

Running Amazon Elastic Kubernetes Service Anywhere on Dell EMC VxRail

An Amazon EKS Anywhere validated solution on VxRail that enables customers to operate Kubernetes clusters as easily on-premises as in the public cloud

Dell Technologies and Amazon have partnered to validate Dell EMC VxRail hyperconverged infrastructure and Dell EMC PowerStore with Amazon EKS Anywhere. EKS Anywhere is a deployment option enabling you to create and operate Kubernetes clusters on-premises using VMware vSphere while making it possible to have connectivity and portability to AWS public cloud environments. EKS Anywhere provides operational consistency and tooling with AWS EKS.



VxRail is the only fully integrated, pre-configured, and tested HCI system optimized for VMware, making it the ideal platform for EKS Anywhere which requires the use of vSphere for production environments. Running EKS Anywhere on VxRail delivers a seamless and automated operations experience for VxRail infrastructure across cloud native and traditional workloads. Intelligent lifecycle management with VxRail automates non-disruptive upgrades and patches to keep the VxRail infrastructure in a continuously validated state to ensure workloads are running and clusters are optimized. This greatly reduces risk so that customers can stay current with the multiple releases of Kubernetes and EKS platform each year that are updated via EKS Anywhere. Together, VxRail and EKS Anywhere make it easy to standardize both IT and developer operations on-premises as in the Amazon public cloud.

Built on open-source software, Amazon EKS Anywhere uses VMware vSphere to help you easily create and operate Kubernetes on-premises with automated deployment, scaling, and management of containerized applications. EKS Anywhere provides an installable software package for creating and operating on-premises Kubernetes clusters based on Amazon EKS Distro, the same Kubernetes distribution used by Amazon EKS for clusters on AWS. By simplifying the creation and operation of on-premises Kubernetes clusters and automating cluster management, EKS Anywhere can help reduce your support costs and avoid the maintenance of redundant open-source and third-party tools. In addition, you can leverage the EKS console to view all of your Kubernetes clusters (including EKS Anywhere clusters) running anywhere through the EKS Connector (public preview). Amazon EKS Anywhere is available via a free download from AWS (see Install EKS Anywhere in the resource section).

Amazon EKS Anywhere validated configurations using VxRail HCI nodes with vSAN and VxRail dynamic nodes with PowerStore

Dell performed the validation testing using many of the common tasks outlined in the EKS Anywhere cluster management task documentation. Some of these cluster management tasks included cluster create, upgrade, updates, as well as vSphere CSI plugin integration and operations. Additionally, the Dell EMC VxRail was upgraded to ensure the value of the VxRail HCI System Software was maintained through the typical cluster management task such as upgrades and scale out of the EKS Anywhere environment.

EKS Anywhere validation included two certified infrastructure configurations based on VxRail hyperconverged infrastructure (HCI) system. First, (Diagram 1) Amazon EKS Anywhere is validated with Dell EMC VxRail cluster using First Class Disks (FCD) on vSAN block and vSAN file services for shared container storage.

