



SUPERMICRO SOLUTION FOR MICROSOFT AZURE STACK HCI

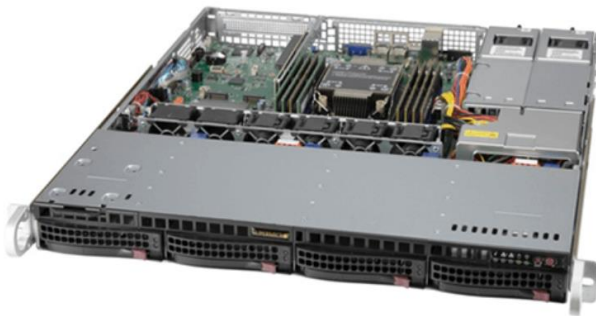
X12 Single-Socket Mainstream 1U Server SYS-510P-MR Simplifies the Implementation of Hyperconverged Infrastructure and Hybrid Cloud

Summary

Cloud and hyperconverged infrastructure (HCI) data center deployments offer significant ROI improvement potential. Supermicro X12 single-socket Mainstream 1U server systems can deliver these ROI improvements with the latest hybrid cloud service from Microsoft. These X12 servers support Azure Stack HCI to offer the latest security, performance, and features that deliver the highest HCI hybrid cloud performance and efficiency.

The Supermicro X12 single-socket Mainstream 1U system offers many attractive HCI and hybrid cloud features, including the latest 3rd Gen Intel® Xeon® Scalable processors, All-Flash NVMe storage, and PCI-E 4.0.

Configured as a cluster and compared to an X11 dual-socket Ultra server cluster supporting Azure Stack HCI, the X12 single-socket Mainstream 1U system offers a per-node 40%+ performance increase and 30%+ improvement in power use, for a 100%+ increase in performance-per-watt. As a result, these X12 systems offer better TCO for enterprises implementing hybrid cloud and HCI.



X12 Single-Socket Mainstream 1U Server
SYS-510P-MR

SUPERMICRO

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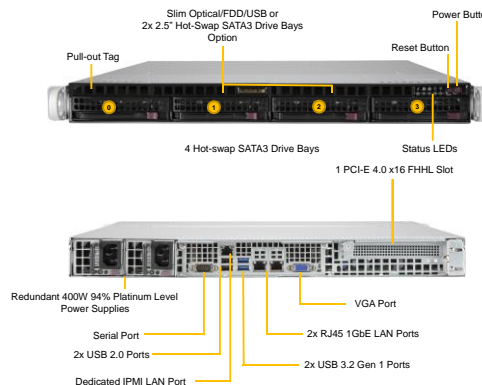


Figure 1: X12 Single-Socket Mainstream 1U System (Front & Rear Views)



Solution Description

Azure Stack HCI is a hyperconverged operating system designed by Microsoft to connect on-premises and cloud resources, maximizing storage, performance, scalability, and functionality. Supermicro further optimizes Azure Stack HCI through processing technologies designed for the rapid scaling of compute and capacity for workload flexibility.

