

# Flexible Deployment Models: VOS as a Container and Hosting Containers on Versa uCPE

## Introduction

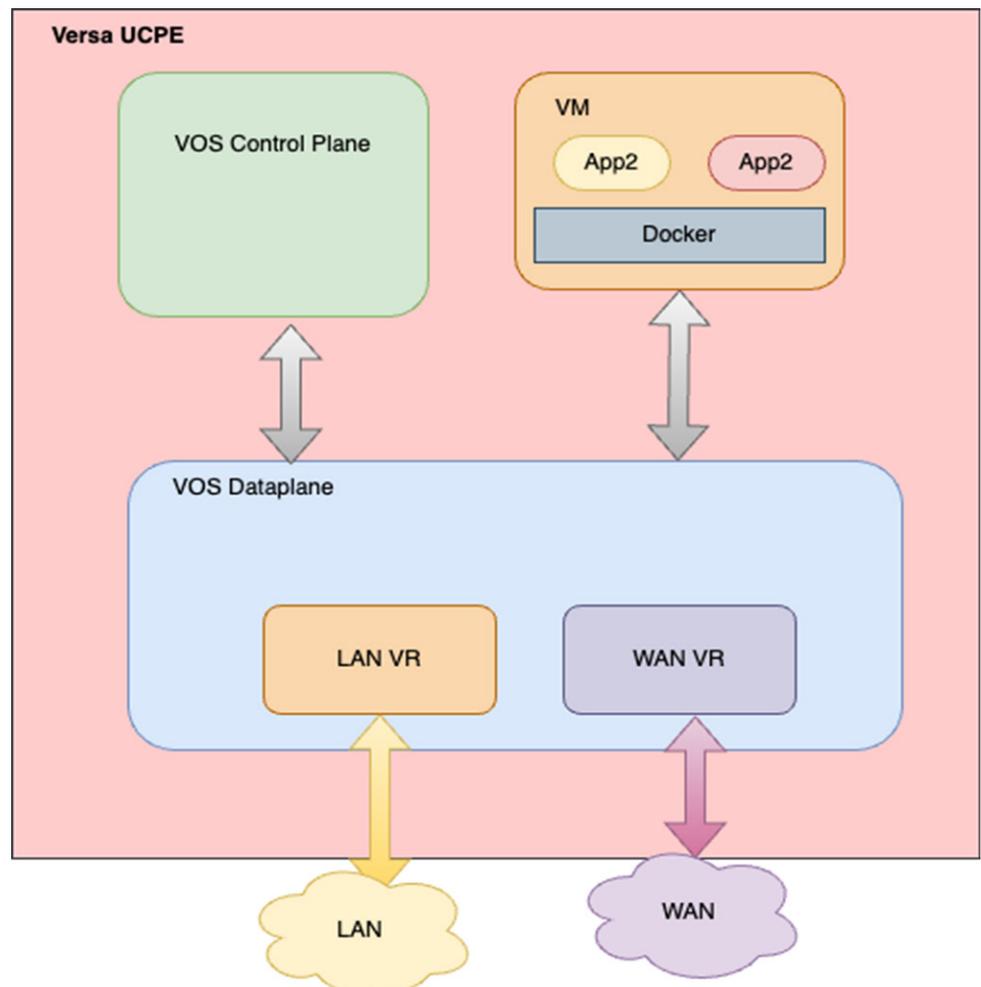
A container application is a standard unit of software that packages up code and all its dependencies so the application runs quickly and reliably from one computing environment to another. A container application can be deployed as a standalone docker application or as a Kubernetes pod in a Kubernetes orchestration platform like OpenShift. Kubernetes is an open-source container orchestration platform for managing, automating, and scaling containerized applications.

Standalone docker application uses docker's native technology for container runtime and networking. Container applications launched as Kubernetes pods are deployed on a Kubernetes platform.

Depending on the customer's use case and current environment, Versa has multiple solutions to address the use cases of networking and service-chaining container applications with Versa SD-WAN.

