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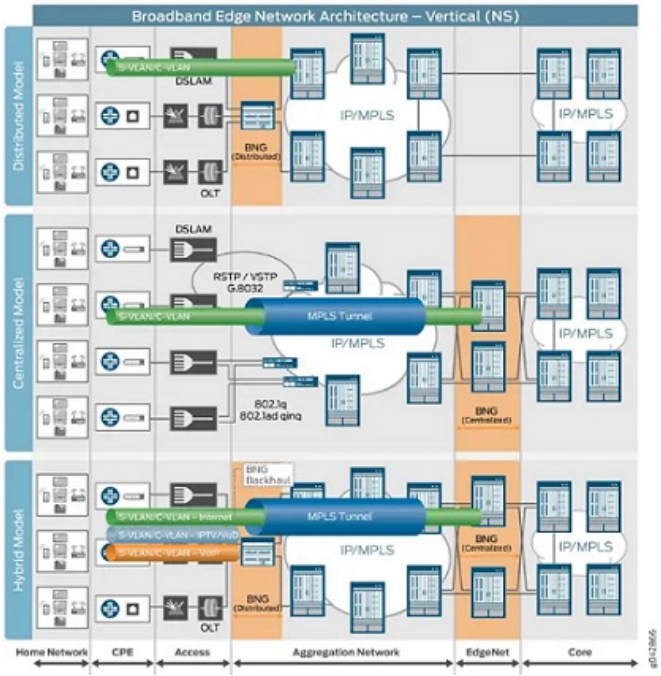
Juniper NETWORKS 25.2R1 Broadband Network Gateway



Specifications

- **Product:** Juniper BNG CUPS 25.2R1
- **Published:** 2025-06-30

Product Usage Instructions

Introduction

The Juniper BNG CUPS 25.2R1 is a controller system that requires specific system requirements for installation.

Installation

BNG CUPS Controller Requirements

The installation of Juniper BNG CUPS 25.2R1 requires a Kubernetes cluster comprised of physical or virtual machines with the minimal resources specified in Table 1.

Table 1: Single Kubernetes Cluster Setup Requirements

Category	Details
Jump host	If using Red Hat OpenShift Container Platform cluster,OpenShift CLI must be installed.

Node specification (minimum of 3 nodes)	We recommend partitioning disk storage accordingly.

New and Changed Features
The Juniper BNG CUPS 25.2R1 introduces new features such as exporting queue statistics and dynamic interface information for interfaces (IFLs) and interface sets.

Open Issues
Issue PR1819336 is currently open and must be addressed.

Requesting Technical Support
Technical support is available through the Juniper Networks Technical Assistance Center (JTAC) for customers with active support contracts.

Introduction

Juniper BNG CUPS disaggregates the broadband network gateway (BNG) function running in Junos OS into separate control plane and user plane components. The control plane is a cloud-native application that runs in a Kubernetes environment. The user plane component continues to run on Junos OS on a dedicated hardware platform. In Juniper BNG CUPS, the BNG functions are split into the BNG CUPS Controller (control plane) functions and the BNG User Plane (user plane) functions. The management, state and control packet interfaces operate between the BNG CUPS Controller and the BNG User Planes.

The benefits of Juniper BNG CUPS are the following:

- A centralized BNG CUPS Controller provides for more efficient use of network resources. Following are some examples:
- Address allocation
- Load balancing
- Resiliency and high availability
- Management and control
- Increased scale—The cloud environment that Juniper BNG CUPS utilizes, enables you to increase the number of subscribers supported.

- Locational independence and separate life-cycle management and maintenance.
- Throughput and latency optimization—Because the BNG User Planes are closer to the subscribers, throughput and latency is optimized.

These release notes accompany the Juniper BNG CUPS release 25.2R1. They describe new features and known problems.

Installation

BNG CUPS Controller Requirements

Juniper BNG CUPS 25.2R1 installation requires the minimum system requirements listed in this section.

NOTE: The system requirements listed in Table 1 on page 3 are for a single geographically located installation of Juniper BNG CUPS Controller (BNG CUPS Controller). For the system requirements of a multiple geographically located, multiple cluster setup, see Juniper BNG CUPS Installation Guide.

BNG CUPS Controller installs on a Kubernetes cluster comprised of physical or virtual machines (VMs).
BNG CUPS Controller requires the minimal resources listed in Table 1 on page 3, from the Kubernetes cluster.
For information on how to install Juniper BNG CUPS, see Juniper BNG CUPS Installation Guide.

Table 1: Single Kubernetes Cluster Setup Requirements.

Category	Details

Jump host	The jump host must be running Ubuntu version 22.04 LTS or later and have the following resources allocated to it: • CPU—2 cores • Memory—8 GB • Storage—128 GB If you are using a Red Hat OpenShift Container Platform cluster, you must have the OpenShift CLI installed.

