ELTEX
Integrated Networking Solutions

– Data routing
– 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)
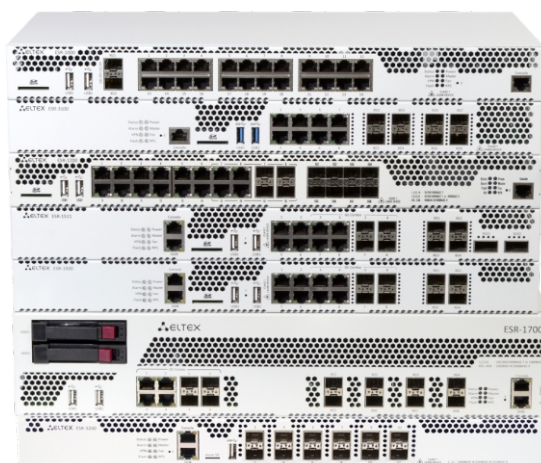
The family of ESR routers is a universal hardware platform capable of performing a wide range of tasks related to network security, data encryption, subscriber termination, etc. The product line includes models that can be used in networks of various sizes — from small enterprise networks to carrier networks and data centers.

Performance

The key elements 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.

Functional purpose

– Scalable solution for different fields of application
– Flexible service configuration
– Interfacing with the equipment of leading manufacturers
– Hardware acceleration of data processing

