



TECHNICAL TRAINING BOOTCAMP 2025 - ISOC BENGALURU



REPORT - 2025



ABOUT

FUNDAMENTALS OF DESIGNING AND DEPLOYING COMPUTER NETWORKS (DDCN)

The **Fundamentals of Designing and Deploying Computer Networks (DDCN)** Bootcamp, organized by the **Internet Society Foundation**, is a practical, hands-on training initiative designed to build essential networking skills among students, early-career professionals and working professionals. The bootcamp focuses on real-world application of core networking concepts such as IP addressing, Ethernet and Wi-Fi technologies, router and switch configuration, LAN design, and Internet connectivity.

The Bootcamp is based on the online DDCN course developed by the **Internet Society Learning**, which serves as the foundational learning material. Participants are encouraged to complete the online modules prior to or alongside the bootcamp, enabling them to reinforce theoretical understanding with immersive lab based practice. The online course ensures accessibility and continuity of learning, while the bootcamp provides live instruction, troubleshooting experience, and peer collaboration.

The Bootcamp was held at **GITAM Deemed University, Bengaluru**, from **28th April to 2nd May** and brought together enthusiastic learners from various colleges. It forms part of the Internet Society's broader mission to strengthen technical capacity and promote an open, globally connected, and secure Internet for everyone.

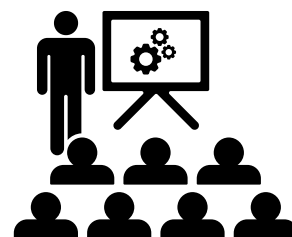


OUR OBJECTIVES



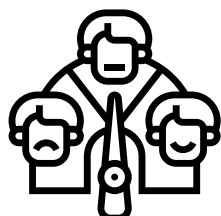
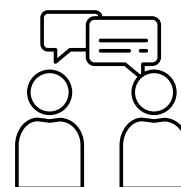
GAIN HANDS-ON EXPERIENCE THROUGH PRACTICAL ACTIVITIES AND EXERCISES.

DEVELOP PRACTICAL SKILLS IN DESIGNING AND DEPLOYING WIRED AND WIRELESS NETWORKS.



EXPLORE WIRED AND WIRELESS TRANSMISSION METHODS.

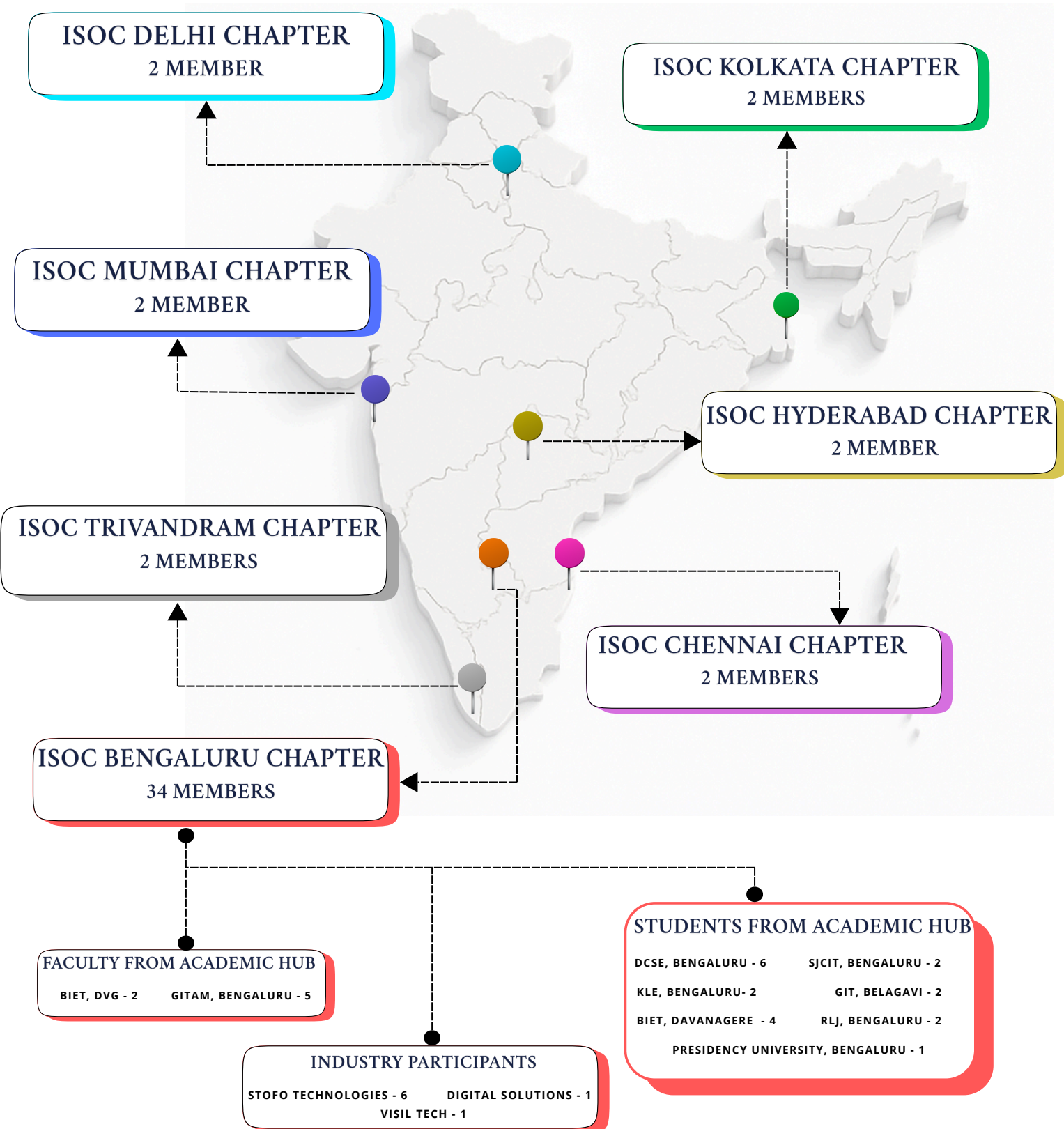
CONNECT PARTICIPANTS WITH MENTORS AND DOMAIN EXPERTS.