Node specification (minimum of 3 nodes)	A node is a Linux system (either virtual or physical system) that has a management address and a domain name. The nodes must meet the following requirements: • Operating System: • Ubuntu 22.04 LTS (for a BBE Cloudsetup cluster) • Red Hat Enterprise Linux CoreOS (RHCOS) 4.15 or later (for an OpenShift Container Platform cluster) • CPU cores—12 cores (hyperthreading preferred) • Memory—64 GB • Storage—512 GB of free disk storage in the root partition We recommend that you partition your dis

	k storage accordingly: • 128 GB to the root (/) partition for the operating system • 128 GB to **/var/lib/docker** for the Docker cache • 256 GB to **/mnt/longhorn** for the application data. This is the default location, you can specify a different location during configuration. • All cluster nodes must have a user account with sudo access. • You must have root-level SSH access from the jump host, using key-based authentication, to all nodes. **NOTE**: To create the cluster, you can use either of the following applications:

	• BBE Cloudsetup release 2.1 or later • Red Hat OpenShift Container Platform release 4.15 or later. An OpenShift Container Platform cluster also, requires the following: • A container registry • A network load balancer with at least one IP Address Pool • A storage class named jnpr-bbe-storage

New and Changed Features

Learn about new features or enhancements to existing features in Juniper BNG CUPS 25.2R1. For more information about a feature, click the link in the description. See the Juniper BNG CUPS Installation Guide and Juniper BNG CUPS User Guide for more details about new and changed features.

New and Changed Features

We've introduced the following in Juniper BNG CUPS 25.2R1:

- Telemetry sensors support for IFL and IFL set statistics from BNG User Planes. You can monitor and export queue statistics and dynamic interface information for interfaces (IFLs) and interface sets (IFLsets) from BNG User Planes using telemetry sensor subscriptions. This feature enables you to collect and analyze queue statistics for interfaces and interface-sets efficiently.
- Added support for enhanced CoS handling and dynamic broadband edge subscriber management for ACX7100-48L, ACX7332, and ACX7348 devices. You can now configure dynamic IFL-Based Subscriber and Agent Circuit identifier-based Dynamic VLANs for BBE subscribers on ACX7100,ACX7332, and ACX7348 platforms. The

maximum CoS IFL scaling is adjusted based on the CoS resources and all service-related configurations must be defined in the client's IFL dynamic profile.
- The oversubscribed standby feature is optimized for the resource utilization for subscribers through the BNG CUPS subscriber groups feature. As part of this enhancement the warm option for the userplane backup-mode configuration at the groups bbe-bng-director bng-controller subscriber-groups subscribergroup-name hierarchy level is changed to warm-enhanced.

Open Issues

This section lists the known issues in Juniper BNG CUPS Release 25.2R1.

- BNG CUPS Controller command processing issue when commands are entered incorrectly. PR1806751
- When using the BNG User Plane: mode user-plane transport routing-instance configuration, a reboot is required. PR1819336

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC).
If you are a customer with an active Juniper Care or Partner Support Services support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources
online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the JTAC
  User Guide located at https://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf.
- Product warranties—For product warranty information, visit https://www.juniper.net/support/warranty/.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week,365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: https://www.juniper.net/customers/support/
- Search for known bugs: https://prsearch.juniper.net/
- Find product documentation: https://www.juniper.net/documentation/
- Find solutions and answer questions using our Knowledge Base: https://supportportal.juniper.net/s/knowledge
- Download the latest versions of software and review release notes: https://www.juniper.net/customers/csc/software/
- Search technical bulletins for relevant hardware and software notifications: https://supportportal.juniper.net/s/knowledge
- Join and participate in the Juniper Networks Community Forum: https://www.juniper.net/company/communities/
- Create a service request online: https://supportportal.juniper.net/
  To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: https://entitlementsearch.juniper.net/entitlementsearch/

Creating a Service Request with JTAC

You can create a service request with JTAC on the Web or by telephone.

- Visit https://support.juniper.net/support/requesting-support/
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see https://support.juniper.net/support/requesting-support/.

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FAQ

What should I do if I encounter issues during installation?

If you encounter issues during installation, please refer to the Juniper BNG CUPS Installation Guide for troubleshooting steps or contact technical support through JTAC.

Can I install Juniper BNG CUPS on a single node cluster?

No, Juniper BNG CUPS installation requires a minimum of 3 nodes in the Kubernetes cluster as specified in the system requirements.

Documents / Resources

	Juniper NETWORKS 25.2R1 Broadband Network Gateway [pdf] User Guide 25.2R1, 25.2R1 Broadband Network Gateway, Broadband Network Gateway, Network Gateway, Gateway

References

- User Manual

JUNIPER NETWORKS

25.2R1, 25.2R1 Broadband Network Gateway, Broadband Network Gateway, gateway, JUNIPER NETWORKS, Network Gateway

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