INTRODUCTION TO FUTURE NETWORKING

COURSE 1 OVERVIEW

CURRICULUM: Extreme Academy Course 1
CERTIFICATION LEVEL: Associate
CERTIFICATION FULL NAME: Extreme Networks Associate - Introduction to Future Networking
CERTIFICATION SHORT NAME: XNA - Introduction to Future Networking

DESCRIPTION
This introduction to Networking course covers the fundamentals of how networks work, with the latest technology and a view into the future.

DURATION / TIMING
Course designed for 2 days of training or 12 hours. Timings are recommended; however, an Instructor may wish to spend more or less time on certain topics. The course can be delivered as a 2-day block or spread out over time.

STUDENT PREREQUISITES
No previous experience of networking is required.
MODULE 1. AN INTRODUCTION
LO: To understand the context of course 1 and be introduced to Extreme Academy

MODULE 2. JARGON BUSTING
LO: To demystify all the jargon and get an inside track on all the buzz words

MODULE 3. NETWORKS
LO: To understand the purpose of Networks and the key principles to bear in mind when designing or managing them

Data Communication Fundamentals
- To understand how network operations are described with the help of layers and protocols
- To understand how standards-giving organizations impact the evolution of networks

Physical Connectivity (L1)
- Understand the principles of the physical layer operation
- Become familiar with various connection types and L1 related protocols

Logical Connectivity (L2)
- To understand the principles of the Data Link Layer
- To understand L2 addressing
- To understand fundamental Switch operations
- To understand the separation of broadcast domains using VLANs (including multi-node network segments)

Logical Connectivity (L3)
- To understand principles of the Network Layer
- To understand L3 addressing
- To understand how routing happens
- To understand L3 traffic types

Data Transport (L4)
- To understand the principles of the Transport Layer
- To understand the differences between L4 source destination ports
- To understand the differences between connection connectionless protocols
- Distinguish common L4 networking protocols

Application Flow Through the Communication Stack
- Understanding the principles of how the Application Layers interact with the lower layers
- To discuss essential network use cases from the communication stack viewpoint

MODULE 4. WIFI NETWORKS
LO:
- To understand the purpose and value of Wi-Fi networks
- To understand basic concepts of wireless operation
- To understand the concept of wireless communication how Wireless LANs (WLANs) fit into modern networks
- Identify the major differences between wired wireless connectivity
- To understand the challenges wireless networks create

The Workings Behind Wi-Fi
- To understand the characteristics of Wi-Fi

MODULE 5. THE INTERNET, DEMYSTIFIED
LO:
- To learn how TCP/IP communication is used for typical client-server connections across the Internet
- To understand essential Internet protocols that make up the TCP/IP protocol stack
- To understand the ICMP protocol and how it can be used to diagnose network connectivity issues

The Workings Behind Internet
- To understand the most important parts of LAN-to-Internet operations, such as NAT, WWW, DNS.

MODULE 6. MANAGING NETWORKS AND DEVICES
LO:
- To understand the rationale behind network management
- To understand how networks and devices are managed in an ‘On Premise’ or ‘In Cloud’ scenario
- To understand the principles of Network Management
- To experience the benefits of Extreme CloudIQ for onboarding, monitoring and unified device management
- To understand basics of device management options and protocols

How We Manage Devices and Networks
- To understand on-premise and cloud approaches to network management and main differences between them
- To understand network management architecture in cloud-based approach. Learn to know basic Extreme CloudIQ functions.

Cloud-Based Management
- To understand a ‘Cloud-based’ approach to network management architecture
- Experience basic Extreme CloudIQ functions.
- To understand the differences between ‘on-premise’ and ‘cloud’ approaches to network management

Automating Network Maintenance
- To learn about the available automation and integration capabilities related to device or network management

COURSE CONCLUSION AND ASSESSMENT

REFLECTION SECTION AND NEXT STEPS