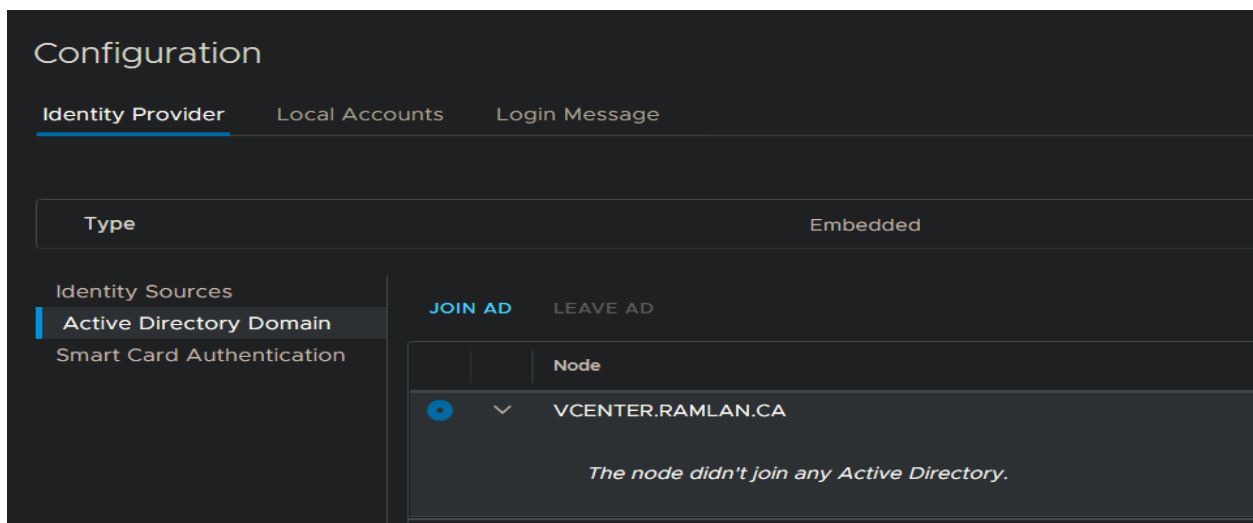
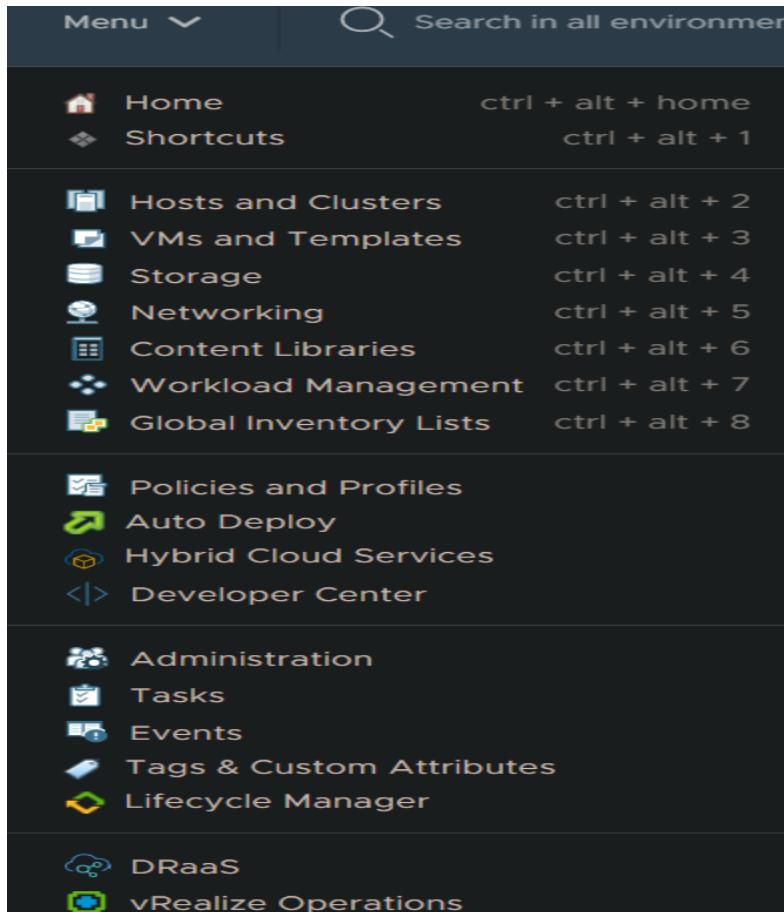


# Post Configuration for vCenter Server 7 Appliance

In the last post we installed vCenter Server 7 Appliance. Now it is time to do the following:

1. Add vCenter to Domain
2. Add Administrator to VADMIN Security Group
3. Install Root Certificate
4. Explore other features within vCenter

## Join vCenter to AD:



# Join Active Directory Domain

Domain

RAMLAN.CA


Organization Unit (optional)

Username

administrator

Password

.....|

 Reboot the node to apply changes.

CANCEL


JOIN

## Configuration

Identity Provider

Local Accounts

Login Message

CHANGE IDENTITY PROVIDER 


Type

Embedded

Identity Sources

Active Directory Domain

Smart Card Authentication

 Node VCENTER.RAMLAN.CA has joined the active directory successfully. Reboot the node to apply changes. [Acknowledge](#)

JOIN AD

LEAVE AD

Node

VCENTER.RAMLAN.CA

Active Directory RAMLAN.CA

Organization Unit

1 items


Reboot vCenter Server 7 Appliance. No need to reboot ESX1 and ESX2.

