VMware vSphere 5.5.5 New Features

This is what I came up with. Overall I wanted to actually come up with something that could actually be in a release of vSphere. These are things that I find sorely lacking with the vCenter Server and would love to see them implemented in a future release.

- What's New
  - Enhanced vCenter Server Appliance

Enhanced vCenter Server Appliance

The vCenter Server is the core management product of the vSphere suite. It currently resides in two forms, the installable Windows Server version and the vCenter Server Appliance (vCSA). Depending on use case, the Windows Server was excellent at providing other essential services such as vSphere Update Manager and Linked-Mode. In the past it has also relied upon embedded technologies such as vSphere High Availability to ensure that it was always available in the event of a host failure where the vCenter Server resided.

The following changes have been made:

- External databases for vCenter are no longer supported. This was done to facilitate a more scale-out approach to the vCSA. As cluster sizes grown and shrink, so do the database needs. This new model provides a more elastic configuration.
- Functionality of vSphere Update Manager has been moved into the vCSA with no Windows Server dependency.
- Full IPv6 support now added. This was necessary to expose IPv6 neighbor discovery and the building of the scale-out vCSA cluster.

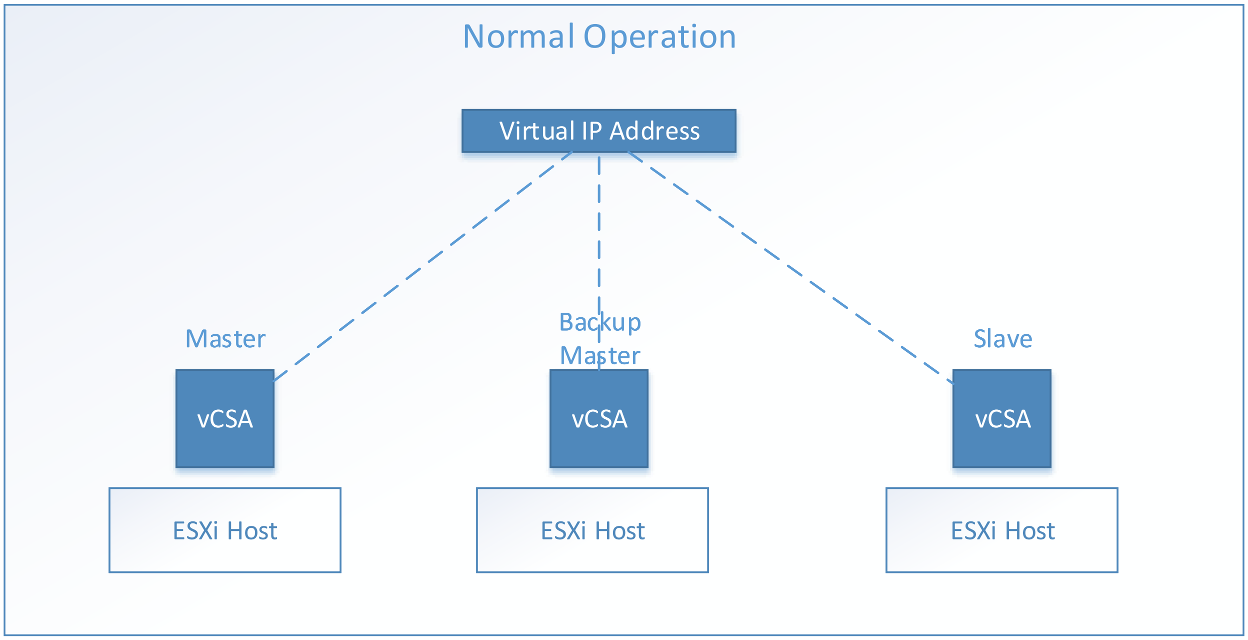
vCenter Server Appliance Cluster

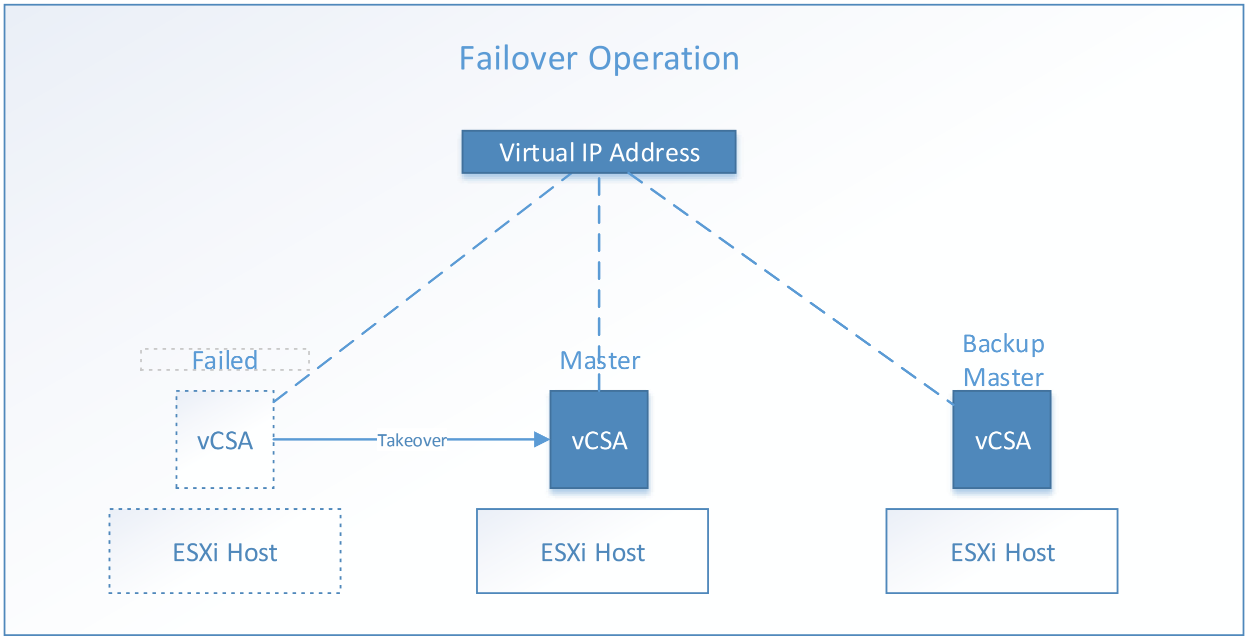
The vCenter Server Appliance is now embedded with the host installation similar to a VSA. The database in which the vCenter Server Appliance relies upon is now only supported for embedded database options. Upon deployment of vCenter and when a new cluster is built, a new instance of the vCenter Server Appliance will be spawned on each new host. These new instances will perform IPv6 neighbor discovery and once discovered will begin initial communication with each other to exchange information. The appliances will begin a cluster election and a Master Node will be selected as well as a Backup Master Node and the other appliances will become Slave Nodes. An election will take place to establish the Master Node as well as a Backup Master and subsequent Slave nodes. A single virtual IP address will provide access to the vCenter Server Cluster.

