Partner Flyer

Business-Critical Computing

Scalable High-Performance Computing from SUSE Linux and Microsoft Azure

New data-intensive applications that utilize artificial intelligence, machine learning and data analytics all require high performance computing (HPC) resources and scalability in order to deliver the best results. SUSE Linux Enterprise High Performance Computing on Microsoft Azure enables organizations to easily, and cost-effectively, scale the resources these applications need by harnessing the efficiency and flexibility of the cloud.

SUSE and Microsoft Azure for HPC at a Glance:

- *Boost performance with the Microsoft Azure optimized kernel*
- *Speed tasks using high-throughput networking*
- *Control costs with cloud flexibility and reserved compute power*
- *Scale resources easily to tackle any size job*

- **Products:**

+ *SUSE Linux Enterprise High Performance Computing*
+ *Microsoft Azure*

Delivering the Flexibility Today's Applications Need

Enterprises have traditionally used on-premises infrastructure for their HPC tasks. But as newer, more data-intensive applications are developed, demand is increasing for HPC infrastructure. SUSE Linux Enterprise High Performance Computing on Microsoft Azure gives customers a cost-effective, cloud-based platform that provides the elasticity and scalability required for large, HPC workloads.

When deployed on Microsoft Azure, SUSE Linux Enterprise High Performance Computing enables dynamic scaling and supports high-throughput rapid networking. This enables enterprises to easily increase capacity and add infrastructure as needed, removing bottlenecks that can diminish project performance.

In addition, SUSE Linux High Performance Computing offers more than just an OS. It also features the HPC module, which includes a number of popular open source HPC tools, all supported by SUSE. Full system images of the SUSE HPC solution are available through the Microsoft Azure marketplace.

Meeting Compute Resource Demands Quickly

Organizations can use SUSE Linux Enterprise High Performance Computing on Microsoft Azure as an all-cloud HPC configuration or use it for cloud bursting with existing on-premises infrastructure. If customers need a better way to handle varying compute resource demands, they don't have to start from scratch. With existing on-premises HPC infrastructure, the cloud-bursting model is the best choice, saving customers time and money. In the bursting scenario, customers can run a more streamlined local presence without sacrificing their ability run large workloads when needed.

The number of organizations adopting HPC clouds will reach 30 percent by 2023—up from 5 percent today—resulting in higher infrastructure agility in HPC environments.[3]

Contact us at:
www.suse.com

A Partnership Built for Performance

SUSE's and Microsoft's combined expertise provides performance for processing-intensive enterprise workloads on demand. SUSE Linux Enterprise High Performance Computing running on Microsoft Azure is designed to provide maximum scalability and flexibility, without the expense of customized supercomputing systems. Plus, enterprises get a solution that is backed by two HPC industry leaders.

The SUSE-Microsoft partnership delivers open source, developer-focused, HPC solutions, backed by a long history of enterprise engineering. In fact, the two companies worked together to develop the Azure-tuned kernel, the first enterprise Linux kernel optimized for Azure. This kernel delivers enhanced performance, faster boot speeds and throughput, lower latency and a decreased memory footprint.

SUSE is a global independent software vendor (ISV) for Microsoft and the largest independent provider of open source solutions. SUSE Linux is the leading operating system for HPC, with SUSE Linux Enterprise running 21 of the top 50 supercomputers and 37 percent of the top 100 systems. In fact, more than half of the Linux operating systems used in the HPC TOP500 use SUSE Linux.[1]

Microsoft Azure uses HPC-optimized infrastructure components, such as the fastest CPUs and the latest-generation GPUs to power today's data-intensive applications and workloads. Microsoft Azure also offers the most productive HPC infrastructure of any cloud provider. A recent study by Exabyte[2] found that Azure is the best-performing cloud platform, placing ahead of other cloud providers and most traditional on-premises clusters.

SUSE and Microsoft: Empowering the Most Demanding Applications for Today—and Tomorrow

Regardless of whether customers want to move their entire HPC operations to the cloud or only use cloud-bursting capabilities, SUSE Linux Enterprise High Performance Computing on Microsoft Azure delivers the performance, scalability and flexibility they're looking for. The combined solution can help enterprises increase efficiency, gain a competitive edge, achieve long-term growth and control costs.

Hyperion Research found that 70 percent of HPC sites now run some jobs in public clouds (up from 13 percent in 2011). Hyperion predicts that spending for HPC in the cloud will grow 83 percent by 2022.[4]

1 *Top500 Supercomputer Report, June 2019*
2 *Top500: Exabyte Measures Linpack Performance Across Major Cloud Vendors* ***https://www.top500.org/news/exabyte-measures-linpack-performance-across-major-cloud-vendors/***
3 *"Top 5 Ways to Successfully Deliver HPC Cloud Strategies," Gartner, Chirag Dekate, Nov. 29, 2018*
4 *HYPERION RESEARCH UPDATE: Research Highlights In HPC, HPDA-AI, Cloud Computing, Quantum Computing, and Innovation Award Winners, ISC19,* ***https://hyperionresearch.com/proceed-to-download/?doctodown=isc-19-breakfast-briefing***

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