Milestone 2 - AD and vCenter

References

- https://docs.vmware.com/en/VMware-vSphere/7.0/vsphere-vcenter-server-703-installation-guide.pdf

> 💡 In Milestone 2, we are going to attempt to complete all of the typically slow housekeeping procedures such as AD installation, vCenter installation & update, and licensing that are a necessary part of our enterprise. Be prepared to kick off a task, get a cup or two of coffee, walk the dog, do some journaling. Come back to the console every 15 minutes to interact as necessary to complete the long running process you are working on. It is imperative you have this lab complete before the next milestone begins.

Step 1: Add Server 19 and VCSA ISOs to DataStore 2

Goals and steps for this deliverable:

- SSH directly into you ESXi server from mgmt1 or your workstation
    - To do that - you may need to “Enable SSH” (Host-Action-Services…)
- Through your ssh connection, navigate the file system to your datastore and ISO directory
    - Hint: “vmfs” and “volumes”
- Use wget to download the following ISOs to the datastore ISO directory from http://192.168.7.240/isos (even #’d Supers) OR http://192.168.7.241/isos (odd #’d Supers)
    - VCSA 8 (vcenter) ISO
    - Server 2019 ISO

```
Deliverable 1.  Watch the following video.  Provide a screenshot that shows that the VCSA and Server 2019 ISO's have been added to datastore 2 via wget  similar to the one below.
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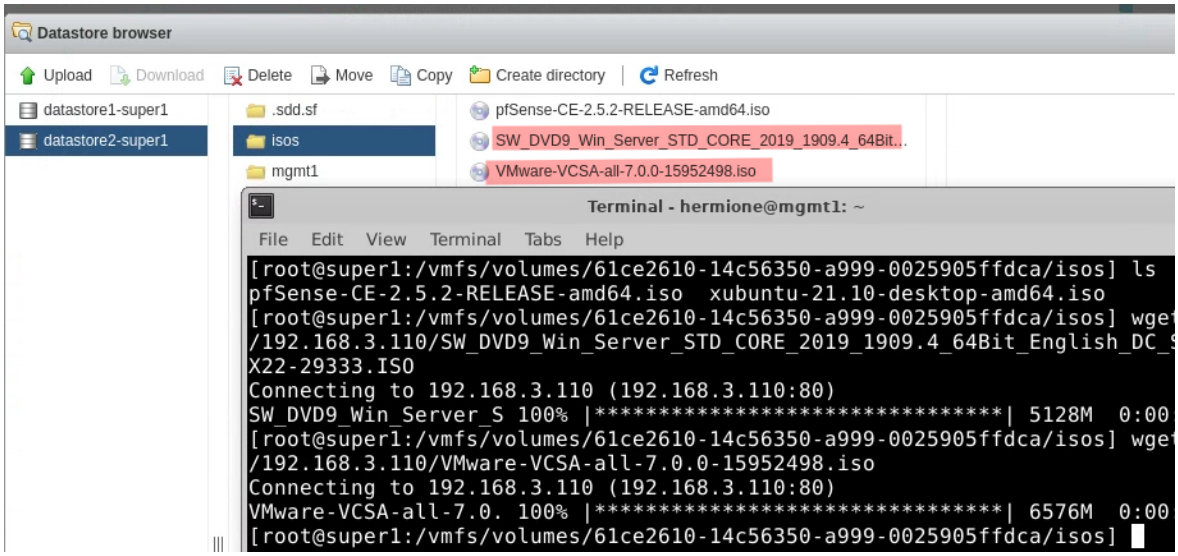


Step 2: AD-350

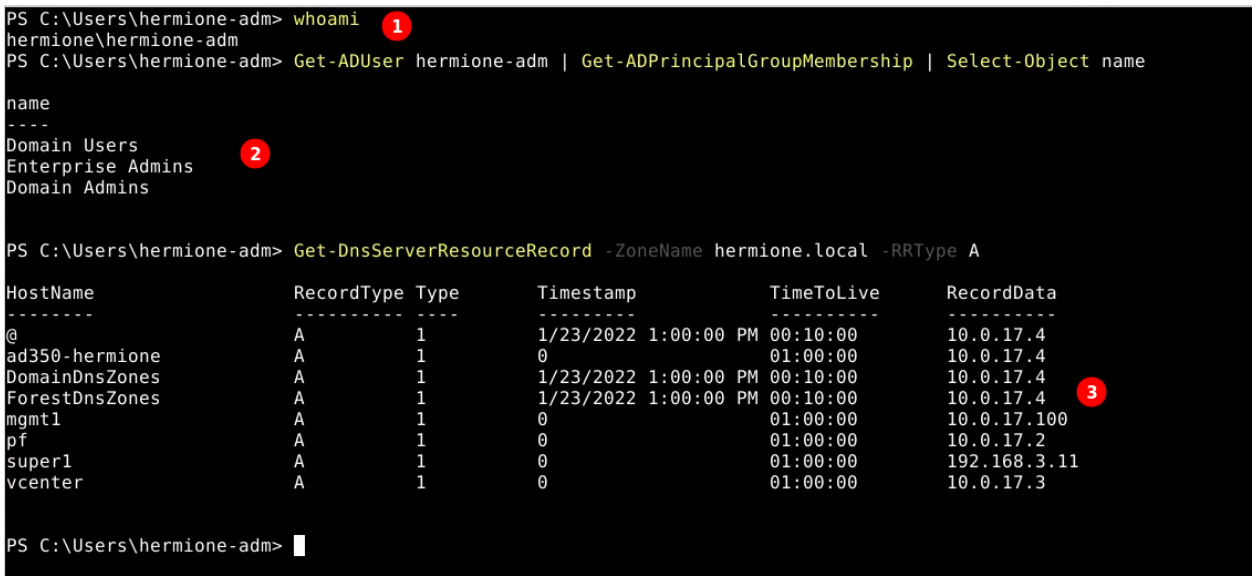
You've built several ADDS servers in your time here. The actual ADDS configuration is rather standard. You may be interested in the sysprep aspects of this activity.

