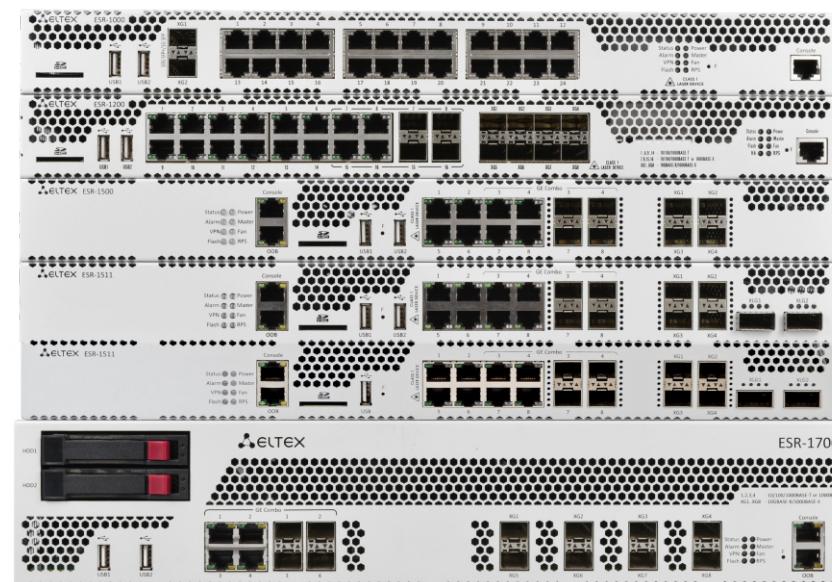


- Data routing
- Flexible service configuration
- Hardware acceleration of data processing
- Multiprotocol Label Switching (MPLS)
- Building a secure network (NAT, Firewall)
- Intrusion Detection and Prevention System (IDS/IPS)
- Service Level Agreement (SLA)
- Filtering of network data by various criteria (including filtering by applications)
- Organization of secure network tunnels between company branches
- Remote connection of employees to an office
- Internet channel management and bandwidth allocation within an office using QoS
- Organization of backup connection (wired or via 3G/LTE modem)
- Subscriber termination and bandwidth limitation BRAS (IPoE)
- Pairing with equipment from leading vendors



ESR series service routers are universal hardware platform capable of performing a wide range of tasks related to network security, data encryption, subscriber termination, etc. The product line includes models that can be used in networks of various sizes: from small enterprise networks to carrier networks and data centers.

The key elements of the series are software and hardware-accelerated data processing. Optimal distribution of data processing functions among the device parts maximizes performance.

Technical features

	ESR-1000	ESR-1200	ESR-1500	ESR-1511	ESR-1511 rev.B	ESR-1700
Interfaces						
Combo 10/100/1000BASE-T/1000BASE-X (SFP)	—	4	4	4	4	4
Ethernet 10/100/1000BASE-T (RJ-45)	24	12	4	4	—	—
10GBASE-R (SFP+)/1000BASE-X (SFP)	2	8	4	4	8	—
40GBASE-X (QSFP+)	—	—	—	2	—	—
Console port RS-232 (RJ-45)	1	1	1	1	1	1
OOB	—	—	1	1	1	1
USB 2.0	2	2	2	2	1	2
HDD slot	—	—	—	—	2 ¹	—
SD card slot	1	1	1	1	—	—

For firmware version 1.28.

¹ Will be supported in further versions.

Technical features (continued)

