Knowledge Management Centre – KMC

Broadband Solutions
2023 Knowledge Catalogue for Customers

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1 Training center introduction

The emergence of new technologies that replace, complement and upgrade traditional telecommunications networks and facilitate the introduction of new services often make telecommunications providers face difficult decisions: which of the new technologies to choose; when and how to introduce it into the network; and what services to offer end users.

The mission of the S&T Iskratel Training Center is to provide professional training for S&T Iskratel customers, business partners and everyone connected via modern telecommunications.

Our vision of professional training is to provide training programs about all types of S&T Iskratel products, solutions and telecommunication technologies, which provide the participants with a clear and complete review of knowledge they need in their business environment and workplaces.

With our help participants in the training process will be able to attain their goals (successful operation of our systems and new products) in an easier, faster and more efficient way than anywhere else.

The classrooms are equipped with the most advanced terminal equipment and connections to the test bed. We organize our trainings, by previous agreement, also at our customer's premises (if the customer is able to provide the necessary equipment).

Training courses by Broadband Solutions (Širokopasovne rešitve) are as follows:
- Fiber Broadband Solutions (Optične širokopasovne rešitve)
- Copper Broadband Solutions (Širokopasovne rešitve preko bakra)

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2 Fiber Broadband Solutions – Training Courses

2.1 (SSB8000AA) – SI3000 MSAN/LUMIA – Installation of hardware and software and basic administration

Code for order: SSB8000AA

Training duration: 4 days

Description

This course is intended for participants who work on the initial installation and booting of the SI3000 Multiple Services Access Node (MSAN). The course deals with the complete MSAN configuration, including Ethernet switch and POTS, ISDN, VDSL2 and optical access.

Possible audience:
- Manager
- System/solution integrator

Competences:
- Know the MEx shelf
- Know how to set up each of existing access blades
- Know how to operate the system
- Know the basic system administration
- Know the basic troubleshooting steps

Prerequisites
- Participants need to have the basic knowledge about modern (NGN) telecommunications.
- A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and DSL technology is beneficial.

Contents
- Introduction
  - MSAN/LUMIA platform
  - Mechanical design
  - Description of plug-in boards
- Ethernet switch
  - Entry of a new node into the MNS administrative system
  - Using the ACS option
  - Installation of SW on a network element
  - Handling the synchronisation and display of alarms
  - Basic administration
  - Equipping Ethernet links
  - Administration of VLANs, STP (RSTP), IGMP, LACP, DHCP
- VDSL2
  - Product description
  - Entry of a new node into the MNS administrative system
  - Using the ACS option
  - Installation of SW on a network element
  - Handling the synchronisation and display of alarms

- Configuring Ethernet Switch ports
- Administration of DSL profile
- Administration of 3play
- Diagnostics and troubleshooting

- Optical access (P2P) blade
  - Product description
  - Entry of a new node into the MNS administrative system
  - Using the ACS option
  - Installation of SW on a network element
  - Handling the synchronisation and display of alarms
  - Configuring Ethernet Switch ports
  - Administration of 3play
  - Diagnostics and troubleshooting
- Maintenance procedures
  - Regular maintenance procedures
  - Making the data back-up copy
  - Diagnostics and troubleshooting

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2.2   (SSB8001AA) – GPON equipment installation

Code for order: SSB8001AA

Training duration: 1 day

Description

This course is aimed at the participants, who work on hardware installation SI3000 GPON Lumia frames. It focuses on the installation of hardware GPON Lumia frames in 19" or ETSI racks.

Possible audience:

◆   Manager
◆   System/solution integrator

Competences:

◆   Know the differences and capability of different types of GPON Lumia frames
◆   Know the basic parts and functionality of GPON Lumia frames
◆   Know the how to perform the proper installation GPON Lumia frames in to the rack
◆   Know how to connect the power, fiber and network cables on GPON Lumia frames
◆   Be able to perform regular and basic maintenance of the system

Prerequisites

◆   Participants need to have the basic knowledge about telecommunications with an emphasis on the NGN network elements. Besides that, it is necessary for them to understand and read the blue prints of hardware installation racks, shelves and boards.
◆   Knowledge of the electrical profession.

Contents

◆   Introduction
- SI3000 Lumia MEC 18 Shelf
- SI3000 Lumia MEC 10 Shelf
- SI3000 Lumia G16 1U

◆   Detailed
- Characteristics of the MEC 18/10 shelf
- Technical data
- Shelf components
- The fan unit
- The air filter
- Installation of the MEC 18/10 Shelf in to Rack
- Connection of power supply to the MEC 18/10 shelf
- Installation of active plug-in boards
- Running fiber cables from an installed MEC 18/10 shelf
- Description of Compact GPON OLT with 16 GPON and 6 GE P2P

2.3 (SSB8002AA) – Basic administration and configuration (Implementation Service Lumia GPON)

Code for order: SSB8002AA

Training duration: 3 days

Description

Participant receives knowledge about Lumia Broadband basic administration and configuration procedures.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know basic IDK administration and configuration procedure
- Know basic GPON administration and configuration procedure

Prerequisites

- Participate on training in Iskratel Training Center.

Contents

- Basic administration and configuration IDK
- Basic administration and configuration GPON blade

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2.4 (SSB8003AA) – Basic administration and configuration Lumia GPON

Code for order: SSB8003AA

Training duration: 4 days

Description

Participant receives knowledge about Lumia Broadband basic administration and configuration procesures.

Possible audience:

◆ Manager
◆ System/solution integrator

Competences:

◆ Know basic IDK administration and configuration procedure
◆ Know basic GPON administration and configuration procedure
◆ Use CPE solutions in Lumia broadband.

Prerequisites

◆ Participate on training in Iskratel Training Center.

Contents

◆ Basic administration and configuration IDK
◆ Basic administration and configuration GPON blade
◆ CPE Management

2.5   (SSB8004AA) – Basic administration and configuration P2P Fiber blade

Code for order: SSB8004AA

Training duration: 2 days

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding P2P technology and FTTH product functionalities and troubleshooting experiences.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know all possible VLAN handling mechanisms
- Be able to classify Flow Profiles with advanced settings
- Know all possible Multicast handling methods
- Know security features
- Know the advanced troubleshooting steps

Prerequisites

- Participants need to successfully complete the basic training "Basic administration and configuration P2P Fiber blade" and at least half year of experiences with P2P technology.