General Notes and Steps

- Update the VM spec to 2 CPUs and 6-8GB of RAM
- Start the Build on VMNetwork, getting a DHCP IP from Joyce
- Can use “sysprep” to prepare the VM for future cloning
    - ctr+shift+F3 at admin password screen
    - Put sysprep window to side and open Powershell
    - Then- sconfig to do a bunch of the following
- Fully update the system until there are no more Recommended updates available
    - Hint: remember, you may need to check/install updates and reboot more than once
- sconfig cont…: Set Updates to Manual once complete
- sconfig: Eastern Standard Time
- Install SSH and Sysprep the System. Here's a handy script
    - If the sysprep fails (which it might) reboot the box and run the last line of the linked script.
- Install VMWare Tools (In esxi - Actions-GuestOS-Install VMWare Tools)
    - This mounts CD/DVD in Server 2019 and from there, you can run setup64
- After poweroff
    - **Change network to 350-Internal**
    - **Change CDROM to Host device**
    - **Take a VMWare Snapshot called Base**
- Networking

    - IP: 10.0.17.4/24
    - GW: 10.0.17.2
    - Initial DNS: 10.0.17.2
    - Hostname: ad350-yourname
    - Domain Name: yourname.local
- Add ADDS/DNS with Management Tools
- Users
    - Named admin yourname.adm
        - Member of Domain Admins and Enterprise Admins Group
- A Records and PTR records for
    - fw01, 10.0.17.2
    - mgmt1, 10.0.17.100
    - Make sure AD350 gets a PTR record
    - After your Domain is created, make sure you've created the appropriate users, A and PTR records as described in this video

`Deliverable 2.  SSH session from mgmt1 to yourname@yourdomain@10.0.17.4.  With your session show the logged in user, their primary ad groups and the A records for your primary zone similar to the screenshot below`



Step 3: VCenter Installation & Licensing

🐌 If you thought AD installation was glacially slow, vCenter is not much better. Consider working on getting your tech journal sorted out during this installation and update breather.

General Steps

Watch the following video and perform the following operations:

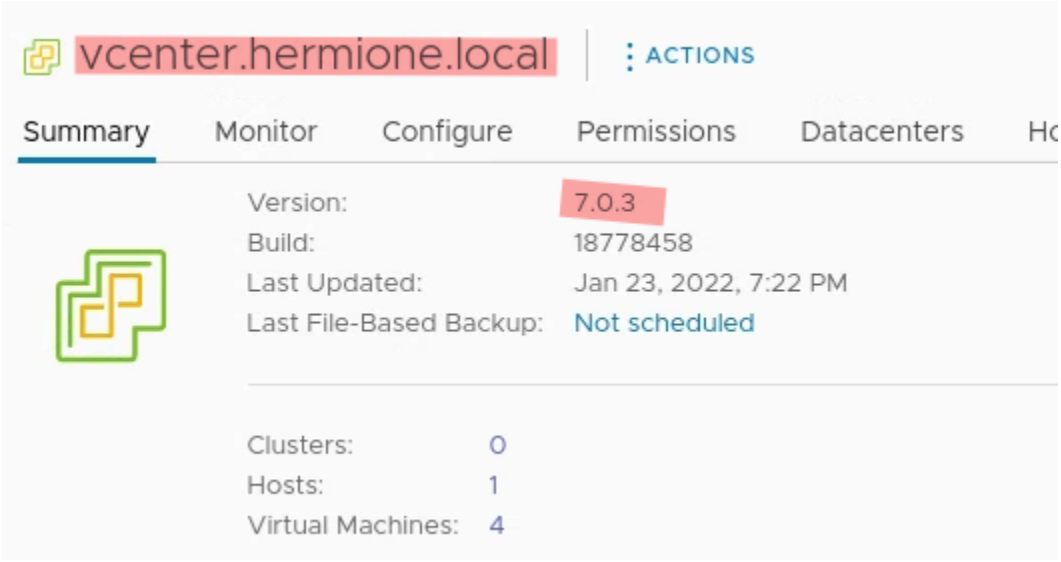
***Note: The video references old vSphere/vCenter versions - we're using 8.0! Also, the video mentions a spreadsheet of individual licenses for each student. Now we have a multi-use key that should work for everyone, that key is in this doc.**

- Install vCenter
    - *This process takes 2 stages, each stage will prompt you for some configuration settings, and then grace you with a progress bar. Each stage might take 10-20 minutes to finish once you reach the progress bar.
