

# Faculty of Medicine, University of Kelaniya

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UNIVERSITY OF KELANIYA

# Background

- Faculty of Medicine, University of Kelaniya is located at Ragama close to North Colombo Teaching Hospital.

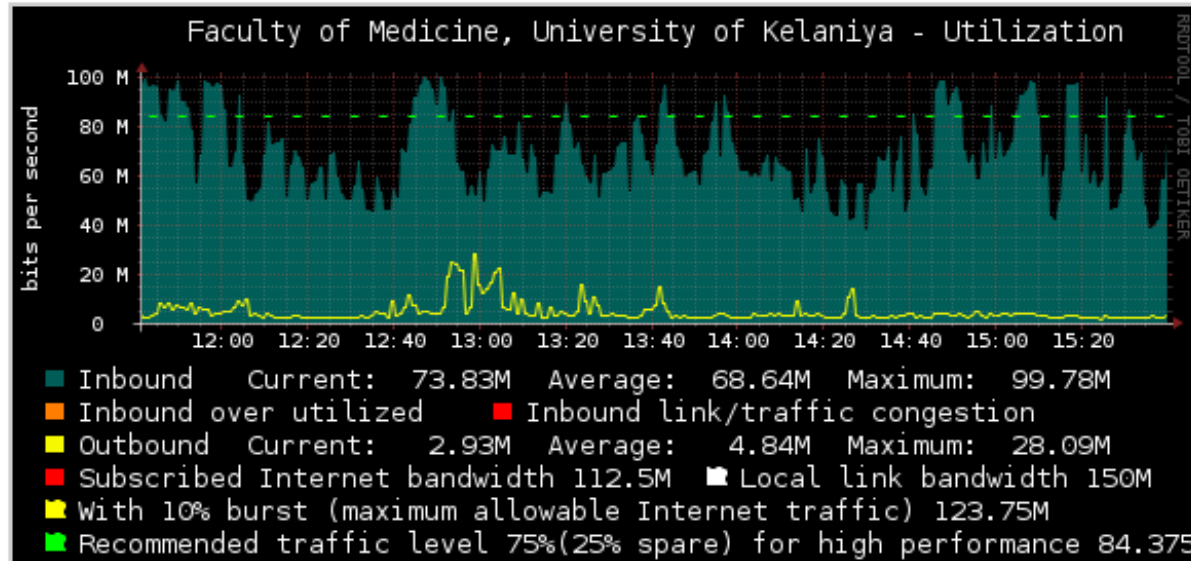


# Capacity

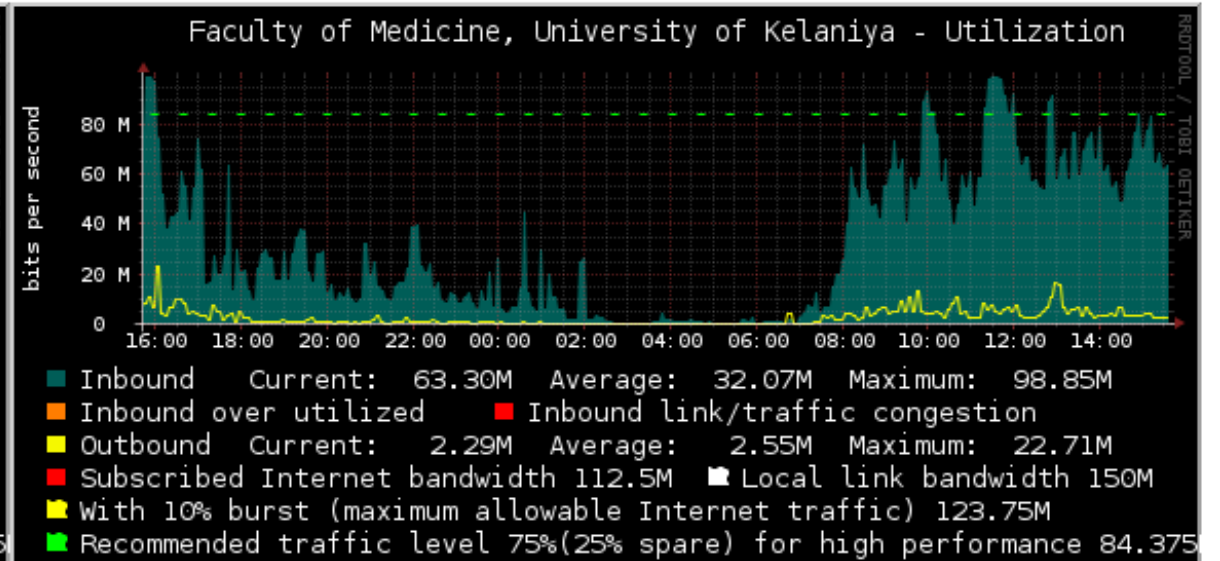
- Over 500 Concurrent users
- Over 1500 users
- Internet bandwidth 112.5Mbps
- Connected to Learn with 150Mbps



