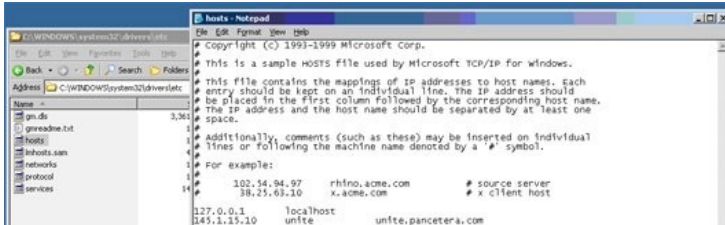


Using Quantum vmPRO with EMC Networker

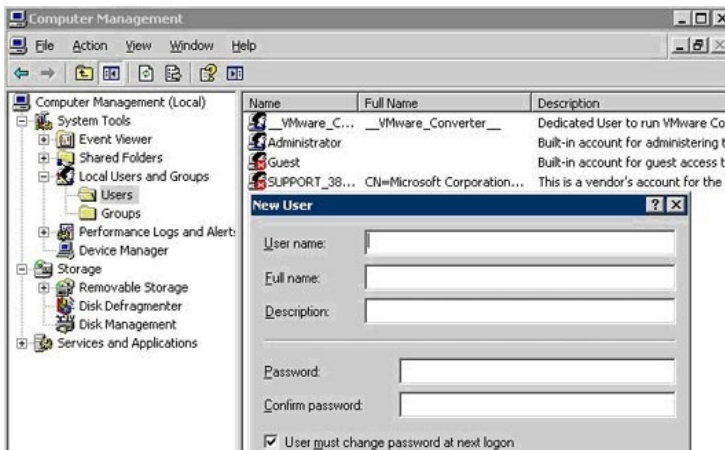
Backup using Quantum vmPRO with EMC Networker

1. If the vmPRO appliance name and IP address are not resolved through DNS, update the Windows hosts file to include the IP address and host name of the appliance:

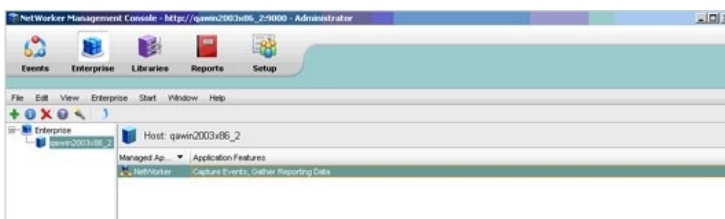


2. On the Windows server running the Networker server, create an account with the same name and password as used for the vmPRO server. The account allows access to the vmPRO /export directory without giving a user name and password each time.

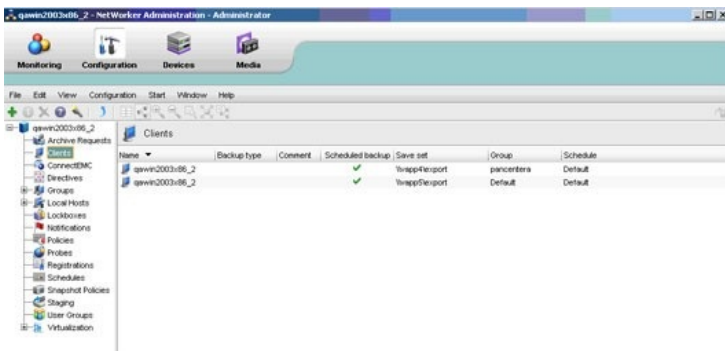
To create a new user, go to *Start > Control Panel > Administrative Tools > Computer Management > Local Users and Groups > Users*. Then right-click *Users* and choose *New User*.



3. Start the NetWorker Administrator GUI through the *NetWorker Management Console*.
4. Select the NetWorker server name on the left panel and right-click on *NetWorker* on the right panel to start the NetWorker GUI.