    - First do the following preparatory steps:
    - Ensure proper connection to & configuration of your domain
    - Create DNS records for your vCenter & SuperMicro
        - Hint: Your mgmt box needs to be able to resolve *vcenter.yourname.local*
    - On MGMT1 - Mount VCSA ISO (*you should have downloaded this to your ESXi datastore at the start of this lab!*)
        - Make sure that your CDROM is connected in VM settings!
    - Run through installer (this may take some time, 2 stages)
        - Thin Disk, select the new datastore you created
        - Be careful, don't lose your VCSA root pass OR default SSO admin pass
            - You can re-use the same pass for both
        - Create your default vcenter domain & admin
            - administrator@vsphere.local is a good default
- Update vCenter
    - Sign into your vCenter management interface with root or default admin
    - Head to update, stage & update
    - ****Note***: The video for this section says "no later than 7.x..", I am testing with version 8.0.1.00300 (8.0 Update 1c), feel free to use that as well - just be sure that your vCenter version is newer or of the same version as ESXi.
    - This update may take another ~20 minutes
    - After updating, you may see "no healthy upstream" for up to a few minutes when attempting to reconnect to the main vSphere client
- Create a DataCenter called SYS350

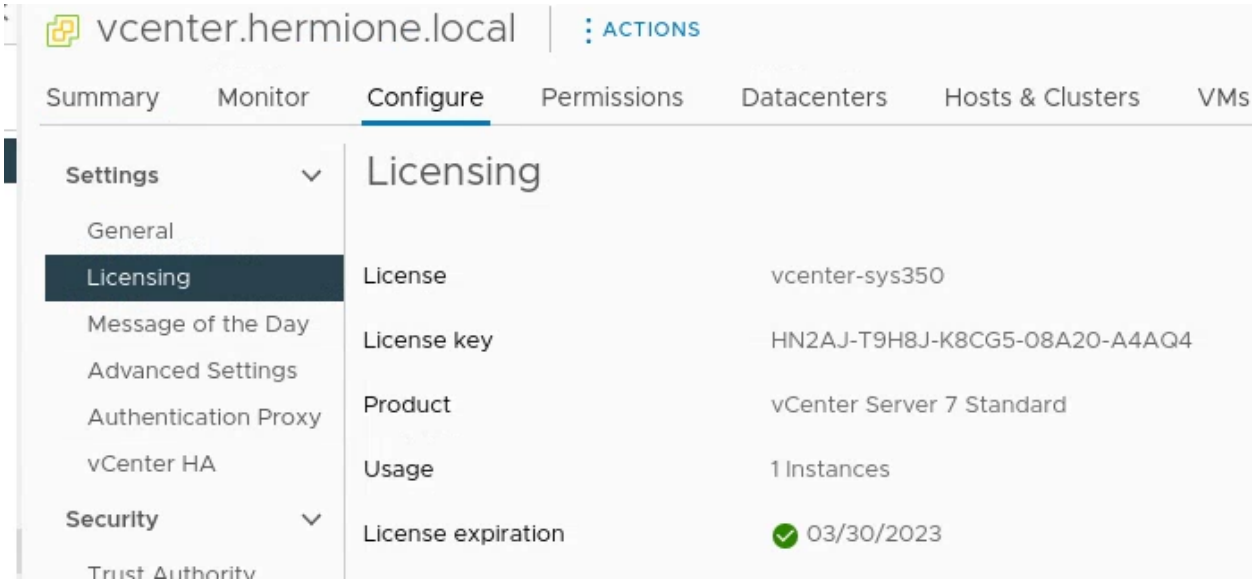
    - You only have one ESXi host, but this is where clusters of host(s) live.