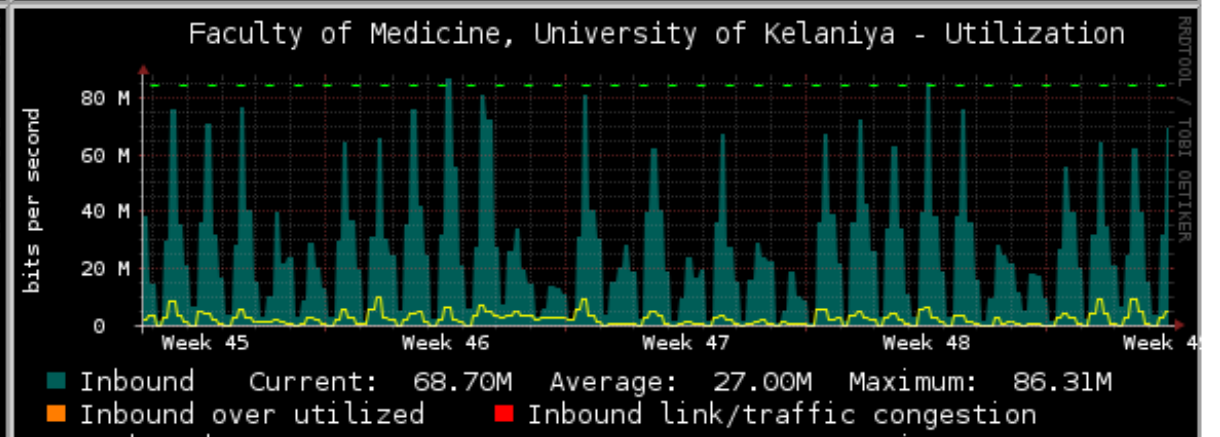
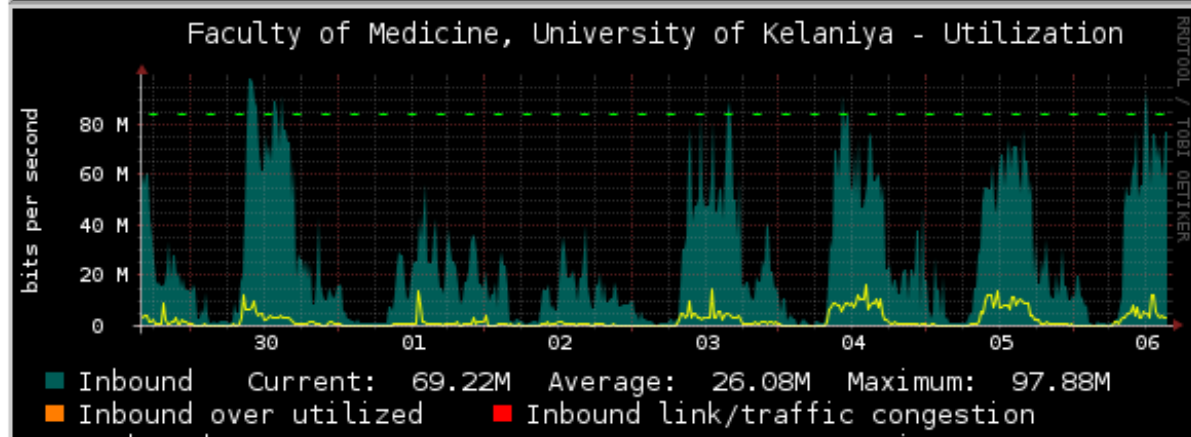
# Capacity



