

VMware Cloud Director Availability On-premises Guides

Guide #14

Migration and Failover tasks

You can find the most up-to-date technical documentation on the VMware website at: <https://docs.vmware.com/>

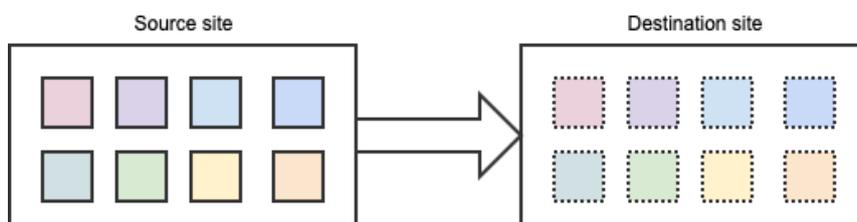
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What is a Migration

The purpose of the migration is to move workloads from one site to another. Migrate a vApp or a virtual machine to a remote organization, and run the workload in the destination site, by configuring a migration. The original workload is running in the source site, until you perform a migrate task. After performing a successful migration to the destination site, you can power on the source virtual machine in the destination site. Configuring a new migration is like configuring a protection, without providing the RPO and the migration synchronizes the workloads every 24 hours. For a migration, you cannot have more than one instance.

When you are ready to move the workloads to the destination site, perform a migrate task. In the destination site, a new virtual machine is built by using replicated data from the source virtual machine. During the migrate task, the source virtual machine is powered off. In the **Migrate task wizard**, you can select to automatically power on the migrated virtual machine after a successful migration, or you can select to power on the migrated virtual machine sometime later.

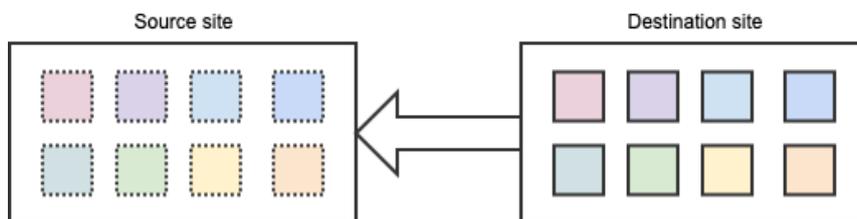
The following figure shows workloads in the source site, configured with a migration in the destination site. The workloads are still running in the source site while replicating the data in the destination site. In the figure, the running workloads are shown as surrounded by a solid line and the replicated data as surrounded by a dotted line.



After migrating the workloads, they reside in the destination site, shown in the figure as surrounded by a solid line. The original workloads are powered off in the source site, shown in the figure as surrounded by a dashed line. You can delete the migration as no longer needed. As a result, after migration the migrated workloads are running in the destination site and the original workloads are left powered off in the source site.



Optionally, you can configure the migrated vApps and virtual machines with new protections to the original source site and use the original workloads as seed to reduce the initial replication traffic from the destination site.



Note: You can migrate a regular protection. If your workloads are currently protected in a remote site, but you changed your mind and want to move the workloads, you can migrate vApps and virtual machines by using the already existing replications. It is not necessary to create a new migration for this task.

Differences between Migration and Failover

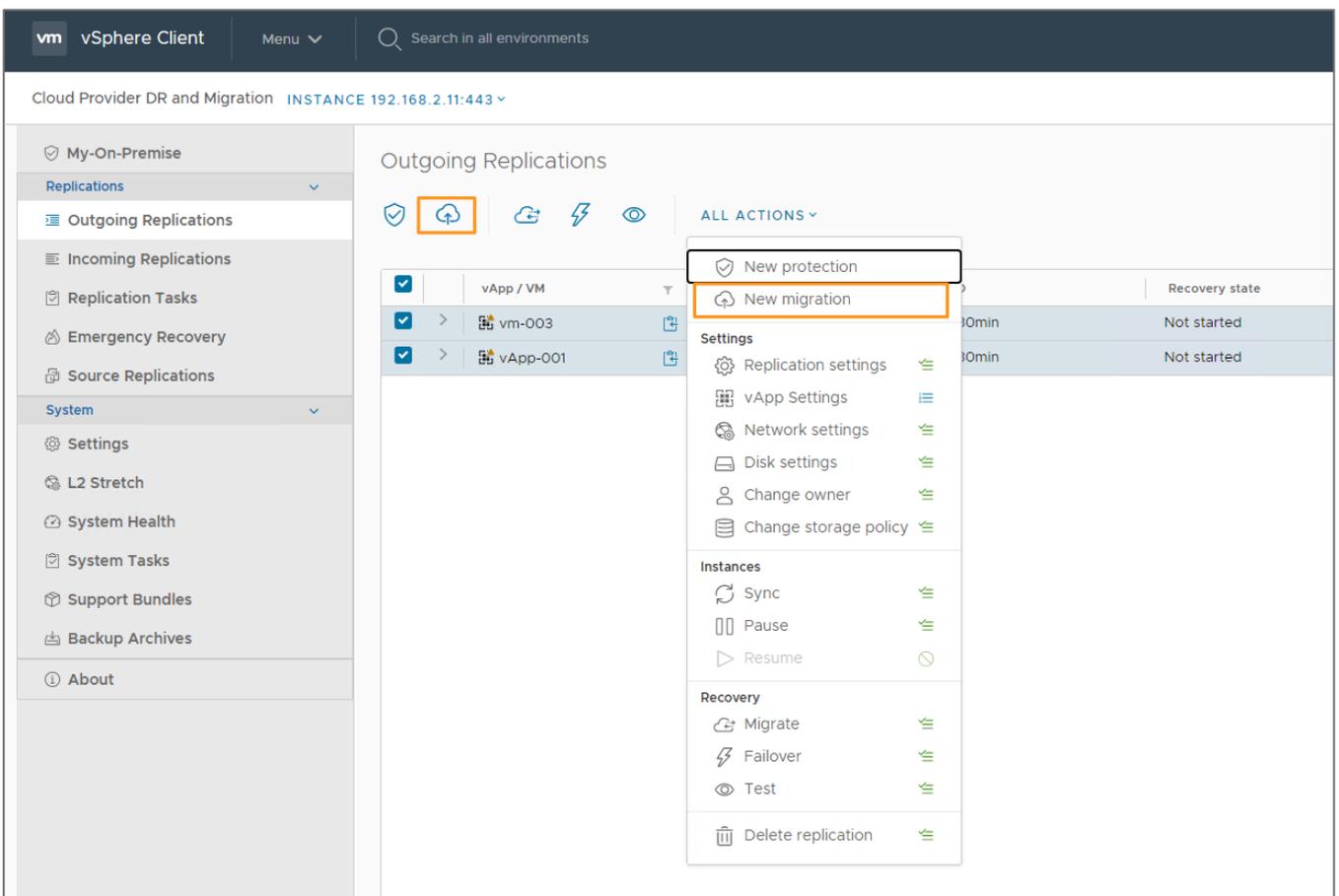
While the migration is for planned move of workloads, use failover to move the workloads in case of emergency or any disaster in the source site. Like the migrate tasks, performing a failover task creates new vApps and virtual machines in the destination site. The failover tasks do not touch the source workloads as they are not accessible, for example in case of disaster.