	ESR-1000	ESR-1200	ESR-1500	ESR-1511	ESR-1511 rev.B	ESR-1700
Performance						
Firewall/routing (1518B frames)	7.2 Gbps; 601.1k pps	9.5 Gbps; 789.6k pps	14.9 Gbps; 1228k pps	14.8 Gbps; 1218.3k pps	39.1 Gbps; 3217.5k pps	
Firewall/routing (IMIX) ¹	3.3 Gbps; 600.5k pps	4.3 Gbps; 788.7k pps	6.7 Gbps; 1225.6k pps	6.8 Gbps; 1230.4k pps	23.9 Gbps; 4338.4k pps	
IPsec VPN (1456B frames)*	2 Gbps; 176.2k pps	2.4 Gbps; 209.5k pps	4 Gbps; 344.8k pps	1.5 Gbps; 131.6k pps	12.8 Gbps; 1098.6k pps	
IPsec (IMIX) ^{2*}	1.1 Gbps; 213k pps	1.4 Gbps; 264.8k pps	2.2 Gbps; 414.8k pps	1.2 Gbps; 220.1k pps	7 Gbps; 1308.1k pps	
1 IPsec tunnel (1456B frames)*	285.4 Mbps; 24.4k pps	331.7 Mbps; 28.4k pps	266.7 Mbps; 23k pps	122.7 Mbps; 10.5k pps	393.7 Mbps; 33.8k pps	
1 IPsec tunnel (IMIX)*	150.3 Mbps; 28k pps	176.9 Mbps; 33.1k pps	142.5 Mbps; 26.8k pps	85.6 Mbps; 15.9k pps	204.3 Mbps; 38.2k pps	
IPS/IDS 10k rules	610.7 Mbps; 110.7k pps	762 Mbps; 138.2k pps	1.1 Gbps; 212.6k pps	1.2 Gbps; 215.3k pps	3.3 Gbps; 664.5k pps	
MPLS L2VPN switching (IMIX)	–	–	–	–	–	20.6 Gbps; 3764.6k pps
MPLS L3VPN switching (IMIX)	–	–	–	–	–	17.8 Gbps; 3250.1k pps

For firmware version 1.28.

¹ Traffic format (number per second : size of each frame) - 8:74; 5:512; 7:1518.

² Traffic format (number per second : size of each frame) - 8:74; 5:512; 7:1456.

*Measured using the authentication algorithm MD5 and the encryption algorithm AES128.

Technical features (continued)

	ESR-1000	ESR-1200	ESR-1500	ESR-1511 (rev.B)	ESR-1700
Number of CPU by role					
Control CPU	0			0	CPU-1 – 0–1 CPU-2 – 0–3
Balancing CPU	4			4–5	CPU-1 – – CPU-2 – 4–11
Service CPU	1–3, 5–15			1–3, 6–31	CPU-1 – – CPU-2 – 12–79
Switching					
Interfaces				bridge – 500 sub – 2048 QinQ – 2048	
LLDP				interfaces port policies – 8 network policies – 64	
MAC table	16k	128k	128k	128k	128k
Label switching					
MPLS				LDP neighbors – 1024 pseudowires – 1024 pseudowire classes – 64 Ethernet over MPLS – 256	
System features					
Static routes				11k	
Maximum number of competitive sessions	3.13M	3.13M	2.43M	8.5M	8.5M
VLAN	up to 4094 active VLANs in accordance with 802.1Q				
FIB size	1.7M	1.7M	1.7M	1.7M	3M
VRF				32	
PBR				instances – 50 rules for all instances – 512	

For firmware version 1.28.

Technical features (continued)

	ESR-1000	ESR-1200	ESR-1500	ESR-1511 (rev.B)	ESR-1700
Object-groups					
Object-group network	instances – 500 ip prefixes in group – 1024 ip ranges in group – 1024			instances – 1024 ip prefixes in group – 1024 ip ranges in group – 1024	
Object-group address:port				instances – 500 address:port in group – 64	
Object-group service				instances – 500 ports ranges in group – 64	
Object-group application				instances – 50 apps in group – 128	
Object-group content filter				instances – 64 categories per vendor – 500	
Object-group URL				instances – 31 plain URL in group – 32 regex URL in group – 32	
Object-group MAC				instances – 500 macs in group – 64	

Technical features (continued)