Hourly (1 Minute Average)



Daily (5 Minute Average)



# Bandwidth plan (Priority)

- VLAN
- User category
- Application
- Time of the day



# Local servers

- AD
- DNS
- DHCP

# Public servers

- LMS
- Redcap
- OPAC (Koha)
- Backup DNS



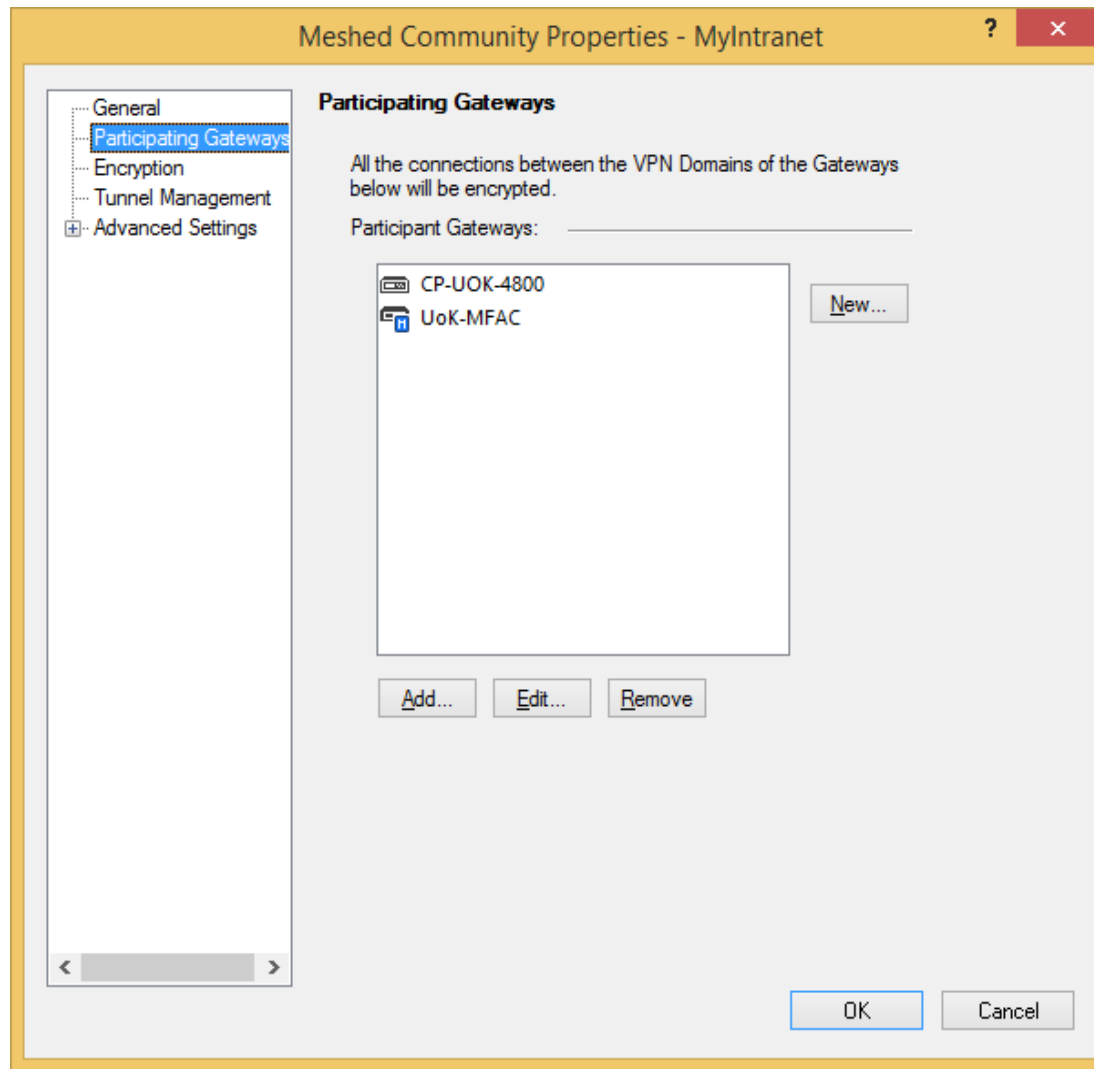
# What we have done

- Site to Site VPN
- Eduroam
- Core network – IPV4/IPV6 dualstack
- Shibboleth





# Site to Site VPN





# Eduroam

File Edit View History Bookmarks Tools Help

virtualbox - C Downloads - IPv6 Tutorial Inbox - indra KLN MED\_Fa ipv6vmconf Test your IPv APAN APAN43\_ppt APAN APAN43\_ppt 2017|pv6ipall UoK-MFAC https://lnms.lear

172.18.10.31/screens/frameset.html Search

CISCO Saye Configuration Ping Logout Refresh Home

MONITOR WLANs CONTROLLER WIRELESS SECURITY MANAGEMENT COMMANDS HELP FEEDBACK

Monitor

- Summary
- Access Points
- Cisco CleanAir
- Statistics
- CDP
- Rogues
- Clients
- Sleeping Clients
- Multicast
- Applications
- Local Profiling

Clients Entries 1 - 42 of 42

Current Filter WLAN SSID: eduroam [Change Filter] [Clear Filter]