## Configuration

Identity Provider

Local Accounts

Login Message

CHANGE IDENTITY PROVIDER 

Type

Embedded

Identity Sources

Active Directory Domain

Smart Card Authentication

JOIN AD

LEAVE AD

Node

VCENTER.RAMLAN.CA

Active Directory RAMLAN.CA

Organization Unit

1 items

Configuration

Identity Provider Local Accounts Login Message

CHANGE IDENTITY PROVIDER ⓘ

Type Embedded

Identity Sources

- Active Directory Domain
- Smart Card Authentication

ADD EDIT SET AS DEFAULT REMOVE

| Name | Server URL | Type               | Domain        | Alias |
|------|------------|--------------------|---------------|-------|
| --   | --         | System Domain      | vsphere.local | --    |
| --   | --         | Local OS (Default) | localos       | --    |

2 items

Configuration

Identity Provider Local Accounts Login Message

Add Identity Source

Identity Source Type Active Directory (Integrated Windows Authentication)

Domain name \* ⓘ RAMLAN.CA

☒ Use machine account  
☐ Use Service Principal Name (SPN)

CANCEL ADD

Configuration

Identity Provider Local Accounts Login Message

CHANGE IDENTITY PROVIDER ⓘ

Type Embedded

Identity Sources

- Active Directory Domain
- Smart Card Authentication

ADD EDIT SET AS DEFAULT REMOVE

| Name | Server URL | Type   | Domain        | Alias |
|------|------------|--|---------------|-------|
| --   | --         | System Domain  | vsphere.local | --    |
| --   | --         | Local OS (Default)                                   | localos       | --    |
| --   | --         | Active Directory (Integrated Windows Authentication) | RAMLAN.CA     | --    |

3 items

From Access Control – Global Permissions – We will add VADMIN group that, I created in ADUC earlier and grant Administrator level access to vCenter Server.

VADMIN Security Group - Global vCenter Admins

Administration

- Access Control
  - Roles
  - Global Permissions
- Licensing
  - Licenses
- Solutions

Global Permissions

Permissions provider:

+ ✎ ✕

User/Group ↑

## Add Permission | Global Permission Root

Domain: RAMLAN.CA

User/Group: Q VADMIN

Role: Administrator

☒ Propagate to children

CANCEL OK

vm vSphere Client | Menu | Search in all environments

VCENTER.RAMLAN.CA | ACTIONS

Summary | Monitor | Configure | **Permissions** | Datacenters | Hosts & Clusters | VMs | Datastores | Networks | Linked vCenter Server Systems

| User/Group    | Role          | Defined In        |
|---------------|---------------|-------------------|
| RAMLAN\VADMIN | Administrator | Global Permission |

Now logout of vCenter and login as AD Administrator

# VMware® vSphere

ramlan\administrator

.....

☐ Use Windows session authentication

LOGIN

vm vSphere Client | Menu | Search in all environments

VCENTER.RAMLAN.CA | ACTIONS

Summary | Monitor | Configure | Permissions | Datacenters | Hosts & Clusters | VMs | Datastores | Networks | Linked vCenter Server Systems

Version: 7.0.0  
Build: 16386335

Clusters: 1  
Hosts: 2  
Virtual Machines: 1

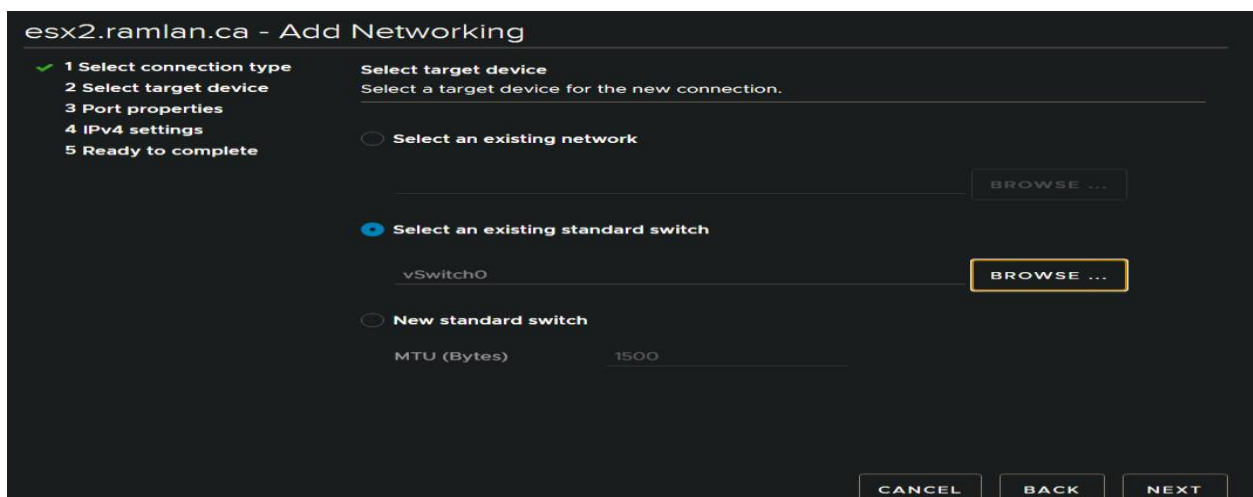
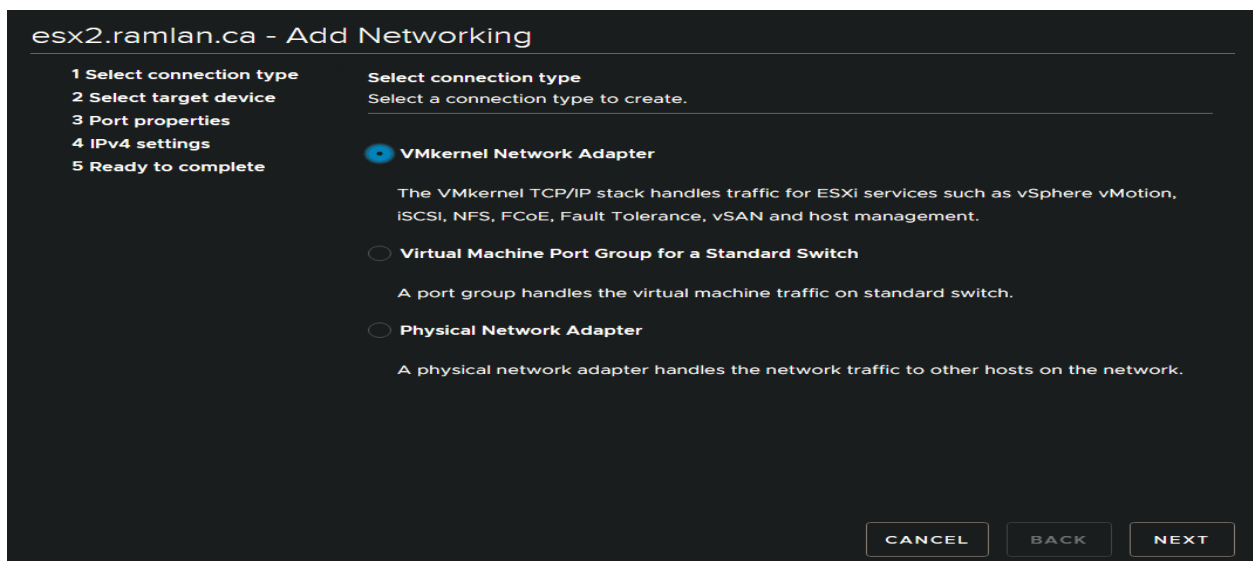
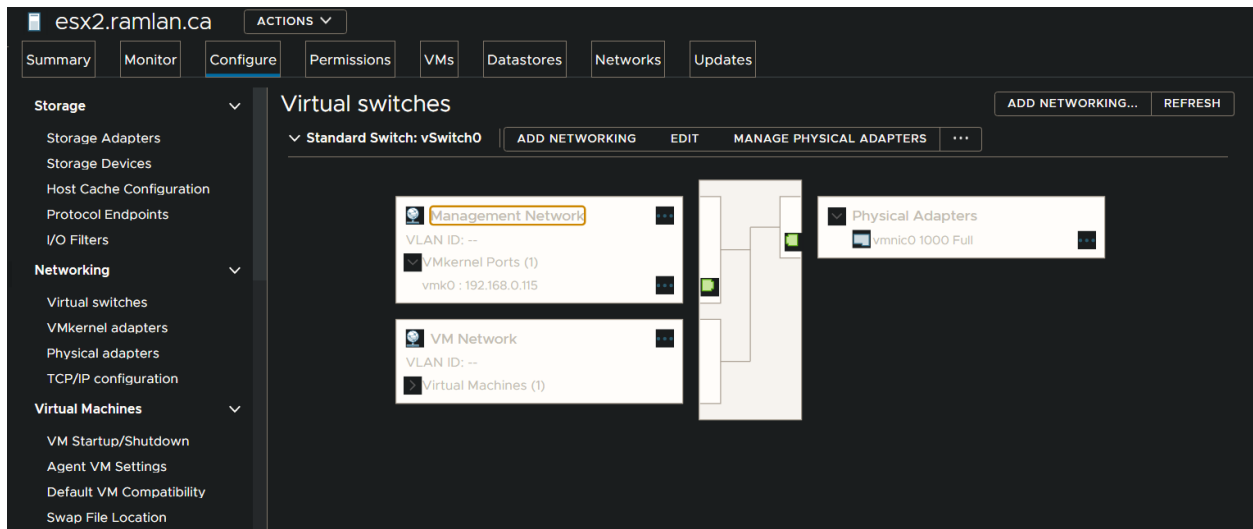
CPU: Used 2.96 GHz, Free 14.39 GHz, Capacity 17.36 GHz  
Memory: Used 14.59 GB, Free 7.27 GB, Capacity 21.85 GB  
Storage: Used 30.78 GB, Free 1.5 TB, Capacity 1.5 TB

