

# 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.

## Course 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).

## Upon 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.

### Have the knowledge of:

- 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.

### Acquire the following skills:

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

## Curriculum

### “Deploying Eltex MES Switches (basic level) v.1”

Activity	Description	Time
<b>Topic:</b>	<b>1. MES switches and their application.</b>	<b>2 hours</b>
<b>Description:</b>	1.1. MES Switching Product Line. 1.2. Hierarchical enterprise network model. Deployment of MES switches	2 hours



	at different layers of the hierarchical model.	
<b>Lab:</b>	—	

Activity	Description	Time
<b>Topic:</b>	<b>2. Initial Preparation of MES switches for operation.</b>	<b>4 hours</b>
<b>Description:</b>	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
<b>Lab:</b>	2.1. Basic switch settings. 2.2. Configuring AAA.	2 hours

Activity	Description	Time
<b>Topic:</b>	<b>3. VLAN configuration.</b>	<b>4 hours</b>
<b>Description:</b>	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
<b>Lab:</b>	3.1. Configuring VLANs and trunking.	2 hours

Activity	Description	Time
<b>Topic:</b>	<b>4. Broadcast domain Management at Layer 2.</b>	<b>4 hours</b>
<b>Description:</b>	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
<b>Lab:</b>	4.1. Configuring and verifying the STP protocol. 4.2. Port-Channel using LACP.	2 hours





Activity	Description	Time
<b>Topic:</b>	<b>5. Configuring and optimizing DHCP.</b>	<b>4 hours</b>
<b>Description:</b>	5.1. Basics of DHCP. 5.2. DHCP Relay. 5.3. DHCP Snooping.	2 hours
<b>Lab:</b>	5.1. DHCP Snooping.	2 hours

Activity	Description	Time
<b>Topic:</b>	<b>6. Implementing Network Security at the Layer 2.</b>	<b>4 hours</b>
<b>Description:</b>	6.1. ARP Inspection. 6.2. IP Source Guard. 6.3. Access Control Lists.	2 hours
<b>Lab:</b>	6.1. IPSG, ARP Inspection. 6.2. Configuring ACLs.	2 hours

Activity	Description	Time
<b>Topic:</b>	<b>7. Scaling and redundancy.</b>	<b>4 hours</b>
<b>Description:</b>	7.1. Stacking 7.2. Multi-chassis LAG 7.3. VRRP	2 hours
<b>Lab:</b>	7.1. Configuring VRRP	2 hours

Activity	Description	Time
<b>Topic:</b>	<b>8. Monitoring and backup.</b>	<b>5 hours</b>
<b>Description:</b>	8.1. Configuring SNMP. 8.2. Configuring SysLog. 8.3. Backup and copy management.	2 hours
<b>Lab:</b>	8.1. Setting the backup function. 8.2. Configuring SNMP. 8.3. Configuring Syslog.	3 hours

Activity	Description	Time
<b>Topic:</b>	<b>9. Diagnostics.</b>	<b>5 hours</b>
<b>Description:</b>	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



<b>Lab:</b>	9.1. Physical Layer Diagnostics Techniques 9.2. LLDP. 9.3. Port mirroring.	3 hours
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**Intermediate testing and final exam: 4 hours**

One free-of-charge attempt of certification test is provided within the frameworks of this course. The participant may use this attempt on the last day of the course.

In case the test attempt is unsuccessful, the participant may contact the Commercial Department for purchasing the additional attempt.

The participant may use the paid attempt within one calendar month starting from the data of course completion.