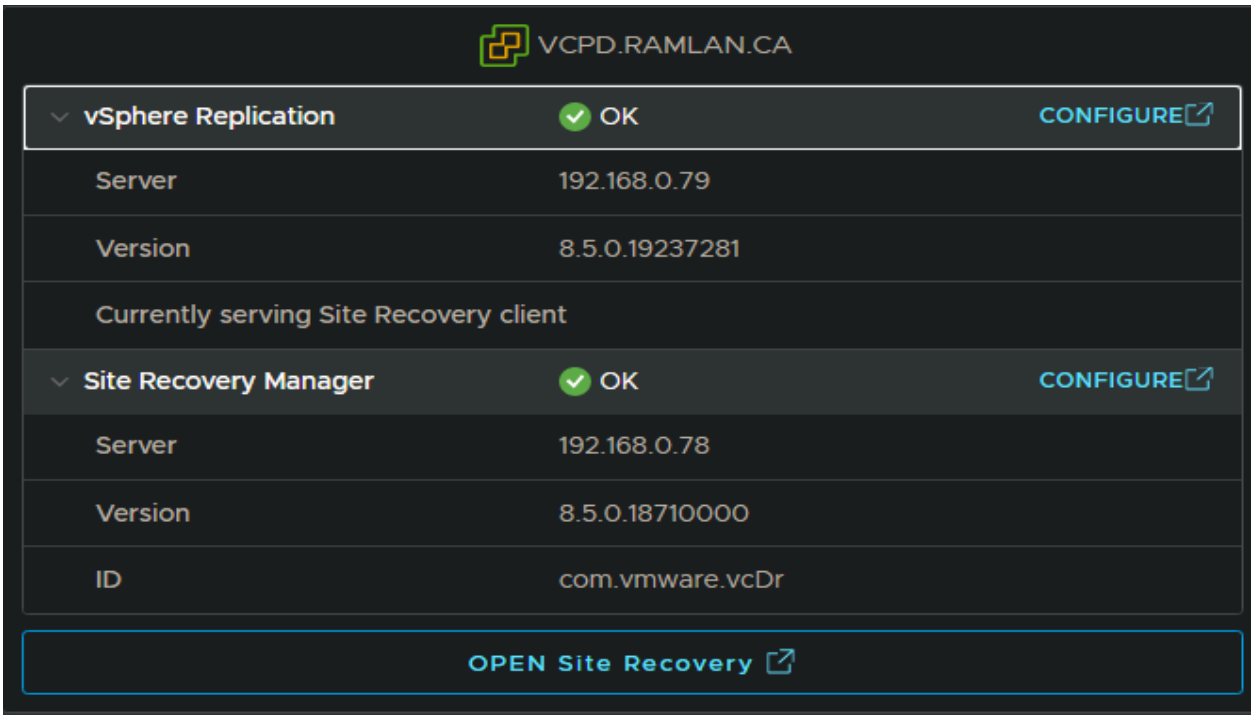
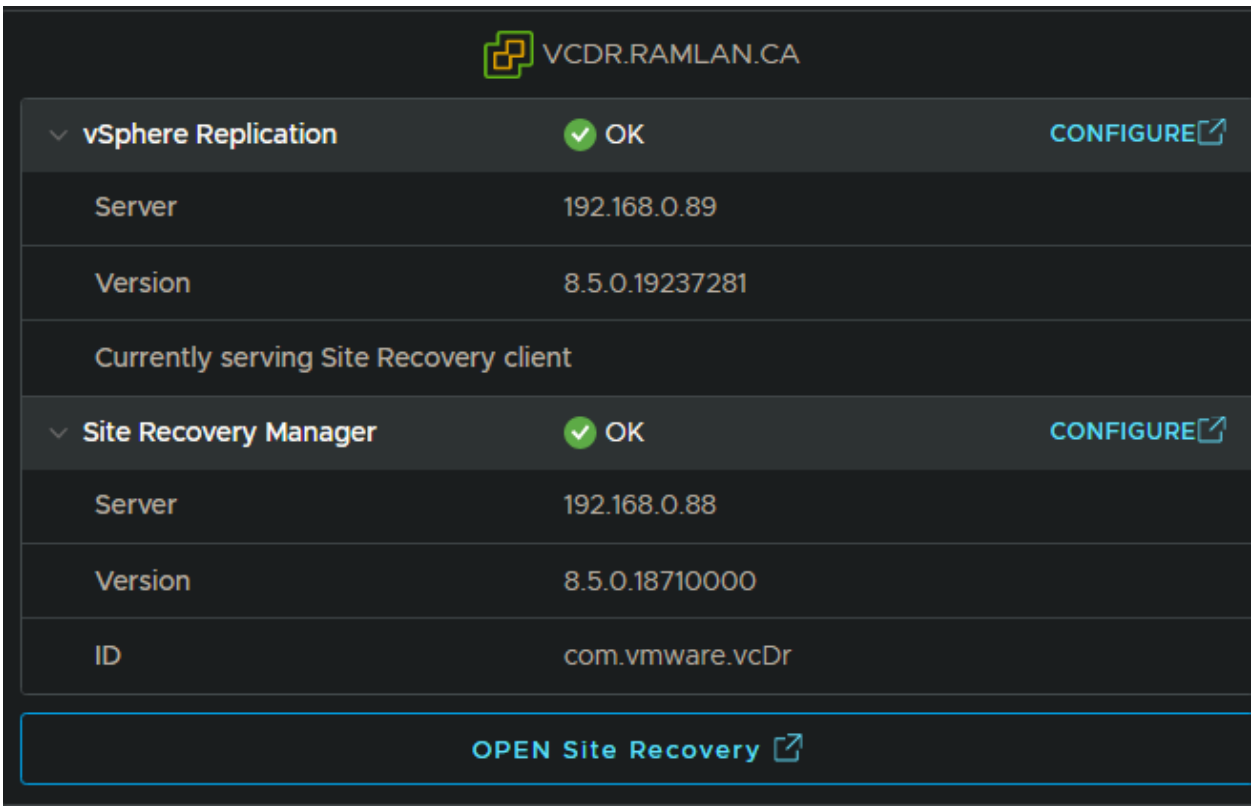
SITE RECOVERY MANAGER POST CONFIGURATION – PART 2

In this blog, I am going to breakdown various configurations we have to complete on SRM, REP and then perform test VM failover.

The purpose of this exercise is to make sure, if production data center goes down the recovery site will take over all the VM and the business will function as usual without any delay or downtime. This is what SRM does.

Make sure your Site Recovery is running at both the sites without any issue. All should be GREEN.

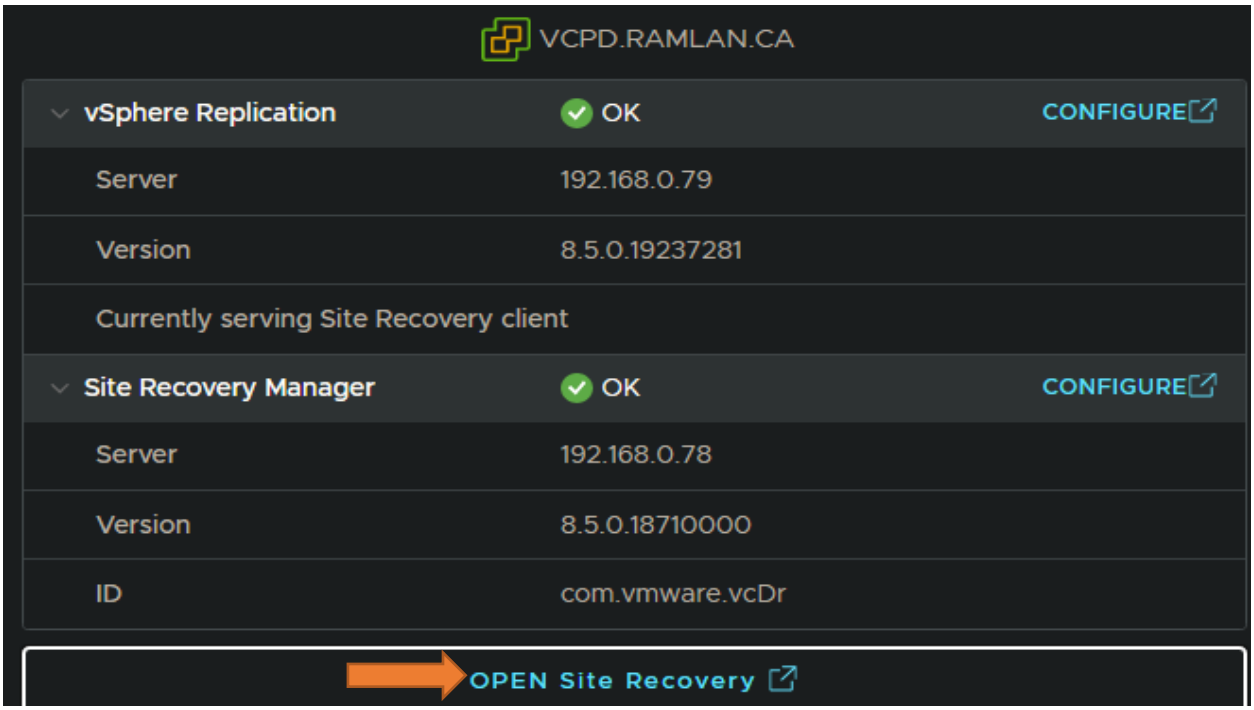


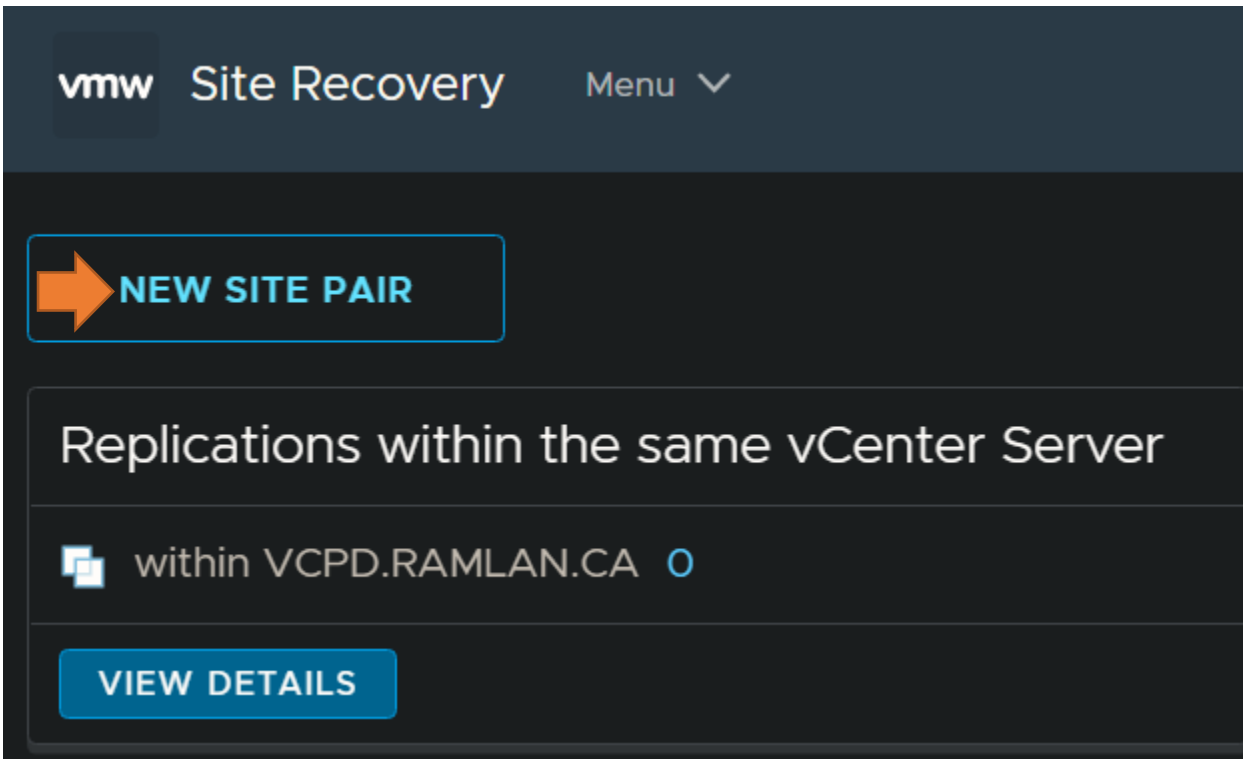


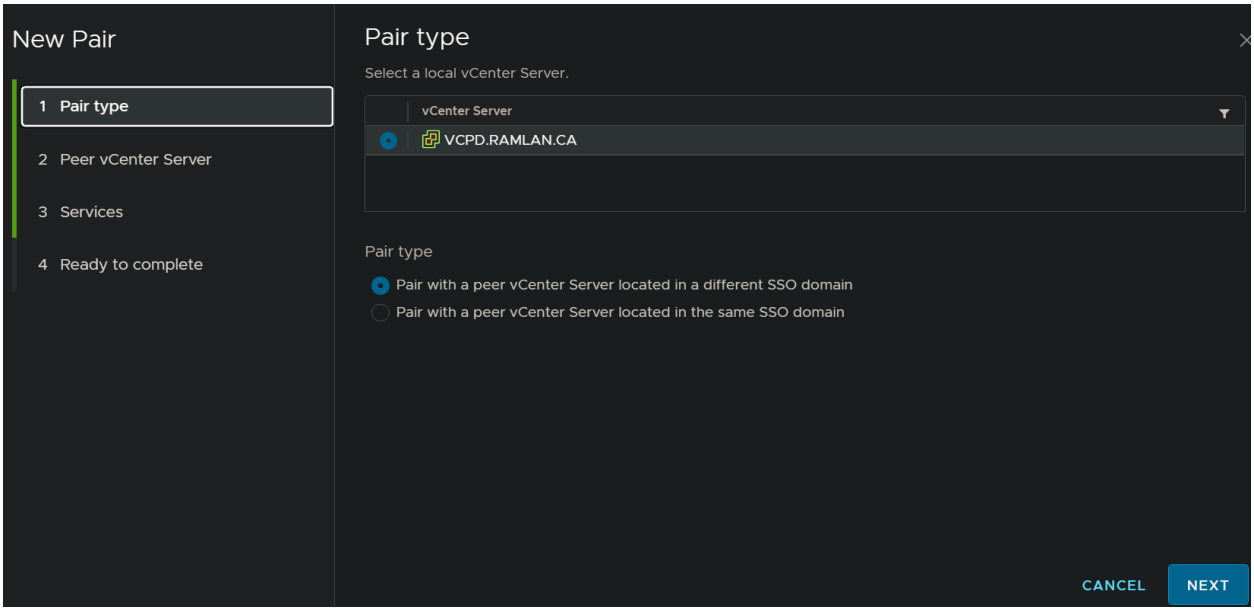
1. Site Paring 2. Network Mapping 3. Folder Mapping 4. Resource Mapping 5. Storage Policy Mapping 6. Placeholder Datastore	Network Mappings Folder Mappings Resource Mappings Storage Policy Mappings Placeholder Datastores

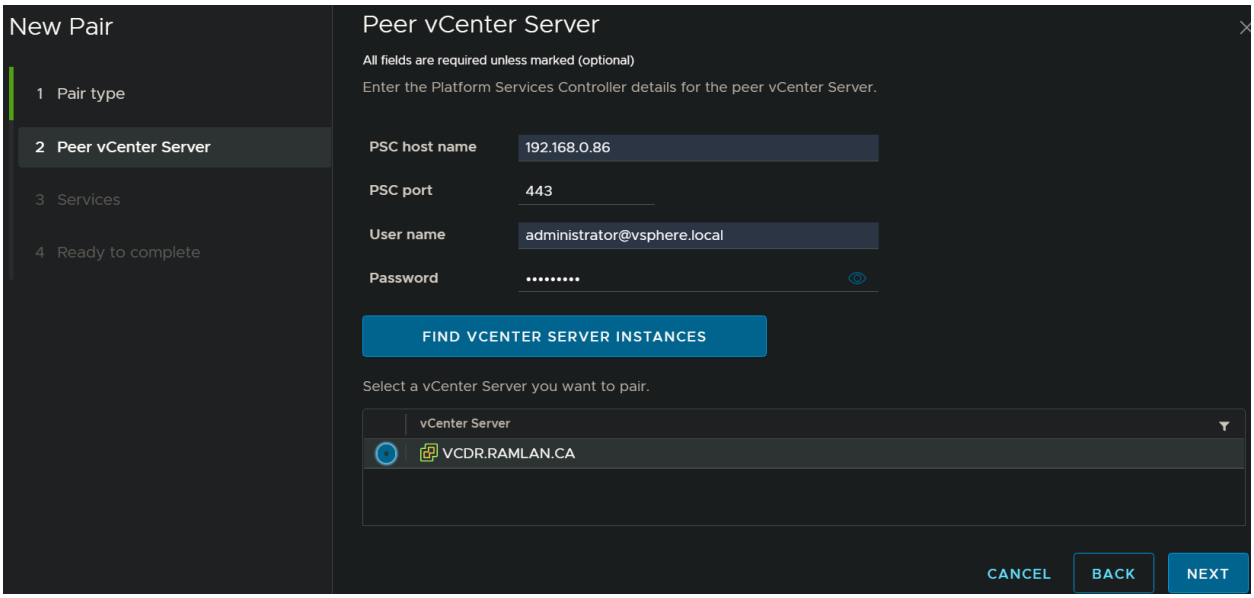
SITE PARING:

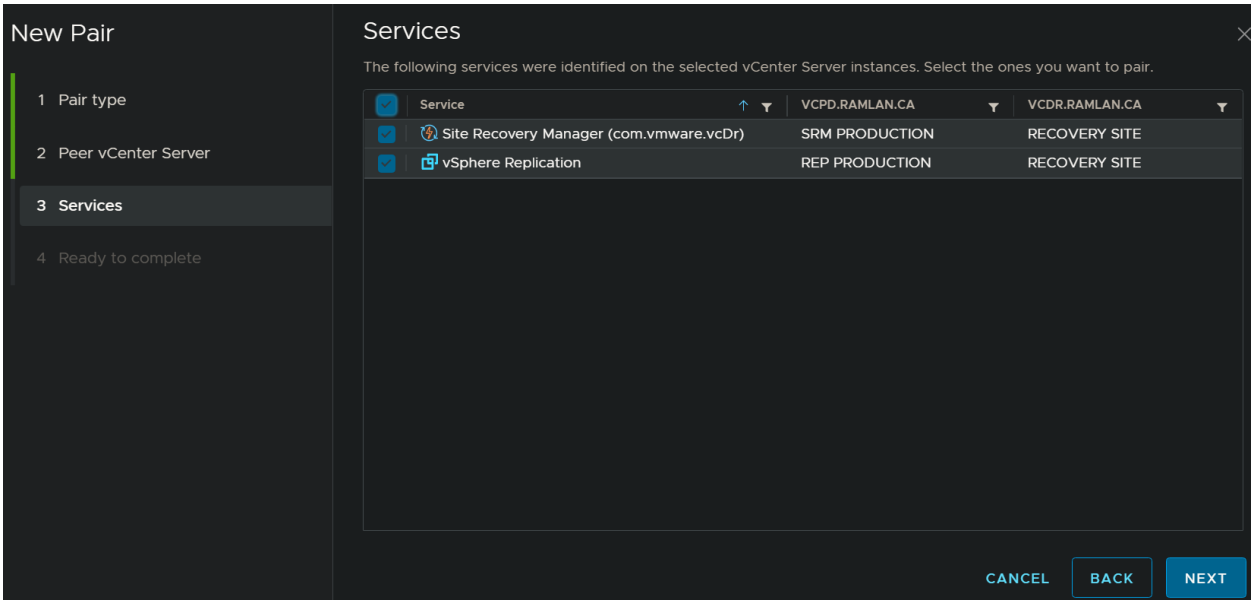
Click Open Site Recovery – New Site Pair

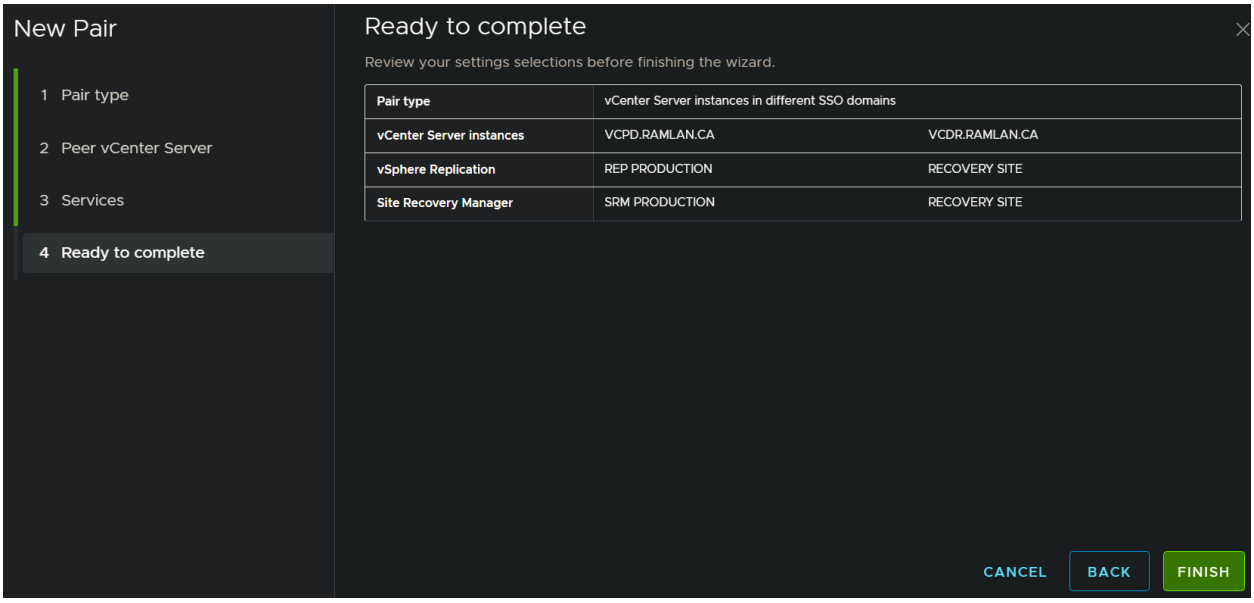




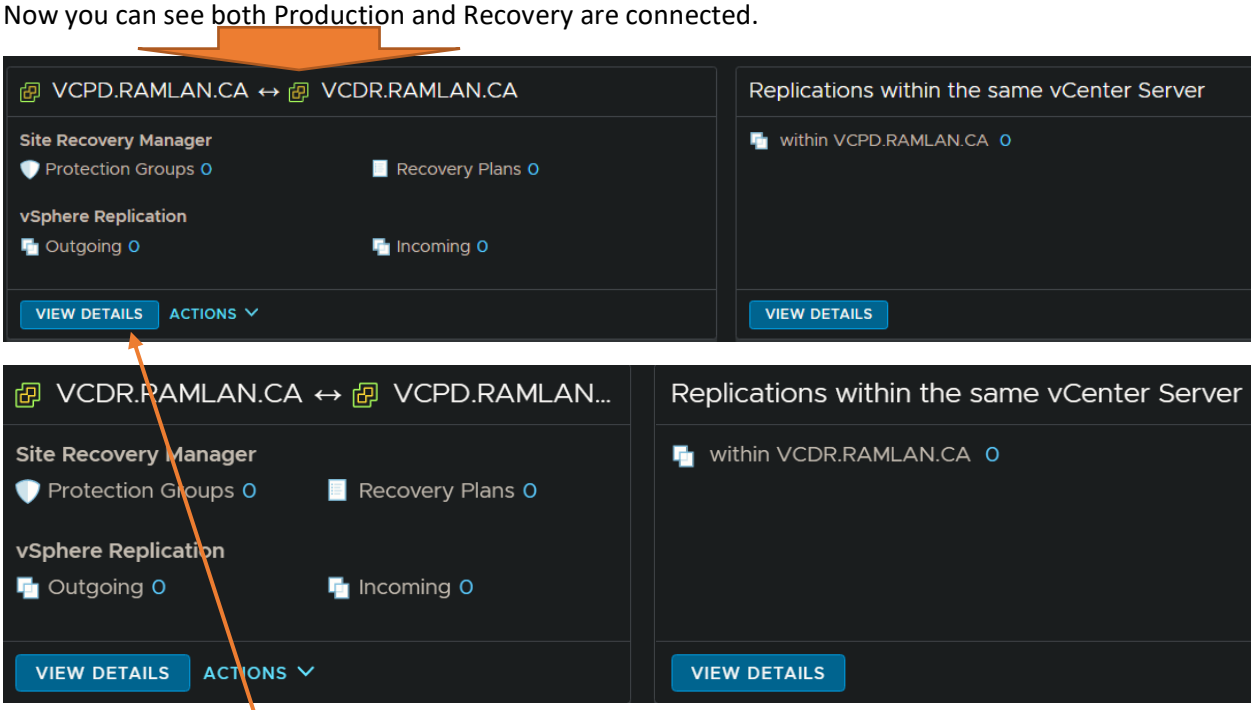

New Pair
1 Pair type
2 Peer vCenter Server
3 Services
4 Ready to complete
Pair type
Select a local vCenter Server.
vCenter Server
VCPD.RAMLAN.CA
Pair type
Pair with a peer vCenter Server located in a different SSO domain
Pair with a peer vCenter Server located in the same SSO domain
CANCEL
NEXT


New Pair
1 Pair type
2 Peer vCenter Server
3 Services
4 Ready to complete
Peer vCenter Server
All fields are required unless marked (optional)
Enter the Platform Services Controller details for the peer vCenter Server.
PSC host name
192.168.0.86
PSC port
443
User name
administrator@vsphere.local
Password
FIND VCENTER SERVER INSTANCES
Select a vCenter Server you want to pair.
vCenter Server
VCDR.RAMLAN.CA
CANCEL
BACK
NEXT

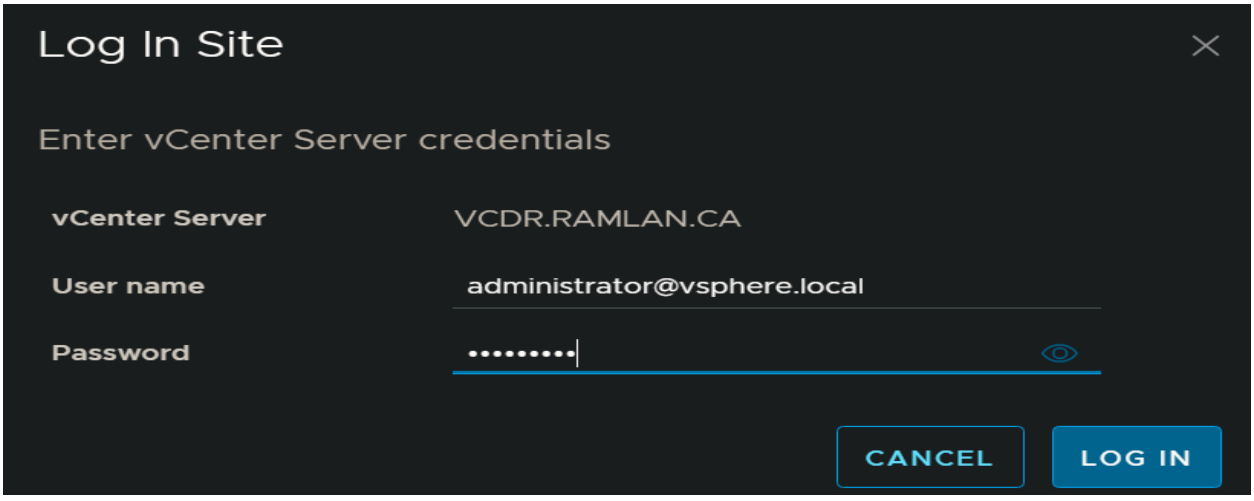

New Pair
1 Pair type
2 Peer vCenter Server
3 Services
4 Ready to complete
Services
The following services were identified on the selected vCenter Server instances. Select the ones you want to pair.
Service
VCPD.RAMLAN.CA
VCDR.RAMLAN.CA
Site Recovery Manager (com.vmware.vcDr)
SRM PRODUCTION
RECOVERY SITE
vSphere Replication
REP PRODUCTION
RECOVERY SITE
CANCEL
BACK
NEXT



Now you can see both Production and Recovery are connected.