	ESR-1000	ESR-1200	ESR-1500	ESR-1511 (rev.B)	ESR-1700
Routing					
BGP		instances – 64 networks in instance – 128 neighbors – 1k RIB – 5M			instances – 64 networks in instance – 512 neighbors – 1k RIB – 5M
OSPFv3		instance, neighbors in interface – 64 summaries in instance – 128 areas – 256 networks in area – 64 virtual links – 1024 RIB – 500k			instance, neighbors in interface – 64 summaries in instance – 128 areas – 256 networks in area – 64 virtual links – 1024 RIB – 500k
IS-IS		instances, circuits – 64 RIB – 500k			
RIP(ng)		neighbors – 16 summaries – 8 networks – 128 RIB – 10k			
QoS					
QoS limitations		class-maps – 1024 policy-maps – 1024 classes in policy-map – 3072			
Tunneling					
VPN tunnels	IPIP – 500 GRE – 500 Ethernet over GRE – 500 GRE SUB – 500 SoftGRE – 1500 L2TPv3 – 500 LT – 128 IPsec VTI – 500		IPIP – 500 GRE – 500 Ethernet over GRE – 500 GRE SUB – 500 SoftGRE – 8161 L2TPv3 – 500 LT – 128 IPsec VTI – 500		IPIP – 500 GRE – 3200 Ethernet over GRE – 500 GRE SUB – 500 SoftGRE – 8169 L2TPv3 – 500 LT – 128 IPsec VTI – 500
IPsec VPN tunnels		256			3200

Technical features (continued)

	ESR-1000	ESR-1200	ESR-1500	ESR-1511 (rev.B)	ESR-1700
Remote access					
Remote Access			L2TP tunnels (client) – 10 PPTP tunnels (client) – 10 OpenVPN tunnels (client) – 10 OpenVPN remote addresses per tunnel – 8		
WireGuard tunnel, RA			instance – 16 peers per instance 128 local addresses – 1 addresses per peer (address-range & obj-group) – 10k	instance – 16 peers per instance – 256 local addresses – 1 addresses per peer (address-range & obj-group) – 10k	
Services					
Source NAT			ruleset – 512 rules in ruleset – 512 pool – 512	ruleset – 1024 rules in ruleset – 1024 pool – 1024	
Destination NAT			ruleset – 512 rules in ruleset – 512 pool – 512	ruleset – 1024 rules in ruleset – 1024 pool – 1024	
DHCP Server			pools – 100 pool size – 10k static address in pool – 128	pools – 100 pool size – 10k static address in pool – 128	
Security					
ACL			instances – 1533 rules – 1533		
Firewall			zone – 128 zone-pair – 512 rules – 10k		
IPS			user update servers – 32 ips-categories – 20 rules – 500		
IKE (v1/v2), IPsec (esp/ah)					
Authentication	md5, sha1, sha2-256, sha2-384, sha2-512				
Encryption	des, blowfish128, aes128, camellia128, aes128ctr (IKEv2 only), blowfish192, aes192, camellia192, 3des, aes192ctr (IKEv2 only), blowfish256, aes256, camellia256, aes256ctr (IKEv2 only)				
Diffie Hellman	Regular Groups: 1, 2, 5, 14-18. Modulo Prime Groups with Prime Order Subgroup: 22-24. NIST Elliptic Curve Groups: 19-21, 25-26. Brainpool Elliptic Curve Groups: 27-30. Elliptic Curve 25519: 31				

For firmware version 1.28.

Physical parameters

	ESR-1000	ESR-1200	ESR-1500	ESR-1511 (rev.B)	ESR-1700
Physical specifications and environmental parameters					
RAM	4 GB DDR3	4 GB DDR3	4 GB DDR3	8 GB DDR3	32 GB DDR3
Flash	1 GB NAND-Flash	1 GB NAND-Flash	1 GB NAND-Flash	1 GB NAND-Flash	1 GB NAND-Flash
Maximum power consumption	75 W	85 W	125 W	128 W	250 W
Power supply	100–240 V AC, 50–60 Hz; 36–72 V DC up to two hot-swappable power modules				176–264 V AC, 50–60 Hz; 36–72 V DC up to two hot-swappable power modules
Operating temperature	from -10 to +45 °C				
Storage temperature	from -40 to +70 °C				
Operating humidity	no more than 80 %				
Storage humidity	from 10 to 95 %				
Dimensions (W × H × D)	430 × 44 × 352 mm	430 × 44 × 352 mm	430 × 44 × 425 mm	430 × 44 × 425 mm	440 × 88 × 490 mm
Weight	3.6 kg	5.5 kg	7 kg	7 kg	12 kg
Lifetime	no less than 15 years				

