

Build Book

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## Task 1 – Creating a Virtual Machine (no installation of guest operating system)

### Short Description of Task

We can Creating a Virtual machine without installing a guest operating system.

### Long Description of Task

It involves setting up a virtual machine without using guest operating systems, it performed using virtualization software like VirtualBox, VMWare on the host side of the machine with the resources. There are traditional VM setups where the establishing a framework for subsequent OS installation and other activities like testing, development, and isolation.

### Pre-Implementation Test Task

1. First we check the hardware requirements of the host machine to run the virtual machine.
2. Check the virtual machine installed and works properly.
3. Test the creation of a virtual machine with minimal settings and all the functions are correct.
4. Lastly, verify that sufficient storage space is available for the virtual machines.

### Implementation Plan

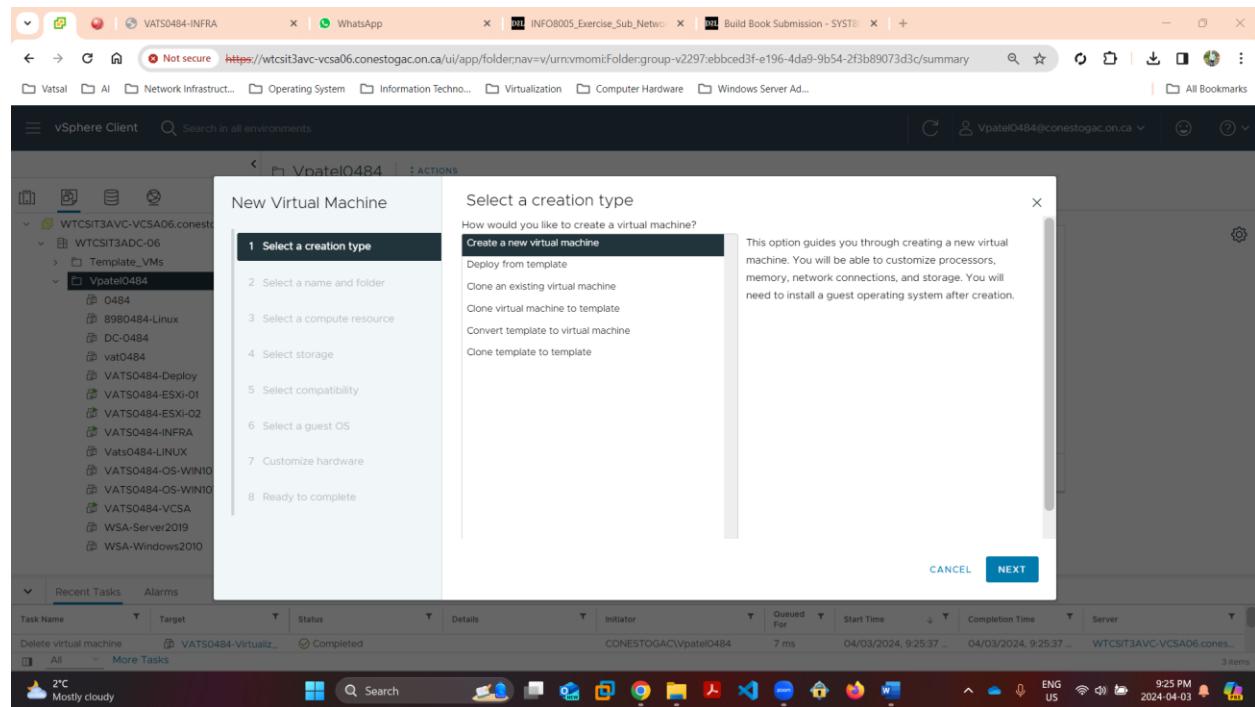


Fig 1-1: Picture shows the select a creation type that is creating a new virtual machine.

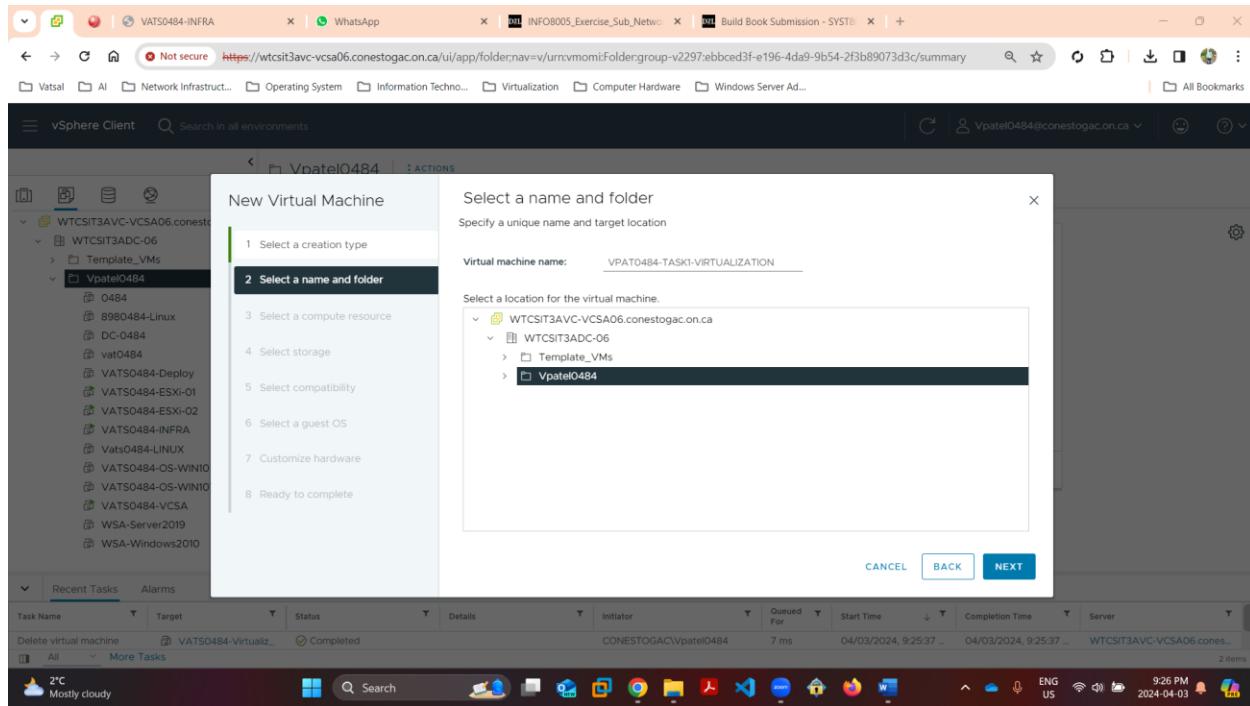


Fig 1-2: Picture shows that to select a virtual machine name and select a folder.

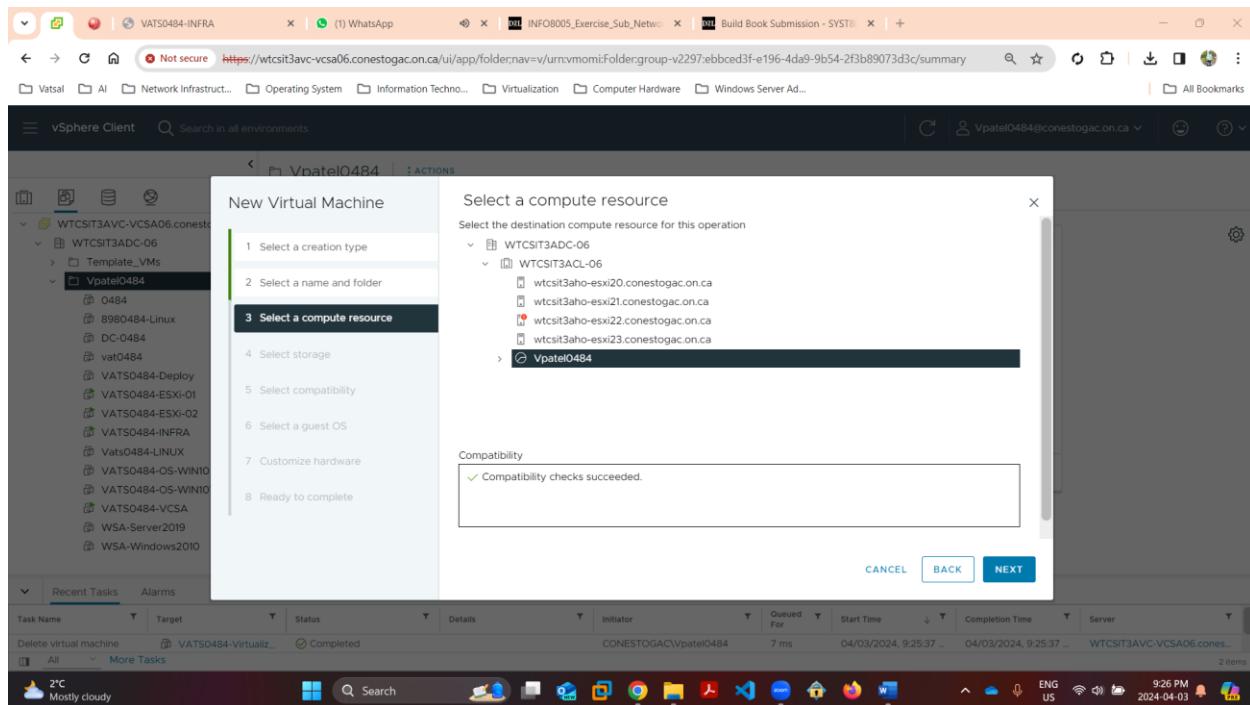


Fig 1-3: Picture shows the selecting of a compute resource of the virtual machine.

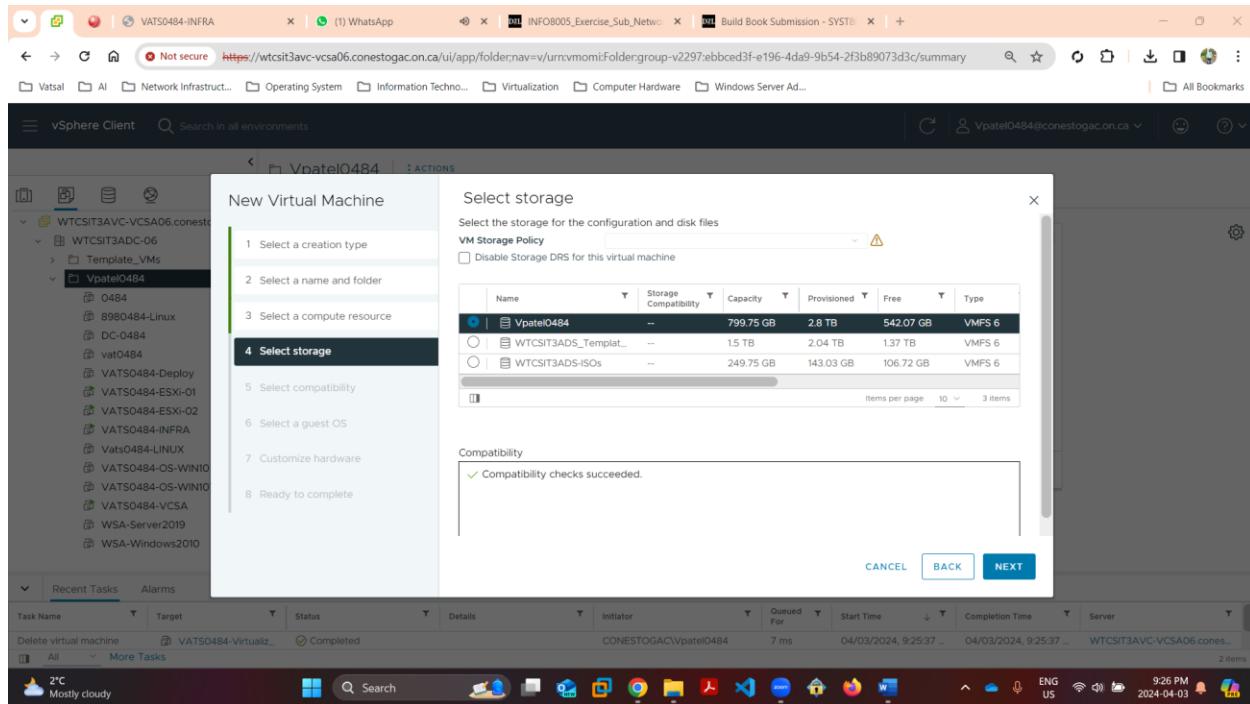


Fig 1-4: Picture shows to select a storage for the virtual machine.

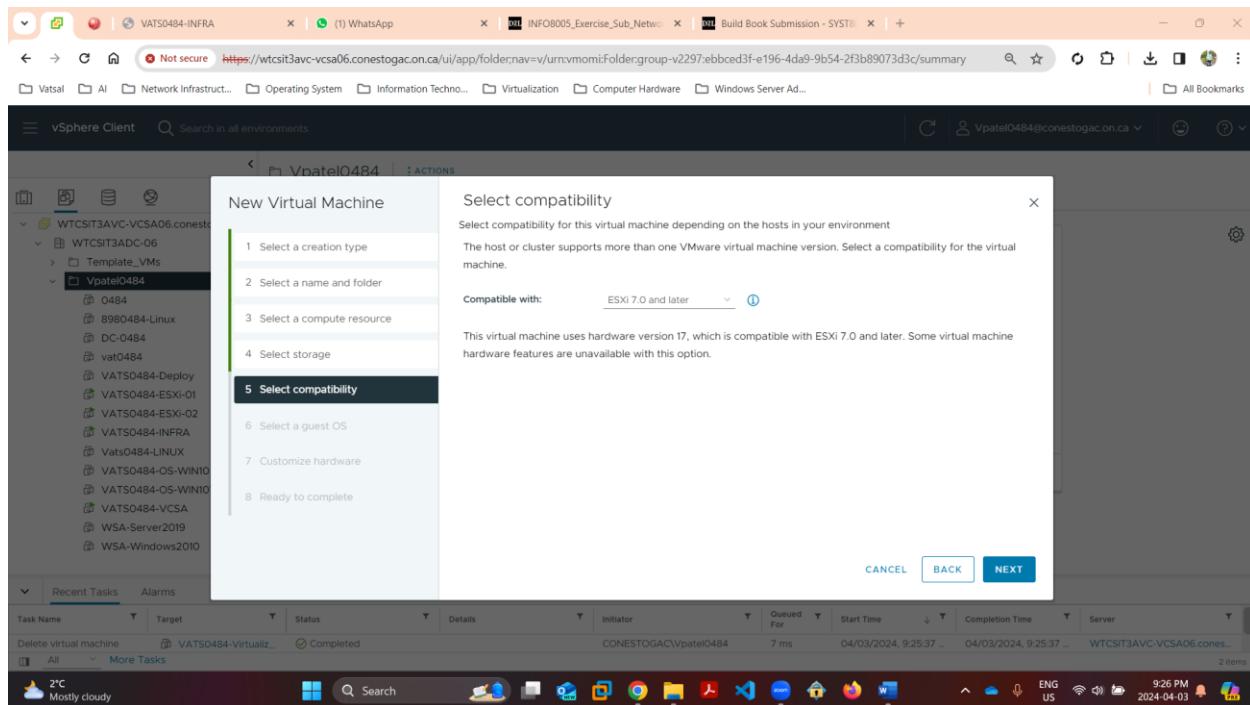


Fig 1-5: Picture shows to select a compatibility for the newly created virtual machine.