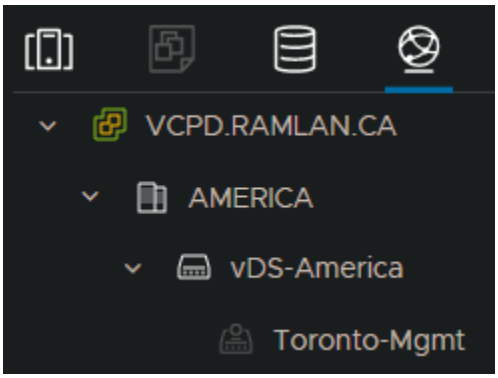


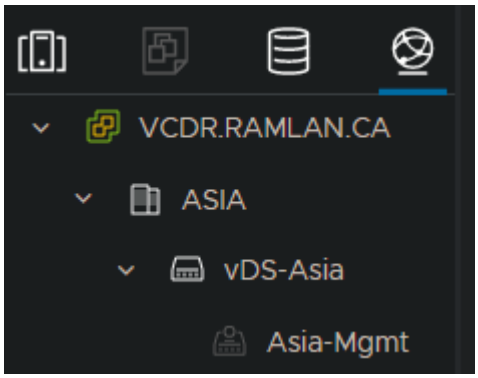
When you click View Details – Summary – You will be prompted to enter credentials for Recovery site.

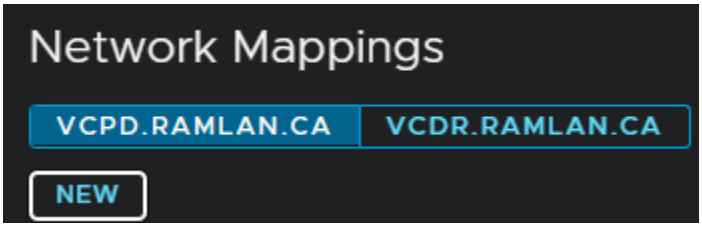


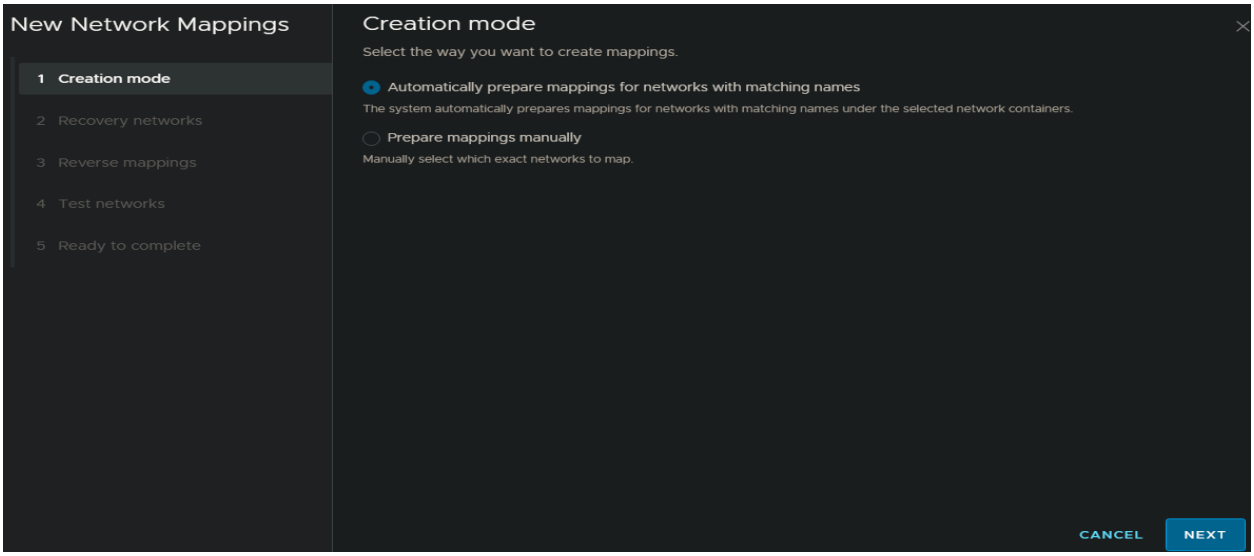
NETWORK MAPPING:

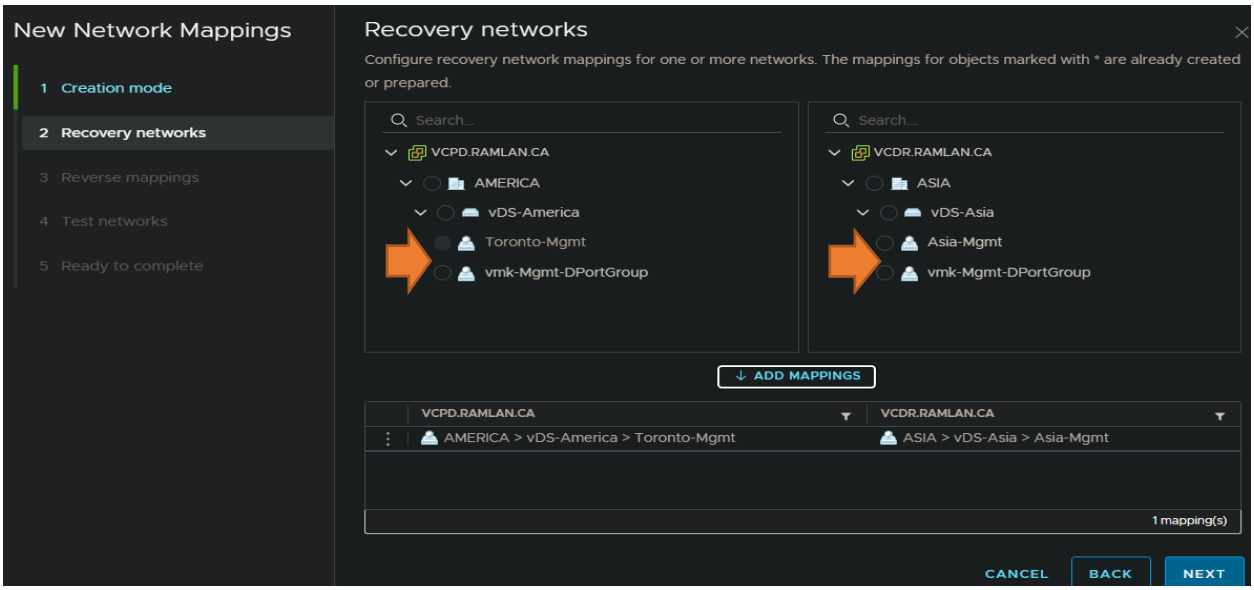
For the lab, I did create Port Group on both Production and Recovery vCenter. They are called Toronto-Mgmt and Asia-Mgmt. I will be using this port group for network mapping.

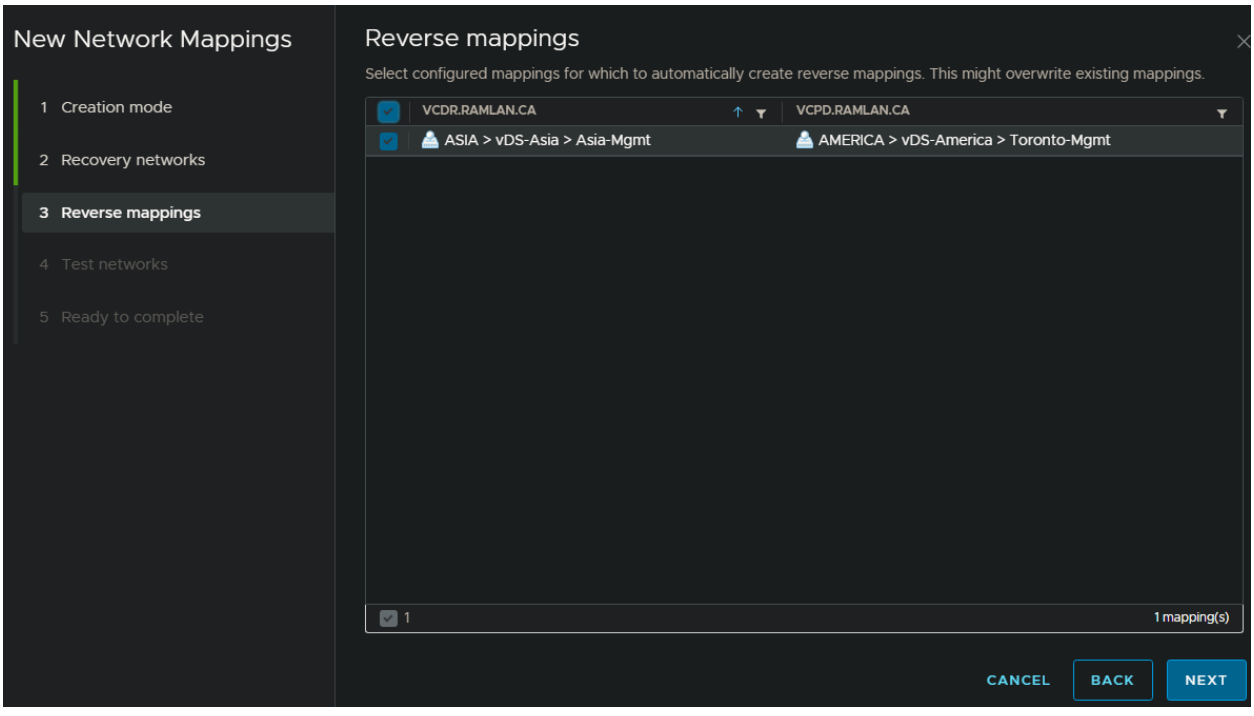


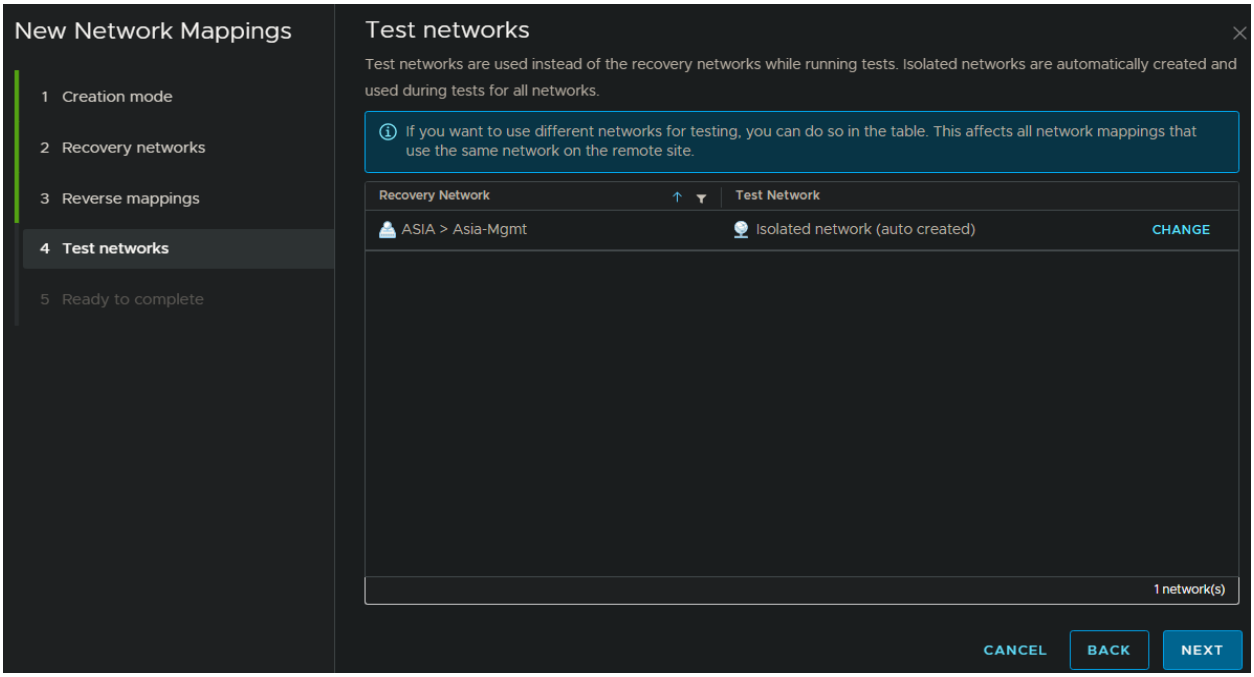


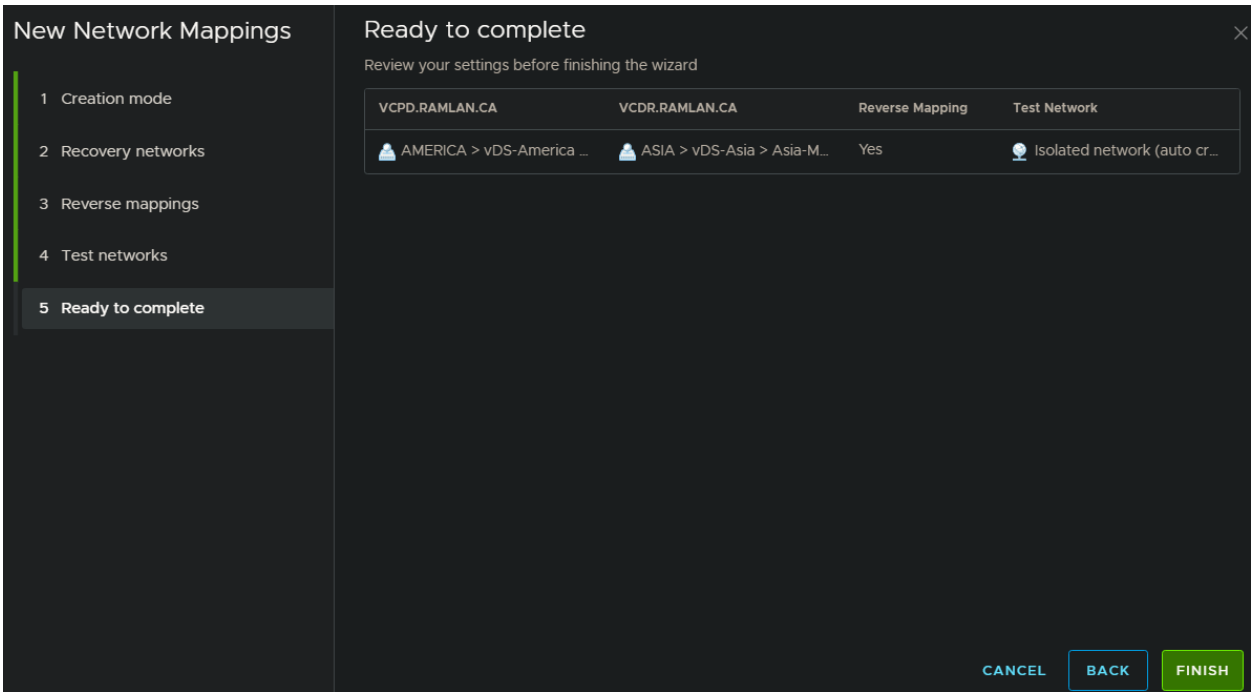



New Network Mappings
1 Creation mode
2 Recovery networks
3 Reverse mappings
4 Test networks
5 Ready to complete
Creation mode
Select the way you want to create mappings.
Automatically prepare mappings for networks with matching names
The system automatically prepares mappings for networks with matching names under the selected network containers.
Prepare mappings manually
Manually select which exact networks to map.
CANCEL
NEXT

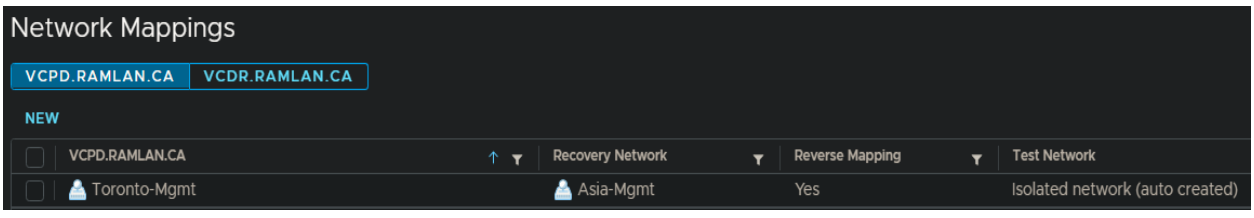

New Network Mappings
1 Creation mode
2 Recovery networks
3 Reverse mappings
4 Test networks
5 Ready to complete
Recovery networks
Configure recovery network mappings for one or more networks. The mappings for objects marked with * are already created or prepared.
Search...
VCPD.RAMLAN.CA
AMERICA
vDS-America
Toronto-Mgmt
vmk-Mgmt-DPortGroup
Search...
VCDR.RAMLAN.CA
ASIA
vDS-Asia
Asia-Mgmt
vmk-Mgmt-DPortGroup
ADD MAPPINGS
VCPD.RAMLAN.CA
VCDR.RAMLAN.CA
AMERICA > vDS-America > Toronto-Mgmt
ASIA > vDS-Asia > Asia-Mgmt
1 mapping(s)
CANCEL
BACK
NEXT

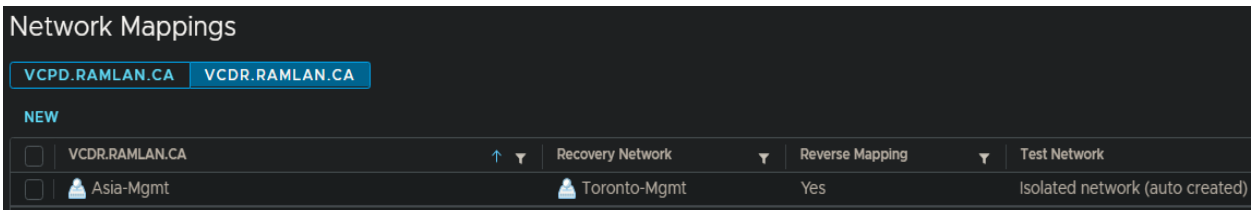

New Network Mappings
1 Creation mode
2 Recovery networks
3 Reverse mappings
4 Test networks
5 Ready to complete
Reverse mappings
Select configured mappings for which to automatically create reverse mappings. This might overwrite existing mappings.
VCDR.RAMLAN.CA
VCPD.RAMLAN.CA
ASIA > vDS-Asia > Asia-Mgmt
AMERICA > vDS-America > Toronto-Mgmt
1
1 mapping(s)
CANCEL
BACK
NEXT





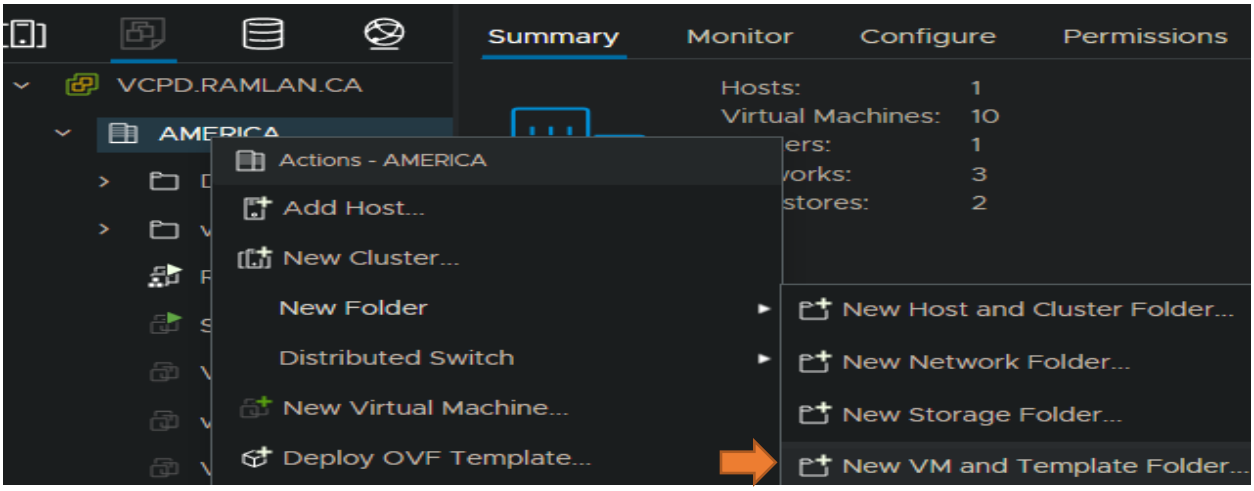
Below are my network mappings between both the sites.

