Milestone 3 Nested Virtualization and Templates
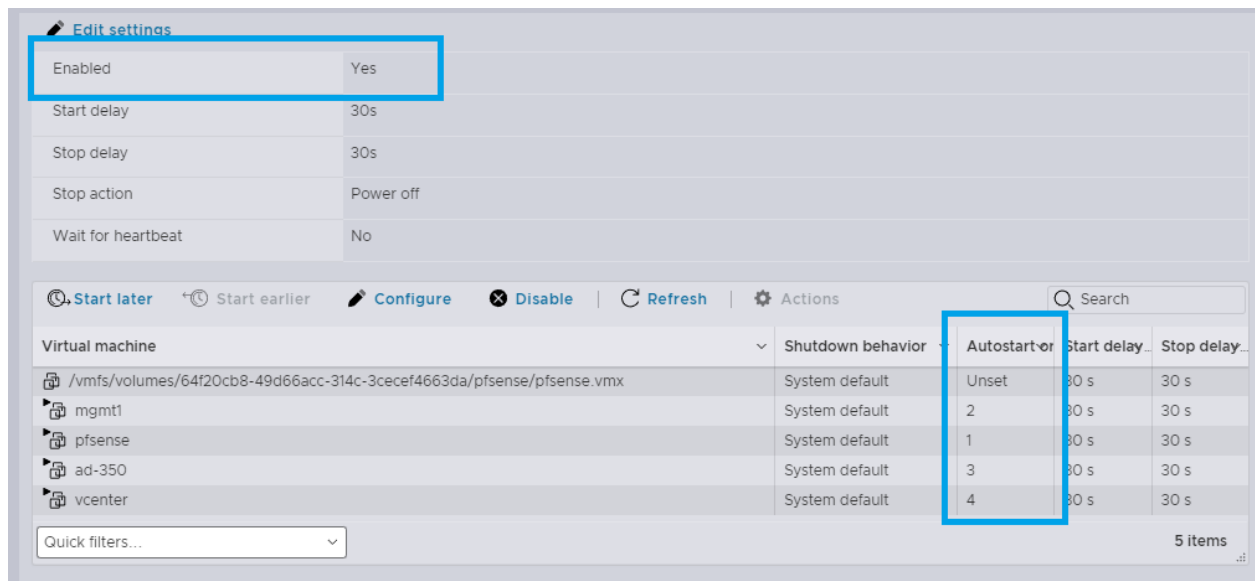
Part 1: Nested Virtualization

Step 1: DNS Entries on **ad350**

Deliverable 1. Provide a screenshot showing the A records for nested 1-3 similar to the one below.

nested1	Host (A)	10.0.17.20
nested2	Host (A)	10.0.17.30
nested3	Host (A)	10.0.17.40

Step 2: ESXi Auto-Start

Enabled	Yes
Start delay	30s
Stop delay	30s
Stop action	Power off
Wait for heartbeat	No

⟳ Start later   ⟲ Start earlier   ✏ Configure   ⊗ Disable | ⟳ Refresh | ⚙ Actions   🔍 Search

Virtual machine	Shutdown behavior	Autostart or	Start delay_	Stop delay_
/vmfs/volumes/64f20cb8-49d66acc-314c-3cecef4663da/pfsense/pfsense.vmx	System default	Unset	30 s	30 s
mgmt1	System default	2	30 s	30 s
pfsense	System default	1	30 s	30 s
ad-350	System default	3	30 s	30 s
vcenter	System default	4	30 s	30 s

Quick filters...   ⌄   5 items

Step 3: 3 ESXi Virtual Appliances

⚠ **Actions - 192.168.7.26**

📑 New Virtual Machine...

📑 Deploy OVF Template...

≡ **1. Select an OVF template**   ✕

Select an OVF template from remote URL or local file system

Enter a URL to download and install the OVF package from the Internet, or browse to a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.

◉ URL

ware.com/software/vmw-tools/nested-esxi/Nested_ESXi7.0u3_Appliance_Template_v1.ova

◯ Local file

| UPLOAD FILES | No files selected. |

                                                        CANCEL   **NEXT**

≡ **2. Select a name and folder**   ✕

Specify a unique name and target location

Virtual machine name: nested1

Select a location for the virtual machine.

∨ 📑 vcenter.david.local
   > 📄 SYS-350

≡ 3. Select a compute resource

Select the destination compute resource for this operation

⌄ ▦ SYS-350

⚠ 192.168.7.26

Compatibility

✓ Compatibility checks succeeded.

