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Deploying Eltex MES Switches (basic level) v.1

Course duration: 40 academic hours (5 days)

Target audience:

- System administrators;
- Technical and engineering service specialists;
- Maintenance and technical support engineers;
- Network software developers.

Pre-requisites:

- Knowledge of the OSI model and the role of protocols in data transmission;
- Understanding the fundamentals of switching and routing;
- Understanding the terms: switch, service router, IP address, MAC address, VLAN;
- Knowledge of the features of switch ports in Access and Trunk modes;
- Understanding the functioning of the hierarchical network model (access, distribution, core);
- Experience with the command line interface (CLI).

Learning outcomes:

After the completion of the course the participants will be able to:

- plan and implement Ethernet-based local networks;
- implement STP, DHCP, RADIUS, TACACS+, VRRP technologies and services;
- ensure redundancy at both L2 and L3 levels;
- ensure connectivity between local physical and virtual networks.

know:

- fundamentals of network technologies: OSI, TCP/IP models;
- fundamentals of Ethernet, 802.1x, RADIUS, TACACS+ protocols;
- fundamentals of IPv4 protocols;
- virtual local area networks VLAN and Trunk — encapsulation;
- basic principles of ensuring the security of network devices;
- principles of building redundant networks.

obtain:

- skills in managing network devices;
- skills in setting up medium-sized networks using telecommunications equipment.

Curriculum

"Deploying Eltex MES Switches (basic level) v.1"

Name	Description	Duration
Topic:	**1. MES switches and their application.**	**2 hours**
Description:	1.1. MES Switching Product Line. 1.2. Hierarchical enterprise network model. Deployment of MES switches at different layers of the hierarchical model.	2 hours
Lab:	—	

Name	Description	Duration
Topic:	**2. Initial Preparation of MES switches for operation.**	**4 hours**
Description:	2.1. Basic switch configuration. 2.2. Configuring device identity. 2.3. Configuring physical and logical interfaces. Setting up IP addressing. 2.4. User and password setup. User privilege setup. 2.5. Configuring AAA with RADIUS and TACACS. 2.6. Configuring remote access via SSH, Telnet. 2.7. Time coordination configuration (SNTP). 2.8. Software upgrade.	2 hours
Lab:	2.1. Basic switch settings. 2.2. Configuring AAA.	2 hours

Name	Description	Duration
Topic:	**3. VLAN configuration.**	**4 hours**
Description:	3.1. Basics of Virtual Local Area Networks (VLAN). 3.2. Access, Trunk, General, Customer port modes. 3.3. Selective QinQ. 3.4. SVI interfaces. Routing between VLANs.	2 hours
Lab:	3.1. Configuring VLANs and trunking.	2 hours

Name	Description	Duration
Topic:	**4. Broadcast domain Management at Layer 2.**	**4 hours**
Description:	4.1. STP and RSTP protocols. 4.2. Link aggregation. LACP protocol. 4.3. Storm Control and Loopback Detection. 4.4. Port Isolation.	2 hours
Lab:	4.1. Configuring and verifying the STP protocol. 4.2. Port-Channel using LACP.	2 hours

	Description	Duration
Topic:	**5. Configuring and optimizing DHCP.**	**4 hours**
Description:	5.1. Basics of DHCP. 5.2. DHCP Relay. 5.3. DHCP Snooping.	2 hours
Lab:	5.1. DHCP Snooping.	2 hours

Name	Description	Duration
Topic:	**6. Implementing Network Security at the Layer 2.**	**4 hours**
Description:	6.1. ARP Inspection. 6.2. IP Source Guard. 6.3. Access Control Lists.	2 hours
Lab:	6.1. IPSG, ARP Inspection. 6.2. Configuring ACLs.	2 hours

Name	Description	Duration
Topic:	**7. Scaling and redundancy.**	**4 hours**
Description:	7.1. Stacking 7.2. Multi-chassis LAG 7.3. VRRP	2 hours
Lab:	7.1. Configuring VRRP	2 hours

Name	Description	Duration
Topic:	**8. Monitoring and backup.**	**5 hours**
Description:	8.1. Configuring SNMP. 8.2. Configuring SysLog. 8.3. Backup and copy management.	2 hours
Lab:	8.1. Setting the backup function. 8.2. Configuring SNMP. 8.3. Configuring Syslog.	3 hours

Name	Description	Duration
Topic:	**9. Diagnostics.**	**5 hours**
Description:	9.1. Diagnostics at the physical layer. PoE. 9.2. Diagnostics at the Layer 2. Link Layer Discovery Protocol (LLDP). 9.3. Port mirroring.	2 hours
Lab:	9.1. Physical Layer Diagnostics Techniques 9.2. LLDP. 9.3. Port mirroring.	3 hours

Intermediate testing and final exam: 4 hours

One certification exam attempt is included into the cost of the course. The participant may use this attempt on the last day of the course. The exam is to be passed in a supervised environment.
If the participant does not pass the exam, the client may contact the commercial department for purchasing another attempt, which should be utilized within one calendar month from the date of course completion.