

SOLUTION BRIEF

HYBRID CLOUD KUBERNETES
WITH DIAMANTI AND NIRMATAINFRASTRUCTURE AND OPERATIONS ROADBLOCKS
WITH DISTRIBUTED CONTAINER ENVIRONMENTS

While containers offer enterprises substantial gains in application deployment speed and portability, these benefits are often countered by the operational complexities of infrastructure configuration and management, especially when employing a mix of cloud and on-premises container environments.

Specifically, organizations face challenges as a result of implementing complex, out-of-band processes and software overlays with container networking and persistent storage when trying to build their own container stacks using legacy infrastructure. Even when those hurdles are cleared, the resulting stack doesn't efficiently deliver the reliable performance and granular control demanded by developers and application owners.

On top of the challenges of standing up production-ready container infrastructure, application owners run into issues with deployment, scaling, and mobility of applications across both on-premises and hybrid-cloud infrastructures. These processes are often cumbersome, error-prone, and lack intelligent automation, which slows the application development lifecycle.

DIAMANTI D10 PLATFORM
AT A GLANCE

SPEED

- Container infrastructure deploys in 15 minutes
- 2.4M+ IOPS per three-node cluster
- 200µs latency across the cluster

SIMPLICITY

- Plug-and-play cluster deployment and easy management
- Self-service networking, storage, and capacity scaling with only a few clicks
- RBAC and Active Directory integration

EFFICIENCY

- 50% smaller infrastructure footprint
- 70% lower TCO compared to public cloud deployments
- 90% utilization using existing networks and software
- Integrates easily with established workflows

CONTROL

- Container-granular policies and monitoring
- Guaranteed SLAs
- Network and storage QoS
- No vendor lock-in
- 24x7 full-stack support



Diamanti and Nirmata are
Kubernetes 1.8 certified

DIAMANTI AND NIRMATA: ACCELERATE CONTAINER DEPLOYMENTS AND SIMPLIFY MULTI-CLOUD CLUSTER MANAGEMENT

To solve the multitude of operational challenges around mixed cloud-native environments, Diamanti and Nirmata offer a joint product integration. This integration extends Nirmata's federated approach to Kubernetes cluster deployment and application management to the Diamanti platform, seamlessly bridging bare-metal and hybrid cloud container environments.

1. DEPLOY AN ON-PREMISES CONTAINER STACK IN MINUTES

The Diamanti D10 bare-metal container platform provides enterprises with turnkey operational infrastructure using standard protocols for storage and networking virtualization in conjunction with open-source plug-ins, CNI and FlexVolume.

Each Diamanti D10 cluster pools low-latency, high-performance NVMe flash storage and 40GbE networking, and comes with open-source Docker and Kubernetes pre-installed. Diamanti OS gives IT operations teams end-to-end control of the container stack through easy configuration management, performance monitoring, container-granular QoS, and secure operation.

2. INCORPORATE DIAMANTI INTO YOUR MULTI-CLOUD WITH NIRMATA

Once the Diamanti D10 cluster is configured, Helm Package Manager can be used to install the Nirmata chart. Nirmata runs a lightweight containerized agent on each D10 node that connects to the Nirmata Management UI, bridging the Diamanti D10 stack with other container environments within the Nirmata platform.

3. SIMPLIFY MANAGEMENT AND CONTAINER GOVERNANCE ACROSS DIAMANTI AND PUBLIC CLOUD ENVIRONMENTS

With the Diamanti D10 container stack connected to Nirmata, organizations can federate their public and private clouds via the Nirmata management UI. This approach creates substantial flexibility for application owners, who have to optimize for infrastructure resources, as well as for cost and scale.

NIRMATA AT A GLANCE

MULTI-CLOUD AUTOMATED KUBERNETES CLUSTER MANAGEMENT

- Operationalize Kubernetes in minutes
- Use policies to ensure consistent cluster configuration
- Onboard existing clusters and gain instant visibility into cluster resources

DEPLOY AND MANAGE APPLICATIONS WITH EASE

- Quickly model or import applications and deploy them in public or private cloud environments
- Automatically generate new applications along with customized policy-compliant Kubernetes manifests
- Move containers across dev, test, and production environments without custom scripts or deployment workarounds

OPERATE EFFICIENTLY AT ENTERPRISE SCALE

- Automatically scale clusters and services up or down to meet changing business needs
- Automatically restart failed services, add/remove instances on-demand to meet SLAs and availability agreements
- Update services or in minutes without application downtime

ENFORCE SECURITY AND POLICY COMPLIANCE

- Configure policies to ensure consistent application behavior across all managed environments
- Set infrastructure policies to automatically apply networking, storage, and security constraints
- Capture detailed audit trails to ensure compliance and facilitate security reviews