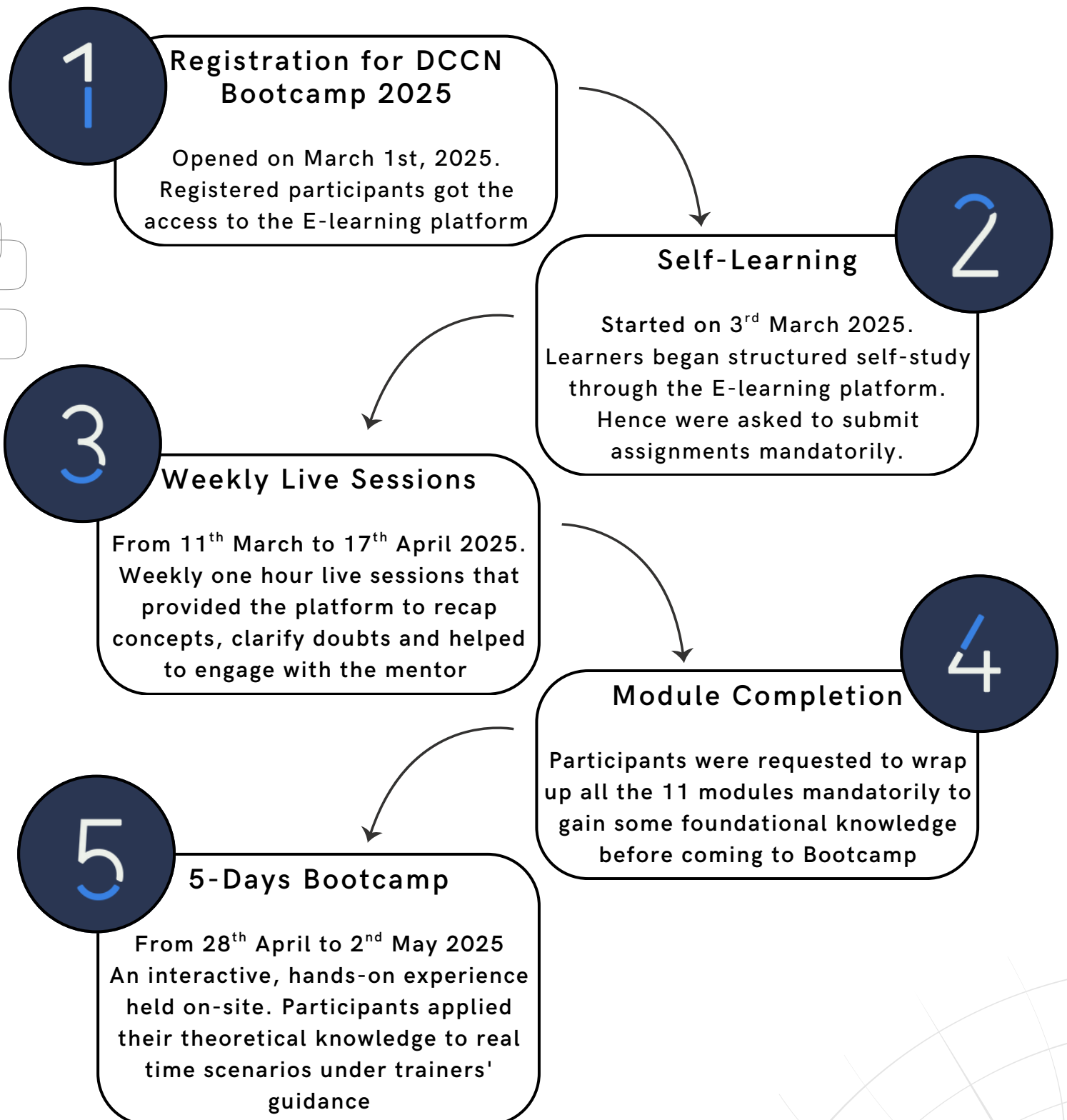
ENHANCE FOUNDATIONAL UNDERSTANDING OF COMPUTER NETWORKING PRINCIPLES AND PROTOCOLS.

