Lab 5: Virtualization

In this lab, we installed Hyper-V, a type 1 hypervisor, on one of our servers.

For this purpose, the nested virtualization feature was enabled in the VMware hypervisor as hyper-V required hardware capabilities from the host OS. And our host was already running in virtual environment. The 'Virtualize Intel VT -x/EPT' was checked.

The network connection on this server that is intended to be used by the virtual switches must be identified before installing hyper-V.

Hyper-V is installed in serverCore. We cannot install this on the serverDesktop as it is configured with AD DS feature. Hyper-V Manager is installed in serverDesktop (not in serverCore) because it provides tools and information to creation and configure local and remote VMs via its GUI.

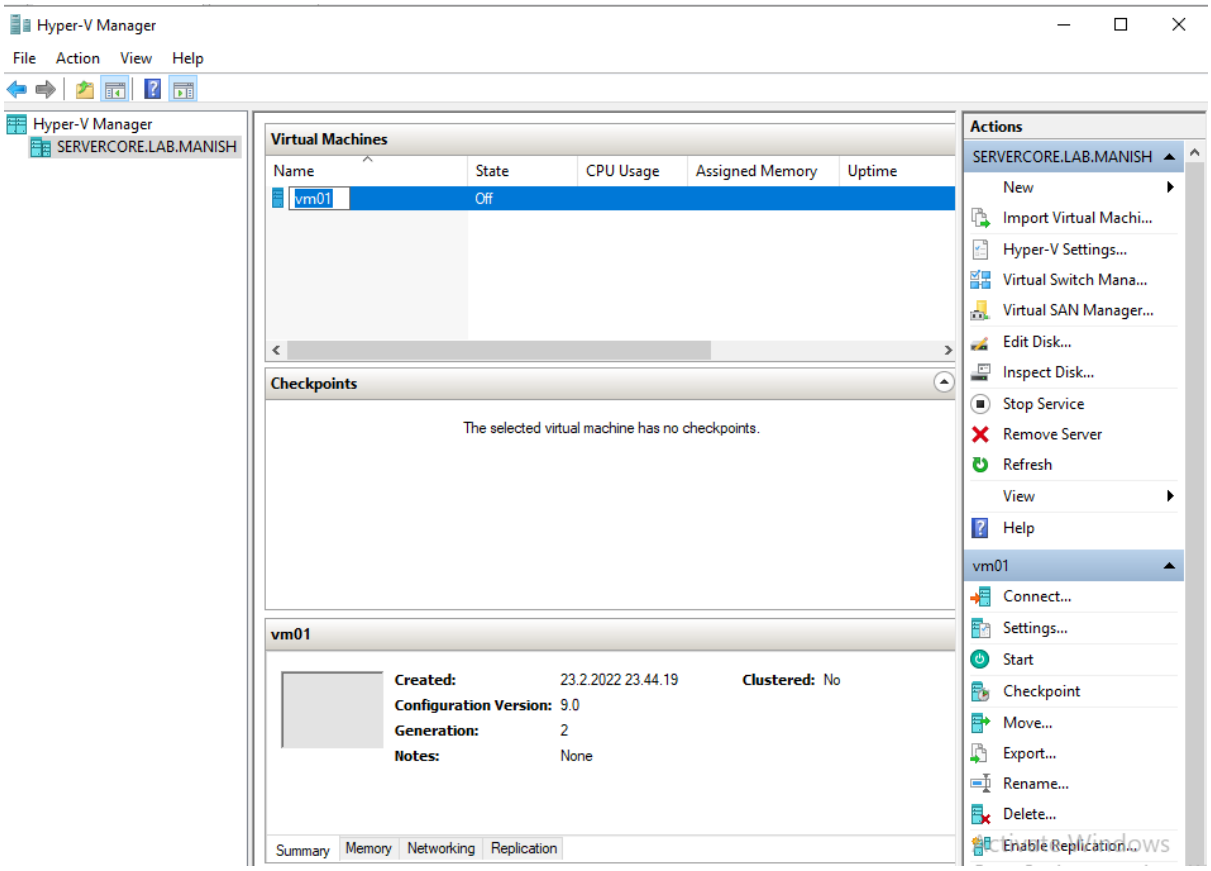

Figure: Hyper-V manager

First, we specified the location for the files and executives of the VM. Then, we created a private virtual switch (External/Public/Private) as we need the switch while creating a new VM. Finally, created a new VM. The ISO image and hard drives will be attached later.

The switch created above is instantly used in this process.

