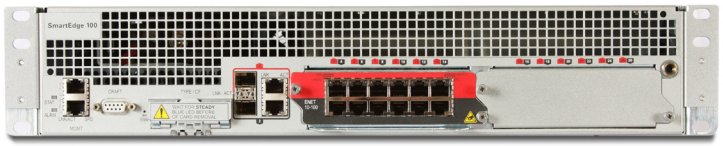
SMARTEDGE 100
MULTI-SERVICE EDGE ROUTER

Compact form-factor Multi-Service Edge Router integrates Edge Routing, Ethernet Aggregation, and Subscriber Management functionalities to deliver secure, guaranteed Multi-Play services to consumers and businesses.



Key benefits

- Simplifies triple play networks by combining edge routing, Ethernet aggregation, and subscriber management
- Suitable for deployment in smaller network environments with fewer subscribers or requiring less ports
- Resilient Operating System (SEOS) allows continuous operation capable of independently restarting tasks
- Multicast replication for IPTV and video on demand
- IPV4 (IPv6 ready) routing with up to 1.5 million route entries and 1,000 BGP Peers
- Granular service control with up to 8 queues per subscriber
- 12 Gbps throughput, 7 Mpps wire speed performance in a compact 2-RU form factor
- Support for 8,000 simultaneous users with up to 16,000 VLANs, 10,000 IGMP groups and Multicast Routes; 160,000 MAC Addresses
- Advanced H-QoS and Traffic Management to control bandwidth for each service per subscriber: Can be configured for up to 2,000 virtual routers or VPN with 2,000 L2TP tunnels, 2,000 MPLS labels, 1,000 H-VPLS instances with 802.1Q access and EoMPLS access

Ericsson's SmartEdge 100 Multi-Service Edge Router (MSER) is architected and optimized for deployment in advanced networks that deliver Multi-Play services such as video, voice, data and interactive content or business services such as layer 2/3 Virtual Private Networking. Based on proven SmartEdge 400/800 Multi-Service Edge Router hardware and software technology, SmartEdge 100 unifies high-performance edge routing, Ethernet aggregation and advanced subscriber management into an efficient, and compact platform. Powered by Ericsson's programmable ASICs, the SmartEdge 100 MSER supports thousands of users and sessions in smaller network environments such as distributed points of presence (POPs), remote central offices (RCOs), wireless backhaul and multi-tenant units (MTU) aggregation. SmartEdge MSERs can be directly connected to the access layer of a network, such as a group of DSLAMs or Ethernet switches, eliminating unnecessary network layers and reducing complexity.

SmartEdge 100 subscriber management capability supports up to 8,000 subscribers, via Point-to-Point Protocol (PPP) and tunneling, DHCP Server, RADIUS and AAA support. SmartEdge 100 MSER applies user configuration and management policies

ERICSSON

to individual data streams on a per-subscriber, personalized basis. It also supports Client-Less IP Subscribers (CLIPS) environments, without requiring PPPoE usernames for DHCP environments to increase subscriber retention rates.

Edge Routing capability is supported in hardware with a full suite of IP routing protocols, Multi-Protocol Label Switching (MPLS), with hierarchical Quality of Service (H-QoS). It is suited for smaller size networks or to extend an existing large network into smaller, lower port density segments.

Access aggregation is supported via

- Hot-swappable 12 port SFP-based Fast Ethernet, OR 12 port 10/100 Copper-based
- Hot-swappable 2 two-port ATM OC-3/STM-1
- Hot-swappable 2 fixed dual-wired 1xGE uplink ports
- Full suite of IP QoS and layer 2/3 protocols such as, Q-n-Q, VPLS, MPLS, H-VPLS with Traffic Management using Hierarchical Quality of Service (H-QoS) schemes.

The SmartEdge 100 uses the same highly resilient operating system that is used in higher capacity SmartEdge 400/800 platforms. The SmartEdge operating system (SEOS) is modular and capable of hitless restart. This means that when a software process is taken out of service the system can continue to operate until the process is updated and restarted independently.

SmartEdge 100 delivers low latency, wire-speed performance for all ports. Two Packet Processing ASICs (PPA2) perform per-subscriber packet inspection, processing, and forwarding at wire-speed. High throughput is ensured by utilizing one PPA2 for ingress and the other to egress traffic. SmartEdge 100 has two additional CPUs, separating system management functions from packet processing services. One CPU is dedicated to protocol and subscriber management functions, and the other is dedicated to time-critical system functions, such as fault and performance monitoring and alarms. The separation of data, control and management functions enables the SmartEdge 100 to deliver scale and performance predictability for every port and every subscriber, regardless of the number of route entries, BGP Peers or Layer 3 and layer 4 services.