Contents

- Lumia Basic
- Lumia Fiber Boards – HW
- Lumia ES HW
- CLI
    - System Management Configuration
    - Interfaces
    - Profiles and Training Scheme
        - DATA Service Profile (VLAN Profile, Flow-Profile, Service Profile)
        - IPTV Service Profile (+Multicast Profile)
        - VOIP Service Profile
    - Scripts and Log Files
    - SW Upgrade
    - Basic Troubleshooting Commands
- MNS
    - MNS Basic Use
    - MNS Install NE SW on MN
    - MNS Entry of a New Node
    - MNS Data Service Profile (VLAN Profile, Flow-Profile, Service Profile)
        - MNS Iptv Service Profile (+Multicast Profile)
        - MNS Voip Service Profile
        - MNS Service Template Multiple Provisioning
    - MNS Backup Configuration and Restore
    - MNS Upgrade NE SW

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2.6 (SSB8005AA) – **Advanced administration and configuration P2P Fiber blade**

<u>Code for order:</u>   SSB8005AA

<u>Training duration:</u>   2 days

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA). The course focuses on two main components of the MSAN:

- Ethernet switch
- Optical access blade

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know how to set up the Ethernet Switch
- Know how to set up the optical access blade
- Know how to operate the system
- Know basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications. A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and optical technology is beneficial.

Contents

- Overview of basic Triple Play Configuration
- Vlan Profile (QinQ; Remarking; Externa)
- Flow Profile (Advanced Classification of the traffic, Prioritisation, Scheduling…)
- Multicast Profile (Supression, Fast leave, Multicast Static Groups, MVR)
- Security Profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
- Multicast ACL
- DHCPRA and PPPoE IA – Macros for Custom Id Mode
- Troubleshooting

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2.7   (SSB8006AA) – Basic administration and configuration GPON blade

Code for order: SSB8006AA

Training duration: 2 days

Description

This course is intended for participants who deal with operational and administration tasks on the SI3000 PONO node. It focuses on the SI3000 version of GPON fiber access.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know the LUMIA GPON solution
- Know how to set up and operate the system
- Know how to control the available Innbox GPON ONT (modem)
- Know the basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications. A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and DSL technology is beneficial.

Contents

- Lumia Basic
- Lumia GPON HW
- Lumia ES HW
- GPON Basic Theory
- CLI
  - System Management Configuration
  - Interfaces
  - Configuring of ONU equipment
  - Profiles and Training Scheme
    - DATA Service Profile (VLAN Profile, Flow-Profile, ONU T-CONT Profile, ONU Flow Profile, Service Profile)
    - IPTV Service Profile (+ Multicast profile, ONU Multicast Profile)
    - VoIP Service Profile
  - Scripts and log files
  - OLT SW upgrade
  - ONU SW upgrade
  - Basic troubleshooting commands
- MNS
  - MNS Basic use
  - MNS Install NE SW on MN
  - MNS Entry of a new node
  - MNS Configuring the ONU equipment
    - MNS DATA Service Profile (VLAN Profile, Flow-Profile, ONU T-CONT Profile, ONU Flow Profile, Service Profile)
    - MNS IPTV Service Profile (+ Multicast profile, ONU Multicast Profile)

- ▪ MNS VoIP Service Profile
- MNS Service Template Multiple Provisioning
- MNS Backup Configuration and Restore OLT
- MNS Upgrade OLT ONU

2.8   (SSB8007AA) – Advanced administration and configuration GPON blade

Code for order: SSB8007AA

Training duration: 2 days

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding GPON technology and GPON product functionalities and troubleshooting experiences.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know all possible VLAN handling mechanisms and ONU – VLAN Profile
- Be able to classify Flow Profiles with advanced settings
- Know all possible Multicast handling methods
- Know security features
- Know the advanced troubleshooting steps

Prerequisites

- Participants need to successfully complete the basic training
- Basic administration and configuration GPON blade and at least half year of experiences with GPON technology.

Contents

- Overview of basic Triple Play Configuration
- Vlan profile (QinQ; Remarking; External)
- Flow profile (Advanced Classification of the traffic, Prioritisation, Scheduling…)
- Multicast profile (Supression, Fast leave, Multicast Static Groups, MVR)
- Security profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
- ONU VLAN profile
- Multicast ACL
- DHCPRA and PPPoE IA - Macros for Custom Id Mode
- Troubleshooting

2.9 (SSB8008AA) – Advanced administration and configuration GPON

Code for order: SSB8008AA

Training duration: 5 days

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding GPON technology and GPON product functionalities and troubleshooting experiences.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know all possible VLAN handling mechanisms and ONU – VLAN Profile
- Be able to classify Flow Profiles with advanced settings
- Know all possible Multicast handling methods
- Know security features
- Know the advanced troubleshooting steps

Prerequisites

- Participants need to successfully complete the basic training "Basic administration and configuration GPON" and at least half year of experiences with GPON technology.

Contents

- Overview of basic Triple Play Configuration - CLI
- Overview of basic Triple Play Configuration - MNS
- Advanced features in Vlan profile (QinQ; Remarking; External)
- Advanced features in Flow profile (Classification of the traffic, Prioritisation, Scheduling…)
- Multicast profile (Supression, Fast leave, Multicast Static Groups, MVR)
- Security profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
- ONU VLAN profile
- Multicast ACL
- DHCPRA and PPPoE IA - Macros for Custom Id Mode
- Troubleshooting
- Practical exercises

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2.10 (SSB8009AA) – Basic administration and configuration IDK

Code for order: SSB8009AA

Training duration: 1 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA).

Possible audience:

◆ Manager

◆ System/solution integrator

Competences:

◆ Know the usage of the Ethernet Switch in different network configurations

◆ Know how to prepare tools and connections to operate the Ethernet Switch

◆ Know how to set-up and administer the Ethernet Switch

◆ Know the basic troubleshooting steps

Prerequisites

◆ Participants need to have the basic knowledge about modern (NGN) telecommunications. A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.

◆ Understanding of Ethernet technology is beneficial.

Contents

◆ Lumia Basic

◆ Lumia ES HW

◆ General settings and administration of the Ethernet switch

- "nvram" settings
- Interface configuration
- Port-channels
- VLAN configuration
- IGMP snooping basic
- upgrade procedure

2.11   (SSB8010AA) - Advanced administration and configuration IDK

Code for order: SSB8010AA

Training duration: 1 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding Ethernet Switch (IDK) and its functionalities.

Possible audience:

◆   Manager

◆   System/solution integrator

Competences:

◆   Know advanced IGMP settings

◆   Be able to use different xSTP

◆   Know how to use RADIUS

◆   Know security features

◆   Get more information about some project specific settings

Prerequisites

◆   Participants need to successfully complete the basic training "Basic administration and configuration ES IDK " and at least half year of experiences with IDK switches.

