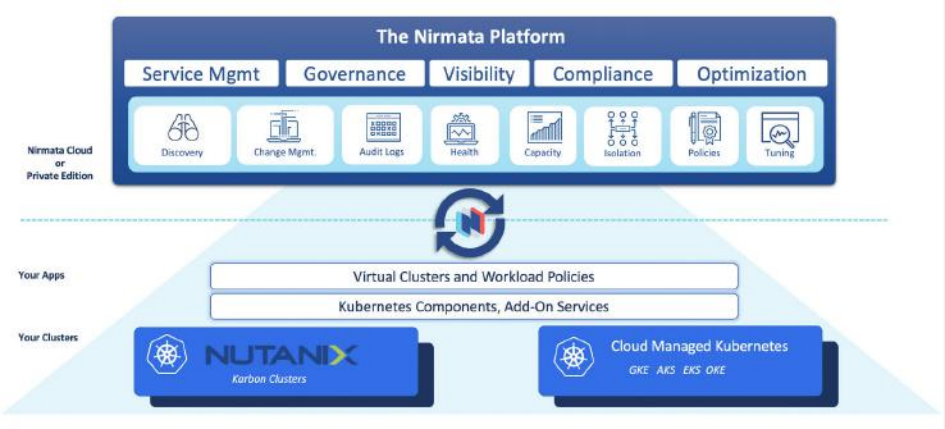
SOLUTION BRIEF

Secure, Self-service Kubernetes with Nutanix Karbon and Nirmata

As enterprises continue on their cloud-native journey, Kubernetes has become the de-facto platform for delivering cloud-native applications. While it is easy to create simple clusters with a few commands, provisioning secure, enterprise-grade clusters with storage, networking remain challenging. Preparing clusters for use by development teams requires additional steps like managing access, adding common services such as security, monitoring, logging etc. and enabling self-service provisioning of virtual clusters. Nutanix Karbon Clusters simplifies the configuration and management of a production-ready Kubernetes environment on-premises. Nirmata integrates with Nutanix Karbon Clusters to allow platform teams to deliver secure, self-service Kubernetes platforms on hybrid cloud.With

SOLUTION ARCHITECTURE/HOW IT WORKS



"The promise of container technologies to increase developer speed, efficiency and portability across hybrid infrastructures, as well as microservices, are all driving growth."

– Jay Lyman, 451 Research Principal Analyst.

Source: https://451research.com/451-research-says-application-containers-market-will-grow-to-reach-4-3bn-by-2022

NUTANIX READY VALIDATION

- Nirmata validated with Nutanix Karbon Clusters

RESOURCES AND GETTING STARTED

- Put a bulleted list of technical contents or point to the Nutanix resources library
- Hyper-link of solution on partner website

Nutanix Karbon Clusters can be provisioned directly from Nirmata management console. To enable self-service, on-demand Kubernetes clusters, the platform operator can create a cluster type and specify the cluster size, networking and storage requirements. In addition, the platform operator can also specify common services that need to be deployed to the cluster. Some commonly deployed services are security, monitoring, logging, backup etc. Once the cluster type is created, developers can use the cluster type to provision Kubernetes clusters on-demand. Nirmata invokes the Karbon Clusters API to provision the Kubernetes cluster and once the cluster is created, Nirmata adds all the configured services to the cluster along with the Nirmata policy engine. Now, the cluster can be managed from Nirmata. Developers can download the Kubernetes configuration file to access the cluster from command line or continue using the Nirmata management console to deploy applications to their cluster. In case, the platform operator wants to share a cluster across multiple development teams, developers can request virtual clusters, which are secure and isolated namespaces on a physical cluster. Nirmata also integrates with cloud provider Kubernetes services such as Amazon EKS, Azure AKS and Google GKE to enable hybrid cloud application deployment and management. Nirmata has a built-in policy engine that ensures configuration security, promotes best practices for workload configuration and enables in-cluster automation. Using Nirmata's application catalog, development teams can automate application deployment across clusters using GitOps, Helm and Kustomize.

KEY SOLUTION BENEFITS

Nirmata and Karbon Clusters together provide following key benefits -

- **Automated cluster and application deployment and scaling** - Nirmata and Karbon Clusters integration provides a single pane view into Karbon Clusters and Kubernetes applications.
- **Visibility into cluster health** - Full visibility into clusters and workloads with easy automated analysis of complex issues. Nirmata integrates with ticketing and change management tools for process automation that cuts down on hours of manual troubleshooting and costly handoffs.
- **Correlated alerting and notifications** - Nirmata listens for cluster changes and generates alerts based on built-in rules for state changes, metrics, threshold crossings, as well as other error conditions. Nirmata routes workload alerts to the appropriate teams, freeing up cluster administrators to focus on delivering value.
- **Application catalogs with flexible developer workflows** - With Nirmata, product teams can automate the deployment of applications using GitOps. Nirmata supports Helm, Kustomize and Kubernetes-native YAML syntax to provide easy modeling and validation of configurations in a central location. Nirmata also enables deployment and management of applications across multiple environments and clusters along with approvals and change notifications.

NUTANIX™

- **Centralized identity & access management** - Nirmata integrates with your central enterprise identity provider and automates the management of user identities and access controls across all your Karbon Clusters. Each team can be provided granular access to clusters, and teams and securely share clusters with Nirmata automating the management of resource quotas, network policies, and role bindings.
- **Centralized policy management** - Nirmata includes a powerful policy engine with runs as an admission controller in Karbon Clusters and enables dynamic validation, mutation, and generation of workload. You can easily validate configurations with the built-in library of best practice policies and enforce compliance on a granular basis.

ABOUT NIRMATA

Nirmata's mission is to enable cloud-native agility for all enterprises. Nirmata delivers an enterprise-grade cloud-native application management platform, based on open technologies such as containers and Kubernetes.

Nirmata was founded by experts in centralized management of large-scale distributed systems. Nirmata enables enterprises to leverage open source innovation, cloud-computing, containers, and Kubernetes. Since its inception, Nirmata has several large enterprise deployments, and has won many industry awards like Gartner's "Cool Vendor" award and TIE50 Top Startup award. Nirmata is a Kubernetes Certified Service Provider and the Nirmata platform is a Kubernetes Certified solution.

ABOUT NUTANIX

Nutanix is a global leader in cloud software and a pioneer in hyperconverged infrastructure solutions, making computing invisible anywhere. Organizations around the world use Nutanix software to leverage a single platform to manage any app at any location at any scale for their private, hybrid and multi-cloud environments. Learn more at www.nutanix.com or follow us on Twitter @nutanix.

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