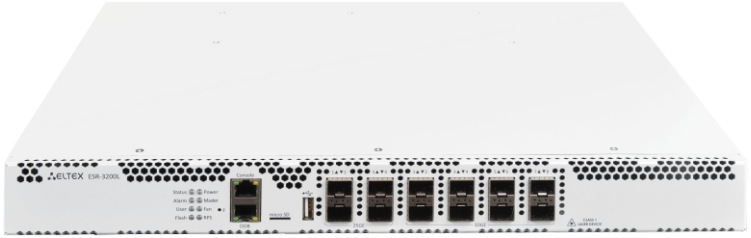
– Data routing
– Flexible service configuration
– Hardware acceleration of data processing
– Multi-protocol Label Switching (MPLS)
– Construction of secure network perimeter (NAT, Firewall)
– Intrusion prevention and detection (IPS/IDS)
– Service quality monitoring (SLA)
– Filtering of network data by various criteria (including filtering by applications)
– Organization of secure network tunnels between different offices of a company
– Remote connection of staff members to office
– Management and distribution of Internet channel width within an office by using QoS
– Organization of redundant connection (by means of wires or 3G/LTE modem)
– Subscriber termination and bandwidth limiting — BRAS (IPoE)
– Possibility to operate with the equipment of leading manufacturers

ESR-3100

ESR-3200



ESR-3200L

ESR-3300

The **ESR-3100, ESR-3200, ESR-3200L, ESR-3300** service routers are universal hardware platforms 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 enterprise networks to service provider networks and data centers.

The key features of ESR service routers are data processing hardware acceleration means that ensure a high level of performance. Hardware and software processing is distributed among the units of the device.

Technical features

	ESR-3100	ESR-3200	ESR-3200L	ESR-3300
	Interfaces			
Ethernet 10/100/1000BASE-T (LAN/WAN)	8	—	—	—
1000BASE-X/10GBASE-R/25GBASE-R (LAN/WAN)	—	12	4	4
10GBASE-R SFP+/1000BASE-X SFP (LAN/WAN)	8	—	8	—
40GBASE-R QSFP+/100GBASE-R QSFP28	—	—	—	4
Console RS-232 (RJ-45)	1	1	1	1
OOB	—	1	1	1
USB 2.0	—	1	1	—
USB 3.0	2	—	—	1
SD card slot	1	—	—	—
microSD card slot	—	1	1	1

Functionality for firmware version 1.23.

Technical features

	ESR-3100	ESR-3200	ESR-3200L	ESR-3300
	Performance			
Firewall/routing (1518B frames)	25.2 Gbps; 2074.1k pps	44.2 Gbps; 3637.1k pps	18.2 Gbps; 1495.1k pps	67.1 Gbps; 5526.7k pps
Firewall/routing (IMIX)[1]	10.5 Gbps; 1900.9k pps	19.7 Gbps; 3570.8k pps	8.4 Gbps; 1520k pps	30.2 Gbps; 5484k pps
IPsec VPN (1456B frames)	4.3 Gbps; 368.4k pps	2.1 Gbps; 183.8k pps	1.1 Gbps; 127k pps	3.6 Gbps; 305k pps
IPsec (IMIX)	2.2 Gbps; 409.3k pps	1.1 Gbps; 207.4k pps	779.2 Mbps; 145.5k pps	1.8 Gbps; 344.8k pps
IPsec tunnel (1456B frames)	282 Mbps; 24.2k pps	325.4 Mbps; 27.9k pps	320.7 Mbps; 27.5k pps	353.9 Mbps; 30.4k pps
IPsec tunnel (IMIX)[2]	148 Mbps; 27.7k pps	171.4 Mbps; 32k pps	169.6 Mbps; 31.7k pps	187.2 Mbps; 35.1k pps
IPS/IDS 10k rules	1.15 Gbps; 237.9k pps	1.4 Gbps; 259.6k pps	729 Mbps; 135.6k pps	2.6 Gbps; 477.8k pps
MPLS L2VPN switching (IMIX)	1.5 Gbps; 267.6k pps	1.4 Gbps; 263.9k pps	1.4 Gbps; 267.6k pps	1.6 Gbps; 286.5k pps
MPLS L3VPN switching (IMIX)	668 Mbps; 122.2k pps	916.3 Mbps; 168.3k pps	915.9 Mbps; 167.1k pps	1 Gbps; 184.5k pps

Functionality for firmware version 1.23.
[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.