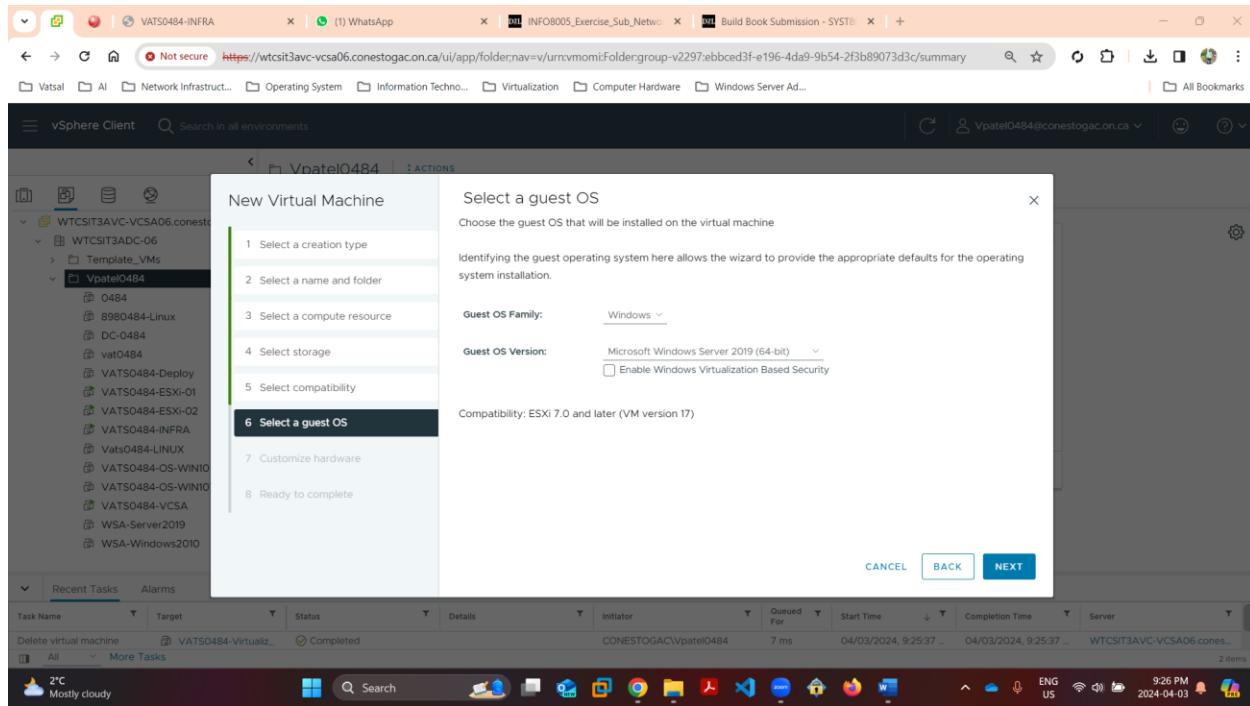


Fig 1-6: Picture shows to select a guest OS for virtual machine.

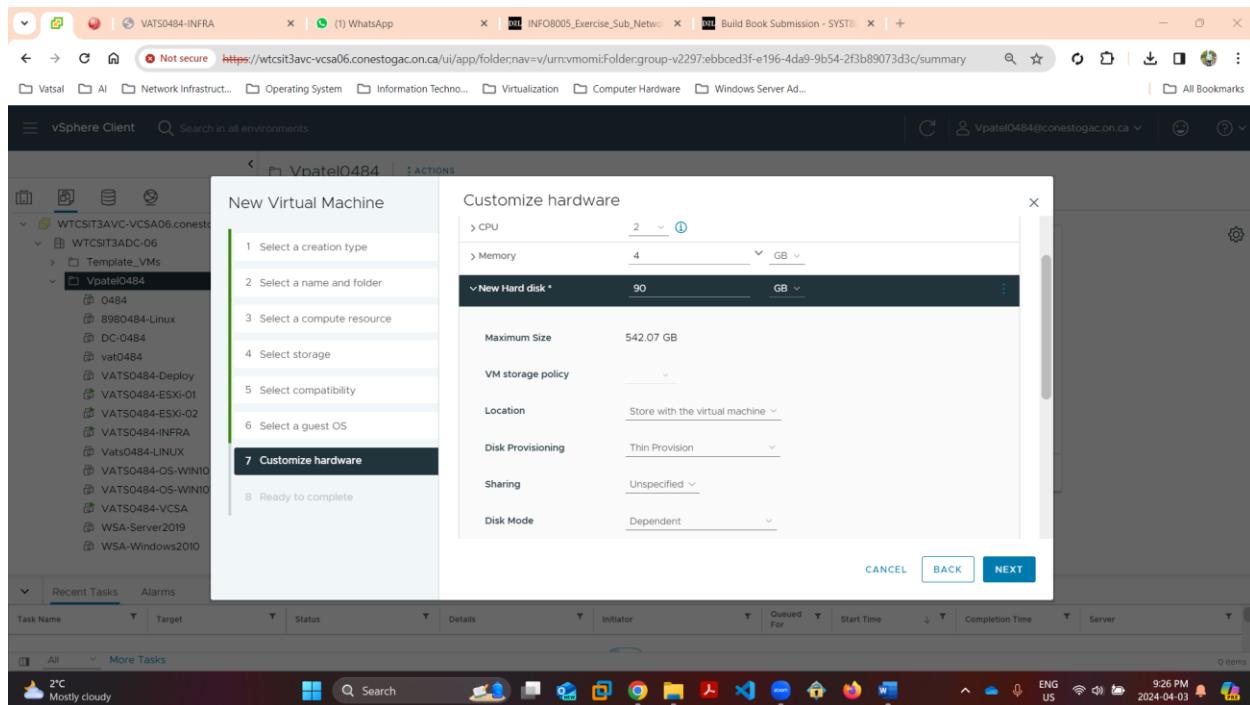


Fig 1-7: Picture shows customization hardware that is new hard disk type is the Thin Provision.

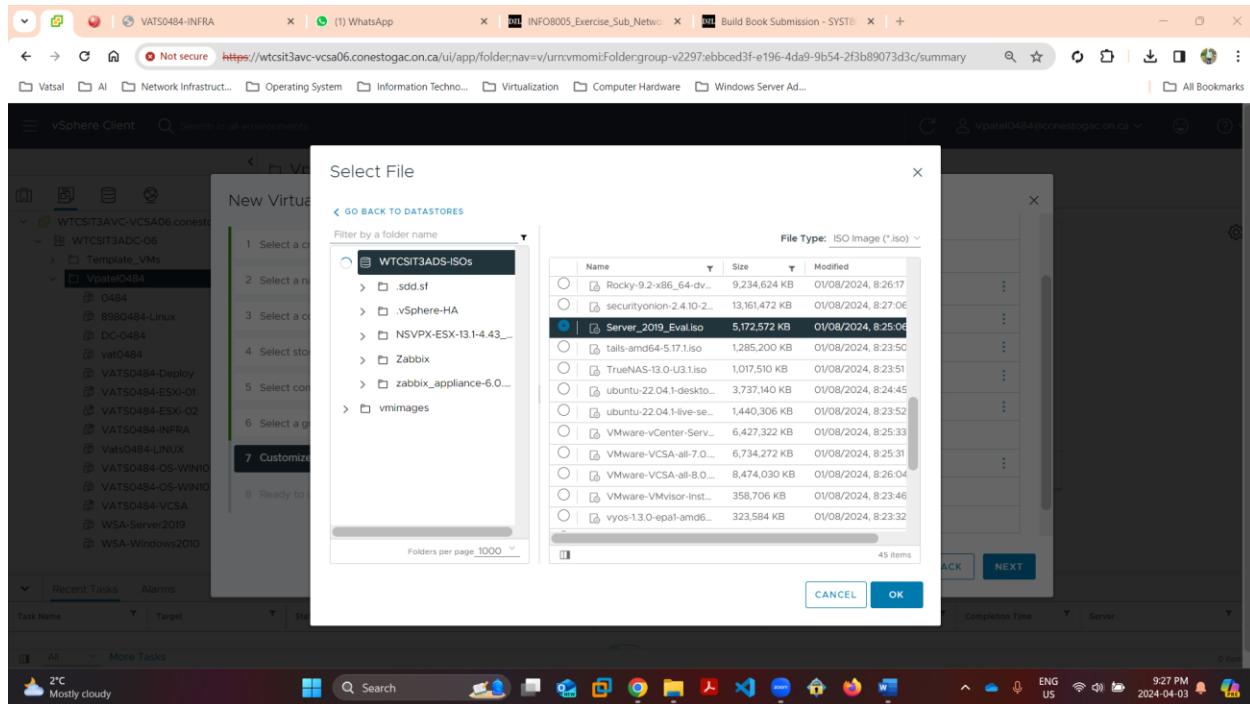


Fig 1-8: Picture shows selecting a data store file for virtual machine.

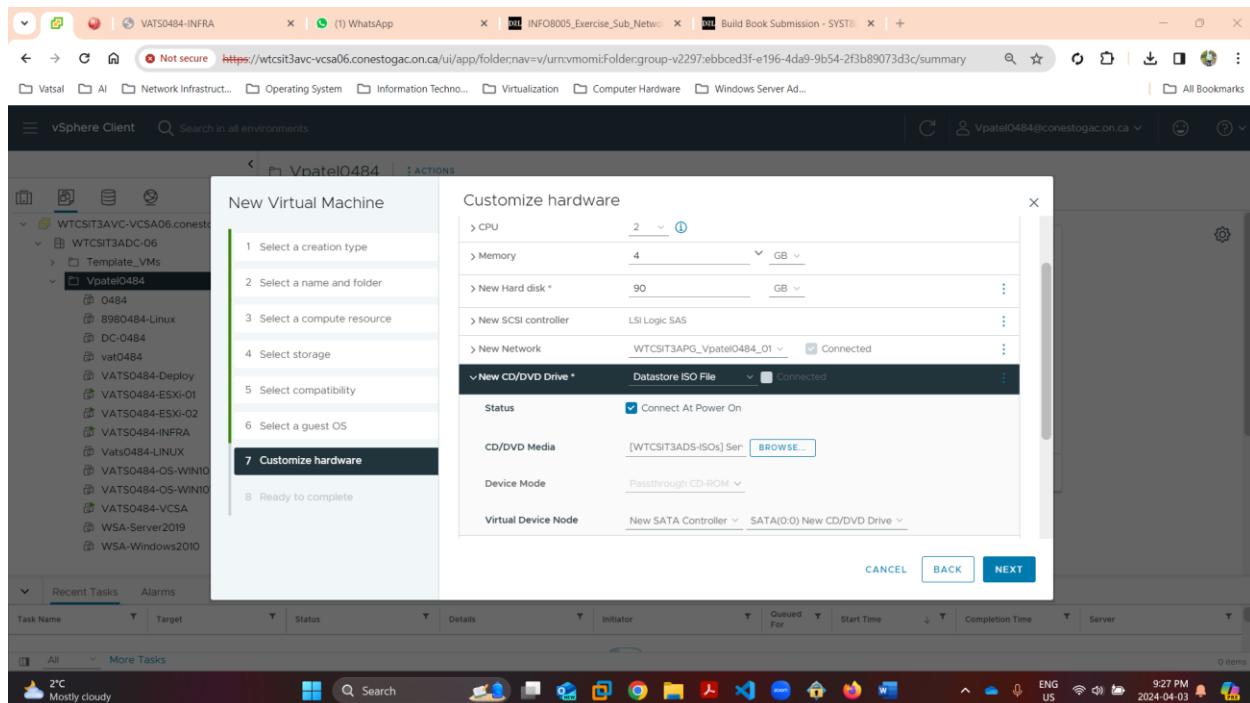


Fig 1-9: Picture shows selecting a New CD/DVD Drive is data ISO file.

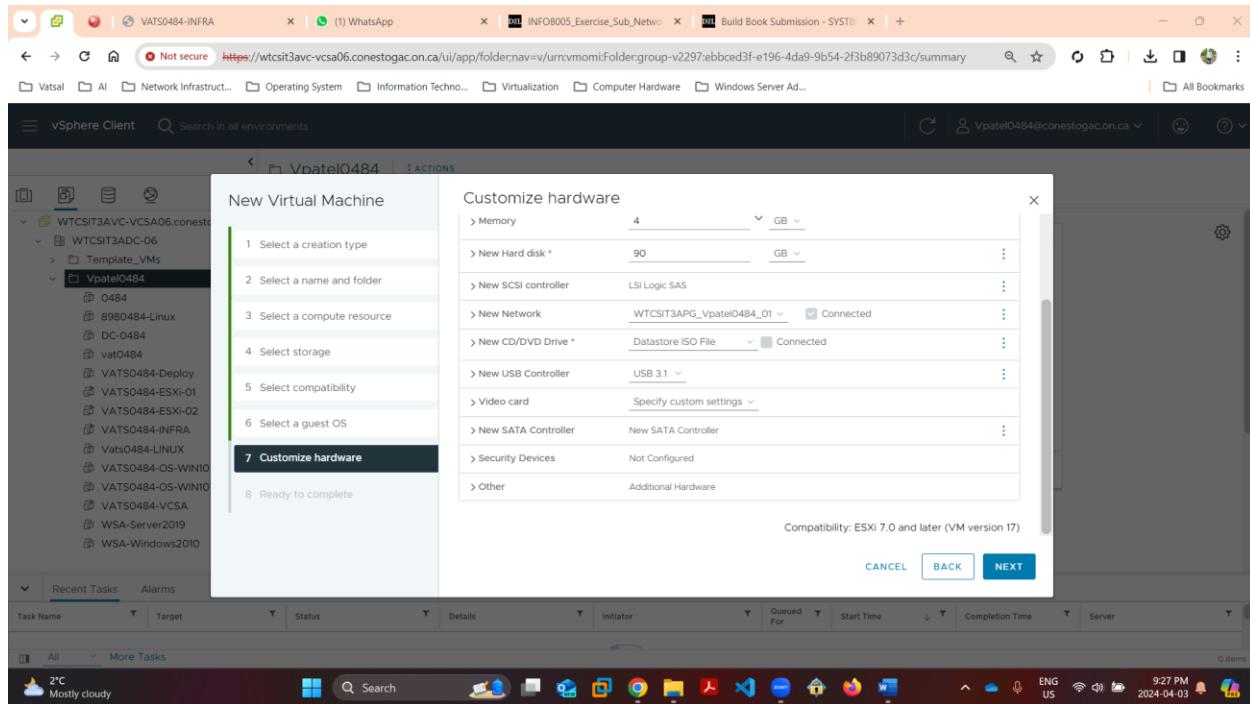


Fig 1-10: Picture shows the customization hardware page that is customized for virtual machine.

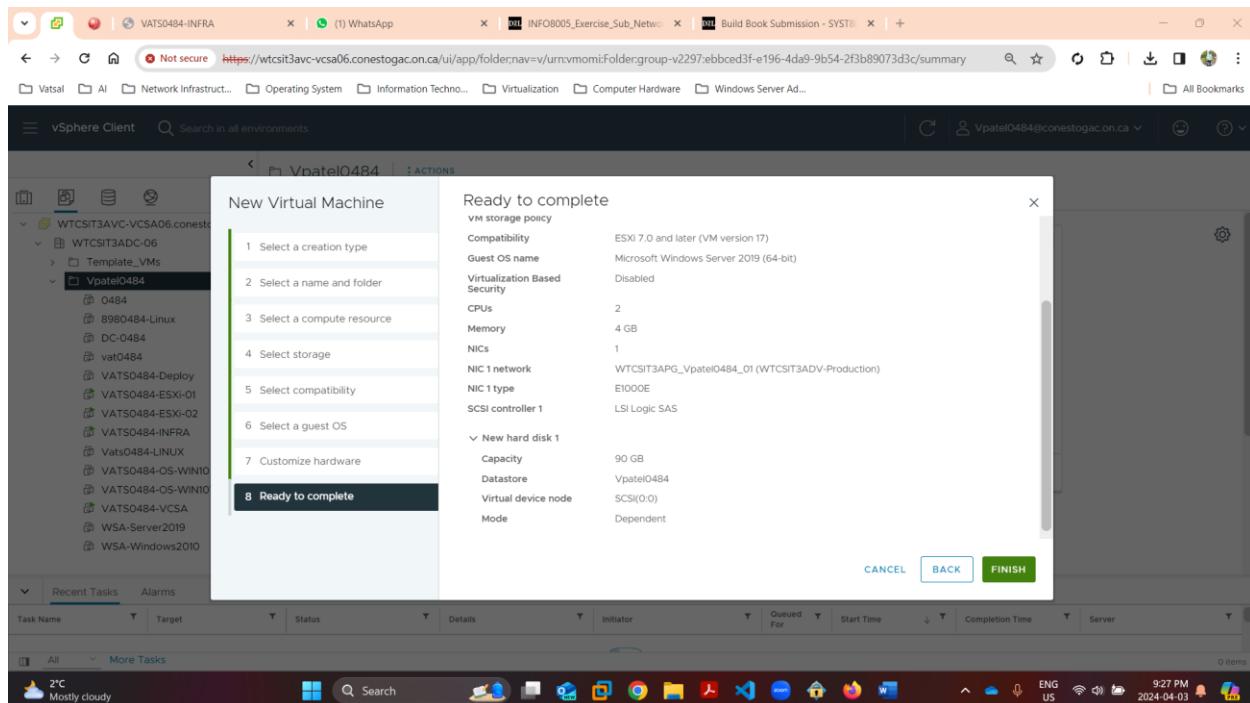


Fig 1-11: Picture shows that the virtual machine is ready to complete.