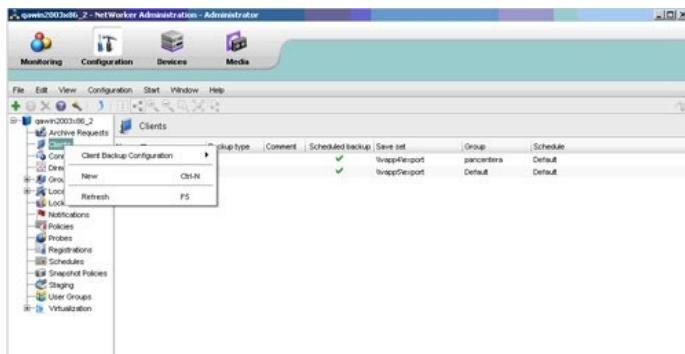


5. Select the *Configuration* button on the top and select *Clients* on the left panel.

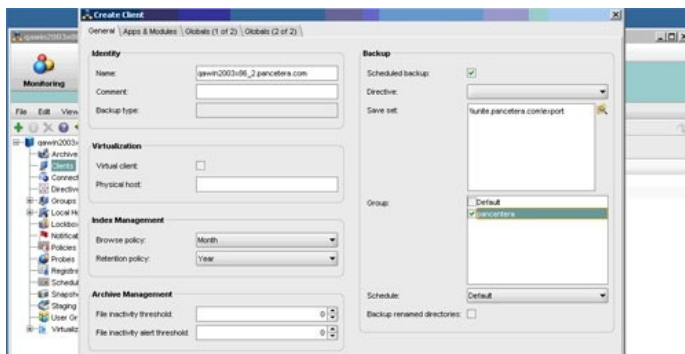


6. If the CIFS share is accessed through the NetWorker server, the client should already be defined under *Clients* or create a new client only for CIFS. If the share is accessed through a different NetWorker client, create the client:

- Right-click on *Clients* and select *New*.



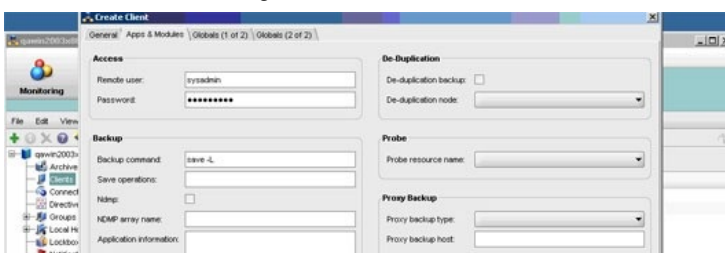
- Define the appropriate client *Name* and select the *Group* with which to associate the client.
- In the *Save Set* field, specify the CIFS share for the vmPRO appliance as:
`\\hostname.domain.com\export`.



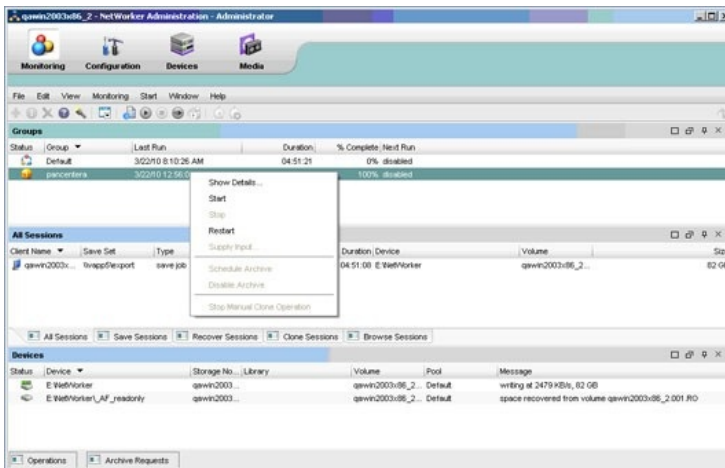
7. Click the *Apps & Modules* tab and specify the vmPRO administrator username and password in the *Remote User* and *Password* fields. In the same tab, specify the following command in the *Backup Command* field:

```
save -L
```

8. Click *OK* to save the changes.



9. Select the *Monitoring* button on the top of the GUI and select the group that the client was added to. Right-click on the group to start the group. Note that all clients in this one group are backed up once the start button is selected unless the other clients are not marked for scheduled backup under the client configuration.

