



NVIDIA AND VMWARE VSPHERE DISTRIBUTED SERVICES ENGINE POWERED BY NVIDIA BLUEFIELD DPU

Supercharge VMware Cloud Foundation

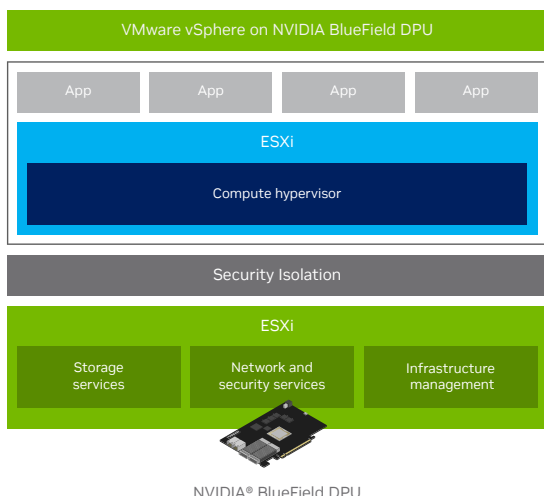
Accelerate VMware Servers to Handle Next-Generation Application Challenges

With the increasing adoption of new workloads such as AI, machine learning, and big data, enterprises need a data center architecture that can support private cloud and edge deployments. They want a solution that provides composability and flexibility with virtualization, containers, or bare-metal servers. And they demand a solution that offers high performance, robust security, and efficiency. Traditional software-defined infrastructure provides flexibility but can suffer from performance and scalability limitations, since up to 30 percent of server CPU cores may be consumed by infrastructure workloads, including networking, storage, and security.

The VMware vSphere Distributed Services Engine powered by the NVIDIA® BlueField® DPU provides the ideal solution for enterprise, telecommunications, and service providers to deliver a software-defined, hardware-accelerated cloud solution. VMware vSphere on BlueField DPU provides a breakthrough solution that supports virtualization, containers, and scalable management. The NVIDIA BlueField DPU offloads, accelerates, and isolates infrastructure workloads, allowing the server CPUs to focus on core applications and revenue-generating tasks.

Software-Defined, Hardware Accelerated Cloud Platform

The integration of VMware vSphere and NVIDIA BlueField simplifies the building of cloud-ready infrastructure. VMware enables workload composability and portability that supports multi-cloud, while BlueField handles critical networking, storage, security, and management, including telemetry tasks, to free up the CPUs to run business and tenant applications. The BlueField DPU also provides security isolation by running firewall, key management, and intrusion detection and intrusion prevention systems (IDS/IPS) on its Arm® cores in a separate domain from the applications.



NVIDIA® BlueField DPU



KEY CHALLENGES

- > Modern workloads require a flexible, accelerated, software-defined infrastructure platform.
- > Infrastructure tasks and distributed applications consume significant server CPU cycles.
- > Increasing cyberthreats require enhanced server security with domain isolation.

BENEFITS

- > Enhanced server performance, security, and manageability
- > Increased infrastructure efficiency with lower TCO
- > Single cloud architecture across multiple servers and locations
 - > Virtualized or bare metal
 - > On-prem, cloud, or edge

SPECIFICATIONS

DPU supported	Selected NVIDIA BlueField-2 and BlueField-3 DPUs
OEM Server Providers	Dell
VMware versions	VMware vSphere 8+

The optimized solution brings maximum performance, increased efficiency, simplified operations, and zero-trust security to VMware Cloud Foundation (VCF) deployments for data center, edge, cloud, and hybrid environments. It offers the ideal platform for running enterprise AI workloads. BlueField simplifies lifecycle management for VCF deployments and provides expanded telemetry to proactively monitor, identify, and mitigate infrastructure anomalies and bottlenecks.

BlueField DPU Accelerations for vSphere Distributed Services Engine



Networking Acceleration

Software-defined networking (SDN) and network functions virtualization (NFV), GPUDirect®, remote direct-memory access (RDMA) and RDMA over Converged Ethernet (RoCE), deep packet inspection (DPI), overlay networks, connection tracking, accelerated data path



Security Acceleration

Isolation, zero-trust, VMware NSX firewall, crypto, key management, regular expression engine, Internet Protocol Security (IPsec), Transport Layer Security (TLS)



Storage Acceleration

Non-Volatile Memory Express over Fabrics (NVMe-oF), elastic block storage, data integrity, de-dupe, disaggregation

Zero-Trust Security

The DPU helps create a zero-trust security stance for each server with support for secure boot, hardware-accelerated encryption, and network microsegmentation. Control plane software for next-generation firewalls, IDS/IPS, microsegmentation, and telemetry agents can run on the BlueField's Arm cores, further offloading security work from the CPU and providing security domain isolation.

Immediate Access Via LaunchPad

With NVIDIA LaunchPad, enterprises can get immediate access to a free trial of VMware's vSphere Distributed Services Engine software powered by the NVIDIA BlueField-2 DPU. LaunchPad helps IT professionals with a remote trial, allowing them to experience and run workloads prior to onsite installation. Afterward, the same stack can be deployed for production to make more confident decisions. [Try the LaunchPad Lab.](#)

Ready to Get Started?

To learn more about VMware vSphere Distributed Services Engine powered by NVIDIA BlueField DPU, visit: www.nvidia.com/try-vsphere-dpu