Client MAC Addr	IP Address	AP Name	WLAN Profile	WLAN SSID	User Name	Protocol	Status
<a href="#">00:34:da:91:84:d4</a>	172.18.193.43	CANTEEN_	eduroam	eduroam	RMSSR3@med.kln.ac.lk	802.11bn	Associ
<a href="#">00:ee:bd:9a:4b:82</a>	172.18.192.21	AR_OFFICE_	eduroam	eduroam	muditha@med.kln.ac.lk	802.11bn	Associ
<a href="#">08:ec:a9:f5:13:73</a>	172.18.192.179	CCLab	eduroam	eduroam	dpg@med.kln.ac.lk	802.11bn	Associ
<a href="#">10:2f:6b:94:95:3f</a>	172.18.193.102	TUTE_ROOMS_	eduroam	eduroam	hgktk1@med.kln.ac.lk	802.11bn	Associ
<a href="#">18:3a:2d:28:8f:6d</a>	172.18.192.34	Bio_RH_Room	eduroam	eduroam	sanjeewa@med.kln.ac.lk	802.11bn	Associ
<a href="#">1c:3e:84:93:94:f3</a>	172.18.192.156	CCLab	eduroam	eduroam	solanga@med.kln.ac.lk	802.11bn	Associ
<a href="#">20:2d:07:ff:91:17</a>	172.18.192.180	CANTEEN_	eduroam	eduroam	KUDAAR_SH019@med.kln.a	802.11bn	Associ
<a href="#">20:55:31:3c:f7:f5</a>	172.18.193.113	TUTE_ROOMS_	eduroam	eduroam	s11009@med.kln.ac.lk	802.11bn	Associ
<a href="#">20:6e:9c:5f:1a:d9</a>	0.0.0.0	Library_Outdoor	eduroam	eduroam	Unknown	802.11bn	Associ
<a href="#">20:a6:80:4c:3d:47</a>	172.18.192.117	TUTE_ROOMS_	eduroam	eduroam	kalak1@med.kln.ac.lk	802.11bn	Associ
<a href="#">2c:f0:ee:28:b7:a4</a>	172.18.193.74	PUBLIC_HEALTH_	eduroam	eduroam	lathika@med.kln.ac.lk	802.11an	Associ
<a href="#">30:07:4d:10:2f:b1</a>	172.18.192.30	PUBLIC_HEALTH_	eduroam	eduroam	mosad@med.kln.ac.lk	802.11bn	Associ
<a href="#">34:8a:7b:7d:aa:dc</a>	172.18.193.195	GynObs	eduroam	eduroam	panditha_me15100@med.klr	802.11bn	Associ
<a href="#">34:de:1a:6b:e4:0f</a>	172.18.192.76	PUBLIC_HEALTH_	eduroam	eduroam	mosad@med.kln.ac.lk	802.11bn	Associ
<a href="#">34:e2:fd:04:52:4d</a>	172.18.193.151	BOARD_ROOM_	eduroam	eduroam	sjayr1@med.kln.ac.lk	802.11bn	Associ
<a href="#">54:40:ad:7c:83:7c</a>	172.18.192.146	MEC_OD_	eduroam	eduroam	gayani@med.kln.ac.lk	802.11bn	Associ
<a href="#">60:7e:dd:81:f1:92</a>	172.18.192.53	CANTEEN_	eduroam	eduroam	weerasoo_me15150@med.k	802.11bn	Associ
<a href="#">60:af:6d:58:aa:23</a>	172.18.192.168	BOARD_ROOM_	eduroam	eduroam	dissanay_me14036@med.klr	802.11bn	Associ
<a href="#">64:20:0c:86:6b:f2</a>	172.18.192.35	CCLab	eduroam	eduroam	janaka@med.kln.ac.lk	802.11an	Associ