≡ 4. Review details

≡ 5. License agreements

≡ 6. Select storage

Select the storage for the configuration and disk files

☐ Encrypt this virtual machine (No encryption policies available)

Select virtual disk format   Thin Provision   ⌄

VM Storage Policy   Datastore Default ⌄

☐ Disable Storage DRS for this virtual machine

	Name ▼	Storage Compatibility ▼	Capacity ▼	Provisioned ▼	Free ▼	Typ
○	▤ datastore1	--	337.5 GB	198.14 GB	229.36 GB	VM
◉	▤ datastor…	--	476.75 GB	743.28 GB	427 GB	VM

▥   Items per page   10 ⌄   2 items

≡ 7. Select networks

Select a destination network for each source network.

Source Network	Destination Network
VM Network	350-internal ⌄

≡ 8. Customize template

Customize the deployment properties of this software solution.

> ⊘ All properties have valid values

⌄ Networking	7 settings
Hostname	ESXi Hostname (DHCP if left blank)
	nested1

≡ 9. Ready to complete

Review your selections before finishing the wizard

⌄ Select a name and folder

Name	nested1
Template name	Nested_ESXi7.0u3_Appliance_Template_v1
Folder	SYS-350

⌄ Select a compute resource

Resource	192.168.7.26

⌄ Review details

Download size	583.2 MB

⌄ Select storage

When selecting Storage -Make sure the esxi VM is **thinly provisioned** and is tied to your 350-Internal Network. (**Need to change from defaults)**

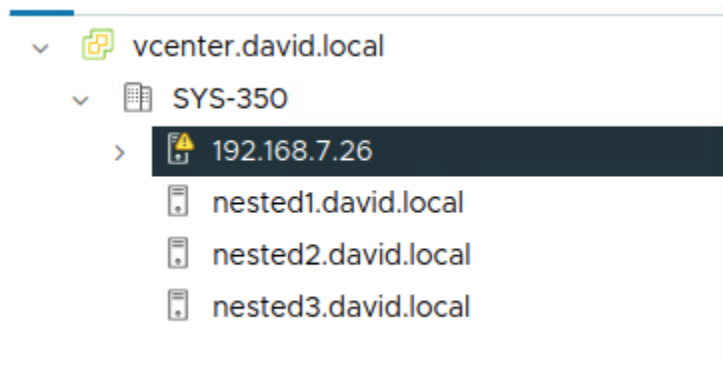**Configure Network Settings - NOTE: Set esxi Root password for nested1 - or you can use SSH keys if you have that set up**

In order to make nested virtual networking work, you will need to hunt down and tweak the vSwitch settings for 350-Internal as shown below. (**From ESXi Host Site - Networking-350-Internal- Edit Settings- Security**

Security	
Promiscuous mode	● Accept ○ Reject ○ Inherit from vSwitch
MAC address changes	○ Accept ○ Reject ● Inherit from vSwitch
Forged transmits	● Accept ○ Reject ○ Inherit from vSwitch

Adding nested1,2,3 to your sys350 datacenter

Add and license these three nested hypervisors. Your current license should cover all of them

Deliverable 2. Provide a screenshot that shows your 4 hypervisors (the nested ones are virtual)

```
∨  🔁 vcenter.david.local
    ∨  🏢 SYS-350
        >  ⚠ 192.168.7.26
           🖥 nested1.david.local
           🖥 nested2.david.local
           🖥 nested3.david.local
```

Part 2: Templates (convert VM to Template- then Clone)

Step 1: Configure DHCP on your 350-Internal Network

Subnet	10.0.17.0
Subnet mask	255.255.255.0
Available range	10.0.17.1 - 10.0.17.254
Range	10.0.17.110 10.0.17.160
	From To