Contents

◆   Overview of general settings and administration of the Ethernet switch

◆   Configuring advanced functions - protocols

◆   User authentication (RADIUS…)

◆   SNTP

◆   IGMP

◆   DHCP RA

◆   xSTP

◆   Security functions

◆   ECFM

◆   Troubleshooting

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2.12 (SSB8011AA) – XGS-PON technology and solution

Code for order: SSB8011AA

Training duration: 0,5 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need knowledge about XGS-PON technology and solution.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know XGS-PON technology
- Know XGS-PON solution

Prerequisites

- Participants need to successfully complete the basic training " Basic administration and configuration GPON " and at least half year of experiences with GPON technology.

Contents

- Lumia Basic
- XGS-PON technology introduction
- XGS-PON solution introduction

2.13 (SSB8012AA) – GPON equipment installation

Code for order: SSB8012AA

Training duration: 9 days

Description

This course is intended for participants who deal with operational and administration tasks on the SI3000 PONO node. It focuses on the SI3000 version of GPON access.

Possible audience:

* Manager
* System/solution integrator

Competences:

* Know the LUMIA GPON solution
* Know how to set up and operate the system
* Know how to control the available Innbox GPON ONT (modem)
* Know the basic troubleshooting steps

Prerequisites

* Participants need to have the basic knowledge about modern (NGN) telecommunications.
* A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
* Understanding of Ethernet and DSL technology is beneficial.

Contents

* Theory
  * Lumia Basic
  * GPON basic
  * MNS basic
* IDK
  * Lumia ES HW
  * General settings and administration of the Ethernet switch:
    * "nvram" settings
    * Interface configuration
    * Port-channels
    * VLAN configuration
    * IGMP snooping basic
    * upgrade procedure
* GPON board – configuring over CLI
  * Lumia GPON HW
  * System management configuration
  * Interfaces
  * Configuring of ONU equipments – basic
  * Scripts and logging files
  * Service Profile – DATA
  * Service Profile – VoIP
  * Service Profile – IPTV
  * Service Profile –Host

- ONT configuring over OLT
- ONT SW upgrade
- OLT SW upgrade
- GPON board – configuring over MNS
  - MNS basics
  - Entry of new shelf, node…
  - Data synchronisation – MNS-NE
  - Configuring of ONU equipments – basic
  - Scripts and logging files
  - Service Profile – DATA
  - Service Profile – VoIP
  - Service Profile – IPTV
  - ONT configuring over OLT
  - ONT SW upgrade
  - OLT SW upgrade
- CPE
  - Innbox portfolio:
    - CPEs
    - PLC
    - Additional services
  - CPE Configuration:
    - L2 creation
    - PPPoE connection
    - IPoE connection
    - Bridged connection
    - LAN configuration
    - SIP
    - Miscellaneous settings passed on participants requests
  - TR-069
- Open questions

2.14 (SSB8013AA) – Basic administration and configuration GPON

Code for order: SSB8013AA

Training duration: 3 days

Description

This course is intended for participants who deal with operational and administration tasks on the SI3000 PONO node. It focuses on the SI3000 version of GPON access.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know the LUMIA GPON solution
- Know how to set up and operate the system
- Know how to control the available Innbox GPON ONT (modem)
- Know the basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications. A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and DSL technology is beneficial.

Contents

- Theory
  - Lumia Basic
  - GPON basic
  - MNS basic
- IDK
  - Lumia ES HW
  - General settings and administration of the Ethernet switch:
    - "nvram" settings
    - Interface configuration
    - Port-channels
    - VLAN configuration
    - IGMP snooping basic
    - upgrade procedure
- GPON board – configuring over CLI
  - Lumia GPON HW
  - System management configuration
  - Interfaces
  - Configuring of ONU equipments – basic
  - Scripts and logging files
  - Service Profile – DATA
  - Service Profile – VoIP
  - Service Profile – IPTV
  - Service Profile –Host
  - ONT configuring over OLT

- ONT SW upgrade
- OLT SW upgrade
- GPON board – configuring over MNS
    - MNS basics
    - Entry of new shelf, node…
    - Data synchronisation - MNS-NE
    - Configuring of ONU equipments - basic
    - Scripts and logging files
    - Service Profile - DATA
    - Service Profile - VoIP
    - Service Profile - IPTV
    - ONT configuring over OLT
    - ONT SW upgrade
    - OLT SW upgrade
- CPE
    - Innbox portfolio:
        - CPEs
        - PLC
        - Additional services
    - CPE Configuration:
        - L2 creation
        - PPPoE connection
        - IPoE connection
        - Bridged connection
        - LAN configuration
        - SIP
        - Miscellaneous settings passed on participants requests
    - TR-069
- Open questions

2.15 (SSB8014AA) – Lumia instalation, GPON administration and configuration, CPE basics

Code for order: SSB8014AA

Training duration: 5 days

Description

This course is aimed at the participants, who work on hardware installation SI3000 GPON Lumia frames and who deal with operational and administration tasks on the SI3000 PONO node. It focuses on the SI3000 version of GPON access.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know the differences and capability of different types of GPON Lumia frames
- Know the basic parts and functionality of GPON Lumia frames
- Know the how to perform the proper installation GPON Lumia frames in to the rack
- Know how to connect the power, fiber and network cables on GPON Lumia frames
- Be able to perform regular and basic maintenance of the system
- Know the LUMIA GPON solution
- Know how to set up and operate the system
- Know how to control the available Innbox GPON ONT (modem)
- Know the basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about telecommunications with an emphasis on the NGN network elements. Besides that, it is necessary for them to understand and read the blue prints of hardware installation racks, shelves and boards. Knowledge of the electrical profession.
- Participants need to have the basic knowledge about modern (NGN) telecommunications. A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture. Understanding of Ethernet and DSL technology is beneficial.