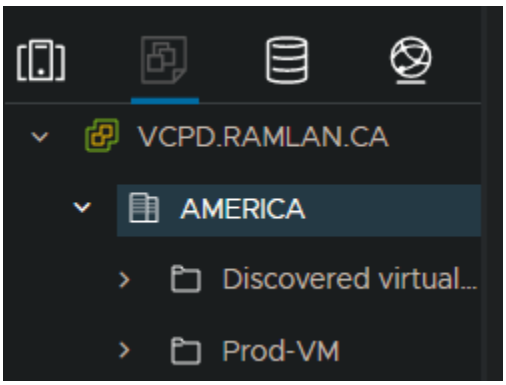


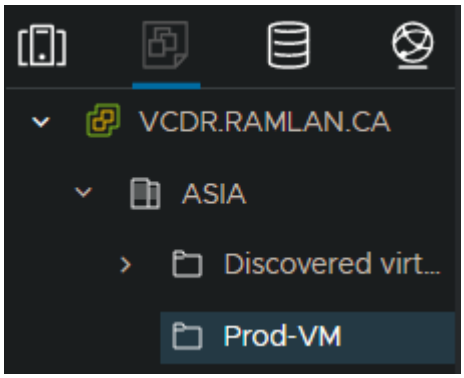


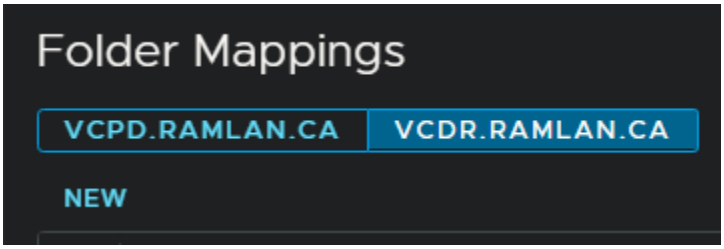
FOLDER MAPPING:

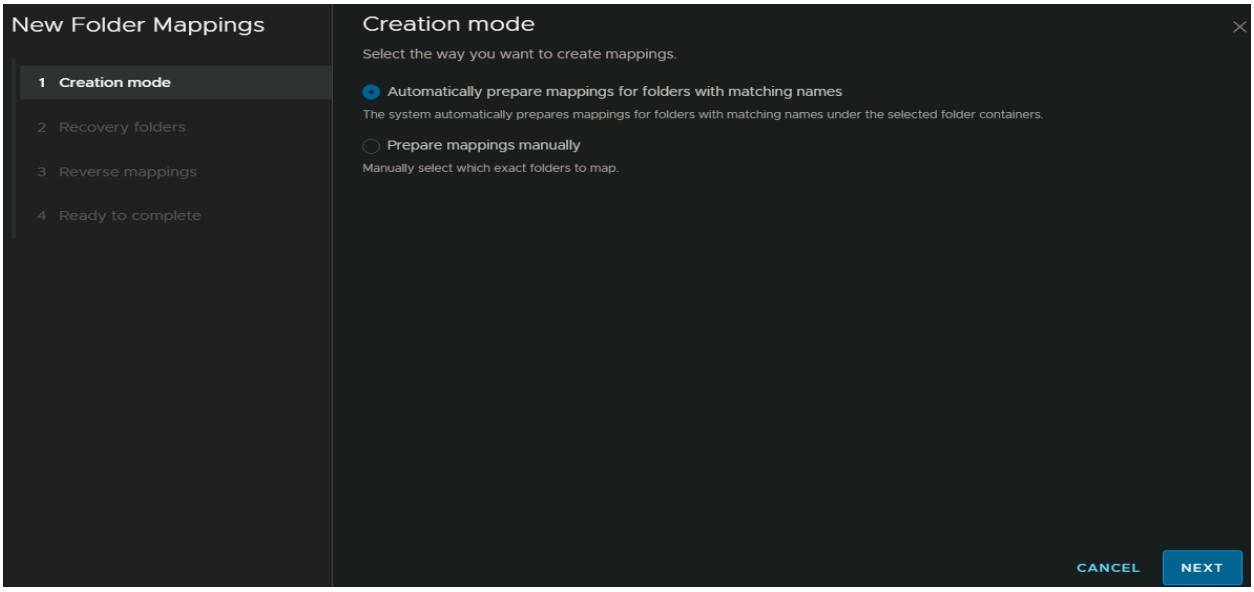
I did not create any folders before on both Production and Recovery vCenter. I will do it now on the production site.

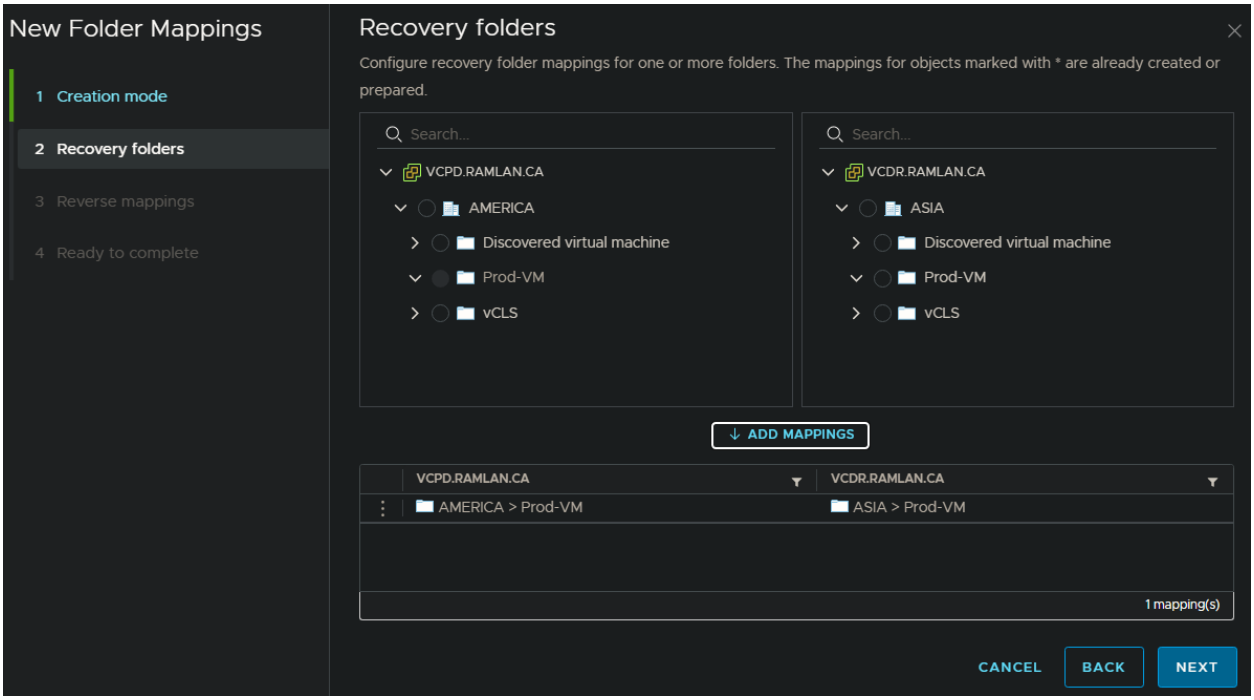


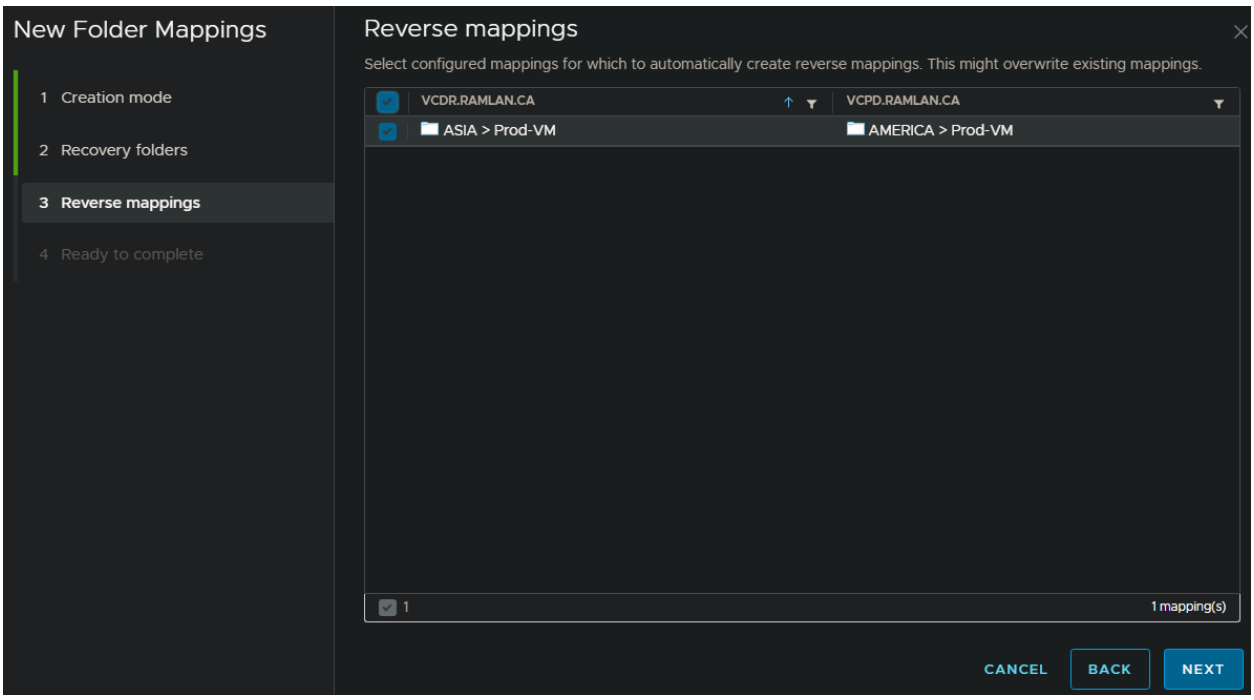




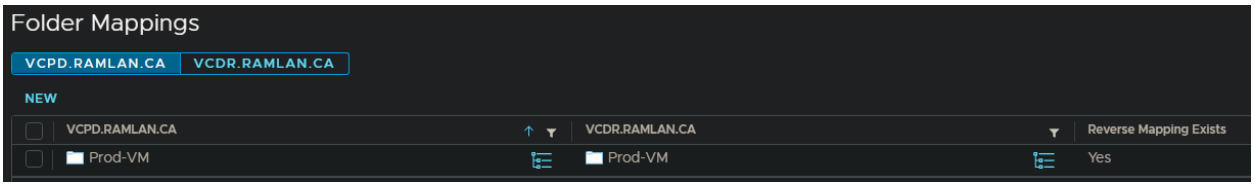


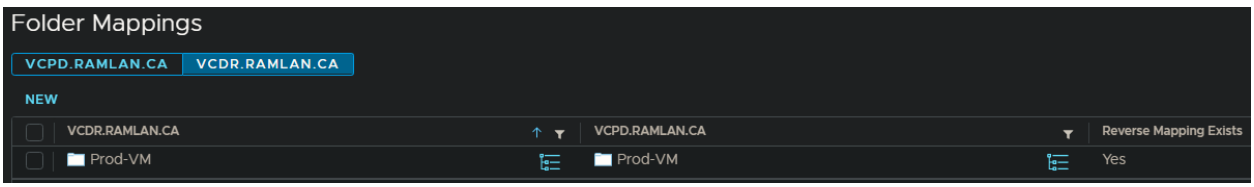




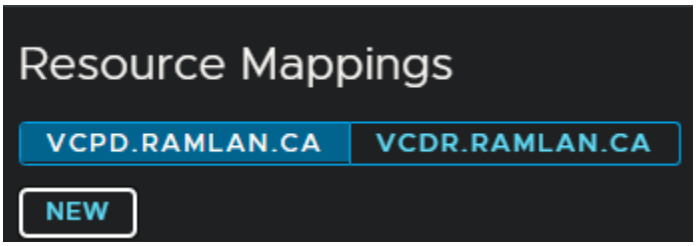


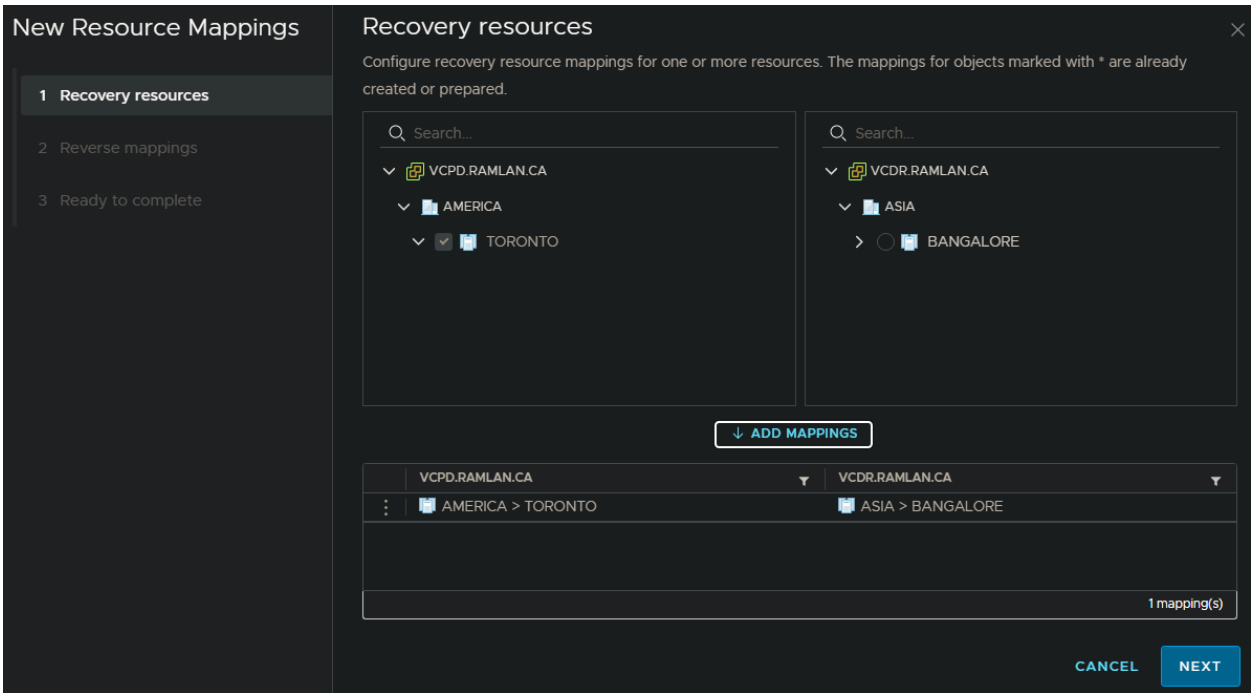
Below are my folder mappings between both the sites.

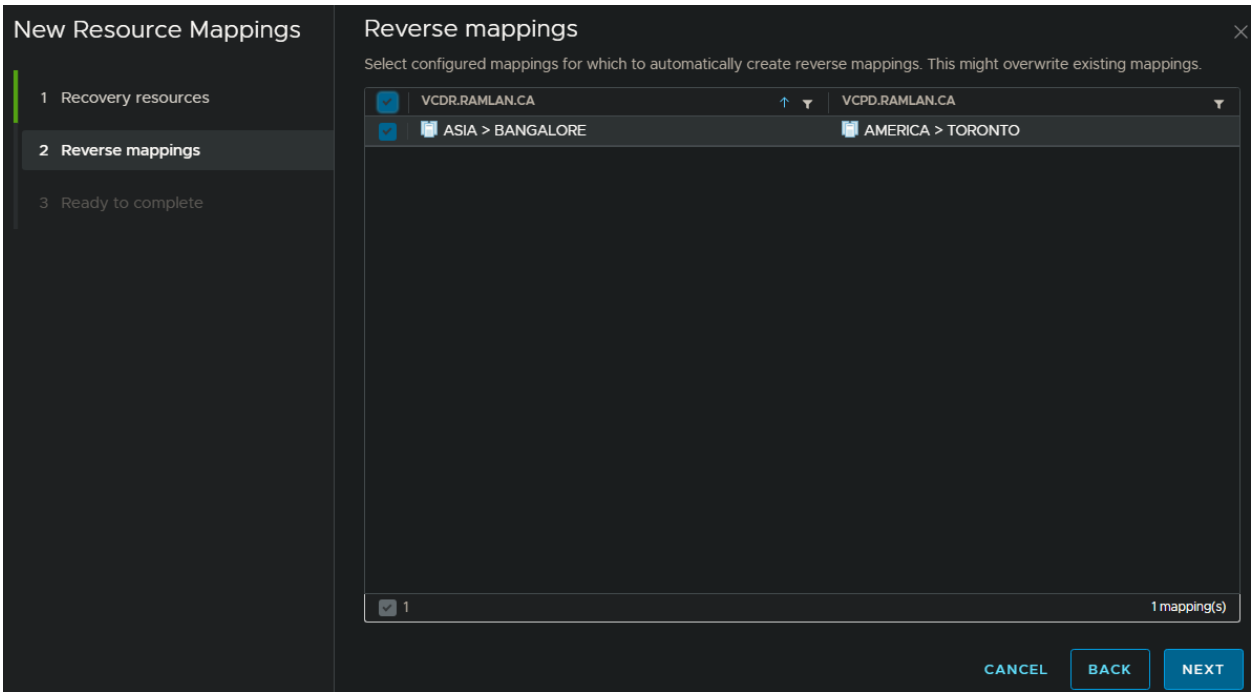


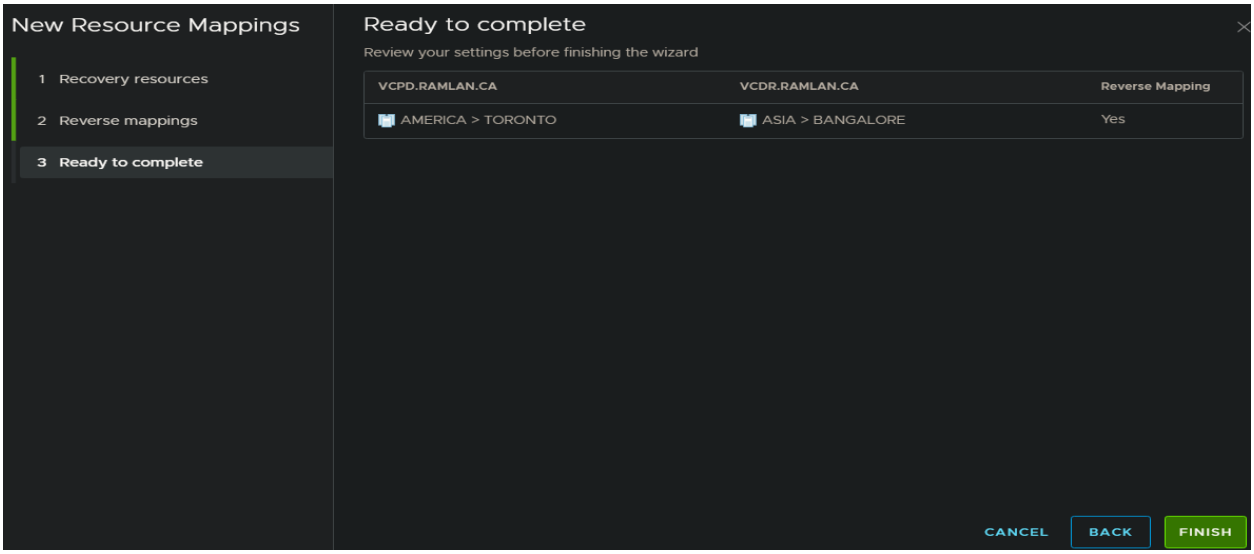


RESOURCE MAPPING: **This is basically your CLUSTER. I have 2 of them (Toronto & Bangalore)**

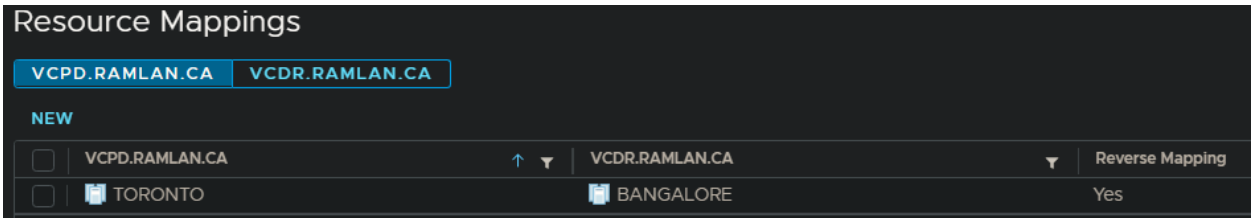


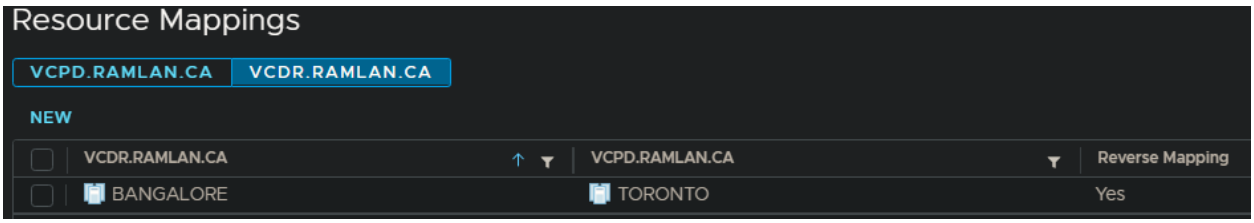




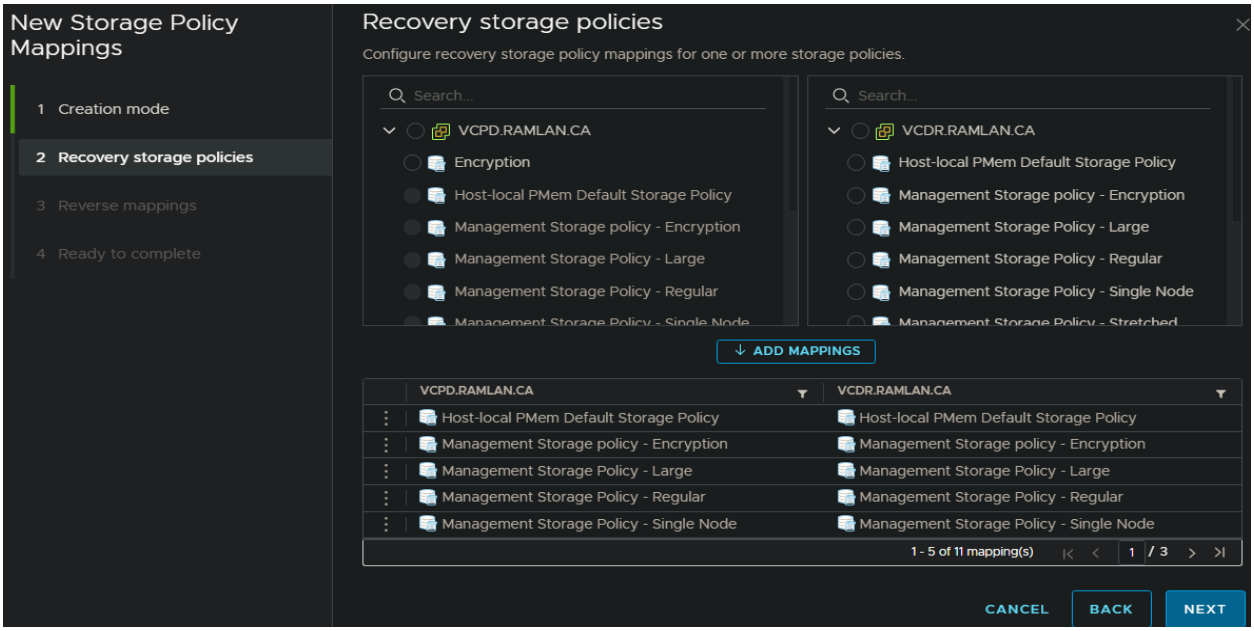


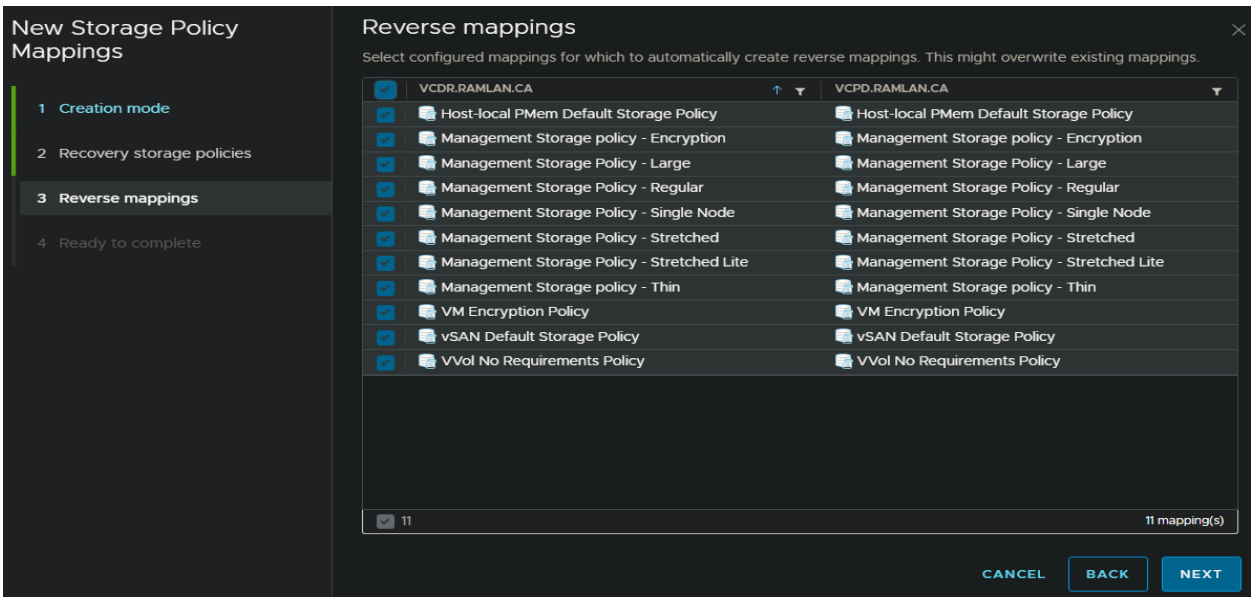
Below are my resource mappings between both the sites.