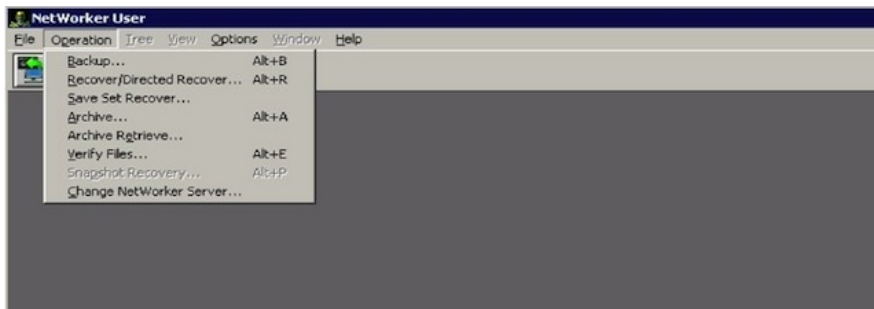


Recovery using Quantum vmPRO with EMC NetWorker

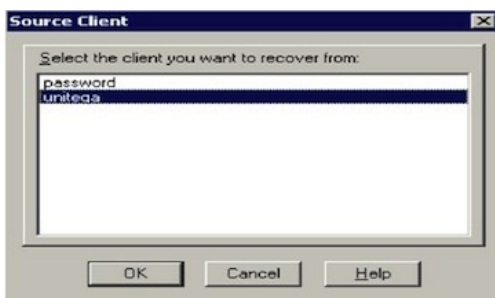
1. Start *NetWorker User*.



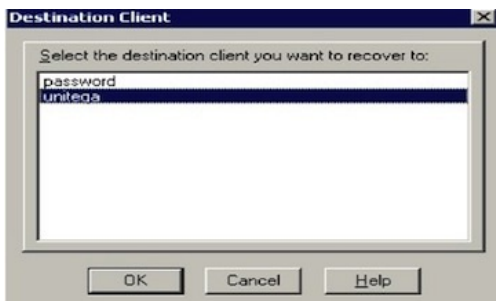
2. Select *Operation > Recover/Directed Recover*



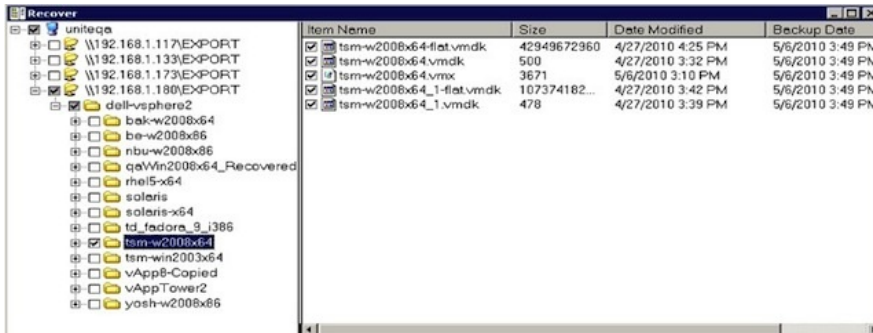
3. Select the *Source Client* that was used to back up the export directory and click *OK*



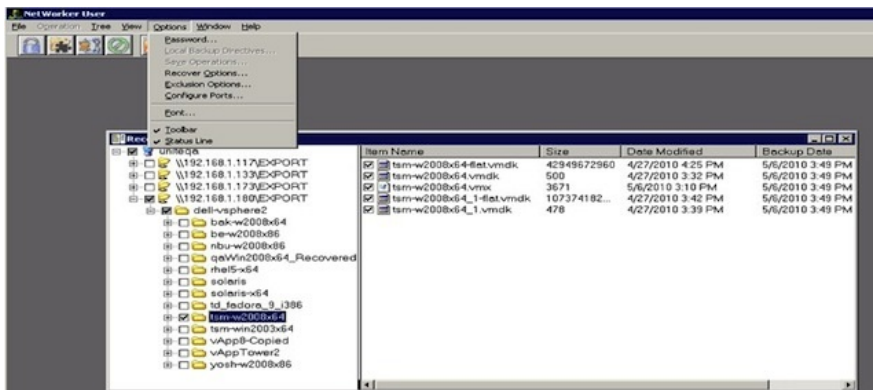
4. Select the *Destination Client* where the data will be sent and click *OK*.



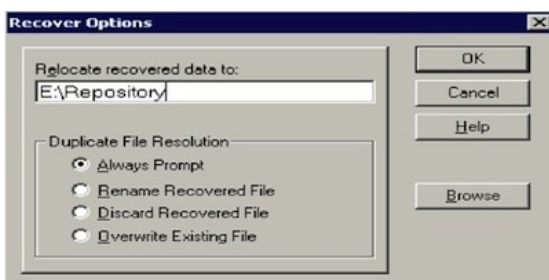
5. In the *Recover* window, select the VM (Virtual Machine) to restore from the list.



