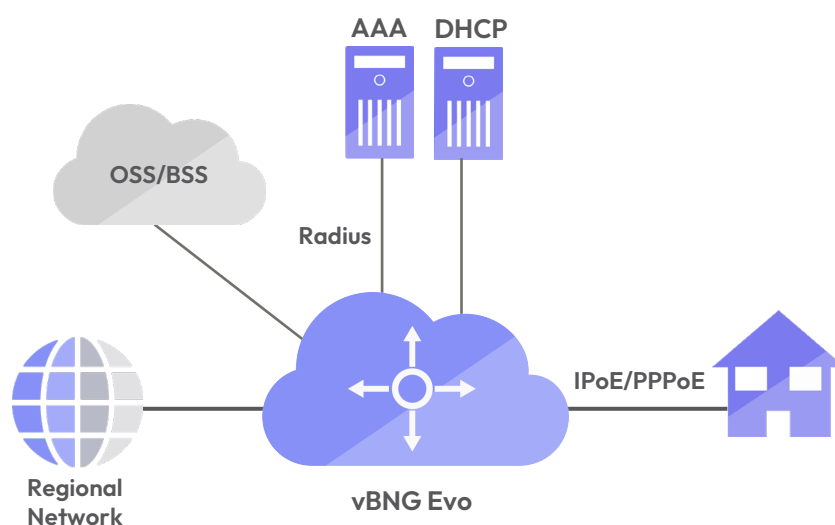


FEATURES

- **Built for the Cloud:** The Aurora Networks vBNG Evo was built from the ground up, in a container-based virtualization framework.
- **Centralized/Distributed Data Planes with Automatic Scaling:** vBNG Evo offers separation of control and data planes and is designed for redundancy and multi-dimensional scaling, so service providers have assurance, service agility, and faster time to market.
- **Disaggregation of Network Functions:** Not only are control and data planes separated, but the data plane can also be distributed to remote silos, giving service providers the ability to flexibly centralize or distribute functions as needed.
- **Industry Leading Throughput:** Deliver high throughput performance with HQoS and Accounting enabled per session, dynamically scalable to terabits per second.
- **Advanced Subscriber Management:** Features include per subscriber Hierarchical QoS and policy-based routing.

The Aurora Networks Virtualized Broadband Network Gateway (vBNG Evo) provides advanced subscriber management and routing capabilities in a virtualized solution that enables the elastic scaling and service agility today's dynamic Internet services environment requires. Built from the ground up as a cloud-native solution for container-based cloud networks, vBNG Evo delivers the performance, scaling, and flexibility needed to address the greater diversity of wireless access and FTTH broadband demands. Through a unique design that disaggregates network functions, streamlines packet flows, enables independent and dynamic scaling of control and data planes, the Aurora Networks vBNG Evo delivers superior throughput in both centralized and distributed architectures.



Customers who choose vBNG Evo can expect full BNG functionality, from a cloud-native virtualized solution.

- IPoE and PPPoE access methods providing IPv4 and IPv6 connectivity to the internet or BNG MPLS-VPNs.
- L2TP LAC and LNS for wholesale broadband connectivity.
- Dynamic template-based configuration of subscriber sessions.
- RADIUS-based authentication, authorization, and accounting per session. Change-of-Authorization for dynamic services.
- Layer 2/Layer 3 edge routing for IPv4 and IPv6 unicast and multicast.
- Hierarchical QoS for subscriber traffic with traffic shipping and rate limiting for traffic management.
- Routing VRF support for both unicast and multicast with MPLS.
- CLI, SNMP, and NETCONF/YANG for management.
- Lawful intercept support per session.
- Wi-Fi® Access Gateway
- Integrated CGNAT to reduce the number of public IPv4 addresses required.