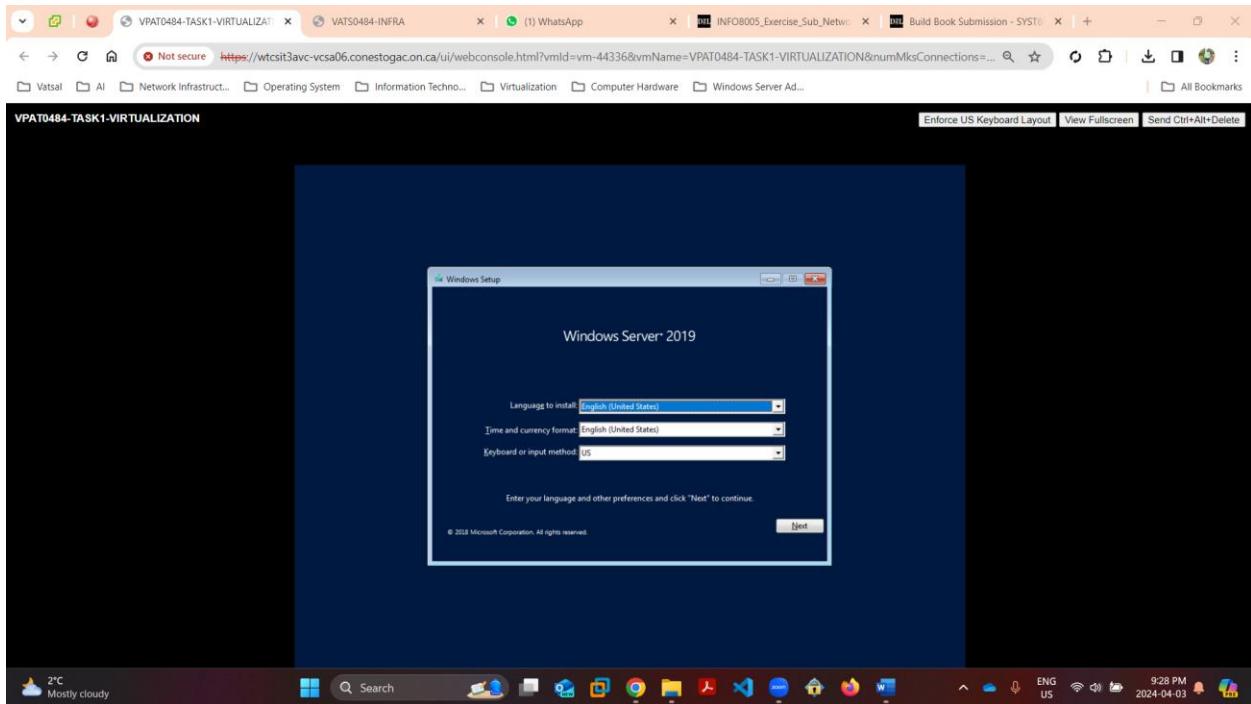


Fig 1-12: Picture shows installing the windows server 2019 OS in the virtual machine.

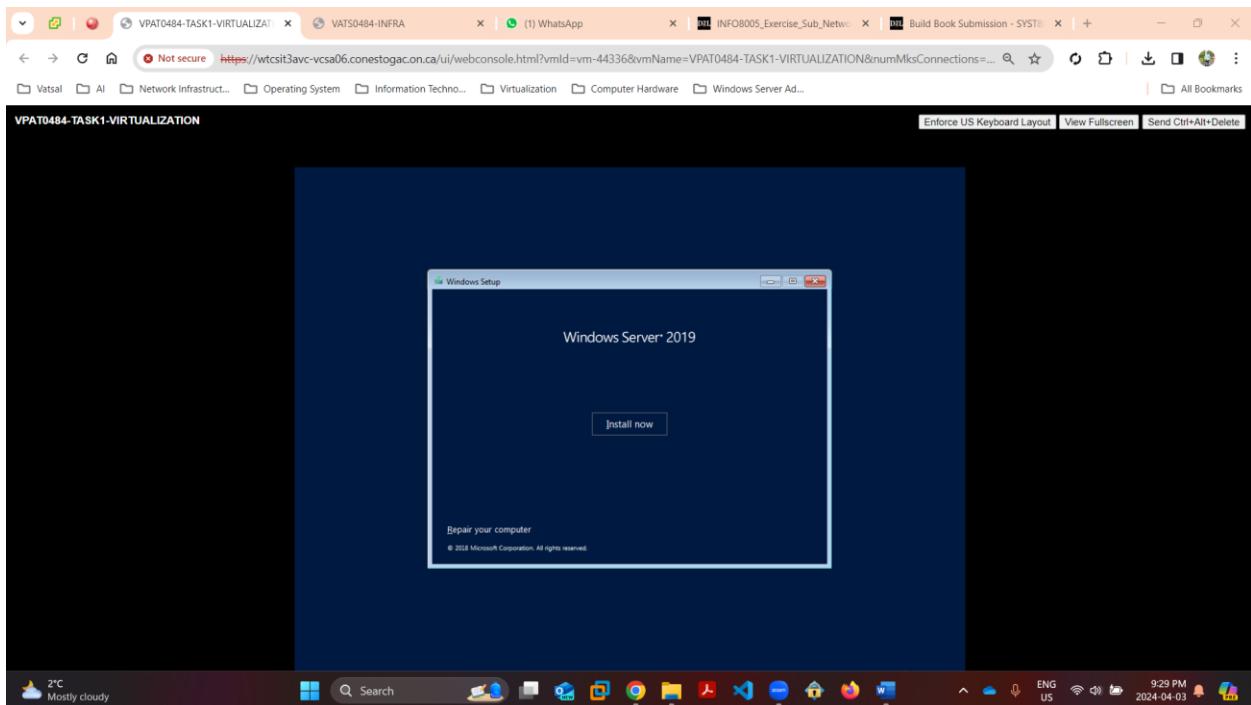


Fig 1-13: Picture shows the windows server 2019 is ready to install.

### Verification Plan

1. First we confirm that the virtual machine created successfully without installing a guest operating system.
2. Check the virtual machine setting like Hard disk type is thin provision or not, also check the specification.
3. Lastly, Power on the virtual machine and check it is successfully turn on without any error.

### Backout Plan

The creating a virtual machine can be undone by deleting the VM from the virtualization interface. Anything can be lost until or unless you have no backup for that data. We can allocate resources would need to be reverted if no longer needed.

## Task 2 – Deploying a Virtual Machine from a template

### Short Description of Task

We can Deploying a Virtual machine from the template.

### Long Description of Task

It involves provisioning of the virtual machine by deploying from a template. It serves as a predefined configuration of virtual machines such as operating system, software, and setting. Deploying from a template is the process of creating multiple virtual machine instances, consistency and environment.

### Pre-Implementation Test Task

1. We check the templates are available and accessible within the virtualization environment.
2. After that reviewing the configuration and setting of the templates.
3. Check that there are sufficient resources available for the virtual machine.
4. Confirm that the deploying templates are compatible with the virtualization software.

### Implementation Plan

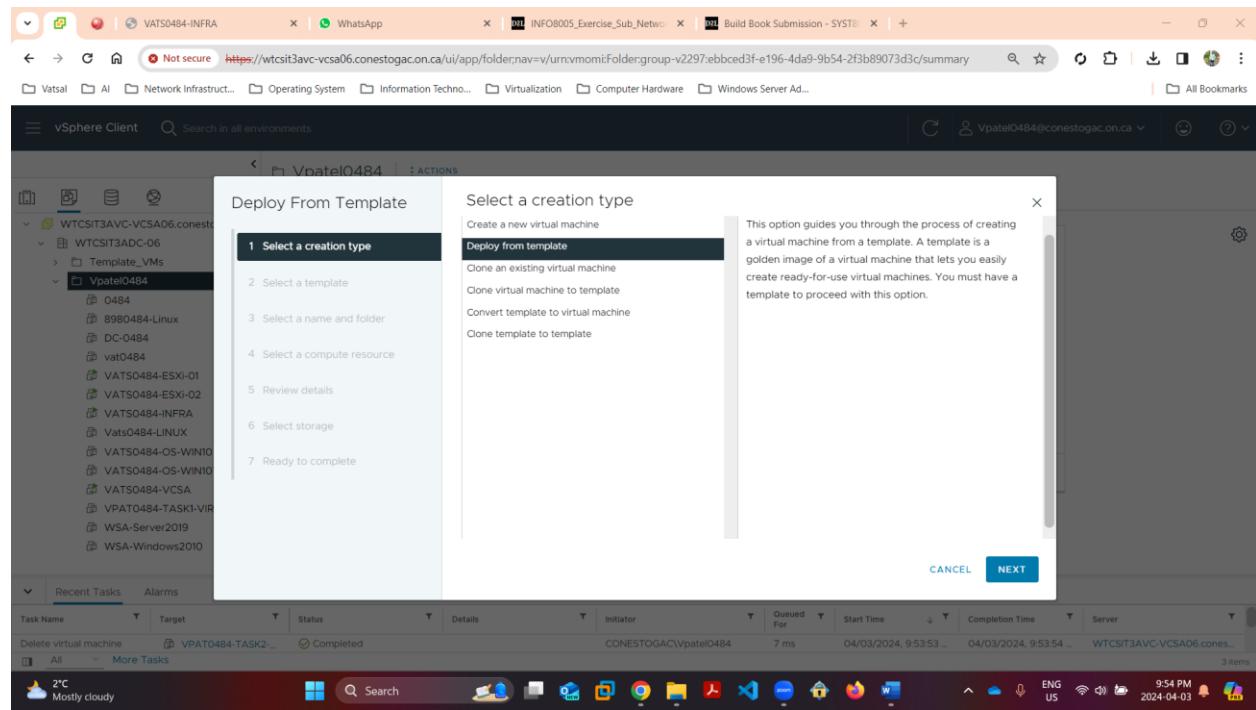


Fig 2-1: Picture shows we deploy a virtual machine from a template.

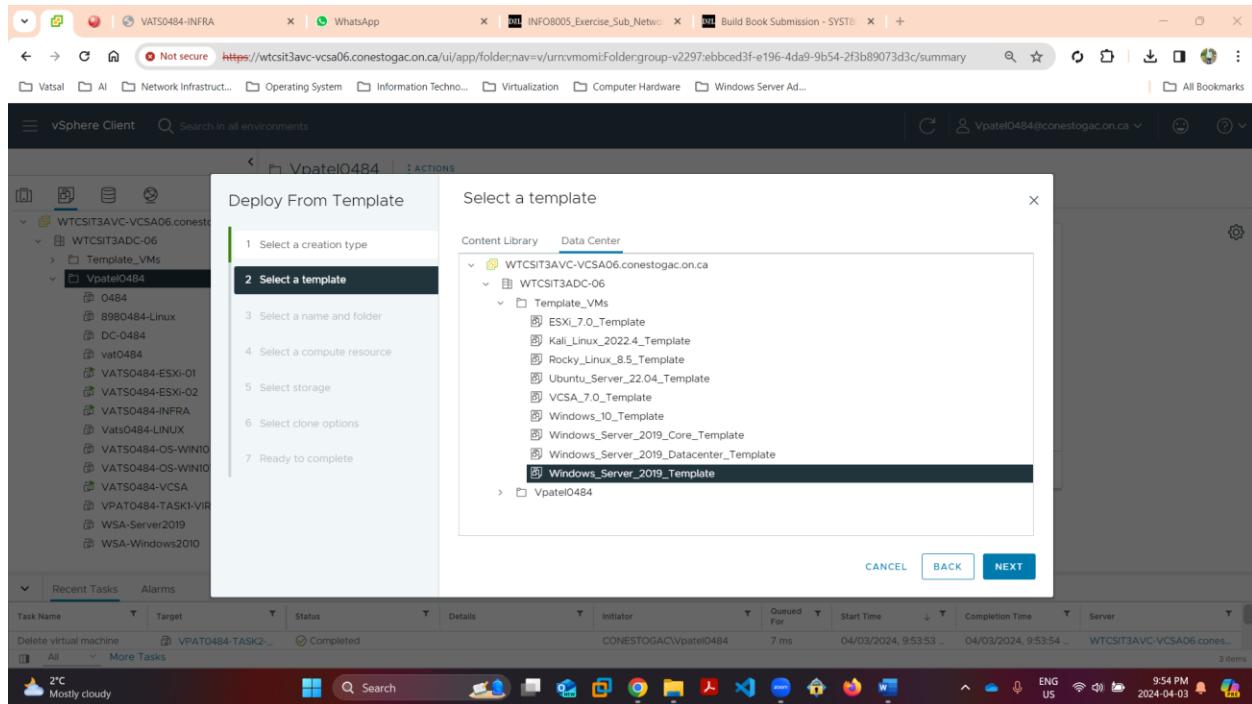


Fig 2-2: Picture shows selecting a windows server 2019 template.

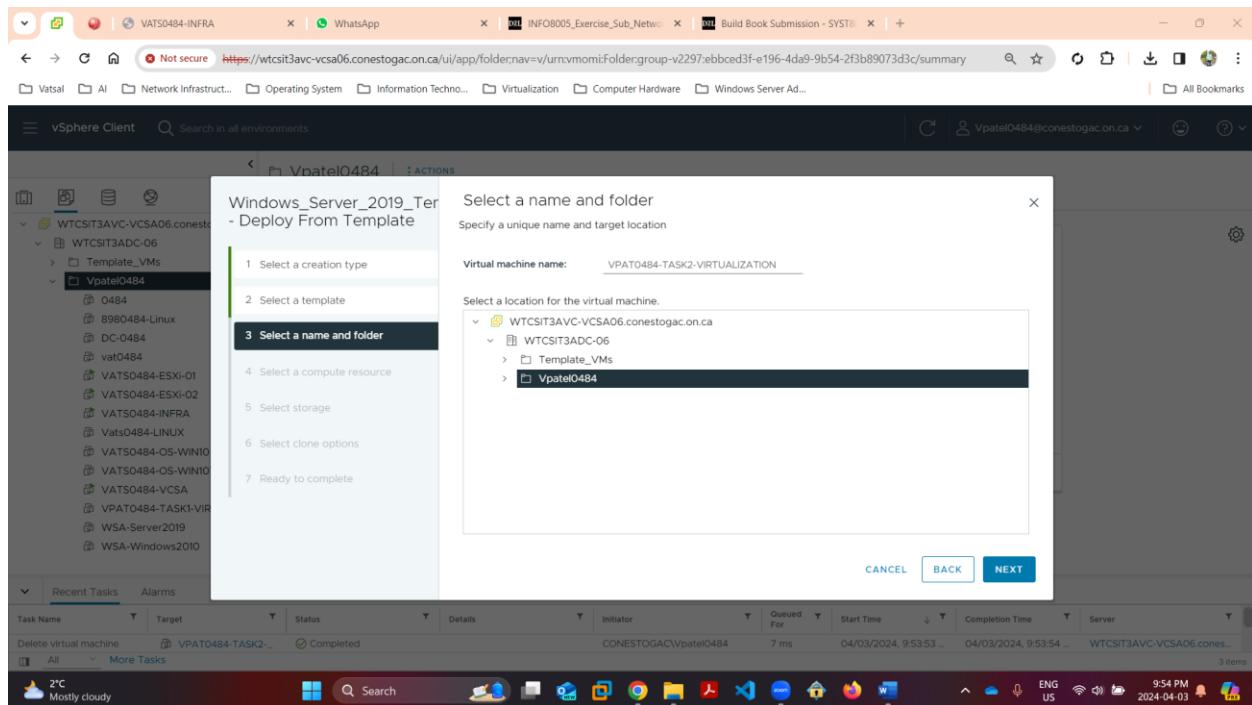


Fig 2-3: Picture shows that to select a virtual machine name and select a folder.