PARTICIPANTS

OVERVIEW



DDCN COURSE OVER MONTHS



TESTIMONIALS



MRIGNAYANI CHANDRA

Research Associate, India Internet Foundation (AIORI Project)

The content was well-structured and technically rich and delivered by knowledgeable facilitators who balanced theory with practical insights. The interactive format encouraged collaboration and cross-disciplinary exchange, adding significant value to the experience. This bootcamp is for individuals seeking a deeper understanding of decentralized communication technologies and their practical implications across sectors.



BENAK PATEL

SOC Engineer for Digit Solutions, Germany.

Participating in the bootcamp was a game-changer for my cybersecurity career. The hands-on experience with Cisco Packet Tracer and real-time routing protocols deepened my understanding of network infrastructure. From cable crimping to configuring Mikrotik routers, every session sharpened my practical skills and boosted my confidence in handling real-world network environments.



YOGESH K

Founder of Codespace Solutions

The DDCN Bootcamp by ISOC Bengaluru @ GITAM University was a total game-changer. From configuring routers and switches to real-time troubleshooting, every session was packed with practical takeaways. We're already applying what we learned at Codespace Solutions and it's making a difference.



KONATHAM PRANAVA RAIDU

ISOC Hyderabad Chapter

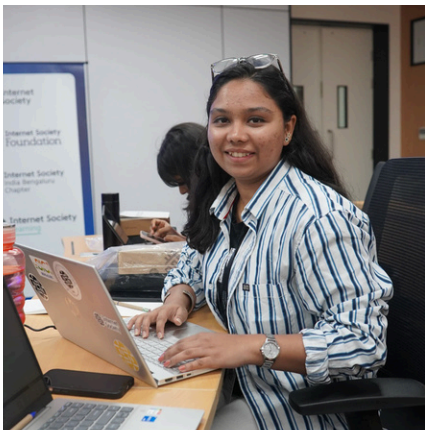
I'm super excited to be sharing my journey from designing and deploying computer networks to diving deep into tech that powers the world. The internet isn't just a tool it's a space for change, and we're the ones shaping it.



DR. SOWMYA S

Assistant Professor, Department of CSE, GITAM School of Technology, Bengaluru

I had a great experience attending the 5-day DDCN Bootcamp organized by the Internet Society – India Bengaluru Chapter. The sessions covered key concepts of decentralized networks, along with insightful discussions. The hands-on sessions were especially valuable, offering practical exposure to real-world tools and technologies. A big thanks to the organizers for this well-structured and engaging program!



HAFSA ANJUM D

StoFo Technologies, ISOC Bengaluru Chapter

The DDCN Bootcamp was an incredibly enriching experience that deepened my understanding of computer networking. The mixture of theoretical learning and practical hands-on sessions helped me grasp key concepts like LAN design, Wi-Fi setup, and troubleshooting techniques. The instructors were highly encouraging and supportive, making the sessions engaging and easy to follow.



BHAGYA SHANTHAKUMAR

Assistant Professor, ECE, BIET - ISOC Academic Hub

It was thoroughly impressed with the experience. The sessions were well-structured, insightful, and highly engaging. The facilitator demonstrated deep expertise and created an interactive environment that encouraged participation and practical learning. I walked away with valuable knowledge I highly recommend this workshop to anyone looking to grow professionally and personally.

