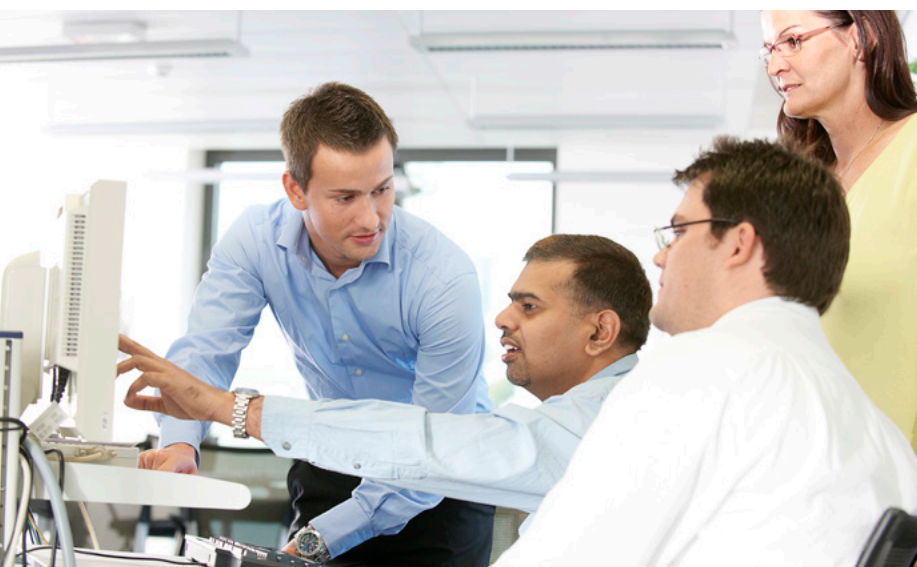


NA939

TCP/IP Networking Fundamentals and Troubleshooting



Learn how to quickly support, troubleshoot, and maintain network functionality and uptime for System 800xA.

Course type and methods

This is a comprehensive instructor led training program with short presentations and relevant demonstrations, engaging lab exercises, and hands-on sessions and discussions.

Student Profile

This course is for operators and engineers, with basic to intermediate networking and TCP/IP knowledge, who want to design, build, and support highly functional TCP/IP based networks for System 800xA.

Prerequisites

Before attending this course, students must have familiarity with computer hardware and devices, the ability to locate unsupported devices using Device Manager, and Experience supporting previous versions of Windows Server OS.

Course objectives

Upon completion of this course the participants will be able to:

- Confidently identify, troubleshoot and participate in resolving detailed network issues including performance and mis-configuration
- Understand the OSI model in real world terms as a useful model for supporting networking and System 800xA and the Client Server Model
- Establish sessions – sockets – firewall – VPN – address translation

- Demonstrate advanced knowledge of IP addresses, subnet mask, default gateway for IP Support
- Troubleshoot common and advanced networking issues and scenarios
- Trace the complete TCP/IP packet route from workstation IP device 1 to server IP device 2
- Conduct single and multi-network traffic analysis
- Design subnetted IP networks for hands on knowledge of design considerations and support
- Install, configure, and troubleshoot IP routers, and IP devices
- Build useful packet analyzer skills to troubleshoot network issues and validate network design
- Conduct System 800xA RNRP network fault tolerance and redundancy

Main topics

Participants learn skills required to design, install, support, and troubleshoot TCP/IP devices and networks. They will utilize tools and techniques which will demystify and break-down TCP/IP networking into easy to understand blocks; leading step by step into more complex scenarios.

NA939 provides the fundamental foundation for technical network support of Windows Server 2012 for System 800xA and IP networks.

Duration

The duration is 5 days

Course Outline

Day 1	Day 2	Day 3	Day 4	Day 5
<ul style="list-style-type: none">• Introductions• Overview of Course• Begin networking with a view from 3,000 feet• Ethernet vs. other topologies• Client server communication, packet encapsulations, and System800xA network requirements• Firewalls and other devices defined• Network traffic analysis, Demonstrations & Labs	<ul style="list-style-type: none">• Review, discussions, System 800xA• Network terminology; broadcast vs. directed, ports, ARP, NAT, DNS, proxy, TCP, UDP, DHCP, Demonstrations & Labs• Helpful command prompt utilities unveiled• Characterizing services, examining frames, clientserver traffic• Begin TCP/IP	<ul style="list-style-type: none">• All about TCP/IP, single network, multi-network traffic and design• System 800xA RNRP on single network and multinetwork overview• IP Version 6• IP troubleshooting• IP design• Analyzing IP traffic• Demonstrations and Labs	<ul style="list-style-type: none">• All about routers, configuration• Internet• Subnetting, default routes• Giant routing lab• Advanced IP troubleshooting• If time allows: client to server network traffic problem• Demonstrations & Labs	<ul style="list-style-type: none">• DNS, CISCO switches, CISCO terminology and common configurations• Firewall, NAT, Ethernet, Applied OSI reviewed• NetBIOS, WINS, OPC-DA, Other Industrial Networks• Finish items requested during class• Review

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