DIAMANTI

DATASHEET

Diamanti D20
Enterprise Kubernetes Platform

FULLY INTEGRATED	NETWORK	STORAGE	COMPUTE
Docker and Kubernetes	4x10 GbE per node	4 / 8 / 32 TB NVMe	Intel® Xeon® 20, 32 or 44 CPU cores per node

Cloud-native principles accelerate application development and deployment, but legacy infrastructure is a major obstacle to building a high-performance cloud-native environment. IT ops requires efficiency and low total cost of ownership, while developers and application owners demand performance and control.

Traditional IT infrastructure isn't architected for the way Kubernetes uses storage and network resources, making a do-it-yourself approach to building a cloud-native environment a complex, months-long project. You risk slower time to market, rising personnel and equipment costs, and growing frustration between developers and IT operations.

Diamanti's D20 Enterprise Kubernetes Platform gives platform architects, IT operations, and application owners the performance and enterprise-class features they need to run stateful 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 D20 is a proven Kubernetes platform that deploys in minutes.

DIAMANTI AT A GLANCE

SIMPLICITY
- 15-minute bare-metal deployment
- Kubernetes certified
- No vendor lock-in
- Integrates with cloud-native ecosystem
- Easy to manage and scale

PERFORMANCE
- 1,000,000 IOPS per 1U
- Consistent 100-microsecond latency
- Industry-leading application-level transactions per second
- Intel® Xeon® CPUs: 20, 32 or 44 cores per node

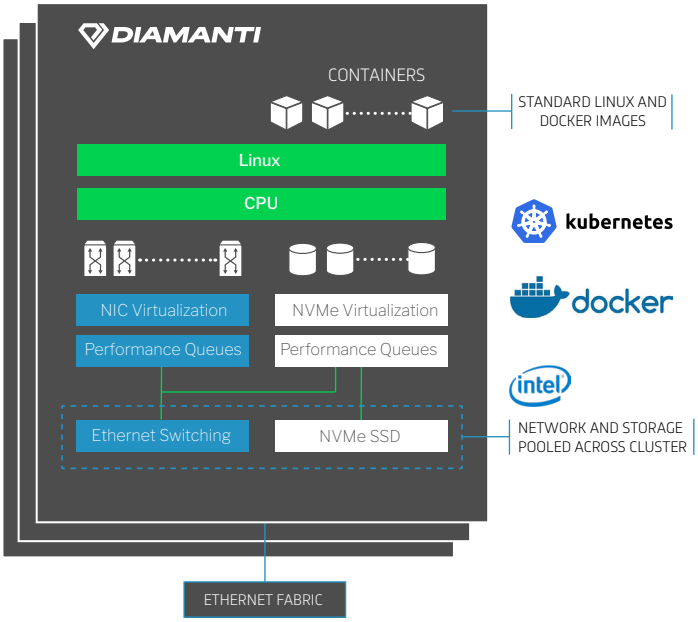
EFFICIENCY
- 70% lower TCO
- 100% host utilization
- 95% usable storage capacity
- No hypervisor needed
- Guaranteed QoS with no overprovisioning

ENTERPRISE-CLASS
- Full-stack support
- Production-grade SLAs
- Secure multi-tenant isolation
- Advanced DR/DP
- On-premises availability zones and hybrid cloud support

The Diamanti D20:

INFRASTRUCTURE ARCHITECTED FOR KUBERNETES

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 95%—across the entire cluster. No other Kubernetes platform achieves comparable performance in 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 Intel® 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 system of port mappings, overlays, and bandwidth requirements that create a host of interoperability challenges. Diamanti eliminates these configuration roadblocks by using networking that integrates directly with existing network infrastructure. Each container is automatically allocated an IP address and can reside on any subnet.

FAST NVME PERSISTENT STORAGE

Legacy scale-up storage arrays don't fit modern scale-out containers. Trying to achieve performance at scale for databases and key value stores has ops teams scrambling to deliver persistent storage. Diamanti meets the storage needs of your stateful applications with low-latency NVMe block storage, delivering 100-microsecond read/write latency. Diamanti extends NVMe across the cluster using standard 10 Gb Ethernet, offering data mobility without compromise.