Contents

- Introduction
  - SI3000 Lumia MEC 18 Shelf
  - SI3000 Lumia MEC 10 Shelf
  - SI3000 Lumia G16 1U
- Detailed
  - Characteristics of the MEC 18/10 shelf
  - Technical data
  - Shelf components
  - The fan unit
  - The air filter
  - Installation of the MEC 18/10 Shelf in to Rack
  - Connection of power supply to the MEC 18/10 shelf
  - Installation of active plug-in boards
  - Running fiber cables from an installed MEC 18/10 shelf
  - Description of Compact GPON OLT with 16 GPON and 6 GE P2P
- Theory

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- Lumia Basic
- GPON basic
- MNS basic

- IDK
  - Lumia ES HW
  - General settings and administration of the Ethernet switch:
    - "nvram" settings
    - Interface configuration
    - Port-channels
    - VLAN configuration
    - IGMP snooping basic
    - upgrade procedure

- GPON board - configuring over CLI
  - Lumia GPON HW
  - System management configuration
  - Interfaces
  - Configuring of ONU equipments - basic
  - Scripts and logging files
  - Service Profile - DATA
  - Service Profile - VoIP
  - Service Profile - IPTV
  - Service Profile -Host
  - ONT configuring over OLT
  - ONT SW upgrade
  - OLT SW upgrade

- GPON board - configuring over MNS
  - MNS basics
  - Entry of new shelf, node…
  - Data synchronisation - MNS-NE
  - Configuring of ONU equipments - basic
  - Scripts and logging files
  - Service Profile - DATA
  - Service Profile - VoIP
  - Service Profile - IPTV
  - ONT configuring over OLT
  - ONT SW upgrade
  - OLT SW upgrade

- CPE
  - Innbox portfolio:
    - CPEs
    - PLC
    - Additional services
  - CPE Configuration:
    - L2 creation
    - PPPoE connection
    - IPoE connection
    - Bridged connection

- LAN configuration
- SIP
- Miscellaneous settings passed on participants requests
  - TR-069
- Troubleshooting

2.16 (SSB8015AA) – CLI – Basic administration, configuration and troubleshooting GPON/XGSPON blade

Code for order: SSB8015AA

Training duration: 1,5 days

Description

This course is intended for participants who deal with operational and administration tasks on the SI3000 PONO node. It focuses on the SI3000 version of GPON/XGSPON fiber access.

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know the LUMIA GPON/XGSPON solution
- Know how to set up and operate the system
- Know how to control the available Innbox GPON/XGSPON ONT (modem)
- Know the basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications.
- A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and DSL technology is beneficial.

Contents

- Lumia Basic
- Lumia GPON/XGSPON HW
- Lumia ES HW
- GPON/XGSPON Basic Theory
- CLI
  - System Management Configuration
  - Interfaces
  - Configuring of ONU equipment
  - Profiles and Training Scheme
    - DATA Service Profile (VLAN Profile, Flow-Profile, ONU T-CONT Profile, ONU Flow Profile, Service Profile)
    - IPTV Service Profile (+ Multicast profile, ONU Multicast Profile)
    - VoIP Service Profile
  - Scripts and log files
  - OLT SW upgrade
  - ONU SW upgrade
  - Basic troubleshooting commands

2.17   (SSB8016AA) – CLI – Advanced administration, configuration and troubleshooting GPON/XGSPON blade

Code for order: SSB8016AA

Training duration: 1 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding GPON/XGSPON technology and GPON/XGSPON product functionalities and troubleshooting experiences.

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know all possible VLAN handling mechanisms and ONU – VLAN Profile
- Be able to classify Flow Profiles with advanced settings
- Know all possible Multicast handling methods
- Know security features
- Know the advanced troubleshooting steps

Prerequisites

- Participants need to successfully complete the basic training "Basic administration and configuration GPON/XGSPON blade" and at least half year of experiences with GPON/XGSPON technology.

Contents

- Overview of basic Triple Play Configuration
- Vlan profile (QinQ; Remarking; External)
- Flow profile (Advanced Classification of the traffic, Prioritisation, Scheduling…)
- Multicast profile (Supression, Fast leave, Multicast Static Groups, MVR)
- Security profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
- ONU VLAN profile
- Multicast ACL
- DHCPRA and PPPoE IA - Macros for Custom Id Mode
- Troubleshooting

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2.18   (SSB8017AA) – CLI – Basic administration configuration and troubleshooting P2P Fiber blade

Code for order: SSB8017AA

Training duration: 0,5 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding P2P technology and FTTH product functionalities and troubleshooting experiences.

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know all possible VLAN handling mechanisms
- Be able to classify Flow Profiles with advanced settings
- Know all possible Multicast handling methods
- Know security features
- Know the advanced troubleshooting steps

Prerequisites

- Participants need to successfully complete the basic training "Basic administration and configuration P2P Fiber blade" and at least half year of experiences with P2P technology.

Contents

- Lumia Basic
- Lumia Fiber Boards – HW
- Lumia ES HW
- CLI
  - System Management Configuration
  - Interfaces
  - Profiles and Training Scheme
    - DATA Service Profile (VLAN Profile, Flow-Profile, Service Profile)
    - IPTV Service Profile (+Multicast Profile)
    - VOIP Service Profile
  - Scripts and Log Files
  - SW Upgrade
  - Basic Troubleshooting Commands

2.19   (SSB8018AA) – CLI – Advanced administration configuration and troubleshooting P2P Fiber blade

Code for order: SSB8018AA

Training duration: 0,5 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA). The course focuses on two main components of the MSAN:

- Ethernet switch
- Optical access blade

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know how to set up the Ethernet Switch
- Know how to set up the optical access blade
- Know how to operate the system
- Know basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications.
- A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and optical technology is beneficial.

Contents

- Overview of basic Triple Play Configuration
- Vlan Profile (QinQ; Remarking; External)
- Flow Profile (Advanced Classification of the traffic, Prioritisation, Scheduling…)
- Multicast Profile (Supression, Fast leave, Multicast Static Groups, MVR)
- Security Profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
- Multicast ACL
- DHCPRA and PPPoE IA – Macros for Custom Id Mode
- Troubleshooting

Kontron

2.20 (SSB8290AA) – MNS – Basic administration, configuration and troubleshooting GPON/XGSPON blade

Code for order: SSB8290AA

Training duration: 1 day

Description

This course is intended for participants who deal with operational and administration tasks on the SI3000 PONO node. It focuses on the SI3000 version of GPON/XGSPON fiber access.

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know the LUMIA GPON/XGSPON solution
- Know how to set up and operate the system
- Know how to control the available Innbox GPON/XGSPON ONT (modem)
- Know the basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications.
- A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and DSL technology is beneficial.

Contents

- Lumia Basic
- Lumia GPON/XGSPON HW
- Lumia ES HW
- GPON/XGSPON Basic Theory
- MNS
  - MNS Basic use
  - MNS Install NE SW on MN
  - MNS Entry of a new node
  - MNS system log files
  - MNS users
  - MNS Configuring the ONU equipments
    - MNS DATA Service Profile (VLAN Profile, Flow-Profile, ONU T-CONT Profile, ONU Flow Profile, Service Profile)
    - MNS IPTV Service Profile (+ Multicast profile, ONU Multicast Profile)
    - MNS VoIP Service Profile
  - MNS Service Template Multiple Provisioning
  - MNS Backup Configuration and Restore OLT
  - MNS Upgrade OLT ONU

2.21 (SSB8291AA) – MNS – Advanced administration, configuration and troubleshooting GPON/XGSPON blade

Code for order: SSB8291AA

Training duration: 1 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding GPON/XGSPON technology and GPON/XGSPON product functionalities and troubleshooting experiences.

