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Milestone 12 - HyperV - Linked Clones and Automation 1

💡Linked Clones are exceptionally handy when fast deploys are needed and when a good deal of the OS's disk footprint can remain static. They become less so when massive feature and security updates occur frequently. We are going to use a relatively painful process to create a linked clone with the goal of automating this with a couple lines of powershell at the end of this milestone.

Parent Disk

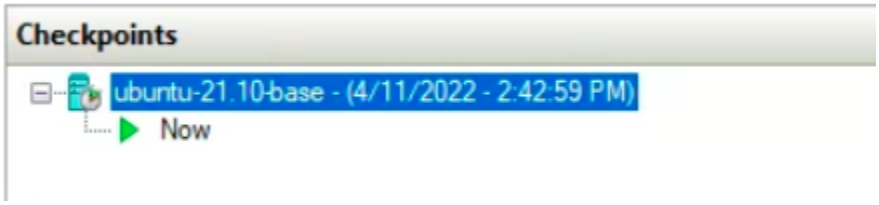
Create an ubuntu22.04-base virtual machine and prepare it for cloning.
You can access an ubuntu ISO (live server…) at:
http://192.168.7.241/isos/

- VM Generation: 1
- Network: HyperV-WAN
- At least 2GiB ram

Take a look at the following script (from hyperv-ubuntu-sealer) which was modified for hyper v instead of vmware.

Baseline your VM using the script, adding any other software or configuration you would like to include.

Once powered off, take a checkpoint (aka snapshot)



Experiment with this VM, power it on, add a file to the desktop, apply the checkpoint to the running VM or revert to the latest checkpoint, The VM should turn off and when powered on the file should go away just like a VMWare Snapshot.

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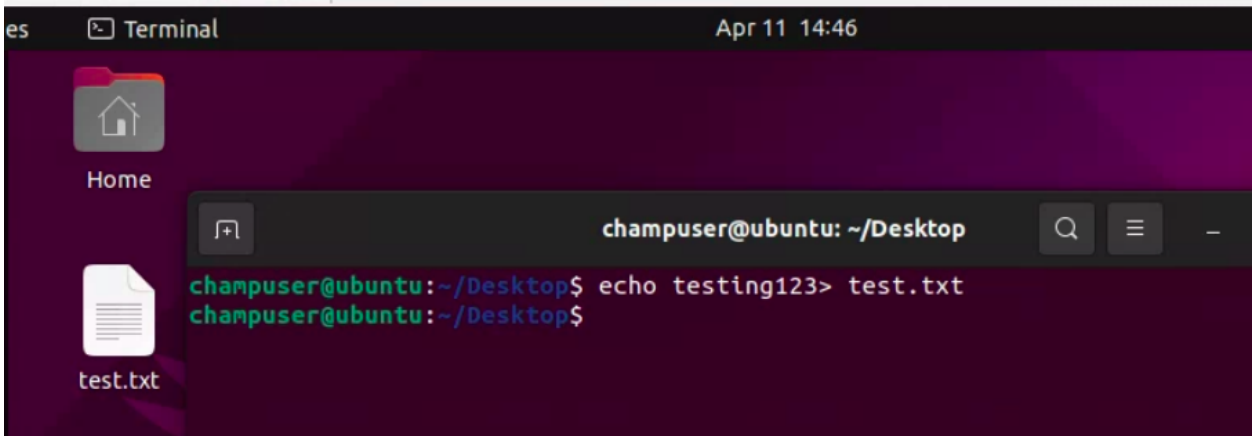
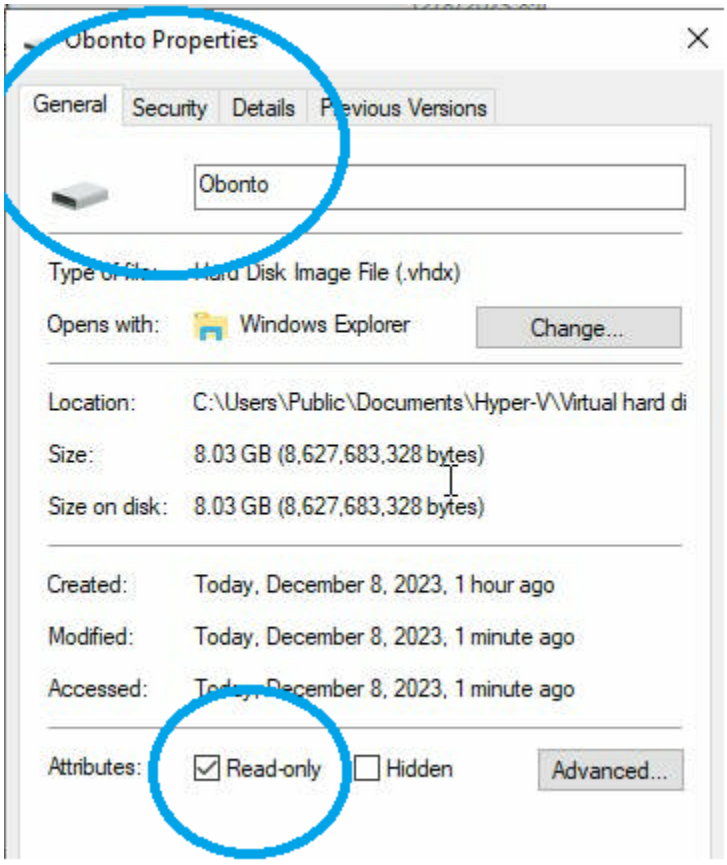


