flywheel DATA + NUTANIX

A Brief Guide to Kubernetes

What is Kubernetes?

Kubernetes, often shortened to "K8's", is an open-source platform designed to automate the deployment, scaling, and management of containerized applications. It is a framework for orchestrating container workloads and services, enabling efficient operation of applications across a cluster of resources. Containers were embraced in the application development community because of their portability, consistency, and reduced resource requirements. Containers, along with the de-facto platform to run them at scale, Kubernetes, have proliferated far outside of the DevOps world—many applications are being packaged as containers over virtual machines (VMs) today and into the future.

Who Cares About Kubernetes?

Everyone should care. Kubernetes is here to stay and is gaining immense traction. In fact, the Department of the Navy Chief Information Office (DONCIO) released a memo that directs the US Navy to utilize containers. Containerized applications will run alongside virtual machines, but only those VMs that are not destined to be refactored into a container at some point.

Though K8's is open source, many companies have created their own distributions that tailor K8's to their vision, support structure, and to meet specific goals in the feature set. While anyone can download and run K8's, it is extremely difficult to configure and manage, something independent distributions aim to fix while giving you a phone number to call for necessary levels of support.

What Does Flywheel Data Suggest?

We highly suggest a Flywheel Data Workshop to get a hands-on introduction to creating and managing a K8's cluster. We utilize the Nutanix Kubernetes Platform (NKP) in our lab because it is a fully featured Kubernetes platform to run and scale containerized applications.

We run NKP on top of Nutanix HCI and their AHV hypervisor to further streamline operations while being able to run VMs and containers side by side but in their native control planes. Other K8's solutions run VMs by utilizing the "KubeVirt" feature to manage a VM like a container and this can lead to increased complexity if you are not already heavily invested in container management.

"We did not realize how complex planning for and running containers and Kubernetes is. I'm glad you guys came out and showed us."

— A real person at US Navy SUBPAC

Why NKP

Nutanix Kubernetes Platform (NKP) is ideally suited for government agencies that are on the road to utilizing containers but are VM-centric today. Containers, while portable and easy to manage by themselves, are difficult to manage at scale due to the dizzying amounts of components that make up a Kubernetes cluster to keep them running efficiently, securely, and highly available.

NKP pulls the best pieces of the Cloud Native Computing Foundation (CNCF) and delivers them in a complete package that is validated, supported, and secure to provide a comprehensive and enterprise-grade Kubernetes management solution. These include monitoring, logging, observability, security, backup and restore, policy agents, cost management, external DNS, load balancing, ingress, SSO, service mesh, and continuous delivery. These components leverage industry-standard tools and open-source software, such as Kubernetes Cluster API (CAPI), to automate cluster lifecycle management and provide a production-ready environment.

Deploying NKP not only provides everything you need to run and manage containers on bare-metal or virtualized, but NKP is also a multi-cloud distribution and runs just as well in your local data center as it does in a public cloud of your choice, giving you freedom to run containers anywhere.

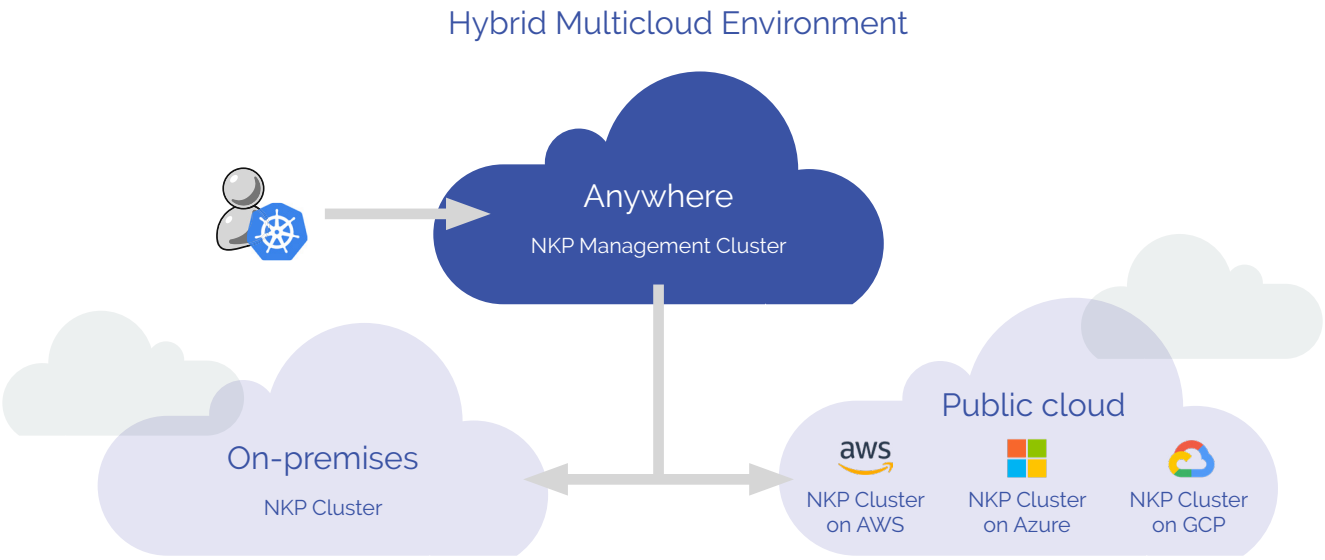

Figure 1. Nutanix NKP – Any Cloud, Anywhere

Getting Started

If you're ready to learn more, contact Flywheel Data about a customized Kubernetes Workshop with Nutanix NKP!

About Flywheel Data

Flywheel Data provides elite solution design, system integration, software development, and product resale for data-driven-organizations.

Based on our experiences with the US Government and top commercial companies; Flywheel Data recognizes that data and people are at the center of a successful, data-driven organization.

Our goal is to arm our clients with the right tools, platforms, and culture to accelerate data-driven insights.

If you'd like to learn more about the Zero Trust Access Platform, you can contact Flywheel Data by phone or email.

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