Health Status: Overall Health Good

vCenter HA: Mode --, State --

## vMotion:

If you want to move machine from one host to another host, we have to use vMotion and it requires physical or virtual adapter for configuration. Since, I have only ONE physical adapter per host, I will use the same for vMotion. Here is the configuration.



## esx2.ramlan.ca - Add Networking

- ✓ 1 Select connection type
- ✓ 2 Select target device
- 3 Port properties
- 4 IPv4 settings
- 5 Ready to complete

### Port properties

Specify VMkernel port settings.

### VMkernel port settings

|                    |  |      |
|--------------------|--|------|
| Network label      | vMotion ESX2                                     |      |
| VLAN ID            | None (0) ▼                                       |      |
| MTU                | Get MTU from switch                              | 1500 |
| TCP/IP stack       | Default  |      |
| Available services |  |      |
| Enabled services   | <input checked="" type="checkbox"/> vMotion      |      |
|                    | <input type="checkbox"/> Provisioning            |      |
|                    | <input type="checkbox"/> Fault Tolerance logging |      |
|                    | <input type="checkbox"/> Management              |      |
|                    | <input type="checkbox"/> vSphere Replication     |      |
|                    | <input type="checkbox"/> vSphere Replication NFC |      |
|                    | <input type="checkbox"/> vSAN                    |      |

CANCEL

BACK

NEXT

## esx2.ramlan.ca - Add Networking

- ✓ 1 Select connection type
- ✓ 2 Select target device
- ✓ 3 Port properties
- 4 IPv4 settings
- 5 Ready to complete

### IPv4 settings

Specify VMkernel IPv4 settings.

- ☐ Obtain IPv4 settings automatically
- ☒ Use static IPv4 settings

|                      |  |
|----------------------|--|
| IPv4 address         | 192.168.0.118  |
| Subnet mask          | 255.255.255.0  |
| Default gateway      | <input type="checkbox"/> Override default gateway for this adapter |
|                      | 192.168.0.1  |
| DNS server addresses | 192.168.0.2  |

CANCEL

BACK

NEXT

## esx2.ramlan.ca - Add Networking

- ✓ 1 Select connection type
- ✓ 2 Select target device
- ✓ 3 Port properties
- ✓ 4 IPv4 settings
- 5 Ready to complete

### Ready to complete

Review your settings selections before finishing the wizard.

