

NA913 Microsoft Network Troubleshooting

Course Description



Course Duration

The duration of this course is 5 days.

Course Goal

The goal of this course is to provide students with an in-depth knowledge of troubleshooting techniques for TCP/IP networks running in a Microsoft Windows environment. The purpose is to better support the 800xA applications running in a distributed network architecture.

Student Profile

System Administrators, Network Administrators, Technical Support specialist and IT Professionals that support Process Portal in a Microsoft Windows networking environment.

Prerequisites and Recommendations

NA910 Microsoft Windows Technologies for Industrial^{IT} and NA912 Microsoft TCP/IP for Industrial IT.

Description

This course is a sequel to NA912 and covers Windows network troubleshooting. This course will help students ensure optimum network performance for their 800xA system. This will improve such indications as display call up time and reliability of OPC communication.

Course Objectives

Upon completion of this course, students will be able to:

- Troubleshoot the Physical Layer – Cable Statistics & Issues – Cable Testers, Tone Generators, Fluke Meters. EIA/TIA Specifications – Pin Outs, Loop Back.
- Troubleshoot the Data Link Layer – Gratuitous ARP & Assignment Issues (IEEE.ORG). Historical LAN AID-C, Logical Link Control Methodologies. Cyclical Redundancy Checks
- Troubleshoot the Network Layer – IP Assignment Issues RARP Errors and DHCP Control Options (Looking into the packet)
- Troubleshoot the Transport & Session Layers – Session Management (Looking into the Packet – Sniffer)
- Troubleshoot the Presentation Layer – Client for Microsoft Networks, Server/Workstation Service, RPC Analysis. Performance Monitoring (Performance – System Monitor, Logging and Tracing)
- Troubleshoot the Application Layer – Using Application Layer Policies. Implementing IPsec and VPNs. NSLookup, Logging and Tracing.



Course Calendar

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
<p>The course begins with revisiting the OSI and DOD Models which are introduced in NA912. The OSI is the foundation to the course content. The OSI drives a methodical approach to looking at issues at all layers of the network. The main work of day one focusses on the physical and datalink layers.</p>	<p>Extends on the OSI. Students will look at the Network layer with both presentations and hands on. Students will force static ARPS to view a gratuitous IP packet structure. Command line diagnostics and sub netting are used to find IP delivery Issues.</p>	<p>Students will analyze the Transport Layer. Content based on TCP as well UDP will be explored. Printing sessions and Remote Desktop sessions are used to observe TCP in action.</p>	<p>Students see the Graphical Interfaces and Server Services. Students now see how the underlying areas either make or break the server functionality. Here students build VPN, IPSec and Web based Servers.</p>	<p>Building upon localized Server Services, students learn the importance of a properly configured DNS server. In depth analysis of resource records and database management is stressed. Students will explore the importance of securing the Wireless communication via MAC Filtering, WEP and WAP.</p>

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