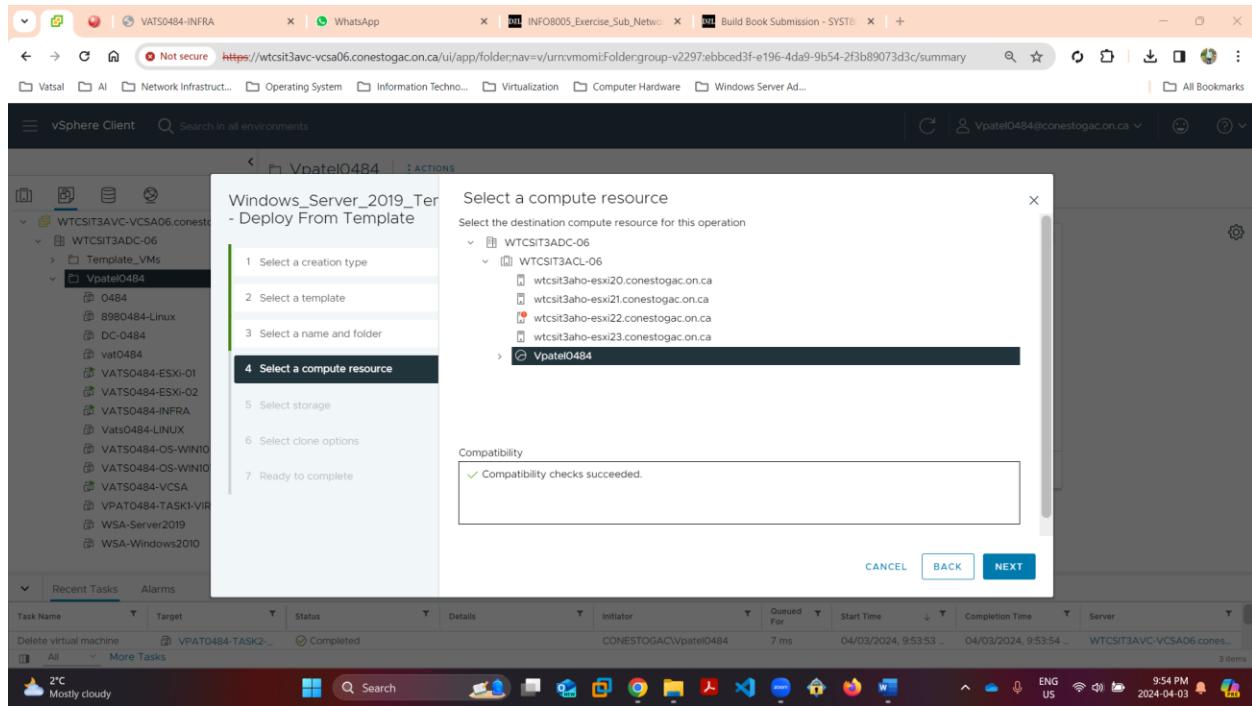


Fig 2-4: Picture shows to select a compute resource for virtual machine.

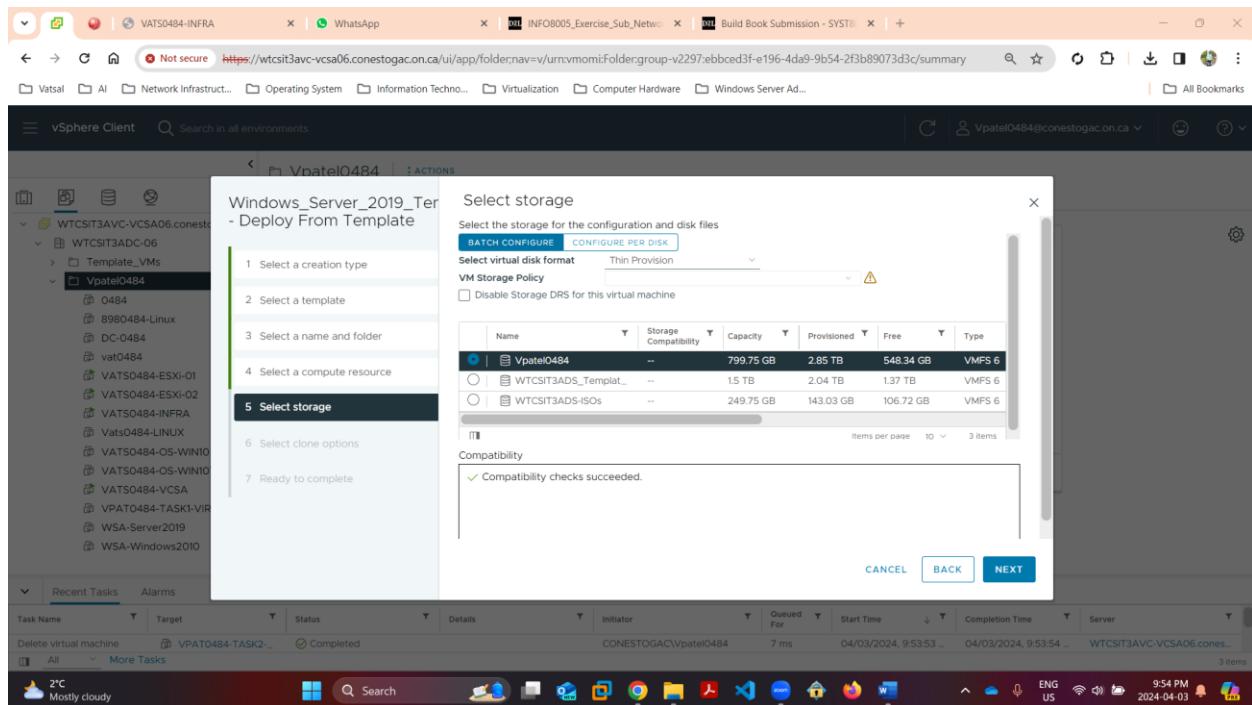


Fig 2-5: Picture shows to select a storage for virtual machine.

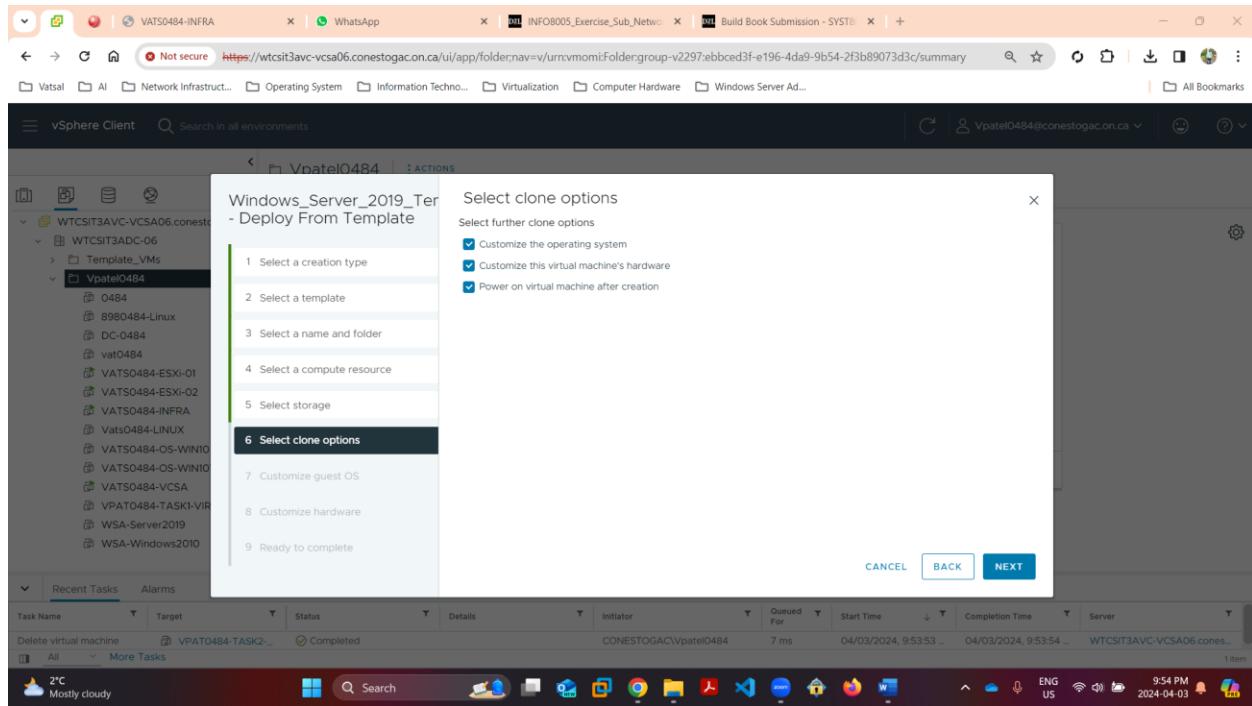


Fig 2-6: Picture shows to select a clone options.

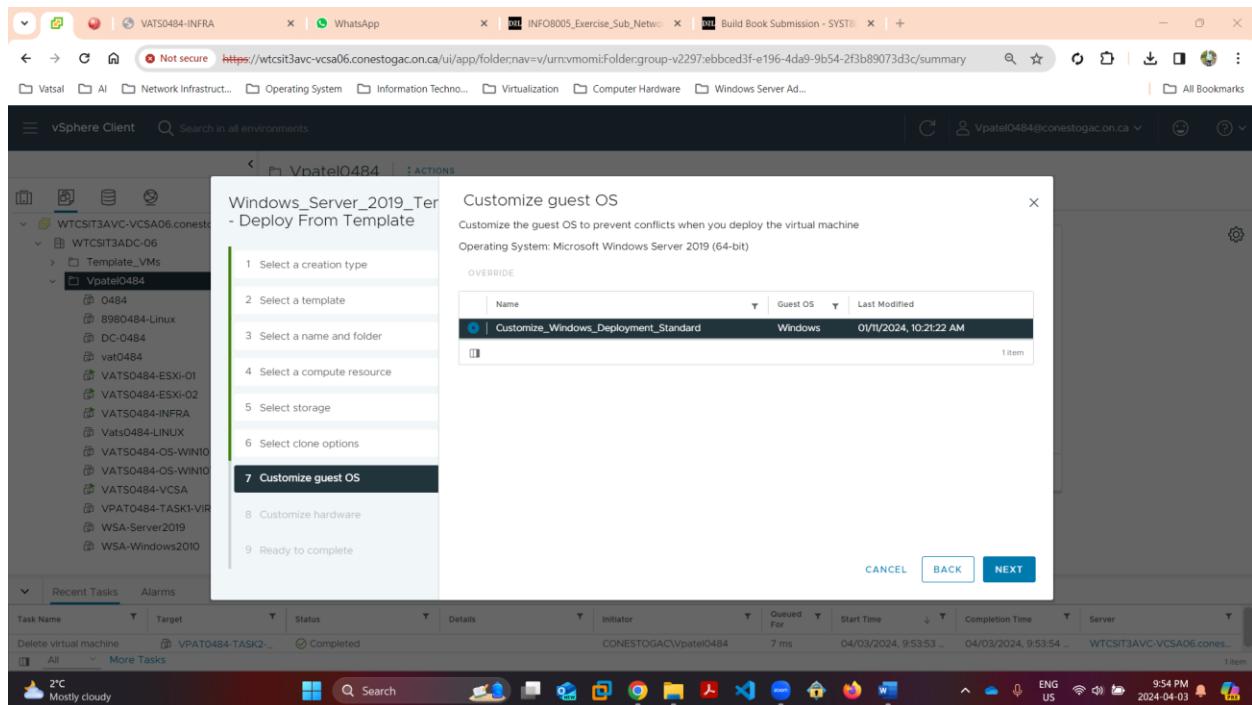


Fig 2-7: Picture shows customization windows deployment standard.

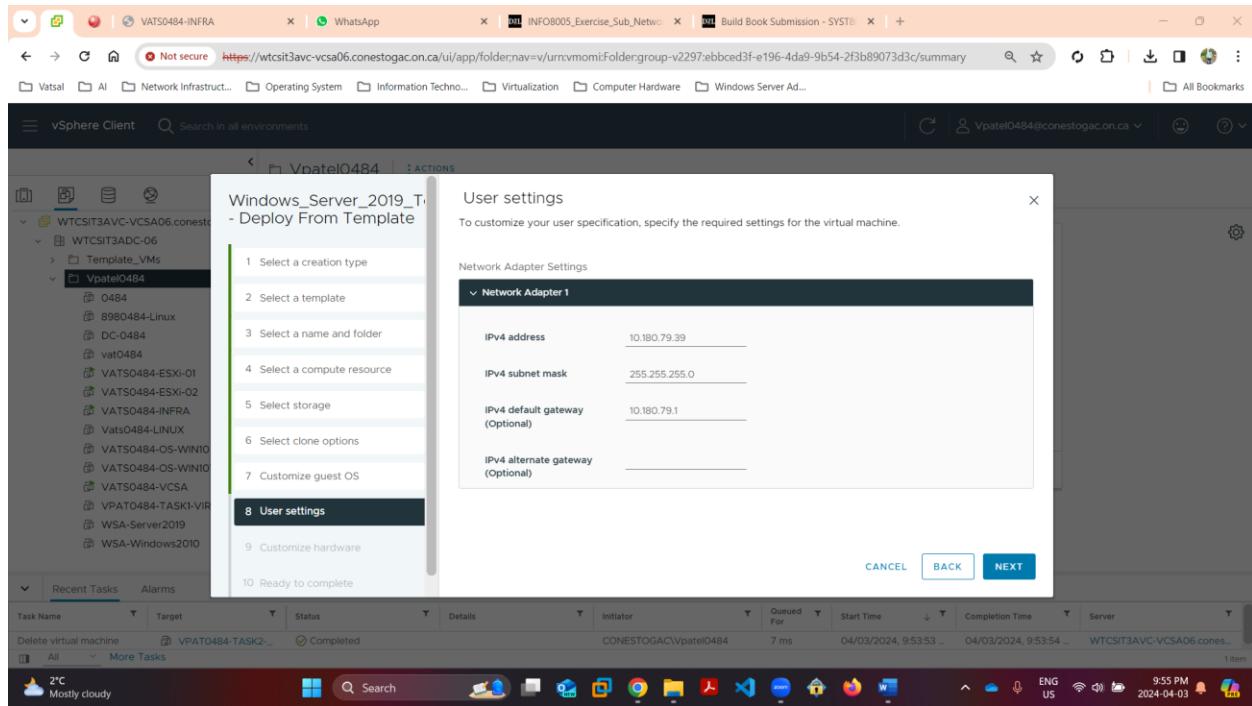


Fig 2-8: Picture shows the IP addresses, subnet mask and gateway.

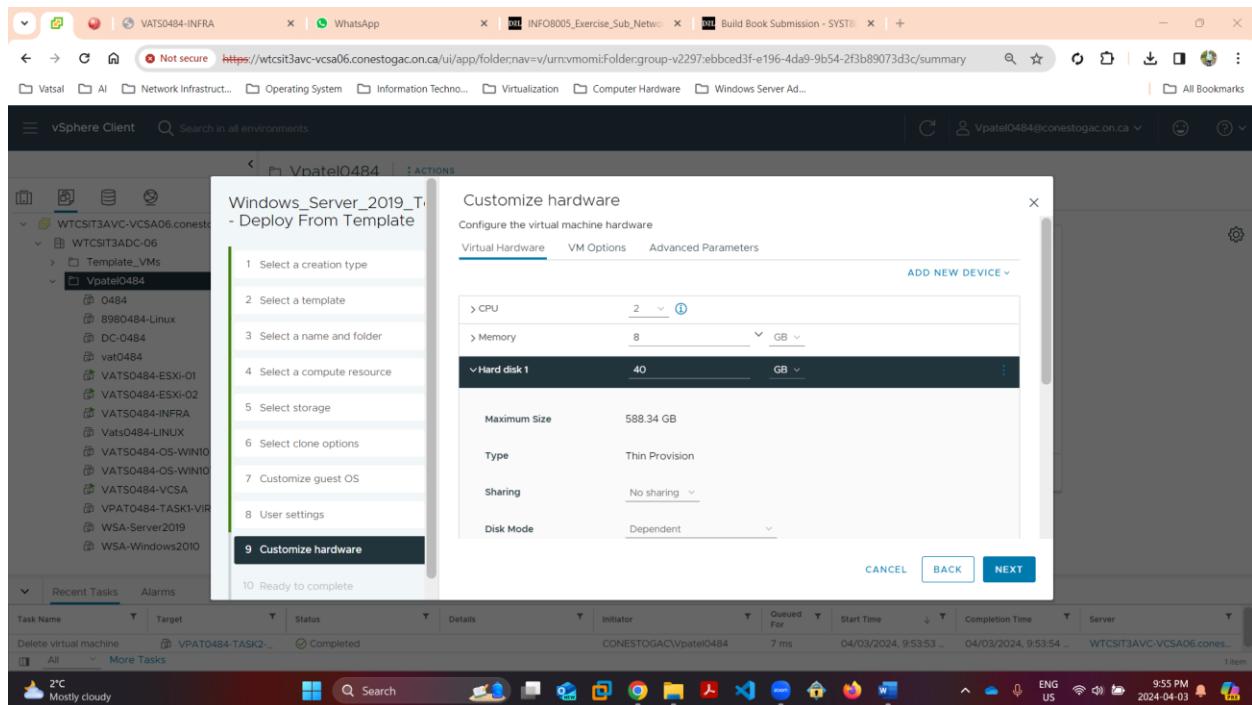


Fig 2-9: Picture shows that the Hard Disk type is Thin Provision.