Technical features (continued)

	ESR-3100	ESR-3200	ESR-3200L	ESR-3300
Number of CPUs by role				
Management CPU	0			
Balancing CPU	15–17	–	–	–
Service CPU	2–14, 18–23	1–23	1–11	1–35
Switching				
Interfaces	bridge – 500 sub – 2048 QinQ – 2048			
LLDP	interfaces port policies – 8 network policies – 64			
Label switching				
MPLS	LDP neighbors – 1024 pseudowires – 1024 pseudowire classes – 64 Ethernet over MPLS – 256			
System features				
Static routes	11k			
Maximum number of concurrent sessions	8.5M			
VLAN support	up to 4094 active VLANs in accordance with 802.1Q			
FIB base size	1.7M			
VRF	32			
PBR	instances – 50 rules for all instances – 512			

Functionality for firmware version 1.23.

Technical features (continued)

	ESR-3100	ESR-3200	ESR-3200L	ESR-3300
	Object-groups			
Object-group network	instances – 500 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			

Functionality for firmware version 1.23.

Technical features (continued)

	ESR-3100	ESR-3200	ESR-3200L	ESR-3300
Routing				
BGP	instances – 64 networks in instance – 128 neighbors – 1k RIB – 5M			
OSFPv3	instance, neigbors 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			
Quality of Service (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 – 4000 L2TPv3 – 500 LT – 128 IPsec VTI – 500			
IPsec VPN tunnels	256			

Functionality for firmware version 1.23.

Technical features (continued)

	ESR-3100	ESR-3200	ESR-3200L	ESR-3300
Remote access				
Remote Access	L2TP concurrent connections – 10 PPTP concurrent connections – 10 OpenVPN concurrent connections – 10 OpenVPN remote addresses per connection – 8			
WireGuard tunnel, RA	instance – 16 peers per instance 16 local addresses – 1 addresses per peer (address-range & obj-group) – 10k			
Services				
Source NAT	ruleset – 100 rules in ruleset – 100 pool – 100			
Destination NAT	ruleset – 100 rules in ruleset – 100 pool – 100			
DHCP Server	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) encryption algorithms				
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			

Functionality for firmware version 1.23.

Physical specifications

	ESR-3100	ESR-3200	ESR-3200L	ESR-3300
	Physical specifications and environmental parameters			
RAM	16 GB DDR4	24 GB DDR4	16 GB DDR4	48 GB DDR4
Flash memory	4 GB eMMC	8 GB eMMC	8 GB eMMC	8 GB eMMC
Maximum power consumption	123 W	118 W	105.3 W	177 W
Power supply	100–240 V AC, 50–60 Hz; 36–72 V DC up to two hot-swappable 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 × 330 mm	430 × 44 × 330 mm	430 × 44 × 330 mm	430 × 44 × 425 mm
Weight	4.34 kg	5 kg	5 kg	6 kg
Lifetime	no more than 15 years			

Functionality for firmware version 1.23.

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)
– Port-security, protected port
– Jumbo frames

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

Routing
BGP:
– Address family: IPv4, IPv6, VPNv4, L2VPN, IPv4 label-unicast, Flow-spec
– Flexible management of route information by attributes. Support for Conditional Advertisement, Route Aggregation and Local-AS mechanisms
– Scalability and configuration flexibility: support for peer-group, dynamic neighbor, as-range, Route-reflector
– Fall over based on BFD and Fast Error Peer Detection
– Graceful restart
– Authentication
– Flexible redistribution from/to BGP process of other protocol routes
– Ability to run up to 64 processes simultaneously
– ECMP
– Support for policy-based routing