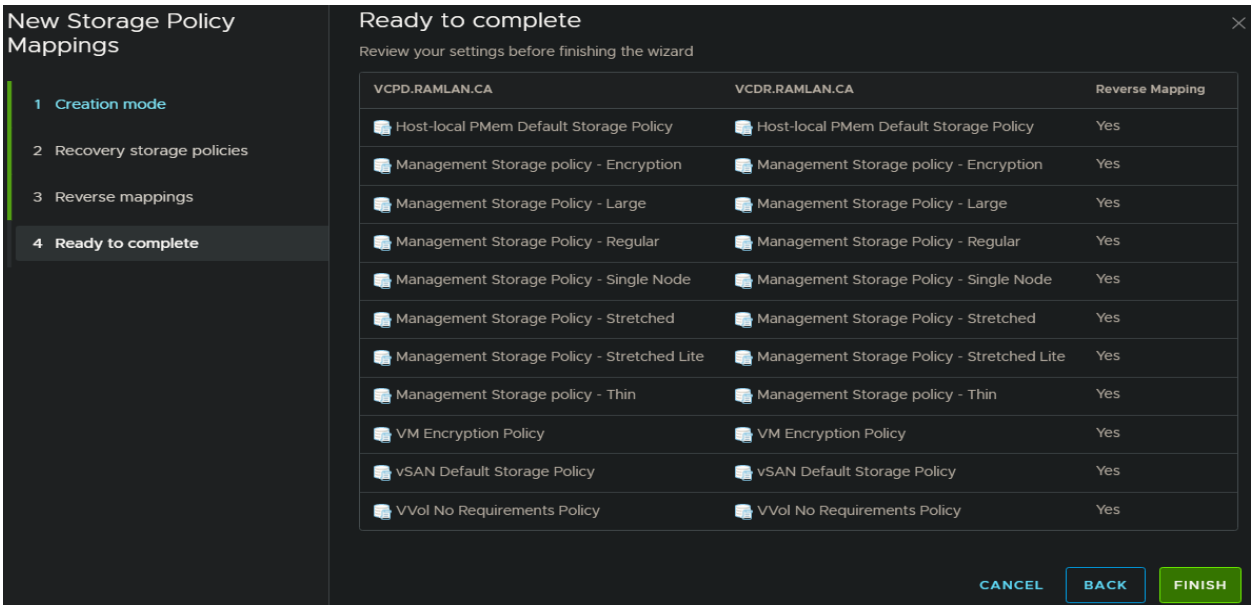




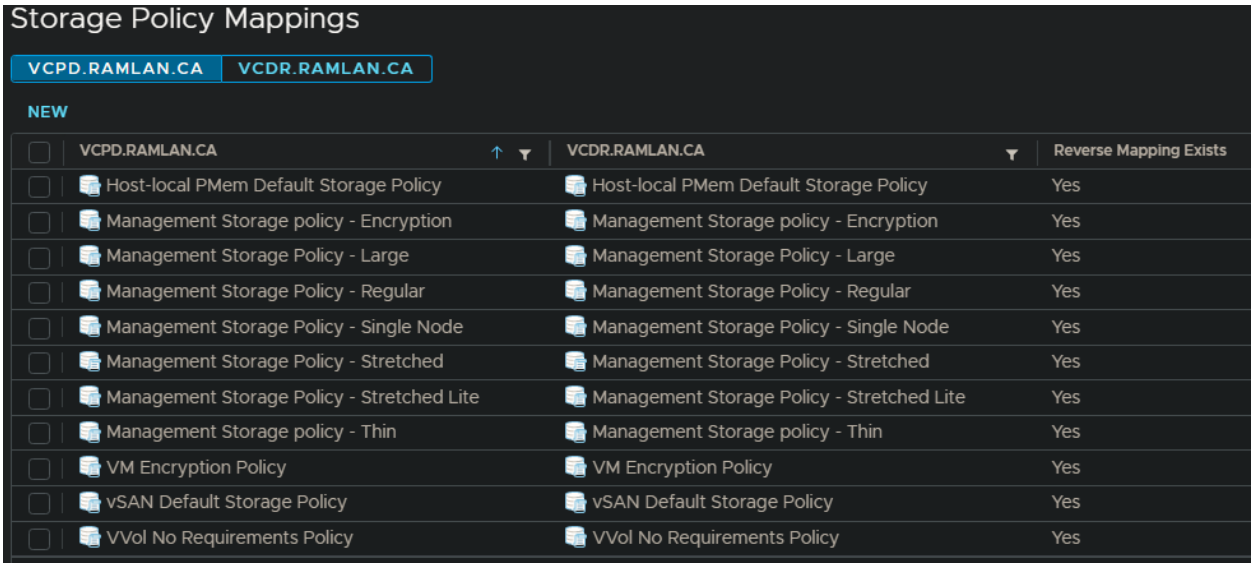
STORAGE POLICY MAPPING:

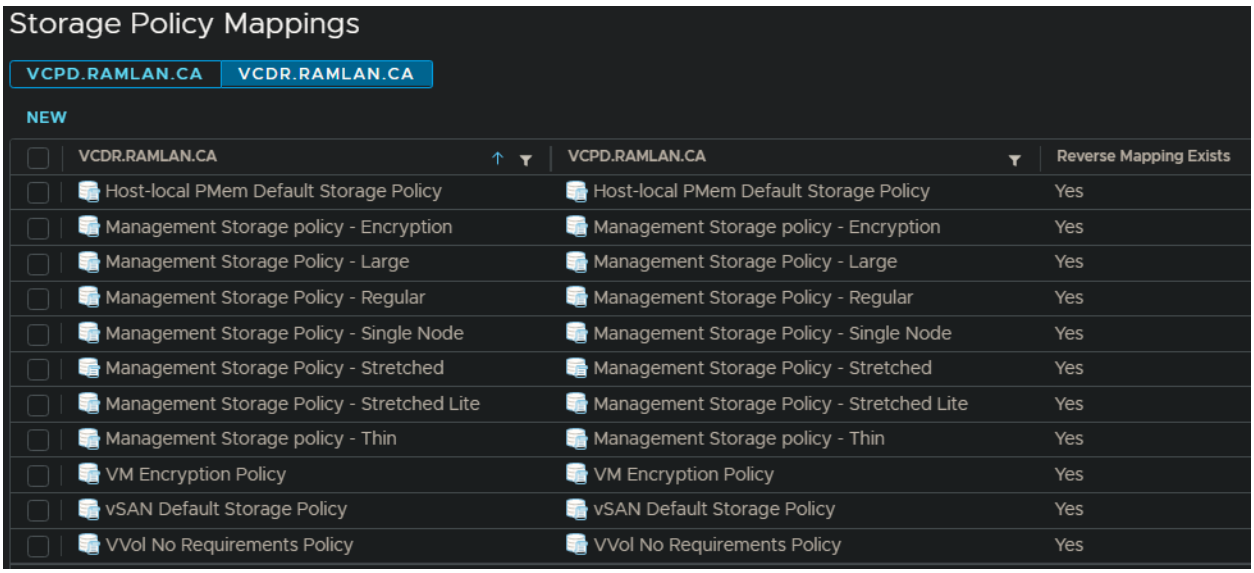

New Storage Policy Mappings
1 Creation mode
2 Recovery storage policies
3 Reverse mappings
4 Ready to complete
Recovery storage policies
Configure recovery storage policy mappings for one or more storage policies.
Search...
VCPD.RAMLAN.CA
Encryption
Host-local PMem Default Storage Policy
Management Storage policy - Encryption
Management Storage Policy - Large
Management Storage Policy - Regular
Search...
VCDR.RAMLAN.CA
Host-local PMem Default Storage Policy
Management Storage policy - Encryption
Management Storage Policy - Large
Management Storage Policy - Regular
Management Storage Policy - Single Node
ADD MAPPINGS
VCPD.RAMLAN.CA
VCDR.RAMLAN.CA
Host-local PMem Default Storage Policy
Management Storage policy - Encryption
Management Storage Policy - Large
Management Storage Policy - Regular
Management Storage Policy - Single Node
1 - 5 of 11 mapping(s)
1 / 3
CANCEL
BACK
NEXT


New Storage Policy Mappings
1 Creation mode
2 Recovery storage policies
3 Reverse mappings
4 Ready to complete
Reverse mappings
Select configured mappings for which to automatically create reverse mappings. This might overwrite existing mappings.
VCDR.RAMLAN.CA
VCPD.RAMLAN.CA
Host-local PMem Default Storage Policy
Management Storage policy - Encryption
Management Storage Policy - Large
Management Storage Policy - Regular
Management Storage Policy - Single Node
Management Storage Policy - Stretched
Management Storage Policy - Stretched Lite
Management Storage policy - Thin
VM Encryption Policy
vSAN Default Storage Policy
VVol No Requirements Policy
11
11 mapping(s)
CANCEL
BACK
NEXT


New Storage Policy Mappings
1 Creation mode
2 Recovery storage policies
3 Reverse mappings
4 Ready to complete
Ready to complete
Review your settings before finishing the wizard
VCPD.RAMLAN.CA
VCDR.RAMLAN.CA
Reverse Mapping
Host-local PMem Default Storage Policy
Yes
Management Storage policy - Encryption
Management Storage Policy - Large
Management Storage Policy - Regular
Management Storage Policy - Single Node
Management Storage Policy - Stretched
Management Storage Policy - Stretched Lite
Management Storage policy - Thin
VM Encryption Policy
vSAN Default Storage Policy
VVol No Requirements Policy
CANCEL
BACK
FINISH

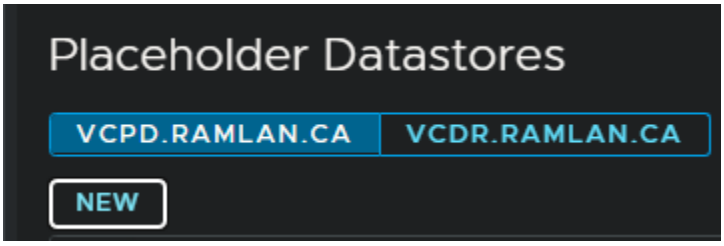
Below are my storage policy mappings between both the sites.

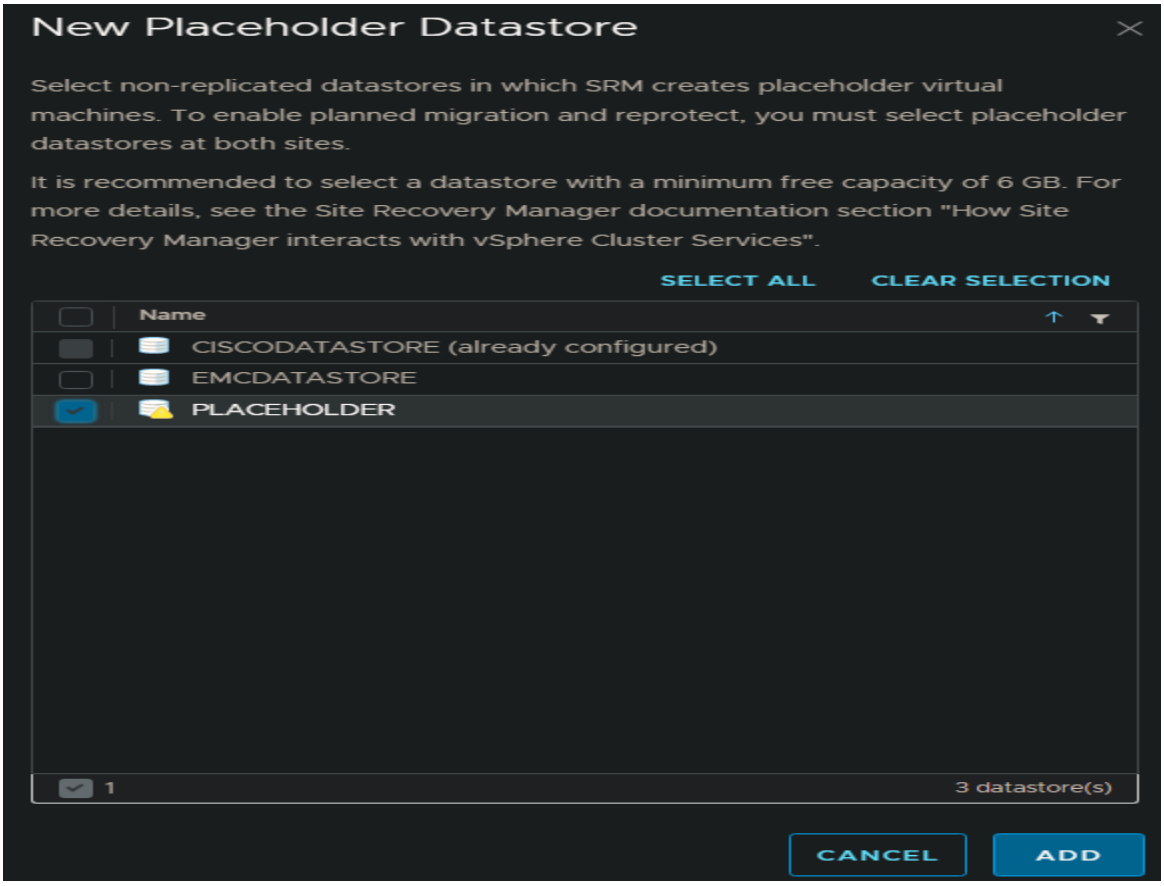


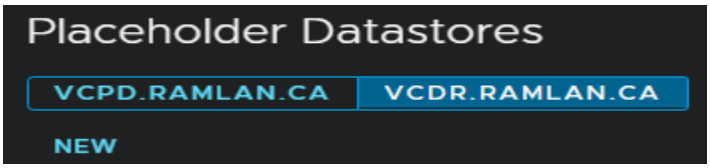


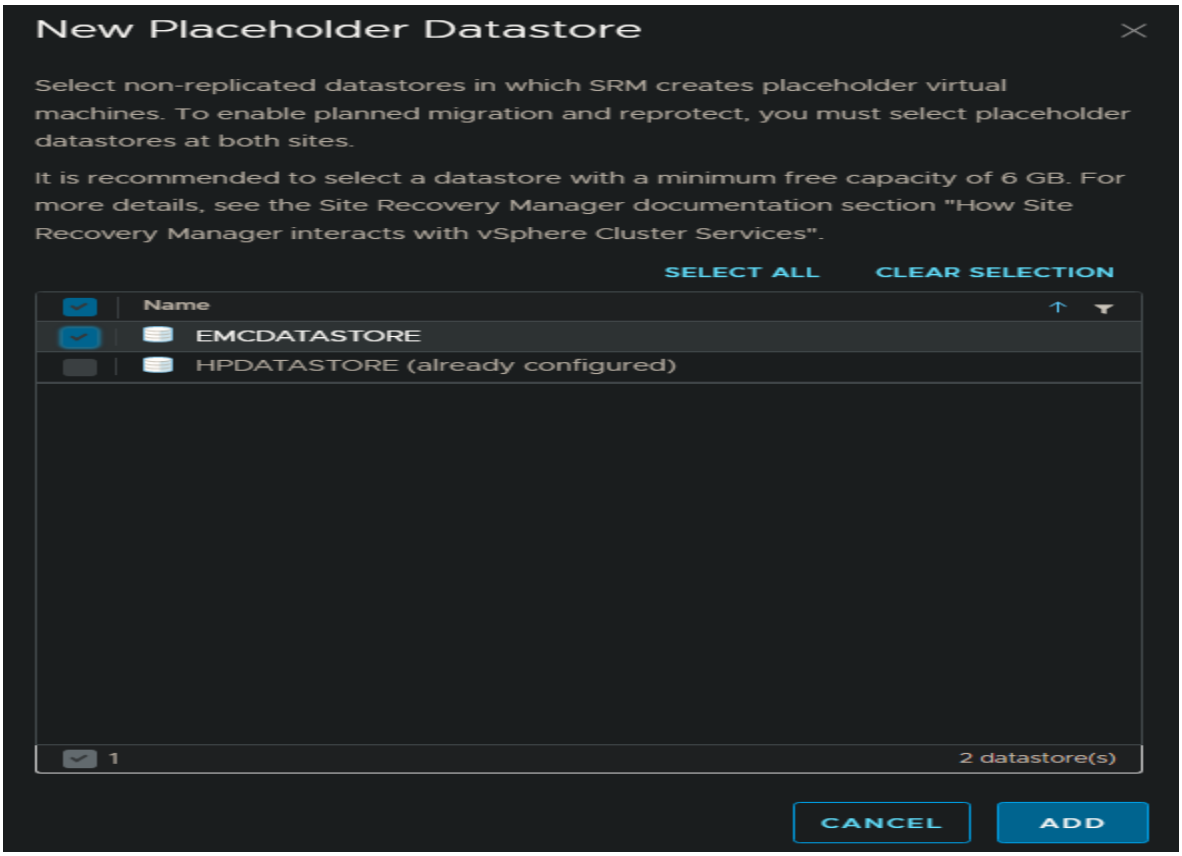
PLACEHOLDER DATASTORES:

I am using NFS share for placeholder datastores mapping.

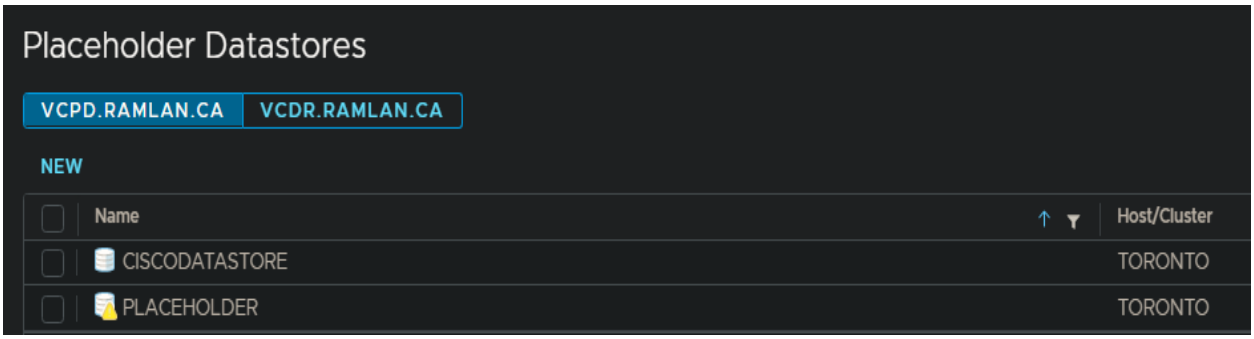


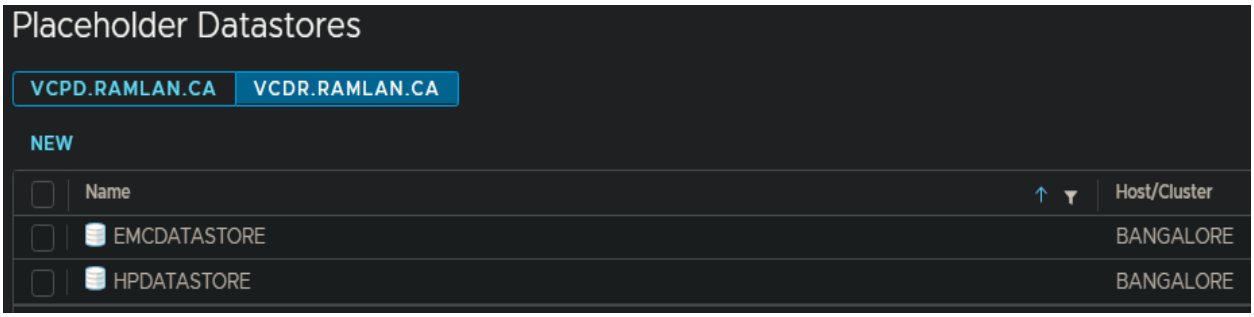

New Placeholder Datastore
Select non-replicated datastores in which SRM creates placeholder virtual machines. To enable planned migration and reprotect, you must select placeholder datastores at both sites.
It is recommended to select a datastore with a minimum free capacity of 6 GB. For more details, see the Site Recovery Manager documentation section "How Site Recovery Manager interacts with vSphere Cluster Services".
SELECT ALL
CLEAR SELECTION
Name
CISCODATASTORE (already configured)
EMCDATASTORE
PLACEHOLDER
1
3 datastore(s)
CANCEL
ADD


Placeholder Datastores
VCPD.RAMLAN.CA
VCDR.RAMLAN.CA
NEW

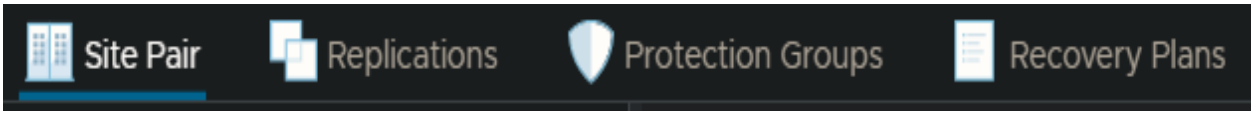

New Placeholder Datastore
Select non-replicated datastores in which SRM creates placeholder virtual machines. To enable planned migration and reprotect, you must select placeholder datastores at both sites.
It is recommended to select a datastore with a minimum free capacity of 6 GB. For more details, see the Site Recovery Manager documentation section "How Site Recovery Manager interacts with vSphere Cluster Services".
SELECT ALL
CLEAR SELECTION
Name
EMCDATASTORE
HPDATASTORE (already configured)
1
2 datastore(s)
CANCEL
ADD

Below are my placeholder datastores mappings between both the sites.

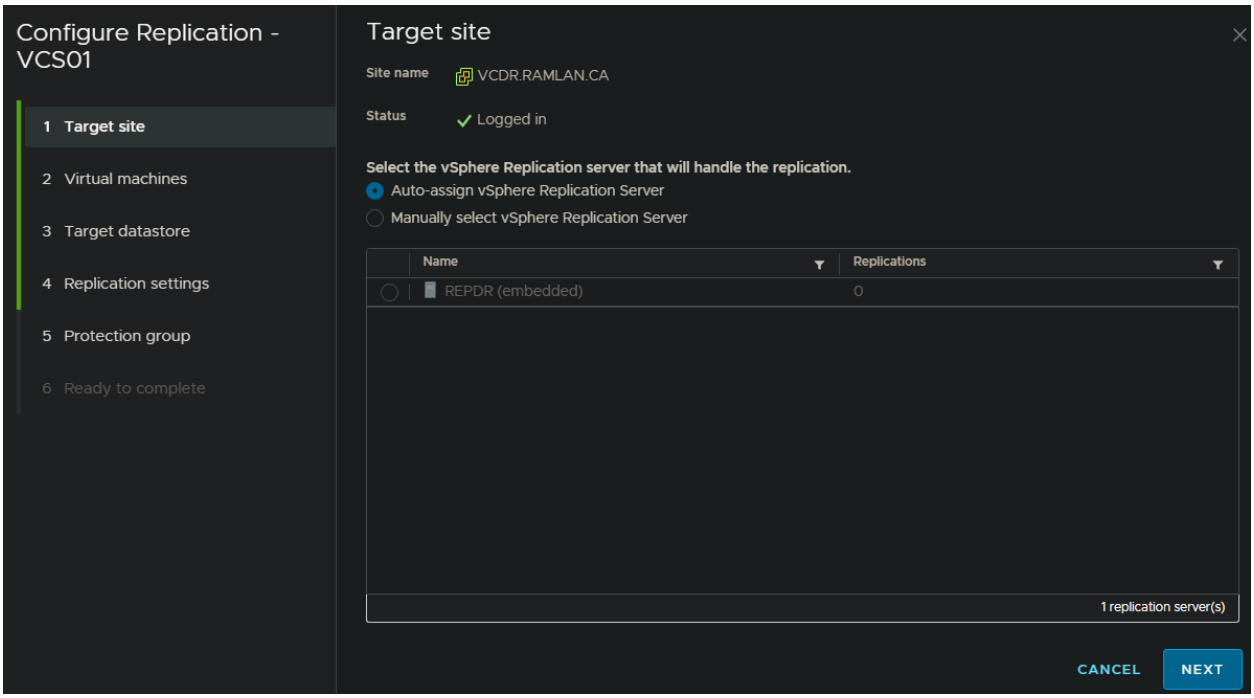




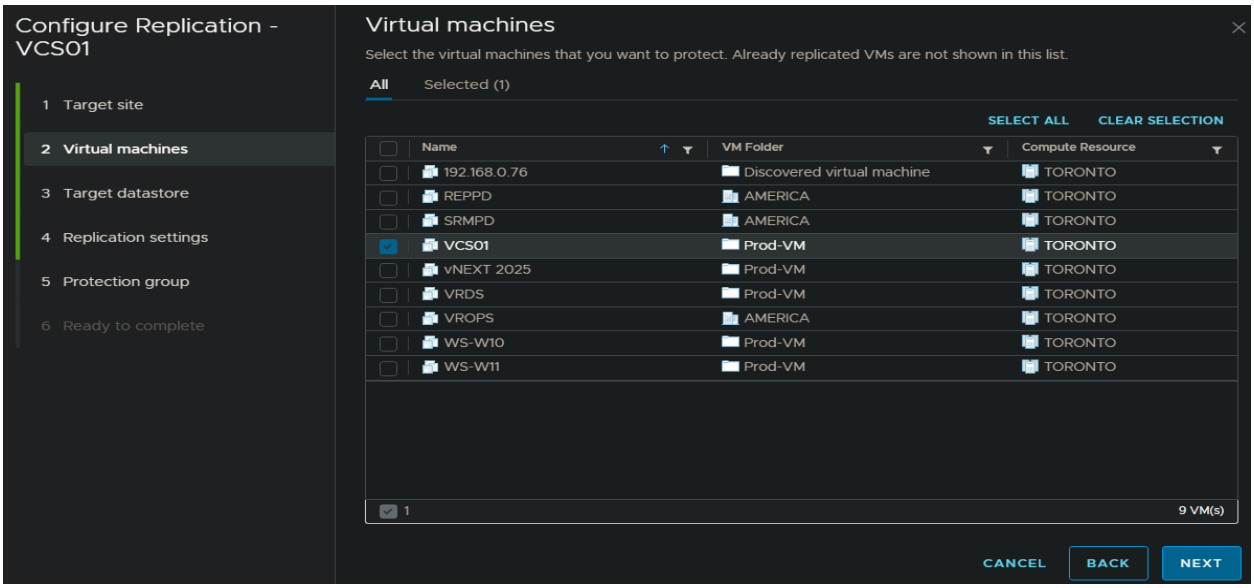
With above configuration we have completed everything from Site Pair.