- Add superX as a host to your new datacenter
- License vCenter and superX
    - `ESXi: 156AJ-JE31M-589N8-0P2RP-2JFHN`
    - `vCenter Server: JM437-QC00L-58TN4-0L8KP-28E00`
    - Make sure to not only add, but also *assign* your new licenses via the assets tab!

`Deliverable 3. Provide Screenshots that show:`

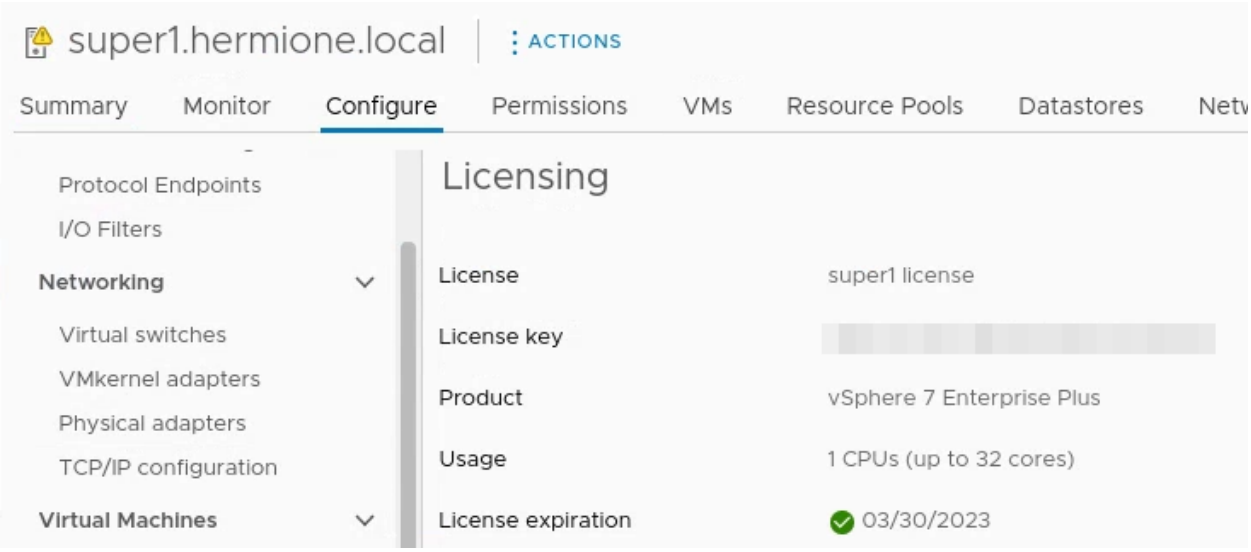
- Your current vCenter version



- Valid vCenter license



- Valid vsphere license

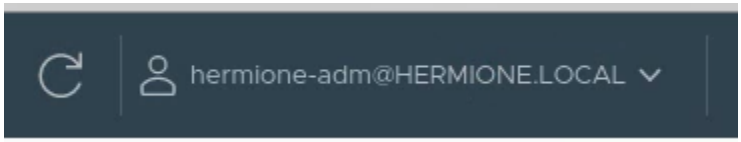


Step 4: SSO Integration

Watch the following video and perform the following actions

- Join vCenter to your domain
    - Be sure to double check your time server on vCenter & in your AD environment to make sure they are synching to the same NTP server!
        - *Hint: Look into how the w32t service commands work*
- Add the your.name.local SSO provider as default
    - Administration->Single Sign On->Configuration
    - To join your domain in vCenter, you'll enter creds for your domain admin
- Reboot your vCenter Server once more for the identity source to be added
    - Use the management interface!
- Add *yourname.local* Domain Admins to the vCenter Administrators group
    - Make sure you're selecting the right domain from the dropdown list
    - ***Note:** The video says that Native Windows AD Identity Sources will be deprecated, but in 8.0 you can still utilize IWA. Alternatively, AD over LDAP achieves the same thing, just requiring some additional configuration settings like the base distinguished name for users & groups.*
- Logout and login using your named domain administrator
    -

Deliverable 4. Provide a screenshot showing your named domain administrator login in the upper right of the vCenter UI.



Deliverable 5. Capture this process in your tech journal. There is a great deal of work here which is why it is worth 3 points. Make sure you capture what was done technically to meet the requirements of this milestone. If you've documented relevant AD configurations before, you can link to that documentation with annotations on any substantive changes. Most of the AD steps were fully documented in classes such as SYS265. Make sure to capture and comment on the areas that gave you trouble. Provide links to the documentation you created in the course of this milestone.