Virtual Broadband Network Gateway—vBNG Evo

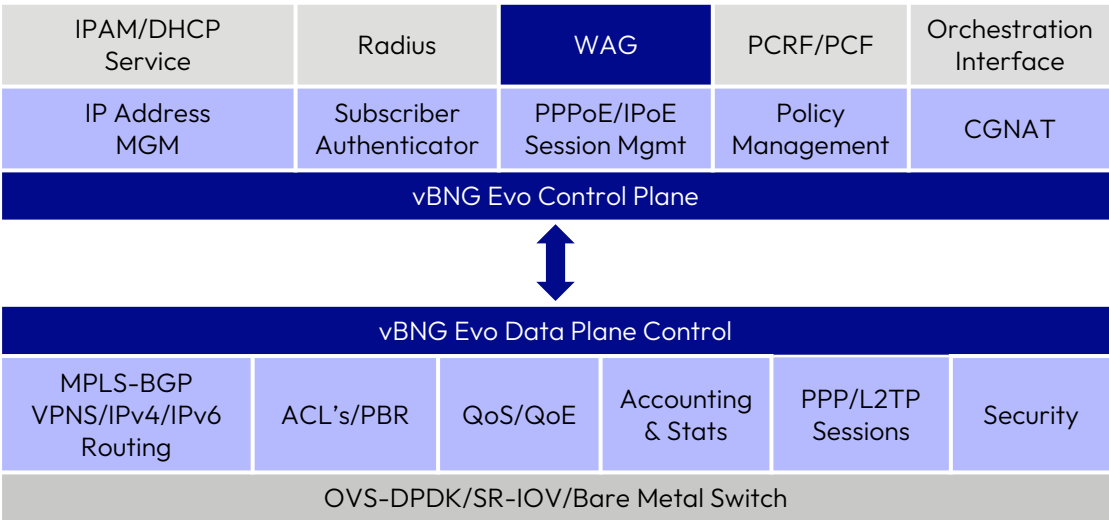
The Aurora Networks vBNG Evo gives service providers key benefits in the race to attract and retain high-speed data customers:

- Network simplification: reduced equipment requirements by replacing multiple legacy Broadband Remote Access Server (BRAS) and BNG chassis with vBNG Evo from Aurora Networks
- Network flexibility: independent, dynamic scaling of control and data planes and, uniquely, the ability to distribute the data planes closer to the subscribers.
- Service agility: increased control over and ability to differentiate the user experience with elastic scaling, per-subscriber QoS, policy-based routing, captive portals, and DHCP relay.
- Automatic Scaling of Data Planes based on number of subscribers or throughput.

Control and Data Plane Separation

The vBNG Evo software architecture separates control and data plane functions and decomposes those functions, as shown in Figure 1 below. This enables not only independent scaling, but also the flexibility to put the control plane and data plane where they make the most sense—on the same server in the data center/CO, different servers, or even in different locations (e.g., the data plane can be distributed closer to the end user). The API between the control and data plane works in any of these scenarios.

