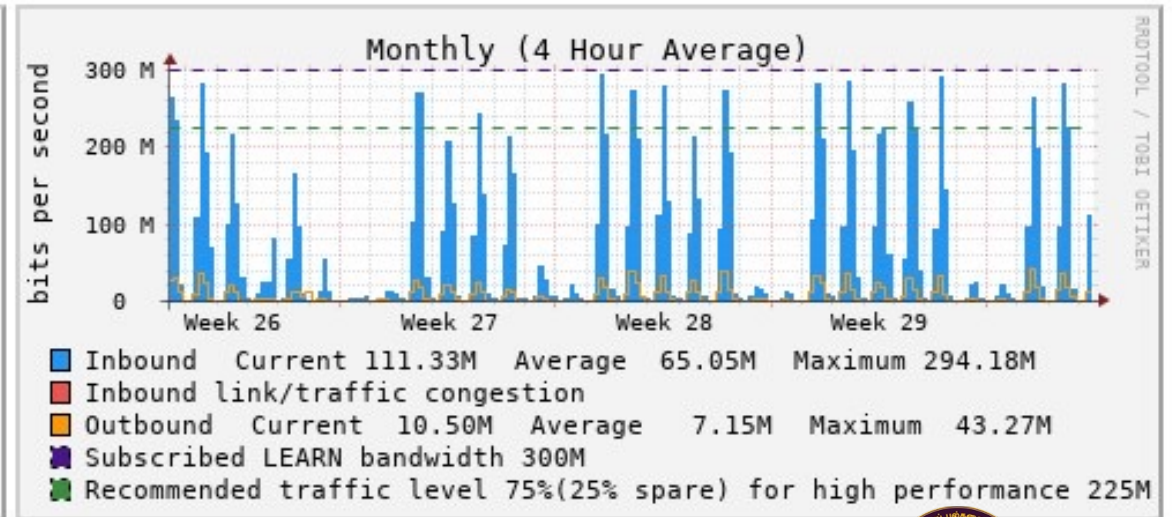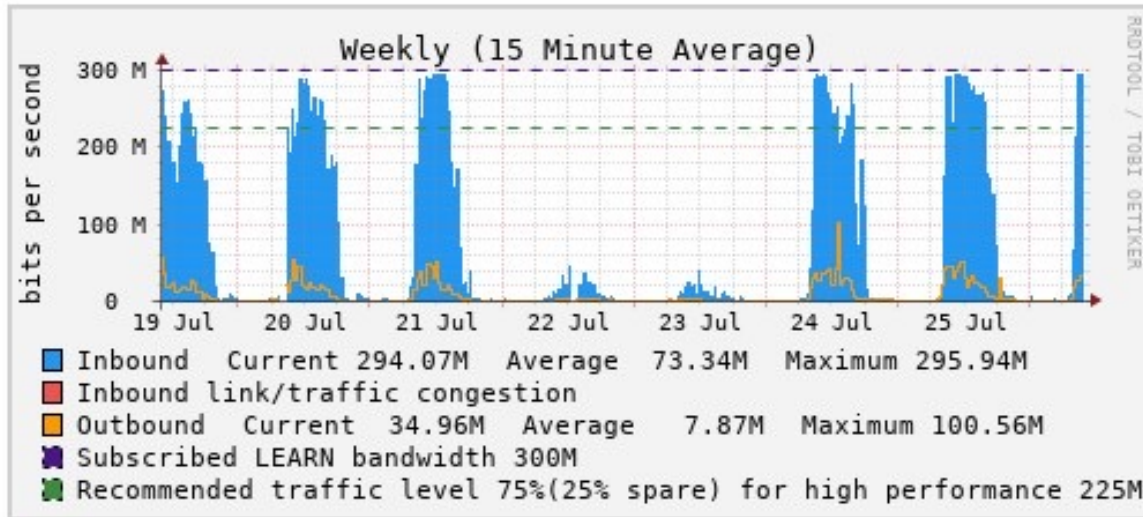