# IP allocation

- Our total allocation 2401:dd00:21::/48
- WAN side 2401:dd00:21:0::/64
- Router LAN side 2401:dd00:21::ffff/64
- Firewall WAN interface 2401:dd00:21::ffff/64
- DMZ side 2401:dd00:21:ffff::/64
- Firewall interface 2401:dd00:21:ffff::ffff/64









# IP Allocation for Distribution switches

Vlan description	old ID	New ID	Interface IP range			
VlanOne	1	1	2401:dd00:21:1001::/64	2401:dd00:21:1001::ffff/64		
SERVER_RM	2	2	2401:dd00:21:1002::/64	2401:dd00:21:1002::ffff/64		
ANATOMY	168	101	2401:dd00:21:1101::/64	2401:dd00:21:1101::ffff/64		
AR_OFFICE	80	102	2401:dd00:21:1102::/64	2401:dd00:21:1102::ffff/64		
AUDIO_VISUAL	69	103	2401:dd00:21:1103::/64	2401:dd00:21:1103::ffff/64		
BIO_CHEM	169	104	2401:dd00:21:1104::/64	2401:dd00:21:1104::ffff/64		
CCTV	18	105	2401:dd00:21:1105::/64	2401:dd00:21:1105::ffff/64		
CC_LAB2	120	106	2401:dd00:21:1106::/64	2401:dd00:21:1106::ffff/64		
COMPUTERC_LAB1_LEFT	112	107	2401:dd00:21:1107::/64	2401:dd00:21:1107::ffff/64		
DDS	144	108	2401:dd00:21:1108::/64	2401:dd00:21:1108::ffff/64		
DIGITAL_LAB	160	109	2401:dd00:21:1109::/64	2401:dd00:21:1109::ffff/64		
ENGLISH_UNIT	161	110	2401:dd00:21:1110::/64	2401:dd00:21:1110::ffff/64		
FM	34	111	2401:dd00:21:1111::/64	2401:dd00:21:1111::ffff/64		
FORENSIC	50	112	2401:dd00:21:1112::/64	2401:dd00:21:1112::ffff/64		
GYN_OBS	81	113	2401:dd00:21:1113::/64	2401:dd00:21:1113::ffff/64		
High_Band	240	114	2401:dd00:21:1114::/64	2401:dd00:21:1114::ffff/64		
LECTURE_HALL_AUDITORIUM	115	115	2401:dd00:21:1115::/64	2401:dd00:21:1115::ffff/64		
LIBRARY	113	116	2401:dd00:21:1116::/64	2401:dd00:21:1116::ffff/64		
LOW_BAND	241	117	2401:dd00:21:1117::/64	2401:dd00:21:1117::ffff/64		
MEC	64	118	2401:dd00:21:1118::/64	2401:dd00:21:1118::ffff/64		
MEDICINE	21	119	2401:dd00:21:1119::/64	2401:dd00:21:1119::ffff/64		
MFAC_WIFI	10	120	2401:dd00:21:1120::/64	2401:dd00:21:1120::ffff/64		
MICRO	33	121	2401:dd00:21:1121::/64	2401:dd00:21:1121::ffff/64		
MMU	128	122	2401:dd00:21:1122::/64	2401:dd00:21:1122::ffff/64		
PARASIT	48	123	2401:dd00:21:1123::/64	2401:dd00:21:1123::ffff/64		
PATHOLOGY	49	124	2401:dd00:21:1124::/64	2401:dd00:21:1124::ffff/64		