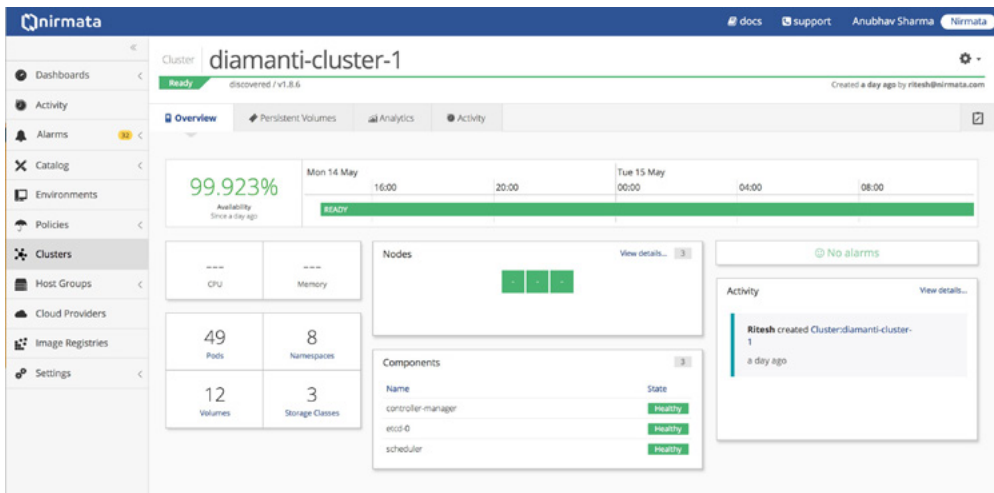


FIGURE 1: Nirmata Platform's dashboard view of a Diamanti D10 cluster

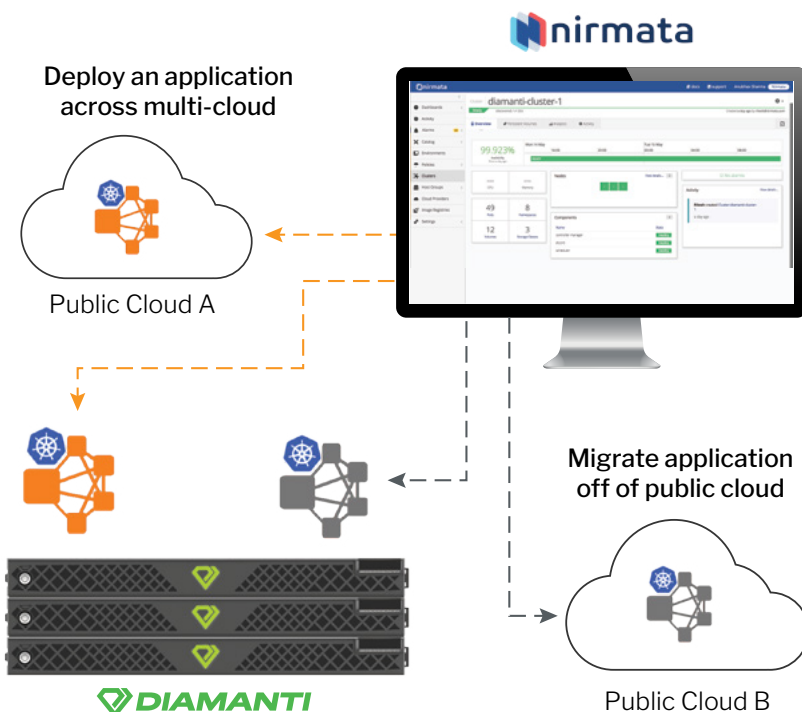
Through the Nirmata platform, applications running on Diamanti can easily be scaled and extended across to public cloud container environments. And, because Nirmata also integrates with vSphere environments, it facilitates migrations of containerized applications off of VM infrastructure to the Diamanti bare-metal platform in favor of significantly higher resource utilization.

Together, Nirmata and Diamanti offer rich infrastructure management feature sets to both application owners and IT operations teams, while neatly abstracting away cloud-native infrastructure complexities from developers. Pairing these two technologies together gives enterprises a new dimension of Kubernetes multi-cloud management simplicity.

According to a recent [Enterprise Management Associates survey](#), support for hybrid infrastructure is a top priority for enterprises deploying containerized applications.

LEARN MORE:

www.diamanti.com/product
www.nirmata.com



ABOUT DIAMANTI

Diamanti's D10 bare-metal container platform gives infrastructure architects, IT operations, and application owners the speed, simplicity, efficiency, and control they need to run stateful containerized applications at scale. With open-source Docker and Kubernetes fully integrated, together with purpose-built hardware and complete support for the entire stack, the Diamanti D10 is a proven full container stack that deploys in minutes.

ABOUT NIRMATA

Nirmata is a turnkey, application-centric container management platform, built on Kubernetes. Nirmata natively supports both traditional and microservices-based applications, enabling teams to seamlessly manage multiple Kubernetes clusters and their entire application portfolio across all environments from a single, intuitive interface.