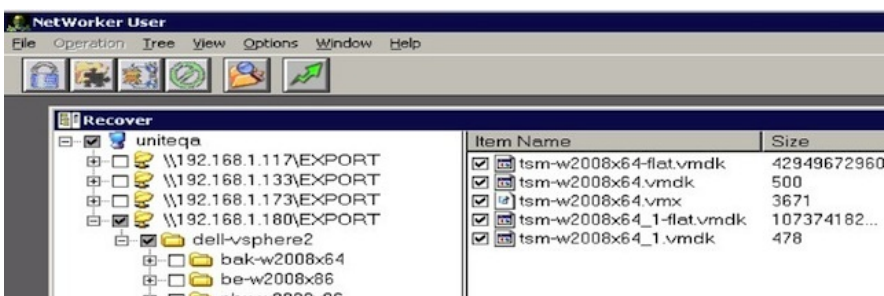
6. In the *Networker User* window, select *Options > Recover Options*.



7. In the *Relocate recovered data* field, specify the path on the destination machine to restore the data to, and click **OK**. **Note:** vmPRO backups cannot be restored back to /export (NFS) or lexport (CIFS); the restore must be redirected to a different location than the export directory.



8. Click the start button (the green arrow) to start the restore.



9. Wait for the restore to complete.

10. If you are using vmPRO 2.2.0 or higher, you can now finish recovering your files using the

using the [vmPRO Recovery Wizard](#).^[1]

If necessary, you can finish recovering your files using [VMware Converter](#)^[2] instead of the vmPRO Recovery Wizard.

Installing and using the NetWorker Client on a Quantum vmPRO virtual appliance

Requirements for Installation

- You must have the NetWorker 7.x.x Linux 32 bit RPMs.
- You must be using vmPRO 2.2.3 or later.
If you are already running an earlier version of vmPRO, upgrade the system before beginning the NetWorker client installation. See the vmPRO user guide if you need instructions.
- One or more ESX hosts, or one vCenter host, must be configured with the appliance.
If you have not already added a vCenter host or one or more ESX hosts, do so before beginning the NetWorker client installation. See the user guide for help with adding a vCenter or ESX server.
- If you wish to do incremental or differential backups, enable Changed Block Tracking for your VMs.
See the user guide for information on enabling CBT.

Install the NetWorker client

Overview

- Install the NetWorker Client.
- Modify the client server's files.
- Assign a port range to NetWorker.
- Run a manual backup.
- Schedule your backups.

Procedure

1. Copy the NetWorker RPMs to the *vmPRO-upgrade* share. These files are needed:

lgtocInt-7.x.x.i686.rpm

Required client package

lgtonode-7.x.x.i686.rpm

Required if the client will act as a storage node

2. Run this command and follow the prompts:

```
nw install
```

3. Disable NetWorker service using this command:

```
nw disable
```

4. *Omit this step if you do not want to restrict the vmPRO appliance to a single NetWorker server.*

Run this command:

```
nw edit servers file
```

Modify the servers file to identify the name(s) of the NetWorker server.

5. Make sure the NetWorker client service is *not* running; to check, run:

```
nw status
```

6. Assign a port range to the client. NetWorker clients must be assigned ports from 7937 range; ports 7937 and 7938 are dedicated ports for the NetWorker client and must be assigned. In addition to those two dedicated ports, the client also needs a few more ports. We recommend that you assign 10 ports to the client and increase as needed:

```
nw set nsrports 10
```

You should see output like the following:

```
Port setting completed
Service ports: 7937-9936
Connection ports: 0-0
```

By default, vmPRO assigns ports starting from 7937.

7. Verify that the ports have been assigned correctly:

```
nw show nsrports
```

8. Start the NetWorker client service:

```
nw enable
```

9. Verify that NetWorker is running correctly:

```
nw status
```

You will see output like the following:

tcp	0	0	:::7937	:::*	LISTEN	24602/nsrexecd
tcp	0	0	:::7938	:::*	LISTEN	24602/nsrexecd
tcp	0	0	:::8105	:::*	LISTEN	24602/nsrexecd
tcp	0	0	:::9361	:::*	LISTEN	24602/nsrexecd
udp	0	0	:::7938	:::*		24602/nsrexecd

Important

Before moving forward, refer to your *NetWorker Administrator Guide* for information on configuring a NetWorker client on the server. If the vmPRO appliance has not yet been defined as a client of the NetWorker server, the following operations may not work properly.

