Nokia Advanced Optical Network Management with NFM-T

Course outline

This course is designed for mid to senior-level network operations and management personnel. Participants will learn how to use the Nokia Network Functions Manager – Transport (NFM-T) to efficiently and effectively manage a Nokia 1830 PSS-based optical network.

The course focuses on advanced optical network construction, configuration, and management. Topics include: Network Services Platform (NSP) overview; advanced node architectures (such as FlexGrid, C+L band, WDM/OTN convergence); advanced network configurations (such as MRN, overlay, mixed plane, cascading); advanced service creation (on top of the previous scenarios, including ODUflex and alien services); network maintenance and transformation (with and without L0 and L1 GMPLS); and NFM-T agents and processes overview/troubleshooting. The course provides extensive hands-on lab exercises to ensure students gain practical skills on the topics presented.

Course number
TOP00006

Duration
5 days (including lectures and hands-on lab exercises)

Exam
Nokia Advanced Optical Network Management with NFM-T (exam number 4A0-260)

Credit toward certification
Nokia Optical Network Architect Certification

Recommended pre-requisites
- Knowledge of optical transmission concepts and standard equipment
- Familiarity with standard optical node architectures, such as FOADM, ROADM
- Familiarity with NFM-T menus and basic concepts such as trail/services
- Basic knowledge of GMPLS
- Working knowledge of standard optical network management tasks
Course objectives

After completing the course, students should be able to:

• Describe key NSP features and components
• Describe key features of NFM-T, including WebUI and menus
• List some optical network node configurations and card types
• Configure nodes through NFM-T in specific advanced configurations
• Describe various node architectures, such as CDC and FlexGrid
• Explain WDM/OTN convergence, by implementing cluster and SWDM
• Describe advanced network configurations, such as mixed plane, cascading, overlay, MRN and managed plane
• Explain key features of Automatically Switched Optical Networks Multi-region Networking (ASON MRN)
• Describe L band needs, and C+L band support by NFM-T
• Describe advanced optical network scenarios including L0 and L1 Control Plane and CDC-F with MRN
• Construct networks in advanced scenarios
• Configure OTS links with single fiber hardware (tx and rx in the same fiber)
• Configure ODUflex services
• Construct network architectures for alien services and lightpath
• Explain GMPLS link maintenance and traffic rerouting

• Explain non-GMPLS maintenance and traffic rerouting
• Configure and de-configure protection mechanisms for existing services
• Convert current GMPLS route to nominal
• Configure non-GMPLS traffic reroute
• Describe NFM-T system processes and capabilities
• Identify primary traces and logs for selected network creation, service implementation and network management functions
• Modify trace levels

Course modules

• Module 1 – Architecture of NSP
• Module 2 – Advanced node configurations
• Module 3 – Advanced network configurations
• Module 4 – Advanced service creation
• Module 5 – Network maintenance and transformation
• Module 6 – Description of NFM-T main agents and processes

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