The most significant difference between the migrate and failover tasks is that when performing a migrate task, before creating virtual machines in the destination site, an additional synchronization occurs.

- When performing a migration, the replication occurs while the virtual machines are running. The next step is to power off the source virtual machines and perform a new synchronization. After synchronizing the powered off workload, starts the creation of the vApps and virtual machines. The additional synchronization of the powered off workload guarantees that no data can be lost.
- When performing a failover it is possible to incur data loss. This depends on the RPO and the moment a disaster strike. For example, if the RPO is 1 hour, meaning that the workload is synchronized every hour, and if disaster strikes 30 minutes after the last sync, then all changes after the last sync are lost.

Configure new Migration

To create new migration, navigate to **Outgoing Replications** or to **Incoming replications**, depending in which direction to migrate the workloads. From the **All Actions** menu, select **New Migration** or select the new migration button.



Outgoing Migration

Follow the **New Outgoing Replication** wizard.

1. In the **vCenter VMs** page, select one or more virtual machines from your vCenter Server to migrate to the cloud site and click **Next**.

New Outgoing Migration

- 1 vCenter VMs
- 2 Destination VDC and Storage policy
- 3 Settings
- 4 Ready to complete

vCenter VMs

Select VMs to replicate from: 192.168.1.10

Group VMs to a single vApp

<input type="checkbox"/>	VM	CPU	Memory	Disk capacity
<input type="checkbox"/>	vm-001	1	2.00 GB	16.00 GB
<input checked="" type="checkbox"/>	vm-002	1	2.00 GB	16.00 GB
<input checked="" type="checkbox"/>	vm-003	1	2.00 GB	16.00 GB
<input type="checkbox"/>	vm-01-C6Zq	1	4.00 GB	10.00 GB

2 DESELECT ALL Items per page 20 1 - 4 of 4 results

CANCEL **NEXT**

2. In the **Destination VDC and Storage policy** page, select the destination virtual data center and storage policy and click **Next**.

New Outgoing Migration

- 1 vCenter VMs
- 2 Destination VDC and Storage policy
- 3 Settings
- 4 Ready to complete

Destination VDC and Storage policy

Select a virtual data center from CLOUD-01 to be used as replication target: **REFRESH**

<input type="checkbox"/>	Name	Used CPU	Used memory	Used storage	VMs	Quota	Ongoing replications
<input checked="" type="checkbox"/>	ovdc01	0 M	0.00 B	14.00 GB	1	100	0

Items per page 20 1 - 1 of 1 results

Storage policy

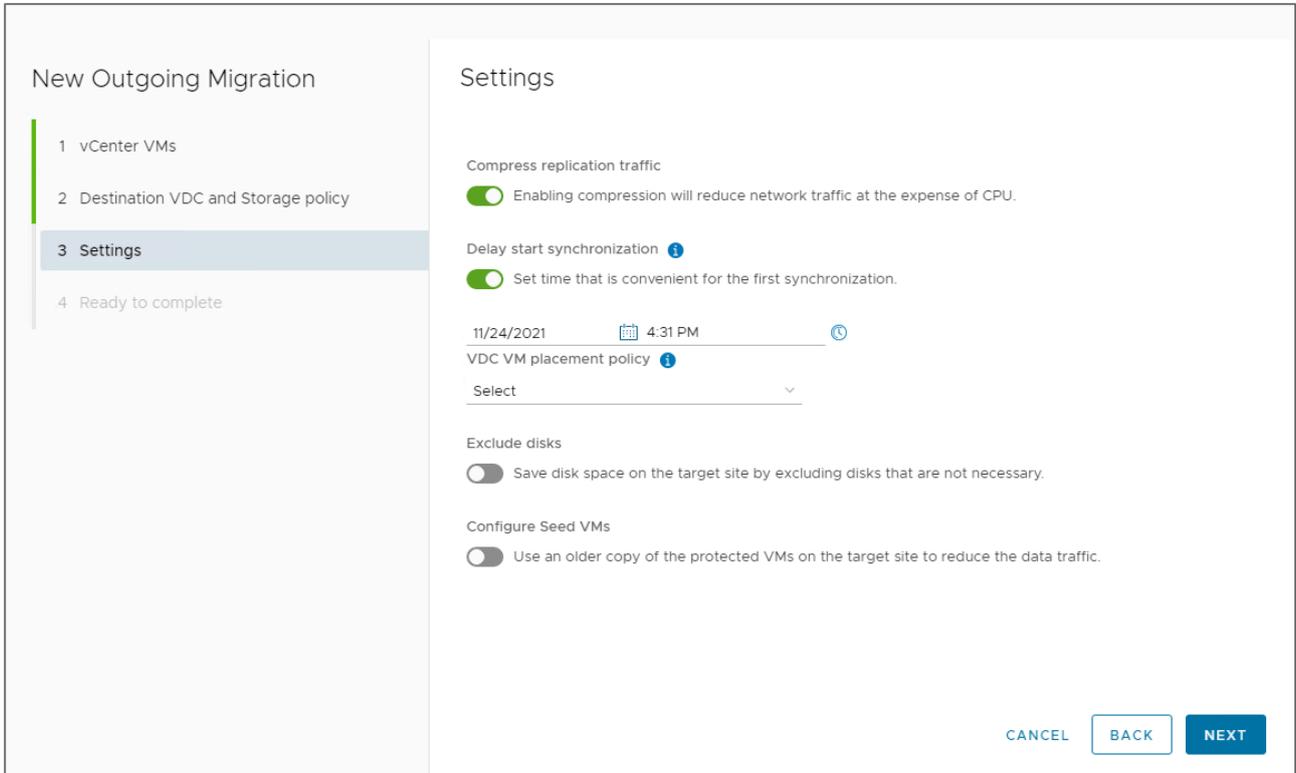
Select the new storage policy placement for the recovered VMs

