

TEIN WORKSHOP ON MAINTAINING CAMPUS NETWORK

[1] TITLE OF THE WORKSHOP: Workshop on Maintaining Campus Network

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[3] INTRODUCTION:

Patuakhali Science and Technology University is first public university in greater *Barisal division* of **Bangladesh**. Recently it is connected with Bangladesh Research and Education Network (BdREN) and a campus network is going to establish from campus network sub-project which is a project of Ministry of Education funded by World Bank. Implementing agency of this project is BdREN and University Grants Commission(UGC) of Bangladesh. UGC/BdREN is a member of TEIN since 2012. PSTU has a good Technical Team of professionally skilled network engineers which makes it very much competent for hosting such training events with the collaboration of BdREN, TEIN*CC and in association with other renowned local technical resource persons as trainers/assistants.

[4] OBJECTIVES:

- Train assistant network engineers, network engineers and network related personnel etc., how to operate and maintain campus network.
- Provide proper importance of maintaining the campus network.

[5] TARGET PARTICIPANTS:

The workshop is targeted for the network professionals for TEIN beneficiary and candidate countries (Sri Lanka and India) including Bangladesh.

The following are the list of expected target audiences-

- Network professionals from TEIN partners countries
- General/Specialist network personnel, Faculty, Researchers, Technicians, IT Professionals etc. in Bangladesh

[6] NUMBER OF PARTICIPANTS:

- Total Participants: 25
- Out of total 25 participants, local participants will be 23 and foreign participants will be 02 (Sri Lanka and India)

[7] TRAINING DATES: 18-22 AUGUST, 2017

[8] TRAINING DURATION: 5 DAYS

[9] SYNOPSIS PROGRAM

The proposed 5-day long training course will include all the major topics and issues of campus network involving Network Performance, Management, Monitoring, Routing and Security. The training program will be followed by an Evaluation program to choose the successful candidates who will be awarded with the certificate. The course in brief will be as follows:

PROGRAM SCHEDULE (TENTATIVE):

The course will cover the following topics:

Session	Time	Topic	Resource Person
	Day-1	18 August 2017	
	09.00 - 09.30	Registration	
	09:30 - 10:30	Opening Session	
	10:30 - 11:00	Tea/Coffee Break	
Session-1	11:00 - 12:30	Campus Network Architecture, Design Principles, Network Elements (Host, L2 Switches, L3 Switches/Routers, Firewalls) and their functions in the Campus Network [The session will connect all the topics to be conducted in the program and to arouse interest in the trainees]	Prof. Dr. MMA Hashem, CSE, KUET
	12:30 - 14.00	Lunch and Prayer Break	
Session-2	14:00 - 15:30	MAC and IPv4/IPv6 Addressing, Routing and Switching Basics, VLANs, STP and ICMP	Md. Abdul Awal Howlader, BdREN
	15:30 - 16:00	Tea/Coffee Break	
Session-3	16:00 - 17:30	Lab Activity: Configuration of Host and Gateway Configuration of DHCP Server Configuration of VLANs and demonstration of Inter-VLAN Routing Network Troubleshooting using ICMP	Md. Abdul Awal Howlader, BdREN/Md. Nazrul Islam, BdREN
	Day-2	19 AUGUST 2017	
Session-4	09:00 - 10:30	Concept of Access, Distribution and Core Switches in Campus Network Concept of HSRP and its implementation in Campus Network Routing Protocols (Static, Interior [OSPF] and Exterior [BGP])	Md. Abdul Awal Howlader, BdREN