Device specifications for SmartEdge 100

- Dimensions: 3.5 inches (8.9 cm) height, 17.5 inches (44.5 cm) width, 19.6 inches (50.0 cm) depth
- Weight: 20.0 lb (9.1 kg)
- System CPU: Two 600 MHz Power PCs
- Route/Switch Engine: two programmable ASICs, each with 32
- RISC core and 1GB RAM
- 1 GB system RAM
- 1 GB removable compact system flash card

Physical interfaces

Ethernet

- 12 10BASE-T, 100BASE-TX, 100BASE-FX
- 2 Gigabit Ethernet ports (TX and FX supported) ATM
- 2-port OC-3/STM-1 cards (includes support for SM and MM)

Power requirements

- AC Power Version Single Auto-sensing AC Power supply – 90-132 VAC or 170-264 VAC, Frequency range: 47-63 Hz Current draw, maximum 3.8A @90 VAC
- DC Power Version Two Redundant DC power entry points -39 VDC to –58 VDC Current draw, maximum 7.6A @-40 VDC

Power consumption

- 200 Watts for typical configuration to 300 Watts max
- 682 British Thermal Units (BTUs) at average power draw of 200W

Environmental specifications

- Operating temperature, nominal: 41° to 104°F (5° to 40°C)
- Operating temperature, short term (96 hours or less): 23° to 131°F (-5° to 55°C)

Thermal exhaust

- Front to back airflow and exhausts air to the rear of the device

Regulatory compliance, emission certification and immunity

Product Safety	Emissions	Immunity UL
UL 60950	CSA 22.2 No. 60950	IEC60950
EN60950	AS/NZS 3260	FCC part 15, Class A
ETSI EN300 386-2	CISPR 22, Class A	ICES-003, Class A
VCCI, Class A	EN55022, Class A	EN61000-3-2
EN61000-3-3	AS/NZS 3548, Class A	EN61000-3-3
EN61000-4-2	EN61000-4-3	EN61000-4-4
EN61000-4-5	EN61000-4-6	EN61000-4-8
EN61000-4-11	EN300 386-2	

Feature specifications

Ethernet

- IEEE 802.1Q, VLAN Trunking/Tagging, IEEE 802.3ad link aggregation (with LACP) Encapsulations and Tunneling
- Ethernet, IEEE 802.1QinQ, MPLS, PPPoA, PPP over Ethernet (RFC 2516), IPoE, DHCP
- Bridge 1483, Route 1483

IP address management

- DHCP: DHCP Proxy, DHCP Relay
- Integrated DHCP Server
- PPP: IPCP parameter negotiation, L2TP Dynamic
- IP assignment: IP pools, RADIUS assigned addressing and Clientless IP addresses
- Fixed IP address assignment: localized subscriber profile, RADIUS assigned addressing

Multicast protocols

- PIM-SM (RFC 2362 + IETF Draft), PIM-DM (IEFT Draft), IGMPv1, v2, v3 (RFC 3376), SSM (RFC 3569), MBGP (RFC 2858), MSDP (RFC 3618), IGMP snooping, IGMP filtering
- IPv6 Mstatic Support; Enhance PIM Static Joins for V6 Support and Enhanced PIM SSM for V6

Quality of service

- 802.1p Class of Service (CoS), Differentiated Services Code Point (DSCP) ToS, IP Precedence, and MPLS EXP bits
- Packet classification (RFC 474,2475, 2597, 2598); DiffServ packet marking by ACL, ingress policing, or BGP attribute based QoS; class-based ingress policing and egress shaping; priority queuing and EDRR; RED and WRED; Hierarchical Scheduling
- Ability to customize mapping of L2 to L3 QoS

Technical specifications

Routing protocols

- BGP-4 (RFC 1771), IS-IS (RFC 1195 & ISO/IEC10589), OSPFv2/v3, RIP v2, RIPng, VRRP (RFC 2338), LDP, RSVP
- LDP tunneling over RSVP LSPs (RFC 3209); BFD for OSPF, ISIS, BGP, static routes and individual links in 802.3ad link group
- Mobile IP (Foreign Agent)

Security

- Reverse Path Forwarding (RPF), Secure ARP, MD5 support for routing protocols, key rollover, RADIUS, TACACS+; Administrative ACLs, packet mirroring and sampling, Secure Shell (SSH) Protocol, Kerberos, SNMPv3, IGMP filtering, SSHv2, VLAN ACLs, IP security router ACLs, subscriber-based ACLs
- Lawful Intercept (CALEA)

Virtual private networking

- L2TP (RFC 2661) LAC, LTS, LNS
- 802.1Q Virtual LAN (VLAN) support with 802.1QinQ - with CoS mutation, 802.1Q tunneling with VLAN mapping
- MPLS VPNs (RFC 4364 previously known as 2547bis), Carrier of carriers and Inter-AS, MPLS VPN (options A, B, C) MPLS FRR, Multicast over MPLS VPN, GRE, Soft GRE, MPLS over GRE, EoMPLS, Layer 2 VPNs (draft-martini), VPLS, H-VPLS

Configuration and management

- Command Line Interface (CLI) support via telnet or SSH
- RADIUS, Diameter, TACACS+
- SNMP v1/2/3
- ANCP with support for DSL Sync Rate with Dynamic QoS Change and ATM Ping command to DSLAM

Ericsson
100 Headquarters Drive
San Jose, CA 95134-1362 USA
Tel: +1 408 750 5000
Fax: +1 408 750 5599
www.ericsson.com

© 2008 to 2009, Ericsson AB. All rights reserved.
Redback and SmartEdge are trademarks registered at the U.S. Patent & Trademark Office and in other countries. AOS, NetOp, SMS, and User Intelligent Networks are trademarks or service marks of Redback Networks Inc. All other products or services mentioned are the trademarks, service marks, registered trademarks or registered service marks of their respective owners. All rights in copyright are reserved to the copyright owner. Company and product names are trademarks or registered trademarks of their respective owners. Neither the name of any third party software developer nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission of such third party.