E - LEARNING PLATFORM

Fundamentals of Designing and Deploying Computer Networks (DDCN) equips students with a comprehensive and practical understanding of essential networking concepts and technologies. This course serves as a foundational stepping stone for individuals aspiring to build or strengthen their expertise in the field of computer networking.

The curriculum begins with an in-depth exploration of core networking principles, providing clarity on the various types of networks such as LAN, MAN, and WAN. It emphasizes the significance of global networking standards, ensuring participants understand the frameworks that support interoperability and reliability across devices and systems.

Students delve into the different media used for data transmission, including traditional wired solutions such as UTP cables, as well as modern wireless technologies like Wi-Fi and innovations such as Power over Ethernet. These sections provide practical insights into selecting and implementing the right transmission medium based on specific requirements.

The course covers data transfer methods in detail, such as synchronous and asynchronous communication, and the use of unicast, broadcast, and multicast techniques to optimize data flow across a network.

Key Takeaways:

- ① Understand how different types of networks function and their use cases.
- ① Recognize the importance of standards and protocols in networking.
- ① Learn about essential networking devices and their functionalities.
- ① Explore addressing, routing, and switching concepts for efficient data flow.
- ① Gain practical knowledge of wireless technologies and security concerns.
- ① Apply theoretical concepts to real-world client-server communication models.

DAY 1

The day started with registration, a welcome session and an introduction to the course, setting the tone for the rest of the week. Participants explored core networking devices Hub, Bridge, Switch and Router along with addressing mechanisms such as MAC, IP, and Port. Technical sessions delved into foundational networking models like OSI and TCP/IP, and key concepts such as collision and broadcast domains, routing, broadcasting, encapsulation and decapsulation, and IP subnetting. Hands-on learning was a major component, with participants setting up environments in Cisco Packet Tracer, designing LAN topologies, and configuring DHCP, static and dynamic routing, and wireless networking through interactive simulations.



Key Takeaways:

- ① Learned how different network devices work like hubs, switches, routers, and bridges.
- ① Understood how data travels in a network using models like OSI and TCP/IP.
- ① Figured out how networks are divided and managed using collision and broadcast domains.
- ① Got better at using IP addresses and subnetting for organizing networks.
- ① Practiced building and setting up networks using Cisco Packet Tracer with real examples

DAY 2

The session blended virtual and hands-on networking practice. It began with Cisco Packet Tracer exercises focused on configuring static and dynamic routing, designing subnets, and analyzing real-time packet flow. This was followed by a cable-crimping workshop where participants built and tested CAT6 straight-through and crossover cables using standard networking tools. The day wrapped up with MikroTik training, introducing participants to its architecture, initial setup through Winbox, and device connectivity using patch cords. The mix of theory and practice reinforced key networking concepts, while the collaborative setting promoted peer interaction and active learning. The mix of digital and real-world exercises effectively deepened technical skills, while the collaborative, peer-based environment encouraged questions, discussions, and knowledge sharing. By the end of the session, attendees had not only gained practical expertise but also developed greater confidence in managing and troubleshooting network components independently.



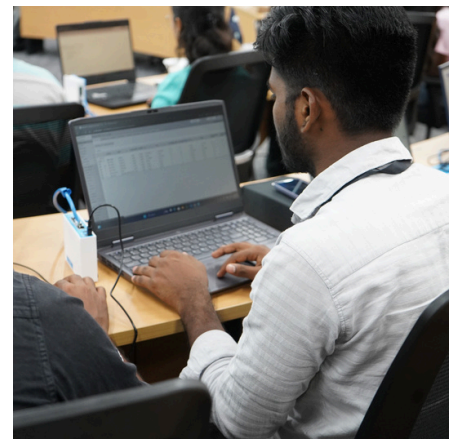
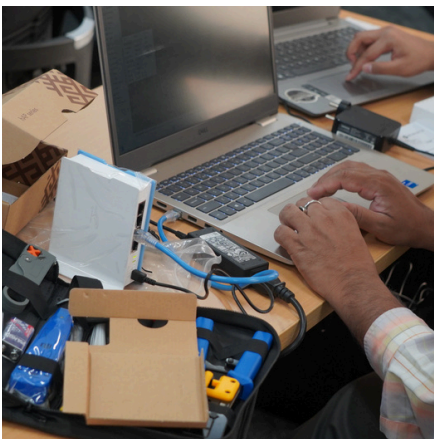
Key Takeaways:

- ⦿ Learned to set up different types of routing in Cisco Packet Tracer.
- ⦿ Designed and linked multiple network segments (subnets).
- ⦿ Watched how data travels in real-time through a network.
- ⦿ Crimped and tested network cables ourselves using real tools.
- ⦿ Explored MikroTik routers, including setup and connection basics.

