

Presented at the LEARN NOC Meeting - 12 December 2018

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# LEARN : Present Status and Future Directions

Lanka Education and Research Network



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# Network Status



# Local Links (via SLT) and Backup Links (via Dialog)

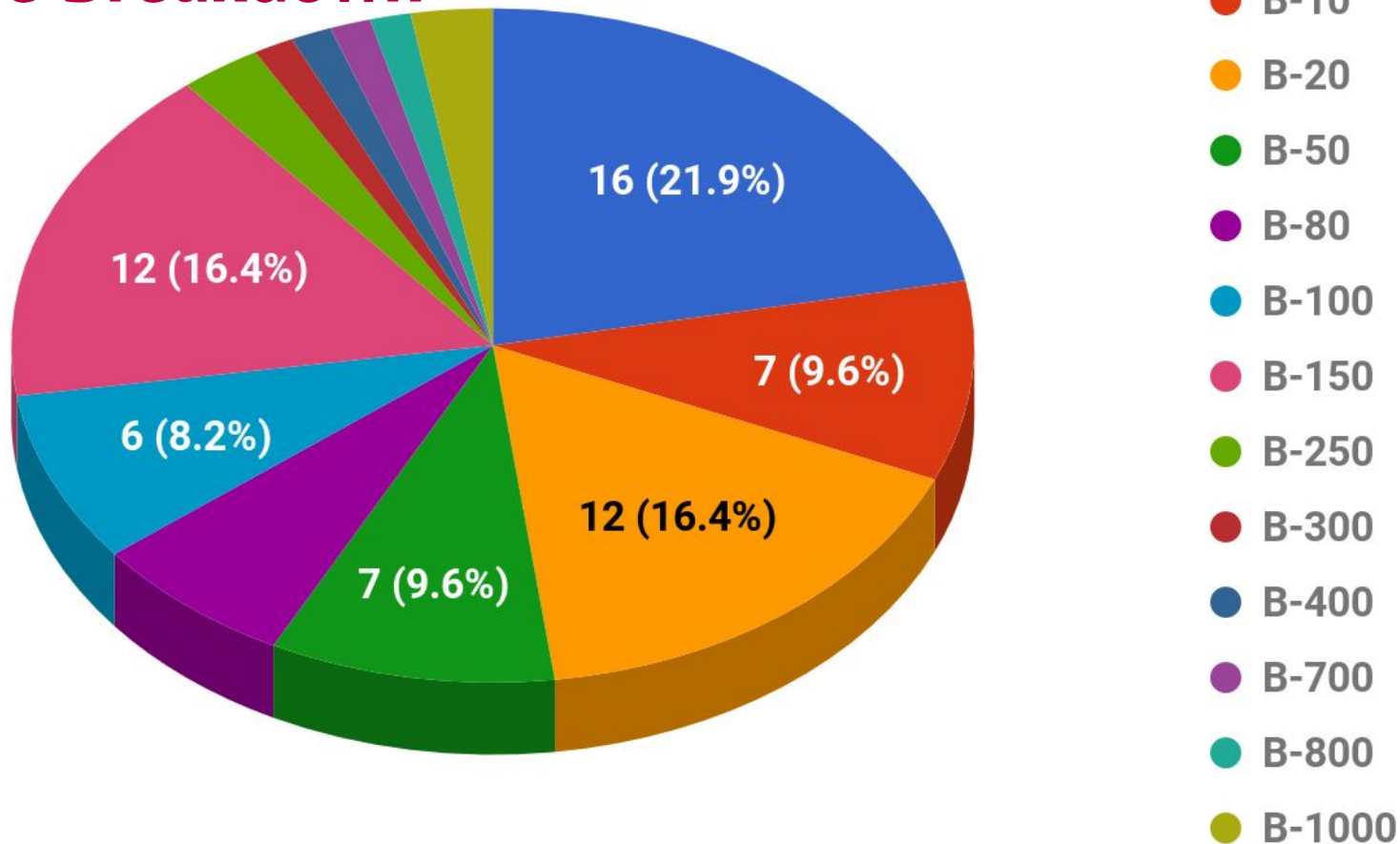
- Total of 77 connections
- Total local link (VPLS) subscription by members is 8.9 Gbps
- Highest local link bandwidth is 1Gbps
  - University of Peradeniya
  - University of Moratuwa
- Lowest local link bandwidth is 5 Mbps
  - All 16 Sri Lanka Institute of Advanced Technological Education (SLIATE) institutes
- Members with the highest bandwidths also have separate backup links from a second service provider (Dialog)
- All are Optical Fiber Links