|                         |                        |
|-------------------------|------------------------|
| New port group          | vMotion ESX2           |
| Standard switch         | vSwitch0               |
| VLAN ID                 | None (0)               |
| vMotion                 | Enabled                |
| Provisioning            | Disabled               |
| Fault Tolerance logging | Disabled               |
| Management              | Disabled               |
| vSphere Replication     | Disabled               |
| vSphere Replication NFC | Disabled               |
| vSAN                    | Disabled               |
| <b>NIC settings</b>     |                        |
| MTU                     | 1500                   |
| TCP/IP stack            | Default                |
| <b>IPv4 settings</b>    |                        |
| IPv4 address            | 192.168.0.118 (static) |
| Subnet mask             | 255.255.255.0          |

CANCEL

BACK

FINISH

## Virtual switches

ADD NETWORKING... REFRESH

**Management Network**  
VLAN ID: --  
VMkernel Ports (1)  
vmk0 : 192.168.0.115

**VM Network**  
VLAN ID: --  
Virtual Machines (1)

**vMotion ESX2**  
VLAN ID: --  
VMkernel Ports (1)  
vmk1 : 192.168.0.118

**Physical Adapters**  
vmnic0 1000 Full

### esx1.ramlan.ca

ACTIONS ▾

Summary Monitor **Configure** Permissions VMs Datastores Networks Updates

**Storage** ▾

- Storage Adapters
- Storage Devices
- Host Cache Configuration
- Protocol Endpoints
- I/O Filters

**Networking** ▾

- Virtual switches**
- VMkernel adapters
- Physical adapters
- TCP/IP configuration

**Virtual Machines** ▾

- VM Startup/Shutdown
- Agent VM Settings
- Default VM Compatibility
- Swap File Location

## Virtual switches

ADD NETWORKING... REFRESH

**Management Network**  
VLAN ID: --  
VMkernel Ports (1)  
vmk0 : 192.168.0.114

**VM Network**  
VLAN ID: --  
Virtual Machines (0)

**vMotion ESX1**  
VLAN ID: --  
VMkernel Ports (1)  
vmk1 : 192.168.0.116

**Physical Adapters**  
vmnic0 10000 Full

### esx2.ramlan.ca

ACTIONS ▾

Summary Monitor **Configure** Permissions VMs Datastores Networks Updates

**Storage** ▾

- Storage Adapters
- Storage Devices
- Host Cache Configuration
- Protocol Endpoints
- I/O Filters

**Networking** ▾

- Virtual switches**
- VMkernel adapters
- Physical adapters
- TCP/IP configuration

**Virtual Machines** ▾

- VM Startup/Shutdown
- Agent VM Settings
- Default VM Compatibility
- Swap File Location

## Virtual switches

ADD NETWORKING... REFRESH

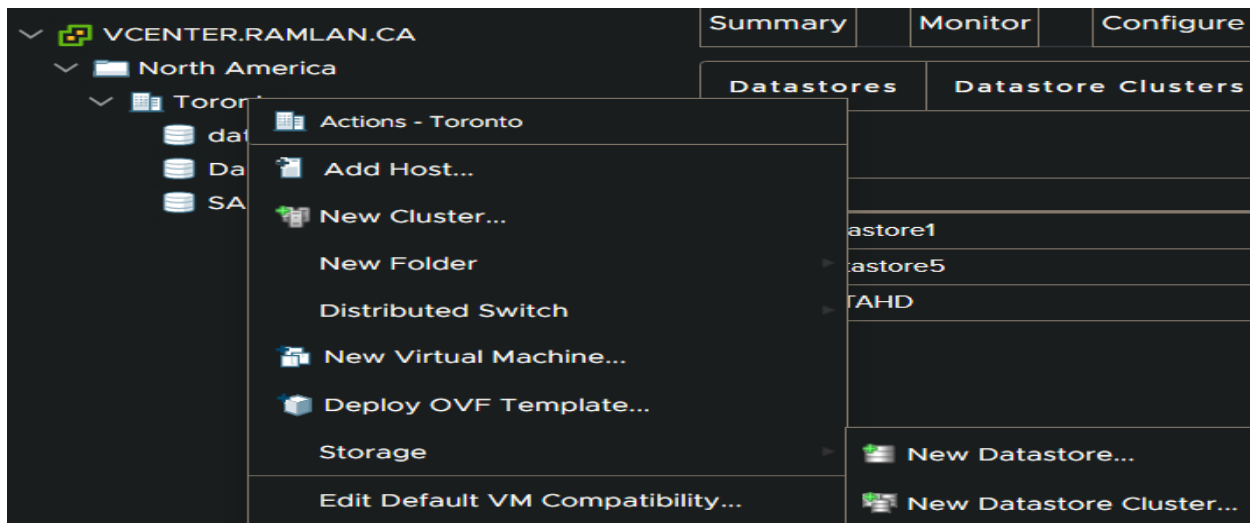
**Management Network**  
VLAN ID: --  
VMkernel Ports (1)  
vmk0 : 192.168.0.115

**VM Network**  
VLAN ID: --  
Virtual Machines (1)

**vMotion ESX2**  
VLAN ID: --  
VMkernel Ports (1)  
vmk1 : 192.168.0.118

**Physical Adapters**  
vmnic0 1000 Full

## Datastore Cluster:



### New Datastore Cluster

#### 1 Name and Location

#### 2 Storage DRS Automation

#### 3 Storage DRS Runtime Se...

#### 4 Select Clusters and Hosts

#### 5 Select Datastores

#### 6 Ready to Complete

#### Name and Location

Datastore cluster name:

Location:

☒ Turn ON Storage DRS

vSphere Storage DRS enables vCenter Server to manage datastores as an aggregate pool of storage resources.

vSphere Storage DRS also enables vCenter Server to manage the assignment of virtual machines to datastores, suggesting placement when virtual machines are created, migrated or cloned, and migrating running virtual machines to balance load and enforce placement rules.

CANCEL

BACK

NEXT

### New Datastore Cluster

#### 1 Name and Location

#### 2 Storage DRS Automation

#### 3 Storage DRS Runtime Se...

#### 4 Select Clusters and Hosts

#### 5 Select Datastores

#### 6 Ready to Complete

#### Storage DRS Automation

Storage automation level

☐ No Automation (Manual Mode)

vCenter Server will make migration recommendations for virtual machine storage, but will not perform automatic migrations.

☒ Fully Automated

Files will be migrated automatically to optimize resource usage.

