Implementing Failover Clustering with Windows Server 2016 Hyper-V

Eli Chang

MSSA Cohort #2

Diagram Exercise 9

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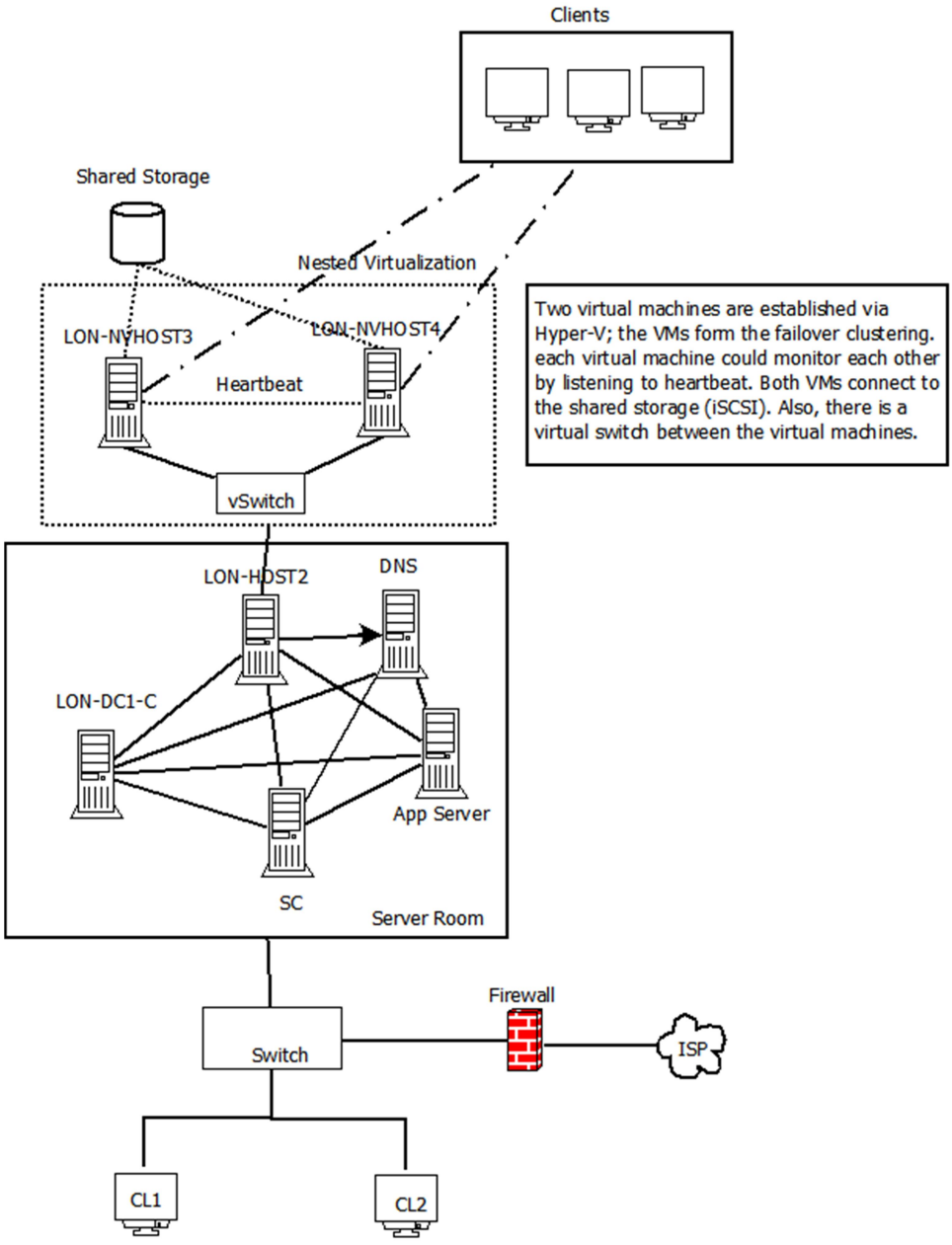
The basic concept of this diagram is to build nested virtualization. There are two nested virtualization virtual machines: LON-NVHOST3 and LON-NVHOST4. Using the Hyper-V environment, the failover clustering is configured in the LON-HOST2. The benefit of nested virtualization is to test any deployments in a virtual environment so that it does not require any physical space.

In Hyper-V clusters, the components are cluster nodes, cluster networks, virtual networks, storage, and VMs. The virtual machines in nested virtualization act as hosts and nodes with Hyper-V. Each node should have shared storage in the failover clustering. Also, the hosts connect to the shared storage with iSCSI connection; there is a virtual switch between the nodes as well.

Finally, the nested virtualization establishes a highly available environment. Each node also monitors each other with a heartbeat; if one of the nodes goes offline, the other can have a workload without downtime. The nodes connect to the clients so that they can provide workload. Cluster Share Volumes are enabled in the storage.


Clients
Shared Storage
Nested Virtualization
LON-NVHOST3
LON-NVHOST4
Heartbeat
vSwitch
Two virtual machines are established via Hyper-V; the VMs form the failover clustering. each virtual machine could monitor each other by listening to heartbeat. Both VMs connect to the shared storage (iSCSI). Also, there is a virtual switch between the virtual machines.
LON-HOST2
DNS
LON-DC1-C
App Server
SC
Server Room
Firewall
Switch
ISP
CL1
CL2