OSFP(v3):
– Different types of zones: Normal, Stub, Totally stub, NSSA, Totally NSS
– Operation in different types of networks: Broadcast, NBMA, Point-to-point, Point-to-multipoint, Point-to-multipoint non-broadcast
– Summarization and filtering of route information
– Authentication
– ECMP
– Passive interface
– Flexible redistribution from/to OSPF process of other protocol routes
– Ability to run up to 64 processes simultaneously
– Support for BFD
– Auto cost calculation mechanism
– Support for policy-based routing

IS-IS:
– Operation in different types of networks: Broadcast, Point-to-point
– Setting the neighbourhood of L1/L2 layers
– Metric style: narrow, wide, transition
– Authentication
– Filtering of route information
– Flexible redistribution from/to IS-IS process of other protocol routes
– Ability to run up to 64 processes simultaneously
– Support for policy-based routing

RIP(ng):
– Operation modes (RIP only): Broadcast, Multicast, Unicast
– Summarization and filtering of route information
– Managing route metrics
– Authentication
– Passive interface
– Flexible redistribution from/to RIP process of other protocol routes
– Support for policy-based routing

Static:
– Support for BFD
– Recursive search
– Managing route metrics
– Ability to select the option of notifying 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
– Queue management: RED, GRED, SFQ, CBQ, WFQ, WRR
– Session labeling
– Bandwidth management (policing, shaping)

IPsec
– «Policy-based» and «route-based» modes
– Incapsulation modes: tunnel and transport
– Authentication pre-shared key, public key, xauth (ikev1 only), eap (ikev2)
– Support for mobike (ikev2 only)
– Support for ike ikering

Remote Access
– PPTP, L2TP over IPsec, OpenVPN, WireGuard
– PPPoE-/PPTP-/L2TP client
– User authentication
– Connection encryption

Functionality for firmware version 1.23.

Features and capabilities (continued)

Security
– Access Control Lists (ACL) based on L2-/L3-/L4 fields
– Zone-based Firewall in two modes: stateful and stateless. Rule triggering logging, counters
– Filtering by applications
– Protection against DoS-/DDoS-/Spoof attacks and their logging
– Intrusion detection and prevention systems (IPS/IDS) and their logging[2]
– Signature analysis via IPS in two modes: transit and mirrored traffic analysis[2]
– Interaction with Eltex Distribution Manager to obtain licensed content — rule sets provided by Kaspersky SafeStream II[3]

Monitoring and management
– Support for standard and extended SNMP MIB, RMONv1
– Zabbix agent/proxy
– Authentication methods: RADIUS, TACACS+, LDAP
– Protection against configuration methods, automatic configuration recovery
– CLI, Syslog
– System resource usage monitoring
– Ping, monitor, traceroute (IPv4/IPv6), packet information in the console output
– 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)
– Local control via RS-232 (RJ-45) and OOB[1]
– Remote control via Telnet and SSH (IPv4/IPv6)
– LLDP, LLDP MED
– Local/remote router configuration storage

SLA
– SLA-responder for Cisco-SLA-agent
– Eltex SLA:
  – Delay (one-way/two-way)
  – Jitter (one-way/two-way)
  – Packet loss (one-way/backward/two-way)
  – Packet Error Rate
  – Out-of-order delivery (one-way/backward/two-way)

Redundancy and clustering
– VRRP v2, v3
– Tracking based on VRRP or SLA test
– Managing VRRP parameters
– Managing PBR parameters
– Managing the administrative status of the interface
– Activating and deactivating a static route
– Managing AS-PATH and preference attributes in a route-map
– DHCP failover to reserve the IP address database issued by the DCHP server
– Failover Firewall to reserve Firewall and NAT sessions
– MultiWAN
– Dual-Homing

