Netceed

COMMSCOPE®

vBNG

Virtualized Broadband Network Gateway Solution

Netceed

Netceed is a global leader in distribution, logistics, technical engineering, and product design with over 30 years of expertise and performance supporting the telecommunications, broadband and energy sectors.

Netceed supplies and distributes a comprehensive range of passive and active equipment and tooling for network deployment, upgrades, and maintenance, supporting all technologies including FTTH, FTTx, HFC, Wi-Fi, 5G/mobile, energy and data center.

Netceed's comprehensive portfolio of 90,000+ products from nearly 1,500 industry-leading suppliers, along with their value-added supply chain solutions support carriers' seamless delivery of high-speed Internet, Video, Data, and Voice services to Residential, Business, and Mobile Users, combined with an extensive know-how within the energy sector.

Netceed employs around 1,800 people across 19 countries and counting, and its experienced team works hard every day shaping the future of communication networks across the globe.

We build connections

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We provide you with a scalable architecture for your access network

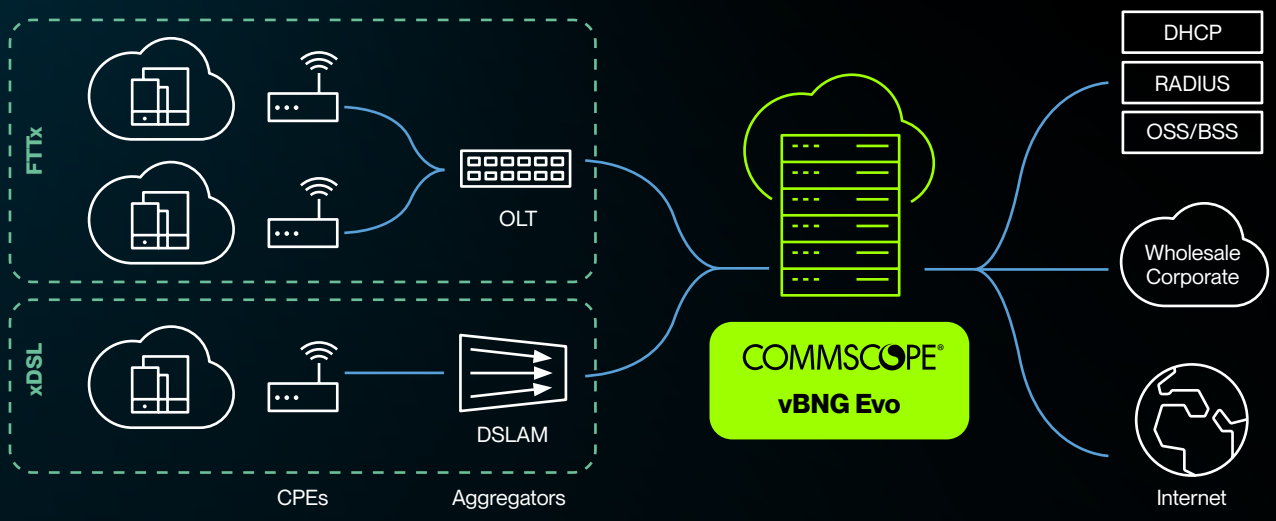
Our Solution for a modern vBNG

A Broadband Network Gateway (BNG) connects subscribers to broadband services, managing authentication, policies, and traffic forwarding. Traditionally hardware-based, a virtualized BNG (vBNG) moves these functions into a cloud-native software environment, giving service providers greater scalability, faster service deployment, and flexibility across broadband and wireless networks. A key advantage is the **separation of Control Plane (CP) and User Plane (UP),** enabling independent scaling of subscriber management and data traffic.

