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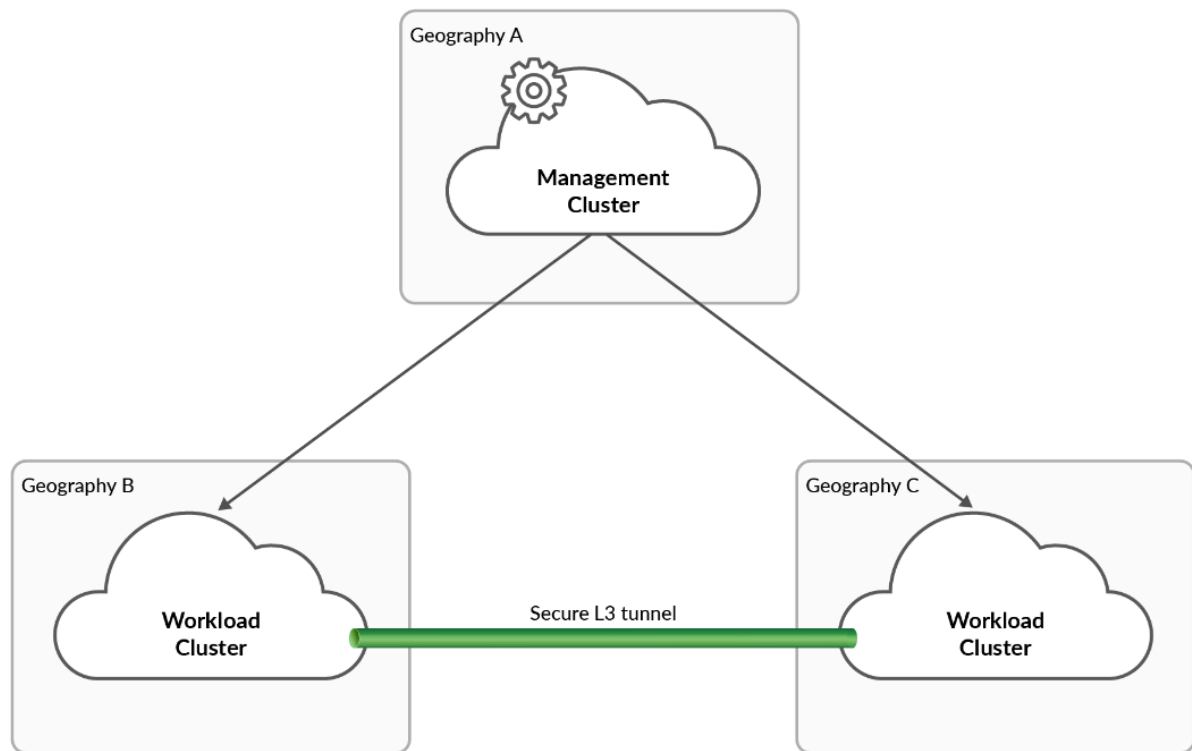
[Home](#) » [JUNIPER NETWORKS](#) » **Juniper NETWORKS 3.4.0 Juniper Address Pool Manager User Guide** 

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**Juniper NETWORKS 3.4.0 Juniper Address Pool Manager**



## Product Information

### Specifications

- **Category:** Address Pool Manager
- **Version:** 3.4.0
- **Published:** 2025-06-03
- **Cluster:** Single cluster with 3 hybrid nodes
- **Kubernetes Node:** 16-core node for running APM and companion applications
- **Storage:** jnpr-bbe-storage
- **Network Load Balancer Address:** One for APMi
- **Container Image Storage Requirement:** Approximately 3 gigabytes (GiB) per APM release

## Product Usage Instructions

### Installation

- Address Pool Manager 3.4.0 installation requires the minimum system requirements listed in the user manual.

### Additional Requirements

- Ensure to meet all additional requirements specified in the installation guide.

## **Cluster Setup**

- To set up a single geographical cluster for APM, follow the specifications provided in Table 1 of the user manual.

## **Kubernetes Node Configuration**

- Use a 16-core node for running APM and other companion applications concurrently.

## **Storage Setup**

- Create a storage class named jnpr-bbe-storage for APM usage.

## **Network Load Balancer**

- Configure a network load balancer address for APMi.

## **Container Image Storage**

- Ensure to have sufficient storage space for container images.
- Each APM release requires approximately 3 gigabytes (GiB) of storage.

## **Introduction**

- Juniper Address Pool Manager (APM) is a cloud-native, container-based application running on a Kubernetes cluster that manages address pools in a network.
- APM monitors the IPv4 address pools on broadband network gateways (BNGs) in the network.
- When the free address utilization drops below a specified threshold on a BNG, APM adds unused prefixes from a centralized pool to the BNG's address pool.
- APM, in cooperation with the BNG, monitors and links address pools in support of dynamic address allocation mechanisms for subscribers.

## **The benefits of APM are as follows:**

- Improves the efficiency of address utilization
- Reduces the overhead and complexity of monitoring and provisioning by automating monitoring and provisioning.
- Allows reclamation of underutilized prefixes for redistribution to the pools that need them.
- Enables APM to work with the BNG CUPS Controller.
- These release notes accompany Juniper Address Pool Manager Release 3.4.0

## Installation

- Address Pool manager 3.4.0 installation requires the minimum system requirements listed in this section.
- **NOTE:** The system requirements listed in Table 1 on page 2 are for a single geographically located installation of Address Pool Manager (APM).
- For the system requirements of a multiple geographically located, multiple cluster setup, see [Address Pool Manager Installation Guide](#).
- APM installs on a Kubernetes cluster comprised of physical or virtual machines (VMs).
- APM has been qualified against the single geographical cluster described in Table 1.
- For information on how to install APM, see [Address Pool Manager Installation Guide](#).