<input type="checkbox"/>	Name	Encryption capability	Used	Limit
<input checked="" type="checkbox"/>	NFS	No	14.00 GB	Unlimited

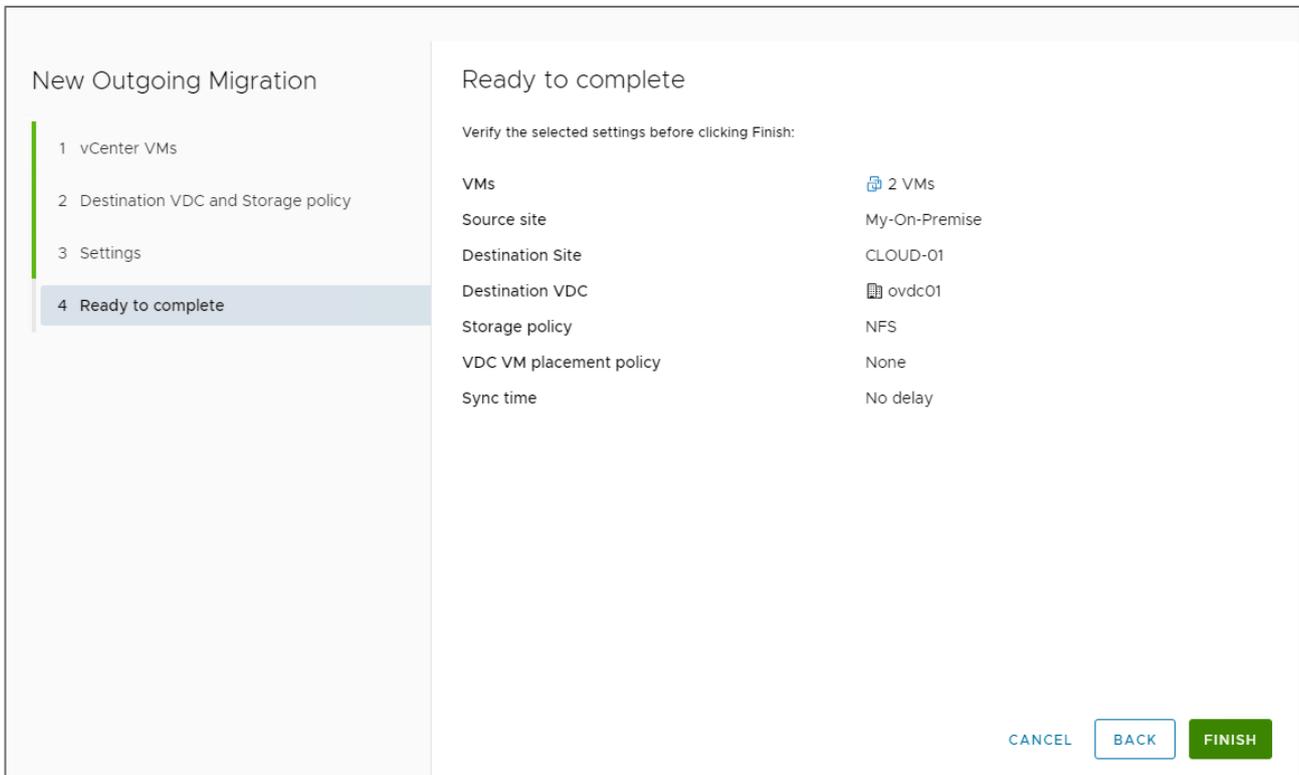
Items per page 20 1 - 1 of 1 results

CANCEL **BACK** **NEXT**

- In the **Settings** page, you can set a time to start the synchronization. If you keep this option deselected, the synchronization starts immediately after completing the wizard. Also, you can exclude disks from the migration, select Placement Policy or configure seed if available. Click **Next**.



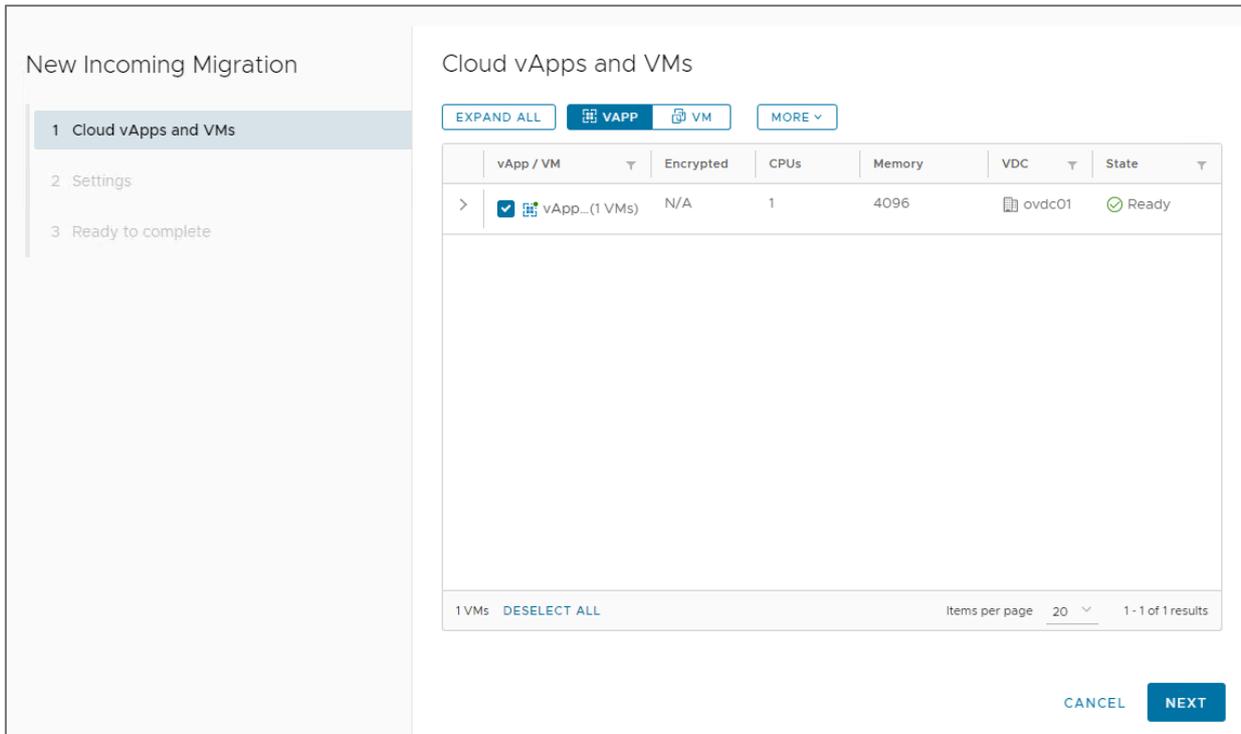
- In the **Ready To Complete** page, review the migration details and click **Finish**.