Space balance automation level

File balance automation level

Thin provisioning enforcement automation level

Storage I/O enforcement automation level

Host evacuation automation level

Use cluster settings

Use cluster settings

Use cluster settings

Use cluster settings

Use cluster settings

CANCEL

BACK

NEXT



## New Datastore Cluster

- ✓ 1 Name and Location
- ✓ 2 Storage DRS Automation
- ✓ 3 Storage DRS Runtime Se...
- 4 Select Clusters and Hosts
- 5 Select Datastores
- 6 Ready to Complete

### Storage DRS Runtime Settings

I/O Metric inclusion

☒ Enable I/O metric for SDRS recommendations

Select this option if you want I/O metrics considered as a part of any SDRS recommendations or automated migrations in this data store cluster

I/O latency threshold

Dictates the minimum I/O latency for each datastore below which I/O load balancing moves are not considered.

5 ms  100 ms  15 ms

Space threshold

Runtime thresholds govern when Storage DRS performs or recommends migrations (based on the selected automation level).

☒ Utilized space

50 %  100 %  80 %

CANCEL

BACK

NEXT

## New Datastore Cluster

- ✓ 1 Name and Location
- ✓ 2 Storage DRS Automation
- ✓ 3 Storage DRS Runtime Se...
- ✓ 4 Select Clusters and Hosts
- 5 Select Datastores
- 6 Ready to Complete

### Select Clusters and Hosts

Filter Selected (1)

Clusters Standalone Hosts

| Filter                                     |               |                  |  |
|--|---------------|------------------|--|
| <input checked="" type="checkbox"/> Name ↑ | Available CPU | Available Memory |  |
| <input checked="" type="checkbox"/> Lab    | 15.05 GHz     | 7.26 GB          |  |
| 1 items                                    |               |                  |  |

CANCEL

BACK

NEXT

## New Datastore Cluster

- ✓ 1 Name and Location
- ✓ 2 Storage DRS Automation
- ✓ 3 Storage DRS Runtime Se...
- ✓ 4 Select Clusters and Hosts
- ✓ 5 Select Datastores
- 6 Ready to Complete

### Select Datastores

Show datastores connected to all hosts ▾

Filter Selected (1)

| Filter   |   |           |
|--|---|-----------|
| <input checked="" type="checkbox"/> Name ↑     | Host Connection Status                                  | Capacity  |
| <input checked="" type="checkbox"/> Datastore5 | <input checked="" type="checkbox"/> All Hosts Connected | 999.75 GB |
| 1 items  |   |           |

CANCEL

BACK

NEXT

## New Datastore Cluster

- ✓ 1 Name and Location
- ✓ 2 Storage DRS Automation
- ✓ 3 Storage DRS Runtime Se...
- ✓ 4 Select Clusters and Hosts
- ✓ 5 Select Datastores
- 6 Ready to Complete

### Ready to Complete

#### Name and Location

Datastore cluster name: NA DatastoreCluster

Storage DRS: Enabled

#### Storage DRS Automation

Cluster automation level: Fully Automated

Space balance automation level: Use cluster settings

I/O balance automation level: Use cluster settings

Rule enforcement automation level: Use cluster settings

Policy enforcement automation level: Use cluster settings

VM evacuation automation level: Use cluster settings

#### Storage DRS Runtime Settings

Storage I/O load balancing: Enabled

Space threshold: 80 % utilized space per datastore

I/O latency threshold: 15 ms

#### Datastores

| Name       | Capacity  | Free Space | Type   |
|------------|-----------|------------|--------|
| Datastore5 | 999.75 GB | 997.33 GB  | VMFS 6 |

CANCEL BACK FINISH

vm vSphere Client Menu Search in all environments Administrator@RAMLAN.CA

Toronto ACTIONS

Summary Monitor Configure Permissions Hosts & Clusters VMs Datastores Networks Updates

Datastores Datastore Clusters Datastore Folders

| Name       | Status   | Type   | Datastore Clu... | Capacity  | Free      |
|------------|----------|--------|------------------|-----------|-----------|
| datastore1 | ✓ Normal | VMFS 6 |                  | 104.75 GB | 69.18 GB  |
| Datastore5 | ✓ Normal | VMFS 6 | NA Datast...     | 999.75 GB | 997.33 GB |
| SATAHD     | ✓ Normal | VMFS 6 |                  | 465.5 GB  | 464.09 GB |

Export 3 items

## Roles & Privileges & Permissions:

From here you can create new roles and add the privileges/permissions user will get on vCenter to manage Host within the environment.

vm vSphere Client Menu Search in all environments

Administration

- Access Control
  - Roles
    - Global Permissions
- Licensing
  - Licenses
- Solutions
  - Client Plugins
  - vCenter Server Extensions
- Deployment
  - System Configuration
  - Customer Experience Improvement P...
- Support
  - Upload File to Service Request
- Single Sign On
  - Users and Groups
  - Configuration
- Certificates
  - Certificate Management

## Roles

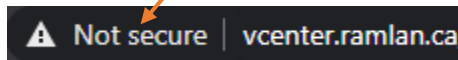
Roles provider: VSPHERE.LOCAL

|   | DESCRIPTION        | USAGE | PRIVILEGES |
|---|--------------------|-------|------------|
| Administrator                                   | Full access rights |       |            |
| Read-only                                       |                    |       |            |
| No access                                       |                    |       |            |
| AppdApplianceUser                               |                    |       |            |
| AutoUpdateUser                                  |                    |       |            |
| Content library administrator (sample)          |                    |       |            |
| Content Library Registry administrator (sample) |                    |       |            |
| Datastore consumer (sample)                     |                    |       |            |
| Network administrator (sample)                  |                    |       |            |
| No cryptography administrator                   |                    |       |            |
| No Trusted Infrastructure administrator         |                    |       |            |
| NSX Administrator                               |                    |       |            |
| NSX Auditor                                     |                    |       |            |
| NSX VI Administrator                            |                    |       |            |
| Resource pool administrator (sample)            |                    |       |            |
| SupervisorService Cluster Operator              |                    |       |            |
| SupervisorService Operator                      |                    |       |            |
| SupervisorService RootFolder Operator           |                    |       |            |
| Sync Users                                      |                    |       |            |

