NVIDIA and VMware CEOs Discuss New Era of Enterprise Computing

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Reinventing enterprise computing for the modern era, VMware CEO Raghu Raghuram Tuesday announced the availability of the VMware vSphere 8 enterprise workload platform running on NVIDIA DPUs, or data processing units , an initiative formerly known as Project Monterey.

Placing the announcement in context, Raghuram and NVIDIA founder and CEO Jensen Huang discussed how running VMware vSphere 8 for BlueField is a huge moment for enterprise computing and how this reinvents the data center altogether.

“Today, we’ve got customers that are deploying NVIDIA AI in the enterprise, in the data center,” Raghuram said. “Together, we are changing the world for enterprise computing.”

Both agreed AI plays a central role for every company and discussed the growing importance of multi-tenant data centers, hybrid-cloud development, and accelerated infrastructure deployment in a 20-minute conversation at the VMware Explore 2022 conference.

To address this, the companies announced a partnership two years ago to deliver an end-to-end enterprise platform for AI as well as a new architecture for data center, cloud and edge that uses NVIDIA DPUs to support existing and next-generation applications.

The stakes for partners and customers are high: AI has become “mission critical” for every enterprise, Raghuram explained. Yet studies show half of AI projects fail to make it to production, with infrastructure complexity a leading cause, he added.

For example, VMware and NVIDIA are working with healthcare providers to accelerate medical image processing using AI to offer a better quality of service to their patients.

Together with Carilion Clinic, NVIDIA will discuss at VMware Explore how the largest healthcare organization in Virginia is future-proofing their hospitals .

New AI-enabled applications include recommender systems, speech and vision analytics, and natural language processing.

This will run on the NVIDIA and VMware AI-Ready Enterprise Platform , which is accelerated by NVIDIA GPUs and DPUs, and optimized and delivered across the breadth of VMware products, Huang said.

Many industries are now embracing VMware and NVIDIA’s joint solutions, Huang said.

In telecom, for example, NTT Communications is deploying multi-tenant services based on the platform. (Watch the breakout session at VMware Explore on “ NTTcom Enabling AI Applications for Enterprises in the Cloud .”)

VMware vSphere 8 with NVIDIA DPUs will be vital to bringing cloud and multi-tenant cloud, hybrid cloud and zero-trust security to enterprises.

Modern organizations continue to generate and process large amounts of data, Raghuram said.

New waves of workloads are starting to emerge that are highly distributed across the data center, network edge and multi-cloud, he added.

Raghuram said that customers need better performance and security in this new era.

DPUs will play a crucial role in the new infrastructure architecture to accelerate performance, free up CPU cycles and provide better security.

“We have rearchitected vSphere to run on DPUs,” Raghuram said. This offloads software-defined infrastructure tasks like network and storage processing, he added.

“And now you get accelerated I/O, and you can have agility for developers, because all of that storage and network processing is now running in the DPU,” he said.

Huang explained that cloud computing and AI are driving a reinvention of data center architecture, ■and that data centers are the new unit of compute.

The DPU is a new type of processor to reduce the processing burden on CPUs and provide a zero-trust security model, Huang explained.

The NVIDIA BlueField DPU , an accelerated computing platform, is designed for all enterprise workloads and optimized for NVIDIA AI■, Huang explained. The BlueField DPU offloads, accelerates and isolates the software-defined infrastructure of the data center — networking, security, storage and virtualization■.

“The return on investment — the benefits that DPU-enabled vSphere 8 with NVIDIA BlueField deliver — will be so fast because it frees up so many resources for computing that the payback is going to be instantaneous,” Huang said. “It’s going to be a really fantastic return.”

This approach is ideal for today’s security challenges. The traditional approach, Raghuram explained, is based on firewalls that focus on the network perimeter.

With the vSphere platform, VMware NSX and advancements in silicon, “we can now bring intrinsic security to life,” Raghuram said.

This new approach, with the NSX distributed firewall running on BlueField DPUs, enables every node to be more secure at virtually every touch point, Huang explained, and the zero-trust security model is finally realized.

“And this is where BlueField and vSphere 8, with NSX running on BlueField, is such an incredible revolution,” Huang said. “We’re essentially going to have a firewall in every single computer.”

Enterprises can get started now. Raghuram announced the first release of vSphere on DPU is available with the vSphere 8 release■, with ESXi and NSX support on BlueField DPU■.

It lets users improve infrastructure performance by offloading and accelerating functions on the DPU■, providing more host resources to business applications■, Raghuram said.

Certain latency- and bandwidth-sensitive workloads that previously used virtualization “pass-thru” can now run fully virtualized with similar performance in this new architecture, without losing key vSphere capabilities like vMotion and DRS, Raghuram said.

Infrastructure admins can rely on vSphere to also manage the DPU lifecycle, thereby reducing operational overhead■, Raghuram added. And enterprises can boost infrastructure security by isolating infrastructure domains on a DPU.

“The beauty of what the vSphere engineers have done is they have not changed the management model,” Raghuram said. “And so, it can fit seamlessly into the data center architecture of today, while enabling the future to come about.”

Showcasing the vSphere on BlueField DPU solution, Dell and NVIDIA are announcing an enterprise AI platform that uses VMware . It includes AI acceleration by NVIDIA GPUs, infrastructure acceleration by BlueField DPUs, advanced AI frameworks from NVIDIA, and management by vSphere.

All of this will be available soon running on Dell servers and Dell VxRail hyper-converged infrastructure. It allows customers to use familiar VMware vSphere tools to deploy and manage AI infrastructure.

VMware vSphere users are able to freely experience these workloads today on NVIDIA LaunchPad■ , Huang said, adding that “it’s available worldwide.”

With LaunchPad, a free program that gives users access to hands-on AI labs, there’s no need to procure and stand up infrastructure to offload, accelerate and isolate vSphere on a DPU before experiencing the lab, Huang explained■.

“I can’t wait to try it out myself,” Raghuram said, adding that “this is just the start.”

Sign up now to try the VMware vSphere platform running on NVIDIA BlueField DPUs■.

Watch the fireside chat with NVIDIA CEO Jensen Huang and VMware CEO Raghu Raghuram, below.

Original URL: https://blogs.nvidia.com/blog/2022/08/30/nvidia-vmware-new-era-enterprise-computing/