# Academic Network and Commodity Internet (1)

## LEARN subscription (ending 2018)

- Dialog - 5 Gbps (Commodity Internet Access - IA)
- LEARN's Singapore Link - 2.5 Gbps (STM/16)
  - TIEN (Asi@Connect) - 1 Gbps <https://lnms.learn.ac.lk/traffic/int.php>
  - Google Node - 10 Gbps
  - Internet 2 & SingAREN - 10 Gbps to Singapore Open Exchange (SOE)
- Sri Lanka Telecom - 2 Gbps (IA)
- LEARN-NKN Link - 1 Gbps
- LEARN-LGN Link - 1 Gbps
- **Total = 8.5 Gbps Commodity and 2 Gbps Academic and 1 Gbps Government Network**

# Package Breakdown



# Congested and Fully Congested Links

Recommendation for the  
Next 2 Years

## Congested

- Moratuwa (B1000)
- Kelaniya (B800)
- Sri Jayawardenapura (B700)
- Colombo (B400)
- VPA (B150)
- Engineering, J'pura (B100)
- BUSL (B50)
- Sri Palee Campus (B20)

3x increase

## Fully Congested

- Open University (B150)
- KDU (B150)
- ITUM (B100)
- Engineering, Jaffna (B100)
- Medicine, Colombo (B80)
- UCSC (B100)
- KDU, Southern Campus (B20)
- NIFS (B20)
- Postgraduate Studies, KDU (B10)
- NARA (B10)
- PGIA, Peradeniya (B10)
- SLIATE (B5 x 16)

4x increase

# Upgrade in Progress

## LEARN subscription

- Dialog - **10 Gbps** (Commodity Internet Access - IA)
- LEARN's Singapore Link - **5 Gbps**
  - TIEN (Asi@Connect) - 1 Gbps
  - Google Node - 10 Gbps
  - Internet 2 & SingAREN - 10 Gbps to Singapore Open Exchange (SOE)
- Sri Lanka Telecom - **4 Gbps (IA)**
- LEARN-NKN Link - **1 Gbps**
- LEARN-LGN Link - **1 Gbps**
- **Total = 18 Gbps Commodity and 2 Gbps Academic and 1 Gbps Government Network**

**With our upgrades, we will double all the member bandwidths without passing any additional cost to the members**

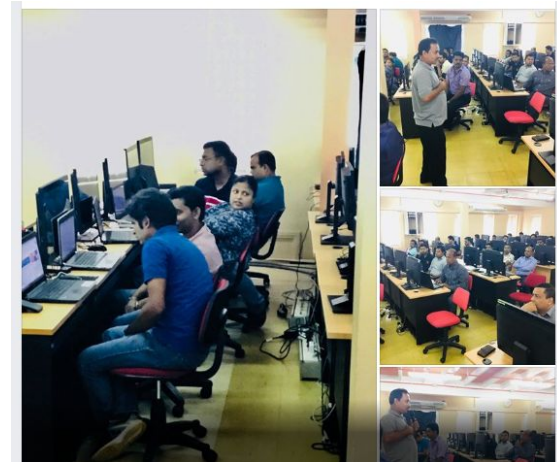
**Free backup links for members with bandwidth above 300Mbps**

# Local and International Engagements



# LEARN Workshops

- 26-28 September 2018: Federated Identity Management
  - Advanced Level program for Senior Network/Systems Administrators/Engineers
  - Class size of 60 and 3 days
  - Contacted at Faculty of Graduate Studies, KDU, Rathmalana
- 12-14 June 2018: Network Security
  - Network Administrators/Engineers
  - Class size of 60 and 3 days
  - IT Center, University of Peradeniya