# Test your IPv6 connectivity.

-  Your IPv4 address on the public Internet appears to be 192.248.26.3
-  Your IPv6 address on the public Internet appears to be 2401:dd00:21:1001:2cc0:21a4:3511:d27
-  Your Internet Service Provider (ISP) appears to be LEARN-LK Lanka Education & Research Network, NREN
-  Since you have IPv6, we are including a tab that shows how well you can reach other IPv6 sites. [\[more info\]](#)
-  HTTPS support on this web site is in *beta*. [\[more info\]](#)
-  Your DNS server (possibly run by your ISP) appears to have IPv6 Internet access.

**Your readiness score**

10/10

for your IPv6 stability and readiness, when publishers are forced to go IPv6 only

Click to see [Test Data](#)

(Updated server side IPv6 readiness stats)

This instance of test-ipv6.com is provided by [HostVirtual](#)

# Advantages

- Efficient security (can use separate IPs for different purposes)
- Direct access without using vpn
- No need any Natting



# Limiting factors for me

- Remote access issues
- Convince top management
- Compatibility issues with some of the devices
- Difficulty of managing ACL rules
- Unidentified issues



# Installation and Maintenance of Identity Management System with respect to eduperson schema

- Installation of Shibboleth as Identity Provider
- <https://idp.medicine.kln.ac.lk/idp/shibboleth>





Display  records per page

Showing 1 to 3 of 3 entries

Name of organization ▲	URL to information about organization
<a href="#">Industrial Technology Institute - Sri Lanka</a> <a href="https://idp.itl.lk/idp/shibboleth">https://idp.itl.lk/idp/shibboleth</a>	<a href="http://iti.lk">http://iti.lk</a>
<a href="#">LEARN IDP</a> <a href="https://idp.learn.ac.lk/idp/shibboleth">https://idp.learn.ac.lk/idp/shibboleth</a>	<a href="https://www.learn.ac.lk">https://www.learn.ac.lk</a>
<a href="#">Medfac Kln IDP</a> <a href="https://idp.medicine.kln.ac.lk/idp/shibboleth">https://idp.medicine.kln.ac.lk/idp/shibboleth</a>	<a href="http://medicine.kln.ac.lk/">http://medicine.kln.ac.lk/</a>
Name of organization	URL to information about organization

Showing 1 to 3 of 3 entries



# Future expansion

- Extend NW to
  - Hostel premises
  - Hospital
- Transfer some of the services to cloud



# Thank You!