Session	Time	Topic	Resource Person
		Different types of Architecture (L2/L3): Pros and Cons Concept of Network Address Translation and Port Address Translation	
	10:30 – 11:00	Tea/Coffee Break	
Session-5	11:00 – 12:30	Lab Activity: Configuration of Access, Distribution and Core Switch Configuration of HSRP in Distribution Layer Configuration of NAT/PAT	Md. Abdul Awal Howlader, BdREN/Md. Nazrul Islam, BdREN
	12:30 - 14:00	Lunch and Prayer Break	
Session-6	14:00 – 15:30	Lab Activity: Configuration of Static Routing Configuration of Layer-3 Routing between Distribution and Core Configuration of Single-Home and Multi-Home BGP in Core Router (with ISPs)	Md. Abdul Awal Howlader, BdREN/Md. Nazrul Islam, BdREN
	15:30 – 16:00	Tea/Coffee Break	
Session-7	16:00 – 17:30	Campus Network Security and Firewall Concept of Inside, Outside and Demilitarized Zone Concept of Single Context and Multiple Context Demonstration of NAT/PAT using Firewall	Md. Abdul Awal Howlader, BdREN
	Day-3	20 AUGUST 2017	
Session-8	09:00 – 10:30	Concept of wireless network, Wireless Modulation Techniques, Wireless Protocols, Access Points and Wireless Controllers, Wireless Encryption and Authentication Protocols	Md. Jahidul Islam, BdREN
	10:30 – 11:00	Tea/Coffee Break	
Session-9	11:00 – 12:30	Lab Activity: Configuration of Access Points with single SSID Configuration of Radius Server Wireless Authentication using Radius Server	Md. Jahidul Islam , BdREN / Md. Mahedi Hasan
	12:30 - 13:30	Lunch and Prayer Break	
Site Visit	15:00 – 17:00	SMW-5 cable landing Station at Kuakata, Patuakhali	Chinmay Bepery, Assistant Professor, Dept of CIT, PSTU Md. Jahidul Islam, BdREN
	19:30 – 21:30	Social Dinner	
	Day-4	21 August 2017	
Session-10	09:00 – 10:30	Linux Administration and Configuration Guideline Network Administration using Linux, Concept of DNS, HTTP, SMTP, POP3, NAT, Proxy, and FTP using Linux	Md. Mahedi Hasan, BdREN

Session	Time	Topic	Resource Person
	10:30 – 11:00	Tea/Coffee Break	
Session-11	11:00 – 12:30	Lab Activity: DNS Server Configuration Mail Server Configuration HTTP Configuration	Md. Mahedi Hasan, BdREN
	12:30 - 14.00	Lunch and Prayer Break	
Session-12	14:00 – 15:30	SNMP: Overview, Configuration and Application NMS: Cacti overview	Md. Jahidul Islam, BdREN
	15:30 – 16:00	Tea/Coffee Break	
Session-13	16:00 – 17:30	Lab Activity: NMS: Configuration of Cacti	Md. Jahidul Islam, BdREN / Md. Mahedi Hasan
	Day-5	22 August 2017	
Session-14	09:00 – 10:30	Lab Activity: NMS: Cacti Plugins (Monitor and Weather Map, Smokeping and Nfsen)	Md. Mahedi Hasan, BdREN / Md. Syedul Islam, BdREN
	10:30 – 11:00	Tea/Coffee Break	
Session-15	11:00 – 12:30	Lab Activity: Configuration of Monitor and Weather Map	Md. Mahedi Hasan, BdREN / Md. Syedul Islam, BdREN
	12:30 - 14.00	Lunch and Prayer Break	
Session-16	14:00 – 15:30	Case Study for Designing Campus Network [The session will interconnect the learnings in all previous sessions]	Mohammad Tawrit, CTO, BdREN or Sayedur Rahman, TST Consultant, BdREN
	15:30 – 16:00	Evaluation and Feedback	Md. Jahidul Islam, BdREN
	16:00 – 17:00	Closing and certificate award ceremony	
	17:00 – 17:30	Tea/Coffee	

[10] EXPECTED OUTCOME

On completion of the training program the Trainees will:

- have a satisfactory level of knowledge on Campus Network
- be able to perform successful network management
- be able to gather adequate knowledge on network monitor
- be able to gather proper knowledge about network performance
- be able to perform successful routing and network security
- be able to gather knowledge on control, setting up and configuration of campus network .

[11] POST TRAINING DEVELOPMENT:

After completing the session from the workshop, the participant will help to maintain the campus network in their own working place. Therefore the participant can provide smooth connectivity 24/7 in their own campus.