Deliverable 1. Hunt down the VHD file associated with your Ubuntu Base Image and give that file read only permissions. Provide a screenshot similar to the one below.



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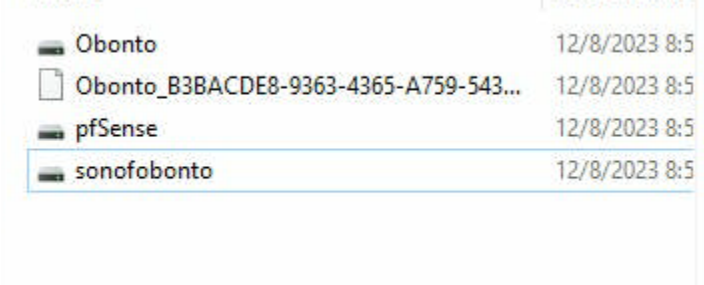
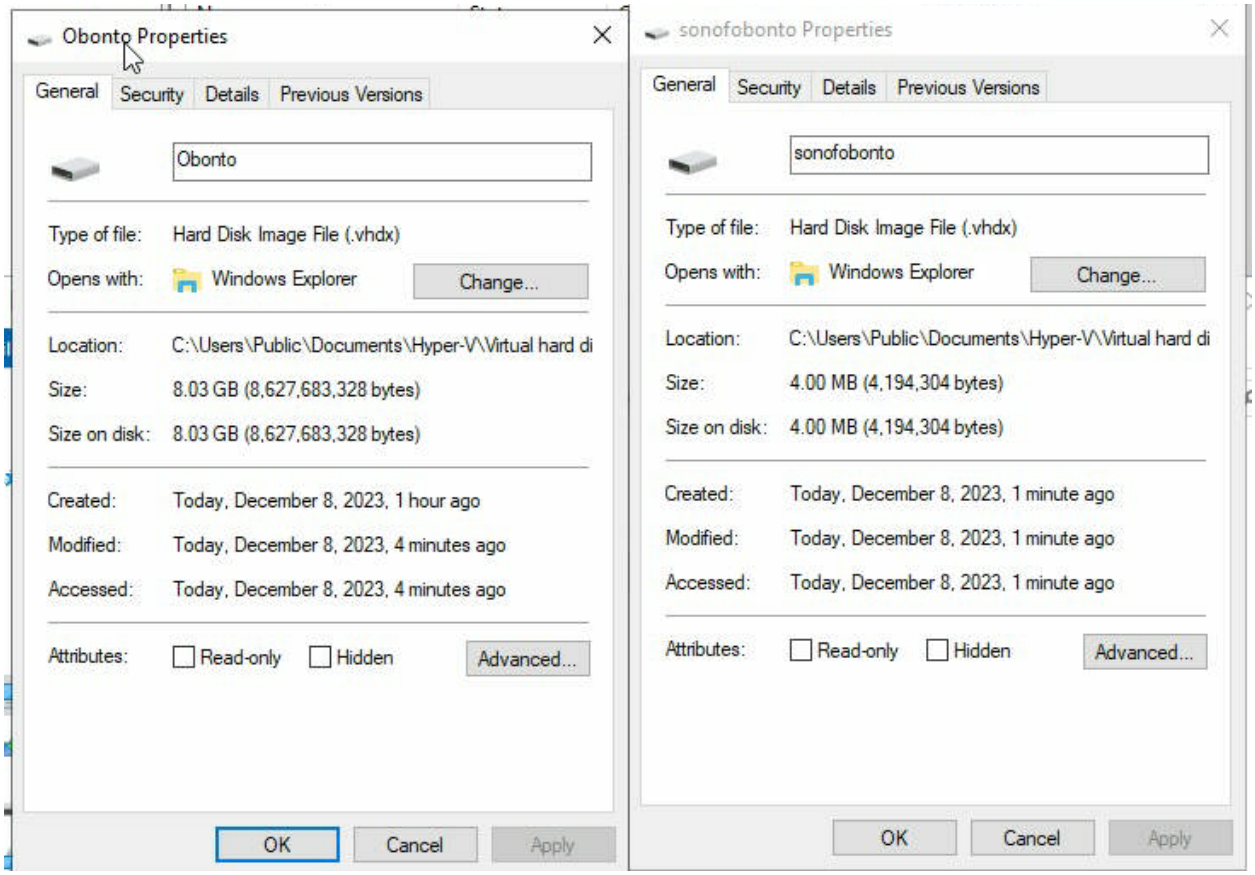
Child Disk