The Master Node will be the 'one truth' in the cluster and forwards its updates of the database to the Backup Master in real-time. The Backup Master then distributes the updates to all Slaves in a timed fashion. This ensures that the Master and the Backup Master are always in sync in real-time and the Slaves can be updated periodically lessening the network load and load on the Master to ensure all Slaves are updated.

In the event of failure, the Backup Master Node then assumes the virtual IP address of the Cluster and all communications change over to this appliance. Another election takes place to elect another Backup

Master. After election is complete, the Master will change its update scheduling with the new Backup Master to get it the newest copy of the database information.

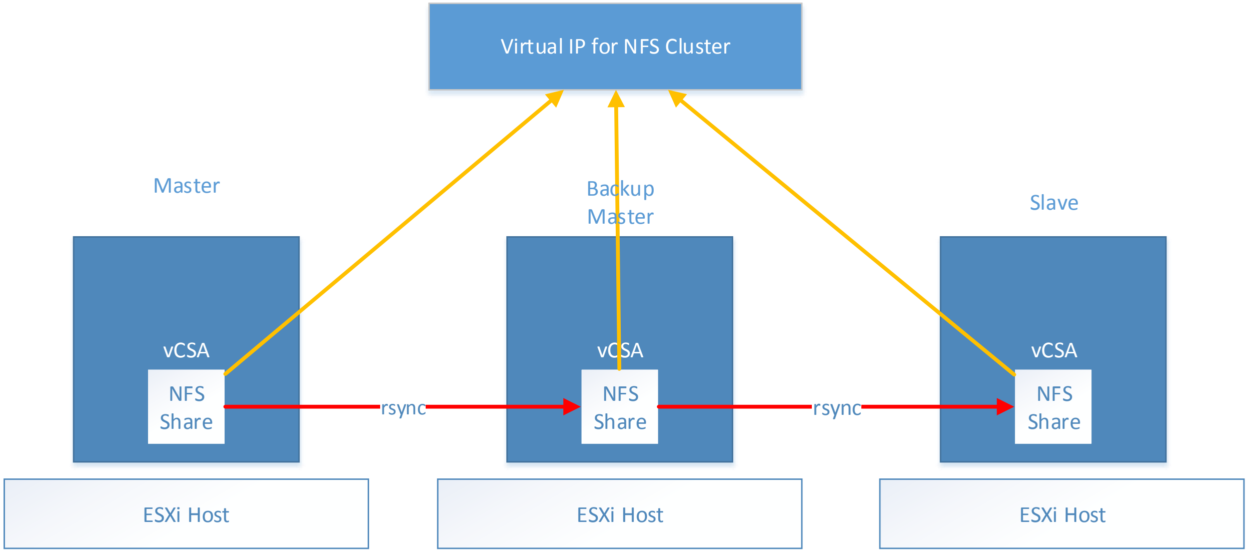




vCenter Server Appliance – vSphere Update Manager

The prototypical vSphere environment relies heavily on vSphere Update Manager to provide updates and upgrades to both the hosts and the VMs within the environment. For years it has relied upon having a Windows server to host these updates and deployment them out. With vSphere 5.5.5, we have changed that model to a highly scalable NFS cluster that is now embedded into the vCSA. Given that the vCSA in its current form is a SuSE Linux-based appliance, NFS and rsync functionality come with it.

The vCSA will create an NFS share on each new vCSA that is spawned on each new host. Those NFS shares will join an NFS cluster where access is provided through a single virtual IP address and all data is kept in sync via rsync. The Master Node is responsible for serving the NFS data for VUM at all times. Similar to how database updates are performed in the vCSA cluster, the rsync functionality pushes the synchronization to the Backup Master in real-time and the Backup Master pushes updates out to the other Slave nodes.


Virtual IP for NFS Cluster
Master
Backup Master
Slave
vCSA
NFS Share
rsync
vCSA
NFS Share
rsync
vCSA
NFS Share
ESXi Host
ESXi Host
ESXi Host