DAY 3

The session offered a hands-on deep dive into MikroTik routers, starting with an overview of their block diagram architecture and initial setup via Winbox, along with physical configuration using patch cords and CAT cables. Participants configured the devices to function as both switches and routers, worked with static and dynamic IP addressing, and analyzed routing tables to track real-time data flow. They established practical connections between routers and switches, reinforcing the link between theory and real-world application.

Beyond the technical work, the day also featured a lively Flash Talk segment where participants gave engaging 3-minute presentations about their backgrounds, interests, and experiences—building stronger peer connections and a sense of community.

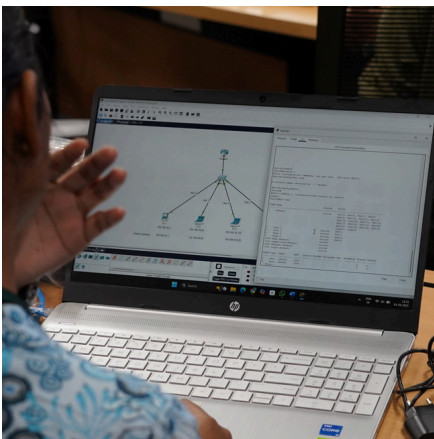


Key Takeaways:

- ⦿ Learned how MikroTik routers work and how to set them up.
- ⦿ Configured devices to act as switches and routers using real networking gear.
- ⦿ Practiced assigning static and dynamic IP addresses and read routing tables.
- ⦿ Connected routers and switches together to build working networks. Got to know each other better through short, fun Flash Talks

DAY 4

The day began with wireless network setup, where participants used web browsers and mobile apps to configure Wi-Fi networks, followed by WPS setup and troubleshooting methods to ensure real-world connectivity. This was followed by a hands-on session on Network Address Translation (NAT), where participants implemented both static and dynamic NAT, worked with Port Address Translation (PAT), and applied IP packet filtering to understand secure communication between private and public IPs. A key highlight of the session was an in-depth exploration of VLANs covering VLAN configuration, inter-VLAN routing, subnetting, and sub-interface setup. Participants also configured trunk ports, used 802.1Q encapsulation, assigned VLAN IDs, and set up DHCP servers to enable smooth communication across virtual network segments.



Key Takeaways:

- ⦿ Configured wireless networks and solved common setup issues with WPS.
- ⦿ Learned how NAT works, including static and dynamic configurations and PAT for port translation.
- ⦿ Worked with IP packet filtering to secure private IP communication over public networks.
- ⦿ Set up and configured VLANs and inter-VLAN routing for efficient network segmentation.
- ⦿ Understood and applied trunk port configurations, 802.1Q encapsulation, and DHCP server configurations for seamless communication across VLANs.



DAY 5

We delved into advanced network deployment and optimization techniques, beginning with the creation and management of address pools for efficient IP allocation. Participants deepened their knowledge of IP routing and port addressing within dynamic network environments. We implemented interface bonding and master-slave routing to boost redundancy and improve throughput. Real-time traffic analysis was conducted using monitoring tools, while SSID configuration ensured secure wireless access. Packet sniffing was used both for troubleshooting and enhancing wireless communication. We also explored the ARP protocol to understand how IP addresses map to MAC addresses in practical settings. This session brought together all layers of networking from physical setup to logical planning and performance tuning.



Key Takeaways:

- ⦿ Implemented interface bonding and master-slave routing to improve redundancy and performance.
- ⦿ Used traffic monitoring tools to analyze real-time network data and optimize flow.
- ⦿ Configured SSID for secure wireless access and performed packet sniffing for troubleshooting.
- ⦿ Optimized wireless communication with Nstreme-Dual protocol and learned ARP mapping for real-time IP to MAC address resolution.

GLIMPS OF DDCN BOOTCAMP - 2025





PARTICIPANTS OF

DDCN BOOTCAMP - 2025

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6	Chaitra K S	Bengaluru Chapter
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21	Mohan C V	Bengaluru Chapter

22	Monish Kumaran D	Bengaluru Chapter
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27	Nagalakshmi S	Bengaluru Chapter
28	Riya M Jain	Bengaluru Chapter
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Report compiled by: StoFo team

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