

VMware Cloud Foundation on Dell EMC vSAN Ready Nodes

Tech Note by

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Summary

Dell EMC vSAN Ready Nodes are preconfigured, tested and certified hyperconverged infrastructure to run VMware vSAN, a radically simple software-defined storage. Each Ready Node includes the right amount of CPU, memory, and network I/O controllers, within a vSAN hyperconverged infrastructure cluster to run a your private or hybrid cloud solution.

Rather than starting from scratch deploying varied virtualization tools for compute, network, storage, etc., vSAN Ready Nodes start with a preconfigured layer to deploy VMware Cloud Foundation, which helps customers provision infrastructure automatically and reliably through workload domains. These Ready Nodes help mitigate human error by reducing the time taken to choose and validate the right cloud infrastructure, while greatly accelerating the time required to provision ready to use infrastructure from weeks to just few hours.

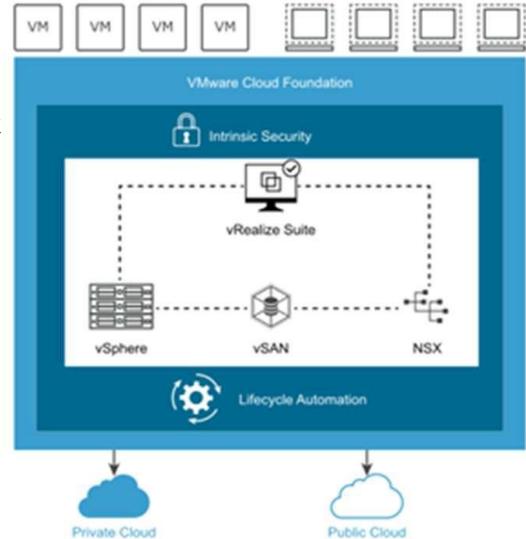
Introduction to the Technology

VMware Cloud Foundation is a unified software-defined data center solution that bundles compute, storage, network virtualization and cloud monitoring and management. VMware Cloud Foundation on Dell EMC vSAN Ready Nodes with AMD processor can be deployed either on-premises, hosted with a service provider as a private cloud or run as a service within or integrate to a public cloud.

VMware Cloud Foundation Architecture

VMware Cloud Foundation can be deployed as two types of architecture model - standard and consolidated. A standard architecture model includes a dedicated management domain, with dedicated infrastructure created during the deployment phase, whereas a consolidated architecture is deployed on a smaller infrastructure footprint of six or fewer hosts, and both the management and workload domains run in the management domain.

VMware Cloud Foundation extends the benefits of compute, storage, and network virtualization to legacy data centers and their cumbersome management of multiple siloes of infrastructure. Cloud foundation also simplifies the provisioning, orchestration, monitoring and management of resources with an integrated software defined data center platform that is the foundation for both private and public cloud environments.



Infrastructure for hosting VMware Cloud Foundation as Standard Architecture Model

Dell EMC vSAN Ready Nodes are one of the building blocks in the Dell EMC solution portfolio, wherein we can deploy the VMware Cloud Foundation solution stack. A hyperconverged infrastructure (vSAN Ready node) improves the efficiency and management of complex data center infrastructure by leveraging the capabilities that a vSAN Ready nodes provides as the basic building block for the Cloud.

The following are the minimum hardware required for the Standard Architecture.

For Management Domain.

The Management domain hosts the infrastructure workloads and requires a minimum of 4-hosts.

For Virtual Infrastructure Workload Domain.

The Virtual Infrastructure Workload Domains host the tenant workloads and consists of a minimum of one cluster of 4 hosts or more. Hosts within a single cluster must be homogeneous.

The below table lists the infrastructure required to host the VMware Cloud Foundation as a Standard Architecture Model.

| Description | Configuration | Qty | Notes |
|---|-----------------------|-----|--|
| Management Cluster (4-vSAN Ready Nodes) | | 4 | 4-Node Management Cluster |
| <ul style="list-style-type: none"> Processors | 1S 8C (for All-Flash) | 2 | All-Flash nodes within a cluster |
| | 1S 8C (for Hybrid) | 1 | Nodes with a combination of flash and spindle disks within a cluster |
| <ul style="list-style-type: none"> Memory | 192 GB | 1 | |
| <ul style="list-style-type: none"> Disk Space | 16GB Boot Device | 1 | Local Media |
| | NVMe or SSD | 1 | Caching Tier |
| | SSDs or HDDs | 2 | Capacity Tier |
| <ul style="list-style-type: none"> Network Interface | 10 GbE or higher | 2 | (IOVP Certified) |
| | 1 GbE (Optional) | 1 | |
| VI Workload Domain (4-Compatible vSAN Ready Nodes-cluster minimum) | | 4 | Choose from the VCG list of validated vSAN RN for User Workload |
| <ul style="list-style-type: none"> Processors | | | As per user-workload Sizing |
| <ul style="list-style-type: none"> Memory | | | |
| <ul style="list-style-type: none"> Disk Space | | | |
| <ul style="list-style-type: none"> Network Interface | | | |
| <ul style="list-style-type: none"> Storage | | | |

Table-1. Hardware Configuration – For Standard Architecture

The below table lists the AMD-based Dell EMC PowerEdge servers validated for vSAN Ready Nodes.

| Dell EMC vSAN Ready Node | No. Of Sockets | No. Of Cores | AMD CPU Platform |
|--------------------------|----------------|--------------|------------------------------|
| • R6515 | 1S | 32/64 | AMD EPYC 7502, AMD EPYC 7742 |
| • R6525 | 2S | 32/64 | |
| • R7515 | 1S | 32/64 | |
| • C6525 | 2S | 32/64 | |
| • R7525 | 2S | 32/64 | |

Table-2. List of AMD platform-based PowerEdge vSAN Ready Nodes

In Conclusion

Dell EMC vSAN Ready Nodes on an AMD-based server platform are pre-configured, validated, and certified to reduce deployment challenges, increase efficiency, and in turn, helps ease the setting up of a VMware private cloud.

With one of the broadest vSAN Ready Node portfolios in the market, Dell EMC helps customers scale strategically and ensures that critical IT resources are configured as per standards for maintaining productivity and competitive cloud advantage.



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