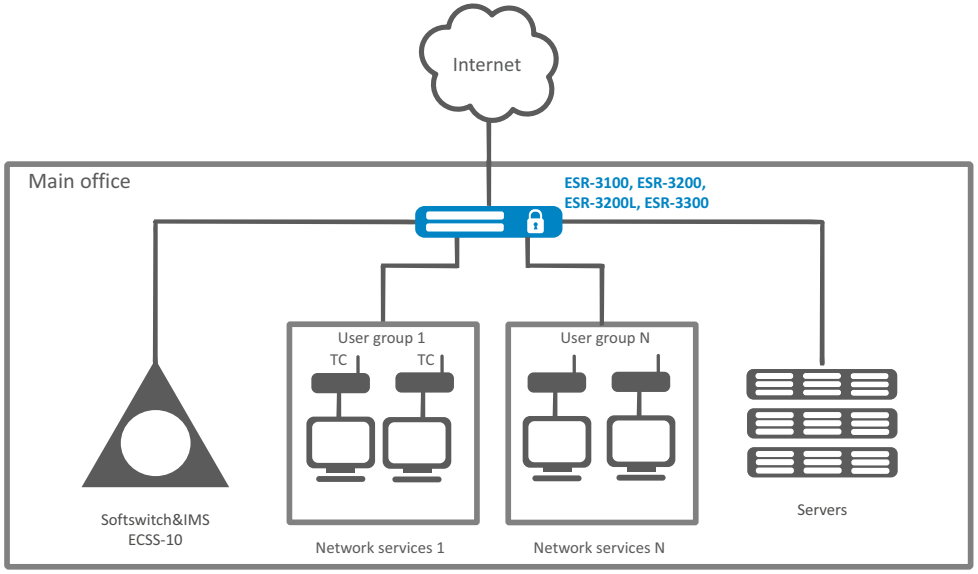
High availability cluster:
– Easy administration and integration: syncronization of configurations, time, versions, licences; Zero Touch Provisioning (ZTP)
– Redundancy of all connections in the cluster
– Router redundancy (the current version supports «1 + 1» redundancy)

Services
– DHCP client, DHCP server
– DHCP Relay Option 82
– DNS resolver
– NTP
– TFTP server
– E1/multilink, modems

BRAS[2]
– Subscriber termination
– White/black URL lists
– Quotas for traffic volume, session time, network applications
– HTTP/HTTPS Proxy
– HTTP/HTTPS Redirect
– Session accounting via Netflow protocol
– Interaction with AAA, PCRF servers
– Bandwidth management by offices, SSIDs and user sessions
– User authentication by MAC or IP address

Functionality for firmware version 1.23.
[1]Applicable for ESR-3200/3200L/3300.
[2]Available under license.
[3]Rule sets are available by subscription. The minimum subscription period is 1 year.

Use case



Ordering information

Name	Description
ESR-3100	ESR-3100 service router, 8 × 10/100/1000BASE-T, 8 × 10GBASE-R SFP+, 1 × Console RS-232 (RJ-45), 2 × USB 3.0, 1 × SD card slot, 16 GB DDR4 RAM, 4 GB eMMC, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-3200	ESR-3200 service router, 12 × Ethernet 1000BASE-X/10GBASE-R/25GBASE-R, 1 × Console RS-232 (RJ-45), 1 × OOB, 1 × USB 2.0, 1 × microSD card slot, 24 GB DDR4 RAM, 8 GB eMMC, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-3200L	ESR-3200L service router, 4 × Ethernet 1000BASE-X/10GBASE-R/25GBASE-R, 8 × 10GBASE-R SFP+/1000BASE-X SFP, 1 × Console RS-232 (RJ-45), 1 × OOB, 1 × USB 2.0, 1 × microSD card slot, 16 GB DDR4 RAM, 8 GB eMMC, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-3300	ESR-3300 service router, 4 × Ethernet 1000BASE-X/10GBASE-R/25GBASE-R, 4 × 40GBASE-R (QSFP+)/100GBASE-R (QSFP28), 1 × Console RS-232 (RJ-45), 1 × OOB, 1 × USB 3.0, 1 × microSD card, 48 GB DDR4 RAM, 8 GB eMMC, 2 slots for power modules 100–240 V AC or 36–72 V DC.

Power modules[1]

Device	AC power module	DC power module
ESR-3100	PM160-220/12	PM160-48/12
ESR-3200	PM160-220/12	PM160-48/12
ESR-3200L	PM160-220/12	PM160-48/12
ESR-3300	PM600-220/12	PM600-48/12

[1] On request.

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About ELTEX

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.