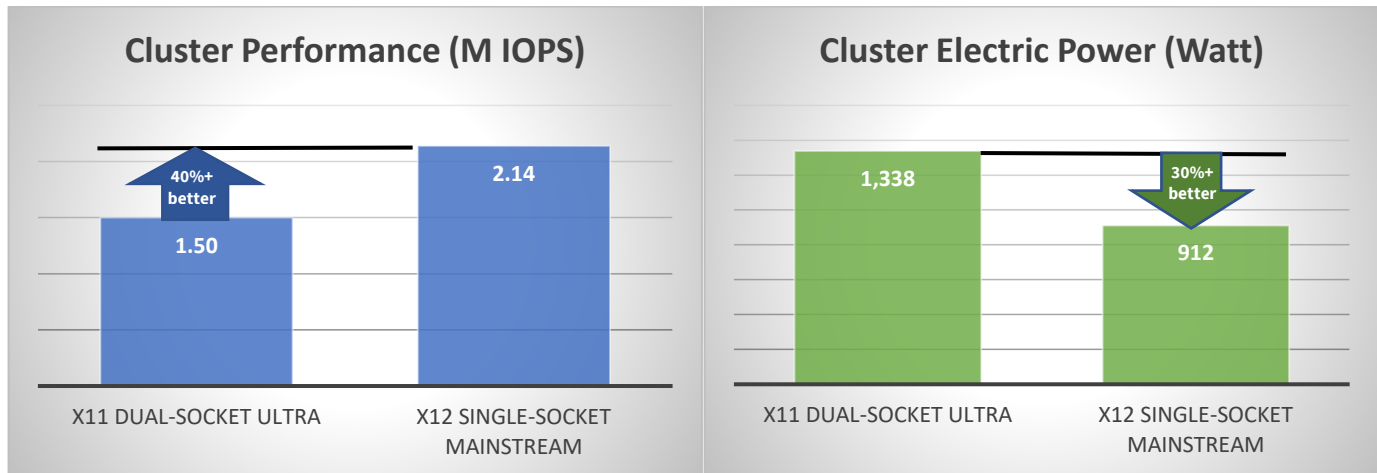
Tested Configuration

The X12 single-socket Mainstream 1U 2-node cluster configuration is detailed below compared to the configuration of a Supermicro X11 dual-socket Ultra 1U SYS-1029U-TN10RT 2-node cluster^{1,2}.

Description- X12 single-socket 1U 2-node cluster	Quantity	Description- X11 dual-socket 1U 2-node cluster
X12 Single-Socket Mainstream 1U SYS-510P-MR	2 2	X11 Dual Socket Ultra 1U SYS-1029U-TN10RT
Intel Xeon 8360Y CPU, 36-Core 2.4GHz (250W) Total: 72 Cores, 500W	2 4	Intel Xeon 6248 CPU, 20-Core 2.5GHz (150W) Total: 80 Cores, 600W
32GB DDR4 ECC RDIMM Total: 512GB of memory	16 8	32GB DDR4 ECC RDIMM Total: 256GB of memory
Intel DC P4510 4TB NVMe PCI-E 3.1, 2.5" 1DWP	8 8	Intel DC P4510 2TB NVMe PCI-E 3.1, 2.5" 1DWP
	0 4	+ Intel DC P4610 1.6TB NVMe PCI-E 3.1, 2.5" 3DWP
2x 25GbE SFP28 Mellanox CX-4 LX EN, Gen3 x8 LP	2 2	2x 25GbE SFP28 Mellanox CX-4 LX EN, Gen3 x8 LP

Results

The X12 single-socket Mainstream 1U two-node cluster achieved 2.14 million IOPS with 40 VMs. This is a 42.7% increase compared to the X11 dual-socket Ultra cluster used as a reference. The electric power required for the X12 single-socket Mainstream 1U cluster is 31.8% lower than an X11 dual-socket Ultra 1U cluster (see chart). The efficiency improvement (in M IOPS-per-watt) is therefore 109%.



Conclusion

A Supermicro X12 single-socket Mainstream 1U cluster supporting Microsoft Azure Stack HCI offers an industry-leading 40%+ improvement in performance and 30% lower power consumption compared to an X11 dual-socket system. In addition, over 2x performance-per-watt power efficiency was observed with lower CPU power consumption compared to the previous generation dual-socket system cluster. This huge leap forward is made possible with a lower total core count (72 vs. 80 Cores), offering enterprises the most ROI-efficient server solution.

Visit <https://www.supermicro.com/en/products/mainstream> for more information

¹The 2-node X12 single-socket Mainstream 1U cluster was compared to a 4-node SYS-1029U-TN10RT X11 dual-socket Ultra 1U cluster with its results halved. The 4-node X11 dual-socket Ultra 1U cluster achieved >3M IOPS (4k, 100% random, 100% reads), equivalent to 1.5M IOPS on a 2-node X11 dual-socket Ultra 1U cluster.

²Per test results, CPU utilization, is 100% while memory utilization is 80% in the dual-processor cluster, indicating that memory is not a performance bottleneck.