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know all possible VLAN handling mechanisms and ONU – VLAN Profile
- Be able to classify Flow Profiles with advanced settings
- Know all possible Multicast handling methods
- Know security features
- Know the advanced troubleshooting steps

Prerequisites

- Participants need to successfully complete the basic training "Basic administration and configuration GPON blade" and at least half year of experiences with GPON technology.

Contents

- Overview of basic Triple Play Configuration
- Vlan profile (QinQ; Remarking; External)
- Flow profile (Advanced Classification of the traffic, Prioritisation, Scheduling…)
- Multicast profile (Supression, Fast leave, Multicast Static Groups, MVR)
- Security profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
- ONU VLAN profile
- Multicast ACL
- DHCPRA and PPPoE IA - Macros for Custom Id Mode
- Troubleshooting

Kontron

2.22 (SSB8292AA) – MNS – Basic administration, configuration and troubleshooting P2P Fiber blade

Code for order: SSB8292AA

Training duration: 0,25 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding P2P technology and FTTH product functionalities and troubleshooting experiences.

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know all possible VLAN handling mechanisms
- Be able to classify Flow Profiles with advanced settings
- Know all possible Multicast handling methods
- Know security features
- Know the advanced troubleshooting steps

Prerequisites

- Participants need to successfully complete the basic training " Basic administration and configuration P2P Fiber blade " and at least half year of experiences with P2P technology.

Contents

- Lumia Basic
- Lumia Fiber Boards – HW
- Lumia ES HW
- MNS
  - MNS Basic Use
  - MNS Install NE SW on MN
  - MNS Entry of a New Node
  - MNS Data Service Profile (VLAN Profile, Flow-Profile, Service Profile)
    - MNS Iptv Service Profile (+Multicast Profile)
    - MNS Voip Service Profile
    - MNS Service Template Multiple Provisioning
  - MNS Backup Configuration and Restore
  - MNS Upgrade NE SW

2.23 (SSB8293AA) – MNS – Advanced administration, configuration and troubleshooting P2P Fiber blade

Code for order: SSB8293AA

Training duration: 0,25 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA). The course focuses on two main components of the MSAN:

- Ethernet switch
- Optical access blade

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know how to set up the Ethernet Switch
- Know how to set up the optical access blade
- Know how to operate the system
- Know basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications.
- A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and optical technology is beneficial.

Contents

- Overview of basic Triple Play Configuration
- Vlan Profile (QinQ; Remarking; External)
- Flow Profile (Advanced Classification of the traffic, Prioritisation, Scheduling…)
- Multicast Profile (Supression, Fast leave, Multicast Static Groups, MVR)
- Security Profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
- Multicast ACL
- DHCPRA and PPPoE IA – Macros for Custom Id Mode
- Troubleshooting

Kontron

2.24   (SSB8294AA) – CLI – Basic administration, configuration and troubleshooting GPON/XGSPON blade

Code for order: SSB8294AA

Training duration: 1 day

Description

This course is intended for participants who deal with operational and administration tasks on the SI3000 PONO node. It focuses on the SI3000 version of GPON/XGSPON fiber access.

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know the LUMIA GPON/XGSPON solution
- Know how to set up and operate the system
- Know how to control the available Innbox GPON/XGSPON ONT (modem)
- Know the basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications.
- A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and DSL technology is beneficial.

Contents

- Lumia Basic
- Lumia GPON/XGSPON HW
- Lumia ES HW
- GPON/XGSPON Basic Theory
- CLI
  - System Management Configuration
  - Interfaces
  - Configuring of ONU equipment
  - Profiles and Training Scheme
    - DATA Service Profile (VLAN Profile, Flow-Profile, ONU T-CONT Profile, ONU Flow Profile, Service Profile)
    - IPTV Service Profile (+ Multicast profile, ONU Multicast Profile)
    - VoIP Service Profile
  - Scripts and log files
  - OLT SW upgrade
  - ONU SW upgrade
  - Basic troubleshooting commands

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2.25 (SSB8295AA) – CLI – Advanced administration, configuration and troubleshooting GPON/XGSPON blade

Code for order: SSB8295AA

Training duration: 0,5day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding GPON/XGSPON technology and GPON/XGSPON product functionalities and troubleshooting experiences.

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know all possible VLAN handling mechanisms and ONU – VLAN Profile
- Be able to classify Flow Profiles with advanced settings
- Know all possible Multicast handling methods
- Know security features
- Know the advanced troubleshooting steps

Prerequisites

- Participants need to successfully complete the basic training "Basic administration and configuration GPON/XGSPON blade" and at least half year of experiences with GPON/XGSPON technology.

Contents

- Overview of basic Triple Play Configuration
- Vlan profile (QinQ; Remarking; External)
- Flow profile (Advanced Classification of the traffic, Prioritisation, Scheduling…)
- Multicast profile (Supression, Fast leave, Multicast Static Groups, MVR)
- Security profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
- ONU VLAN profile
- Multicast ACL
- DHCPRA and PPPoE IA - Macros for Custom Id Mode
- Troubleshooting

Kontron

2.26　(SSB8296AA) – MNS – Advanced administration, configuration and troubleshooting GPON/XGSPON blade

Code for order:　　　　SSB8296AA

Training duration:　　0,5day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding GPON/XGSPON technology and GPON/XGSPON product functionalities and troubleshooting experiences.

Possible audience:

- Manager
- System/solution integrator
- Operations personnel

Competences:

- Know all possible VLAN handling mechanisms and ONU – VLAN Profile
- Be able to classify Flow Profiles with advanced settings
- Know all possible Multicast handling methods
- Know security features
- Know the advanced troubleshooting steps

Prerequisites

- Participants need to successfully complete the basic training "Basic administration and configuration GPON blade" and at least half year of experiences with GPON technology.