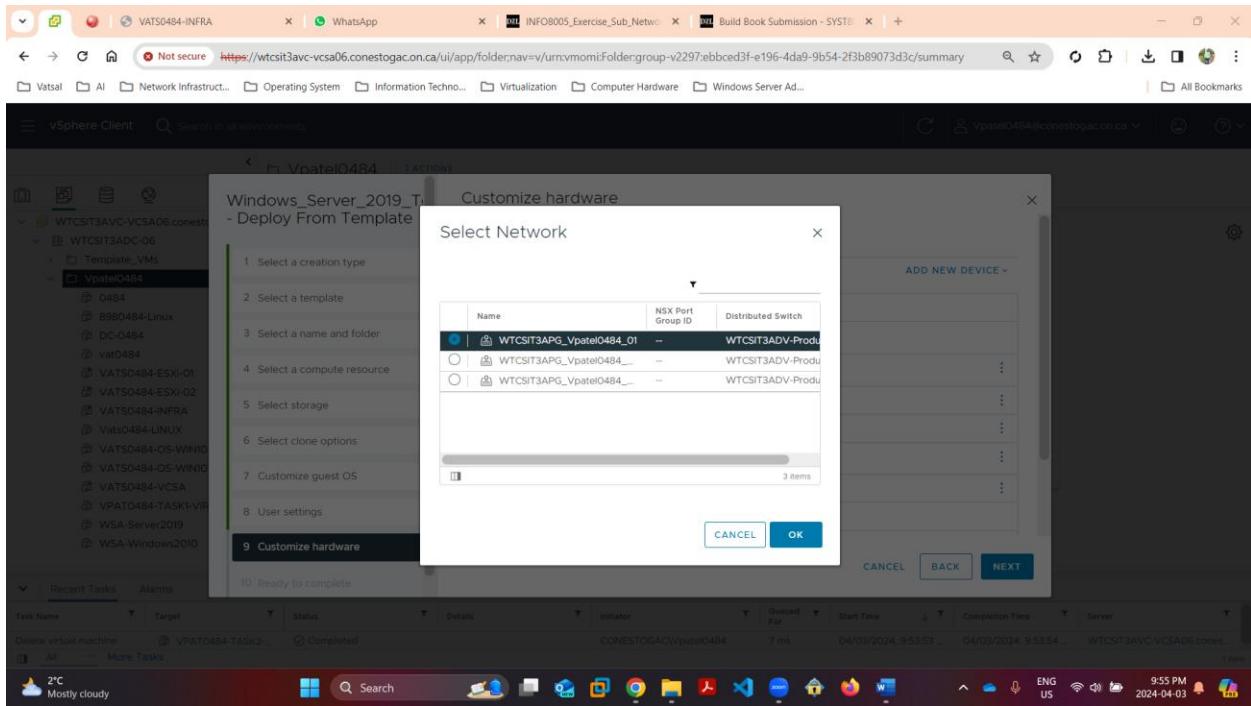


Fig 2-10: Picture shows to select a network for the virtual machine.

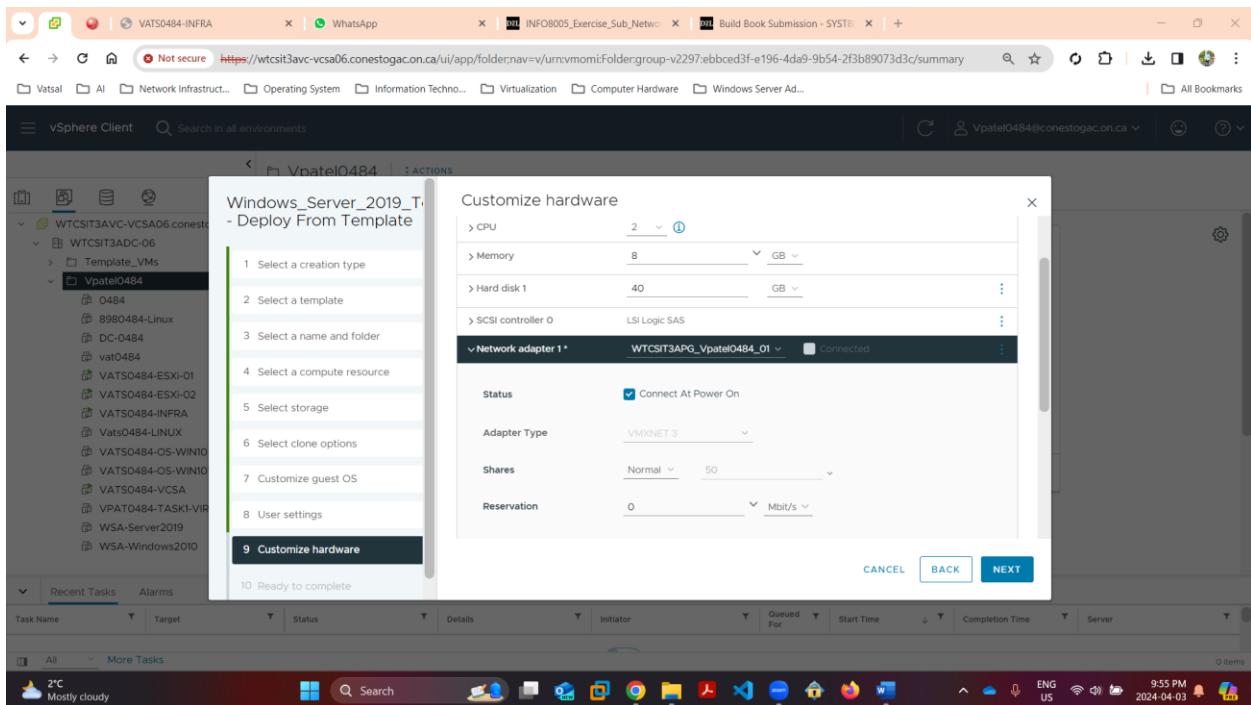


Fig 2-11: Picture shows the network status is connect to power on.

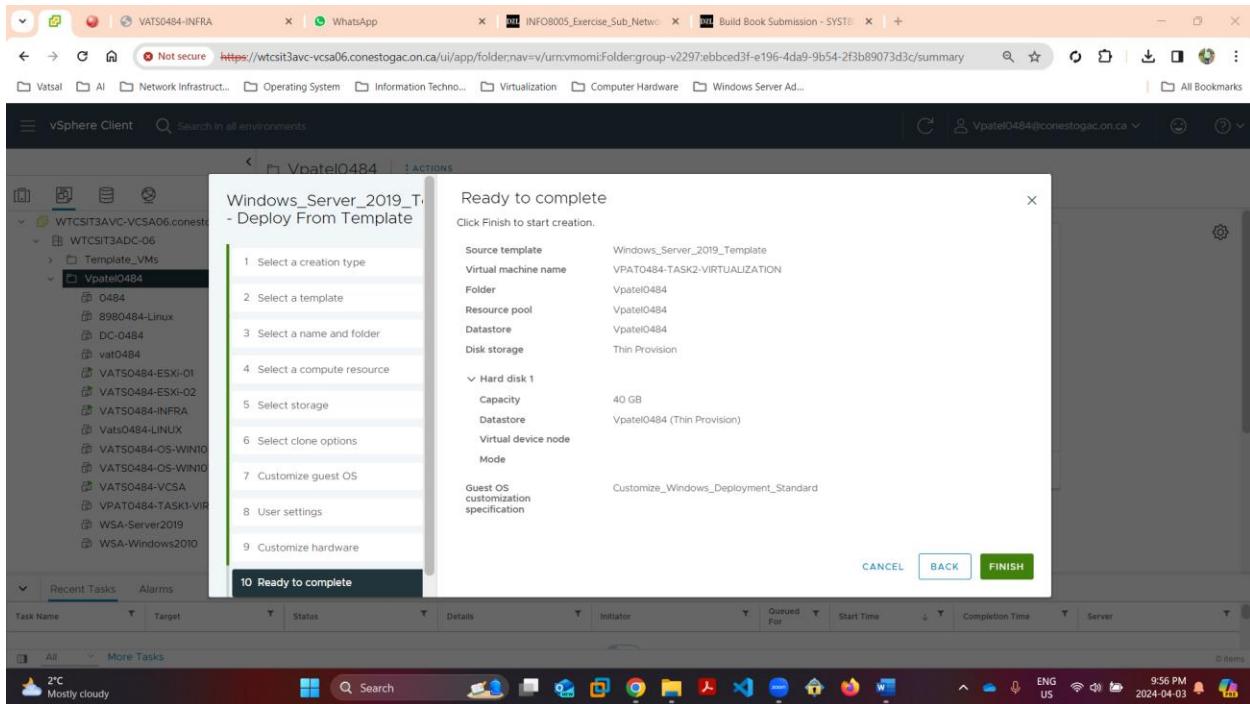


Fig 2-12: Picture shows that the virtual machine is getting ready to complete.

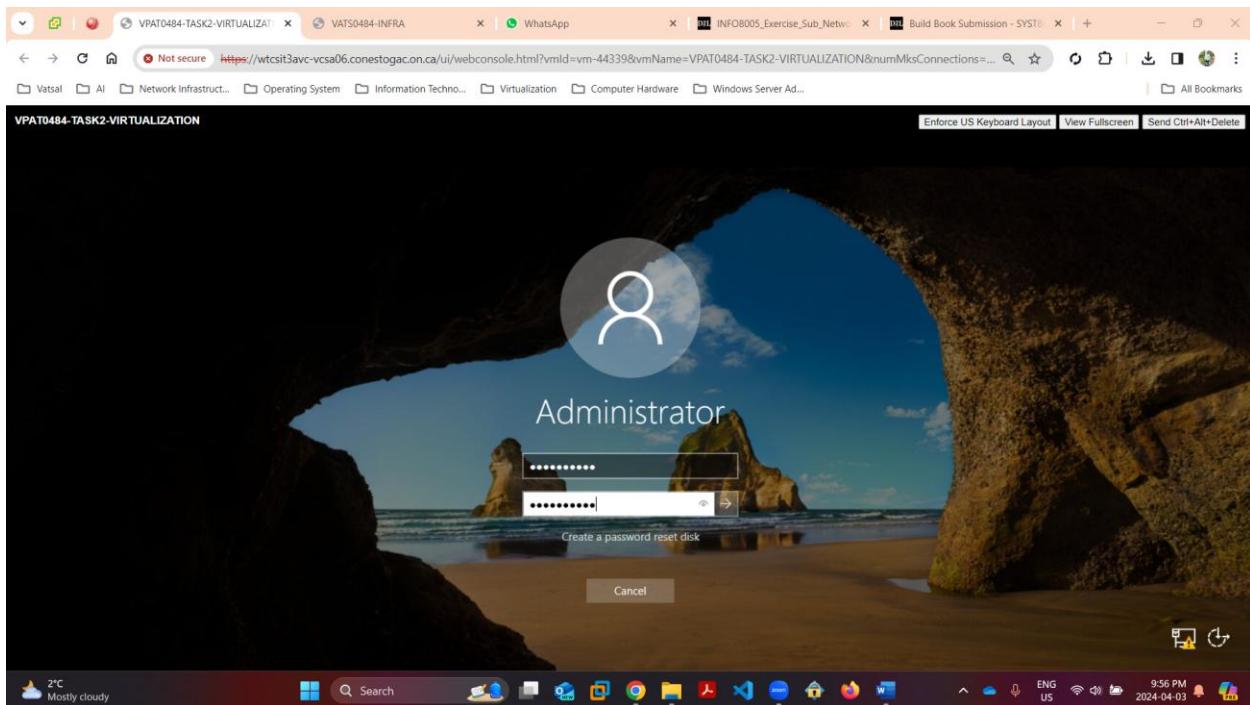


Fig 2-13: Picture shows that to enter the password for your creating virtual machine.

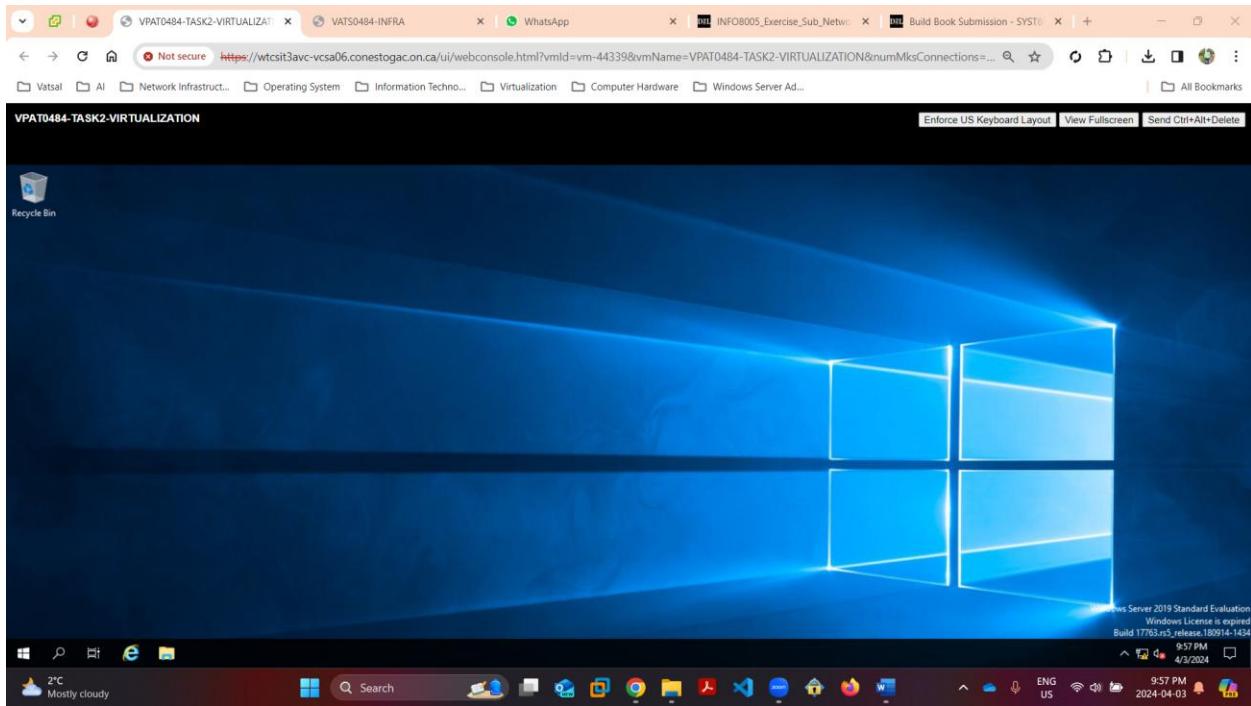


Fig 2-14: Picture shows the virtual machine successfully deployed.

### Verification Plan

1. Verify that the virtual machine is successfully deployed from a template without any error.
2. Check all the configuration and setting of the virtual machine including OS version, network configuration etc.
3. Test all the functionality of the deployed virtual machine.

### Backout Plan

The deploying of the virtual machine from a template can be undone by removing the virtual machine instances from the virtual environment. Any resources allocated for the virtual machine deployment would need to be released or reallocated if no longer needed.

### Task 3 – Creating a Template from a Virtual Machine

#### Short Description of Task

We can create a template from a virtual machine.