Figure out how to create a new virtual difference disk called sonofubuntu.vhdx with the parent value being the base disk you just created.



Create a new vm called sonofubuntu that uses the difference disk, sonofubuntu.vhdx as an existing disk

`Deliverable 2. Provide a screenshot similar to the one below that shows sonofubuntu running as well as the very tiny difference disk attributes similar to the screenshot below.`



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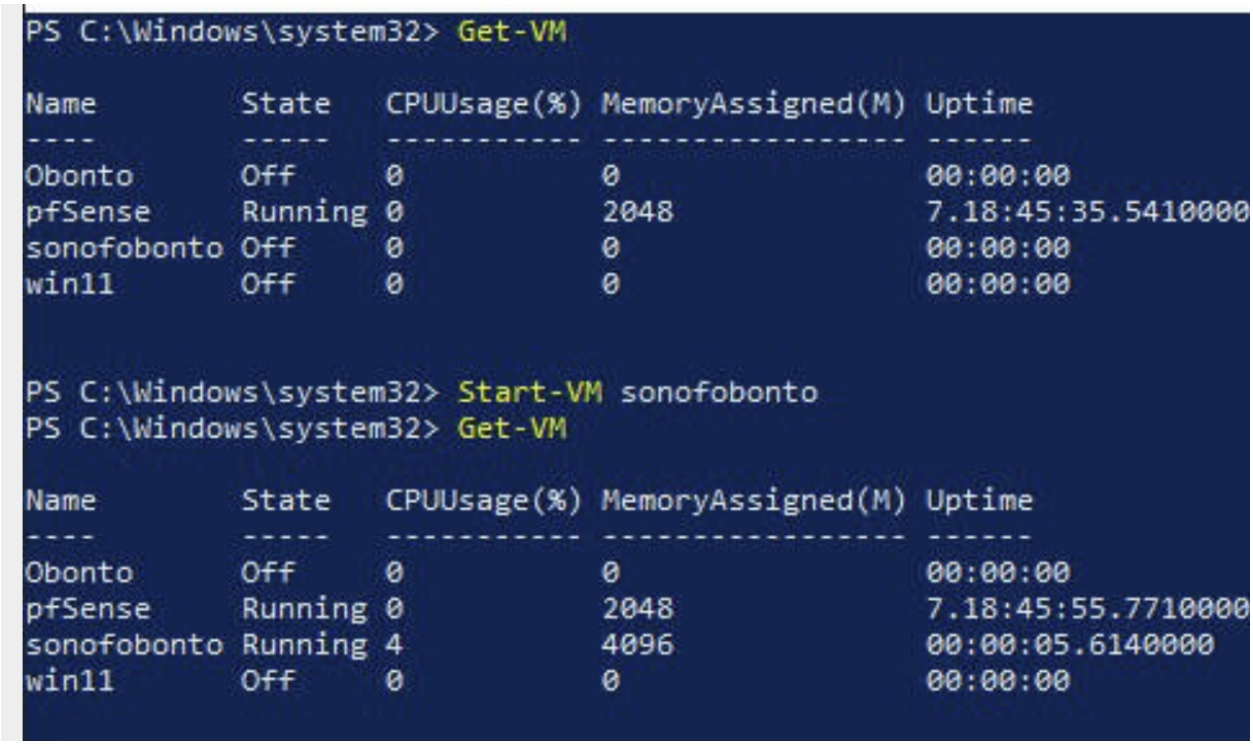
> 💡Now, that was pretty annoying wasn't it? Before you get mad at HyperV, linked clones aren't supported at all from the vSphere GUI, you need to write code to do the same thing with VMWare.

