

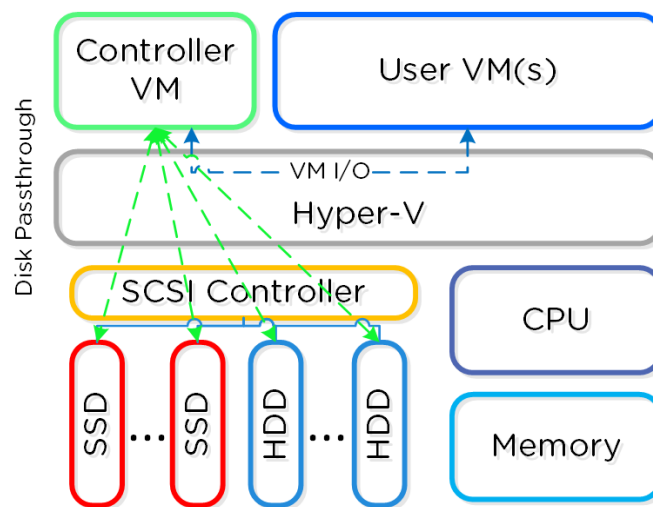
Hyper-V - Hyper-V Architecture

[PDF generated October 31 2024. For all recent updates please see the Nutanix Bible releases notes located at https://nutanixbible.com/release_notes.html. Disclaimer: Downloaded PDFs may not always contain the latest information.]

When a Nutanix Hyper-V cluster is created we automatically join the Hyper-V hosts to the specified Windows Active Directory domain. These hosts are then put into a failover cluster for VM HA. When this is complete there will be AD objects for each individual Hyper-V host and the failover cluster.

Node Architecture

In Hyper-V deployments, the Controller VM (CVM) runs as a VM and disks are presented using disk passthrough.



Hyper-V Node Architecture

Configuration Maximums and Scalability

The following configuration maximums and scalability limits are applicable:

- Maximum cluster size: **16**
- Maximum vCPUs per VM: **64**
- Maximum memory per VM: **1TB**
- Maximum virtual disk size: **64TB**
- Maximum VMs per host: **1,024**
- Maximum VMs per cluster: **8,000**

NOTE: As of Hyper-V 2012 R2 and AOS 6.6. Refer to [Configuration Maximums](#) for other versions.

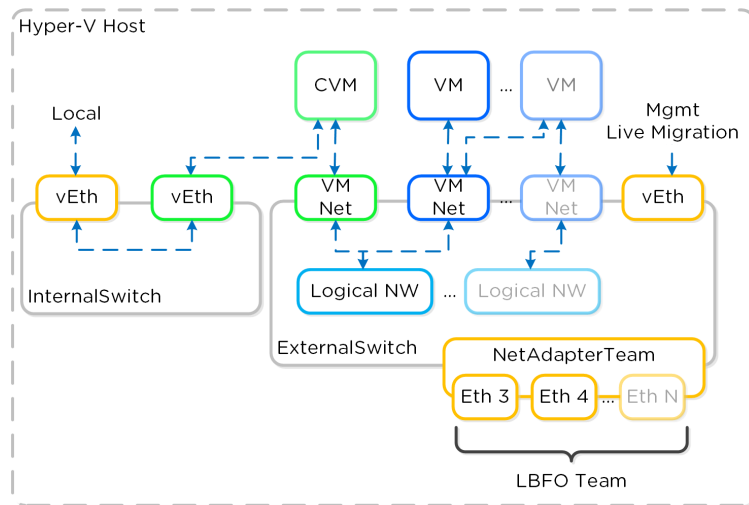
Networking

Each Hyper-V host has an internal only virtual switch which is used for intra-host communication between the Nutanix CVM and host. For external communication and VMs an external virtual switch (default) or logical switch is leveraged.

The internal switch (InternalSwitch) is for local communication between the Nutanix CVM and Hyper-V host. The host has a virtual ethernet interface (vEth) on this internal switch (192.168.5.1) and the CVM has a vEth on this internal switch (192.168.5.2). This is the primary storage communication path.

The external vSwitch can be a standard virtual switch or a logical switch. This will host the external interfaces for the Hyper-V host and CVM as well as the logical and VM networks leveraged by VMs on the host. The external vEth interface is leveraged for host management, live migration, etc. The external CVM interface is used for communication to other Nutanix CVMs. As many logical and VM networks can be created as required assuming the VLANs are enabled on the trunk.

The following figure shows a conceptual diagram of the virtual switch architecture:



Hyper-V Virtual Switch Network Overview

Uplink and Teaming policy

It is recommended to have dual ToR switches and uplinks across both switches for switch HA. By default the system will have the LBFO team in switch independent mode which doesn't require any special configuration.