Use case
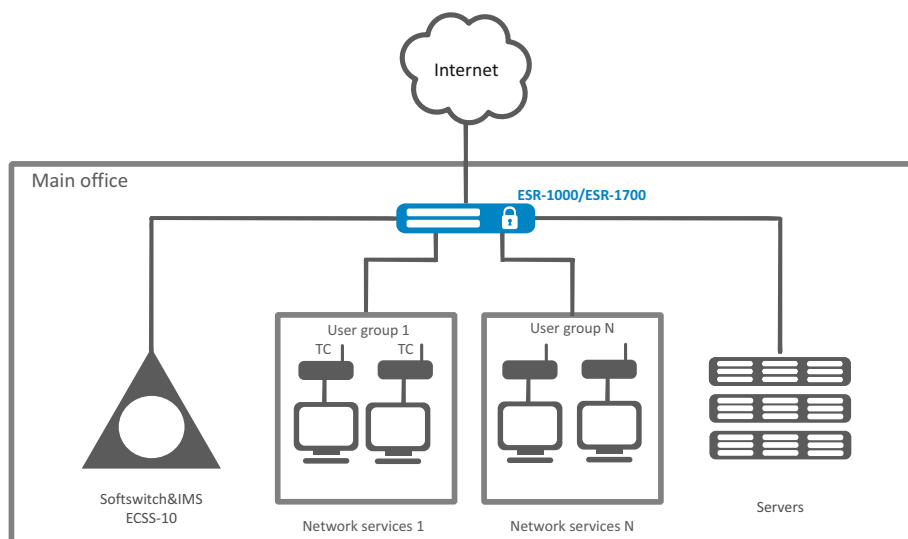
Technical features

	ESR-1000	ESR-1200	ESR-1500	ESR-1511	ESR-3100	ESR-3200	ESR-1700
Interfaces							
Combo 10/100/1000BASE-T/1000BASE-X SFP (LAN/WAN)	—	4	4	4	—	—	4
Ethernet 10/100/1000BASE-T (LAN/WAN)	24	12	4	4	8	—	—
1000BASE-X/10GBASE-R/25GBASE-R (LAN/WAN)	—	—	—	—	—	12	—
10GBASE-R SFP+/1000BASE-X SFP (LAN/WAN)	2	8	4	4	8	—	8
40GBASE-X QSFP+ (LAN/WAN)	—	—	—	2	—	—	—
Console RS-232 (RJ-45)	1	1	1	1	1	1	1
OOB	—	—	1	1	—	1	1
USB 2.0	2	2	2	2	—	1	2
USB 3.0	—	—	—	—	2	—	—
Socket for HDD installation	—	—	—	—	—	—	2
SD card slot	1	1	1	1	1	—	—
MicroSD card slot	—	—	—	—	—	1	—
Performance							
Firewall/NAT/routing (1518B frames)	8.68 Gbps; 715k pps	12.15 Gbps; 1001k pps	18.01 Gbps; 1483k pps	6.78 Gbps; 558k pps	47.103 Gbps; 3878k pps	39 Gbps; 3216k pps	
Firewall/NAT/routing (70B frames)	419 Mbps; 708k pps	585 Mbps; 989k pps	881 Mbps; 1489k pps	330 Mbps; 558k pps	2.251 Gbps; 3802k pps	2.692 Gbps; 4548k pps	
IPsec VPN (1456B frames)	2.34 Gbps; 201k pps	2.98 Gbps; 256k pps	4.66 Gbps; 400k pps	1.07 Gbps; 92k pps	3.207 Gbps; 275k pps	13 Gbps; 1117k pps	
IPS/IDS 10k rules	600.51 Mbps; 129.04k pps	796 Mbps; 171k pps	1.29 Gbps; 280k pps	467 Mbps; 107k pps	1.57 Gbps; 367k pps	3.64 Gbps; 797k pps	
MPLS (1518B frames)	9.71 Gbps; 800k pps	16.38 Gbps; 1349k pps	16.72 Gbps; 1381k pps	*	*	*	
System features							
VPN tunnels	500						
Static routes	11k						
Concurrent sessions	512k						
VLAN support	up to 4k active VLANs in accordance with 802.1Q						
BGP routes	5M						
OSPF routes	500k						
RIP routes	10k						
MAC table	16k	128k	128k	128k	2k entries per bridge	16k	128k
FIB size	1.7M	1.7M	1.7M	1.7M	1.7M	1.7M	3.0M
VRF Lite	32						

Functionality for firmware version 1.14.5.
* To be measured later.

Physical specifications

	ESR-1000	ESR-1200	ESR-1500	ESR-1511	ESR-3100	ESR-3200	ESR-1700
Physical specifications and ambient parameters							
Maximum power consumption	75 W	85 W	125 W	128 W	123 W	118 W	250 W
Max. noise level	58 dB	58 dB	70 dB	70 dB	70 dB	42 dB	70 dB
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 x H x D), mm	430 x 44 x 352	430 x 44 x 352	430 x 44 x 425	430 x 44 x 425	430 x 44 x 425	430 x 44 x 330	440 x 88 x 490
Weight	3.6 kg	5.5 kg	7 kg	7 kg	5 kg	5 kg	12 kg
Service life	at least 15 years						

Features and capabilities

Plug-in interfaces
– USB 3G/4G/LTE modem (except ESR-1700)
– E1 TopGate SFP

Remote Access VPN clients
– PPTP/PPPoE/L2TP/OpenVPN/IPsec XAUTH

Remote Access VPN server
– L2TP/PPTP/OpenVPN/IPsec XAUTH

Site-to-site VPN
– IPsec: "policy-based" and "route-based" modes
– DMVPN
– DES, 3DES, AES, Blowfish, Camellia encryption algorithms
– IKE MD5, SHA-1, SHA-2 message authentication

Tunneling
– IPoGRE, EoGRE
– IPIP
– L2TPv3
– LT (inter VRF-lite routing)

L2 functions
– Packet switching (bridging)
– STP, RSTP, MSTP 802.1D (only for ESR-1000)
– LAG/LACP (802.3ad)
– VLAN support (802.1Q)
– Port Isolation (only for ESR-1000, ESR-1200, ESR-1500, ESR-1700)
– Private VLAN Edge (PVE) (only for ESR-1000, ESR-1200, ESR-1500, ESR-1700)
– Logical interfaces
– LLDP, LLDP MED
– MAC-based VLAN

L3 functions (IPv4/IPv6)
– NAT, Static NAT, ALG
– Static routes
– Dynamic routing protocols RIPv2, OSPFv2/v3, IS-IS, BGP
– Route filtering (prefix list)
– VRF Lite
– Policy Based Routing (PBR)
– BFD for BGP, OSPF, static routes

Functionality for firmware version 1.14.5.