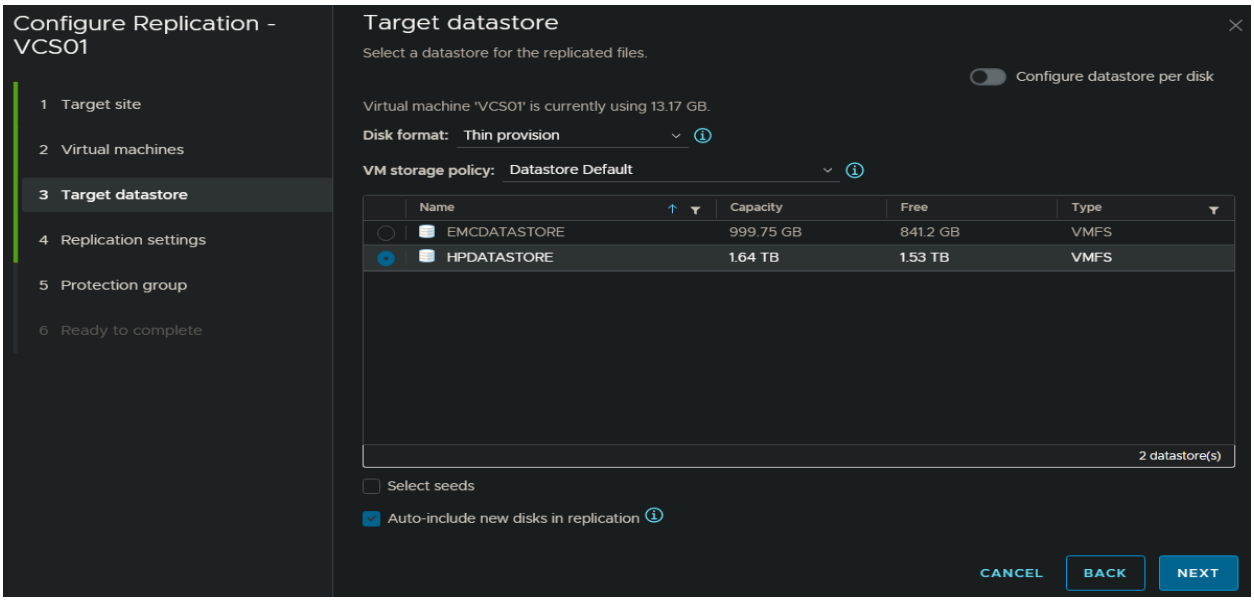


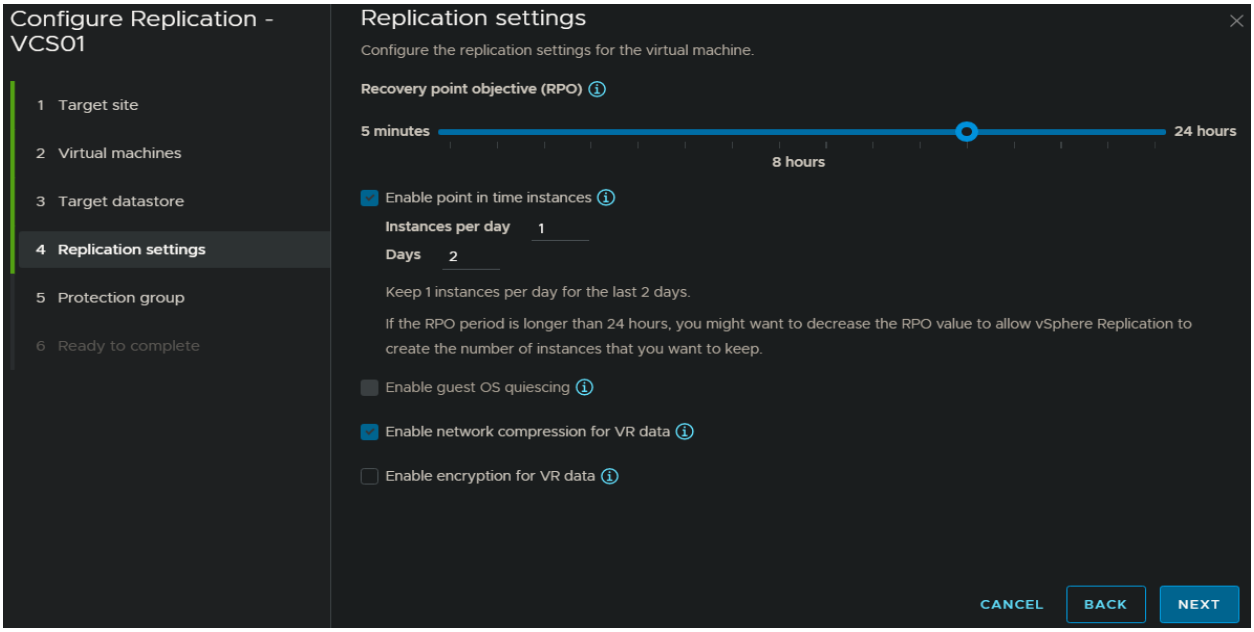
REPLICATIONS:



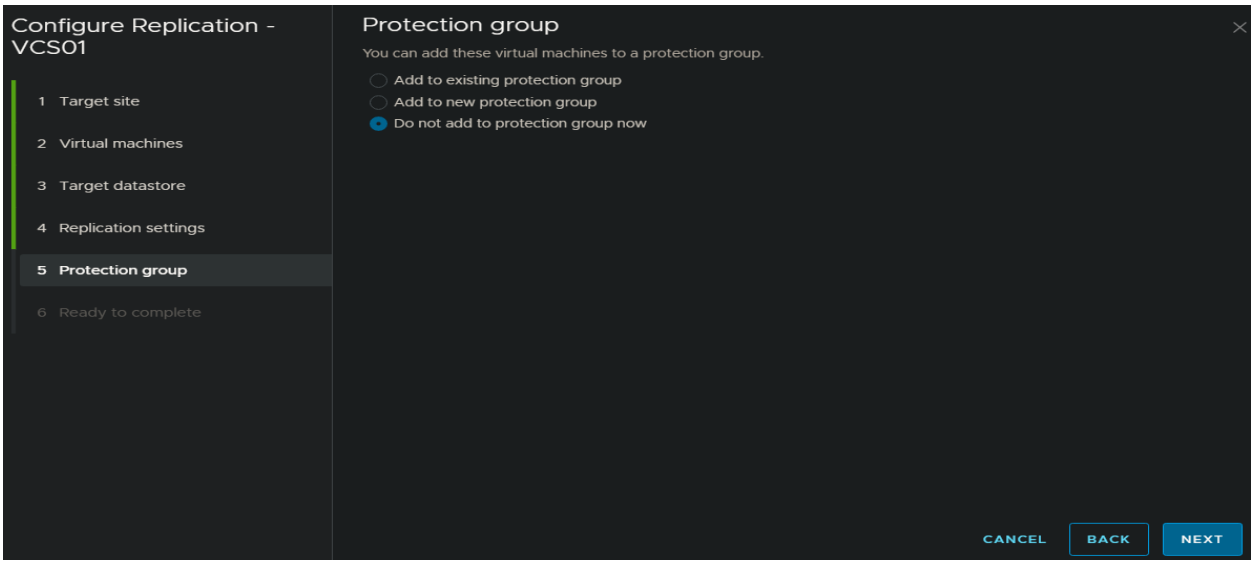
For the purpose of testing, I am going to select just 1 VM only.

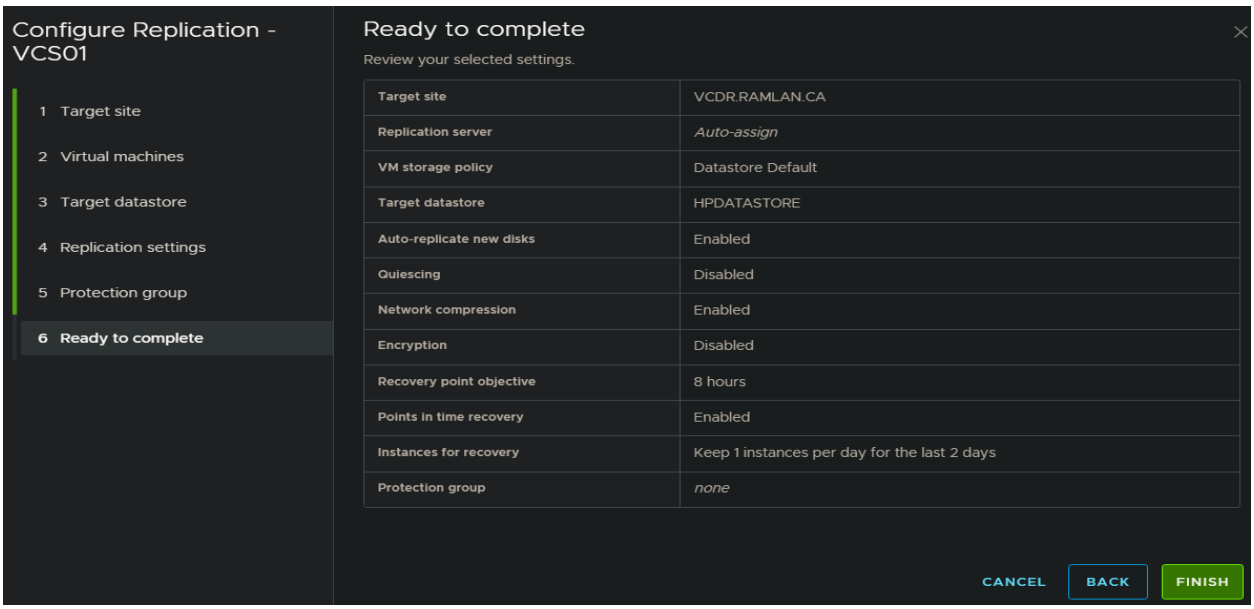




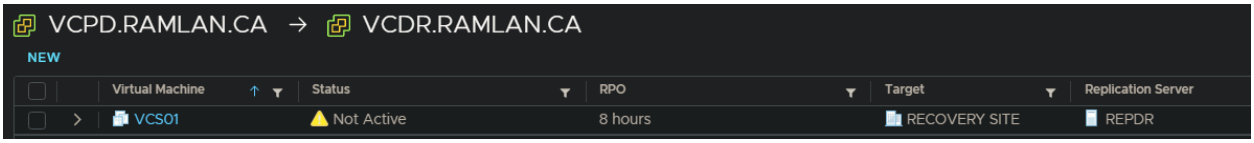


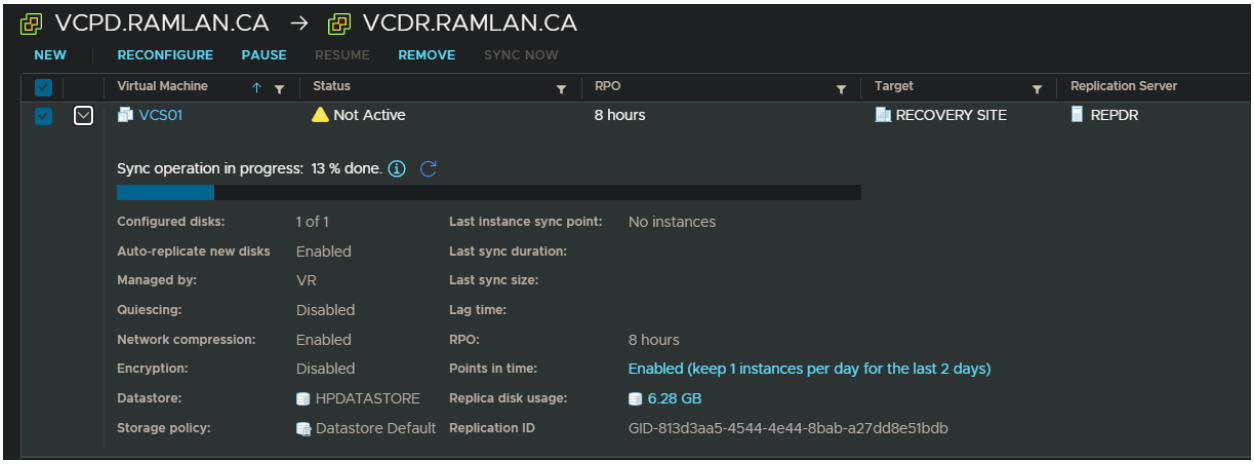
Will create Protection Group later.

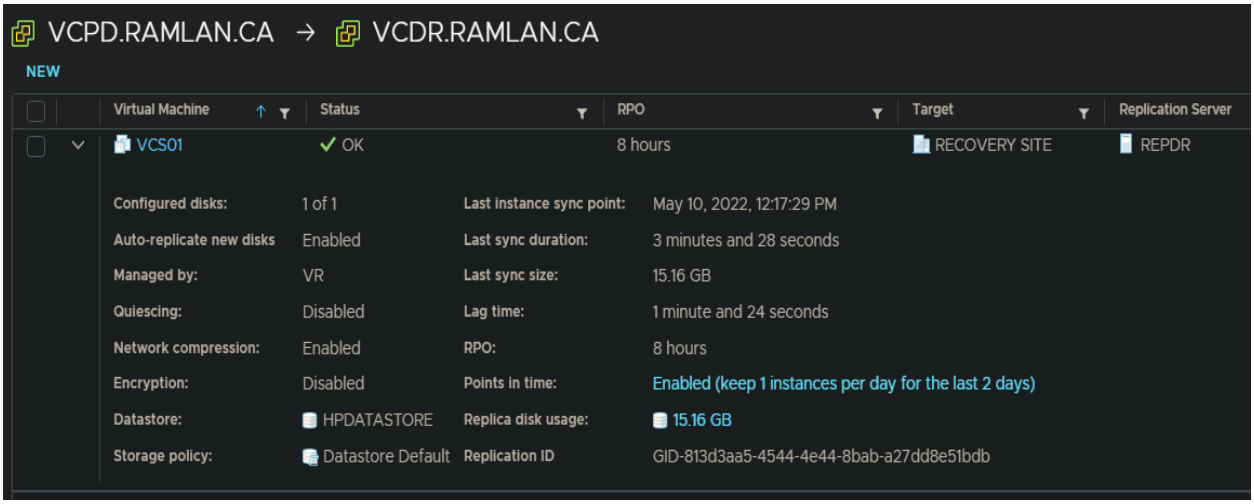




When you click Finish – the replication should commence. For me it took about 3 minutes for 1 VM.



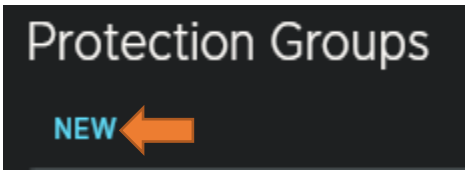


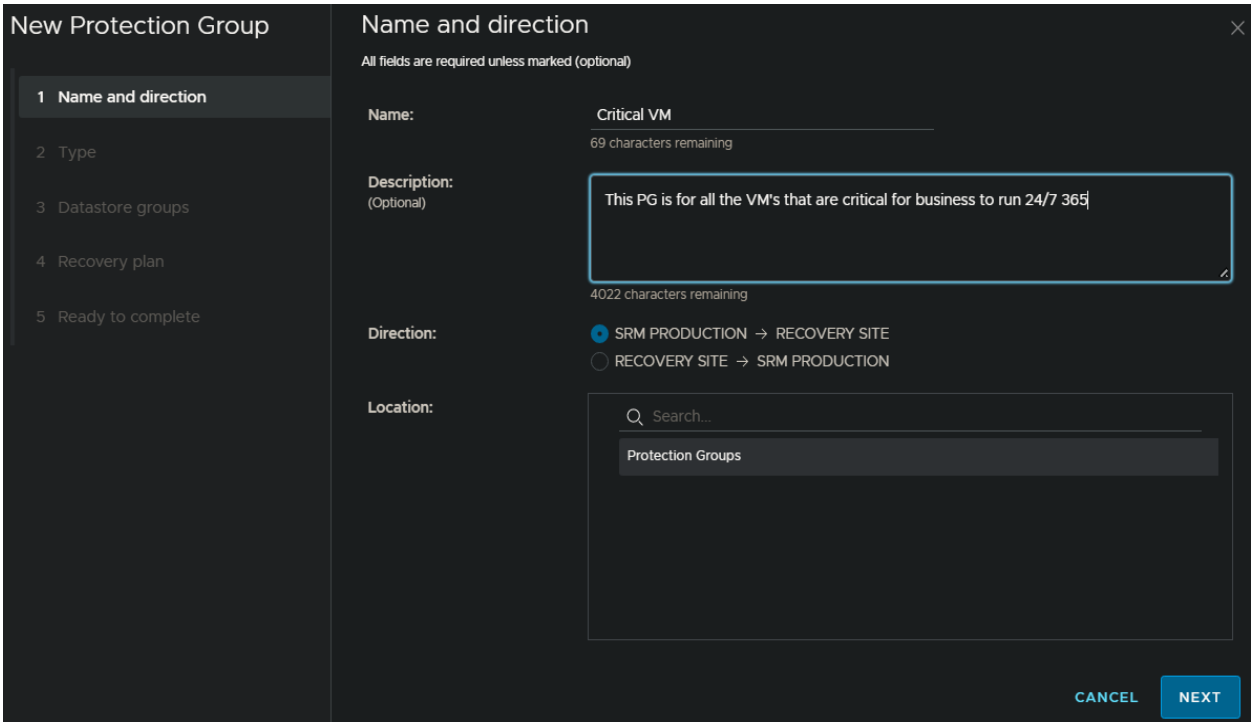


PROTECTION GROUP & RECOVERY PLAN: Now we can create Protection Group & Recovery Plans

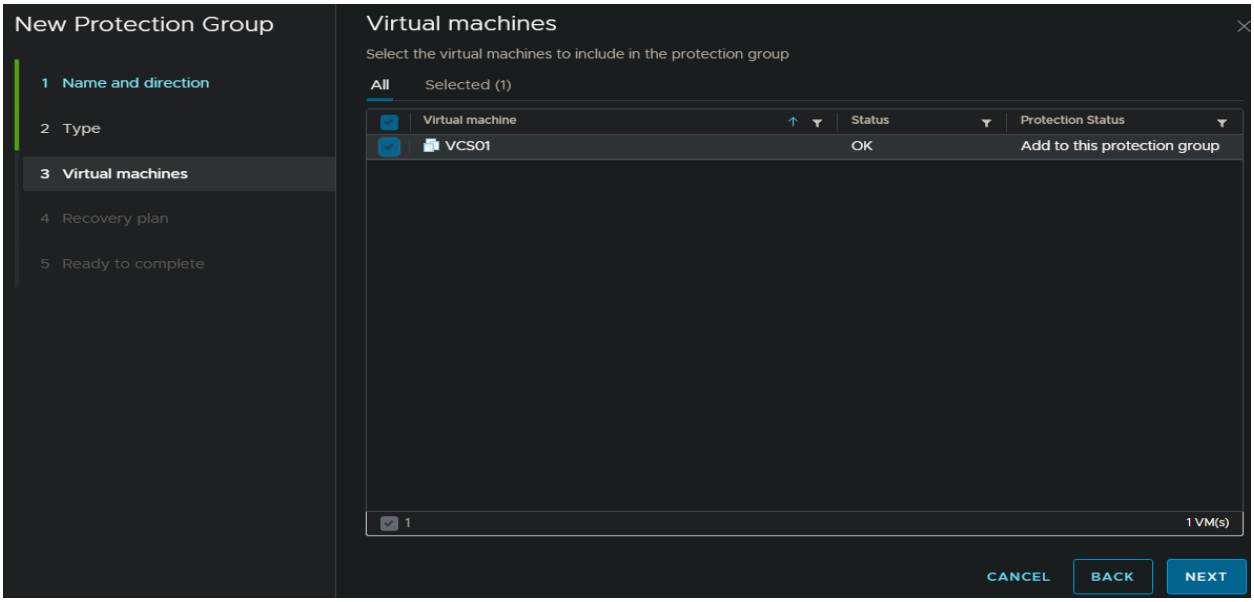
A protection group (pg) is a collection of virtual machines that VMware Site Recovery Manager protects together. There are different types of pg with array-based replication, VVOLs, vSphere replication, however, they can be mixed together in a recovery plan (more on that later).

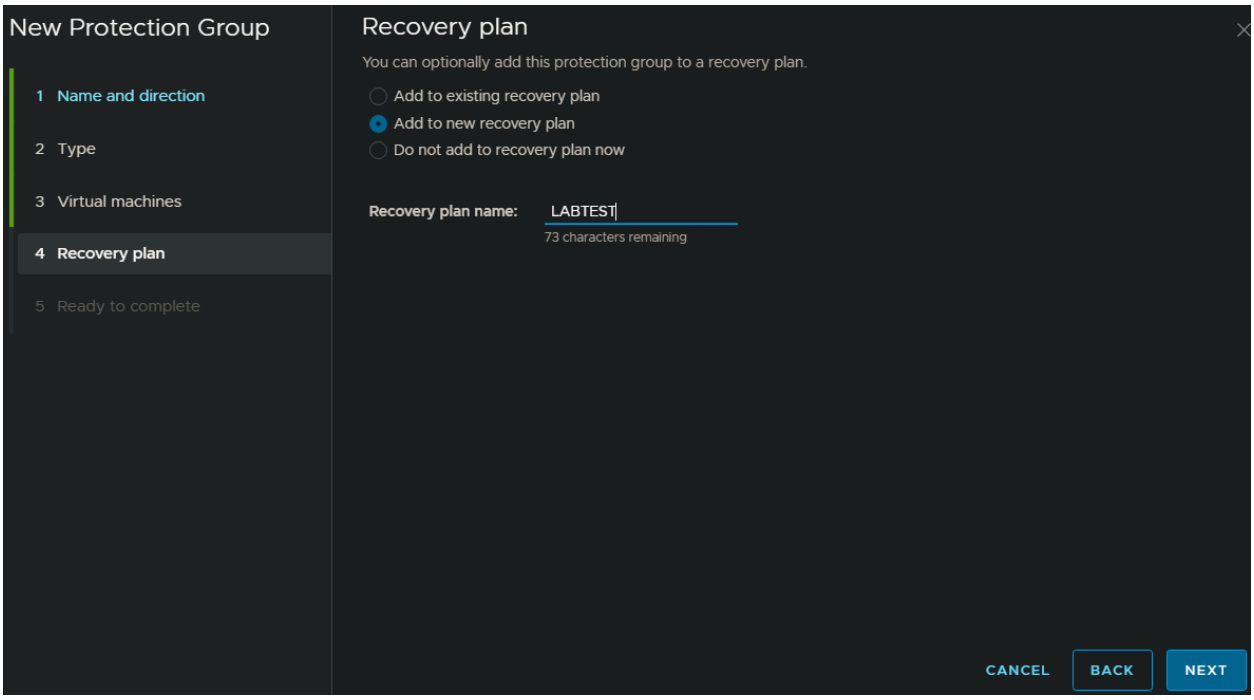
With protection groups, VMware Site Recovery Manager will create placeholder VMs in the recovery site with the right mappings, which is part of the upside of using Site Recovery Manager and not just vSphere Replication on its own.