SEAMLESS SCALABILITY

Easily scale your Kubernetes infrastructure with multi-cloud capabilites and Diamanti appliances that deliver 1,000,000+ IOPS per 1U node and 100-microsecond latency.

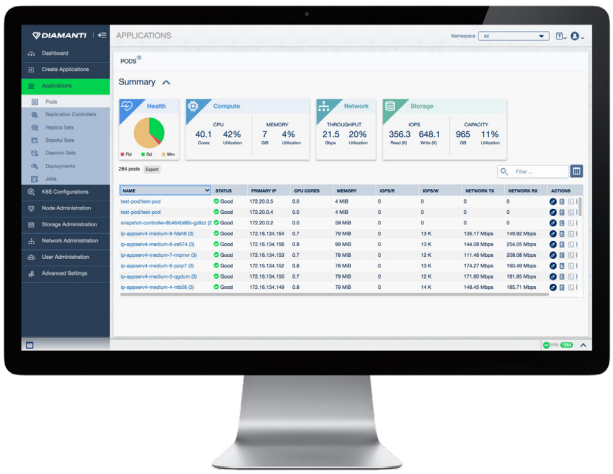
24X7 ENTERPRISE-CLASS SUPPORT

As a Kubernetes Certified Service Provider, Diamanti's single-point-of-contact support allows you to focus on developing applications instead of building and maintaining infrastructure.

Diamanti Console:

FULL KUBERNETES PLATFORM MANAGEMENT, SIMPLIFIED

The Diamanti console is your portal to deploying and managing your Kubernetes infrastructure. With access via browser, CLI, or REST API, the Diamanti console offers a rich set of container configuration capabilities, resource management features, detailed real-time dashboards, and enterprise-class data protection and security.



CONTAINER-GRANULAR QUALITY OF SERVICE (QOS)

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

MULTI-ZONE CLUSTERING

Enhance fault tolerance and application high availability by setting up your Kubernetes environment and deploying workloads across multiple availability zones.

ENTERPRISE-CLASS DATA PROTECTION

Protect application container data with efficient snapshot-based data protection and synchronous mirroring. Diamanti's allocate-on-write container storage architecture ensures that there is no performance impact on the original volume due to IOs on the snapshot and linked clones.

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 PLATFORM OPERATION

Diamanti's isolation of storage and network traffic makes the entire platform inherently more secure, and secure communication is managed by TLS certificates.

RBAC AND SECURE ACCESS

The Diamanti console enables role-based access control (RBAC) to regulate access to resources within the environment. Users can also authenticate via LDAP and Active Directory.

OPEN-SOURCE FLEXIBILITY

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

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

NBCUniversal

Diamanti D20:
SPECIFICATIONS

MANAGEMENT	
USER INTERFACE	DIAMANTI CONSOLE ■ Detailed monitoring and reporting ■ Tunable performance tiers (QoS) for both network and storage ■ Automatic IP address assignment per interface ■ Synchronous volume mirroring and failover ■ Snapshot-based data protection ■ Multi-zone clustering ■ 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 (Docker version 1.13 supported)

HARDWARE SPECIFICATIONS (minimum 3-node configuration is recommended)	
NETWORK	4x 10 GbE via a single 40 GbE QSFP+ connection (per node)
STORAGE	DATA STORAGE 4 TB configuration (4x 1000 GB Intel® NVMe SSD per node) 8 TB configuration (4x 2000 GB Intel® NVMe SSD per node) 32 TB configuration (4x 8000 GB Intel® NVMe SSD per node) HOST OS AND DOCKER IMAGE STORAGE 960 GB (2x 480 GB SATA SSD per node)
COMPUTE	CPU: 2x Intel® Xeon® Processors with 20 / 32 / 44 cores (per node) RAM: 192 GB / 384 GB / 768 GB (per node)

PHYSICAL SPECIFICATIONS	
RACK SPACE	1U
DIMENSIONS PER NODE	17.25” W × 28” D × 1.72” H / 52 lbs 43.8 cm × 71.1 cm × 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)