Features and capabilities

Switching

- Up to 4094 VLAN (802.1Q)
- Voice-VLAN
- Q-in-Q (802.1ad)
- MAC-based VLAN
- Bridge domain
- LAG/LACP (802.3ad)
- STP protocols: RSTP, VSTP, MSTP (ESR-1000 only)
- Port-security, protected port
- Jumbo frames
- SPAN/RSPAN mirroring

MPLS

- LDP
- L2VPN VPWS
- L2VPN VPLS Martini Mode, Kompella Mode
- L3VPN MP-BGP (Option A, B, C)
- L2VPN/L3VPN over GRE, DMVPN
- Transparent transmission of service protocols

Routing

BGP:

- IPv4, IPv6, VPNv4, L2VPN, IPv4 label-unicast, Flow-spec
- Support for Conditional Advertisement, Route Aggregation and Local-AS mechanisms
- Support for peer-group, dynamic neighbor, as-range and Route-reflector
- Fall over based on BFD protocol and Fast Error Peer Detection
- Graceful restart
- Authentication
- Flexible redistribution from/to BGP process of other protocol routes
- Running up to 64 processes simultaneously
- ECMP
- Support for policy-based routing

OSPF(v3):

- Normal, Stub, Totally stub, NSSA, Totally NSS
- Broadcast, NBMA, Point-to-point, Point-to-multipoint, Point-to-multipoint non-broadcast
- Summarizing and filtering of route information
- Authentication
- ECMP
- Passive interface
- Flexible redistribution from/to OSPF process of other protocol routes
- Running up to 64 processes simultaneously
- Support for BFD protocol
- Auto cost calculation
- Support for policy-based routing

IS-IS:

- Broadcast, Point-to-point
- Setting the L1-/L2-levels neighboring
- Metric style: narrow, wide, transition
- Authentication
- Routing information filtering
- Flexible redistribution from/to the IS-IS process of other protocol routes
- Running up to 64 processes simultaneously
- Support for policy-based routing

RIP(ng):

- Broadcast, Multicast, Unicast modes (RIP only)
- Summarizing and filtering of route information
- Route metrics management
- Authentication
- Passive interface
- Flexible redistribution from/to the RIP process of other protocol routes
- Support for policy-based routing

Static:

- Support for BFD protocol
- Recursive search
- Route metrics management
- Selecting the option to notify the sender when traffic is blocked

Quality of Service (QoS)

- Up to 8 priority or weighted queues per port
- L2 and L3 traffic prioritization (802.1p (CoS), DSCP, IP Precedence (ToS))
- Hierarchical QoS
- Management of RED, GRED, SFQ, CBQ, WFQ, WRR queues
- Inlet and outlet labeling
- Policing, shaping

Features and capabilities (continued)

IPsec

- Policy-based and route-based modes
- Tunnel and transport modes
- Pre-shared key, public key, xauth (ikev1 only), eap (ikev2)
- Support for mobike (ikev2 only)
- Support for ike ikering authentication key sets

Remote Access

- Remote access to the corporate network via PPTP, L2TP over IPsec, OpenVPN, WireGuard
- Support for PPPoE-/PPTP-/L2TP client
- User authentication
- Connection encryption

Security

- ACL based on L2-/L3-/ L4 fields
- Zone-based Firewall in stateful and stateless modes. Rule triggering logging, counters
- Filtering by applications
- Protection against DoS/DDoS/Spoof attacks and their logging
- Intrusion detection and prevention system (IDS/IPS) and its logging¹
- Signature analysis via IPS in transit and mirrored traffic analysis modes¹
- Interaction with Eltex Distribution Manager to obtain licensed content - rule sets provided by Kaspersky SafeStream II²

