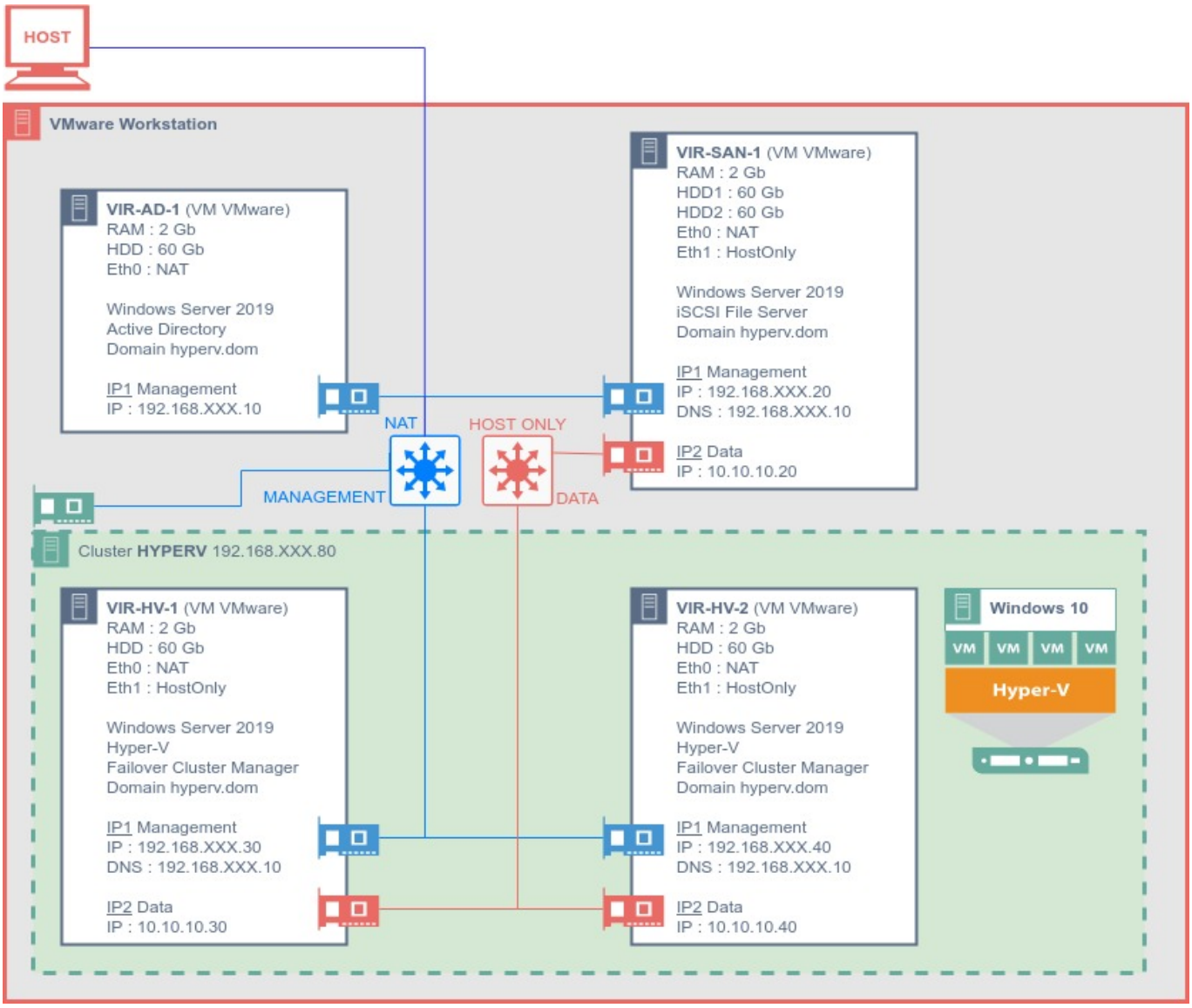
Part 2 Cluster Hyper-V



AD Server Install

In Workstation create new VM Windows Server 2019 :

- Virtual machine name: `W2k19 Server AD`
- Ram : default
- Disk : default
- Network : `NAT`

OS Install :

- Language : `English`
- Time ...: `French (Switzerland)`
- Keyboard : `Swiss French`
- OS : `Windows Server 2019 Standard (Desktop Experience)`
- Password : `Pa$$w0rd`

Finish install

Ad Server Config

Start VM `W2k19 Server AD`
Edit network NAT:

- IPv4 `192.168.XX.10`
- Gateway : `192.168.XX.2`
- DNS : `127.0.0.1`

Change computer name in config by : `VIR-AD-1`
Disable Firewall
Restart server

In **Server Manager** -> **Manage**, add Roles `Active Directory Domain Services`
Finish install
Restart server

In **Server Manager**, clic on the flag on the top and clic on **Promote this server to a domain controller**
Add new forest : `hyperv.dom`
Password : `Pa$$w0rd`
Finish install