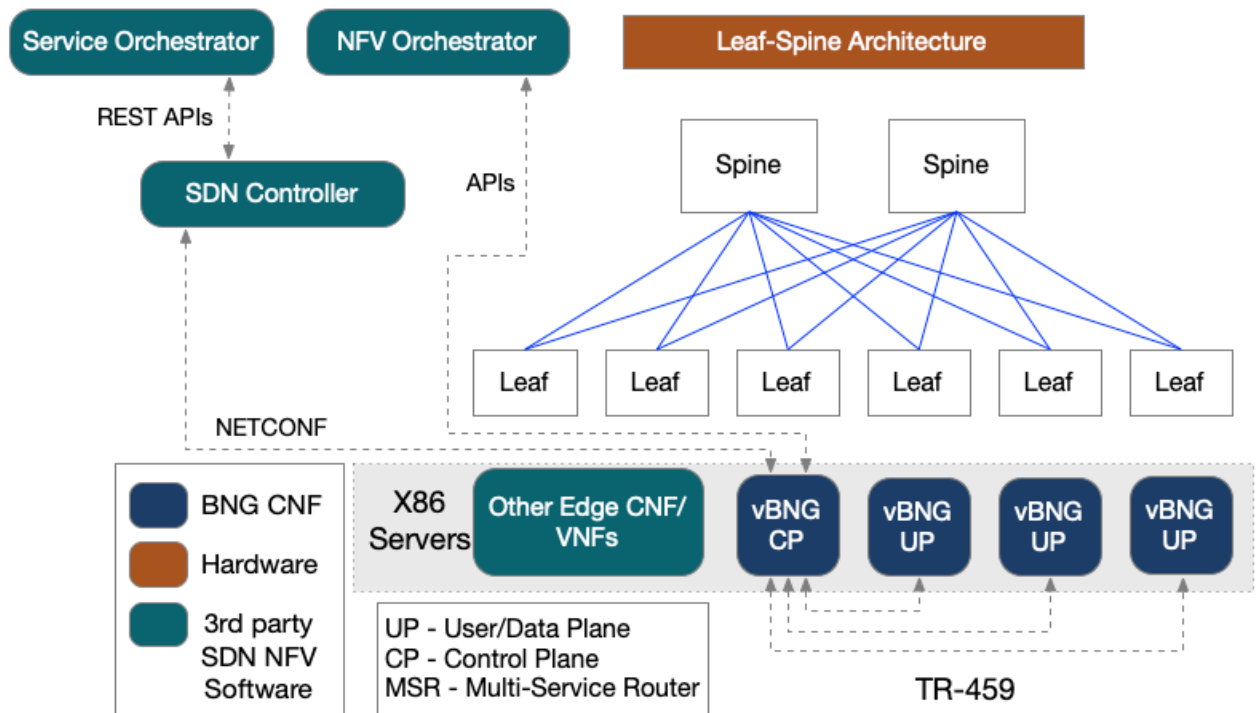
Figure 1: Cloud-Native, Decomposed vBNG Evo Architecture Control Plane and User Plane Separation



Distributed Data Planes with Centralized Control Plane

The Aurora Networks vBNG Evo disaggregated architecture allows the data planes to be distributed to remote central offices closer to the subscriber location. The control plane is centralized at a data center or regional central office. The system operates as one logical BNG instance while still provided the benefits of low latency and fast access to content enabled by distributed data plane processing. Aurora Networks supports full redundant control and planes for 5-9s service enablement to business and residential subscribers. Figure 2 below shows the network topology for the distributed architecture.

Figure 2: Cloud-Native vBNG Evo Architecture with Control Plane and User Plane Separation



FEATURES

Access Methods	
	IPoE/PPPoE sessions L2TP LAC and LNS for wholesale model SoftGRE Tunnel Combination of all access methods on same interface Configuration through dynamic profiles
Authentication/Authorization of Subscriber Sessions	
	Authentication/Authorization/Accounting via RADIUS and Gx interface IPoE/DHCP (Relay and local server) IPv4 and IPv6 support Walled Garden PPPoE Sessions RADIUS Change of Authorization (COA)
Traffic Management	
	Per subscriber QoS Traffic policing/shaping/rate limiting H-QoS HTTP redirect RR and WFQ scheduling Unicast Reverse Path Forwarding ACLs per subscriber
L2/L3/MPLS	
	802.ad (QinQ) for 1:1 and N:1 VLAN classifications Layer 3 routing/OSPF/BGP/RIP/IS-IS/Policy-based routing MPLS (L2 and L3 MPLS VPNs); LAG/LACP PIM-SM/IGMP MLDv2
Management	
	Element Management function interfaces with OSS/BSS for provisioning, fault and performance management: CLI, SNMP, NETCONF/YANG Lawful Intercept trigger from RADIUS, CLI or SNMPv3
Scaling and Throughput	
	Independent scaling of control and data planes Data plane scalable to Tbps Control plane scalable from 256,000 to 2 million
Redundancy and High Availability	
	Control Plane 1+1 Active/Standby Data Plane N+M Active/Standby
Value Added Applications	
	Wi-Fi Access Gateway Integrated CGNAT to reduce the number of public IPv4 addresses required