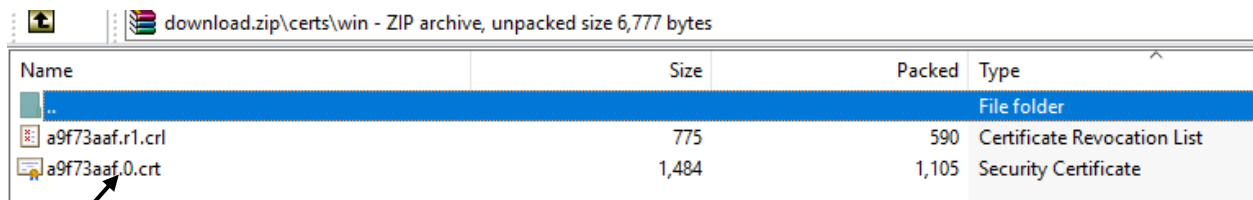
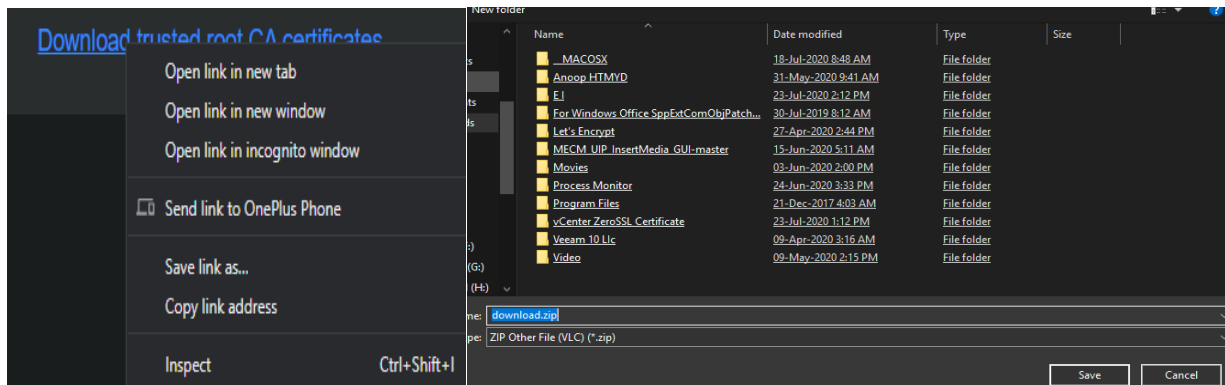
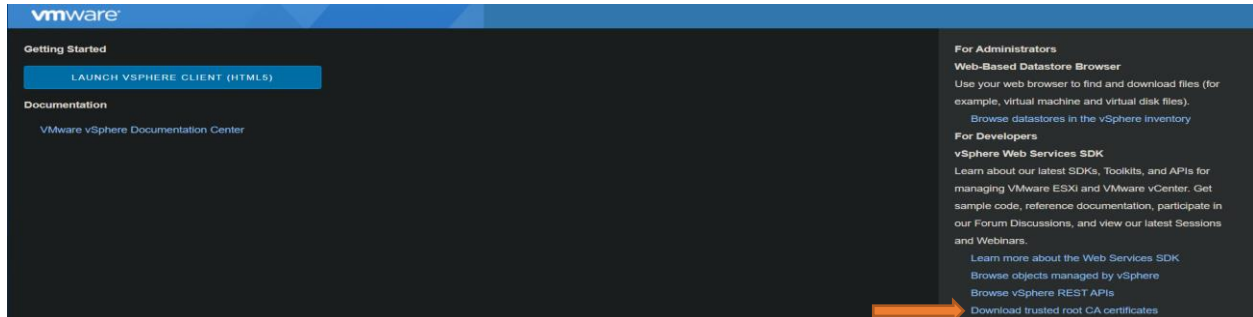
32 items

## Install Root Certificate

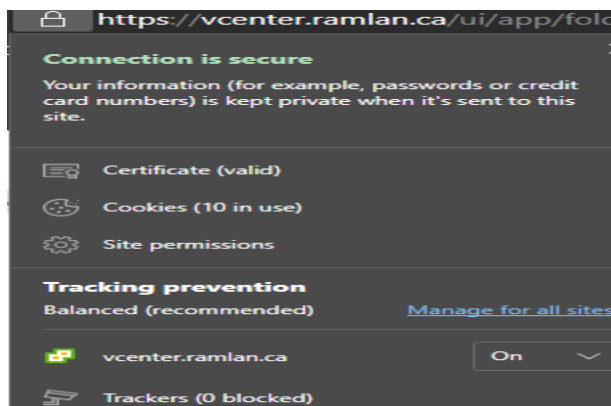
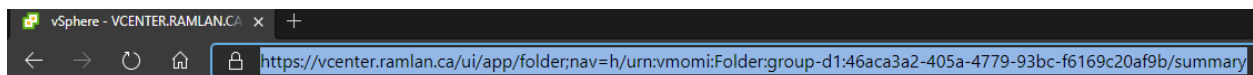
Fix https not secure error: Check this link <https://kb.vmware.com/s/article/2108294>