Contents

- Overview of basic Triple Play Configuration
- Vlan profile (QinQ; Remarking; External)
- Flow profile (Advanced Classification of the traffic, Prioritisation, Scheduling…)
- Multicast profile (Supression, Fast leave, Multicast Static Groups, MVR)
- Security profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
- ONU VLAN profile
- Multicast ACL
- DHCPRA and PPPoE IA - Macros for Custom Id Mode
- Troubleshooting

3 Copper Broadband Solutions – Training Courses

3.1 (SSB8020AA) – Shelter/Lumia equipment installation

Code for order: SSB8020AA

Training duration: 1 day

Description

This course is aimed at the participants, who work on hardware installation SI3000 Shelter/Lumia frames. It focuses on the installation of hardware Lumia frames in Shelters, 19" or ETSI racks.

Possible audience:
- Manager
- System/solution integrator

Competences:
- Know the differences and capability of different types of Shelter/Lumia frames
- Know the basic parts and functionality of Shelter/Lumia frames
- Know the how to perform the proper installation Shelter/Lumia frames in to the rack
- Know how to connect the power, fiber and network cables on Lumia frames
- Be able to perform regular and basic maintenance of the system

Prerequisites
- Participants need to have the basic knowledge about telecommunications with an emphasis on the NGN network elements. Besides that, it is necessary for them to understand and read the blue prints of hardware installation racks, shelves and boards.
- Knowledge of the electrical profession.

Contents
- Introduction
- Shelters
- SI3000 Lumia MEC 18 Shelf
- SI3000 Lumia MEC 10 Shelf
- Characteristics of the MEC 18/10 shelf
- Technical data
- Shelf components
- The fan unit
- The air filter
  - Installation of the MEC 18/10 Shelf in to Rack
  - Connection of power supply to the MEC 18/10 shelf
  - Installation of active plug-in boards
  - Running fiber cables from an installed MEC 18/10 shelf

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3.2   (SSB8021AA) – Basic administration and configuration VDSL blade

Code for order: SSB8021AA

Training duration: 2 days

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA). The course focuses on two main components of the MSAN:

- Ethernet switch
- ADSL2+/ VDSL access blade

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know how to set up the Ethernet Switch
- Know how to set up the ADSL2+/VDSL access blade
- Be able to manage the system
- Know the basic system administration
- Know the basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications. A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet and DSL technology is beneficial.

Contents

- Lumia Basic
- Lumia VDSL Board - HW
- Lumia ES HW
- VDSL Basic Theory
- CLI
  - System Management Configuration
  - Interfaces
  - DSL Profile
  - Profiles and Training Scheme
    - DATA Service Profile (VLAN Profile, Flow-Profile, Service Profile)
    - IPTV Service Profile (+Multicast Profile)
    - VOIP Service Profile
  - Scripts And Log Files
  - OLT SW Upgrade
  - Basic Troubleshooting Commands
- MNS
  - MNS Basic Use
  - MNS Install NE SW on MN
  - MNS Entry of a New Node
  - MNS DSL Profile
  - MNS Data Service Profile (VLAN Profile, Flow-Profile, Service Profile)

- MNS Iptv Service Profile (+Multicast Profile)
- MNS Voip Service Profile
- MNS Service Template Multiple Provisioning
- MNS Backup Configuration and Restore
- MNS Upgrade NE SW

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3.3 (SSB8022AA) – Advanced administration and configuration VDSL blade

Code for order: SSB8022AA

Training duration: 2 days

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding VDSL technology and VDSL product functionalities and troubleshooting experiences.

Possible audience:

◆ Manager
◆ System/solution integrator

Competences:

◆ Know DSL Profile advanced options
◆ Know all possible VLAN handling mechanisms
◆ Be able to classify Flow Profiles with advanced settings
◆ Know all possible Multicast handling methods
◆ Know security features
◆ Know the advanced troubleshooting steps

Prerequisites

◆ Participants need to successfully complete the basic training "Basic administration and configuration VDSL blade" and at least half year of experiences with VDSL technology.

Contents

◆ Overview of basic Triple Play Configuration
◆ DSL Profile – advanced options
◆ Vlan Profile (QinQ; Remarking; External)
◆ Flow Profile (Advanced Classification of the traffic, Prioritisation, Scheduling…)
◆ Multicast Profile (Supression, Fast leave, Multicast Static Groups, MVR)
◆ Security Profile (MAC and IP Source Guard, Port Security, Dynamic ARP inspection, Storm Control, Application Rate Limiting, Access Lists)
◆ Multicast ACL
◆ DHCPRA and PPPoE IA – Macros for Custom Id Mode
◆ Troubleshooting

3.4 (SSB8023AA) – Basic administration and configuration IDL blade

Code for order: SSB8023AA

Training duration: 1 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA).

Possible audience:

◆ Manager

◆ System/solution integrator

Competences:

◆ Know the usage of the Ethernet Switch in different network configurations

◆ Know how to prepare tools and connections to operate the Ethernet Switch

◆ Know how to set-up and administer the Ethernet Switch

◆ Know the basic troubleshooting steps

Prerequisites

◆ Participants need to have the basic knowledge about modern (NGN) telecommunications.

◆ A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.

◆ Understanding of Ethernet technology is beneficial.

Contents

◆ Introduction
  • MSAN/LUMIA platform
  • Chassis and typical configurations
◆ Ethernet switch
  • Product description
  • Possible ES usages
  • HW design of IDx board
  • Ethernet technology
◆ Installation procedures
  • Short description of the work with MNS
  • Installation of SW and entry of Ethernet board on MNS
  • Set-up and check-up of ASC connectivity
  • Using the RS232 interface on PC's
  • Using Ethernet interface for communication
  • Installation of SW on a network element
◆ ES configuration
  • Configuration of ports
  • Configuration of VLANs
  • Configuration of QoS mechanisms
  • Configuration of Multicast protocol
  • STP, RSTP, MSTP protocols
  • LACP protocol
  • DHCP
  • Traffic control

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- ◆ Maintenance procedures
  - Regular maintenance procedures
  - Data backup copying

3.5 (SSB8024AA) – Advanced administration and configuration IDL blade

Code for order: SSB8024AA

Training duration: 1 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA) and need advanced knowledge regarding Ethernet Switch (IDL) and its functionalities.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know advanced IGMP settings
- Be able to use different xSTP
- Know how to use RADIUS
- Know security features
- Get more information about some project specific settings

Prerequisites

- Participants need to successfully complete the basic training "Basic administration and configuration ES IDL " and at least half year of experiences with IDL switches.

