



The bridge to possible

Data sheet
Cisco public

Cisco Cloud Native Broadband Network Gateway

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Cisco® Cloud Native Broadband Network Gateway (cnBNG) provides new dimension to the Control Plane and User Plane Separation (CUPS) architecture of the Broadband Network Gateway (BNG), enabling flexibility and rapid scaling for Internet service providers.

Product overview

With the new CUPS architecture, the Control Plane can host the subscriber management functions globally, across the network, on an elastic infrastructure to have agile scalability. The User Plane will continue to anchor the sessions and aggregate the traffic to the service provider network.

The Cisco cnBNG Control Plane is built on Cisco Cloud Native Infrastructure, which is a Kubernetes-based platform that provides a common execution environment for container-based applications. The Cisco cnBNG Control Plane is built on principles of stateless microservices, to scale at ease and introduce services much faster and more cost-effectively. The Cisco cnBNG Control Plane can also run as a Virtual Machine (VM) to adapt to existing virtual infrastructures deployed by service providers. The cnBNG Control Plane is built ground up on clean-slate architecture with a view on “Converged Subscriber Services” and is aligned to 3gpp and BBF standards. The cnBNG Control Plane effectively manages the subscriber management functions such as:

- Authentication, authorization, and accounting of subscriber sessions
- IP address assignment
- In-built DHCP server
- Security
- Policy management
- Quality of Service (QoS)

Service providers can choose from a wide variety of available ASR9000 form factors, based on exact deployment requirements. CUPS architecture allows you to run these User Planes in distributed mode, to the edge of network, for early traffic offloads.

Features and benefits

- 1) Path to convergence: With shared Subscriber Management infrastructure, common microservices across the policy layer, and shared User Planes for BNG and Mobile back-haul, cnBNG will pave the way for real Fixed Mobile Convergence.
- 2) Flexibility of scaling: cnBNG architecture provides flexibility by decoupling the required scalability dimensions. The Control Plane can be scaled with the required number of subscribers to be managed, and User Planes can be augmented based on the bandwidth requirements. Instead of building the Control Plane for peak usage, Orchestrator can be triggered to deploy the relevant microservices as needed to handle the increased rate of transactions.
- 3) Distributed User Planes: Reduce the core transport costs by having user planes closer to the end users allowing traffic to be offloaded sooner. This is possible through the use of centralized control planes and has the additional benefits of reduced operational complexity and minimal integration efforts for new services.

- 4) Cost-effective and leaner user planes: With the subscriber management functions moved to cloud, cost-effective User Plane models can be chosen for optimized deployment requirements.
- 5) Automation and North-Bound Interfaces (NBI): Cisco cnBNG architecture speeds up the deployments through automation and opens up ways to introduce new services. With consistent NBI (NETCONF, RESTCONF, and YANG) across the product line, automation and management becomes easier across the domains.
- 6) Subscriber visibility: With the industry's largest collection of telemetry Key Parameter Indicators (KPIs), Cisco cnBNG provides enhanced visibility for BNG transactions at a global level, using the in-built dashboards. These KPI details can also be queried by the existing Service Assurance systems for better performance management.

Control Plane Platform Support

Product Family	Platforms Supported	IOS Images (Feature Sets) Supported
Cisco Cloud Native BNG Control Plane	VMware 6.5 OpenStack	

Licensing

Uses Cisco Smart Licensing - registers applications and number of sessions	
Application Base	Per Cluster
Session (Increments)	Network Wide

System requirements

Feature	Description
Disk Space	2x800 GB SSD (RAID 1) or equivalent input/output operations per second (IOPS) and redundancy
Hardware	<ul style="list-style-type: none"> • High-performance x86 64-bit chipset • CPU performance Passmark benchmark of 13K rating per chip and 1365 rating per thread, or better • ESX-compatible if using VMware
Memory	<ul style="list-style-type: none"> • At least DDR3-1600 or better than 1600 MT/s • ECC
Deployment Requirement	Hardware oversubscription, network saturation, or CPU oversubscription reduces application performance and predictability. The Cisco Ultra Cloud Core will detect and take action when infrastructure requirements are not met.

Ordering information

Cisco cnBNG control plane

Product IDs	Description
CN-BNG-BASE-L	Base PID for cnBNG Control Plane (Per Cluster)
CN-BNG-100k-L	Session scale for 100K subscribers (Network Wide)
Reference to the ASR9K data sheet	THK and LSP

Cisco cnBNG user planes

Please refer the ASR9000 data sheet for ordering information:

<https://www.cisco.com/c/en/us/products/routers/asr-9000-series-aggregation-services-routers/datasheet-listing.html>

Warranty information

Cisco Cloud Native BNG has the standard Cisco software warranty.

Cisco and Partner Services

Using the Cisco lifecycle services approach, Cisco and our partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you deploy and operate Cisco technologies and optimize their performance throughout the network lifecycle.

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Call to action

Position your network for success with Cisco Cloud Native BNG. For more information, contact your local account representative.

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