Backups

Manual backup

You can perform a manual, client-initiated backup of /export from the command line of your vmPRO appliance with this command:

```
nw save -v -s NetWorker_Server_Name /export
```

Example: `nw save -vs targetr2 /export`

Scheduled backup

The vmPRO appliance can be configured for scheduled backups on your NetWorker server in the same way as you would configure any other NetWorker clients.

Please refer to your *NetWorker Administrator Guide* for detail on configuring a client to participate in scheduled group backups.

Recover from backup

Note: The steps to perform a recovery for pre vmPRO 3.0 versions are different from those of vmPRO 3.0.

If you have vmPRO 3.0, start with step 7; otherwise, start with step 1.

First, set up a recovery mount location to store the recovered backup.

If you have vmPRO 2.3.3 or earlier, start here:

1. Log into the vmPRO GUI. (Access the GUI by entering the IP address of your vmPRO appliance in the address field of your web browser.)
2. From the *Operations* menu, select *Recover VMs*.

3. Click *Next* to get to the *Recover Virtual Machine Wizard*.
4. Select *Recover individual files from virtual machines*.
5. Choose the type of share (CIFS or NFS) to mount, and fill in the information.
6. Click *Next* and then *OK* to save your information. Proceed to **Second, perform the restore.**

If you have vmPRO 3.0, start here:

7. Log into the vmPRO GUI. (Access the GUI by entering the IP address of your vmPRO appliance in the address field of your web browser.)
8. From the *Smartmotion Backup* menu, select *Storage...*
9. Click the *Add Storage* button.
10. Choose the type of device and the type of share (CIFS or NFS) to mount.
11. Fill in the *Hostname* and *Share* fields appropriately.
12. Enter **nw_recover** in the *Nickname* field.

Second, perform the restore

1. At the command line of the vmPRO appliance, use the following command to query the NetWorker backup for the backup times available to restore:

```
nw mminfo -s NetWorker_Server_Name -avot -c client_name
```

Example

```
vmPRO> nw mminfo -s targetr2 -avot -c datapathvm
volume      client      date       time       size ssid      fl  lvl name
targetr2.001 datapathvm  07/28/11  16:26:07   12 GB 3643928580 cb full /export/THIRD/SMALL
targetr2.001 datapathvm  07/28/11  23:35:53   326 MB 3593622718 cb incr /export/THIRD/SMALL
```

2. **Note: If you have a vmPRO 3.0, your recovery mount location will be /storage/nw_recover. For vmPRO 2.3.3 and earlier, your recovery mount location will be /scratch. The following uses /scratch as an example.**

From the query output, select the backup time you wish to restore, and set the destination target to /scratch filesystem. (/scratch is the recovery mount location you configured in the vmPRO.)

For a save set restore:

```
nw recover -s NetWorker_Server_Name -S ssid -d /scratch/
```

Example: vmPRO> nw recover -s targetr2 -S 3643928580 -d /scratch

3. Once the restore is successfully completed, log into the vmPRO GUI. (Access the GUI by entering the IP address of your vmPRO appliance in the address field of your web browser.)
4.
 - If you have vmPRO 3.0, from the *Smartmotion* menu, select *Recover...*
 - If you have vmPRO 2.3.3 or earlier, from the *Operations* menu, select *Recover VMs*.
5.
 - If you have vmPRO 3.0, navigate to the appropriate folder by browser the mounted storage and follow the steps to complete the VM import.
 - If you have vmPRO 2.3.3 or earlier, select *Recover entire virtual machine back to VMware datastores* and follow the steps to complete the VM import. Manually register the VM by browsing the datastore using VMware VI client GUI.
If you prefer to use VMWare converter, point your converter to the /recover filesystem on the appliance (\\vmPRO\recover\vm\vm.vmx, for example), and re-provision the VM to your ESX or vCenter environment.

vmPRO command line commands for NetWorker

Below is a compiled list of the NetWorker commands available from the vmPRO command line when NetWorker is installed on the vmPRO appliance. Most of the command options for NetWorker are available but must be prefixed with *nw*.

```
nw install
    Install NetWorker package on the vmPRO appliance.
nw uninstall
    Uninstall NetWorker package.
nw edit server file
    Open the servers file for editing.
nw set nsrports <number of ports>
    Set a port range for the NetWorker client.
nw show nsrports
    Display the assigned port ranges.
nw enable
    Start NetWorker services.
nw disable
    Stop NetWorker services.
nw restart
    Restart NetWorker services.
nw status
    Verify NetWorker status.
nw save <save arguments>
    NetWorker manual save command
nw mminfo <mminfo arguments>
    Query NetWorker media database, always indicate the server name by using -s option.
    Example: nw mminfo -s NetWorker_Server_Name -avot -c client_name
nw recover <recover arguments>
    NetWorker recover command. Always indicate the server name by using -s option as in
    mminfo above.
```