Automation

https://docs.microsoft.com/en-us/virtualization/hyper-v-on-windows/quick-start/try-hyper-v-powershell

Figure out how to interactively use powershell commands to:
`Deliverable 3.  stop sonofubuntu`



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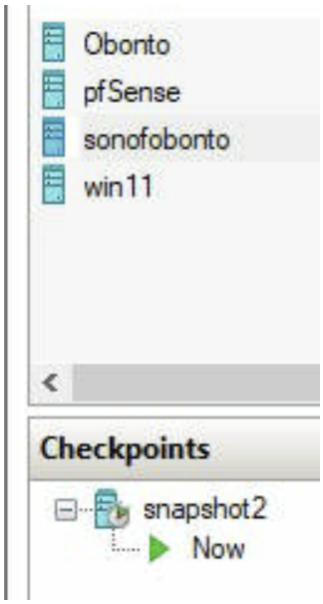
`Deliverable 4.  take a checkpoint of sonofubuntu called snapshot1`

```
PS C:\Windows\system32> Checkpoint-VM -Name sonofobonto -SnapshotName
snapshot2
PS C:\Windows\system32>
```



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Deliverable 5. start sonofubuntu

```
PS C:\Windows\system32> Get-VM

Name        State   CPUUsage(%) MemoryAssigned(M) Uptime
----        -----   ----------- ----------------- ------
Obonto      Off     0           0                 00:00:00
pfSense     Running 0           2048              7.18:45:35.5410000
sonofobonto Off     0           0                 00:00:00
win11       Off     0           0                 00:00:00


PS C:\Windows\system32> Start-VM sonofobonto
PS C:\Windows\system32> Get-VM

Name        State   CPUUsage(%) MemoryAssigned(M) Uptime
----        -----   ----------- ----------------- ------
Obonto      Off     0           0                 00:00:00
pfSense     Running 0           2048              7.18:45:55.7710000
sonofobonto Running 4           4096              00:00:05.6140000
win11       Off     0           0                 00:00:00


PS C:\Windows\system32> Checkpoint-VM -Name sonofobonto -SnapshotName
snapshot2
PS C:\Windows\system32> Stop-VM sonofobonto
PS C:\Windows\system32> Get-VM

Name        State   CPUUsage(%) MemoryAssigned(M) Uptime
----        -----   ----------- ----------------- ------
Obonto      Off     0           0                 00:00:00
pfSense     Running 0           2048              7.18:47:49.3340000
sonofobonto Off     0           0                 00:00:00
win11       Off     0           0                 00:00:00


PS C:\Windows\system32>
```

Deliverable 6. switch sonofubuntu to another network

```
PS C:\Windows\system32> Get-VM | Get-VMNetworkAdapter | Connect-VMNetworkAdapter -SwitchName "LAN-INTERNAL"
PS C:\Windows\system32> Get-VMNetworkAdapter -VMName "sonofobonto"

Name            IsManagementOs VMName      SwitchName   MacAddress   Status IPAddresses
----            -------------- ------      ----------   ----------   ------ -----------
Network Adapter False          sonofobonto LAN-Internal 00155D1A5C05        {}


PS C:\Windows\system32>
```

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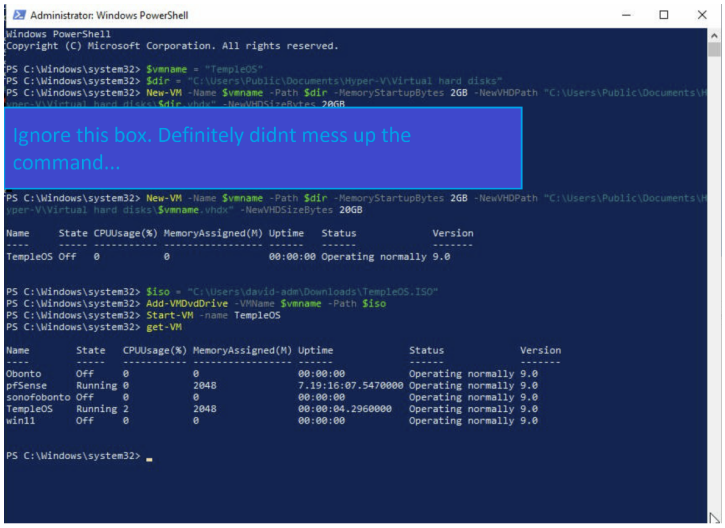
Provide screenshots of your powershell commands for each task.

Deliverable 7. Create a new Base VM using an OS that is not Ubuntu Automate the creation of a Linked clone of your new OS base image using Powershell. Provide a screenshot of your successful command(s) and a screenshot of your running OS and the virtual properties of your child disk.



Deliverable 8. Journal, Journal, Journal. Make sure any powershell 1 liners and ps1 files are saved. Compare and contrast your experience with vCenter and adhoc pyvmomi commands with your experiences on this milestone. Provide a link to your journal entry.