SAN iSCSI Install

Create new VM Windows Server 2019 :

- Virtual machine name: `VIR-SAN-1`
- Ram : default
- Disk 1 : `60GB`
- Disk 2 : `60GB`
- Network 0 : `NAT`
- Network 1 : `Host-Only`

OS Install :

- Language : `English`
- Time ...: `French (Switzerland)`
- Keyboard : `Swiss French`
- OS : `Windows Server 2019 Standard (Desktop Experience)`
- Password : `Pa$$w0rd`
- Finish install

SAN iSCSI Config

Start VM `VIR-SAN-1`
Edit Network Nat :

- IP : `192.168.XX.20`

- Gateway : `192.168.XX.10`
- DNS : `192.168.XX.10`

Edit Network Host-Only :

- IP : `10.10.10.20`

Change name : `VIR-SAN-1`
Change Domain : `hyperv.dom`
Disable Firewall
Restart server

In **Server Manager** -> **Manage**, add roles **File and Storage Services** -> **File and iSCSI Services** -> `iSCSI Target Server`
Finish install

Open **Disk Management** and put Online `Disk 1` and initialize it
Create new simple volume on `Disk 1` :

- Size : max
- Drive letter : `S`
- Volume label : `iSCSI`

Finish

Server Manager -> **File and Storage Services** -> **iSCSI**, start new iSCSI :

- Disk Location : volume `S`
- Disk Name : `iSCSI-1`
- Disk Size : `55GB`
- Target Name : `virtual-target`
- Acess Servers :
  - IP : `10.10.10.30`
  - IP : `10.10.10.40`

Finish creation

Right clic and create `New iSCSI Virtual Disk...` :

- Disk Location : volume `C`
- Disk Name : `voting-ghost`
- Disk Size : `5GB`
- Target Name : `voting-ghost-target`
- Acess Servers :
  - IP : `10.10.10.30`
  - IP : `10.10.10.40`

Finish creation

HV 1 Install

Create new VM Windows Server 2019 :

- Virtual machine name: `VIR-HV-1`
- Ram : `4GB`
- Disk : `60GB`
- Network 0 : `NAT`
- Network 1 : `Host-Only`

OS Install :

- Language : `English`
- Time ...: `French (Switzerland)`
- Keyboard : `Swiss French`
- OS : `Windows Server 2019 Standard (Desktop Experience)`
- Password : `Pa$$w0rd`

Finish install

HV 1 Config

Start VM `VIR-SAN-1`
Edit Network Nat :

- IP : `192.168.XX.30`
- Gateway : `192.168.XX.10`
- DNS : `192.168.XX.10`

Edit Network Host-Only :

- IP : `10.10.10.30`

Change computer name : `VIR-HV-1`
Change Domain : `hyperv.dom`
Disable Firewall
Restart server

HV 1 HyperV Install

In **Server Manager** -> **Manage**, add roles `Hyper-V`
If you are an error :
shutdown VM, open the file *.vmx and add

```
hypervisor.cpuid.v0 = "FALSE"
mce.enable = "TRUE"
vhu.enable = "TRUE"
```

Edit **Processors** on VM and activate `virtualize Intel` and `CPU`

Continue installation of roles : `Hyper-V`
Finish install
Restart server

In **Server Manager** -> **Tools**, open `iSCSI Initiator`
Connect to : `10.10.10.20`
Connect the 2 target
Finish

HV 2

Repeat same of HV 1 with :

- Virtual machine name: `VIR-HV-2`
- Network Nat :
  - IP : `192.168.XX.40`
  - Gateway : `192.168.XX.10`
  - DNS : `192.168.XX.10`
- Network Host-Only :
  - IP : `10.10.10.40`
- Computer name : `VIR-HV-2`

Cluster

In **Server Manager** -> **Manage**, add feature `Failover Clustering`
Restart server

Open **Failover Cluster Manager**
Right clic and choose `Create Cluster`

- Select Servers : `VIR-HV-1` and `VIR-HV-2`
- Cluster Name : `HYPERV`
- Cluster Adresse : `192.168.18.80`

Make tests and finish

In **HYPERV.hyperv.dom** -> **Storage** -> **Disk**, choose the cluster available to storage and on the right, clic on `Add to Cluster Shared Volumes`

Open **HYPERV.hyperv.dom**, right clic on **Roles** and create new virtual machine :

- Cluster nodes : `VIR-HV-1`
- VM Name : `Debian`
- Store in : `C:\ClusterStorage\`
- Generation : `Generation 1`
- Ram : `1GB`
- Size disk : `20GB`
- OS : `Debian 10`

Finish

Tests

Start VM `Debian`
Right clic on `Debian` VM and **Move** -> **Live Migration** -> **Select Node**, and choose an other HV.
After that, check the `Owner Node` on `Debian` has changed
Shut down the HV where `Debian` is running and check on the other HV that `Debian` `Owner Node` has automatically changed