Single-step (/import) recovery using Quantum vmPRO with NetWorker

Products

- NetWorker 7.x
- vmPRO 2.2.3 or later

vmPRO supports single-step recovery of VMs. This recovery process restores the VM directly into the ESX datastore, eliminating the use of VMware Converter.

Using the NetWorker User GUI (for Windows) or nwrecover GUI (for Unix / Linux)

1. Start NetWorker User on a windows system (winworkr) or nwrecover on a Unix /Linux host (not on the appliance) and connect to the NetWorker server.

This will be a “directed recover” and the host and the user to run the recover must be defined in the remote access field of the vmPRO NetWorker client as user@host.

2. Click *Operations > Recover/Directed Recover*.
3. Select the NetWorker vmPRO appliance as the source client.
4. Select the same client as the target client.
5. Expand /export and drill down to the VM to recover.
6. Select the .cfg file.
7. Click the *Options* tab and select *Recover Options*.
8. For *Relocate recovered data to:*, enter */import/recover..*
9. Click *OK*.

10. Start the recover.
11. Once the .cfg file is recovered go back to the appliance console

On the Appliance Console:

12. On the appliance console, run

```
import show errors /import/recover
```

and review for errors. Most likely an error similar to the following will be present:

```
=====
Error in file: /recover/empirestate/empirestate.cfg

The target directory /vmfs/volumes/4d41f3dd-dfaa3335-2485-0026b98c7702/empirestate already exists. It will not be overwritten.
=====
```

13. Modify the .cfg file and specify an alternate target directory. The datastore with the UUID shown above already has a VM with the same name "empirestate" as the one marked for restore.
 - From the appliance console, run the command (substitute with actual .cfg file name):

```
import edit /import/recover/empirestate/empirestate.cfg
```

A vi editor will open the .cfg file for editing.
 - Modify the value of the *on-conflict* = "stop" to "rename" .
 - Save and exit the file (wq!).
 - Verify that the error is no longer present by running `import show errors` again.
 - Return to the NetWorker User Program (GUI) and continue.

Using the NetWorker User program GUI:

14. Click *Operations > Recover/Directed Recover* .
15. Select the NetWorker vmPRO appliance as the source client.
16. Select the same client as the target client.
17. Expand /export and navigate to the VM you want to recover.

The VM files will need to be recovered in three separate operations to ensure that they are recovered in the correct order. (Do not recover the .cfg or the ascii vmdk files.)

18. Select the .vmx file.
19. Click the *Options* tab and select *Recover Options* .
20. For *Relocate recovered data to:* , enter */import/recover* .
21. Click *OK* .
22. Start the recovery and wait for it to complete successfully.
23. Repeat the recovery for the -flat.vmdk file:
Select the -flat.vmdk file (if more than one disk, select all flat.vmdk files).
24. Click the *Options* tab and select *Recover Options* .
25. For *Relocate recovered data to:* , enter */import/recover* .
26. Click *OK* .
27. Start the recovery and wait for it to complete successfully.
28. Repeat the recovery process for the pancbt.vmdk file:
Select the pancbt.vmdk file. (if more than one disk, select all pancbt.vmdk files)
29. Click the *Options* tab and select *Recover Options* .

30. For *Relocate recovered data to:*, enter */import/recover*.
31. Click *OK*.
32. Start the recovery; when the recovery completes successfully, go to vSphere client.

Using vSphere client

33. Browse the ESX datastore the VM(1) was recovered to. This should be the same datastore where the original VM was backed up from.
34. Browse into the new recovered folder which should have (1) or some number in parenthesis next to it; for example, *VM(1)*.
35. Locate the .vmx file and right click on it.
36. Add the .vmx file to inventory.
37. To complete recovery, boot the VM.

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Source URL: <https://mosaic.quantum.com/docs/BackupSolutions/EMCNetworker>

Links:

- [1] <https://mosaic.quantum.com/docs/StorageAndRecovery/RecoveryWizard>
[2] <https://mosaic.quantum.com/docs/StorageAndRecovery/VMwareRecovery>