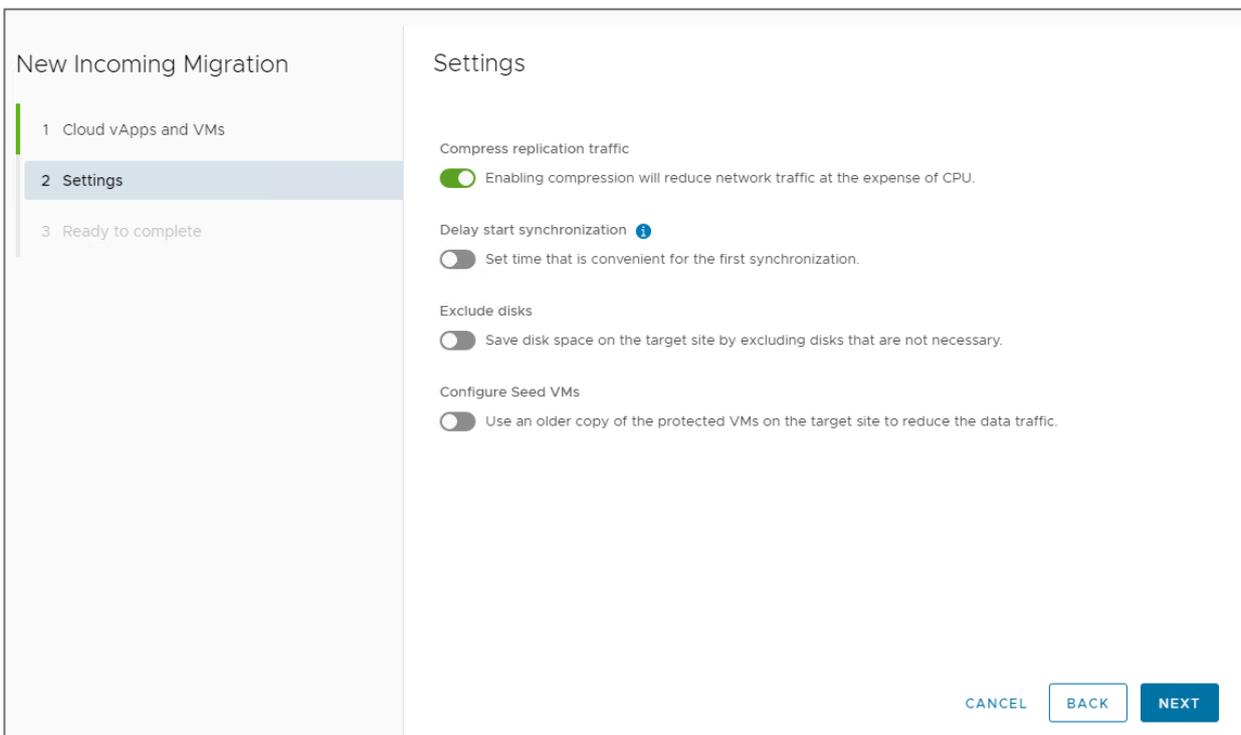
Incoming Migration

Follow the **New Incoming Migration** wizard.

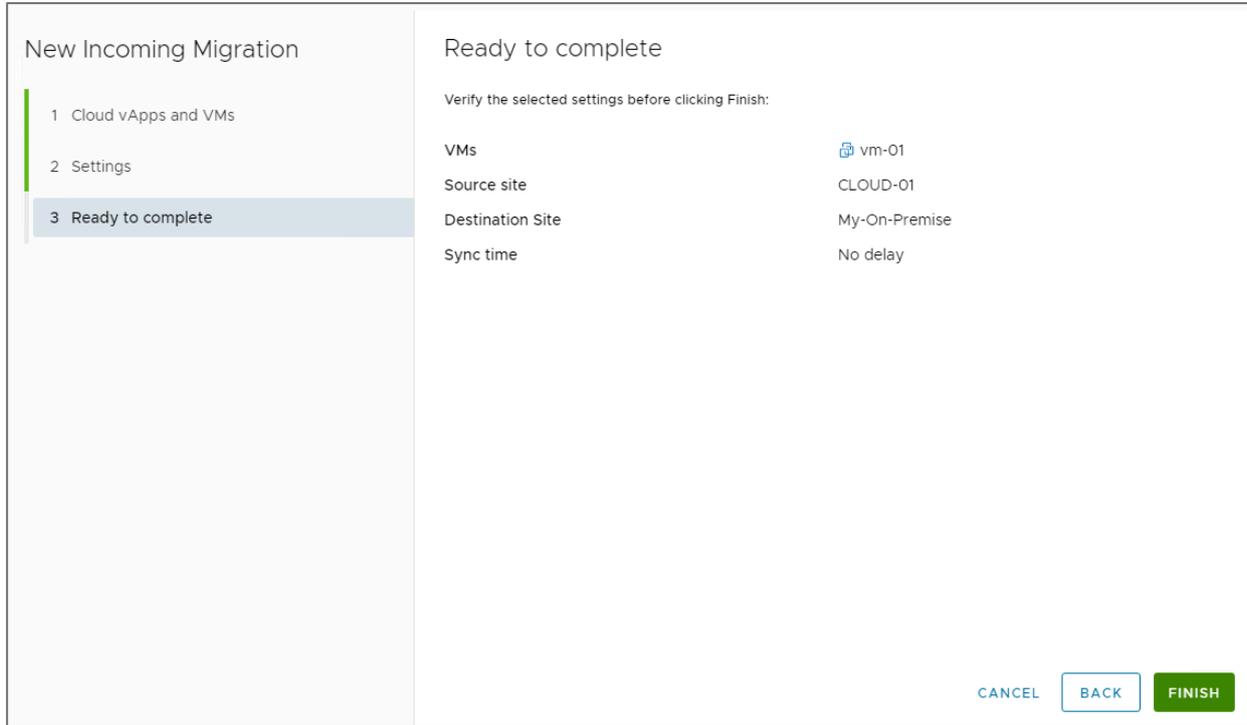
1. In the **Cloud vApps and VMs** page, select one or more cloud virtual machines to migrate to your vCenter Server and click **Next**.



2. In the **Settings** page, you can set a time to start the synchronization. If you keep this option deselected, the synchronization starts immediately after completing the wizard. Also, you can exclude disks from the migration or configure seed if available. Click **Next**.