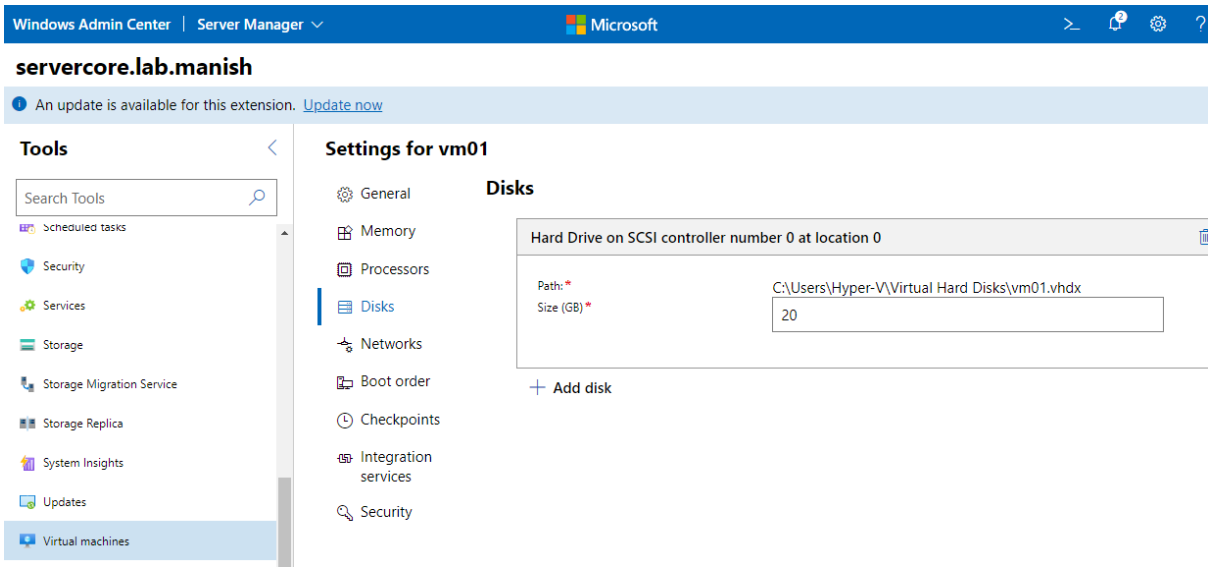

Figure: Virtual machine settings

Now the VHD is also created for the VM.

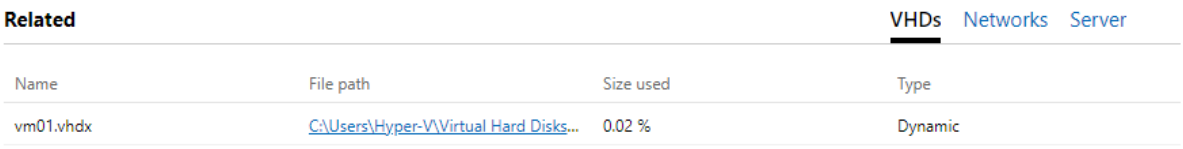

Figure: Virtual machine's hard drive configuration

The last activity of the lab was to install docker on one of the servers. In our case, we chose serverCore as docker is mostly managed through command line interface. So, we installed docker,

(PS cmd - Install-Module -Name DockerMsftProvider -Repository PSGallery -Force)

and used the PackageManagement PowerShell module to install the latest version of Docker.

(PS cmd - Install-Package -Name docker -ProviderName DockerMsftProvider).

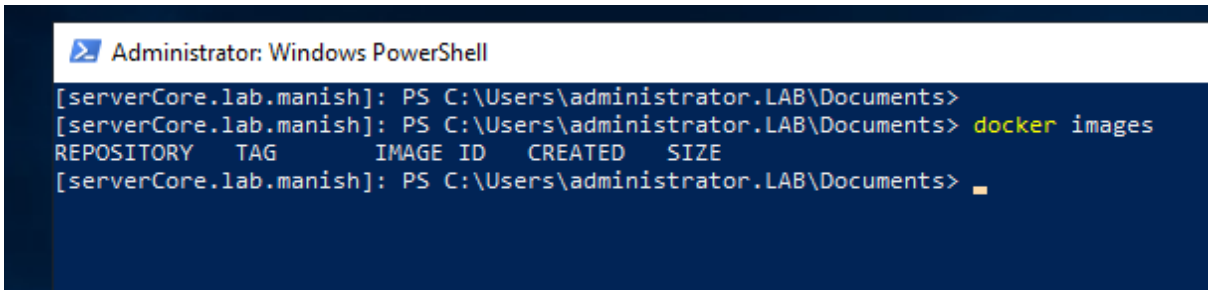

Figure: List of Docker images on the local machine

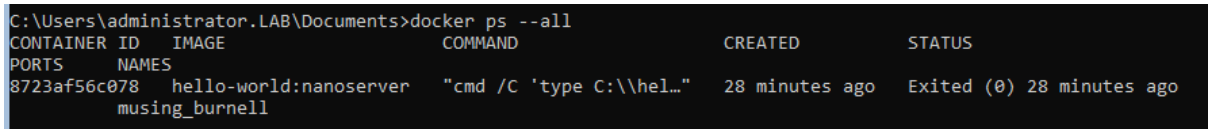

Figure: List of Docker images running or stopped (docker ps --all) on the machine

Conclusion and Reflections

Hyper-V manager offers efficient management of all Virtual Machines in the environment. While a nested virtualization feature was performed in this lab, it was a nice opportunity to practice this. Nested virtualization has its own benefits and use-cases.

Installation of docker required network connectivity. We used several command-line tools to install docker and pull docker images from Microsoft's environment.