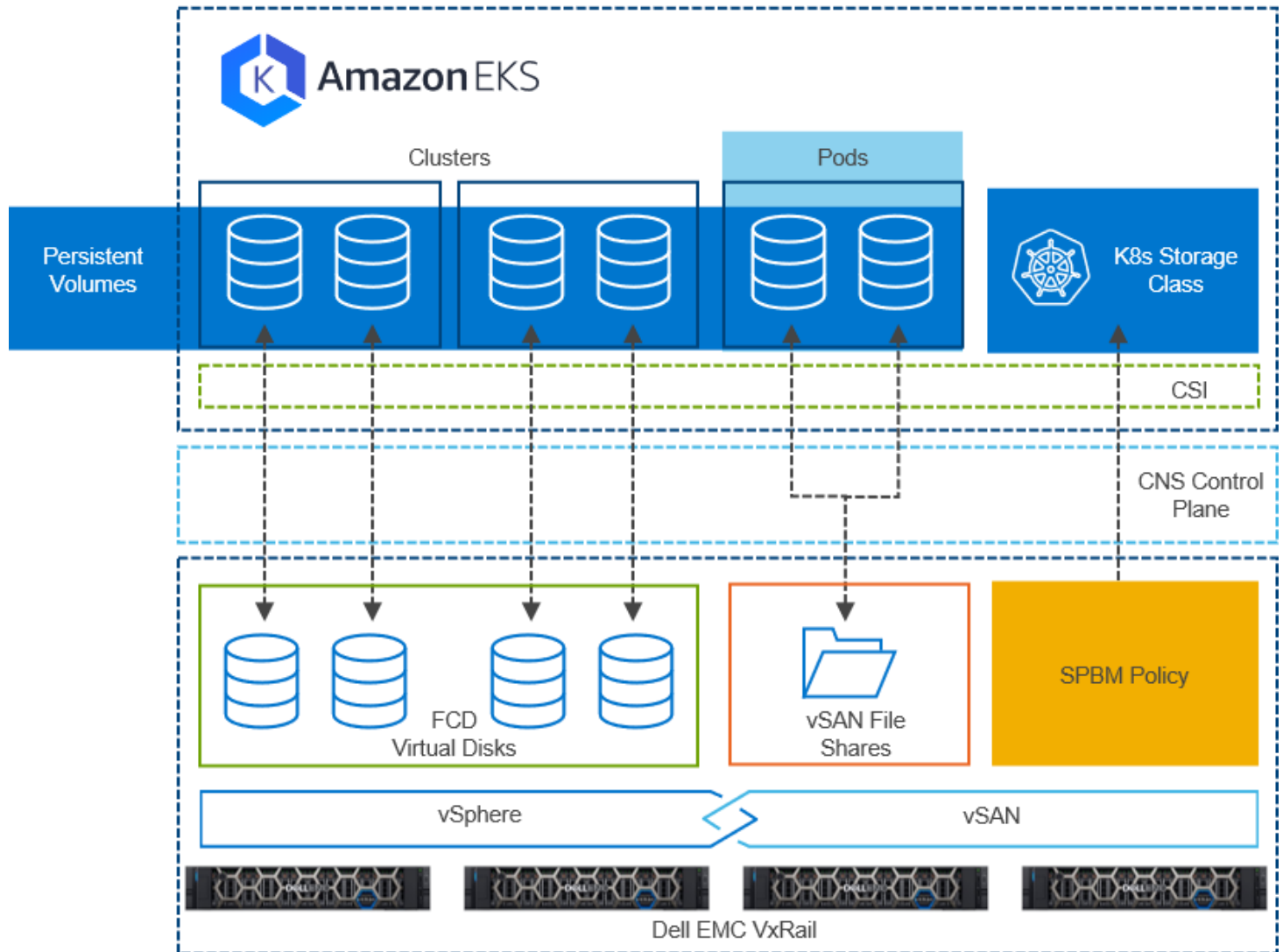


Diagram 1: Amazon EKS Anywhere on Dell EMC VxRail cluster using vSAN for block and file storage. VxRail with vSAN configuration, using First Class Disks (FCD) on vSAN block storage and vSAN file shares storage

Second, (Diagram 2) Amazon EKS Anywhere on Dell EMC VxRail dynamic node cluster using PowerStore for block storage. VxRail dynamic nodes configuration, combined PowerStore configuration, using FCD deployed onto VMFS datastores made of block storage volumes from PowerStore. As a result, customers will enjoy the incredible compute performance, storage flexibility, ease of operations of Dell Technologies infrastructure, and identical Kubernetes distribution experience of the EKS managed service.