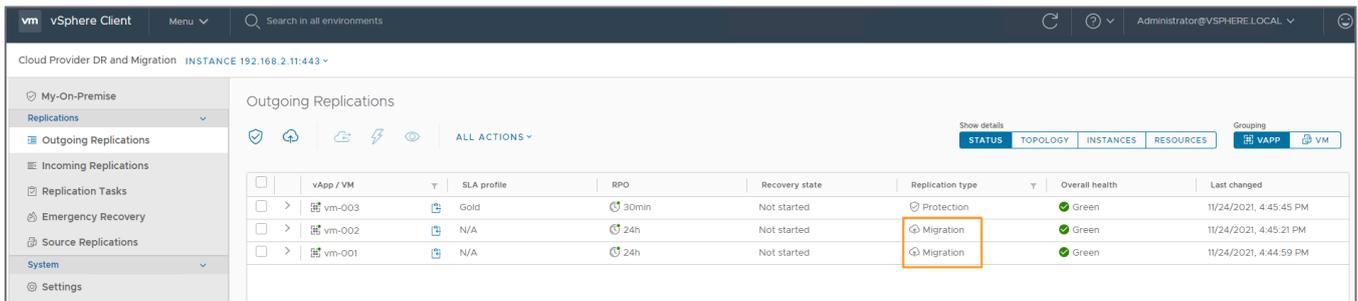


3. In the **Ready To Complete** page, review the migration details and click **Finish**.

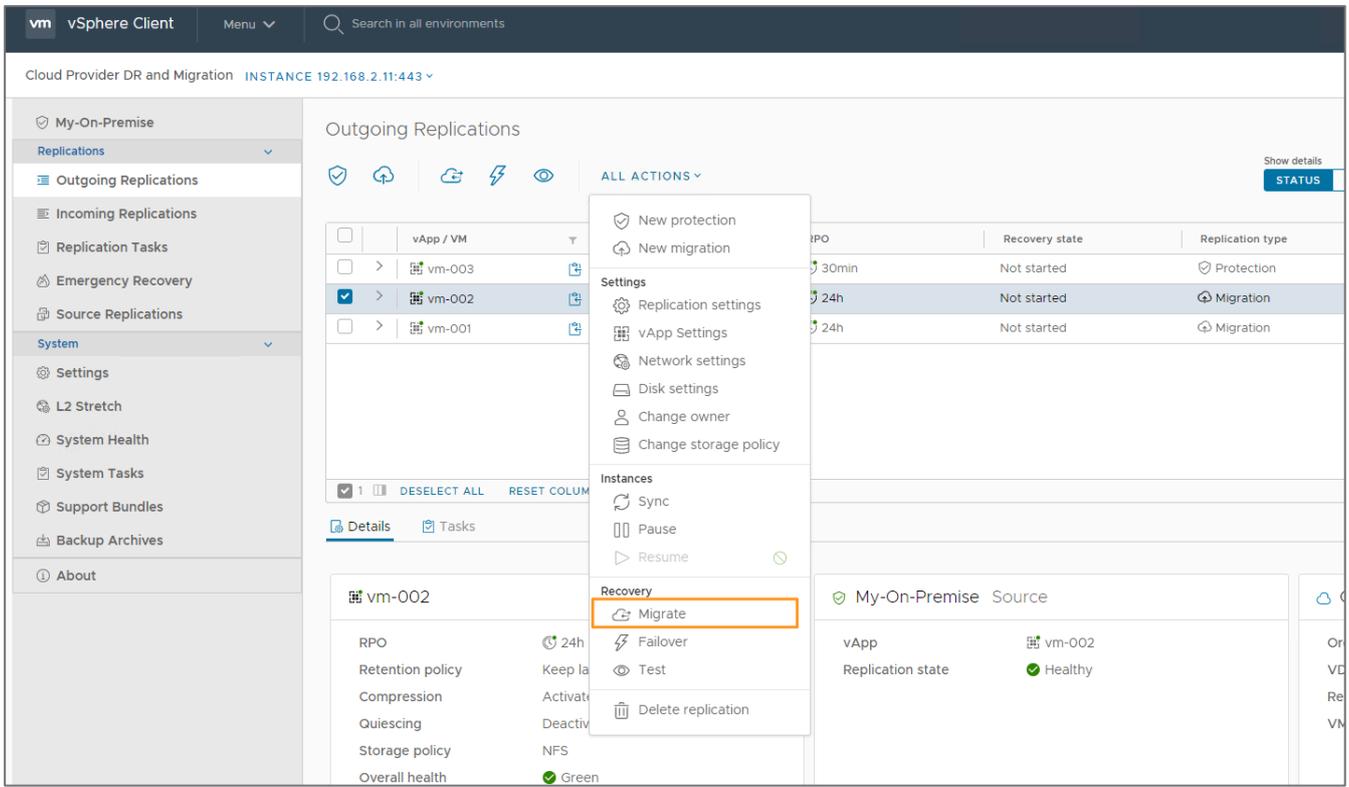


Perform Migration

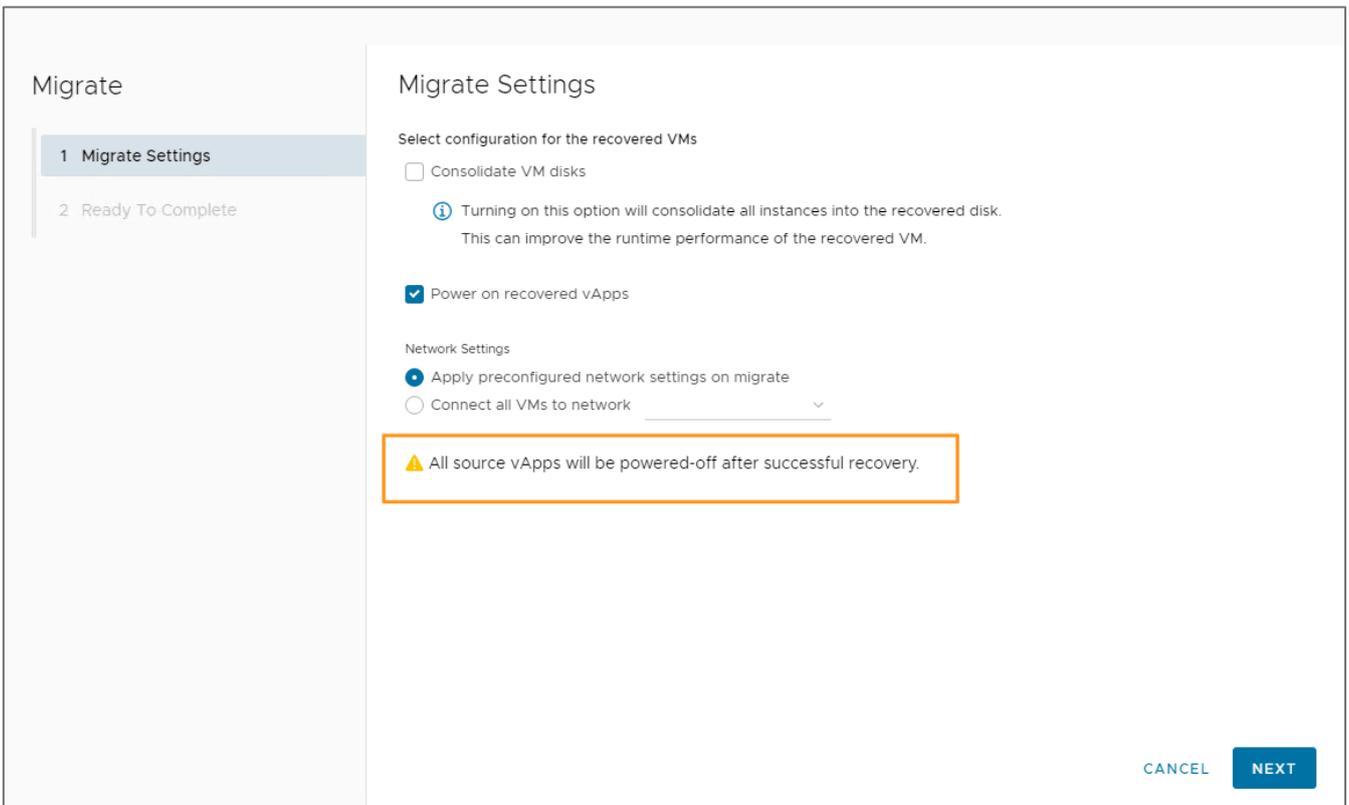
1. To perform migration, under **Outgoing Replications** or **Incoming Replications**, select a **Migration**. As described above, you can also select a **Protection** to perform a migration task.



2. From the **All Actions** menu, select **Migrate** and follow the **Migrate** wizard.



3. In the **Migrate Settings** page, select whether to consolidate the VM disks and whether to power on the migrated workloads. Select to apply preconfigured network settings or select another network for the newly created virtual machines. Click **Next**.



4. In the **Ready To Complete** page, review the details and click **Finish**.