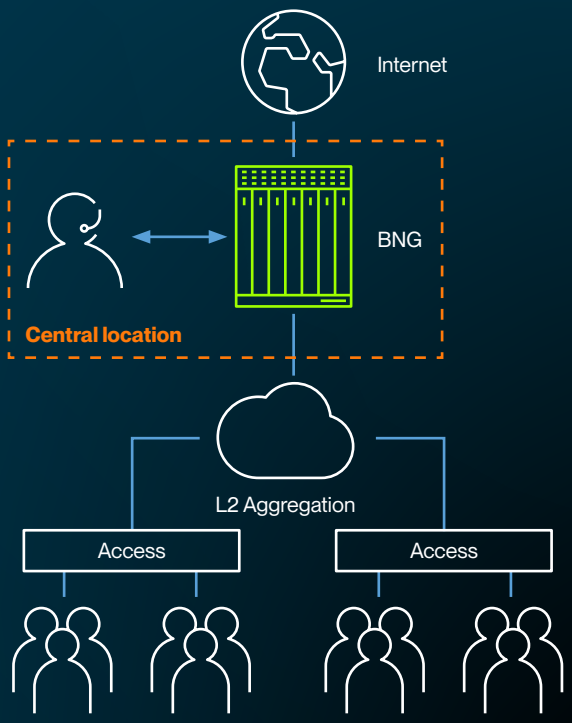
The CommScope® vBNG Evo is a fully virtualized solution that combines advanced subscriber management with high-performance routing. Built as a cloud-native, container-based platform, it delivers the elasticity and efficiency needed to meet growing FTTH and wireless demands. Through its disaggregated design, vBNG Evo streamlines packet flows and supports dynamic scaling of CP and UP, ensuring high throughput in both centralized and distributed deployments.

Key Features of the CommScope® vBNG Evo

- **Cloud-Native Architecture:** Purpose-built for container-based virtualization frameworks.
- **Flexible Scaling:** Separation of control and user planes with redundancy and multidimensional scaling for service agility and faster time to market.
- **Disaggregated Network Functions:** Control and user planes can be deployed centrally or distributed to the edge, depending on service requirements.
- **High Performance:** Delivers industry-leading throughput with Hierarchical QoS (HQoS) and accounting per session, scalable up to terabits per second.
- **Advanced Subscriber Management:** Includes per-subscriber HQoS and policy-based routing for precise service control.



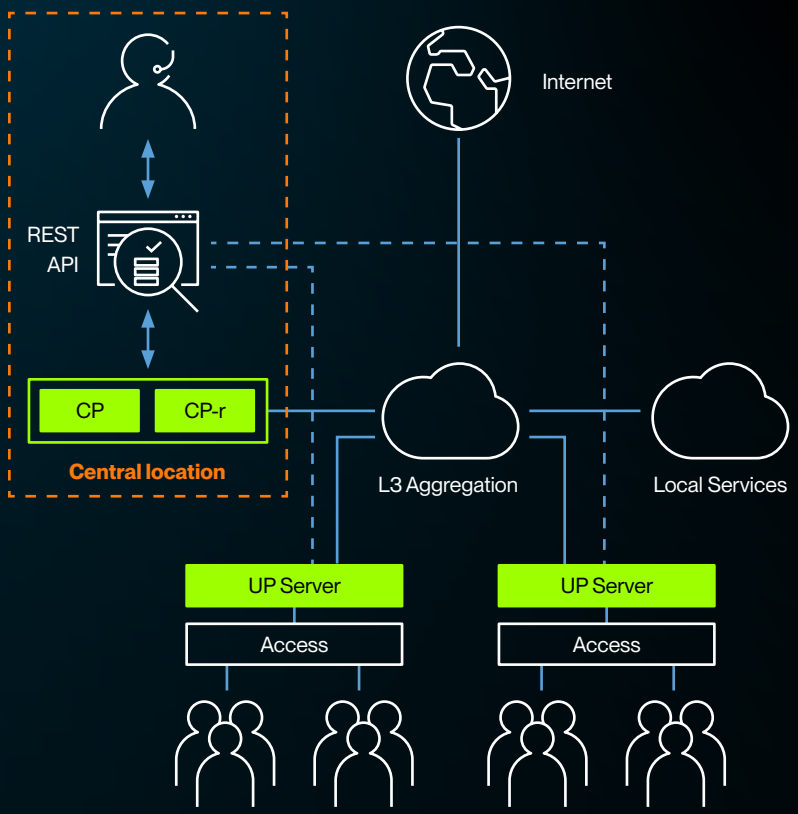
Evolution of traditional BNG setups ...