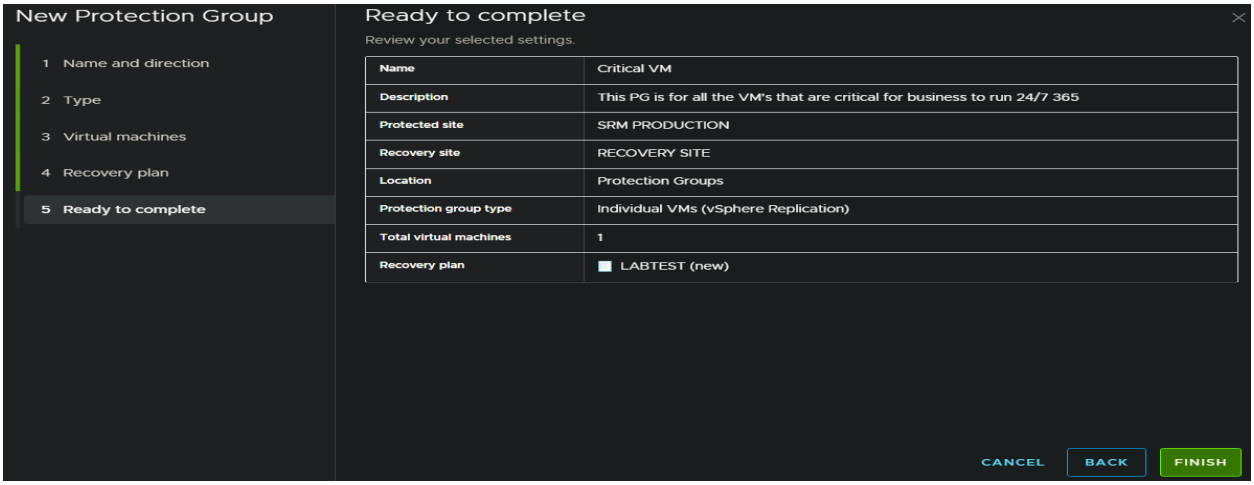


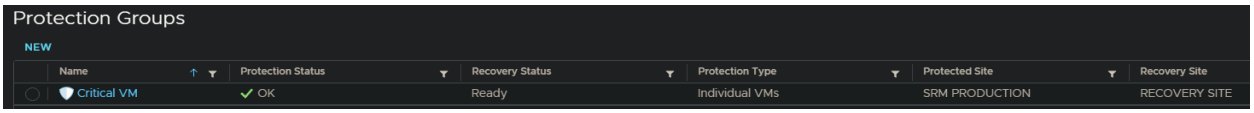


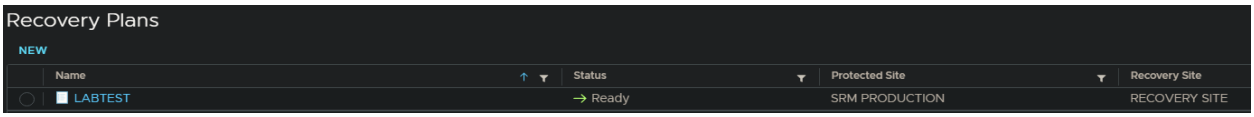

New Protection Group
1 Name and direction
2 Type
3 Virtual machines
4 Recovery plan
5 Ready to complete
Type
Select the type of protection group you want to create:
Datastore groups (array-based replication)
Protect all virtual machines which are on specific datastores.
Individual VMs (vSphere Replication)
Protect specific virtual machines, regardless of the datastores.
Virtual Volumes (vVol replication)
Protect virtual machines which are on replicated vVol storage.
Storage policies (array-based replication)
Protect virtual machines with specific storage policies.
CANCEL
BACK
NEXT

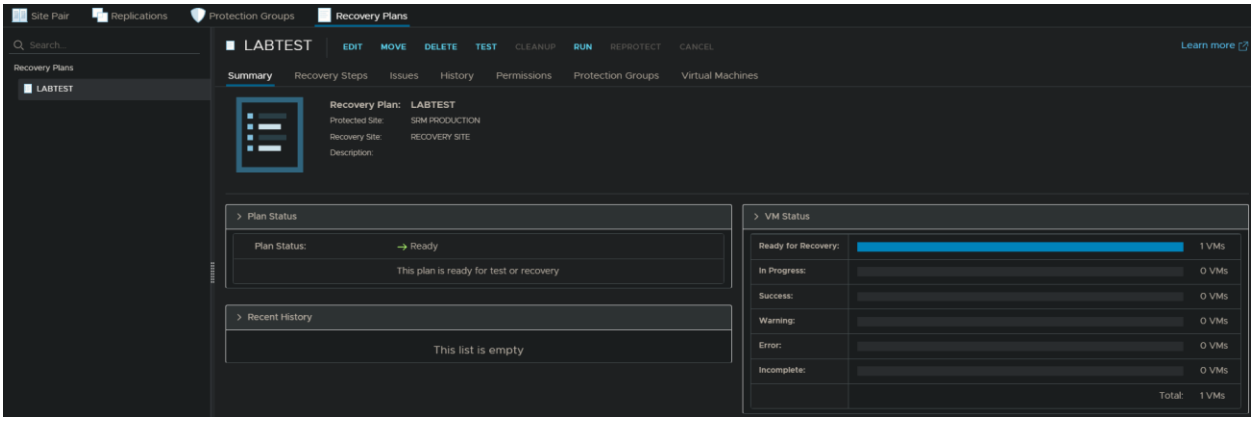

New Protection Group
1 Name and direction
2 Type
3 Virtual machines
4 Recovery plan
5 Ready to complete
Virtual machines
Select the virtual machines to include in the protection group
All
Selected (1)
Virtual machine
Status
Protection Status
VCS01
OK
Add to this protection group
1
1 VM(s)
CANCEL
BACK
NEXT

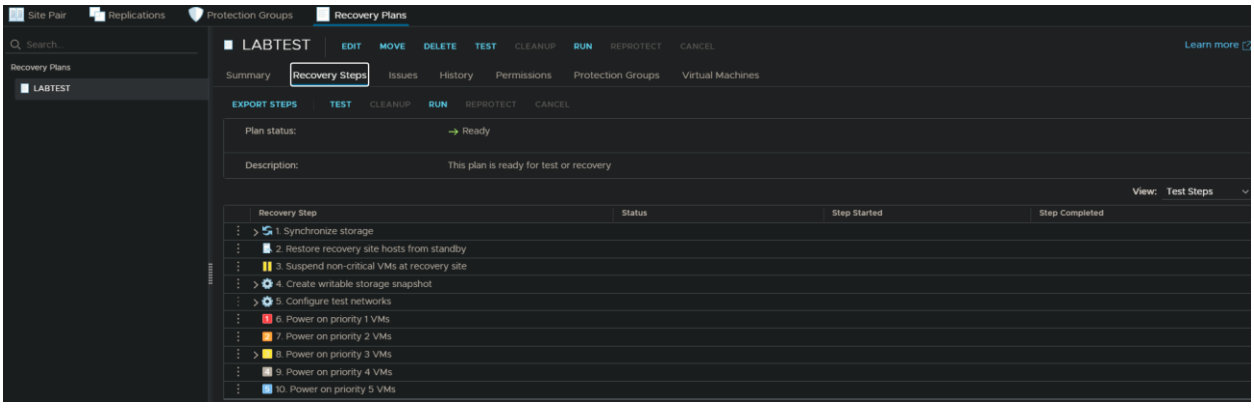

New Protection Group
1 Name and direction
2 Type
3 Virtual machines
4 Recovery plan
5 Ready to complete
Recovery plan
You can optionally add this protection group to a recovery plan.
Add to existing recovery plan
Add to new recovery plan
Do not add to recovery plan now
Recovery plan name:
LABTEST
73 characters remaining
CANCEL
BACK
NEXT

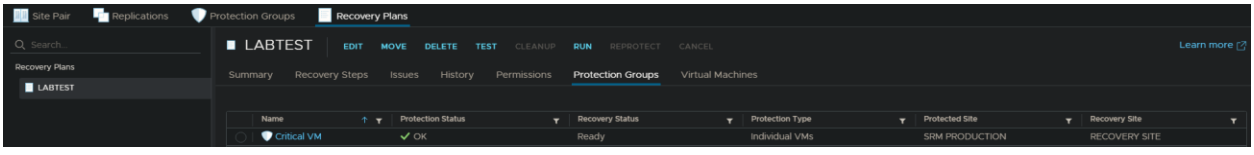

New Protection Group
1 Name and direction
2 Type
3 Virtual machines
4 Recovery plan
5 Ready to complete
Ready to complete
Review your selected settings.
Name
Critical VM
Description
This PG is for all the VM's that are critical for business to run 24/7 365
Protected site
SRM PRODUCTION
Recovery site
RECOVERY SITE
Location
Protection Groups
Protection group type
Individual VMs (vSphere Replication)
Total virtual machines
1
Recovery plan
LABTEST (new)
CANCEL
BACK
FINISH

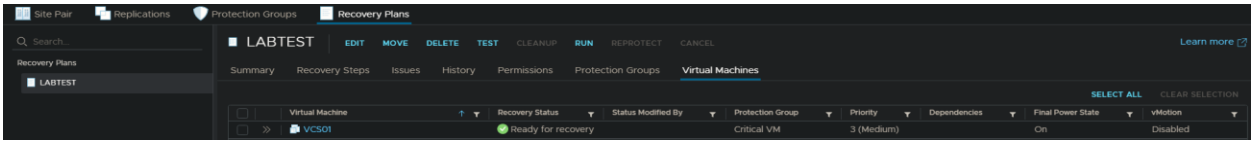

Protection Groups
NEW
Name
Protection Status
Recovery Status
Protection Type
Protected Site
Recovery Site
Critical VM
OK
Ready
Individual VMs
SRM PRODUCTION
RECOVERY SITE


Recovery Plans
NEW
Name
Status
Protected Site
Recovery Site
LABTEST
Ready
SRM PRODUCTION
RECOVERY SITE


Site Pair
Replications
Protection Groups
Recovery Plans
LABTEST
EDIT
MOVE
DELETE
TEST
CLEANUP
RUN
REPROTECT
CANCEL
Learn more
Summary
Recovery Steps
Issues
History
Permissions
Protection Groups
Virtual Machines
Recovery Plan: LABTEST
Protected Site: SRM PRODUCTION
Recovery Site: RECOVERY SITE
Description:
Plan Status
Plan Status: Ready
This plan is ready for test or recovery
Recent History
This list is empty
VM Status
Ready for Recovery: 1 VMs
In Progress: 0 VMs
Success: 0 VMs
Warning: 0 VMs
Error: 0 VMs
Incomplete: 0 VMs
Total: 1 VMs

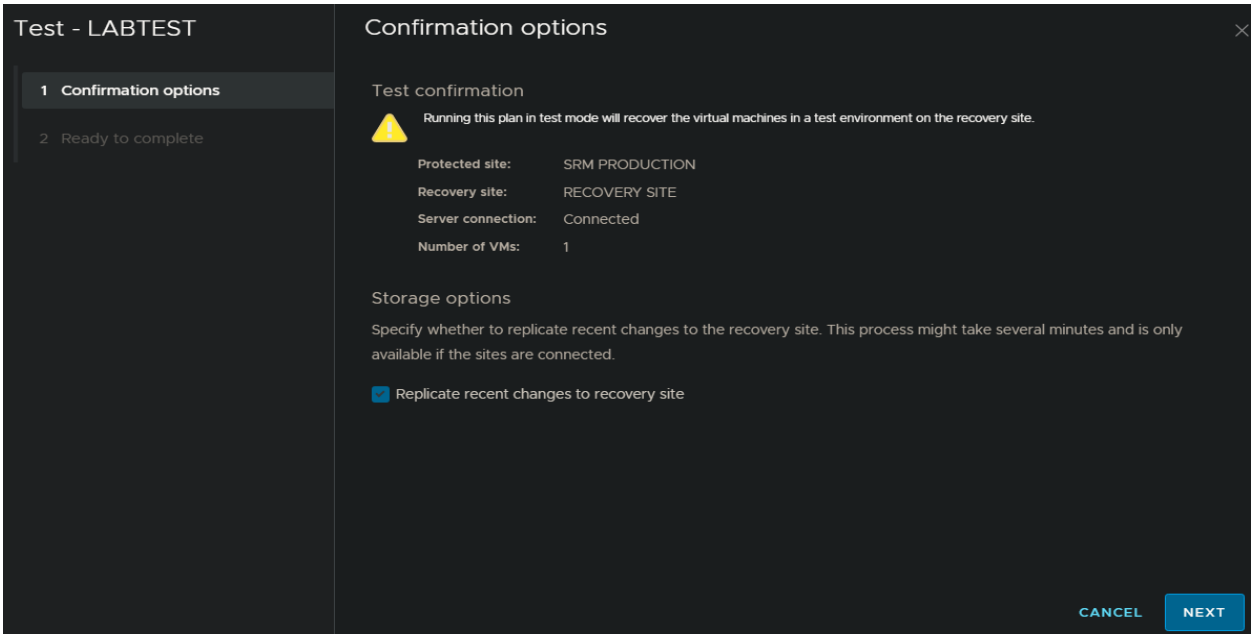

Site Pair
Replications
Protection Groups
Recovery Plans
LABTEST
EDIT
MOVE
DELETE
TEST
CLEANUP
RUN
REPROTECT
CANCEL
Learn more
Summary
Recovery Steps
Issues
History
Permissions
Protection Groups
Virtual Machines
EXPORT STEPS
TEST
CLEANUP
RUN
REPROTECT
CANCEL
Plan status: Ready
Description: This plan is ready for test or recovery
View: Test Steps
Recovery Step
Status
Step Started
Step Completed
1. Synchronize storage
2. Restore recovery site hosts from standby
3. Suspend non-critical VMs at recovery site
4. Create writable storage snapshot
5. Configure test networks
6. Power on priority 1 VMs
7. Power on priority 2 VMs
8. Power on priority 3 VMs
9. Power on priority 4 VMs
10. Power on priority 5 VMs

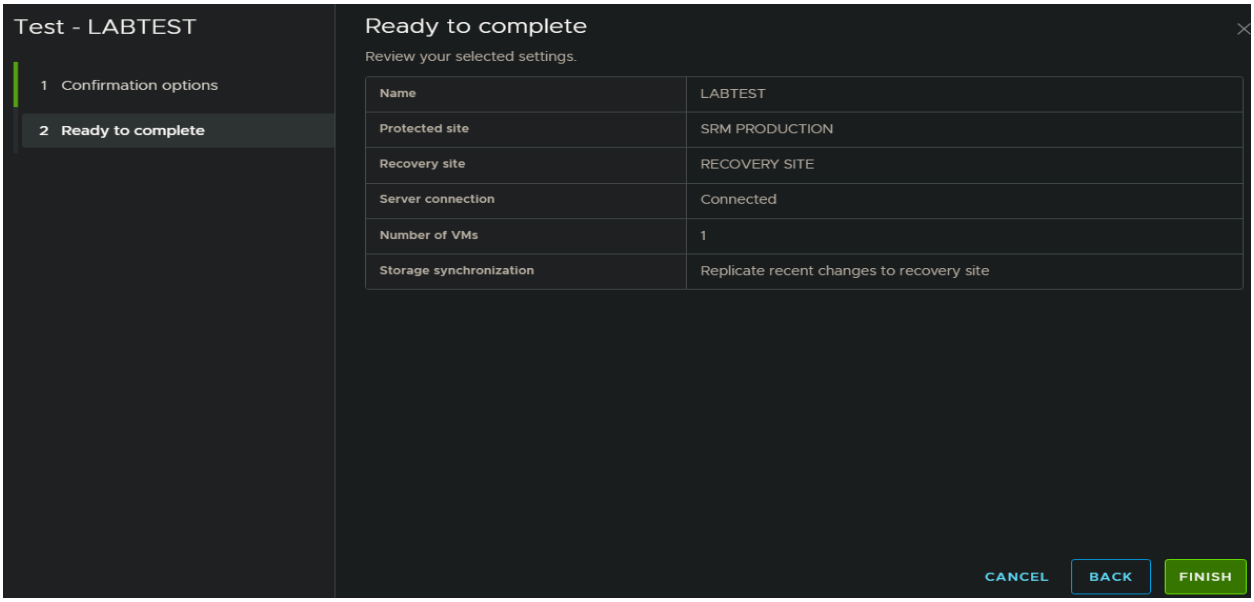

Site Pair
Replications
Protection Groups
Recovery Plans
LABTEST
EDIT
MOVE
DELETE
TEST
CLEANUP
RUN
REPROTECT
CANCEL
Learn more
Summary
Recovery Steps
Issues
History
Permissions
Protection Groups
Virtual Machines
Name
Protection Status
Recovery Status
Protection Type
Protected Site
Recovery Site
Critical VM
OK
Ready
Individual VMs
SRM PRODUCTION
RECOVERY SITE

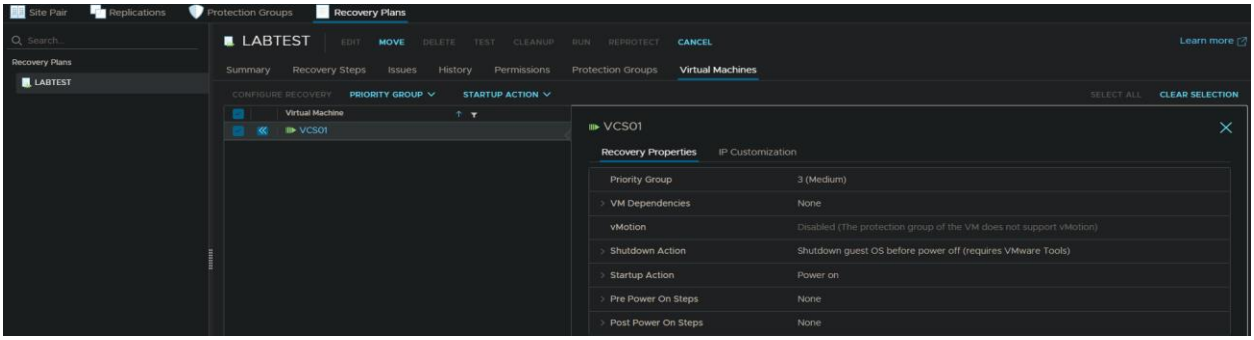

Site Pair
Replications
Protection Groups
Recovery Plans
LABTEST
EDIT
MOVE
DELETE
TEST
CLEANUP
RUN
REPROTECT
CANCEL
Learn more
Summary
Recovery Steps
Issues
History
Permissions
Protection Groups
Virtual Machines
SELECT ALL
CLEAR SELECTION
Virtual Machine
Recovery Status
Status Modified By
Protection Group
Priority
Dependencies
Final Power State
vMotion
VCS01
Ready for recovery
Critical VM
3 (Medium)
On
Disabled

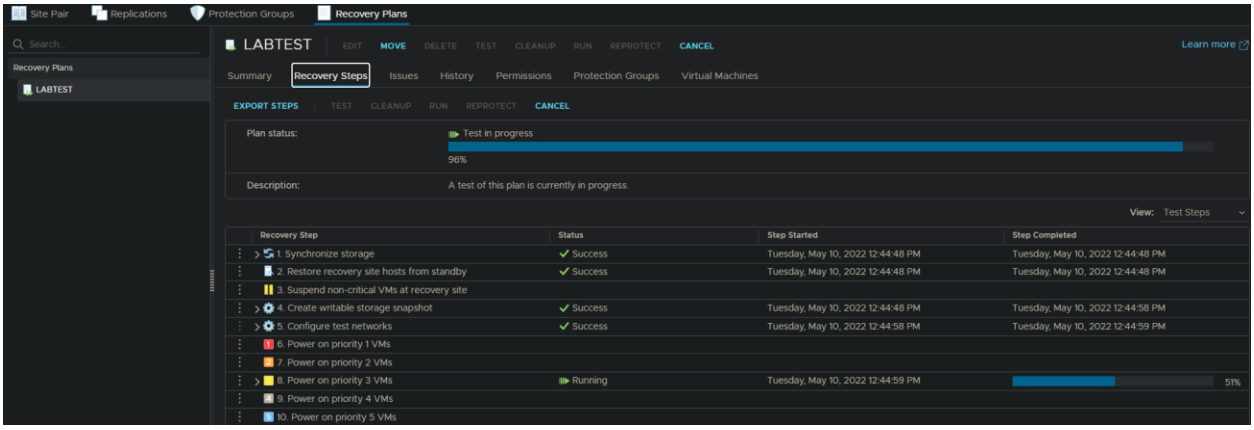
TESTING RECOVERY PLAN:

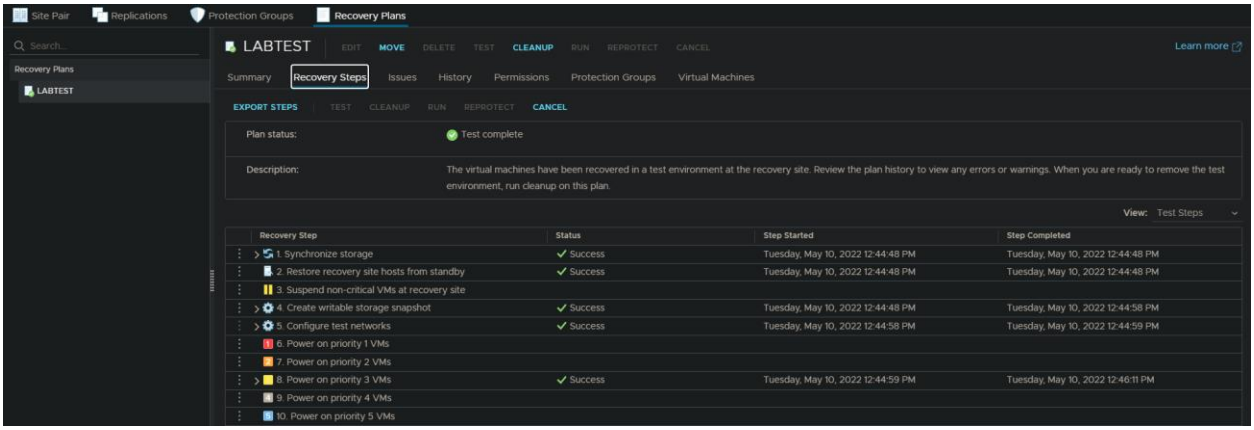
Now that the Recovery Plan is created, it is time to test it. As we mentioned earlier, it is important to test your disaster recovery infrastructure regularly to ensure it works when you need it.