<https://vcenter.ramlan.ca>

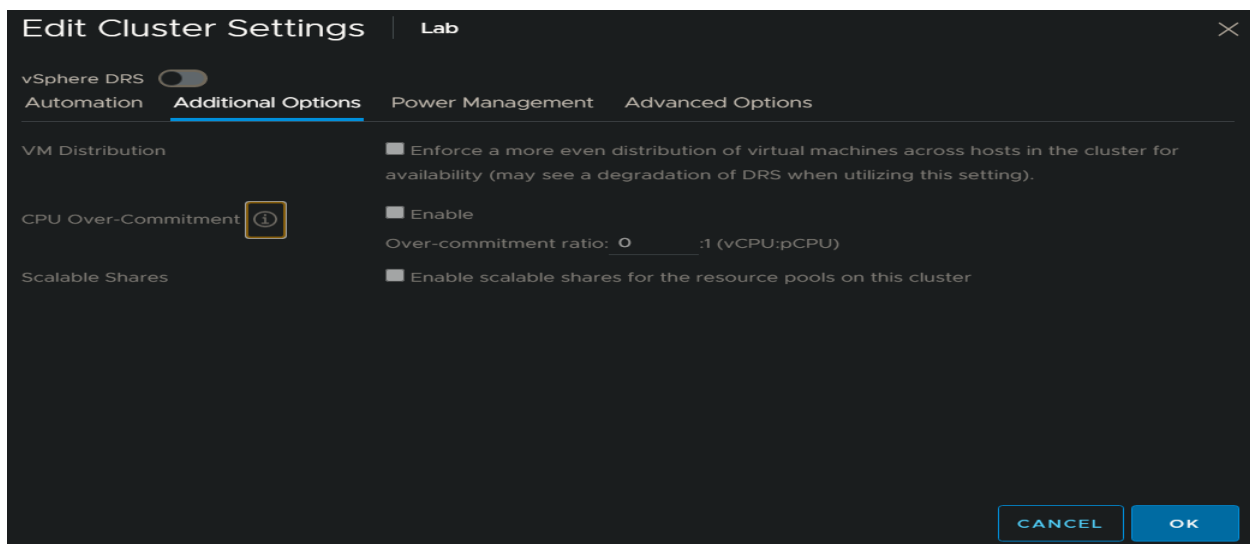
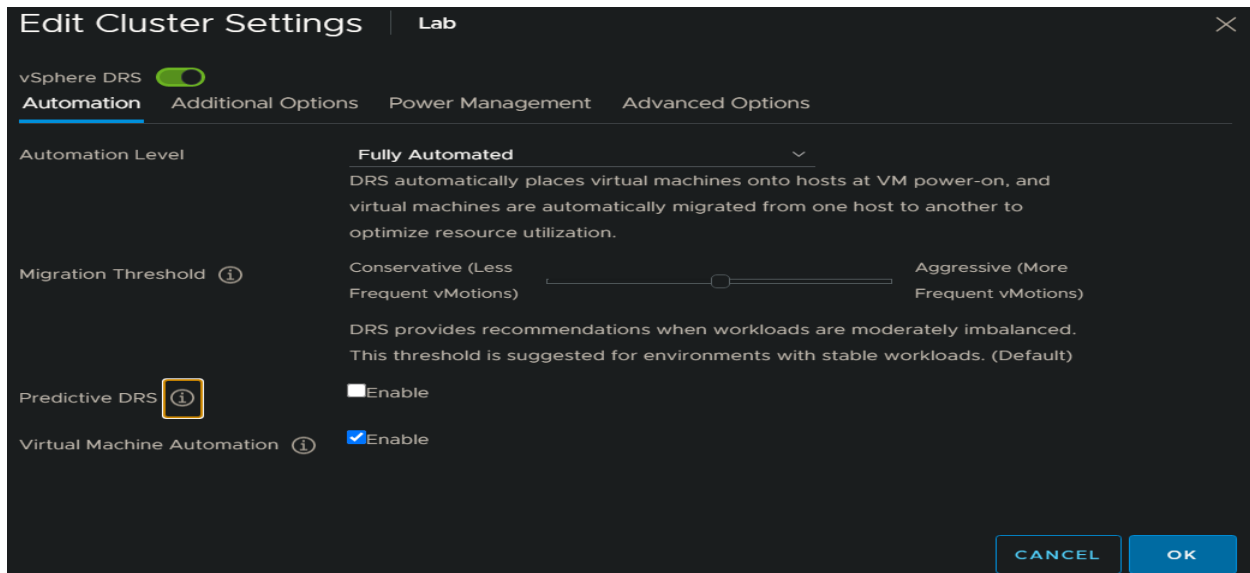
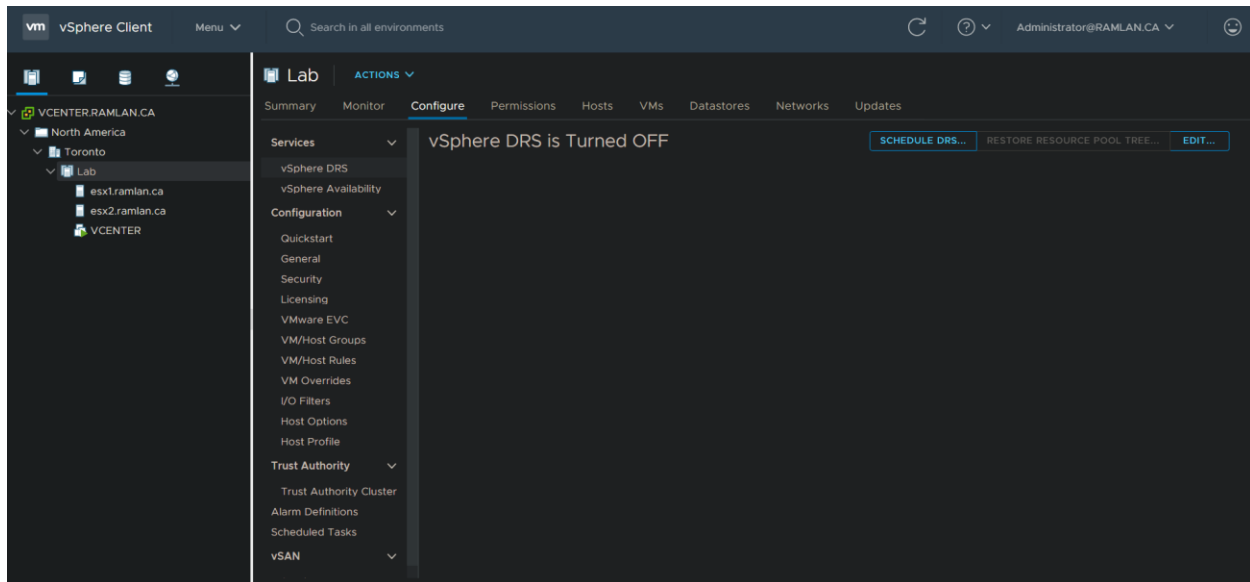


Open MMC – Certificate – Computer Account – Certificates – Trusted Root Certificate – Import above .crt. Logout and login to vCenter – the error should disappear.