## Using Versa uCPE (Universal CPE) to host docker applications within a Virtual Machine (VM)

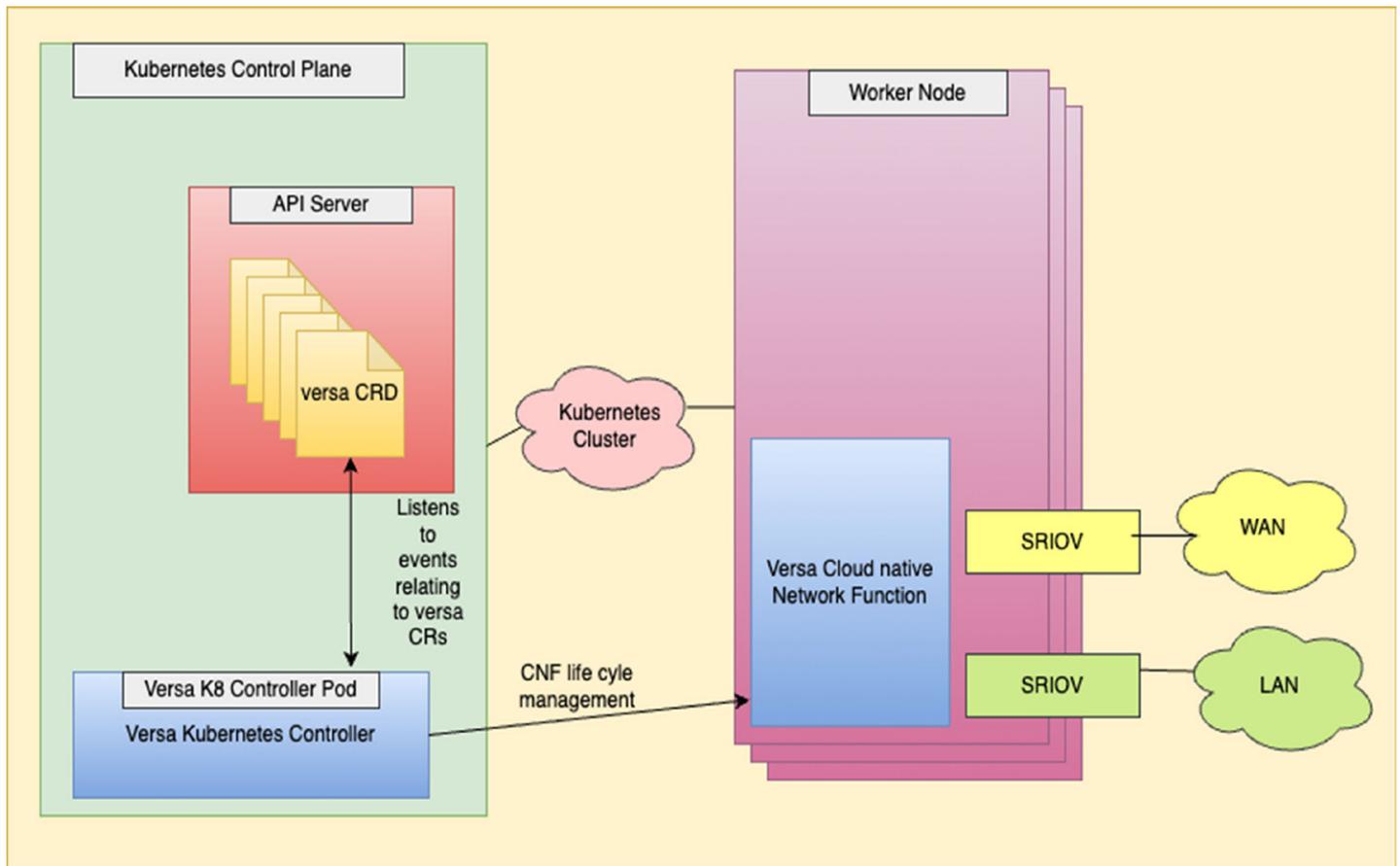
Versa uCPE hosts a VM that can run docker applications, and the VM is plumbed into Versa SD-WAN Data Plane for its networking. The VM is reachable from the Versa Director, which allows users to launch docker applications. Depending on the customer use case, network and security policies are enforced on the VOS for traffic entering or egressing the container that is hosted within the VM.



## Using Versa SD-WAN to run as a Kubernetes pod as a Cloud-native Network Function

A Cloud-Native Network Function (CNF) is a software implementation of the network function inside a container. Versa Network Function is launched as a cloud-native Network function into the Kubernetes platform. The Kubernetes platform should be able to launch CNF, fulfilling the CNF requirements concerning CPU, Memory, and Network Resources. Kubernetes orchestration is used to service chain the VOS (Versa Service Functions) deployed as CNFs with other Kubernetes pods and CNFs within the Kubernetes cluster.

The support for Versa SD-WAN as a Kubernetes pod is currently under development and targeted for the next release into 23.1.



## Using Versa uCPE to launch a standalone docker container.

Standalone docker containers are hosted directly on the VOS appliance and container application service chains with Versa Data Plane via a veth pair interface. Network and security policies for the docker application are enforced on the VOS Data Plane based on the requirements. The support for this capability is our future release roadmap.