Contents

- Overview of general settings and administration of the Ethernet switch
- Configuring advanced functions – protocols
  - User authentication
  - SNTP
  - VLANs – QinQ
  - QoS mechanisms – advanced
  - xSTP, IGMP – advanced
  - Security functions
  - Troubleshooting

3.6   (SSB8025AA) – Basic administration and configuration POTS

Code for order: SSB8025AA

Training duration: 1 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA). The course focuses on two main components of the MSAN:

- Ethernet switch
- POTS access blade

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know how to set up the Ethernet Switch
- Know how to set up the POTS access blade
- Be able to manage the system
- Know the basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications.
- A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet technology is beneficial.

Contents

- Introduction
  - MSAN/LUMIA platform
  - Mechanical design
  - Typical configuration
  - Description of plug-in boards
- Ethernet switch
  - HW design board
  - Ethernet technology
  - Supported protocols and performance features
  - ES SW structure
  - Ethernet switch ports
  - Basic administration of the Ethernet switch
- POTS board
  - Supported protocols and performance features
  - Short description of the work with MNS
  - Adding a new POTS board to the system
  - Changing port profiles
  - Administration of control protocols (MGCP, MEGACO, SIP) on the POTS board
- Maintenance procedures
  - Regular maintenance procedures
  - Data backup copying

3.7 (SSB8026AA) – Basic administration and configuration IDL blade

Code for order: SSB8026AA

Training duration: 0,5 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA).

Possible audience:

◆ Manager

◆ System/solution integrator

Competences:

◆ Know the usage of the Ethernet Switch in different network configurations

◆ Know how to prepare tools and connections to operate the Ethernet Switch

◆ Know how to set-up and administer the Ethernet Switch

◆ Know the basic troubleshooting steps

Prerequisites

◆ Participants need to have the basic knowledge about modern (NGN) telecommunications.

◆ A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.

◆ Understanding of Ethernet technology is beneficial.

Contents

◆ Introduction
  - MSAN/LUMIA platform
  - Chassis and typical configurations

◆ Ethernet switch
  - Product description
  - Possible ES usages
  - HW design of IDx board
  - Ethernet technology

◆ Installation procedures
  - Short description of the work with MNS
  - Installation of SW and entry of Ethernet board on MNS
  - Set-up and check-up of ASC connectivity
  - Using the RS232 interface on PC's
  - Using Ethernet interface for communication
  - Installation of SW on a network element

◆ ES configuration
  - Configuration of ports
  - Configuration of VLANs
  - Configuration of QoS mechanisms
  - Configuration of Multicast protocol
  - STP, RSTP, MSTP protocols
  - LACP protocol
  - DHCP
  - Traffic control

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- ◆ Maintenance procedures
  - Regular maintenance procedures
  - Data backup copying

3.8 (SSB8027AA) – Basic administration and configuration POTS

Code for order: SSB8027AA

Training duration: 0,5 day

Description

This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Multiple Services Access Node (MSAN/LUMIA). The course focuses on two main components of the MSAN:

- Ethernet switch
- POTS access blade

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know how to set up the Ethernet Switch
- Know how to set up the POTS access blade
- Be able to manage the system
- Know the basic troubleshooting steps

Prerequisites

- Participants need to have the basic knowledge about modern (NGN) telecommunications.
- A deep knowledge of IP networks and packet data transmission is required with special focus on layers 1, 2 and 3 of OSI layer architecture.
- Understanding of Ethernet technology is beneficial.

Contents

- Introduction
  - MSAN/LUMIA platform
  - Mechanical design
  - Typical configuration
  - Description of plug-in boards
- Ethernet switch
  - HW design board
  - Ethernet technology
  - Supported protocols and performance features
  - ES SW structure
  - Ethernet switch ports
  - Basic administration of the Ethernet switch
- POTS board
  - Supported protocols and performance features
  - Short description of the work with MNS
  - Adding a new POTS board to the system
  - Changing port profiles
  - Administration of control protocols (MGCP, MGACO, SIP) on the POTS board
- Maintenance procedures
  - Regular maintenance procedures
  - Data backup copying

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3.9 (SSB8050AA) – CPE Advanced Training

Code for order: SSB8050AA

Training duration: 3 days

Description

This course is aimed at the participants who work with Innbox CPE equipment or just starting to use it. Course is intended to get participants familiar with Advanced CPE. This course is aimed at the participants, who work on operational and administrational tasks on SI3000 Customer Premises Equipment (CPE).

Possible audience:

♦ Manager
♦ System/solution integrator

Competences:

- Get to know the basic CPE models
- Get to know the advance CPE models
- Learn how to set up the CPE using GUI
- Learn how to set up the CPE using TR-069
- Learn how to operate the TR-069 system
- Learn basic troubleshooting steps

Prerequisites

♦ Participants need to have the basic knowledge about modern (NGN) telecommunications. Basis knowledge about CPE is beneficial.
♦ Understanding of Ethernet, DSL, GPON technology is beneficial.

Contents

♦ Innbox portfolio:
  - CPEs
  - Mesh WiFi
  - Additional services
♦ CPE Configuration:
  - L2 creation
  - PPPoE connection
  - IPoE connection
  - Bridged connection
  - LAN configuration
  - SIP
  - Miscellaneous settings passed on participants requests
♦ TR-069:
  - Supported protocols and network interfaces
  - TR-069 basics
  - Device provisioning
  - Tasks
  - Groups
  - Device upgrade
  - Device monitoring
  - Access levels
  - Miscellaneous settings passed on participants requests

- Practice, discussion
- All modules consist of hands on approach using our internal TR-069 server and devices

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3.10 (SSB8051AA) – CPE Basic Training

Code for order: SSB8051AA

Training duration: 1 day

Description

This course is aimed at the participants who work with Innbox CPE equipment or just starting to use it. Course is intended to get participants familiar with CPEs. This course is aimed at the participants, who work on operational and administrital tasks on SI3000 Customer Premises Equipment (CPE).

Possible audience:

◆ Manager
◆ System/solution integrator

Competences:

◆ Get to know the basic CPE models
◆ Get to know the advance CPE models
◆ Learn how to set up the CPE using GUI
◆ Learn basic troubleshooting steps

Prerequisites

◆ Participants need to have the basic knowledge about modern (NGN) telecommunications. Basis knowledge about CPE is beneficial.
◆ Understanding of Ethernet, DSL, GPON technology is beneficial.

