Release Notes

Published
2022-09-25

Cloud-Native Contrail Networking 22.3

Juniper Networks | Engineering Simplicity

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Introduction

Juniper Networks Cloud-Native Contrail Networking is a cloud-native software defined networking (SDN) solution that provides high-performance networking to Kubernetes-orchestrated environments. Cloud-Native Contrail automates the creation and management of virtualized networks to connect, isolate, and secure cloud workloads and services seamlessly across cloud networks. Contrail Networking delivers federated multi-cluster networking in Kubernetes-orchestrated environments, providing a networking solution that supports both virtualized network functions (VNFs) and containerized network functions (CNFs).

These release notes accompany Release 22.3 of Cloud-Native Contrail Networking. See: Cloud-Native Contrail Networking, Release 23. This document describes new features, limitations, platform compatibility requirements, known behavior, and resolved issues.

Features

IN THIS SECTION

This section highlights the key features introduced with Cloud-Native Contrail Networking Release 22.3. A brief description of each new feature follows.

Cluster Security

Kubernetes Network Policy matchExpressions—Starting in Cloud-Native Contrail Networking Release 22.3, CN2 supports Kubernetes Network Policy with `matchExpressions`. For information about `matchExpressions`, see "Resources that support set-based requirements" in the Kubernetes documentation.

Services

Configure LoadBalancer Services without Selectors—Starting in Cloud-Native Contrail Networking Release 22.3, you can now load balance a service across multiple secondary interfaces. Kubernetes uses selectors to automatically create a LoadBalancer service, but only uses the default primary interface for load balancing. This feature allows you to create secondary interfaces in CN2 without using a selector.

See Create a LoadBalancer Service.

Telemetry and Analytics

Health Check Object—Starting in Cloud-Native Contrail Networking Release 22.3, a new health check custom resource object is introduced that associates the virtual machine interface (VMI) to the pod creation and update workflow.

See Health Check Object.

Tech Previews for 22.3

Introducing Tech Preview Features—Starting in Cloud-Native Contrail Networking Release 22.2, Tech Previews were introduced. Tech Previews give you the ability to test functionality and provide feedback during the development process of innovations that are not final production features.

Juniper CN2 Technology Previews (Tech Previews).

Supported Platforms

The following table lists the orchestrator releases and the corresponding operating systems and other software components versions supported in Cloud-Native Contrail Networking Release 22.3.

Table 1: Supported Orchestration Platforms for Release 22.3

Orchestrator Release	Deployment Tool	Operating System, Kernel, and Key Components Version
Kubernetes 1.22.12	Ansible	Ubuntu 20.04.3—Linux Kernel Version 5.4.0-97-generic
Kubernetes 1.23.9	Ansible	Ubuntu 20.04.3—Linux Kernel Version 5.4.0-97-generic
Kubernetes 1.24.3	Ansible	Ubuntu 20.04.3—Linux Kernel Version 5.4.0-97-generic
Red Hat OpenShift 4.8.39	Red Hat Openshift AI	RHEL CoreOS 4.8.39 — Linux 4.18.0-305.19.1.el8_4.x86_64
Red Hat OpenShift 4.10.31	Red Hat OpenShift AI	RHEL CoreOS 4.10.31 — Linux 4.18.0-305.62.1.el8_4.x86_64

Container Tags

Container tags are needed to identify the image files to download from the Contrail Container Registry during a Contrail Networking installation or upgrade.

The procedures to access the Contrail Container Registry are provided directly by Juniper Networks. The location of the files in the Contrail Container Registry changed for Cloud-Native Contrail Networking software starting in Release 22.3. Email contrail-registry@juniper.net to obtain access credentials to the registry or if you have any questions about file locations within the registry.

This table provides the container tag name for the image files for Cloud-Native Contrail Networking Release 22.3.

Table 2: Container Tag—Release 22.3

Orchestrator Platform	Container Tag
Kubernetes 1.22.12, Kubernetes 1.23.9, Kubernetes 1.24.3, OpenShift 4.8.39, OpenShift 4.10.31	22.3.0.71

Known Behavior

IN THIS SECTION

This section lists known limitations with Cloud-Native Contrail Networking Release 22.3.

General Routing

- CN2-3234: When a flow matches an ingress network policy, the egress network policy is also allowed. The network policy in Cloud-Native Contrail Networking behaves differently than standard Kubernetes behavior.
- CN2-3429: When fabric source NAT is enabled in an isolated namespace, traffic flows between pods in isolated namespaces and between pods in isolated and non-isolated namespaces.

