DIAMANTI

DATASHEET

Diamanti D10
Bare-Metal Container Platform

FULLY INTEGRATED	NETWORK	STORAGE	COMPUTE
Docker and Kubernetes	4x10 GbE per node	3.2 / 6.4 / 32.0 TB NVMe	2x E5-2630V4 2.2 GHz Intel Xeon

Containers accelerate application development and deployment, but legacy infrastructure is a major obstacle to building a fully functional container stack. Developers and application owners demand performance and control, while infrastructure managers require efficiency and low total cost of ownership.

Containers are incompatible with traditional storage and network infrastructure, so a do-it-yourself approach to building a container environment is a complex, months-long project that risks slower time to market, rising personnel and equipment costs, and growing frustration between developers and IT operations.

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 solution that deploys in minutes.

certified kubernetes 1.12 · docker · redhat TECHNOLOGY PARTNER · CRN 10 Coolest Cloud Storage Startups · Gartner Cool Vendor 2017 · database TRENDS AND APPLICATIONS TREND-SETTING PRODUCT IN DATA MANAGEMENT 2018 · CRN EMERGING VENDORS 2018

DIAMANTI AT A GLANCE

SPEED
- Container infrastructure deploys in 15 minutes
- 2.4M+ IOPS per three-node cluster
- 100µs latency across the entire cluster

SIMPLICITY
- Plug-and-play cluster deployment and easy management
- Networking, storage, and capacity scaling with 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

The Diamanti D10:

INFRASTRUCTURE ARCHITECTED FOR CONTAINERS

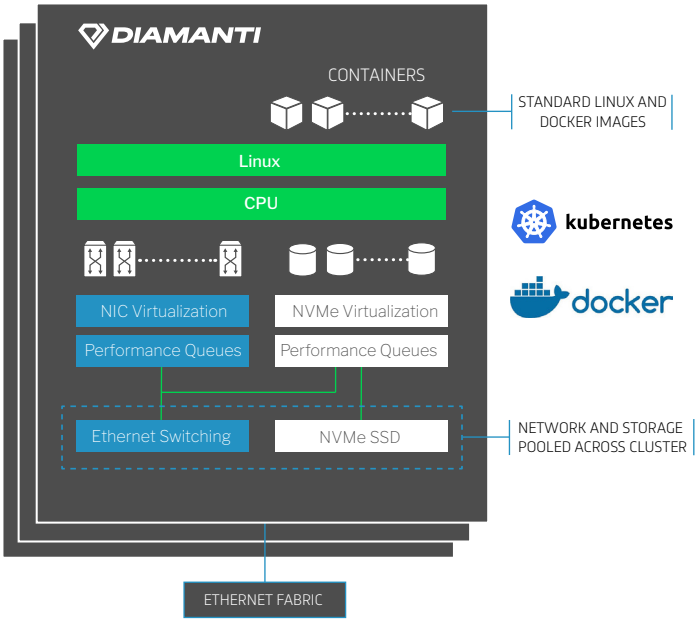
Diamanti's virtualized approach to network and storage traffic management addresses the unique requirements of stateful containerized applications. At the same time, Diamanti delivers unmatched resource utilization—up to 90%—across the entire cluster. No other container stack achieves such a small data center footprint. Volumes deploy and configure in seconds using open-source software including Docker and Kubernetes. Low-latency block storage is built using NVMe, which requires roughly one-third the transactional CPU overhead of SCSI, delivering 100-microsecond read/write latency. Diamanti extends NVMe across the cluster using standard 10 Gb Ethernet, offering data mobility without compromise.

PLUG-AND-PLAY NETWORKING

Containers have their own unique concept of port mappings and overlays that create a host of interoperability challenges. Diamanti eliminates these configuration roadblocks with networking that plugs into existing VLANs and DNS. Diamanti enables the creation of real MAC addresses and corresponding fixed, routable IPs for each pod.

FAST NVME PERSISTENT STORAGE

Legacy scale-up storage arrays don't fit modern scale-out containers. Organizations are challenged with providing highly available databases with high-performance persistent storage, managed and operated in the same way as the applications that consume those services.



Diamanti D10 meets the storage needs of your stateful applications with low-latency NVMe persistent container volumes, delivering 100-microsecond read/write latency. Diamanti extends NVMe across the cluster using dedicated dual 10Gb Ethernet, offering data mobility without compromise.

SEAMLESS SCALABILITY

Easily scale the Diamanti container stack from the minimum three-node cluster that delivers over 2.4 million IOPS with sub-millisecond latency.