Contents

◆ Innbox portfolio:
  • CPEs
◆ CPE Configuration:
  • L2 creation
  • IPoE connection
  • Bridged connection
  • LAN configuration
  • Miscellaneous settings passed on participants requests

3.11   (SSB8060AA) – Juniper Basic training

Code for order: SSB8060AA

Training duration: 3 days

Description

This three-day course provides students with the foundational knowledge required to work with the Junos operating system and to configure basic features of Junos devices. The course provides a brief overview of the Junos device families and discusses the key architectural components of the software. Key topics include user interface options with a heavy focus on the command-line interface (CLI), configuration tasks typically associated with the initial setup of devices, interface configuration basics with configuration examples, secondary system configuration, and the basics of operational monitoring and maintenance of Junos devices. The course then delves into foundational routing knowledge and configuration examples including general routing concepts, routing policy, and firewall filters, where basic Layer 2 and Layer 3 protocols and mechanisms are explained and configured. Training includes hands-on labs, where students will gain experience in configuring and monitoring the Junos OS.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Foundational knowledge required to work with the Junos operating system and to configure basic features of Junos devices
- Know command-line interface (CLI)
- Foundational routing knowledge and configuration examples including general routing concepts, routing policy, and firewall filters, where basic Layer 2 and Layer 3 protocols.

Prerequisites

- Students should have basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) reference model and the TCP/IP protocol suite.

Contents

- Describe the basic design architecture of the Junos OS.
- Identify and provide a brief overview of Junos devices.
- Describe MX, SRX, T, PTX, ACX, QFX, EX, and NFX Series devices.
- Navigate within the Junos CLI.
- Perform initial configuration tasks.
- Configure and monitor network interfaces.
- Describe user configuration and authentication options.
- Monitor basic operation for the Junos OS and devices.
- List the benefits of implementing switched LANs.
- List enterprise platforms that support Layer 2 switching.
- Configure interfaces for Layer 2 switching operations.
- Explain the concept of a VLAN.
- Describe access and trunk port modes.
- Configure and monitor VLANs.
- Explain inter-VLAN routing operations.
- Configure and monitor inter-VLAN routing.
- Explain when a spanning tree is required.
- Describe STP and Rapid Spanning Tree Protocol (RSTP) operations.

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- Describe and configure the bridge protocol data unit (BPDU), Loop, and Root protection features.
- Describesupport for EX Series Ethernet Switches.
- List and describe some features that promote high availability.
- Configure and monitor high availability features.
- Describe and implement the basic concepts and operational details of a virtual chassis.
- Explain basic routing operations and concepts.
- View and describe routing and forwarding tables.
- Configure and monitor static routing.
- Describe and configure typical uses of static, aggregate, and generated routes.
- Describe load-balancing concepts and operations.
- Implement and monitor Layer 3 load balancing.
- Explain the purpose and basic operations of CoS.
- Describe CoS features used in Layer 2 networks.
- Configure and monitor CoS in a Layer 2 network
- Describe a basic troubleshooting method

3.12 (SSB8061AA) – Juniper Advanced training

Code for order: SSB8061AA

Training duration: 4 days

Description

This four-day course is designed to provide students with the tools required for implementing, monitoring and troubleshooting Layer 3 components in an enterprise and service provider network. Detailed coverage of OSPF, BGP, class of service (CoS) and multicast is strongly emphasized. Additionally, students will get insight into basic Layer 2 and Layer 3 MPLS topologies including EVPN and others. The course also exposes students to common troubleshooting commands and tools used to troubleshoot various intermediate to advanced issues. Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos operating system and in monitoring device and protocol operations.

Training includes hands-on labs, where students will gain experience in configuring and monitoring the Junos OS.

Possible audience:

- Manager
- System/solution integrator

Competences:

- Know tools required for implementing, monitoring and troubleshooting Layer 3 components in an enterprise and service provider network
- Know details of OSPF, BGP, class of service (CoS) and multicast
- Know details related to Layer 2 and Layer 3 MPLS topologies
- Know how to configuring and monitoring the Junos operating system

Prerequisites

- Students should have basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) reference model and the TCP/IP protocol suite.

Contents

- Describe carrier Ethernet.
- Describe the Layer 2 services that are available on the MX Series Routers.
- Describe the function of an Ethernet LAN.
- Describe Ethernet frame filtering.
- Implement VLAN tagging.
- Describe and implement MVRP.
- Describe the usage of a routing instance.
- Describe the function of a virtual router.
- Describe the function of a virtual switch.
- Describe interconnecting routing instances.
- Describe the purpose of the Spanning Tree Protocol (STP).
- Configure and monitor the STP, the RSTP, the MSTP, and the VSTP.
- Describe the basic operation of connectivity fault management (CFM).
- Configure and monitor Ethernet OAM.
- Describe the basic operation of LAGs and MC-LAGs.
- Configure and monitor a LAG.
- Explain the operations of OSPF.
- Configure and monitor OSPF.

- Describe the various OSPF link-state advertisement (LSA) types and flooding
- Describe the shortest-path-first (SPF) algorithm.
- Describe and configure different OSPF area types and operations.
- List useful common commands to troubleshoot and verify OSPF.
- Isolate different OSPF issues.
- Summarize and restrict routes.
- Identify scenarios that require routing policy or specific configuration options.
- Describe basic BGP operation and common BGP attributes.
- Explain the route selection process for BGP.
- Configure basic and some advanced BGP options.
- Isolate different issues with BGP communication and configuration.
- Describe IP multicast traffic flow.
- Describe basic MPLS concepts.
- Configure and monitor MPLS - Layer 2 and Layer 3.
- Describe the benefits and use cases for EVPN.
- Configure and monitor EVPN.

3.13   (SSB8062AA) – DWDM transport system

Code for order: SSB8062AA

Training duration: 3,5 days

Description

This training course explains in detail each of the product's components used in the project, its implementation and its relationship to other components. Troubleshooting and configuration exercises are essential elements of the training to assure that the attendants gain a comprehensive understanding of the device's operation.

This training is aimed at the participants, who work on operational and administrational tasks on ADVA FSP3000 Optical transport system and need knowledge about DWDM system its operation, maintenance and Network Management Tasks.

Possible audience:

◆ Manager
◆ System/solution integrator

Competences:

◆ To achieve self-sufficiency at installation, configuration and maintenance of the FSP 3000 product and 100G Coherent Modules.
◆ To be familiar with basic Network Management tasks.

Prerequisites

◆ Training will be held on customer network presenting real case network configuration, installation and maintenance task with the use of Network Management system.

Contents

◆ Theory
  • System overview
  • Component overview
  • Optical system architectures
  • Management Concepts
  • DCN
  • Supported applications
◆ Practice
  • Setting up a system and its components
  • Using GUI & ADVA software
  • Database Backup & Restore
  • Software upgrade
  • Implementing DCN
  • Balancing DWDM Network
  • Performance Monitoring
  • Fiber Cleaning/Power Measuring
  • Troubleshooting
  • Network management basic tasks

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