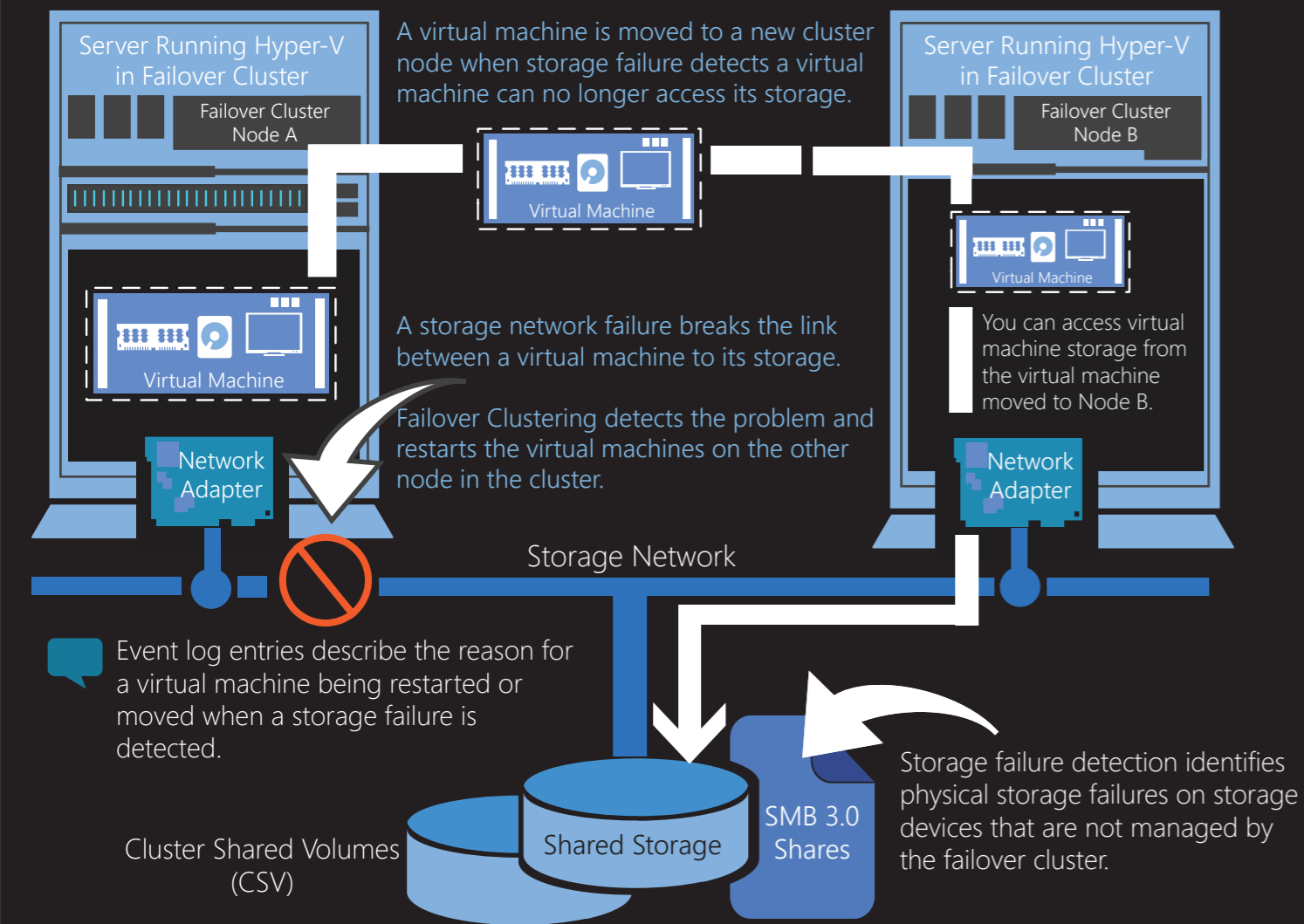


# Hyper-V and Failover Clustering

## Storage Failure Detection for Virtual Machines

Windows Server has always allowed you to cluster your virtual machines using storage managed by the failover cluster. If a storage failure was detected, the failover cluster responded in an appropriate manner and ensured that your virtual machine maintained access to its storage. In Windows Server 2012 R2, Hyper-V and Failover Clustering have been enhanced to detect physical storage failures on storage devices that are not managed by the failover cluster (for example, SMB 3.0 shares).

Storage failure detection can detect the failure of a virtual machine boot disk or any secondary data disk associated with the virtual machine. If such an event occurs, Failover Clustering ensures that the virtual machine is relocated and restarted on another node in the cluster. This eliminates situations where unmanaged storage failures would not be detected and where virtual machines resources may become unavailable. For example, a SQL data store failing on a secondary drive is now detected.