Migrate

- 1 Migrate Settings
- 2 Ready To Complete

Ready To Complete

i The migration workflow will execute the following steps:

- Sync (if the source VM is ON)
- Power off source VM (if needed)
- Sync (after source VM is off)
- Import the VM in the target site

Verify the selected settings before proceeding:

Recovered vApps	vm-002
Recovery site	CLOUD-01
Recovery network	Preconfigured network settings
Power on recovered vApps	Activated
Consolidate VM disks	Deactivated

CANCEL
BACK
FINISH

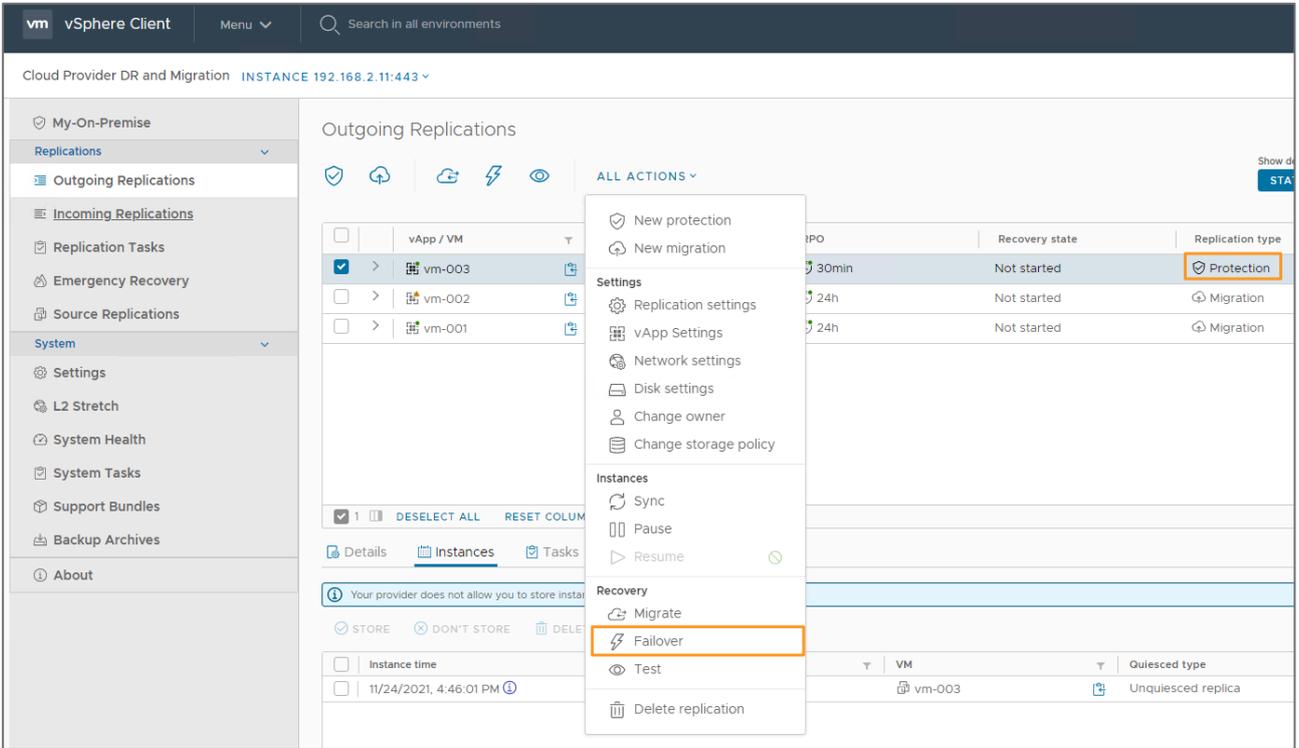
5. You can delete the migration in the replications view. The source virtual machine is powered off. Now you can choose to delete the source virtual machine or to keep it, if you plan to configure new protection by using the original source virtual machine as seed.