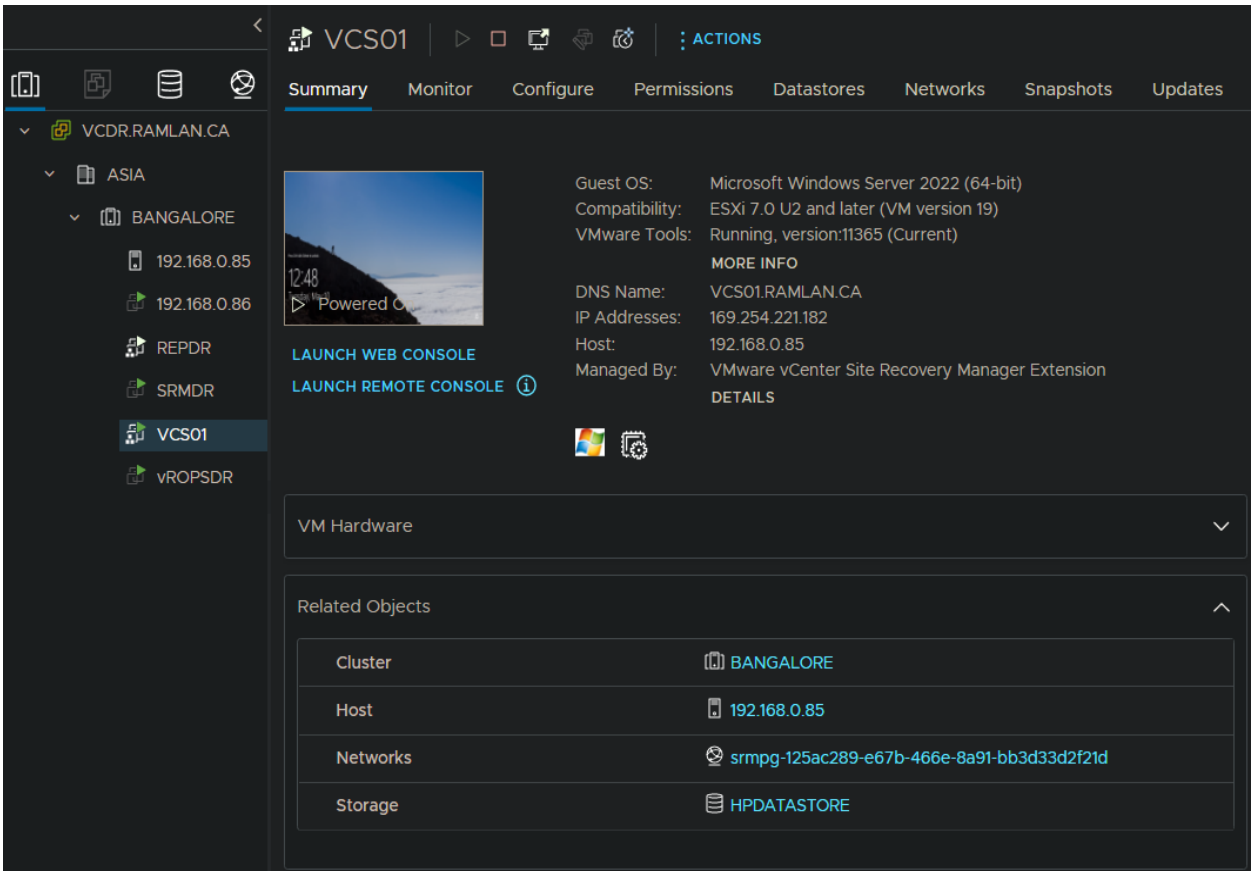




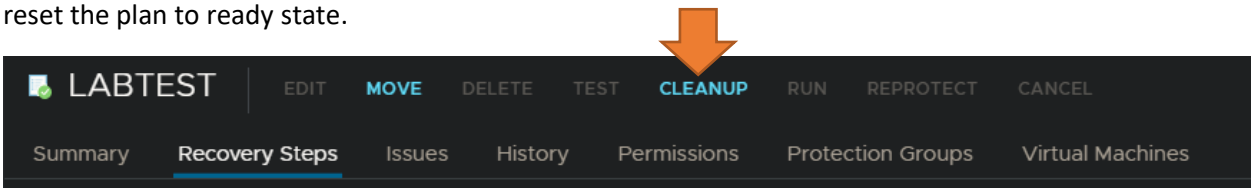


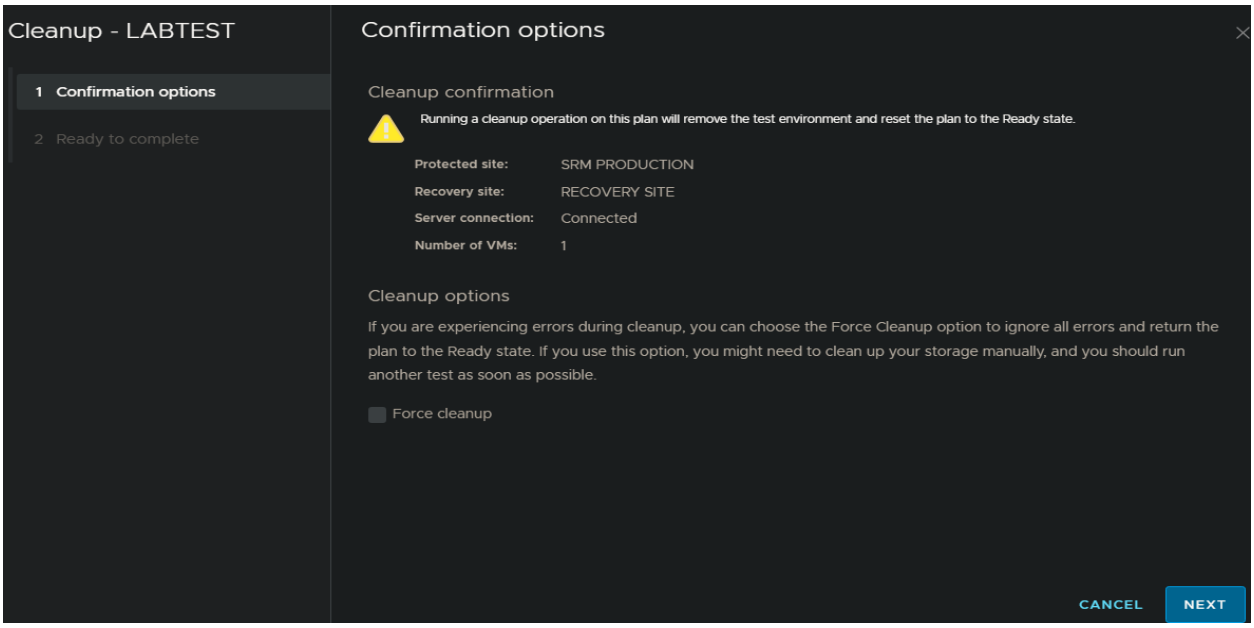


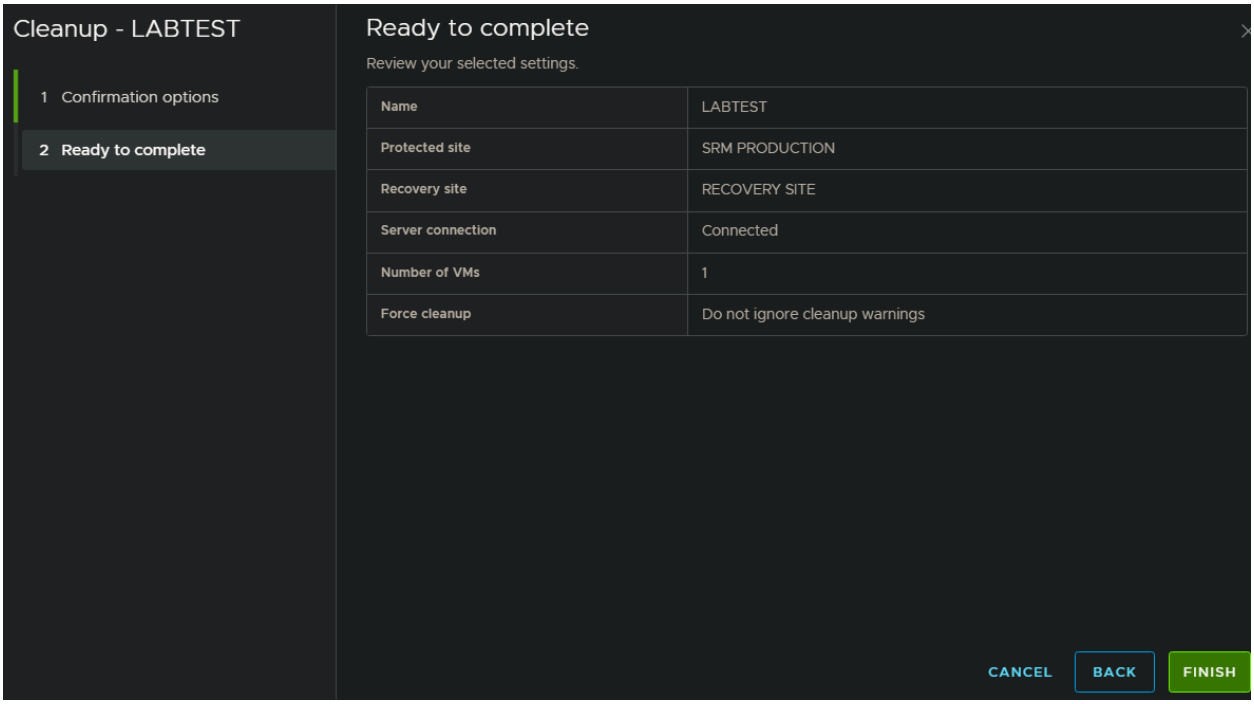
Once the job is finished, you can look in the vCenter at the recovery site and you will find the recovered virtual machines in running state. Again, the source VMs are not impacted and remain running.

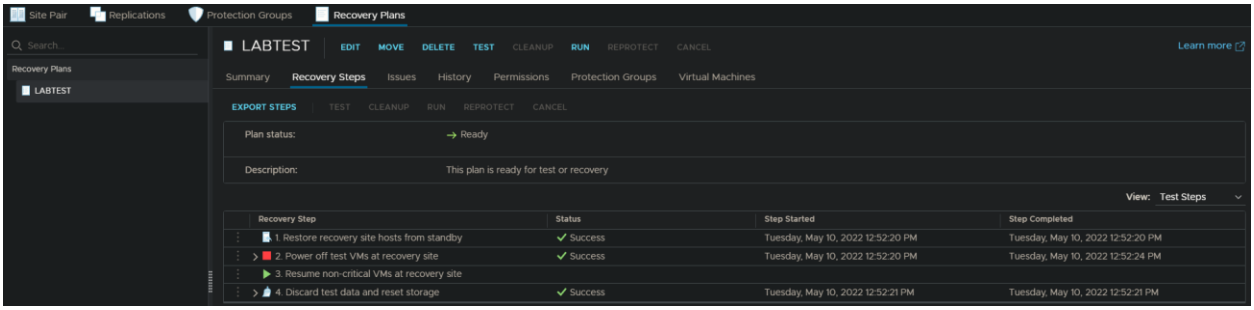


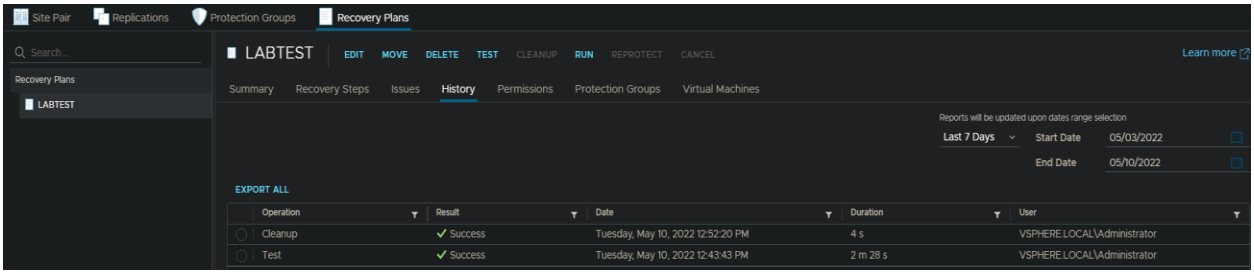
Once you are happy with your DR test, hit the CLEANUP button to remove the test environment and reset the plan to ready state.

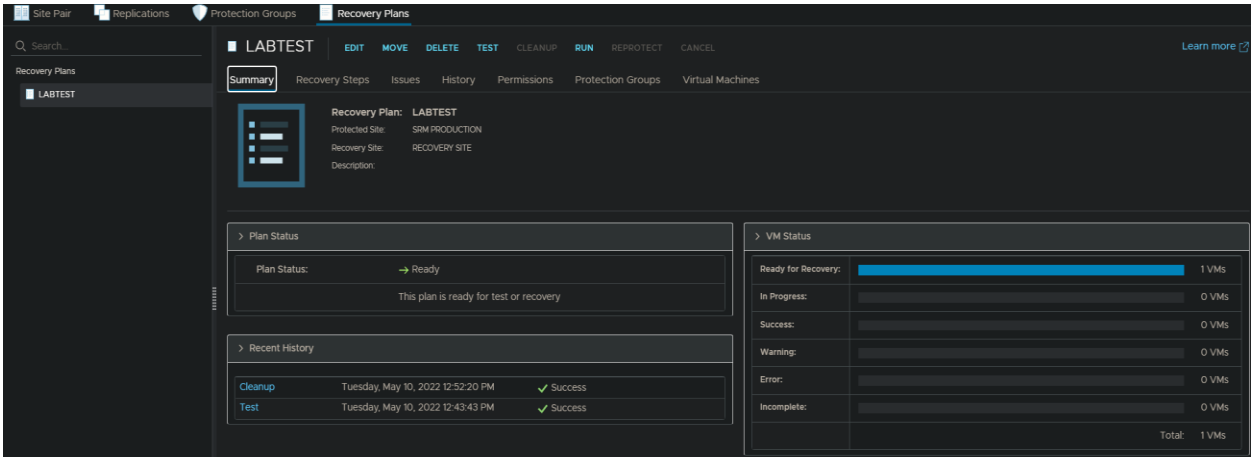




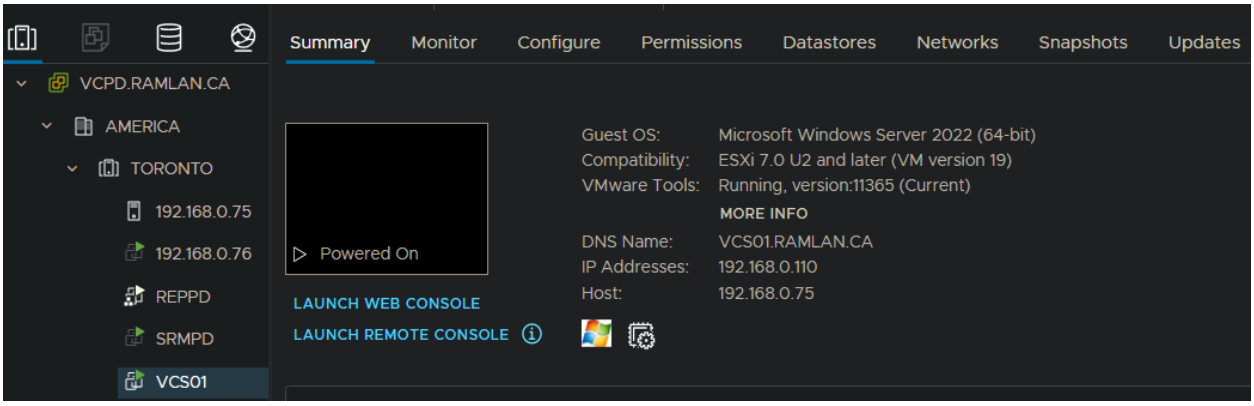




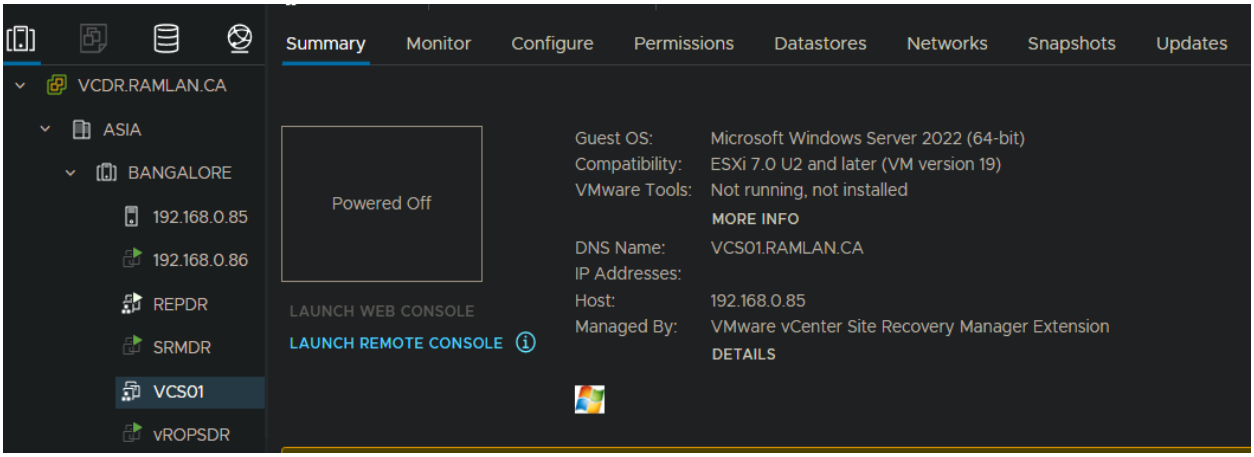




The VM is still running at the Production Site after the clean up.



No sign of VM running at the Recovery Site after the clean up.



EXECUTING RECOVERY PLAN: In the previous test section, we started a copy of the protected VM in an isolated network in the recovery environment while the source VM was kept running. Now we will execute the recovery plan which will switch the workload to the recovery environment.

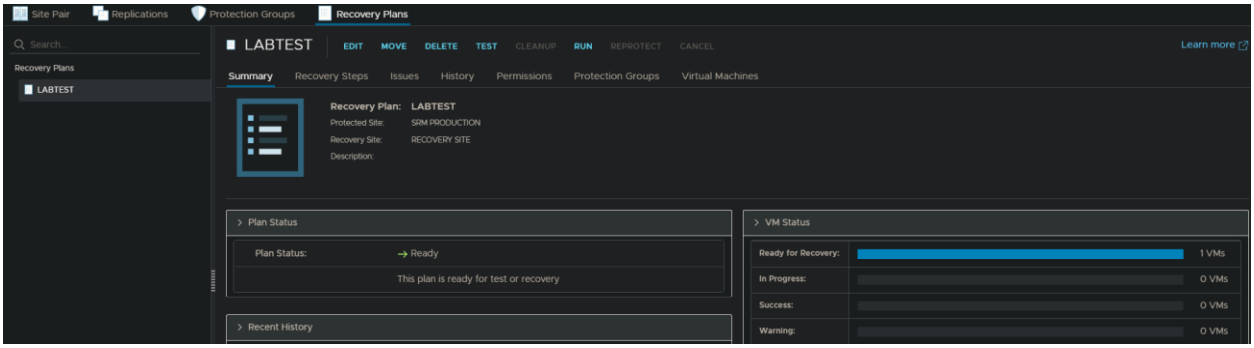
Note that there are 2 methods for Site recovery manager to execute a recovery plan:

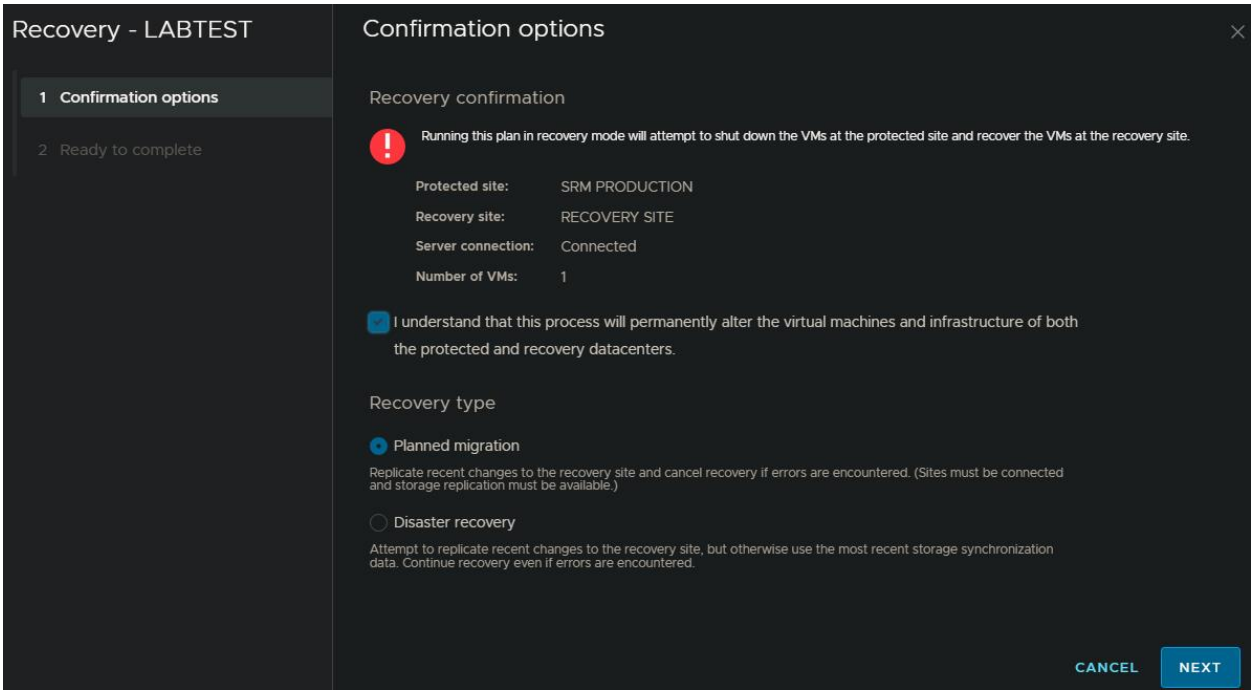
Planned Migration: Replicate recent changes to the recovery site and cancel recovery if errors are encountered.

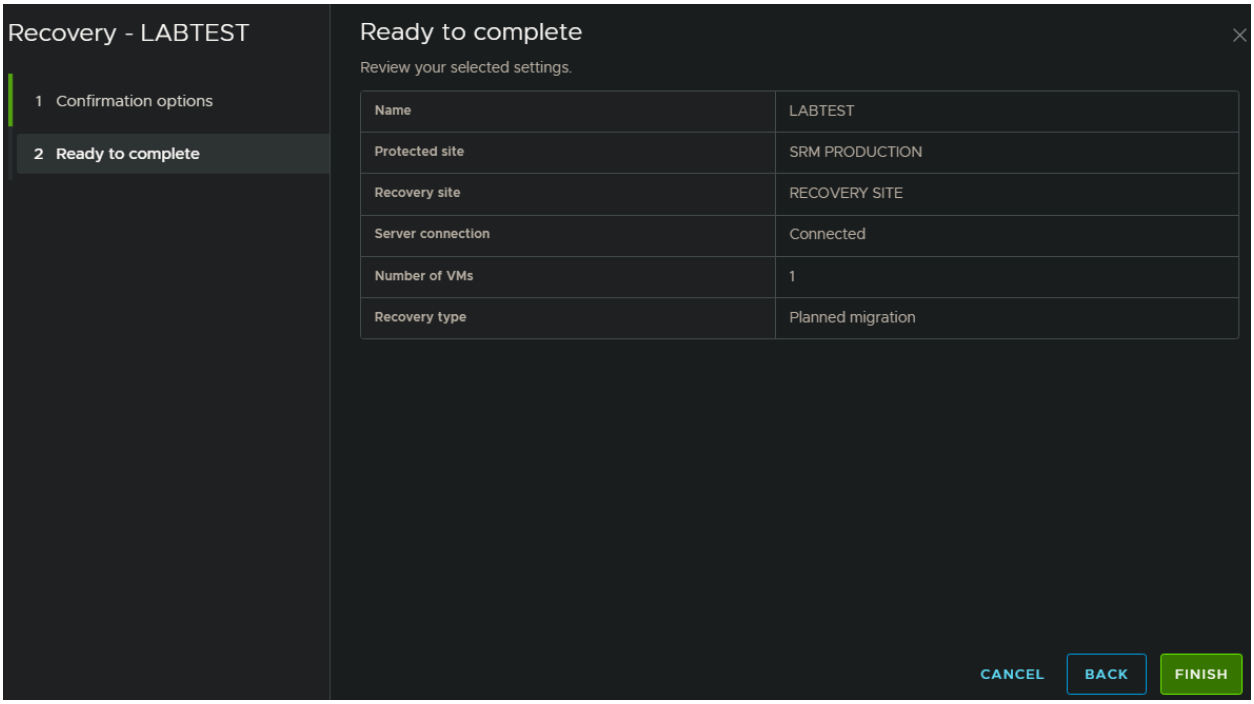
Disaster Recovery: Attempt to replicate recent changes to the recovery site, but otherwise use the most recent data. Continue recovery even if errors are encountered.

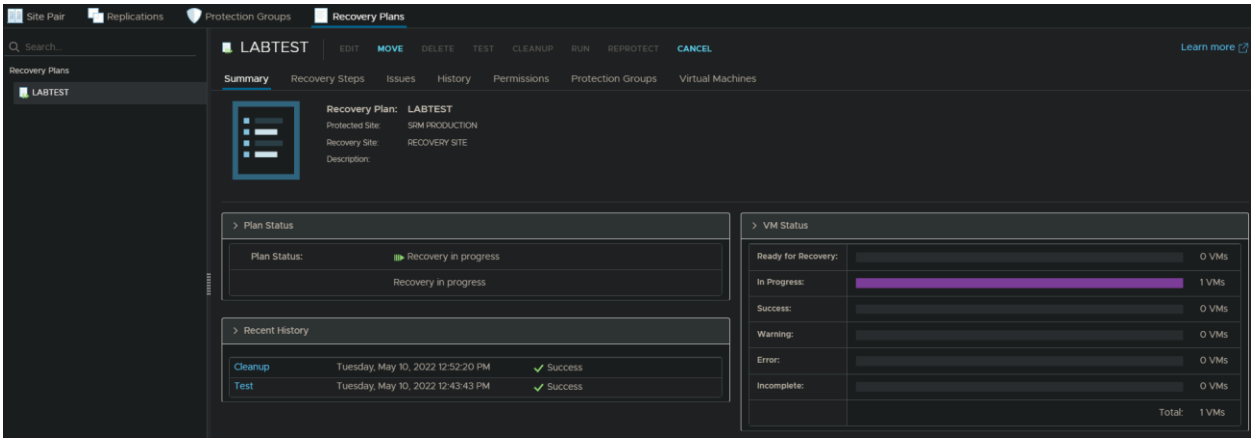
In this example, we will be performing the planned migration.

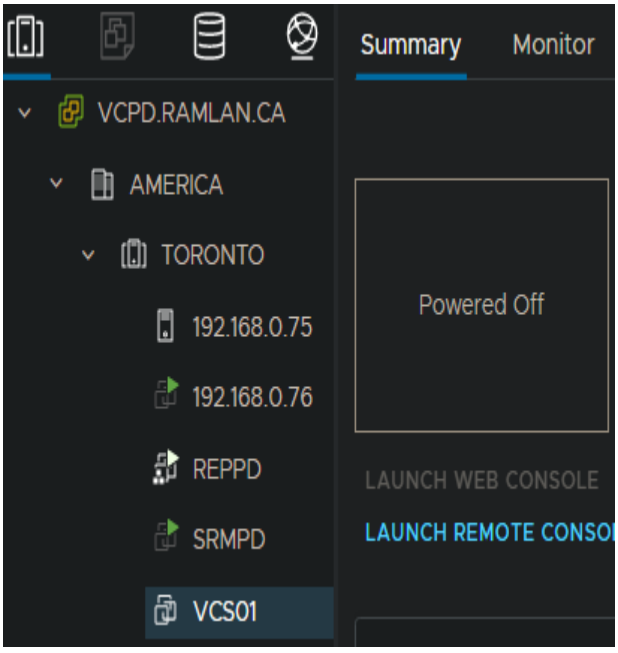
On the recovery plan page, make sure the status is Ready and click on the RUN button.