Management and monitoring

- Support for standard and extended SNMP MIB, RMONv1
- Zabbix agent/proxy

- User authentication using local database via RADIUS, TACACS+, LDAP
- Protection against configuration errors, automatic configuration recovery
- CLI
- Syslog
- System resource usage monitoring
- Ping, monitor, traceroute (IPv4/IPv6), output packet information in console
- Firmware upgrade, configuration upload and download via TFTP, SCP, FTP, SFTP, HTTP(S)
- Support for NTP
- Netflow v5/v9/v10 (exporting of URL statistics for HTTP, host for HTTPS)
- Remote management, Telnet, SSH (IPv4/IPv6)
- LLDP, LLDP MED
- Local and remote saving of router configurations

SLA

- SLA-responder for Cisco-SLA-agent
- Eltex SLA:
 - Delay (one-way/double-way)
 - Jitter (forward/backward)
 - Packet loss (forward/backward/duplex)
 - Duplicate packet detection
 - Packet delivery sequence violation detection (forward/backward/duplex)

Backup and clustering

- VRRP v2, v3
- Tracking based on VRRP or SLA test
- VRRP parameter management
- PBR parameter management
- Administrative interface status management

- Static route activation and deactivation
- Managing AS-PATH and preference attribute in route-map
- DHCP failover for IP addresses base backup issued by the DHCP server
- Firewall failover for Firewall and NAT session backup
- MultiWAN
- Dual-Homing

Fault-tolerant cluster:

- Easy administration and integration: synchronization of configurations, time, versions, licenses; Zero Touch Provisioning (ZTP)
- Backup all connections in the cluster
- Router backup ("1+1" backup is supported in the current version)

For firmware version 1.28.

¹ Activated by a license.

² Rule sets are provided by subscription. The minimum subscription period is 1 year.

³ For ESR-1500/1511/1700.

Features and capabilities (continued)

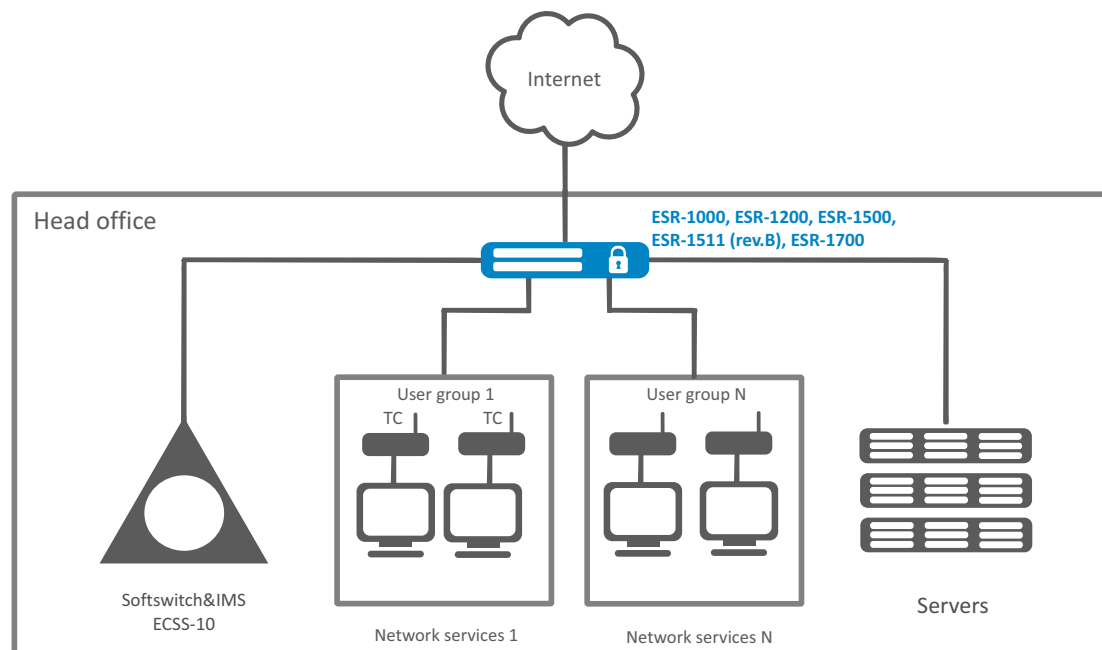
Services

- DHCP client, service
- DHCP Relay Option 82
- DNS resolver
- NTP
- TFTP server
- E1/multilink, modems

BRAS¹

- User termination
- URL whitelists/blacklists
- Quoting by traffic volume, by session time, by network applications
- HTTP/HTTPS Proxy
- HTTP/HTTPS Redirect
- Netflow
- AAA, PCRF
- Bandwidth management by office, SSID and user sessions
- User authentication by MAC or IP address

Use case



For firmware version 1.28.