  Workaround: Do not configure fabric source NAT on an isolated namespace.

- CN2-3256: All cSRX workloads with subinterfaces are not compatible with Cloud-Native Contrail Networking.
- CN2-4822: BGPaaS objects cannot be configured on nodes that host the contrail controller and worker nodes on the same physical host.

  Workaround: Production deployments are not affected because they run the Kubernetes worker and controller in different physical hosts.
- CN2-6290: When installing the vRouter kernel, the vRouter init fails with this error:

  ```
  insmod: can't insert '/kernelmodules/5.4.0-65-generic/vrouter.ko': Invalid argument
  ```

  Workaround: Install the supported kernel version, see Table 1 on page 3.

General Features

- CN2-6327: When interface mirroring is enabled with the **juniperheader** option, only egress packets are mirrored.
  Workaround: Disable the **juniperheader** option to mirror both egress and ingress packets.
- CN2-8728: When deploying CN2 on AWS EC2 instances, running Kubernetes service traffic and Contrail datapath traffic on different interfaces is not supported.

  Workaround: Do not deploy Kubernetes and data traffic on the same interface in AWS.
- CN2-8729: If the nodeSelector field is not populated to run on a single node, the postflight check might show some error messages for UDP test. Also, ping and TCP tests will fail.

  Workaround: In the contrail-readiness-postflight.yaml file, populate the nodeSelector field to run on a single node.

Redhat OpenShift

- CN2-5289: In an OpenShift VRRP deployment, with a separate management network and control and data network, the CNI takes a long time to come up. This issue is due to traffic NATing issues as described in Red Hat Bugzilla: Bug 2070318.
- CN2-5349: In OpenShift deployments, sometimes the vRouter agent core appears causing the Openshift services to not work properly.

Workaround: Reboot the nodes one time before onboarding workloads.

- CN2-6205: When updating OpenShift Container (OCP) from version 4.8.39 to 4.9.31, dual-stack clusters fail. See Red Hat Bugzilla: Bug 2085335.
  Workaround: Delete the secrets: **etcd-serving-metrics-ocp***, **etcd-serving-ocp***, **etcd-serving-ocp***, and then perform the update.
- CN2-8137: OCP fails with a v2InstallCusterConflict error. This error sometimes appears early in OCP cluster deployments and remains in this state. You might see this error during cluster preparations before the installation starts.

  Workaround: Deploy the cluster again.

Kubernetes

- CN2-4642: In Cloud-Native Contrail Networking, the network policy uses the reserved tags "application" and "namespace". These tags conflict with Contrail's reserved resources.

  Workaround: Do not use application and namespace labels to identify the pod and namespace resources.
- CN2-5201: In scaled environments, we recommend that you refer to the node tuning parameters of the corresponding distribution. For example, for OpenShift, follow the instructions Using the Node Tuning Operator.
- CN2-5902: If a service label is shared between a working pod and non-working (terminating) pods, creating a service fails.

  Workaround: Remove the service label association from the non-working pods.
- CN2-6325: You cannot use Docker as a container runtime with Kubernetes 1.20. Docker as a container runtime is now deprecated in Kubernetes.
  Workaround: Use the CRI-O container engine or containerd as runtimes.

Telemetry and Analytics

- CN2-8385: Upgrading CN2 analytics (Prometheus) from non-HA to HA is not working. This applies to both major and minor upgrades.

  Workaround: Perform a helm rollback to the previous software version.

Lens UI

- CN2-8561: After downloading the Lens AppImage Lens-5.4.4-latest.20220324.1.x86_64.AppImage, an "Access Denied" error message displays.

  Workaround: Download the latest version of the AppImage from the following links:

  - https://api.k8slens.dev/binaries/Lens-6.0.2-latest.20220908.1.x86_64.AppImage
  - https://downloads.k8slens.dev/ide/Lens-6.0.2-latest.20220908.1.x86_64.AppImage

Resolved Issues

You can research limitations that are resolved with this release at: Resolved Issues in Cloud-Native Contrail Networking 22.3.

Use your Juniper Support login credentials to view the list. If you do not have a Juniper Support account, you can register for one here.

Requesting Technical Support

IN THIS SECTION

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/
- Find product documentation: https://www.juniper.net/documentation/
- Find solutions and answer questions using our Knowledge Base: https://kb.juniper.net/
- 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://kb.juniper.net/InfoCenter/
- 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/

Revision History

- 23 September 2022—Revision 3
- 22 June 2022—Revision 2
- 02 May 2022—Revision 1, initial release