

BENEFITS

- Best-in-class performance on x86 servers
- 10Gbps line-rate forwarding @ 256b IPv4 packets
- Supports 2,000 to 128,000 subscribers per x86 Server
- Web-based GUI
- CLI, NetConf APIs and SNMP support
- Differentiated services with QoS, Shaping and Policing
- RADIUS & RADIUS COA
- Flexible licensing options



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Virtual Broadband Network Gateway (vBNG)

SUBSCRIBER ACCESS SERVICES ROUTER

BROADBAND NETWORK GATEWAY CHALLENGE

Annual global IP traffic is exploding and is expected to reach 400 Exabytes/month by 2022. Subscriber bandwidth demand is being fueled by more connected devices, cloud computing, and video streaming.

Unfortunately, increasing traffic volumes are creating challenges since legacy Access Services Routers (BNGs) are difficult to scale, expensive, and inflexible. Built for yesterday's static internet traffic, hardware-based Service Routers are expensive, requiring costly up-front investments that don't scale with subscriber growth.

THE NETELASTIC ANSWER

netElastic's BNGs are designed to deliver unmatched performance and scalability on commercially available hardware. netElastic's optimized data plane and patented packet processing techniques maximize hardware performance. Decoupling the control plane and data plane allows flexible capacity expansion without restrictions from either plane.

netElastic BNG solutions deliver performance from 20Gbps (BNG-200 series) up to 120 Gbps throughput on its BNG-1200 series products. This high throughput makes netElastic BNG an ideal choice for many growing networks.

MAXIMUM DEPLOYMENT FLEXIBILITY

BNG gives you the deployment flexibility to deliver new services faster, whether you're deploying a new rural network or upgrading a large-scale metro POP. BNG-200 can be deployed for very small subscriber bases and be upgrade to BNG-1200 to support thousands of subscribers.

LOWER COST AND A FUTURE-PROOF NETWORK

netElastic BNG's are software-based routers which can be run on commercial servers. This approach combined with industry-leading scalability helps service providers save up to 70% in costs compared

to traditional BNG vendors. BNG software and licensing can be migrated between hardware platforms for investment protection, future-proofing this critical network infrastructure.

netElastic BNG solutions align costs with revenue, enabling service providers to start small and grow.

EASY TO OPERATE

netElastic offers a comprehensive web-based BNG Manager that provides operational visibility, management and control. BNG Manager monitors all interfaces, routes, peak and active subscribers, and overall system health. Easily implement complex configurations to control network and interface configurations as well as subscriber policies for rate plans, session QoS, RADIUS interfaces, and more.

MANAGEMENT INTERFACES

In addition to the web-based BNG Manager, netElastic BNG supports management, configuration and monitoring through CLI, NetConf APIs, and SNMP. BNG also supports RADIUS and RADIUS COA for authentication, authorization, and accounting.

BROAD PROTOCOL SUPPORT AND SUBSCRIBER MANAGEMENT FEATURES

netElastic BNG supports a wide range of protocols, including common Service Router access features. Supported access methods include PPPoE, IPoE, and L2TP with subscriber traffic policing and shaping per RADIUS specified rate plans. VxLANs are supported across interfaces, and routing protocols include OSPF, BGP, and IS-IS. CGNAT capabilities eliminate the high cost of separate CGNAT solutions and can support up to 4 million sessions.

SUMMARY

netElastic BNG delivers market-leading performance, eliminates vendor lock-in and reduces total cost of ownership.

Bundled Appliance Options

BNG-200 Series
2x 10Gbps interfaces Up
to 16,000 Subs

BNG-400 Series
4x 10Gbps interfaces Up
to 32,000 Subs

BNG-800 Series
8x 10Gbps interfaces
Up to 64,000 Subs

BNG-1200 Series
12x 10Gbps interfaces
Up to 128,000 Subs

BNG FEATURES

AAA

- Local authentication/authorization
- RADIUS, with server groups, & load balancing
- Web redirect templates
- Access Domain
- RADIUS Attributes supports
- Calling Station ID attribute
- RADIUS COA
- Set Rate Plans & Services QoS via RADIUS

SUBSCRIBER MANAGEMENT

- IPoE v4, v6
- PPPoE v4, v6
- Dual Stack
- Web Authentication
- Circuit Authentication
- Lease-Line Access
- DHCP v4, v6
- DHCP Option 60, 82
- DHCP Proxy, Relay
- Local IP Address Pool
- Static or Dynamic IP Allocation

QOS AND POLICY

- Committed Access Rate (CAR)
- Traffic Classification (based on TOS, IP Precedence, DSCP, VLAN, ACL (L3/L4))
- Traffic Policing
- Rate Limiting
- Hierarchical Policing
- QoS Template
- Class-map
- Policy-map
- QoS and Traffic Policy
- ACL
- Match User Rate Plans & QoS via RADIUS

IP TRANSITION (NAT)

- Network Address Translation (NAT)
- Port Address Translation (PAT)
- NAT Logging
- CGNAT (NAT44)

MPLS

- MPLS (RFC-3031, RFC-3031)
- Label Edge Router (LER),
- Label Switch Router (LSR)
- Label Distribution Protocol (LDP)
- Static and dynamic Label Switch Path (LSP)
- MPLS L2VPN – VPWS, VPLS
- MPLS L3VPN – CE/PE
- VPLS LDP Signaling (RFC 4762)

LAYER 2 AND TUNNEL PROTOCOL

- VLAN – IEEE 802.1q
- QinQ – IEEE 802.1ad
- L2TP (LAC/LNS)
- LACP
- VxLAN
- GRE
- IPSec

LAYER 3 PROTOCOLS

- Static Route
- OSPF v2, v3
- ISIS
- BGP v4, 4+, MP-BGP
- Route Policies
- IPv4, v6 Dual Stack

IP MULTICAST

- IGMP v1/v2/v3
- PIM-SM
- PIM-SSM
- Multicast VLAN

HIGH AVAILABILITY / REDUNDANCY

- Control Plane Hot Standby
- Data Plane Warm Standby
- Full N+1 Redundancy (with PPPoE PADO Delay)

MANAGEMENT

- Web-based GUI Manager
- CLI
- NetConf APIs
- SNMPv1, v2c
- RADIUS
- SSHv2
- Syslog
- NTPv4
- Ping
- Traceroute

PERFORMANCE AND CAPACITY

- Subscriber Connect Rate: 1500 per second
- RIB Capacity: 500K IPv4 / 100K IPv6
- Route Convergence: 10K < 3 seconds
- L3 Forwarding: 10Gbps ≥ 256-byte packets
- QoS/HQoS: 8 services/user

HA



400 Gbps BNG

Supports 320,000 subscribers (expandable to 640,000 subs)

Includes HA node to take over in event of any single node outage