#### Long Description of Task

It involves a creating a template from the existing virtual machine. Templates are pre-configured images that can be used to deploy multiple virtual machine instances. Creating a template from a virtual machine is the process of provisioning new VMs with the consistent performance.

#### Pre-Implementation Test Task

1. Review the virtual machine template that are deployed from a virtual machine.
2. Verify that the virtual machine has sufficient hardware resources.
3. Confirm that the virtualization software that support the crating the templates.
4. Lastly, Validate the content of the created template that are accurately reflects or not.

#### Implementation Plan

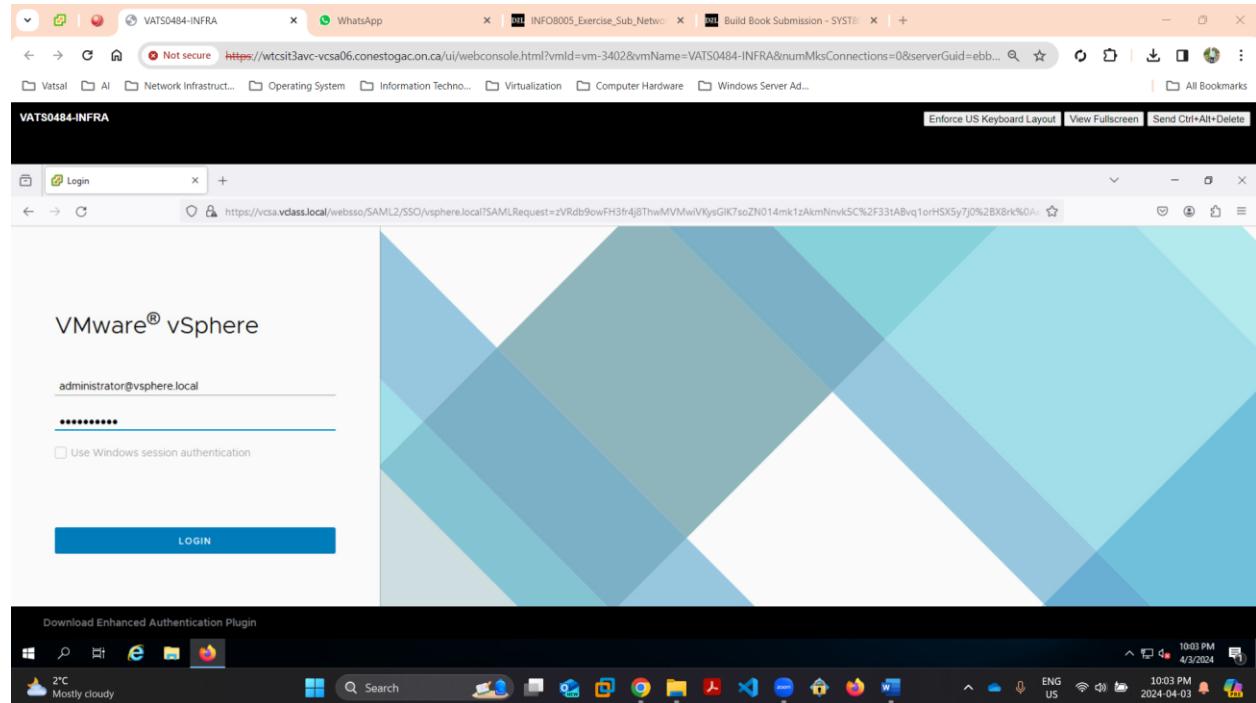


Fig 3-1: Picture shows that the login in vCenter server to create a template from a VMs.

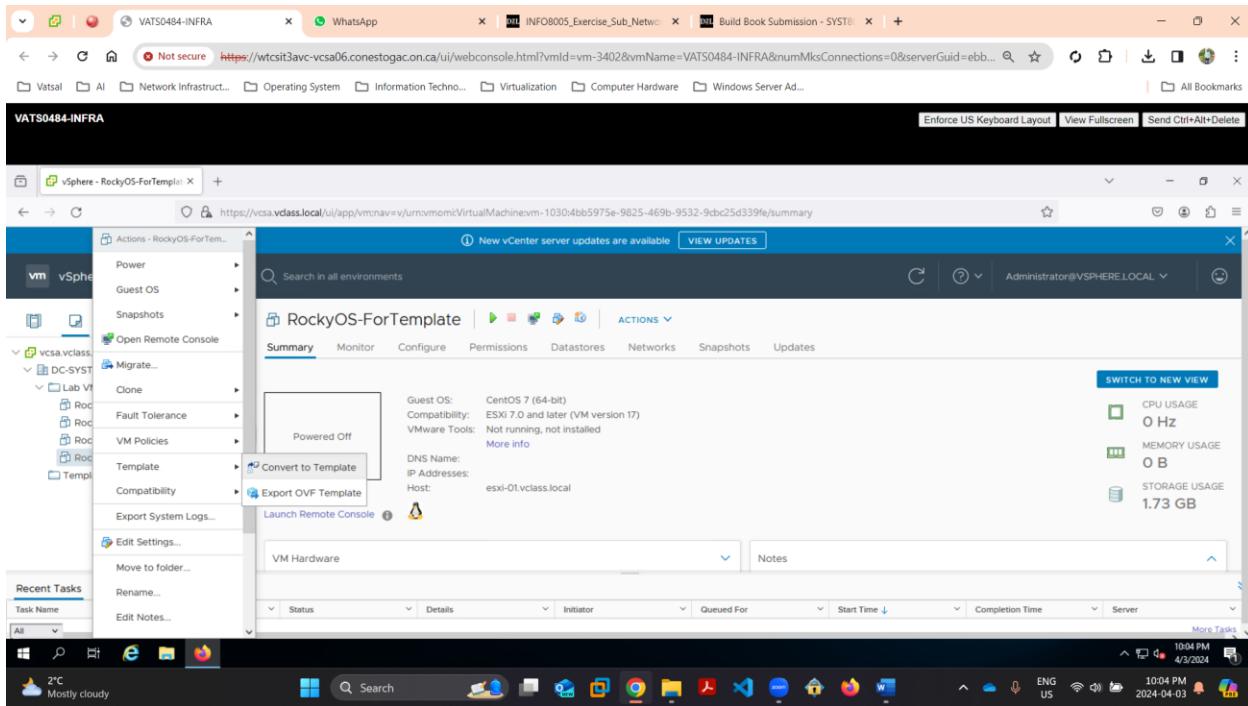


Fig 3-2: Picture shows RockyOS-ForTemplate are select to convert.

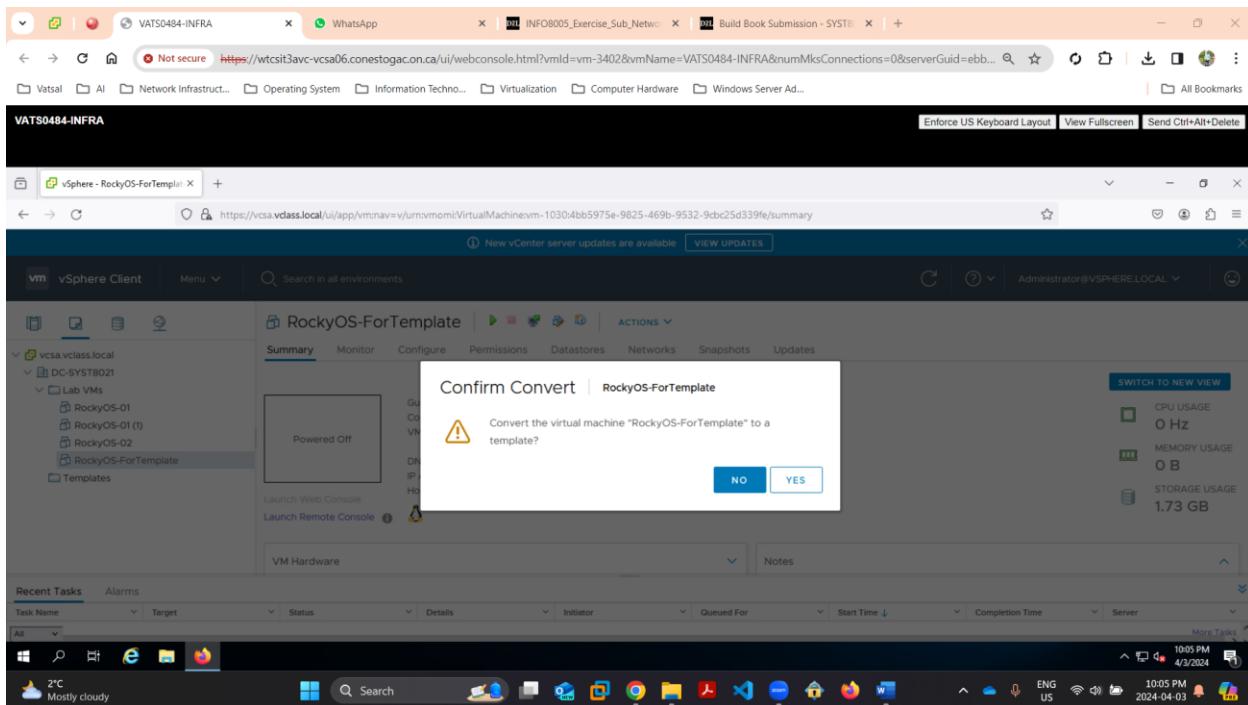


Fig 3-3: Picture shows the popup box of confirmation of converting.

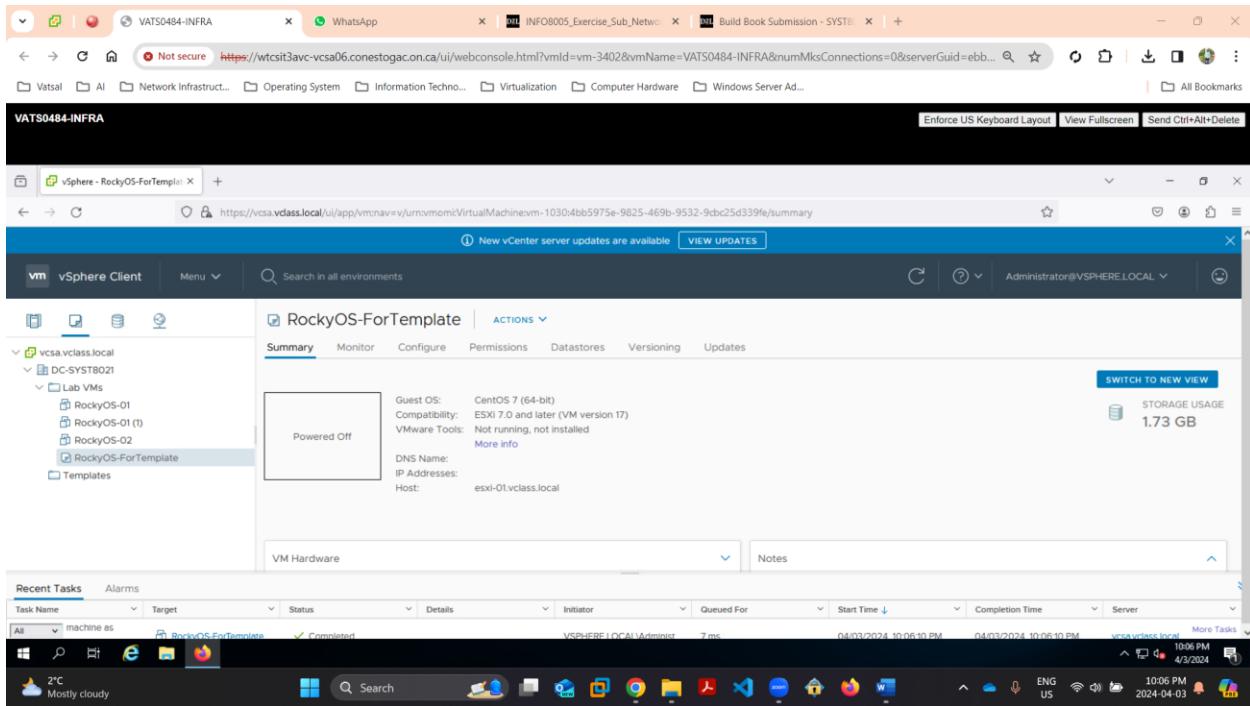


Fig 3-4: Picture shows the creating a template from a virtual machine successfully.

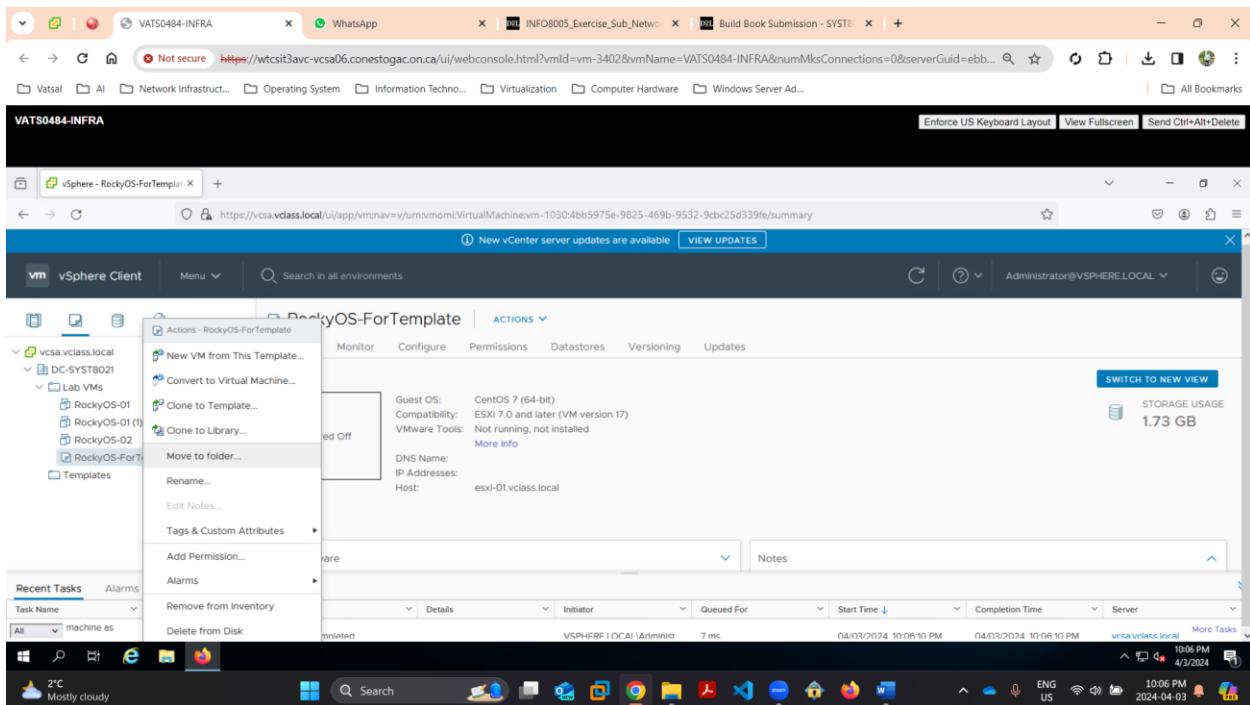


Fig 3-5: Picture shows RockyOS-ForTemplate Move to another folder.