# LEARN Workshops

- 27-29 November 2017: Network Monitoring and Measurement
  - Network Administrators/Engineers
  - Class size of 60 and 3 days
  - IT Center, University of Peradeniya



LEARN Network Monitoring and Measurements Workshop Nov. 2017

# Other Local Engagements

## Co-hosted LkNOG 2017 [Oct 2017]



## Co-costed launching of e-Office and NKN-LEARN link [Jan 2018]



## Other Local Engagements (2)



# International Events (1)

1. APAN44 and the Second Asi@Connect Governors meeting in Dalian, China during August 2017
2. Workshop on Maintaining Campus Network in Bangladesh during August 2017
3. Asi@Connect Security Training Workshop in Malaysia during October 2017
4. Campus Network Security: Issues and Vulnerabilities Workshop in Bangladesh during December 2017
5. Annual TEIN NoC Workshop in Pakistan during December 2017
6. 1st OF@TEIN+ Annual Meeting in Malaysia during January 2018
7. IoT and Wireless Sensor Networks workshop in Nepal during February 2018

# International Events (2)

8. APAN45 and the Third Asi@Connect Governors meeting in Singapore during March 2018
9. Transit I Workshop at APAN45 in Singapore during March 2018
10. Backfire training programme at APAN45 in Singapore during March 2018
11. Workshop on IPv6 Deployment in R&E Networks in Bangladesh during July 2018
12. APAN46 and Fourth Asi@Connect Governors meeting in Auckland, New Zealand during August 2018
13. Transit I Workshop at APAN46 in Auckland, New Zealand during August 2018
14. Backfire training programme at APAN46 in Auckland, New Zealand during August 2018

# Next set of possible workshops

- Campus Network Design / IPv6 for Junior Network Engineers / ANMs
- Virtualization and Cloud
- Wireless Network (WiFi) and Eduroam
- SDN
- IoT

# 30 years of \*LEARN\* - 2019

- LEARN History and Services
- ? LEARN Hosting SANOG34 in Sri Lanka
- More workshops and outreach activities
- Promotional activities

# What's New and Future Directions

**LEARN**

Lanka Education and Research Network

# What's New

- LEARN TAC (Technical Assistance Centre)
  - We are providing onsite support for those who request and on our availability, free of charge for our members
- LEARN-NKN Link
  - 1 Gbps Link to Chennai, India
- LEARN Cloud
  - Waiting for an **Cloud Engineer** to be recruited
- LEARN CSIRT (Computer Security and Incident Report Team)
  - Management setup is done, waiting for the recruitment of **Network/Systems Security Engineer**
- The Bandwidth Upgrade and 20Gbps milestone

Name of NRENs	Network Services							Security Services			Identity	Hosting/Collocation Services							Other Services					Service Index				
	IP Connectivity	IPv6	Virtual Circuit/VPN	Multicast	NTP Service	Optical Wavelength	24x7 Monitoring	CERT/CSIRT	DDoS Mitigation	Vulnerability Scanning	Anti-Spam Solution	EduRoam	InterFederation	DNS Hosting	Cloud Storage	Filesender	IaaS	SaaS	Web Hosting	Email Server Hosting	Collocation	Consultancy/Training	Videoconferencing		Domain Name Register	IP Address Allocation	Virtual Learning	Web/desktop conference
BdREN																												16
LEARN																												15
ERNET																												07
REANNZ																												07
AARnet																												12
NREN																												03
MyREN																												07
NKN																												16
ErdemNET																												06
PERN																												17
PREGINET																												12
ThaiREN																												14
VinaREN																												07
SingAREN																												10
INHERENT																												7

# Future Directions (2)

- Improving the technical manpower within LEARN for
  - Regular operations
  - Setting up and maintaining new services
  - Intensively training our community of Engineers/Network Admins
  - A team for the TAC service
- Improving the operational and accounting manpower



**Thank You!**