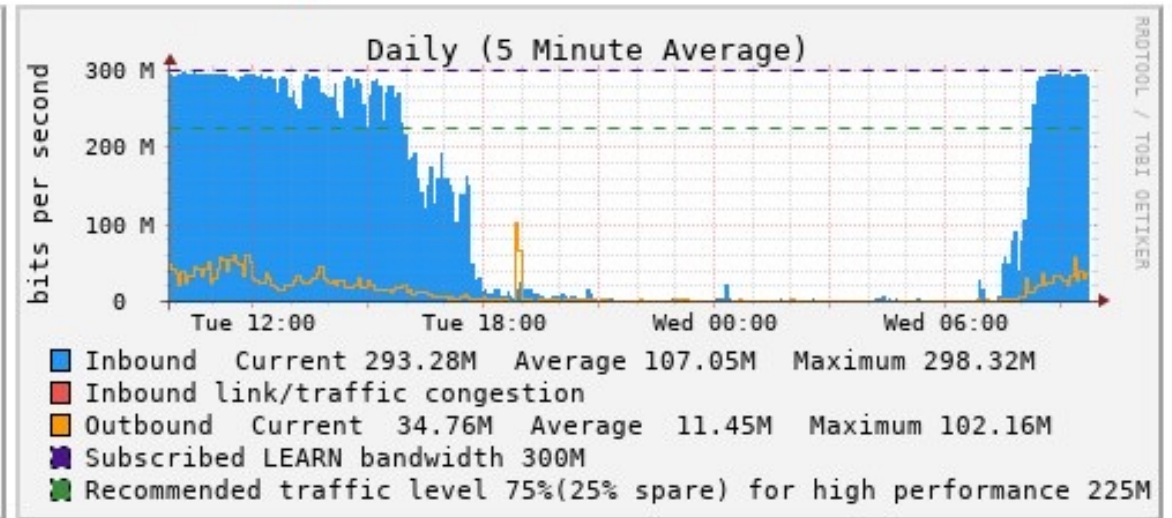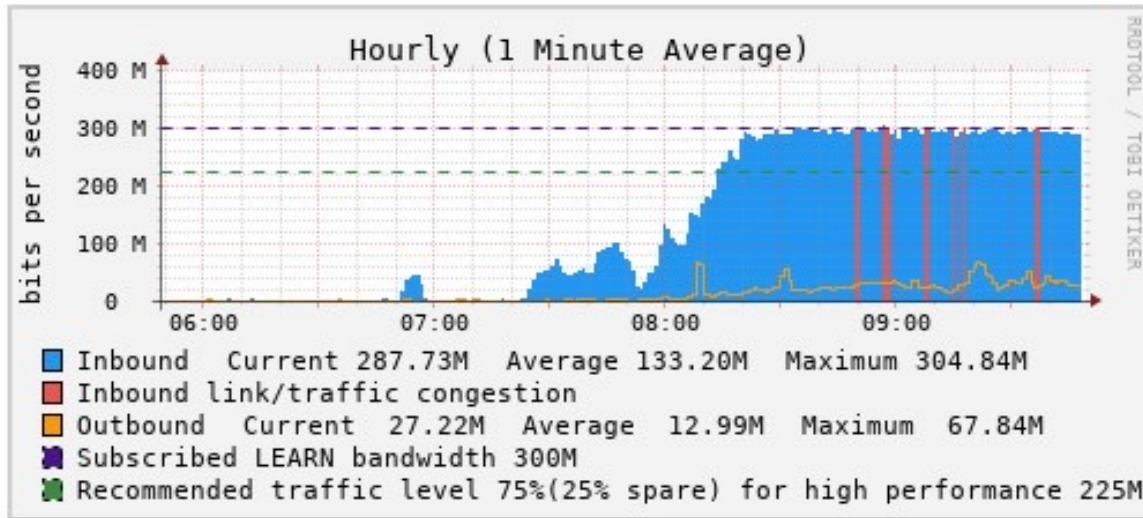
Bandwidth was 300Mbps in Nov,2023