Features and capabilities (continued)

BRAS (IPoE)[1]
– 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

Network security functions
– Intrusion Prevention/Detection system (IPS/IDS)[1]
– Interaction with Eltex Distribution Manager for obtaining licensable content — rule sets, distributed by Kaspersky SafeStream II[1]
– Web filtering by URL, by content (cookies, ActiveX, JavaScript)
– Zone-based Firewall
– Filtering based on L2/L3/L4 fields and applications
– Support for access control lists (ACL) based on L2/L3/L4 fields
– Protection against DoS/DDoS attacks and notification on them
– Logging of attack and rule triggering events

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))
– RED, GRED congestion avoidance algorithms
– Priority re-marking mechanisms
– Policy Map
– Bandwidth management (shaping)
– Hierarchical QoS
– Session labeling

IP addressing management (IPv4/IPv6)
– Static IP addresses
– DHCP client
– DHCP Relay Option 82
– Embedded DHCP server, 43, 60, 61, 150 options support
– DNS resolver
– IP unnumbered

Network reliability assurance means
– Dual homing (only for ESR-1000)
– VRRP v2,v3

– VRRP or SLA tracking
  – Managing VRRP Profiles
  – Managing PBR Profiles
  – Interface Status Management
  – Activation and deactivation of a static route
  – Managing the AS-PATH attribute and preference in route map
– WAN interfaces load balancing, data stream redirection, channel switching during QoS control
– Firewall sessions backup

Management and monitoring
– Support for standard and extended SNMP MIB, RMONv1
– Embedded Zabbix agent
– Authentication methods: local, RADIUS, TACACS+, LDAP
– Protection against configuration errors
– Automatic configuration recovery), ability to restore the default factory configuration
– CLI
– Syslog
– System resource usage monitoring
– Ping, 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 console port (RJ-45)
– Remote control via Telnet, SSH (IPv4/IPv6)
– Displaying information on services/processes
– Local/remote router configuration storage

SLA control functions
– Eltex SLA
  Channel parameters evaluation:
    – Delay (one-way/two-way)
    – Jitter (one-way/two-way)
    – Packet loss (one-way/two-way)
    – Packet Error Rate
    – Out-of-order delivery

MPLS
– LDP
– L2VPN VPWS
– L2VPN VPLS Martini Mode
– L2VPN VPLS Kompella Mode
– L3VPN MP-BGP

Functionality for firmware version 1.14.5.
[1] Activated by the license.

Ordering information

Name	Description
ESR-1000	ESR-1000 service router, 24x10/100/1000BASE-T, 2x10GBASE-R SFP+, 1xConsole RS-232 (RJ-45), 2xUSB 2.0, 1xSD card slot, 4GB RAM (8GB available upon a request), 1GB NAND-Flash, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-1200	ESR-1200 service router, 4xCombo10/100/1000BASE-T/1000BASE-X, 8x10GBASE-R SFP+, 12x10/100/1000BASE-T, 1xConsole RS-232 (RJ-45), 2xUSB 2.0, 1xSD card slot, 4GB RAM (8GB available upon a request), 1GB NAND-Flash, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-1500	ESR-1500 service router, 4x10/100/1000BASE-T, 4xCombo 10/100/1000BASE-T/1000BASE-X, 4x10GBASE-R SFP+, 1xConsole RS-232 (RJ-45), 1xOOB, 4GB RAM, 1GB NAND-Flash, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-1511	ESR-1511 service router, 4x10/100/1000BASE-T, 4xCombo 10/100/1000BASE-T/1000BASE-X, 4x10GBASE-R SFP+, 2x40GBASE-X QSFP+, 1xConsole RS-232 (RJ-45), 1xOOB, 4GB RAM, 1GB NAND-Flash, 2 slots for power modules 100–240 V AC or 36–72 V DC.
ESR-1700	ESR-1700 service router, 4xCombo 10/100/1000BASE-T/1000BASE-X, 8x10GBASE-R SFP+, 1xConsole RS-232 (RJ-45), 1xOOB, 32GB RAM, 1GB SSD, 2 slots for HDD installation, 2 slots for power modules 176–264 V AC or 36–72 V DC.
ESR-3100	ESR-3100 service router, 8x10/100/1000BASE-T, 8x10GBASE-R SFP+, 1xConsole RS-232 (RJ-45), 2xUSB 3.0, 1xSD card slot, 16 GB 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, 1xmicroSD card slot, 16, 32 or 48 GB RAM, 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-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	PM160-220/12	PM160-48/12
ESR-1700	PM350-220/12	PM350-48/12
ESR-3100	PM160-220/12	PM160-48/12
ESR-3200	PM160-220/12	PM160-48/12

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[1] Ordered separately.

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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.