## Enable DRS & HA

You can enable DRS and HA for the cluster. Here are the details. There is a lot you can play around.



Edit Cluster Settings

Lab

vSphere DRS

AutomationAdditional OptionsPower ManagementAdvanced Options

DPM

Automation Level

Manual

DPM Threshold

Conservative (Less Frequent vMotions)

Aggressive (More Frequent vMotions)

vCenter Server will apply power-on recommendations produced to meet vSphere HA requirements or user-specified capacity requirements. Power-on recommendations will also be applied if host resource utilization becomes higher than the target utilization range. Power-off recommendations will be applied if host resource utilization becomes very low in comparison to the target utilization range.

CANCEL

OK

Edit Cluster Settings

Lab

vSphere DRS

AutomationAdditional OptionsPower ManagementAdvanced Options

Configuration Parameters

+ Add

✗ Delete

| Option | Value |
|--------|-------|
|--------|-------|

No items to display

CANCEL

OK

vSphere DRS is Turned ON

SCHEDULE DRS...RESTORE RESOURCE POOL TREE...EDIT...

|                      |                     |
|----------------------|---------------------|
| > DRS Automation     | Fully Automated     |
| > Additional Options | Expand for policies |
| > Power Management   | Off                 |
| > Advanced Options   | None                |

vSphere HA is Turned OFF

EDIT...

Runtime information for vSphere HA is reported under vSphere HA Monitoring

Proactive HA is Turned OFF

EDIT...

Failure conditions and responses

| Failure                          | Response | Details  |
|----------------------------------|----------|--|
| Host failure                     | Disabled | vSphere HA disabled. VMs are not restarted in the event of a host failure. |
| Proactive HA                     | Disabled | Proactive HA is not enabled.   |
| Host Isolation                   | Disabled | vSphere HA disabled. VMs are not restarted in the event of a host failure. |
| Detected with Remote System Loss | Disabled | vSphere HA disabled. VMs are not restarted in the                          |

> Admission Control

Expand for details

> Datastore for Heartbeating

Expand for details


> Advanced Options

None

## Edit Cluster Settings

Lab



vSphere HA 

### Failures and responses

Admission Control

Heartbeat Datastores

Advanced Options

You can configure how vSphere HA responds to the failure conditions on this cluster. The following failure conditions are supported: host, host isolation, VM component protection (datastore with PDL and APD), VM and application.

Enable Host Monitoring  

|                               |   |
|-------------------------------|---|
| > Host Failure Response       | Restart VMs ▾   |
| > Response for Host Isolation | Disabled ▾  |
| > Datastore with PDL          | Power off and restart VMs ▾                               |
| > Datastore with APD          | Power off and restart VMs - Conservative restart policy ▾ |
| > VM Monitoring               | Disabled ▾  |


CANCEL

OK

## Edit Cluster Settings

Lab



vSphere HA 

### Failures and responses

Admission Control

Heartbeat Datastores

Advanced Options

Admission control is a policy used by vSphere HA to ensure failover capacity within a cluster. Raising the number of potential host failures will increase the availability constraints and capacity reserved.

Host failures cluster tolerates

1

Maximum is one less than number of hosts in cluster.

Define host failover capacity by

Cluster resource Percentage ▾

☐ Override calculated failover capacity.

Reserved failover CPU capacity: 0 % CPU

Reserved failover Memory capacity: 0 % Memory

Performance degradation VMs tolerate

100 %

Percentage of performance degradation the VMs in the cluster are allowed to tolerate during a failure. 0% - Raises a warning if there is insufficient failover capacity to guarantee the same performance after VMs restart. 100% - Warning is disabled.

CANCEL

OK

Edit Cluster Settings

Lab

✕

vSphere HA

Failures and responses

Admission Control

Heartbeat Datastores

Advanced Options

vSphere HA uses datastores to monitor hosts and virtual machines when the HA network has failed. vCenter Server selects 2 datastores for each host using the policy and datastore preferences specified below.

Heartbeat datastore selection policy:

☐

 Automatically select datastores accessible from the hosts




☐

 Use datastores only from the specified list

☒

 Use datastores from the specified list and complement automatically if needed

Available heartbeat datastores

|   | Name   | Datastore Cluster   | Hosts Mounting Datastore ↓ |
|---|--|---|----------------------------|
|  |  Datastore5 |  NA DatastoreCluster | 2                          |

CANCEL

OK

Edit Cluster Settings

Lab

✕

vSphere HA

Failures and responses

Admission Control

Heartbeat Datastores

Advanced Options

You can set advanced options that affect the behavior of your vSphere HA cluster.

+

 Add 

×

 Delete

| Option | Value |
|--------|-------|
|--------|-------|

No items to display

CANCEL

OK

vSphere HA is Turned ON

Runtime information for vSphere HA is reported under [vSphere HA Monitoring](#)

Proactive HA is Turned OFF

Failure conditions and responses

| Failure                              | Response                    | Details  |
|--------------------------------------|-----------------------------|--|
| Host failure                         | ✔ Restart VMs               | Restart VMs using VM restart priority ordering.              |
| Proactive HA                         | ❗ Disabled                  | Proactive HA is not enabled.                                 |
| Host Isolation                       | ❗ Disabled                  | VMs on isolated hosts will remain powered on.                |
| Datastore with Permanent Device Loss | ✔ Power off and restart VMs | Datastore protection enabled. Always attempt to restart VMs. |
|                                      |                             | Datastore protection enabled. Ensure resources are           |

> Admission Control

Expand for details

> Datastore for Heartbeating

Expand for details

> Advanced Options

None

With this we have completed some of the post configuration on vCenter Server 7 Appliance. I will add more blogs later when, I get time to explore more.

Thanks

**Ram Lan**

**24<sup>th</sup> July 2020**