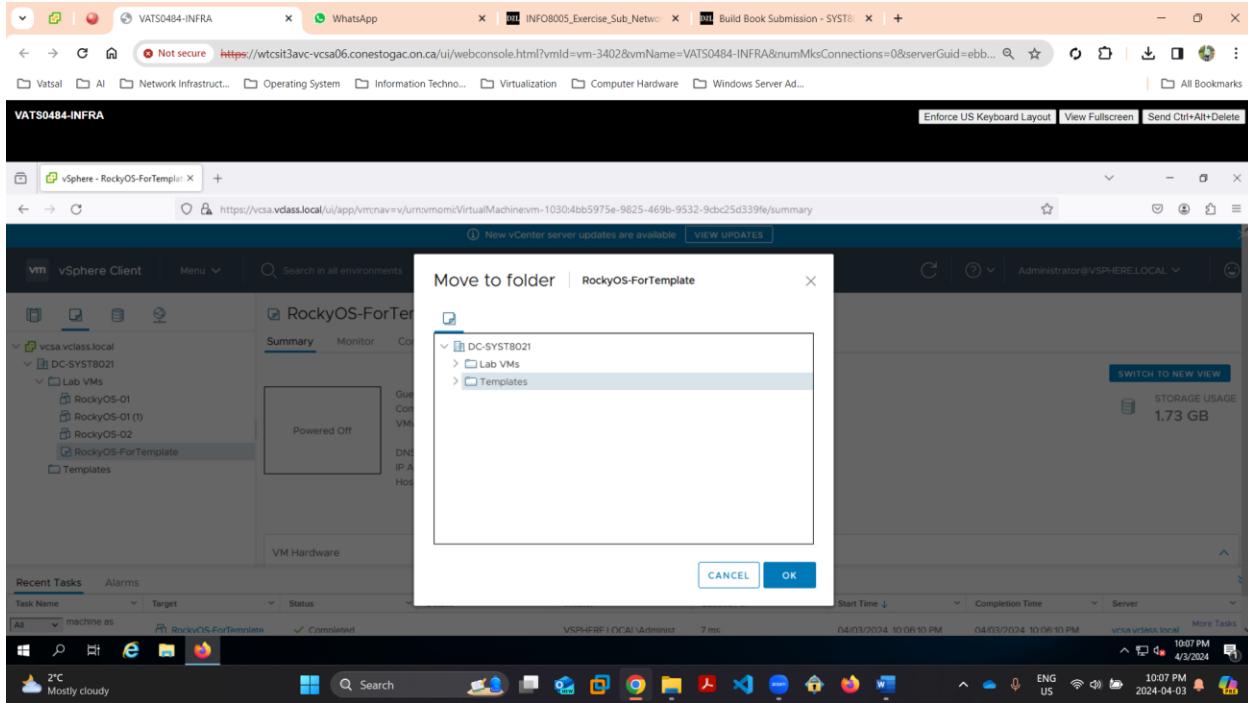


Fig 3-6: Picture shows RockyOS-ForTemplate moved to the Template folder.

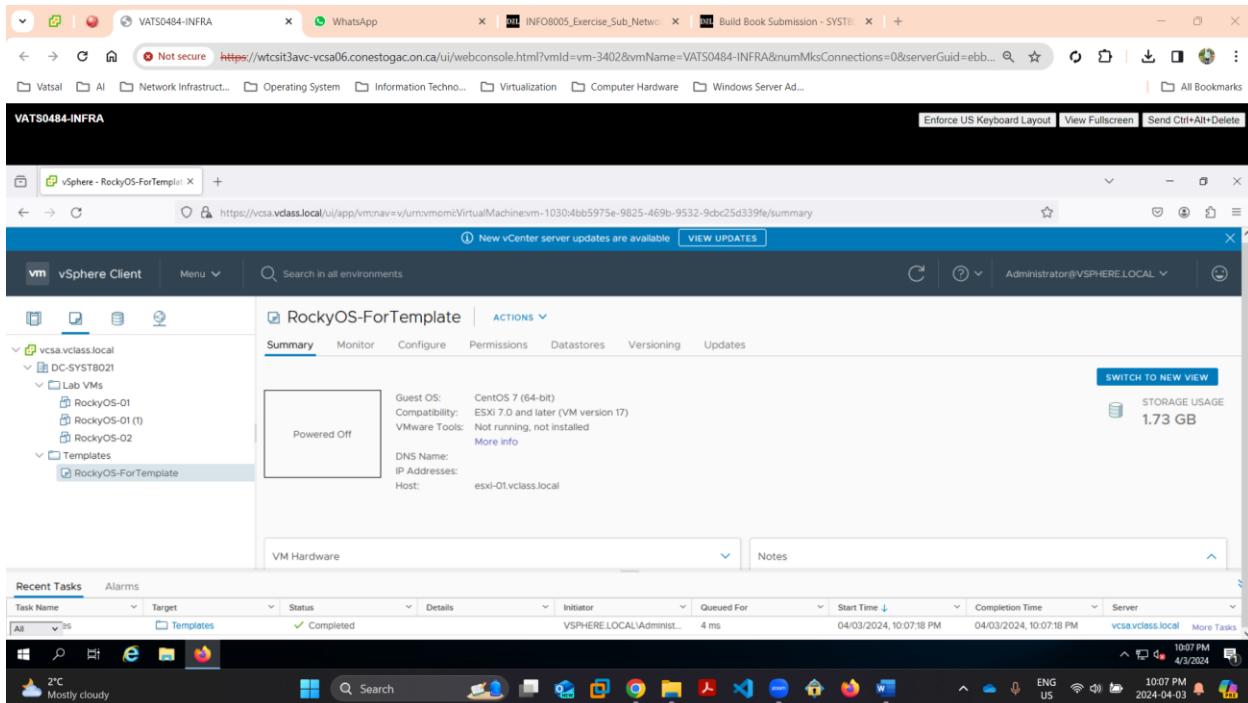


Fig 3-7: Picture shows RockyOS-ForTemplate Move successfully in Template folder.

### Verification Plan

1. Deploy a virtual machine matches the configuration of the sources VM used for the template that we created.
2. Verify that all the customization settings and adjustments are retained during deployment.

### Backout Plan

The creating a template using virtual machine is undone by deleting the templates from the virtual environment. Any of the virtual machine that are creating using templates that is unaffected. It also essential to store a backup for the setting and configurations.

## Task 4 – Creating a VMkernel port on a new standard virtual switch

### Short Description of Task

We can create a VMkernel port on a new standard virtual switch.

### Long Description of Task

It involves setting up a new standard switch within a VMWare environment and configure the switch. It is very crucial for enabling the network communication between virtual machine, ESXi hosts, and other network devices. The VMkernel port on a new standard virtual switch allows the network connectivity for the virtual environment.

### Pre-Implementation Test Task

1. First review the network configuration requirements and align the setup.
2. Test the VM switches and configure the environment.
3. Check that ESXi host have sufficient resources available to support the creation of virtual switches.
4. Verify the connectivity between the ESXi host and other devices.

### Implementation Plan

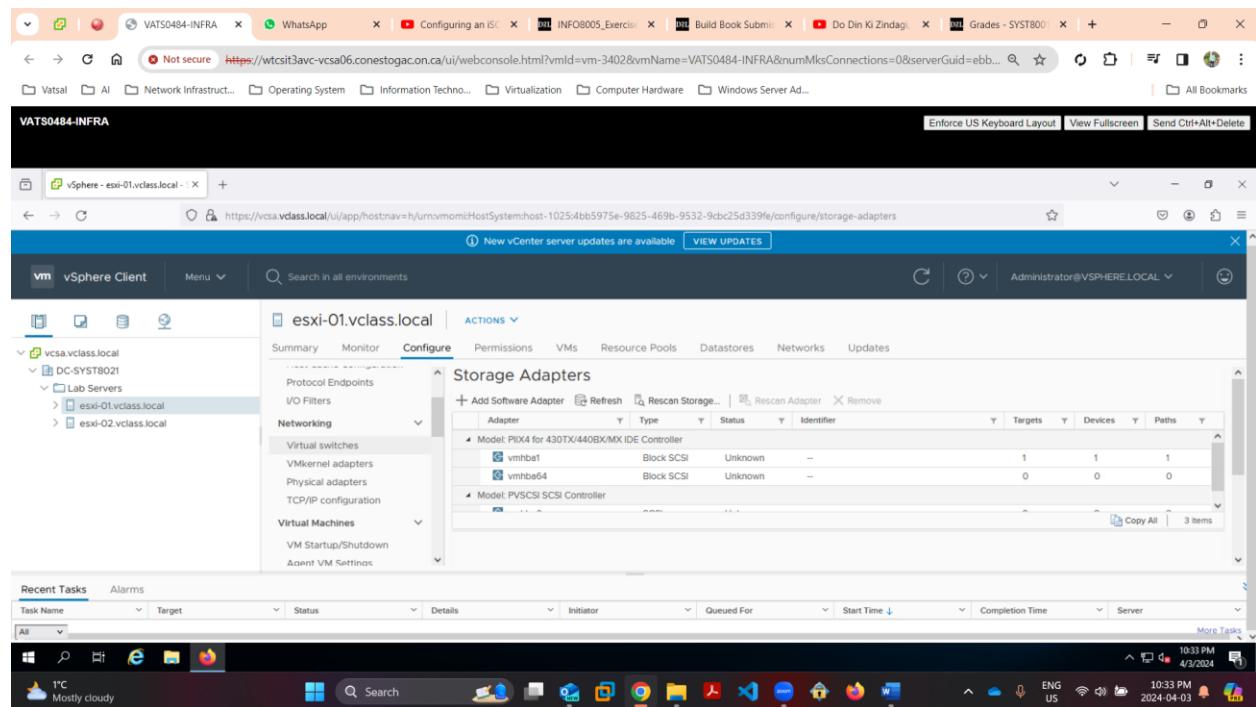


Fig 4-1: Picture shows that we select the ESXi-01 host for creating virtual switches.

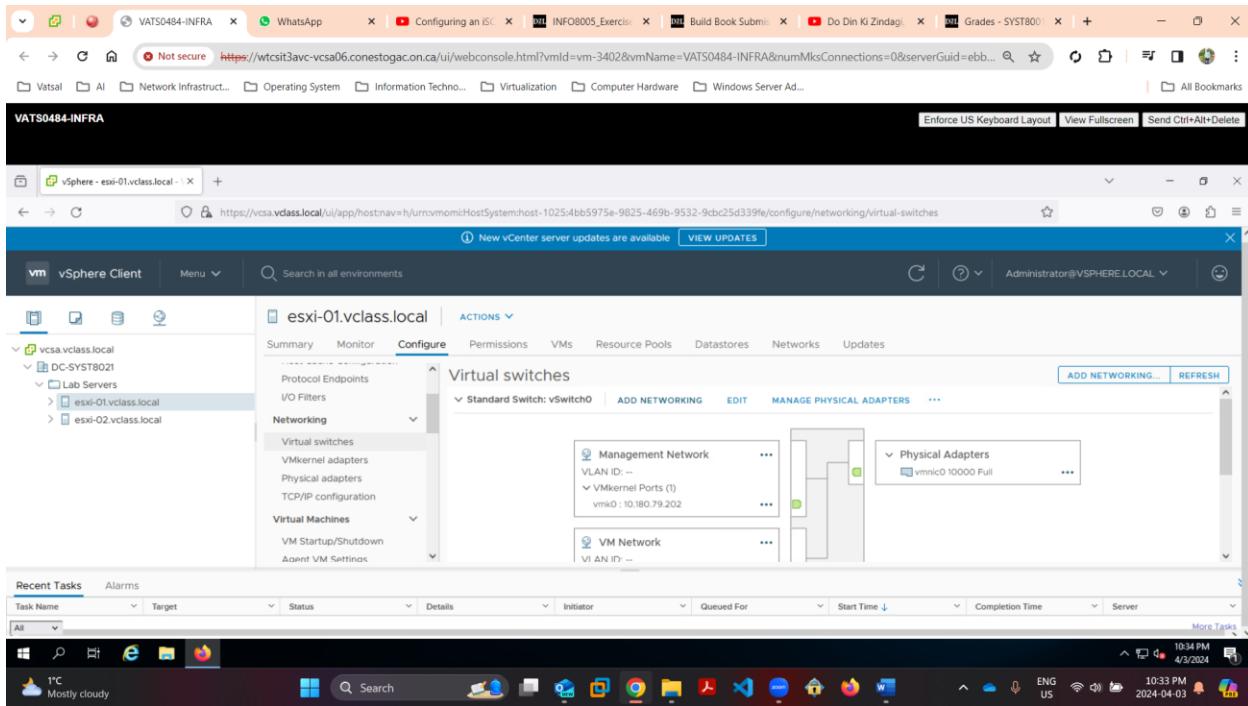


Fig 4-2: Picture shows select configure option than create virtual switches in Networking.

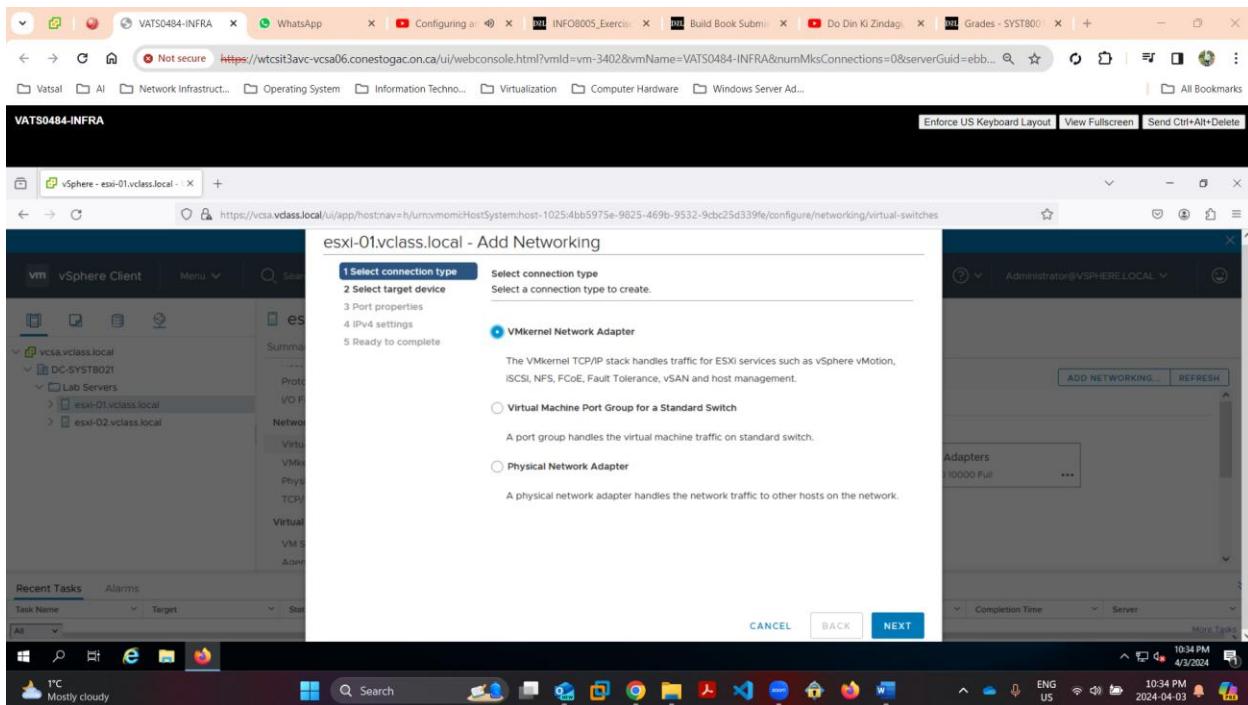


Fig 4-3: Picture shows to select a connection type of the virtual switches.

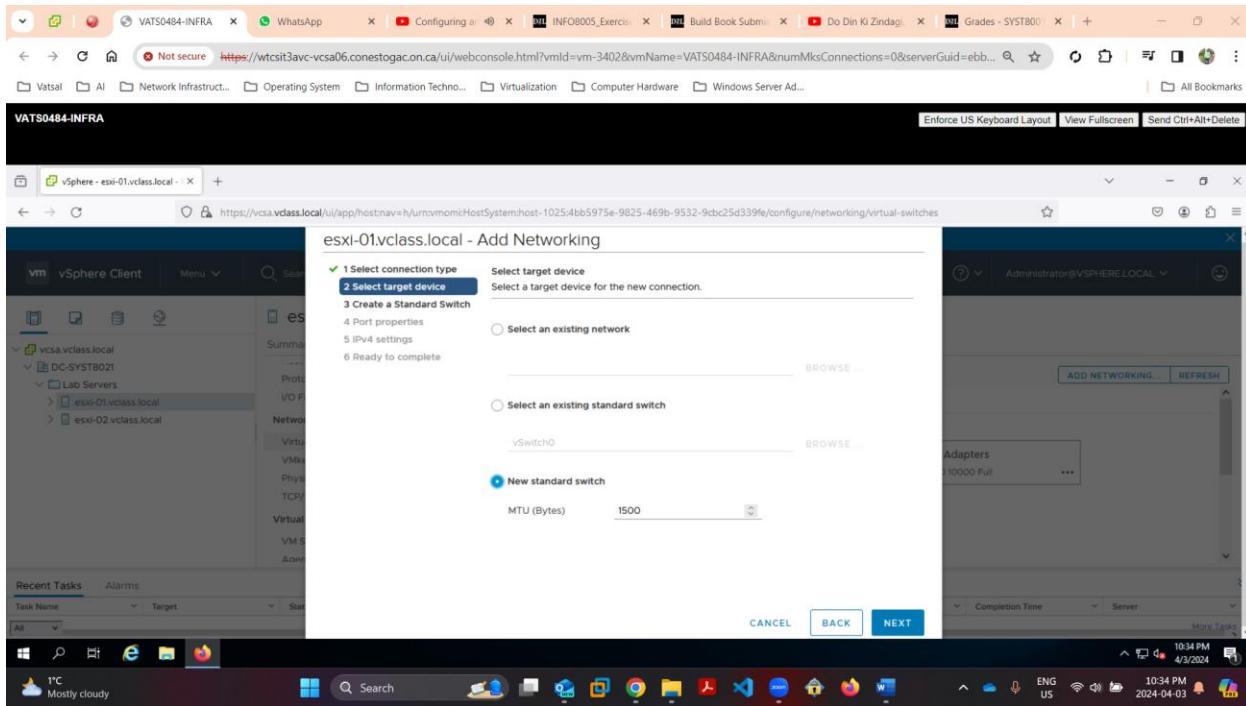


Fig 4-4: Picture shows to select a target device and select a new standard switch.