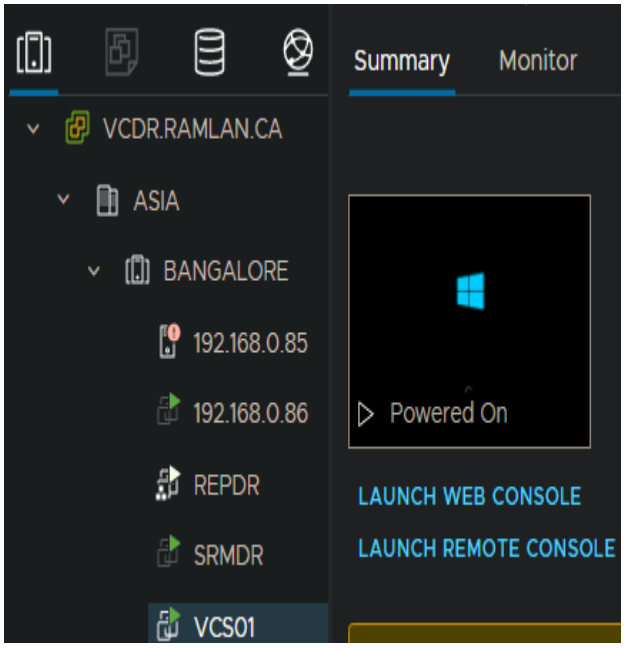


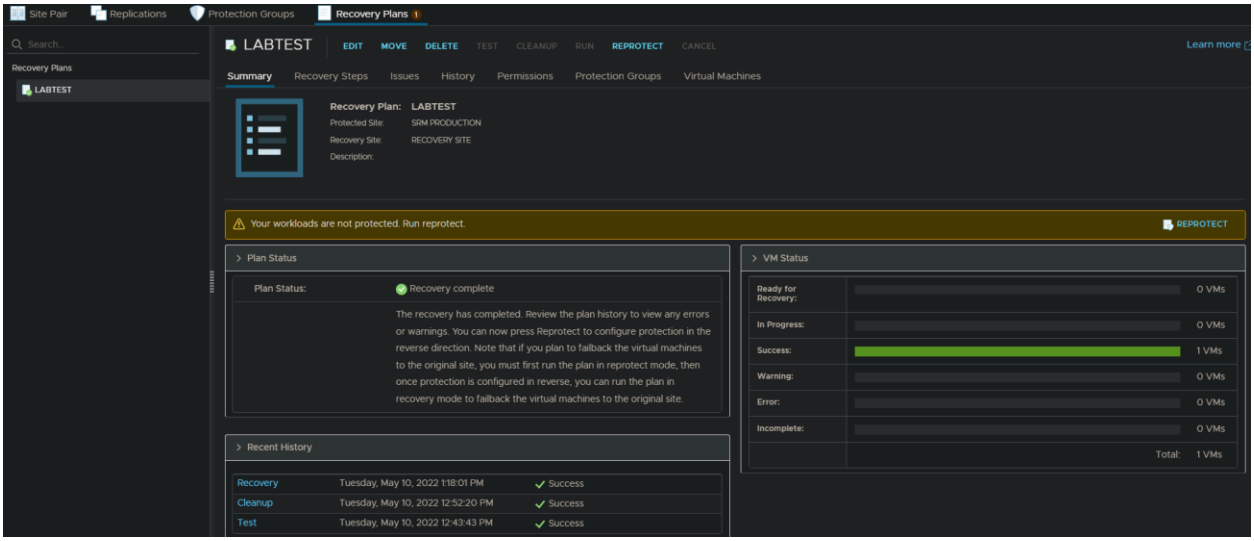


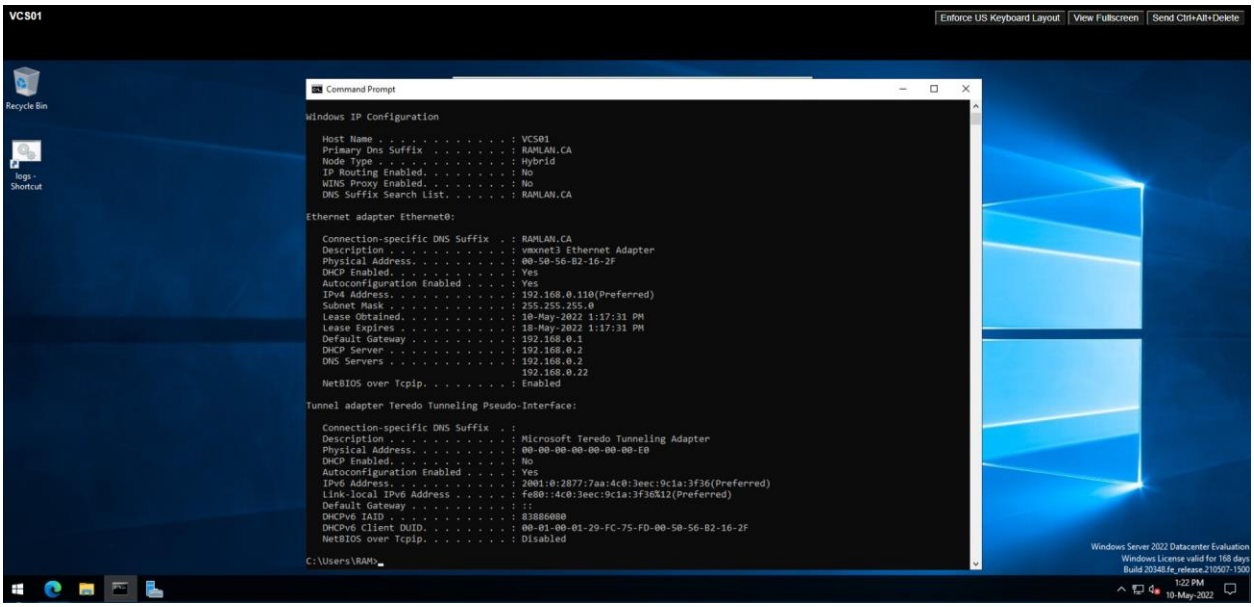

Recovery - LABTEST
1 Confirmation options
2 Ready to complete
Ready to complete
Review your selected settings.
Name
LABTEST
Protected site
SRM PRODUCTION
Recovery site
RECOVERY SITE
Server connection
Connected
Number of VMs
1
Recovery type
Planned migration
CANCEL
BACK
FINISH


Site Pair
Replications
Protection Groups
Recovery Plans
LABTEST
EDIT
MOVE
DELETE
TEST
CLEANUP
RUN
REPROTECT
CANCEL
Learn more
Summary
Recovery Steps
Issues
History
Permissions
Protection Groups
Virtual Machines
Recovery Plan: LABTEST
Protected Site: SRM PRODUCTION
Recovery Site: RECOVERY SITE
Description:
Plan Status
Plan Status: Recovery in progress
Recovery in progress
VM Status
Ready for Recovery: 0 VMs
In Progress: 1 VMs
Success: 0 VMs
Warning: 0 VMs
Error: 0 VMs
Incomplete: 0 VMs
Total: 1 VMs
Recent History
Cleanup Tuesday, May 10, 2022 12:52:20 PM Success
Test Tuesday, May 10, 2022 12:43:43 PM Success


Summary
Monitor
VCPD.RAMLAN.CA
AMERICA
TORONTO
192.168.0.75
192.168.0.76
REPPD
SRMPD
VCS01
Powered Off
LAUNCH WEB CONSOLE
LAUNCH REMOTE CONSOL


Summary
Monitor
VCDR.RAMLAN.CA
ASIA
BANGALORE
192.168.0.85
192.168.0.86
REPDR
SRMDR
VCS01
Powered On
LAUNCH WEB CONSOLE
LAUNCH REMOTE CONSOLE





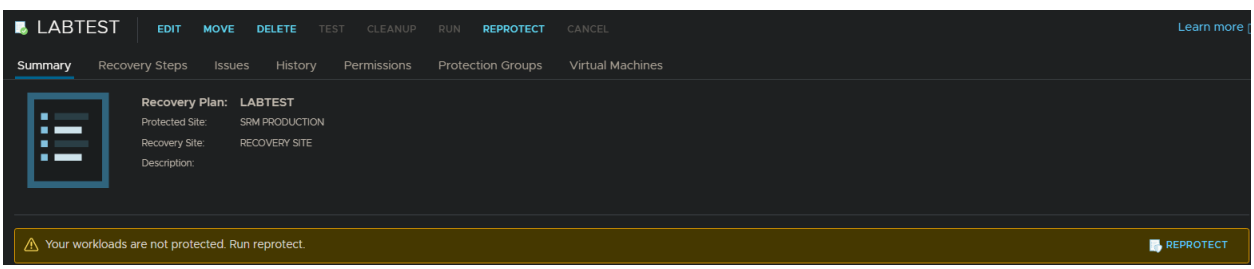
You should also find the plan status on Recovery complete. Notice the warning about your workloads not being protected. This is because there is no protection in the other direction yet.

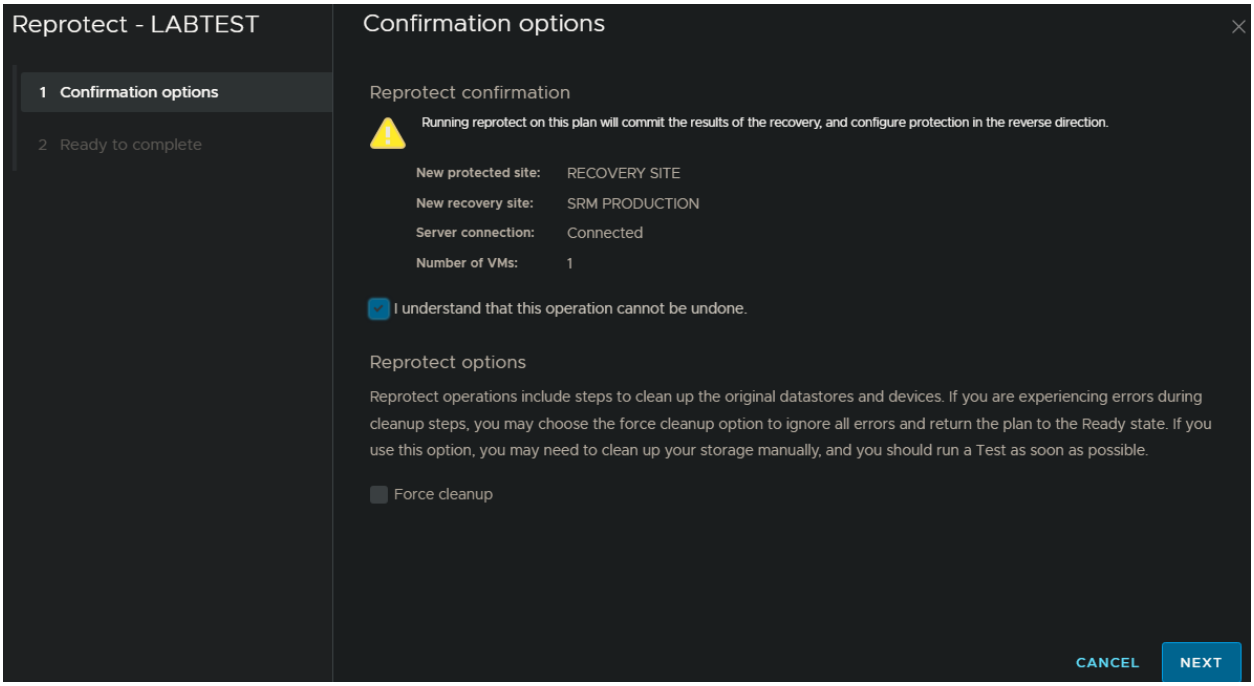
RE-PROTECT AND FAILBACK: When a recovery plan is executed, the workloads are switched to the recovery site but what happens when you want to go back to normal and move them back to their original site?

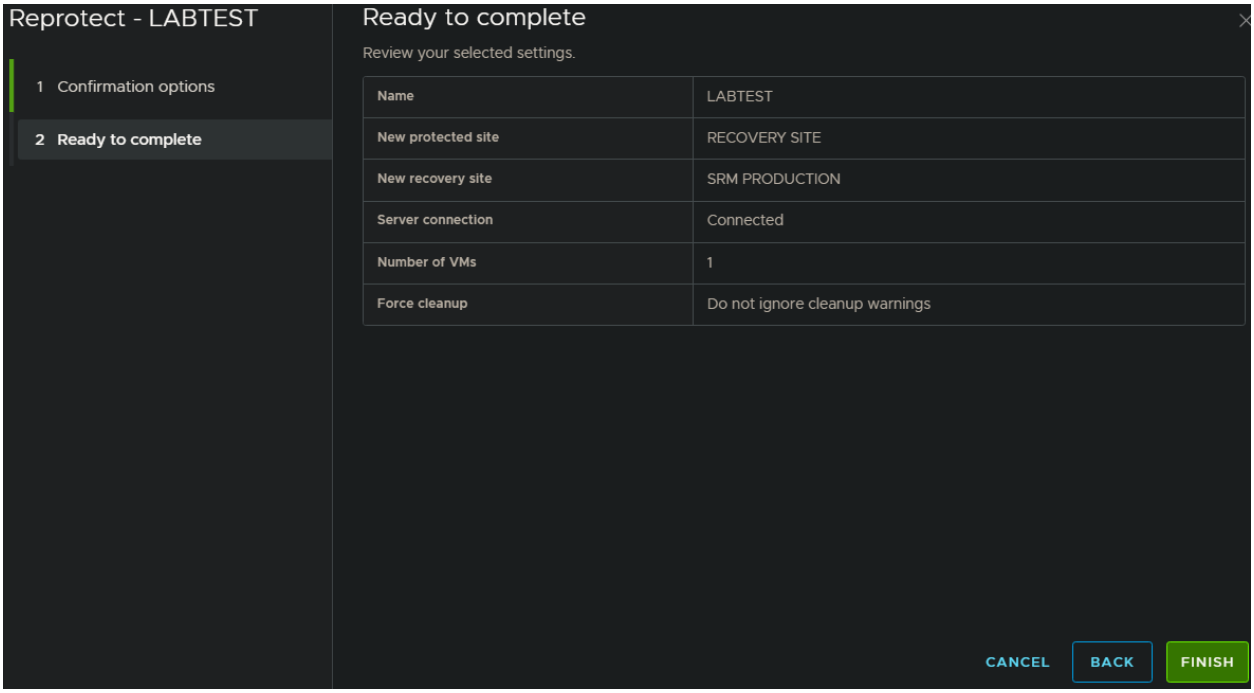
This is known as the failback process which consists of making the recovered VM into the protected virtual machine (the protected site becomes the recovery site) and execute the recovery plan in the other direction.

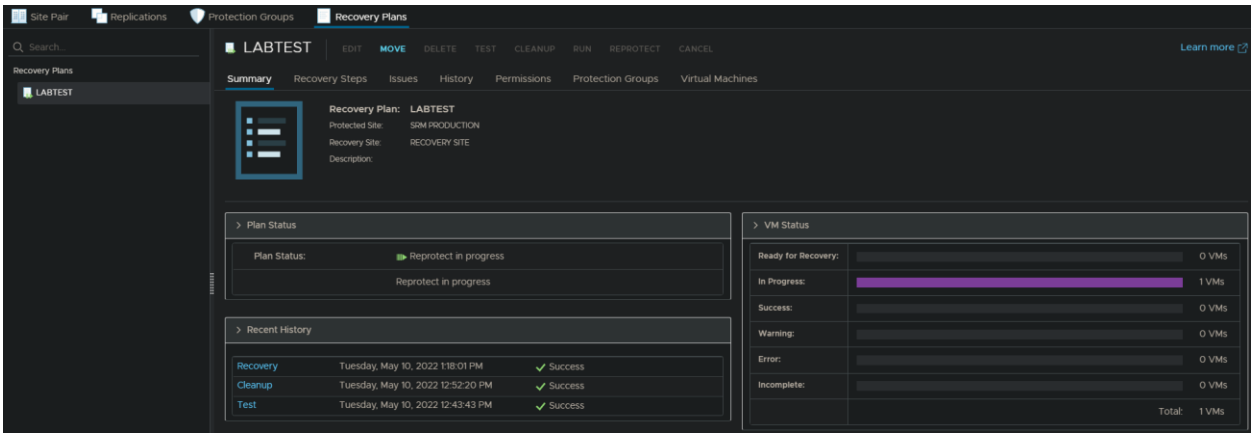
Reprotect:

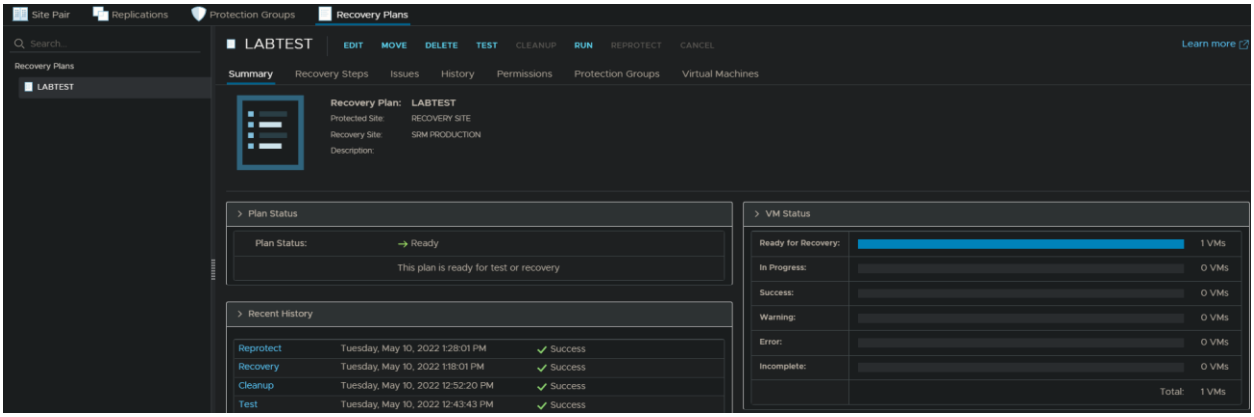
In the recovery plan window, click on the REPROTECT button in the warning banner.



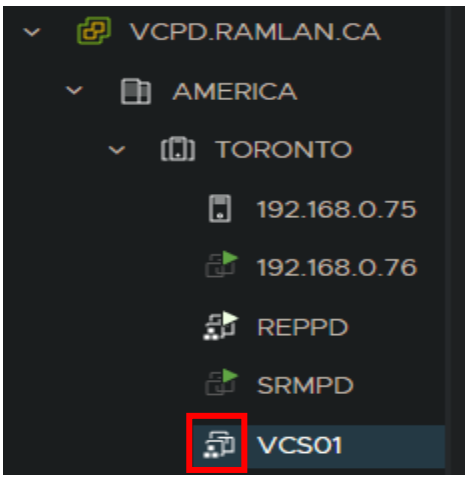

Reprotect - LABTEST
1 Confirmation options
2 Ready to complete
Confirmation options
Reprotect confirmation
Running reprotect on this plan will commit the results of the recovery, and configure protection in the reverse direction.
New protected site: RECOVERY SITE
New recovery site: SRM PRODUCTION
Server connection: Connected
Number of VMs: 1
I understand that this operation cannot be undone.
Reprotect options
Reprotect operations include steps to clean up the original datastores and devices. If you are experiencing errors during cleanup steps, you may choose the force cleanup option to ignore all errors and return the plan to the Ready state. If you use this option, you may need to clean up your storage manually, and you should run a Test as soon as possible.
Force cleanup
CANCEL
NEXT

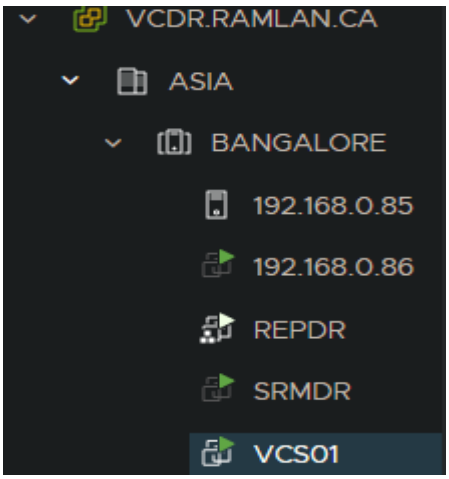

Reprotect - LABTEST
1 Confirmation options
2 Ready to complete
Ready to complete
Review your selected settings.
Name LABTEST
New protected site RECOVERY SITE
New recovery site SRM PRODUCTION
Server connection Connected
Number of VMs 1
Force cleanup Do not ignore cleanup warnings
CANCEL
BACK
FINISH


Site Pair
Replications
Protection Groups
Recovery Plans
LABTEST
EDIT
MOVE
DELETE
TEST
CLEANUP
RUN
REPROTECT
CANCEL
Learn more
Summary
Recovery Steps
Issues
History
Permissions
Protection Groups
Virtual Machines
Recovery Plan: LABTEST
Protected Site: SRM PRODUCTION
Recovery Site: RECOVERY SITE
Description:
Plan Status
Plan Status: Reprotect in progress
Reprotect in progress
VM Status
Ready for Recovery: 0 VMs
In Progress: 1 VMs
Success: 0 VMs
Warning: 0 VMs
Error: 0 VMs
Incomplete: 0 VMs
Total: 1 VMs
Recent History
Recovery Tuesday, May 10, 2022 1:18:01 PM Success
Cleanup Tuesday, May 10, 2022 12:52:20 PM Success
Test Tuesday, May 10, 2022 12:43:43 PM Success

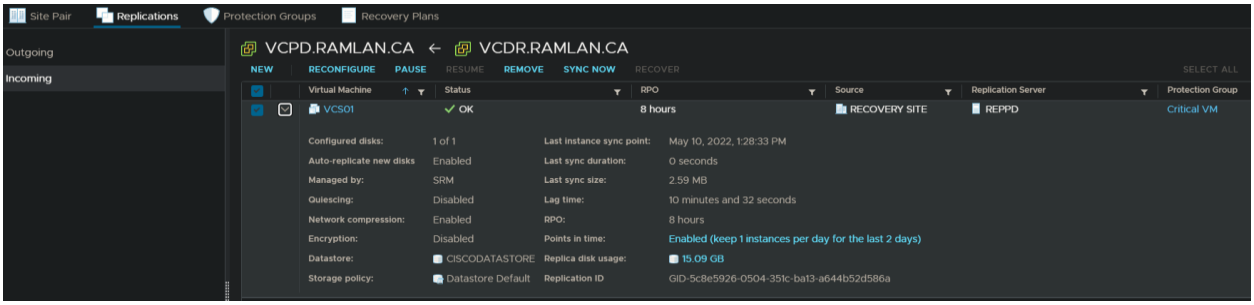


Note that the Reprotect operation has no impact on the state of the VM. It simply turns the original protected VM into the replica. You will actually notice that the icon in vCenter changes to the one with 3 squares next to it.

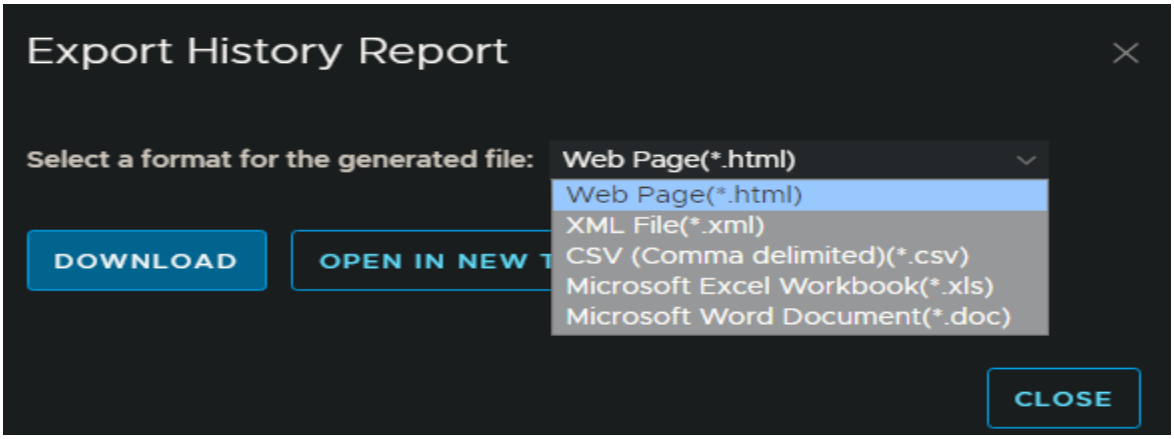




When you look at the Replications – it is other direction – Recovery to Protection Site



REPORTS: VMware Site Recovery Manager includes an export functionality to extract the operations in various formats such as html, xml, csv, xls and doc. That way you can provide your management or clients a proof that a test or actual recovery has been performed.



The looks of the report is a bit simplistic but it includes the core information you are most likely after.

Run Log Report
VMware Site Recovery Manager 8.5

From: 2022-05-03 04:00:00 (UTC 0)
To: 2022-05-11 03:59:59 (UTC 0)

Recovery Plan	User	Operation	Result	Date	Duration
LABTEST	VSPHERE.LOCAL\Administrator	Reprotect	Success	2022-05-10 17:28:01 (UTC 0)	00:00:38
LABTEST	VSPHERE.LOCAL\Administrator	Recovery	Success	2022-05-10 17:18:01 (UTC 0)	00:01:52
LABTEST	VSPHERE.LOCAL\Administrator	Cleanup	Success	2022-05-10 16:52:20 (UTC 0)	00:00:04
LABTEST	VSPHERE.LOCAL\Administrator	Test	Success	2022-05-10 16:43:43 (UTC 0)	00:02:28

With this we have completed all the configuration for SRM and REP. Please note this is just lab environment. In production all these configurations should be properly planned, executed and tested.

Thanks

Ram
10th May 2022