24X7 ENTERPRISE-CLASS SUPPORT

Diamanti is your single support point of contact for your container stack, allowing you to focus on developing applications instead of building and maintaining infrastructure.

Diamanti OS:

FULL CONTAINER STACK MANAGEMENT, SIMPLIFIED

Diamanti OS is the portal to deploying and managing your Diamanti bare-metal container stack. With access via browser, CLI or REST API, Diamanti OS offers users a rich set of container configuration capabilities, resource management features, and detailed real-time dashboards.

CONTAINER-GRANULAR QUALITY OF SERVICE (QOS)

Guarantee real-time service levels for application containers across compute, network, and storage resources.

MULTI-ZONE CLUSTERING

Distribute Kubernetes clusters across multiple availability zones to enhance infrastructure resilience.

ENTERPRISE-GRADE DATA PROTECTION

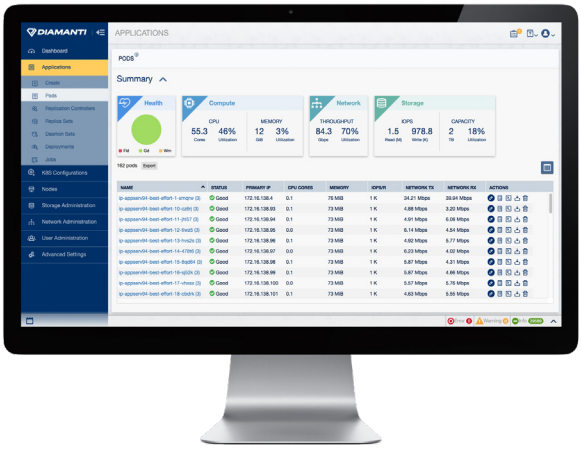
Back up persistent volumes to NFS or other media – without impacting performance – using snapshots that are completely schedulable and configurable per application.

DETAILED REAL-TIME MONITORING

Monitor cluster nodes and application containers with intuitive dashboards that depict overall compute resource consumption, network utilization, and storage performance and capacity.

SECURE ACCESS

Diamanti OS enables secure communication via TLS certificates. Users can also authenticate via LDAP and Active Directory. Leverage role-based access control (RBAC) to regulate access to resources within the environment.



OPEN-SOURCE FLEXIBILITY

Diamanti provides open-source, vendor-agnostic interfaces for networking and storage, and is committed to enabling users with as many choices as possible in how their cloud-native applications are deployed. With open-source Docker and Kubernetes included, there is no vendor lock-in.

We are a proud member of the Cloud-Native Computing Foundation (CNCF). Our team of infrastructure experts has contributed networking and storage scheduler extensions for Kubernetes, and will continue to make valuable contributions to the community.

"Diamanti increased our application performance without code changes and allowed us to consolidate infrastructure while automating application deployment by our development team."

NBCUniversal

Diamanti D10:
SPECIFICATIONS

MANAGEMENT	
USER INTERFACE	DIAMANTI OS ■ Detailed monitoring and reporting ■ Tunable performance tiers (QoS) for both network and storage ■ Automatic IP address assignment per interface ■ Synchronous volume mirroring and failover ■ Role-based access control (RBAC) ■ Authenticated GUI, CLI, and REST API ■ User authentication with LDAP, Active Directory ■ Audit log ■ SNMP monitoring

CONTAINER STACK (fully integrated)	
ORCHESTRATION	Kubernetes (Kubernetes 1.12 certified)
CONTAINER RUNTIME	Docker version 1.12.6

HARDWARE SPECIFICATIONS (minimum 3-node configuration is recommended)	
NETWORK	4x10 GbE via a single 40 GbE QSFP+ connection (per node)
STORAGE	DATA STORAGE 3.2 TB configuration (4x800 GB NVMe SSD per node) 6.4 TB configuration (4x1600 GB NVMe SSD per node) 32.0 TB configuration (4x 8000 GB NVMe SSD) HOST OS AND DOCKER REGISTRY STORAGE 960 GB (2x480 GB SATA SSD per node)
COMPUTE	CPU: 2xE5-2630V4 2.2 GHz Intel® Xeon® Processors (per node) RAM: 128 GB / 512 GB (per node)

PHYSICAL SPECIFICATIONS	
RACK SPACE	1U
DIMENSIONS AND WEIGHT (PER NODE)	17.25" W x 28" D x 1.72" H / 52 lbs 43.8 cm x 71.1 cm x 4.4 cm / 23.6 kg
POWER	Dual redundant 110/220V power supplies
ENVIRONMENTAL	Operating temperature: 50°F to 95°F (10°C to 35°C)

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