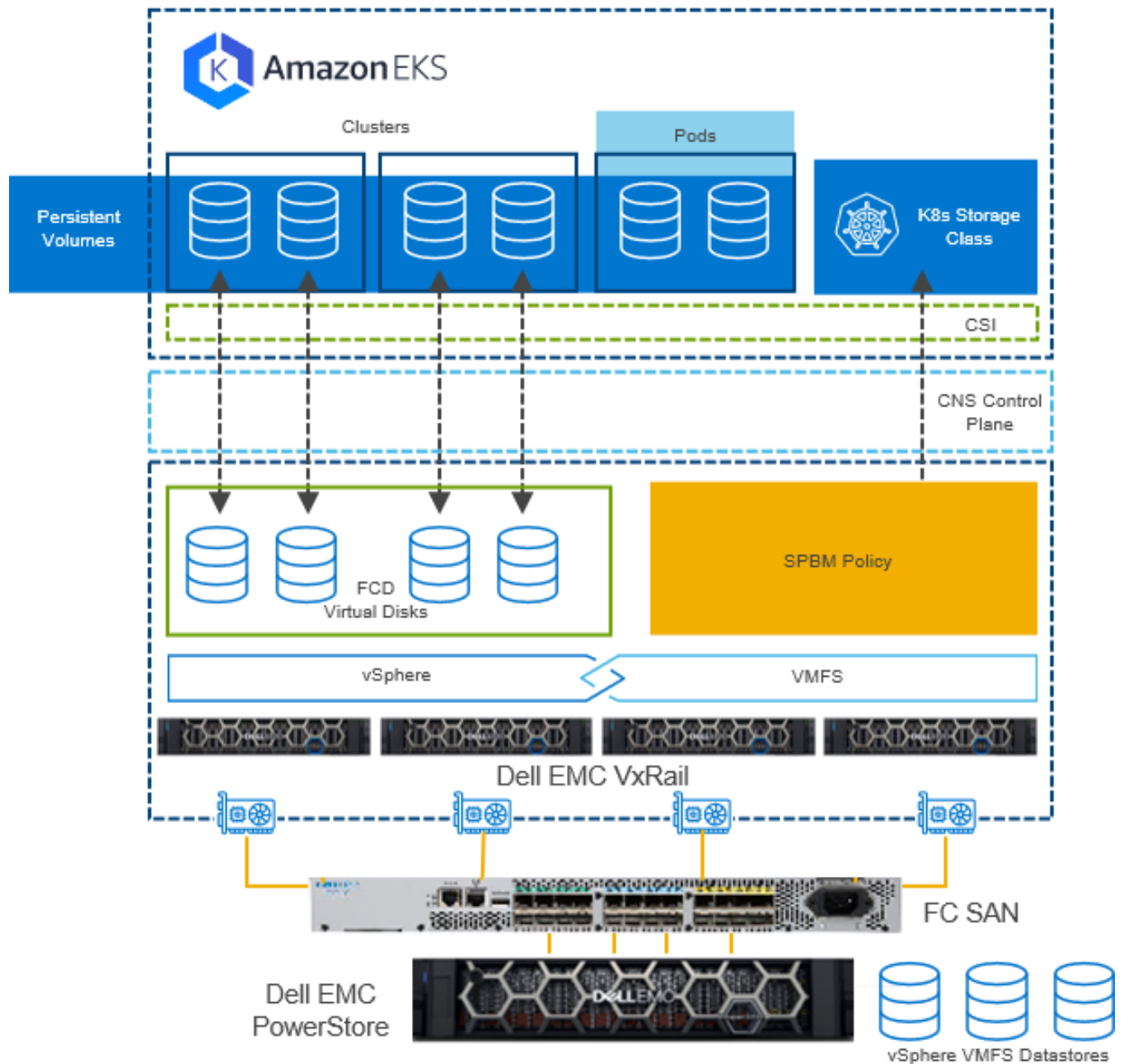


Diagram 2: Amazon EKS Anywhere on Dell EMC VxRail dynamic node cluster using PowerStore for block storage. VxRail dynamic nodes with PowerStore configuration, using First Class Disks (FCD) deployed onto VMFS datastores made from PowerStore block storage volumes.

VMware Cloud-Native Storage and its corresponding Kubernetes CSI driver are used in each of the two validated infrastructure configurations. The CSI driver is leveraged by DevOps and platform teams to deliver dynamic and automated provisioning capabilities of EKS Anywhere Persistent Storage Volumes utilizing native Kubernetes APIs, enabling infrastructure as code operations.

Amazon EKS Anywhere is available as open-source software that you can freely download and install on your existing VxRail infrastructure. There are no upfront commitments or fees to use Amazon EKS Anywhere. Although, for production EKS Anywhere clusters, Amazon requires an Amazon EKS Anywhere Support Subscription.

Amazon Resources

- Requirements for EKS Anywhere on VMware vSphere
<https://anywhere.eks.amazonaws.com/docs/reference/vsphere/vsphere-prereq/>
- Amazon EKS Anywhere FAQ
<https://aws.amazon.com/eks/eks-anywhere/faqs/>
- Install EKS Anywhere
<https://anywhere.eks.amazonaws.com/docs/getting-started/install/>
- Cluster management task
<https://anywhere.eks.amazonaws.com/docs/tasks/cluster/>
- EKS Anywhere Support Subscriptions
https://pages.awscloud.com/GLOBAL_GC_PA_amazon-eks_2021098_7014z000000rUB3-reg.html

Dell EMC VxRail Resources

- Dell EMC VxRail Hyperconverged Infrastructure
<https://www.delltechnologies.com/VxRail>
- Dell EMC infohub
<https://infohub.delltechnologies.com/t/vxrail/>
- Dell EMC VxRail System TechBook
<https://www.delltechnologies.com/asset/en-us/products/converged-infrastructure/technical-support/h15104-vxrail-appliance-techbook.pdf>



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