Challenges of traditional chassis-based BNG

- Single point of failure with large impact zone
- Proproprietary hardware/software integration leading to vendor lock-in
- Limited flexibility in scaling capacity (“not pay-as-you-grow”)
- High redundancy costs (typically 1+1 configurations)
- Lack of agility in hardware and software upgrades
- Difficult to deploy services at the network edge
- Inefficient resource use with underutilized chassis

... to modern vBNG solutions.



Overcome the challenges with a disaggregated vBNG

- Centralized Control Plane simplifies operations
- Failures isolated – CP or UP issues do not impact the entire BNG
- Open, off-the-shelf hardware – no vendor lock-in
- Software-based and agile for faster service innovation
- Pay-as-you-grow scaling in both hardware and software
- Flexible capacity expansion with linear scaling
- Cost-efficient redundancy (N+1 / N+m, including geo redundancy)
- Service deployment possible at the network edge
- CUPS architecture aligned with Broadband Forum TR-459

Advantages of vBNG over traditional solutions

A disaggregated, cloud-native vBNG offers far more than scalability. It eliminates traditional deployment compromises by running on open, standards-based (TR-459) interfaces and leveraging cost-efficient x86 hardware. This approach ensures flexibility, future readiness, and the ability to take advantage of ongoing innovation and annual performance gains in the server market. Integrated functions such as CGNAT, including support for DS-Lite and soft-GRE, further reduce complexity and eliminate the need for additional network elements.

At the same time, the microservices-based architecture enables rapid development and testing cycles without dependency on proprietary hardware or firmware, ensuring greater agility. Efficiency is also improved through advanced redundancy models (m+n), lower power requirements, and a reduced footprint — translating directly into OPEX and CAPEX savings for operators.

Key advantages

- Open, standards-based, and future-proof design
- Cost efficiency and performance growth with x86 platforms
- Integrated CGNAT with minimal performance impact
- Agile microservices architecture for rapid innovation
- Reduced costs, footprint, and energy consumption

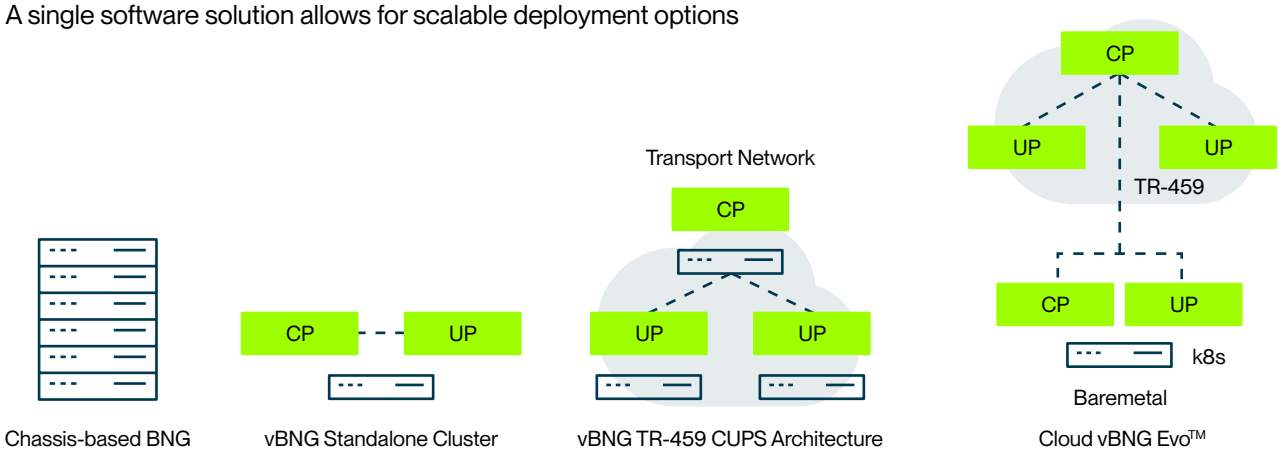
Feature-rich CP with UPs on x86 for edge, cloud and hybrid deployments

Aligns with Broadband Forum and Open Networking Foundation standards

CP redundancy: 1+1 CP redundancy & geo redundancy
UP redundancy: m+n redundancy scheme