Summary Monitor Configure Permissions <u>VMs</u> Updates				
Virtual Machines VM Templates vApps VM Folders				
Name ↑	State	Status		
vm-001	Powered On	✓ Normal	16 GB	
vm-002	Powered Off	✓ Normal	34.59	
vm-003	Powered On	✓ Normal	34.08	

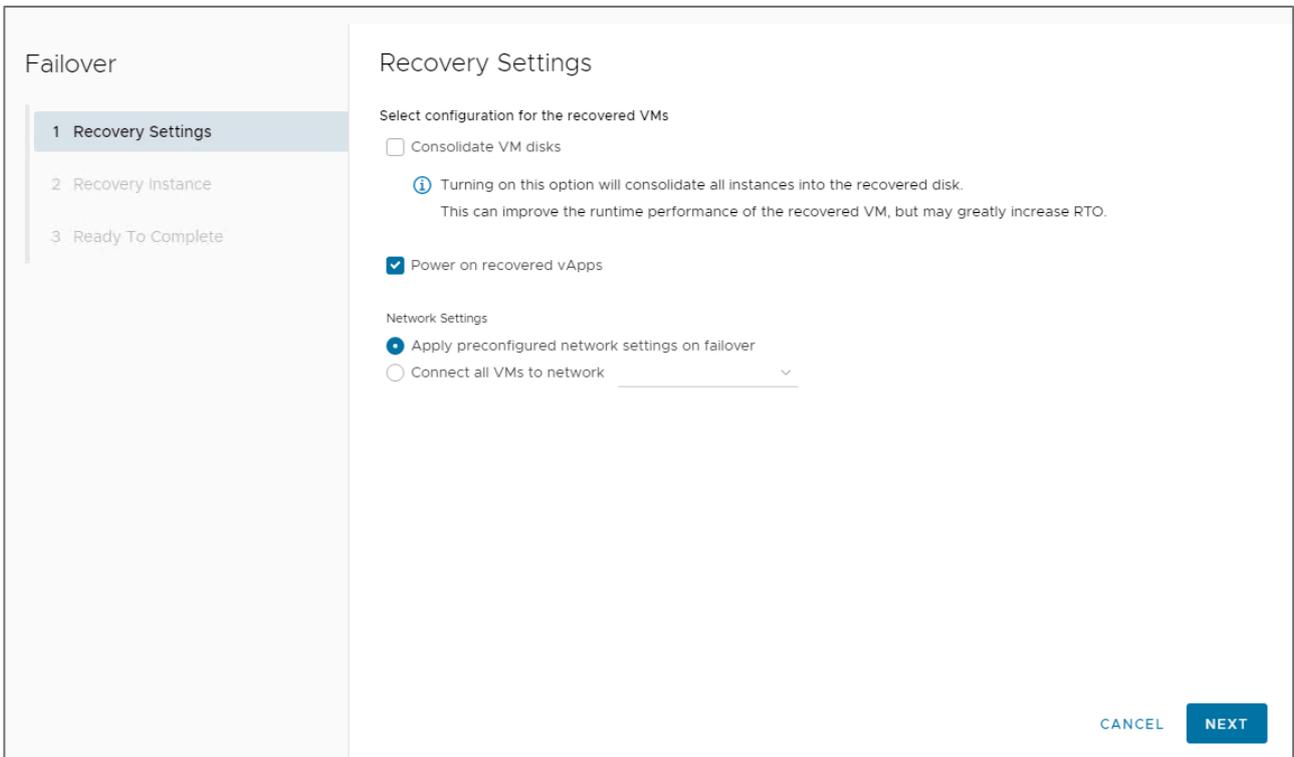
Perform Failover

As described above, you can perform migration for both migrations and protections. You can perform failover only for protections.

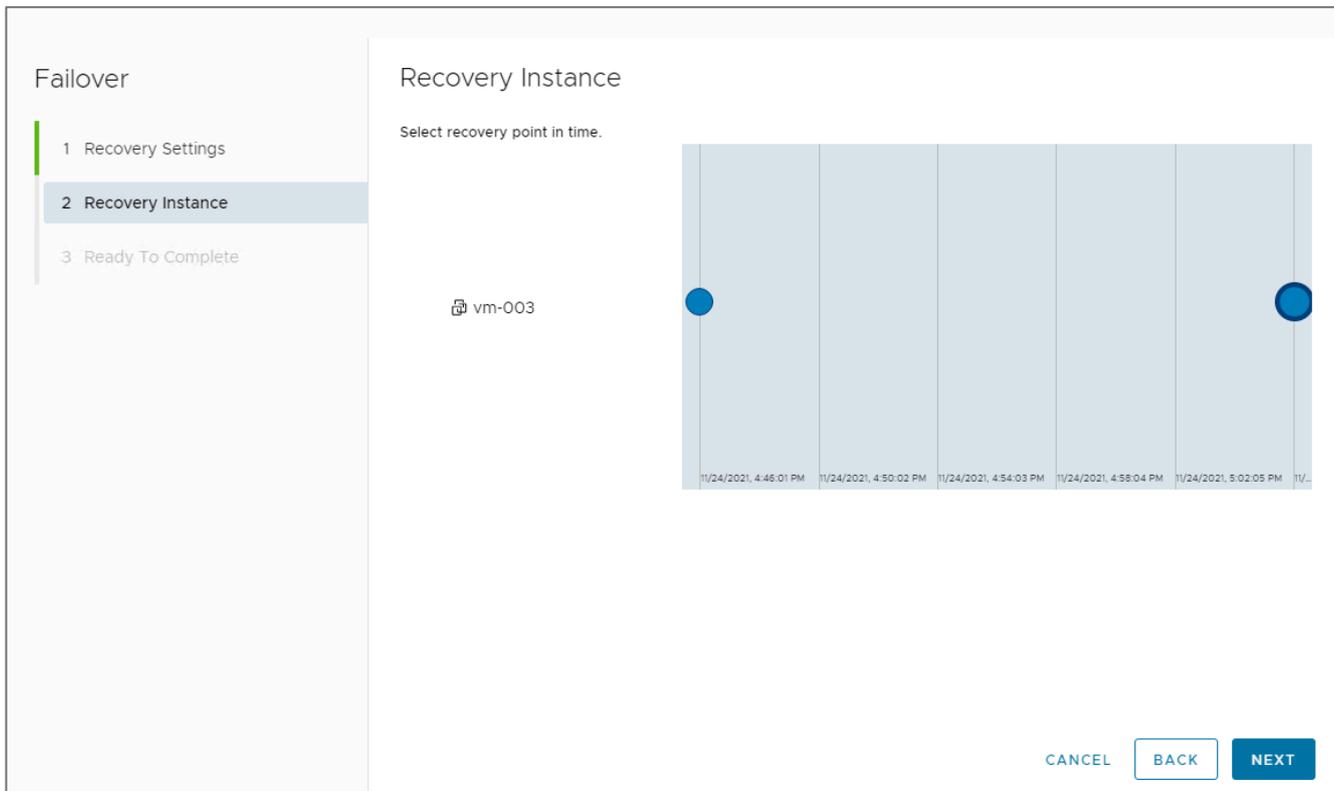
1. To perform failover, select one or more protections and from the **All Actions** menu select **Failover**.