ORDERING INFORMATION

Model Name	Description
Licenses	
BNG-BASE-SW	vBNG Control Plane (CP) Base License
BNG-UP-BASE	vBNG User Plane (UP) Base License
BNG-1K-S	License for 1,000 vBNG Subscribers
BNG-10K-S	License for 10,000 vBNG Subscribers
BNG-100K-S	License for 100,000 vBNG Subscribers
BNG-500K-S	License for 500,000 vBNG Subscribers
BNG-10G-BW	Software License for Enabling 10G Bandwidth Downstream and Upstream Combined
BNG-100G-BW	Software License for Enabling 100G Bandwidth Downstream and Upstream Combined
BNG-CGN-10G-BW	CGNAT License 10G Total Throughput (DS & US)
BNG-CGN-100G-BW	CGNAT License 100G Total Throughput (DS & US)
BNG-1K-GRE	License for 1,000 total GRE Tunnels
BNG-10K-GRE	License for 10,000 total GRE Tunnels
BNG-100K-GRE	License for 100,000 total GRE Tunnels
Packages	
BNG-10G-5K-PKG	vBNG Package License for Enabling 10G Bandwidth and 5,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-1K-S (1), BNG-10G-BW (1). Note package includes CGNAT, standby CP and standby UP.
BNG-100G-5K-PKG	vBNG Package License for Enabling 100G Bandwidth and 5,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-1K-S (5), BNG-100G-BW (1). Note package includes CGNAT, standby CP and standby UP.
BNG-10G-10K-PKG	vBNG Package License for Enabling 10G Bandwidth and 10,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-10K-S (1), BNG-10G-BW (1). Note package includes CGNAT, standby CP and standby UP.
BNG-100G-10K-PKG	vBNG Package License for Enabling 100G Bandwidth and 10,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-10K-S (1), BNG-100G-BW (1). Note package includes CGNAT, standby CP and standby UP.
BNG-10G-20K-PKG	vBNG Package License for Enabling 10G Bandwidth and 20,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-10K-S (2), BNG-10G-BW (1). Note package includes CGNAT, standby CP and standby UP.
BNG-20G-20K-PKG	vBNG Package License for Enabling 20G Bandwidth and 20,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-10K-S (2), BNG-10G-BW (2). Note package includes CGNAT, standby CP and standby UP.
BNG-100G-20K-PKG	vBNG Package License for Enabling 100G Bandwidth and 20,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-10K-S (2), BNG-100G-BW (1). Note package includes CGNAT, standby CP and standby UP.
BNG-100G-64K-PKG	vBNG Package License for Enabling 100G Bandwidth and 64,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-10K-S (6), BNG-1K-S (4), BNG-100G-BW (1). Note package includes CGNAT, standby CP and standby UP.
BNG-200G-128K-PKG	vBNG Package License for Enabling 200G Bandwidth and 128,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-100K-S (1), BNG-10K-S (2), BNG-1K-S (8), BNG-100G-BW (2). Note package includes CGNAT, standby CP and standby UP.
BNG-400G-256K-PKG	vBNG Package License for Enabling 400G Bandwidth and 256,000 Subscribers. Includes: BNG-BASE-SW (1), BNG-UP-BASE (1), BNG-100K-S (2), BNG-10K-S (5), BNG-1K-S (6), BNG-100G-BW (4). Note package includes CGNAT, standby CP and standby UP.

Contact Customer Care for product information and sales:

- United States: +1-888-944-4357
- International: +1-215-323-2345



Note: Specifications are subject to change without notice.

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