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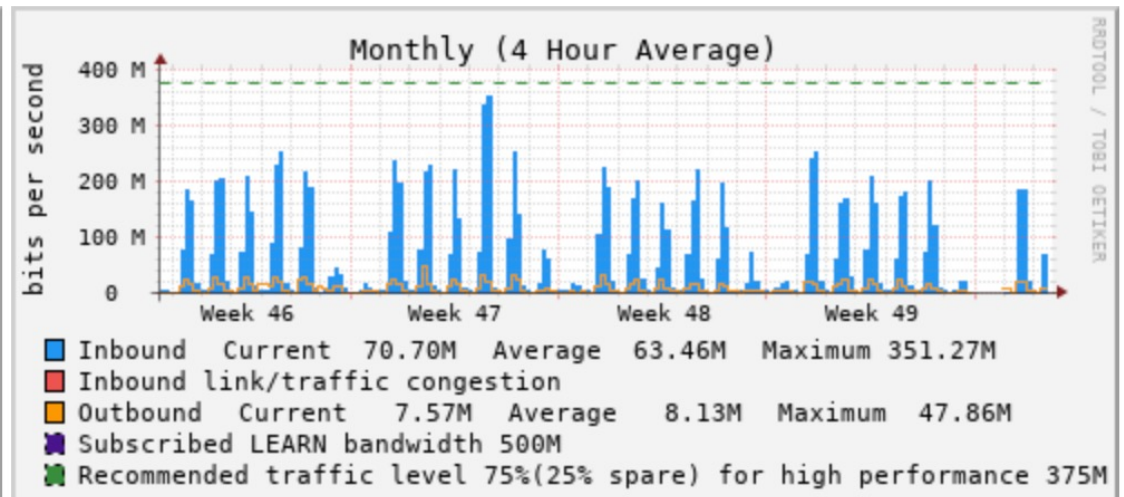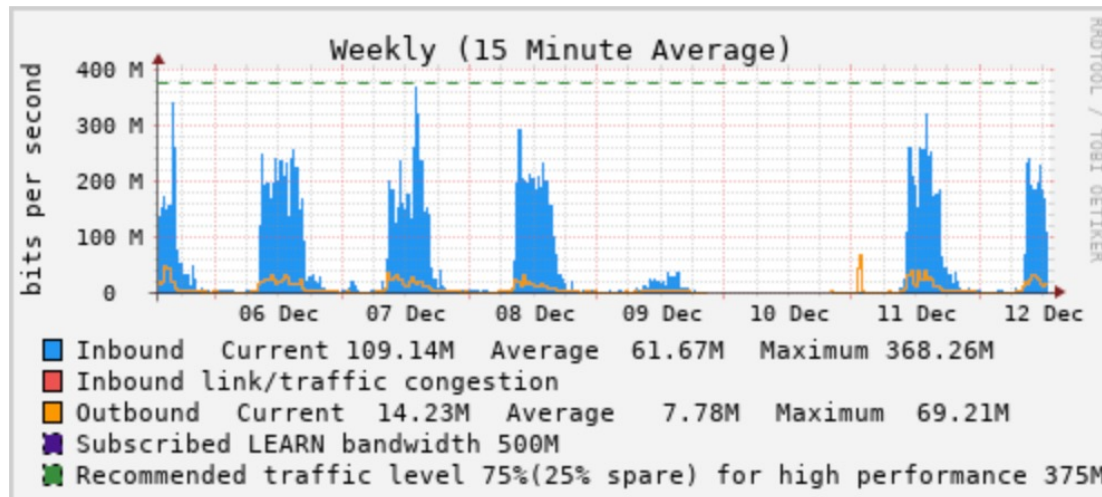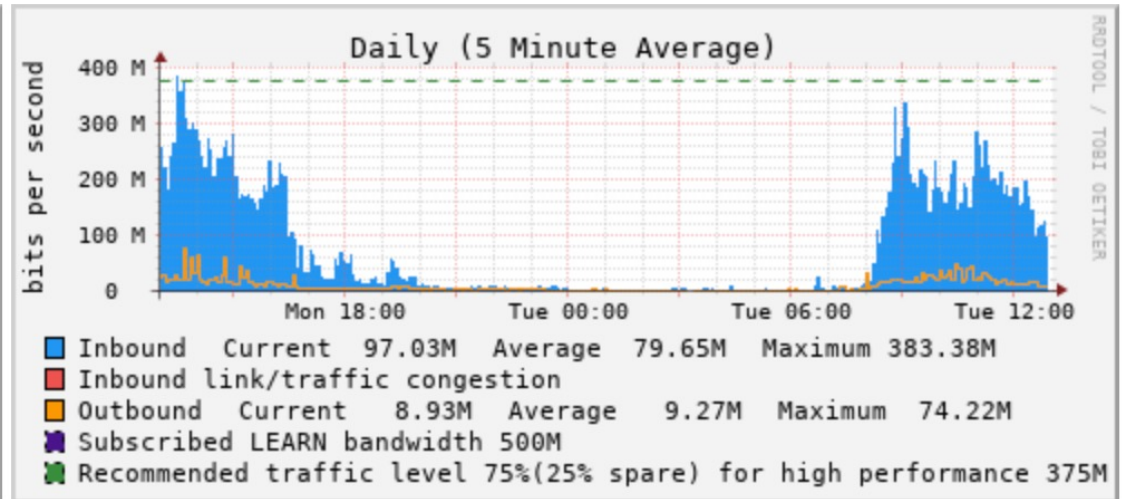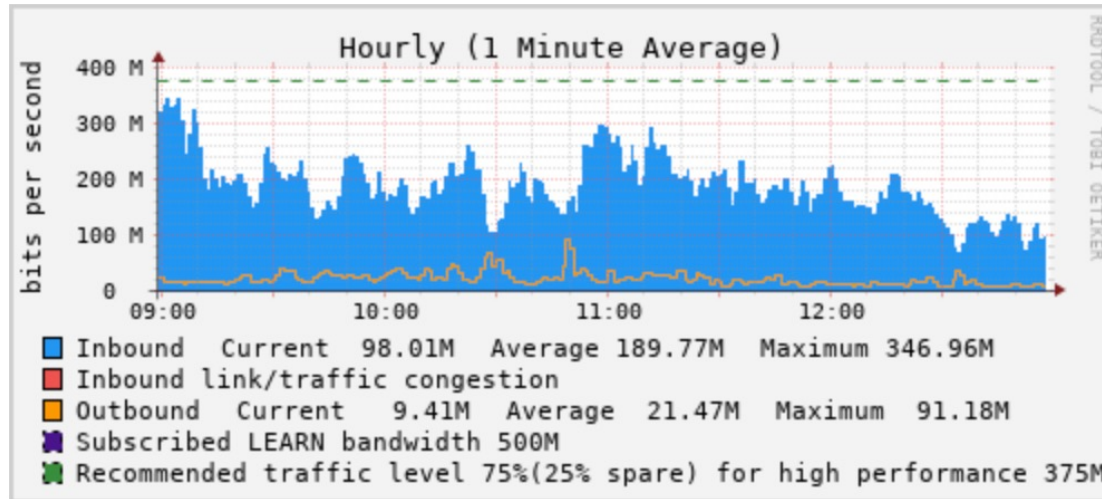
Upgraded Bandwidth 500Mbps in Dec, 2023

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Cambium Wireless Cloud Controller

Cambium Wireless Cloud Controller

Cambium Wireless Cloud Controller

UOV NOC

Network Related Issues in UOV

- Pfsense firewall is able to configure & usable as per our requirements but most of the times it will corrupt & interupt entire services

- Juniper L2 managable switches has software curruption during the uninformed power cut in country because NOC only has propper power backups.

- Not enough L2 manageable Switches in Access Level because we are connected with basic switches,

Future Plan

- Need to expand fibre P2P links & wireless network to new buildings
- Redundency System need to be implemented mainly on pfsense and other services
- Intercom System with IP Phone
- NVR based CCTV System to entire UOV
- End level basic access switches need to be replaced by L2 Manageable Switch

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Thank you

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UNIVERSITY OF VAVUNIYA, SRI LANKA