**Table 1: Single Geographical Cluster Specifications**

Category	Details
Cluster	<b>A single cluster with 3 hybrid nodes.</b>

## Kubernetes node

The Kubernetes nodes require the following:

- For the operating system, you can use either of the following:
- Ubuntu 22.04 LTS (for a BBE Cloud set up cluster)
- Red Hat Enterprise Linux CoreOS (RH COS) 4.15 or later (for an OpenShift Container Platform cluster)
- CPU: 8 or 16 cores.

Use a 16-core node if you plan on running other applications on the cluster (such as the BNG CUPS Controller application).

- Memory: 64 GB
- Storage: 512 GB storage partitioned as 128 GB root (/), 128 GB /var/lib/docker, and 256 GB /mnt/ longhorn(application data)
- Kubernetes role: Control plane etcd function and worker node

This specification establishes a cluster that can run APM as well as its companion applications, such as BBE Event Collection and Visualization, and BNG CUPS Controller simultaneously.

Category	Details
Jump host	<p>The jump host requires the following:</p> <ul style="list-style-type: none"> <li>• Operating system: Ubuntu version 22.04 LTS or later</li> <li>• CPU: 2-core</li> <li>• Memory: 8 gigabytes (GiB)</li> <li>• Storage: 128 gigabytes (GiB)</li> <li>• Installed software: <ul style="list-style-type: none"> <li>• Python3-venv</li> <li>• Helm utility</li> <li>• Docker utility</li> <li>• OpenShift CLI. Required if you are using a Red Hat OpenShift Container Platform cluster.</li> </ul> </li> </ul>

Cluster software	<p>The cluster requires the following software:</p> <ul style="list-style-type: none"><li>• RKE version 1.3.15 (Kubernetes 1.24.4)—Kubernetes distribution</li><li>• MetalLB version 0.13.7—Network load balancer</li><li>• Keepalived version 2.2.8—Kubelet HA VIP Controller</li><li>• Longhorn version 1.2.6—CSI</li><li>• Flannel version 0.15.1—CNI</li><li>• Registry version 2.8.1—Container registry</li><li>• OpenShift version 4.15+—Kubernetes Distribution for RHOC. Uses compatible versions of Longhorn (CSI), MetalLB, OVN (CNI), and OpenShift Image Registry</li></ul>
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Category	Details
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Jump host software	<p>The jump host requires the following software:</p> <ul style="list-style-type: none"> <li>• Kubectl version 1.28.6+rke2r1—Kubernetes client</li> <li>• Helm version 3.12.3—Kubernetes package manager</li> <li>• Docker-ce version 20.10.21—Docker engine</li> <li>• Docker-ce-cli version 20.10.21—Docker engine CLI</li> <li>• OpenShift version 4.15+—Kubernetes distribution for RHOCP clusters.</li> </ul>
Storage	A storage class named jnpr-bbe-storage.
Network load balancer address	One for APMi.
Registry storage	Each APM release requires approximately 3 gigabytes (GiB) of container images.

## Additional Requirements

- The BNG is a Juniper Networks MX Series router running Junos or a Juniper BNG CUPS Controller (BNG CUPS Controller).

### We recommend the following releases:

- Junos OS Release 23.4R2-s5 or later
- BNG CUPS Controller 24.4R1 or later
- For APM, confirm that you have a juniper.net user account with permissions to download the APM software package.
- Download and install the APM software from a machine that will not be part of the



Kubernetes cluster.

## New and Changed Features

- We have introduced the following new feature in APM 3.4.0.
- Support for geographic redundancy—Address Pool Manager can maintain continuous operation across multiple geographically distributed Kubernetes clusters.
- By utilizing a multiple cluster architecture managed by Karmada for orchestration and Submariner for inter-cluster networking, APM can failover if a data center outage occurs.

## Open Issues

- Learn about the open issues in Address Pool Manager 3.4.0
- Deleting an entity-match entry does not completely clean up the show apm entity output. [PR1874241](#)
- An in-service upgrade of the BBE-observer triggers a rollout. As part of an in-service upgrade of the observer microservice, it may appear as if all APM microservices are being upgraded.
- The list of container images loaded or pushed in the rollout output indicates that all the microservices are being upgraded, but only the observer microservice is upgraded.
- Other container images that are being loaded or pushed are not upgraded.  
[PR1879715](#)
- Reverting network load balancer (MetalLB) annotations, followed by performing a rollout, does not reset the external IP address for the APMi.

## Workaround:

- When the external address of the APMi that is bound to a particular IPAddressPool through the network load balancer annotations needs to be reverted to use an auto-assign IPAddressPool by removing the annotations, a stop command, and then a rollout command of APM must be performed.
- [PR1836255](#)

## 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/>

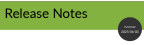
## Creating a Service Request with JTAC

- You can create a service request with JTAC on the Web or by telephone.
- Visit <https://support.juniper.net/support/requesting-support/>
- Call 1888314JTAC (18883145822 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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## Frequently Asked Questions

- **Q: What should I do if I encounter issues during installation?**
  - **A:** Refer to the Open Issues section in the user manual for troubleshooting tips or contact technical support for assistance.
- **Q: Can I run other applications on the same Kubernetes cluster as APM?**
  - **A:** Yes, you can run other applications on the cluster, but ensure to use a 16-core node as per the specifications.

## Documents / Resources

	<a href="#">Juniper NETWORKS 3.4.0 Juniper Address Pool Manager [pdf]</a> User Guide APM-3-4-0, 3.4.0 Juniper Address Pool Manager, 3.4.0, Juniper Address Pool Manager, Address Pool Manager, Pool Manager, Manager
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## References

- [User Manual](#)

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