Pay-as-you-grow

A single software solution allows for scalable deployment options



Value-added option: WiFi Access Gateways

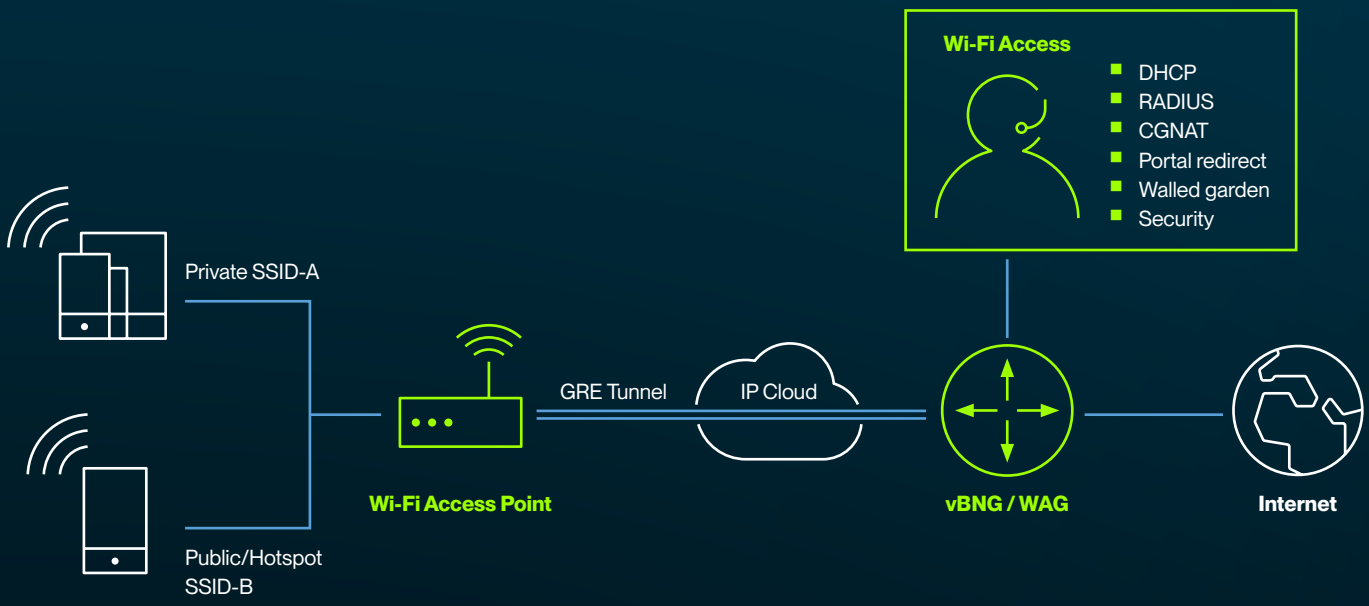
How WiFi Access Gateways can enhance your vBNG solution

WiFi Access Gateways (WAG) extend broadband services beyond fixed connections by enabling flexible, managed access across a wide range of environments.

From public hotspots and community WiFi networks to education campuses, smart cities, venues, and hospitality environments, WAG allows providers to deliver consistent broadband experiences across diverse locations. It also supports mobile network offload and multi-dwelling units (MDUs), ensuring reliable and secure connectivity wherever subscribers need it.

Solution Benefits

- Flexible deployment of control and data plane functions, centralized or across multiple locations
- Seamless, persistent authentication for subscribers
- Enhanced user experience through hierarchical QoS and subscriber-specific profiles
- Intelligent traffic management enabling value-added services (e. g. security, parental controls, content filtering, firewalls)
- Lower costs by consolidating functions and avoiding additional network elements
- Integrated IP address management, AAA, and CGNAT within a single platform



CommScope® vBNG Evo: Technical specifications

Parameter	Details
Access Methods	■ IPoE/PPPoE sessions ■ L2TP LAC and LNS for wholesale model ■ 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 to several million subscribers
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

Netceed

Get in touch

Our team of experts looks forward to helping you develop a scalable and future-proof vBNG configuration that will enable you to save on OPEX and CAPEX while building redundancy. Feel free to get in touch to discuss your requirements.

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