Step 2: Create an Ubuntu VM

Step 3: Conversion of VM to a template

Hunt down the VM Customization Specifications Shortcut in vcenter- and create an ubuntu specification - called Ubuntu-22.04 Specification
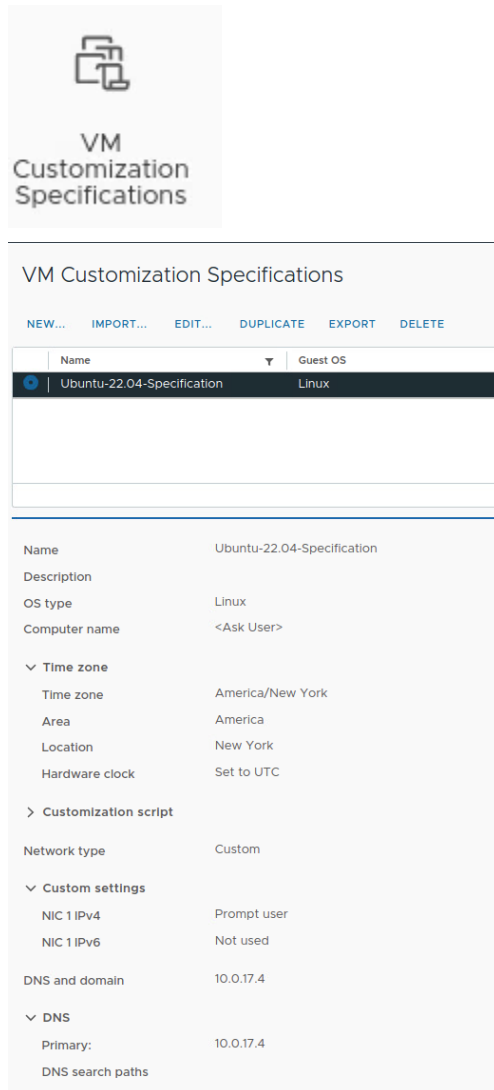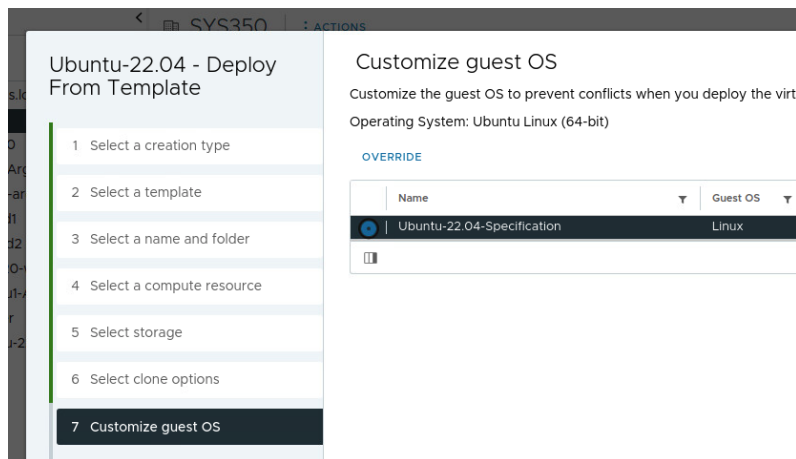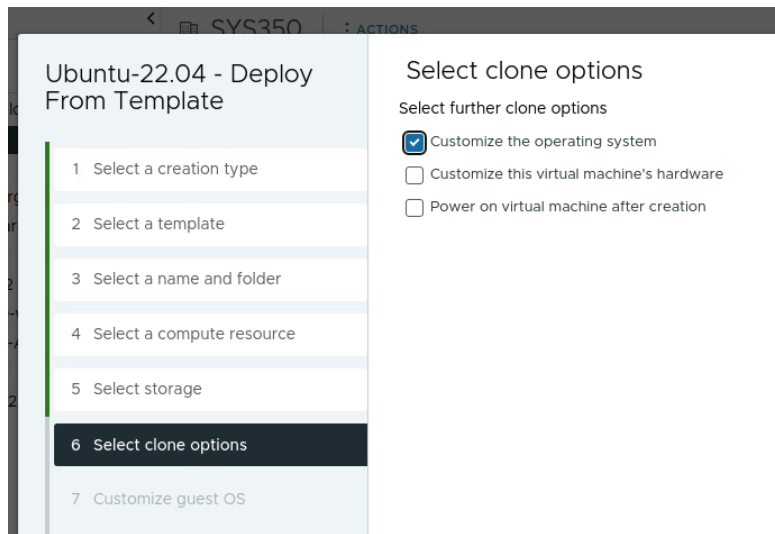

Step 4: Create New VM from Template:

Create a VM called Ubuntu-01-*name* using your Ubuntu 22.04 template
When deploying, select "Customize the Operating System" and it will allow you to pick your Ubuntu 22.04 Specifications.

Deliverable 3. Find the Cloning Task in the vCenter Task Console and provide a screenshot of the successful deployment similar to the one below.

Updated Sep 13, 2023

		Task Name ▼	Target ▼	Status ▼	Details ▼
☐	⌄	Clone virtual machine	🔲 Ubuntu	⊘ Completed	

Task Name	🗒 Clone virtual machine
Status	⊘ Completed
Initiator	👤 administrator@vsphere.local
Target	🔲 Ubuntu
Server	🔲 vcenter.david.local

Related events:

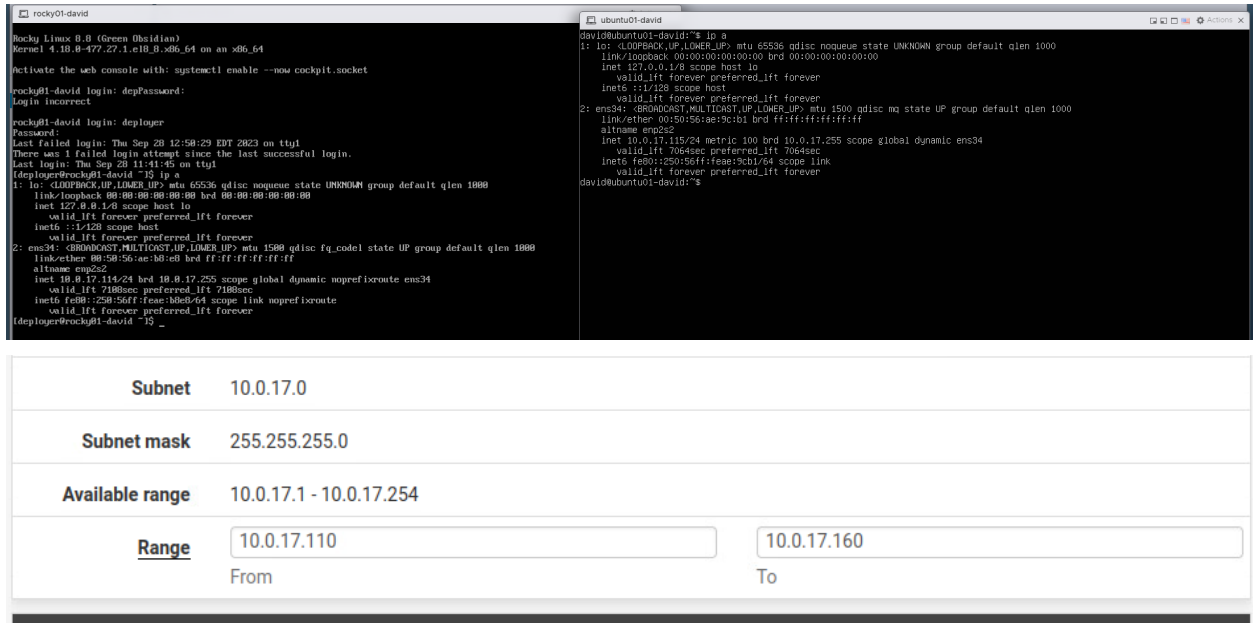| Date Time	Description
09/28/2023, 10:38:12 AM	Reconfigured Ubuntu01-david on 192.168.7.26 in SYS-350 . Modified: config.tools.pendingCustomization: <unset> -> "/vmfs/volumes/64f20cb8-49d66acc-314c-3cecef4663da /Ubuntu01-david/imcf-ipLyau"; config.hardware.device(4000).connectable.startConnected: true -> false; config.extraConfig("viv.moid").value: "8b23f08f-efbe-46bd-af90-a44afaa375c7:vm-2019:pWUAK6qpy2Rkebv6tHK4xiZKliAbfSwbeyS97ba/fMY=" -> "8b23f08f-efbe-46bd-af90-a44afaa375c7:vm-2022:/HgxmRNVYMjZNP9kReuOMPM6vh /7tlx39Fe2H9zvg88="; Added: config.extraConfig("tools.deployPkg.fileName"): (key =

Step 5: Create a Rocky VM -> Template -> Cloned VM

		Task Name	▼	Target	▼	Status	▼	Details	▼
☐	∨	Clone virtual machine		🗗 Rocky		✅ Completed			

Task Name	📋 Clone virtual machine
Status	✅ Completed
Initiator	👤 administrator@vsphere.local
Target	🗗 Rocky
Server	vcenter.david.local

Related events:

Date Time	Description
09/28/2023, 12:44:05 PM	Reconfigured rocky01-david on 192.168.7.26 in SYS-350 . Modified: config.tools.pendingCustomization: <unset> -> "/vmfs/volumes/64f20cb8-49d66acc-314c-3cecef4663da/rocky01-david/imcf-88A900"; config.hardware.device(4000).connectable.startConnected: true -> false; config.extraConfig("viv.moid").value: "8b23f08f-efbe-46bd-af90-a44afaa375c7:vm-2023:TUfDjlYhbXEfWgWVy7f7nXzHkiWGM7PRH6L2r9LnWlo=" -> "8b23f08f-efbe-46bd-af90-a44afaa375c7:vm-2024:UF5YUZs31Blas79t65AYvzQBYFieVTnt6QQDQmeqbRA="; Added: config.extraConfig("tools.deployPkg.fileName"): (key = "tools.deployPkg.fileName", value = "imcf-88A900"); Deleted:

Deliverable 4.   Create another VM and Custom specification for Rocky 8.
Deploy the template with a custom IP address.   Provide a screenshot of both the cloning task as seen in Deliverable 3.   As well as a screenshot of the VMs powered on IP address that should match the one entered during New VM Creation.

Subnet	10.0.17.0
Subnet mask	255.255.255.0
Available range	10.0.17.1 - 10.0.17.254
Range	10.0.17.110	10.0.17.160
	From	To

Deliverable 5. Make sure you capture what was done technically to meet the requirements of this milestone. This includes how to make nested versions of ESXi, The requirements for Solid DNS entries and the Technical steps required to create templates and their associated specifications. 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.

https://github.com/dthomsen116/SYS-350/wiki

Resources

- Milestone 3 - Overview Video