

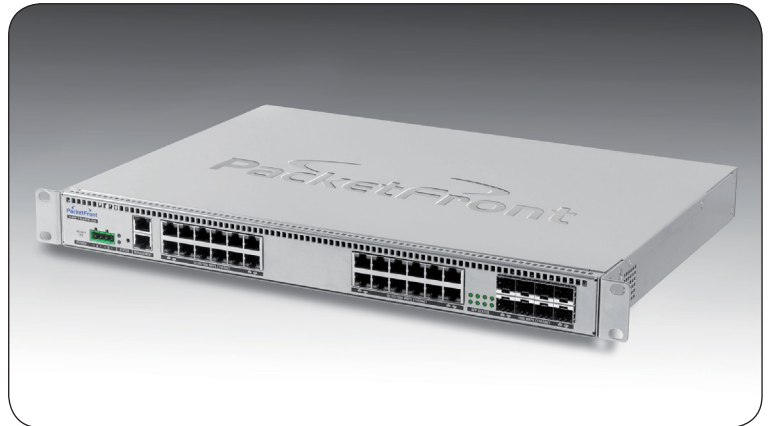
ASR 10000

Advanced Services Router

Purpose-built broadband aggregation router for cost efficient delivery of triple-play services

Key benefits:

- Purpose built for delivery of triple-play services, including advanced IPTV services
- Cost efficient aggregation of multiple access technologies
- Cost-efficiently controlled from BECS™
- Treats each service individually for open access at service level
- Enables advanced service differentiation and personalization



ASR 10000 is PacketFront's high-performance broadband aggregation router optimized for delivery of advanced triple-play services to countless end users. It cost efficiently aggregates different IP-based access technologies, such as ADSL2+, xDSL, PON, Ethernet over COAX and Wireless.

Policy enforcement point

The ASR 10000 transports all data traffic including Internet, IPTV, IP telephony etc. The service policies defined in BECS are enforced in the network by the ASR 10000 and dynamically applied for all users connected. This includes everything from packet filters, bandwidth shaping and what range of IP-address to use. Acting as a client to BECS it receives all communication over a dedicated connection avoiding network disturbances during peak hours.

Open access per service

The ASR 10000 offers individual treatment per service, i.e. parameters like QoS, bandwidth, security and priority, are set per service. Thus, the ASR 10000 treats services, rather than connections or ports.

Through this granular control of services, different bandwidths can be given to the same device (MAC-address) on one interface of the ASR 10000, allowing e.g.

different bandwidth to different members of the household on the same client (e.g. a PC). The ASR 10000 also shapes, and not only police, bandwidth which gives much better performance and accuracy than other means of bandwidth limitation.

IP address management and security in open-access networks

Based on flexible IP address allocation and dynamic configuration, the ASR 10000 fully supports multiple service providers in a shared infrastructure. In cooperation with BECS, the ASR 10000 provides dynamic and static address allocation of private, public and service-provider specific IP addresses. This allocation is also enforced and controlled in ASR 10000 such as multicast source filters and traceability functions; preventing ARP-spoofing and address conflicts. Such anti-spoof mechanisms also play an important role in the prevention, and follow-up, of hacking and abuse.

Automated installation, configuration and upgrading

Being controlled from BECS, ASR 10000 is automatically provisioned with the initial configuration profile and correct iBOS software version when deployed in the network. This is triggered upon connecting the ASR 10000 to the network and requires no manual or on-site configuration. Upgrading of

iBOS software is also performed by means of automation.

Automated service provisioning

Provisioning of services is automated in the ASR 10000 from BECS. Service profiles are sent off to the ASR 10000 containing all necessary information required to deliver the services securely to the end-users' clients (set-top-boxes, PCs or IP phones). Authentication and authorization of clients is automatically taken care of in BECS, resulting in a service-provisioning process that is performed without manual intervention, and thus saving valuable resources.

ASR 10000

Description

- Model:
- ASR 10132-CO

Physical

- Ports:
- 24 1000Base-T ports
 - 8 SFP-based Gigabit Ethernet 1000Base-X ports
 - 1 out of band 10/100BaseTX admin
 - 1 RS-232 serial console port

- Indicators:
- LED indicators for all ports
 - System OK LED indicator
 - Two power status LED indicators

- Dimension (H) (W) (D):
- 44x444x320mm, 1.75"x17.5"x12.6"

- Weight:
- 5.5kg, 12.1lbs

- Acoustic:
- Max 65dBA noise level

- Cooling:
- Redundant fans
 - Replaceable fans

Environmental

- Operating temperature:
- 0 to 40°C, 32 to 104°F depending on model

- Operating humidity:
- 10% to 90%, non condensing

- Storage temperature:
- 20 to 70°C, -4 to 158°F

- Storage humidity:
- 10% to 95%, non condensing

- Rack mounting:
- Standard 19" rack mountable

- Heat dissipation:
- Max 250W

Power and safety

Power connector located in the front panel
Automatic restart of the system when any of the faults conditions are cleared

Redundant power input -40 to -60 V DC, compliant with ETSI EN 300132 V2.1.1 Part2

Power consumption: 250W

Regulatory compliance

CE and UL-mark, IEC/EN/UL 60950, IEC/EN/UL 60825, ETSI EN 300386, FCC Part 15 Subpart B

IP forwarding

- Interfaces:
- 1200 layer 3 interfaces

- Classification:
- Layer 2-4 packet classification with filtering
 - Per-service packets and bytes accounting

- Unicast:
- 5000 IPv4 routes
 - Up to 4 paths using ECMP

- Multicast:
- 2048 S, G IPv4 multicast forwarding entries
 - Per-port and per-VLAN replication

Quality of Service

- Packet queuing:
- Deficit round robin (DRR)

- Policing:
- 2048 Single/Dual Token Bucket Policer, with packet drop or recolor (64kbps - 20Mbps)

- Shaping:
- 1024 Shapers with packet drop or recolor (64kbps - 20Mbps)

Routing protocol support

- Unicast:
- OSPFv2

- Multicast:
- PIM-SM
 - IGMPv2

Management

- SNMPv1, v2 and v3
- TELNET
- Industry standard CLI
- PFDP – PacketFront Device Protocol
- NTP
- SYSLOG
- RS232 console serial port
- DHCP

Security

- IP spoofing protection
- Restrictable multicast access
- Interface mirroring to local or remote interface

Ethernet and Bridging

- Ethernet:
- IEEE 802.3u – Fast Ethernet
 - IEEE 802.3z – Gigabit Ethernet
 - IEEE 802.1p and 802.1Q with full VLAN range