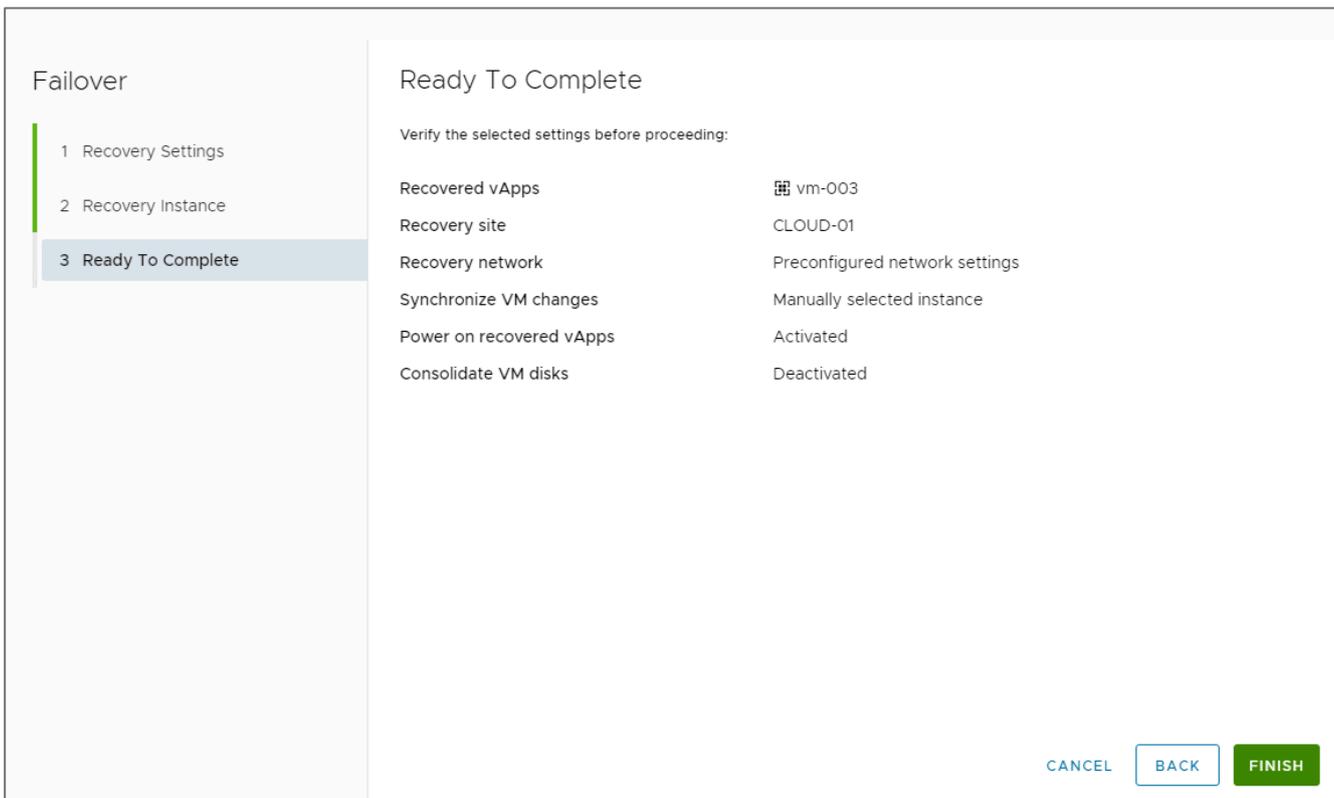
2. In the **Recovery Settings** page, select whether to consolidate the VM disks and whether to power on the workloads. Select to apply preconfigured network settings or select another network for the newly created virtual machines. Click **Next**.



3. In the **Recovery Instance** page, if the replication is configured to keep more than one instance, you can select from which one to create the new virtual machine. Click **Next**.



4. In the **Ready To Complete** page, review the details and click **Finish**.



The **Recovery state** of the new replication changes to **Fail-Over** and in the **Last changed** column you can monitor the progress.

Outgoing Replications

	vApp / VM	SLA profile	RPO	Recovery state	Replication type	Overall health	Last changed
<input checked="" type="checkbox"/>	vm-003	Gold	30min	Failed-Over	Protection	Green	Failover 53%
<input type="checkbox"/>	vm-002	N/A	24h	Not started	Migration	Yellow	11/24/2021, 4:45:21 PM
<input type="checkbox"/>	vm-001	N/A	24h	Not started	Migration	Green	11/24/2021, 4:44:59 PM

5. The failover completes when the **Recovery state** of the new replication changes to **Failed-Over**.

Outgoing Replications

	vApp / VM	SLA profile	RPO	Recovery state	Replication type	Overall health	Last changed
<input checked="" type="checkbox"/>	vm-003	Gold	30min	Failed-Over	Protection	Green	11/24/2021, 5:08:18 PM
<input type="checkbox"/>	vm-002	N/A	24h	Not started	Migration	Yellow	11/24/2021, 4:45:21 PM
<input type="checkbox"/>	vm-001	N/A	24h	Not started	Migration	Green	11/24/2021, 4:44:59 PM

6. Now you can configure the protection in in the opposite direction by using **Reverse** from the **All Actions** menu.

vSphere Client

Cloud Provider DR and Migration

Outgoing Replications

	vApp / VM	RPO	Recovery state	Replication type
<input checked="" type="checkbox"/>	vm-003	30min	Failed-Over	Protection
<input type="checkbox"/>	vm-002	24h	Not started	Migration
<input type="checkbox"/>	vm-001	24h	Not started	Migration

ALL ACTIONS

- New protection
- New migration
- Settings
 - Replication settings
 - vApp Settings
 - Network settings
 - Disk settings
 - Change owner
 - Change storage policy
- Instances
 - Sync
 - Pause
 - Resume
- Recovery
 - Migrate
 - Failover
 - Test
 - Reverse**
 - Delete replication

No preserved instances

