Repurposing ESXi Servers for VMware vSAN

Background

In recent times, there has been a shortage of x86 servers in the market, which has led customers to ask how they can procure new vSAN ESA (Express Storage Architecture)-certified servers. Broadcom's data shows that most of the popular servers certified for the ESXi component of VCF are also certified for vSAN ESA component. Therefore, in most cases, customers with eligible ESXi hosts (as listed on the vSAN BCG) can simply add certified storage components to the ESXi servers that they are currently using for compute, and repurpose them for vSAN ESA. This allows customers to transition to vSAN immediately. Rather than procuring completely new servers certified for vSAN ESA, customers only need to add certified NVMe drives with NVMe backplanes to their existing ESXi servers that they are currently using for compute, if they are also vSAN certified (vSAN Certified Servers). Minimum Hardware Requirements: To ensure vSAN compatibility, existing servers should meet a minimum threshold of 16 CPU cores, 128GB of RAM and 10 GbE Networking. After the certified devices are installed, customers can enable vSAN from the vSphere Client to create a vSAN HCI cluster. Storage vMotion can be performed to move workloads from external storage to vSAN, after which the external storage can be retired.

This approach is viable not only because of hardware cross-certification but also because vSAN's real-world CPU and memory overhead is significantly lower than the resources typically available in ESXi hosts, leaving enough capacity for application workloads.

Frequently Asked Questions

Q: Why can customers repurpose existing ESXi servers that they are using for compute in their environment for vSAN?

A: Based on customer data, the majority of servers deployed for ESXi compute workloads are also certified for vSAN. In addition, our data shows that approximately 70% of the available drive slots in these compute servers are unused, which provides sufficient capacity to add certified storage devices. This combination of hardware cross-certification and available drive capacity makes it possible to repurpose existing ESXi servers for vSAN without requiring a full hardware refresh.

Q: How do I verify my existing ESXi hosts are supported for vSAN?

A: To repurpose existing ESXi servers for vSAN, confirm the server platform is certified in vSAN Certified Servers and meets minimum hardware requirements.

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Q: What additional hardware is required to repurpose ESXi servers for vSAN ESA?

A: For vSAN ESA, you only need to add certified NVMe drives to the existing ESXi servers.

- Get certified NVMe drives from vSAN ESA-Certified NVMe Drives

In some cases, you may need to switch the backplane on the server to support NVMe.

Ensure that the firmware and drivers for the drives are compatible with what is listed on the vSAN HCL.

Q: Is there any difference between vSAN clusters built from existing ESXi servers vs. using vSAN ReadyNodes?

A: No, as long as your "Build-Your-Own" (BYO) configuration matches the BCG specifications, it receives the same validation and support as a certified vSAN ReadyNode.

Q: What happens if a host is running outdated firmware or drivers?

A: vSAN Health Check will flag firmware and driver compatibility issues. You can use vSphere Lifecycle Manager (vLCM) to automate remediation of the driver/firmware versions to be vSAN compatible.

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Q: How do I move workloads from my current external storage to vSAN once enabled?

A: Follow these steps:

1. Add certified NVMe disks to the ESXi compute hosts (if not already present).

2. Enable vSAN ESA on the cluster (vSAN HCI).

3. Use Storage vMotion to migrate workloads from external storage to the vSAN cluster.

4. Decommission the external storage array once migration is complete.

Q: Does Broadcom still recommend vSAN ReadyNodes?

A: Yes, vSAN ReadyNodes are the primary recommendation from Broadcom.

When existing ESXi compute hosts are repurposed for vSAN by adding certified storage components, they become functionally equivalent to vSAN ReadyNodes, provided the configuration matches the vSAN Compatibility Guide (HCL).

Q: Do I need to change how I operate vSAN on existing servers?

A: No. Once you enable vSAN from the existing servers, you can continue to use the same tools for management & operations.

Q. Can I use existing ESXi Compute hosts to build a vSAN ESA storage cluster?

A: Yes, it is possible if the customer wants to maintain a disaggregated topology instead of moving to HCI. Using the same methods as above, you would need to convert one of the ESXi compute clusters into a vSAN ESA storage cluster and keep the remaining as compute-only clusters to run workloads, given there is sufficient compute headroom to do so. Note this does introduce additional operational considerations such as networking changes.

Q: Where can I find more detailed hardware guidance for vSAN ESA?

A: For detailed hardware requirements and configuration guidance, refer to:

- **vSAN ESA Hardware Reference Guide**