



SET SERIES 04

INTENSIVE FACULTY TRAINING PROGRAM ON COMPUTER NETWORKS LAB.

Conducted from	: 05.08.24 to 09.08.24
Duration	: 5 Days
Mode of training	: Offline
Venue	: ECE Block (Room no: 4512)
Total number of participants	: 16 (only faculty members)
Resource Person	: Dr. G. S. Bapi Raju, Professor, Dept. of CSE CISCO accredited Instructor

OBJECTIVES OF THE WORKSHOP:

1. Familiarize Faculty with Advanced Networking Concepts: Equip participants with a deep understanding of newly inducted advanced concepts in computer networking, including routing and switching protocols.
2. Master Cisco Packet Tracer: Train faculty to proficiently use Cisco Packet Tracer for designing, configuring, and troubleshooting complex network topologies.
3. Utilize Wireshark for Packet Analysis: Enable participants to effectively use Wireshark for detailed network traffic analysis and troubleshooting, integrating it with Packet Tracer simulations.
4. Implement IoT Configurations: Teach faculty how to configure and monitor IoT devices and applications within Packet Tracer, integrating them into network designs.



5. Enhance Practical Teaching Skills: Develop faculty's ability to create and deliver interactive, hands-on lab exercises that align with the latest syllabus requirements and industry standards

About CISCO Packet Tracer:

Cisco Packet Tracer is a network simulation tool used for designing, configuring, and troubleshooting virtual networks. It features a drag-and-drop interface for building network topologies and supports configuration via both CLI and GUI. Ideal for educational settings, it allows users to simulate various networking protocols and practices, including routing, switching, and security. Its integration with Cisco Networking Academy makes it a valuable resource for students and professionals preparing for Cisco certifications. Packet Tracer also provides interactive learning through lab exercises and real-time network simulation.

EXPECTED OUTCOMES OF THE WORKSHOP:

1. **Enhanced Technical Proficiency:** Faculty will gain a thorough understanding of advanced networking concepts, including routing, switching, and IoT configurations, enabling them to effectively teach these topics.
2. **Proficiency in Cisco Packet Tracer:** Participants will become adept at using Cisco Packet Tracer to design, configure, and troubleshoot complex network topologies, enhancing their practical teaching capabilities.
3. **Skillful Use of Wireshark:** Faculty will acquire the skills to analyze and troubleshoot network traffic using Wireshark, integrating its insights with Packet Tracer simulations for comprehensive network diagnostics.
4. **Effective IoT Integration:** Participants will be able to configure and monitor IoT devices within Packet Tracer, integrating them seamlessly into their network designs and teaching materials.
5. **Improved Lab Delivery:** Faculty will develop the ability to create and deliver engaging, interactive lab exercises that align with the updated syllabus and industry standards, improving the overall learning experience for students.
6. **Enhanced Teaching Methods:** The workshop will foster innovative teaching strategies and methods, helping faculty to deliver more effective and practical networking education.



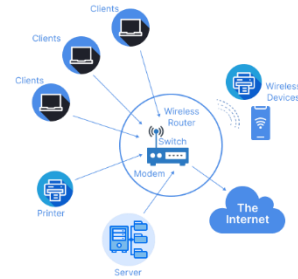
SYALLABUS & DAY WISE SCHEDULE

(05.08.24 to 09.08.24).

05.08.24

Introduction:

1. Network Basics.
2. OSI & TCP Layered Architecture
3. Types of Addresses.
4. IP Addressing, subnets, Masking, Wild card etc.
5. Structure of Internet.
6. Network Hardware.
7. Packet Tracer review



Task 1: Configure network devices, such as hubs and switches within a network topology using Packet Tracer software.

Task 2: Construct a single LAN and understand the concepts and operation of ARP.

Task 3: Tips and techniques for Trouble shooting.

06.08.24

Task 1: Switch Basic and advanced configuration.

Task 2: Implementation of INTRA & INTER VLANs using Packet Tracer software.

Task 3: Network fault finding and diagnostic commands (PING, traceroute, nslookup etc.)

07.08.24

Task 1: Configure and implementation of a Router within a Network using Packet Tracer.

Task 2: Configure and examine SNAT, DNAT & PNAT (Network Address Translation)



08.08.24

Task 1: Implement static routing using Packet Tracer Software.

Task 2: Implement Intra AS (Domain) routing protocol RIPv2, OSPF.

Task 3: Implement Inter AS (BGP) routing protocol.

09.08.24

Task 1: Configure DHCP Server in the Network.

Task 2: Configure a remote login using SSH and Telnet.

Task 3: Establishing a Web Server Connection Using the PC's Web Browser

Task 4: Adding IoT devices to Smart Homes using Packet Tracer

- i). Install Home gateway & Registration server
- ii). Add & configure IoT devices like Door, Fan, lamp etc.
- iii). Connect and Monitor IoT Devices

Task 5: Install Wireshark and view

- i) TCP,UDP,DNS,ICMP Network Traffic.
- ii).Wired and wireless NIC information.
- iii).Examine Ethernet Frames.

Event photos are available at : <https://www.grietsdc.in/sdcsb.html>

Dr. G.S.Bapi Raju

M.Tech (CSE), M.Sc (Nuclear.Phy), Ph.D,

MBA (HR & FIN), IDCPA (NCC,UK),

MCSE, CCNA, AWS, PCCET

Accredited instructor for AWS, CISCO etc.

Professor & Dean (Internships)

Department of CSE,

Gokaraju Rangaraju Institute of Engineering and Technology