¹ Activated by a license.

Ordering information

Name	Description
ESR-1000	ESR-1000 service router, 24 × 10/100/1000BASE-T, 2 × 10GBASE-R SFP+, 1 × Console RS-232 (RJ-45), 2 × USB 2.0, 1 × SD card slot, 4 GB DDR3 RAM, 1 GB NAND-Flash, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-1200	ESR-1200 service router, 4 × Combo10/100/1000BASE-T/1000BASE-X, 8 × 10GBASE-R SFP+, 12 × 10/100/1000BASE-T, 1 × Console RS-232 (RJ-45), 2 × USB 2.0, 1 × SD card slot, 4 GB DDR3 RAM, 1 GB NAND-Flash, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-1500	ESR-1500 service router, 4 × 10/100/1000BASE-T, 4 × Combo 10/100/1000BASE-T/1000BASE-X, 4 × 10GBASE-R SFP+, 1 × Console RS-232 (RJ-45), 1 × OOB, 4 GB DDR3 RAM, 1 GB NAND-Flash, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-1511	ESR-1511 service router, 4 × 10/100/1000BASE-T, 4 × Combo 10/100/1000BASE-T/1000BASE-X, 4 × 10GBASE-R SFP+, 2 × 40GBASE-X QSFP+, 1 × Console RS-232 (RJ-45), 2 × USB 2.0, 1 × OOB, 8 GB DDR3 RAM, 1 GB NAND-Flash, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-1511 rev.B	ESR-1511 rev.B service router, 4 × 10/100/1000BASE-T, 4 × Combo 10/100/1000BASE-T/1000BASE-X, 4 × 10GBASE-R SFP+, 2 × 40GBASE-X QSFP+, 1 × Console RS-232 (RJ-45), 1 × USB 2.0, 1 × OOB, 8 GB DDR3 RAM, 1 GB NAND-Flash, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-1700	ESR-1700 service router, 4 × Combo 10/100/1000BASE-T/1000BASE-X, 8 × 10GBASE-R SFP+, 1 × Console RS-232 (RJ-45), 1 × OOB, 32 GB DDR3 RAM, 1 GB NAND-Flash, 2 HDD slots ¹ , 2 slots for power modules 176–264 V AC or 36–72 V DC.

Related software

ESR-1000	ECCM-ESR-1000 option of Eltex ECCM management system for management and monitoring of Eltex network element: ESR-1000
ESR-1200	ECCM-ESR-1200 option of Eltex ECCM management system for management and monitoring of Eltex network element: ESR-1200
ESR-1500	ECCM-ESR-1500 option of Eltex ECCM management system for management and monitoring of Eltex network element: ESR-1500
ESR-1511 (rev.B)	ECCM-ESR-1511 (rev.B) option of Eltex ECCM management system for management and monitoring of Eltex network element: ESR-1511 (rev.B)
ESR-1700	ECCM-ESR-1700 option of Eltex ECCM management system for management and monitoring of Eltex network element: ESR-1700

Power modules²

Device	AC power module	DC power module
ESR-1000	PM160-220/12	PM100-48/12
ESR-1200	PM160-220/12	PM100-48/12
ESR-1500	PM160-220/12	PM160-48/12
ESR-1511 (rev.B)	PM160-220/12	PM160-48/12
ESR-1700	PM350-220/12	PM350-48/12

¹ Will be supported in further versions.

² Ordered separately.

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About Eltex



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Eltex Enterprise is a leading Russian developer and manufacturer of communication equipment with 30 years of history. Complete solutions and their seamless integrability into the Customer's infrastructure are the priority growth areas of the company.