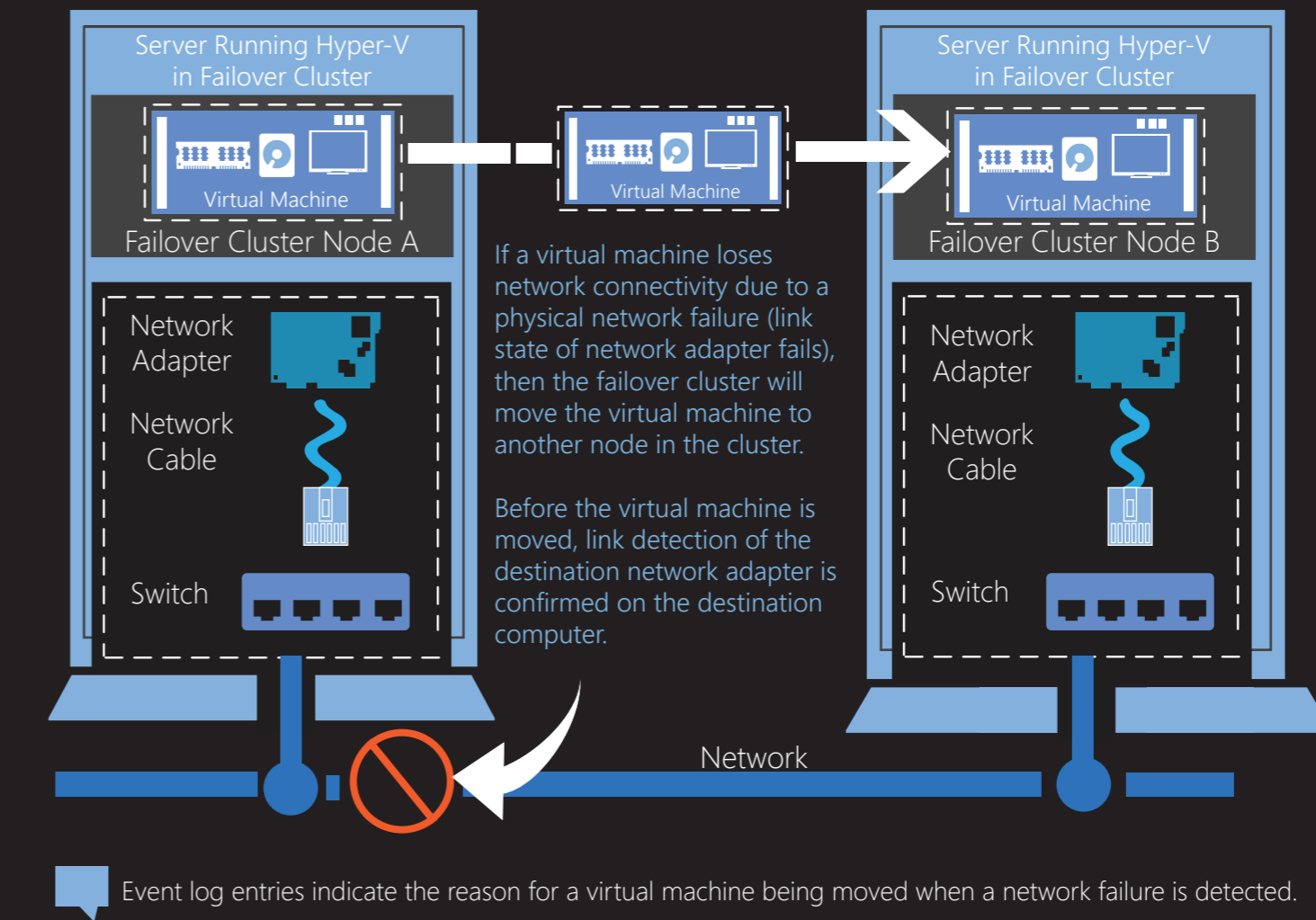


Storage failure detection supports VHD and VHDX file formats, differencing disks, virtual hard disks connected to IDE controllers, virtual hard disks connected to SCSI controllers, virtual machine checkpoints (snapshots), and virtual machines using storage and network resource pools.

## Network Failure Detection for Virtual Machines

In previous releases, Failover Clustering has monitored and managed network connectivity among cluster nodes, and between clients and cluster nodes. It detects problems with a network adapter or other network device and takes appropriate action to ensure connectivity is uninterrupted. In Windows Server 2012 R2, Hyper-V and Failover Clustering have been enhanced to detect network connectivity issues for virtual machines. If the physical network assigned to the virtual machine suffers a failure—such as a faulty switch port, network adapter, or a disconnected network cable—then the failover cluster moves the virtual machine to another node in the failover cluster in order to restore network connectivity.

You can use network failure detection to monitor the health of a physical cluster node as well as the health of the virtual machine and ensure that you can provide a robust environment to host private cloud environments.



Network failure detection works with any virtual machine. It supports legacy and software-based network adapters, SR-IOV-enabled network adapters, virtual machine checkpoints, storage or network resource pools, and advanced networking features enabled on virtual machines.

More information ...

- Understanding Storage Architecture
- Server Message Block 3.0
- Scale Out File Server
- Hyper-V and Failover Clustering
- Virtual Hard Disk Sharing
- Deduplication
- Storage Spaces
- Windows 8 App Server Posterpedia