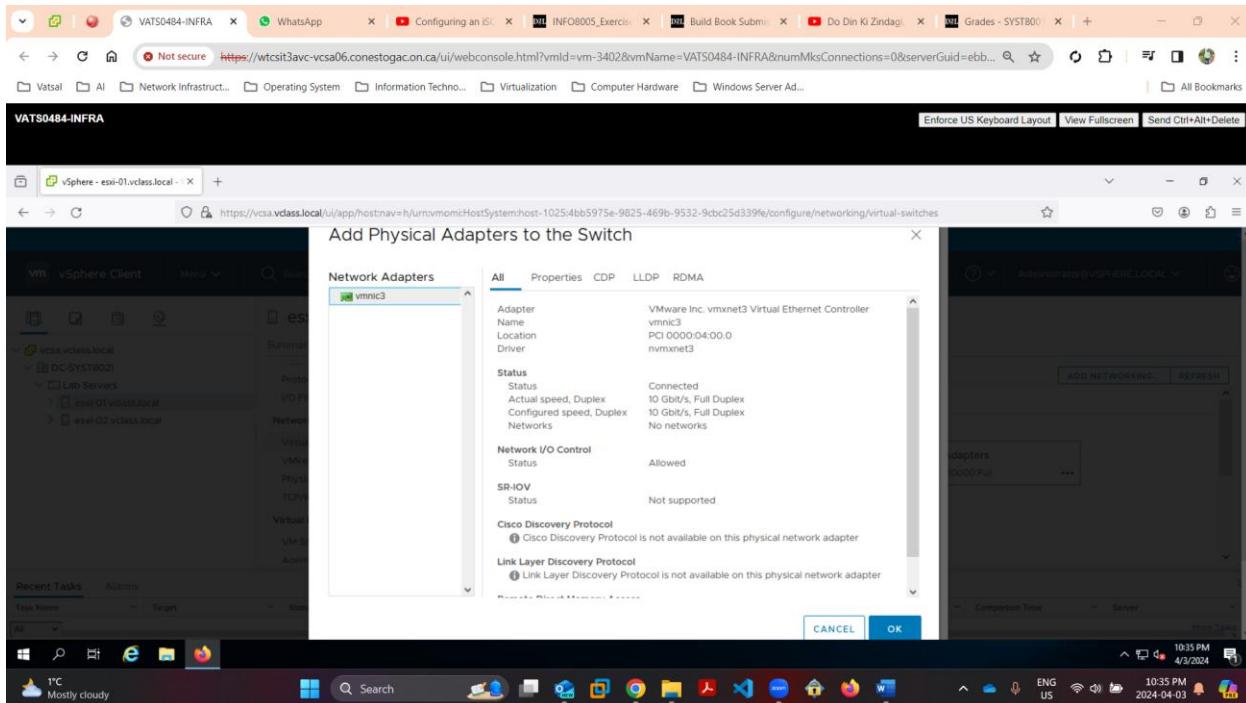


Fig 4-5: Picture shows that to add physical adapters to the switch.

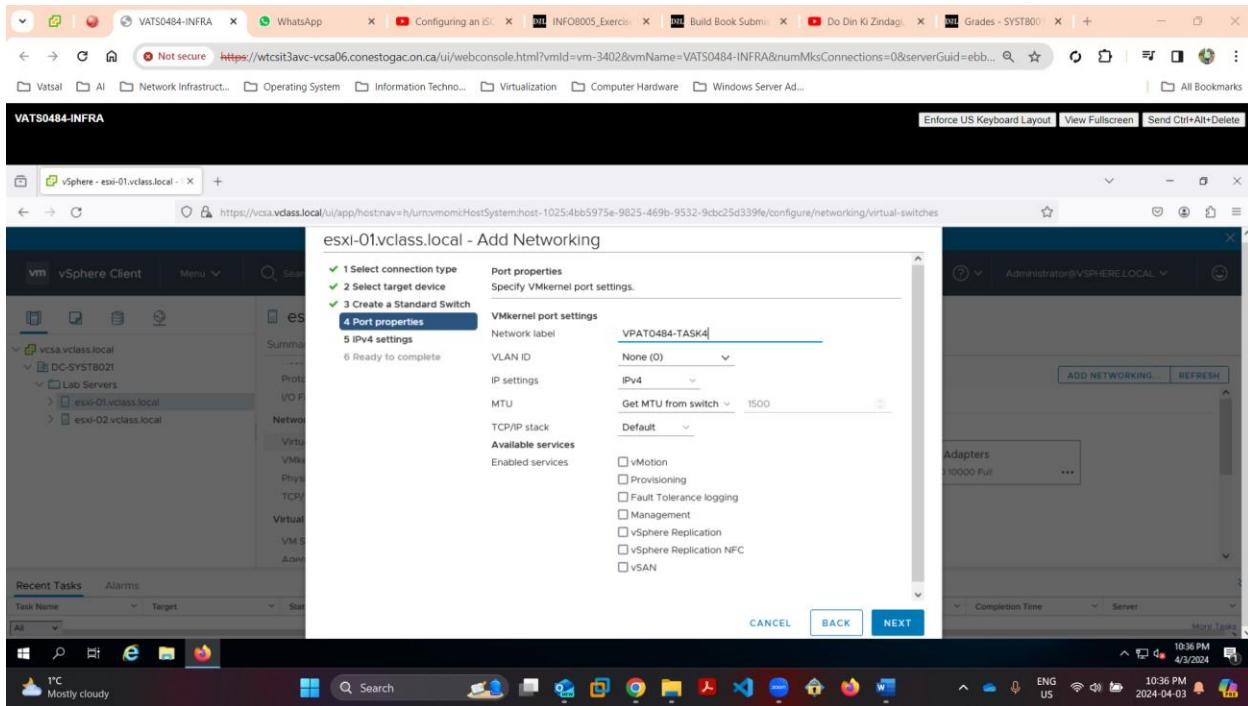


Fig 4-6: Picture shows that create a name of the network label in port properties.

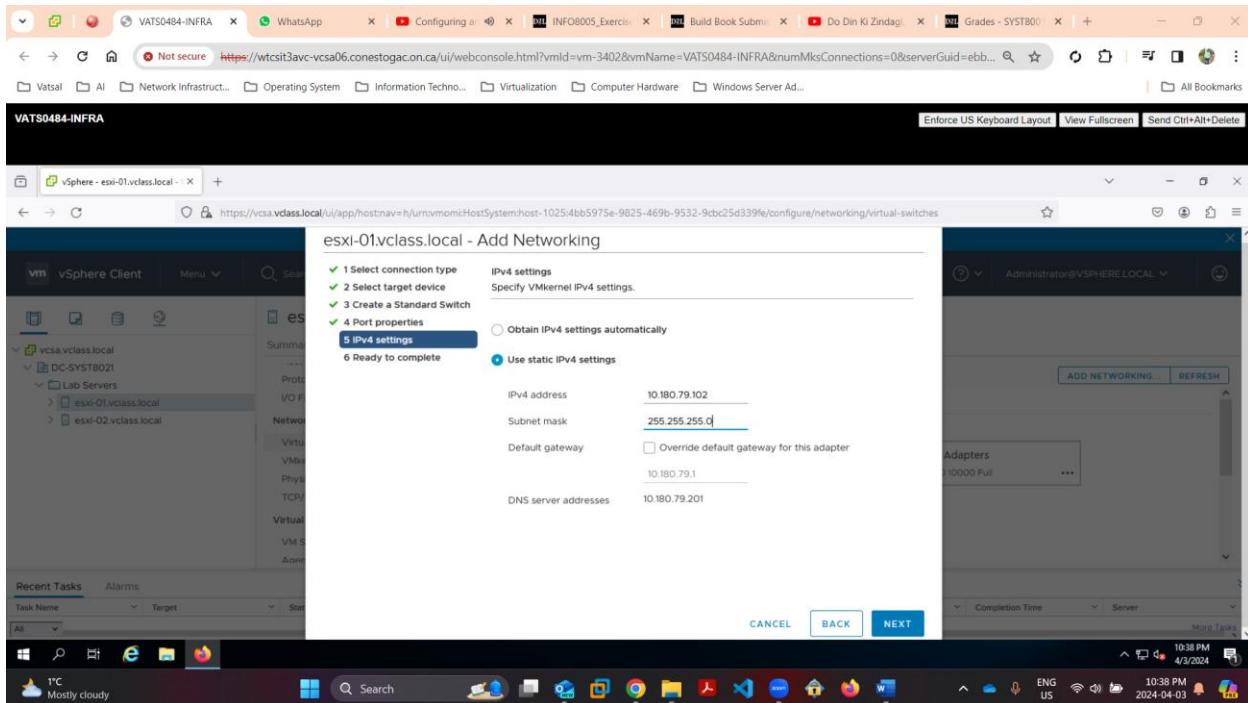


Fig 4-7: Picture shows given the static IP addresses and subnet masks.

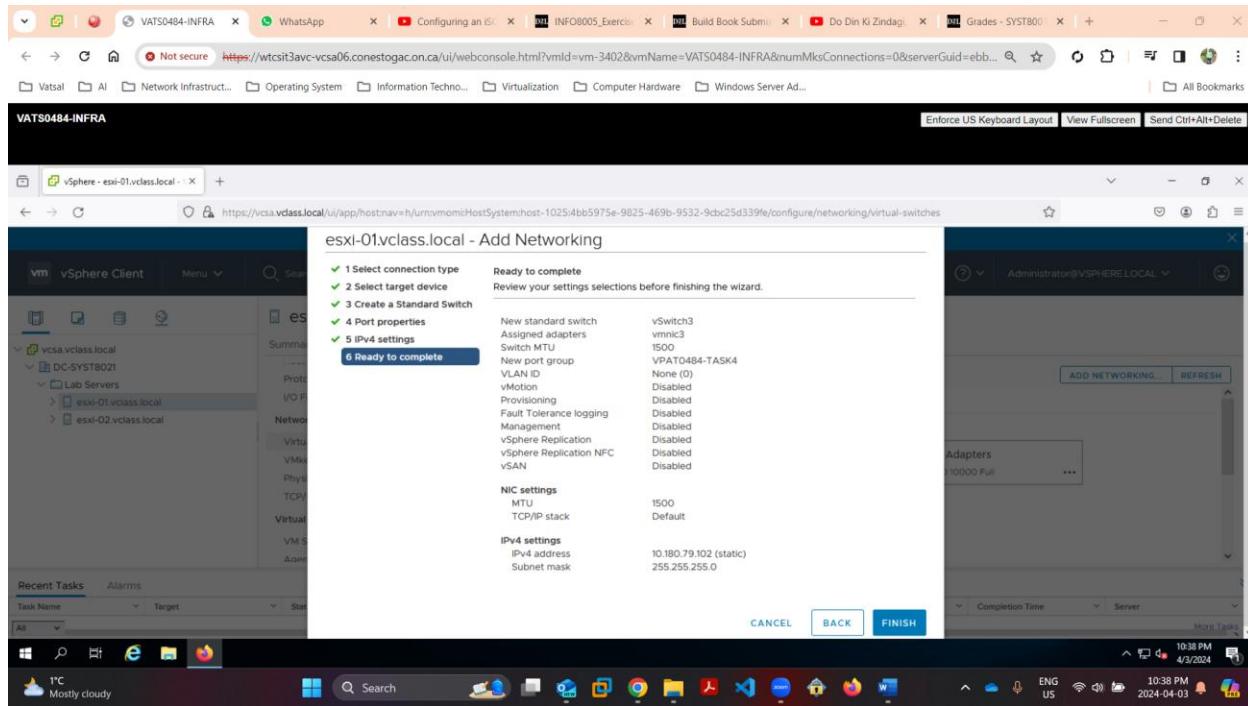


Fig 4-8: Picture shows the new standard switch is ready to complete.

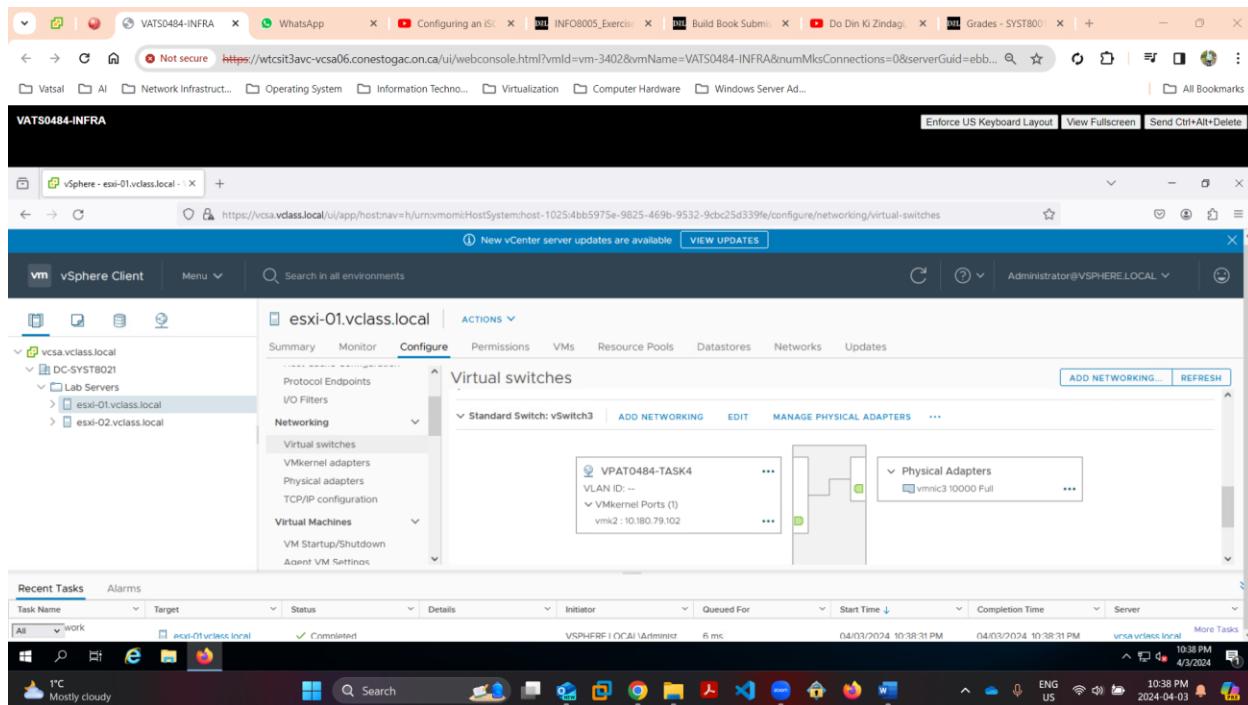


Fig 4-9: Picture shows that the successfully added the switch in the standard switch 3.

### Verification Plan

1. Check that the VMkernel port has been successfully created on the new standard switch.
2. Check the network connectivity of the VMkernel port to ensure that communication is successful.
3. Also check that the VMkernel port can perform the function such as vMotion and traffic handling.

### Backout Plan

When we remove the VMkernel port on a new standard switch it affects the network connectivity and other services that are add the VMkernel port. Any configuration on the network devices should be reverted.