

M – Mass/Auto Restore Menu – Main Menu

The Mass/Auto Restore feature allows you to restore VMDKs very easily, which is very helpful when doing recovery. By only restoring a few VMDKs and doing it automatically, esXpress turns mass restores into simple replication. As of now, the mass restore will only restore delta backups.

The basic premise is that you have a list of VMDK names that you want to restore, and the name of the VMFS you want to restore them to. From either the PHD menu (manually) or automatically these VMDK files will be checked against the FTP servers, and the backups that meet the correct criteria will then be restored. Backups are matched by name, and you might get multiple matches, but only the first one will be used. Make sure to adequately test to ensure you are restoring the correct VMDK backups.

To restore a delta backup (which the mass restore uses) it must be downloaded to the local host first. Then the delta backup is run like a program. The delta backup will then pull the Full backup from the FTP on the fly and make a new VMDK file. The backup will be imported into the VMDK correctly (by creating or reusing the VMDK file). Afterwards the delta backup file will be deleted. Then the next VMDK file is processed and restored. **This entire process is automatic.** After you have defined the VMDK backups to restore, you initiate the process and watch.

Restoring Your Datacenter in 10 Easy Steps.

1. Start by restoring your backups from tape to a server.
2. On this server you startup the FTP service.
3. Install the esXpress rpm on the ESX hosts and configure.
4. Choose option M for Mass Restore from the PHD Main Menu.
5. Choose option F to import the VMDK list from FTP server.
6. Choose option E to edit the VMDK list.
Select the ones you want to restore and to what VMFS.
7. Choose option T to Test run mass restore. This will show you what backups will be restored and if you have all the needed files.
8. Choose option R to run mass restore.
9. Choose option M to watch mass restoration of your VMDK files.
10. Repeat steps 3-9 on the other ESX hosts.

Simple Replication

esXpress defines ‘Simple Replication’ as the *restoring of complete VMDK backups to a host or hosts automatically*. When you backup your virtual machines every day and restore them on another host automatically, you have achieved simple replication.

Since esXpress LE (the free version) is only licensed to make backups and never restorations, you can use esXpress LE in your replicated environments or on hosts that you do not actually need to make delta backups on.

Default Options

- The original VMDK filename will be used.
- If the VMDK already exists, it will be overwritten.
- It will not be verified afterwards.

An Example:

In simple terms you are backing up the VMDK file **email.vmdk** from host ESX01 to your FTP backup server. This VM is being backed up numerous times a day.

On host ESX02 you have defined the **email.vmdk** to be restored to **/vmfs/LOCAL**.
On host ESX03 you have defined the **email.vmdk** to be restored to **/vmfs/LUN07** and set **USE_DAYS= -2**

When the Configuration Option **MASS_RESTORE_ENABLE** is set to **Yes**, then the Auto Restore feature is enabled thus enabling Replication.

Automatically every hour, this host will index the FTP servers, and they will be checked for new backups that meet the correct name and USE_DAYS requirement, then the VMDK will be restored with default options. Afterwards a report will be emailed back to you giving you the status of all the restorations for the day up to that time.

Backup Example

- Our example VMDK **email.vmdk** is backed up at 00:01 hours when the nightly backup runs on ESX01. It is completed before 01:00 hours.
- Now on ESX02 at 01:01 hours the FTP server is checked for new backups, it finds our example **email.vmdk** and it is then download and restored to the local host.
- On ESX03 we have configured the **USE_DAYS** (in the vmdks file) variable to **‘-2’**. Because of this, the newest backup on the FTP server is not used. By setting **‘-2’** we are telling mass restore not to restore backups that are newer then 2 days ago. It will restore the latest backup that was made 2 days ago.
- Come 02:01 hours, ESX02 and ESX03 will both index and check the FTP servers for new backups. If none are found, then nothing is done. This happens every

- hour. If a mass restore (replication restore) is currently running, a new one will not start up. Only one automatic restore will run at a time.
- At 12:01AM the VMDK **email.vmdk** is being backed up again on ESX01.
 - Its 13:01 and ESX02 checks the FTP servers and find a new copy of **email.vmdk** and restores it.
 - ESX03 at 13:01 hours would check the FTP server again, but do nothing else, as it has already restored the latest backup from 2 days ago.
 - This continues on forever until you disable it.

In the previous example we did a simple one to many replication, including having one host be 2 days behind; just in case.

More Complex Simple Replication Examples

- At Location #1 you have ESX farm #1 backing up to FTP Server #1.
- You could have hosts in farm #2 (also at Location #1) replicating VMDKs from FTP Server #1.
- Now you also have a Location #2. The ESX hosts here could replicate from the FTP Server #1 across the WAN.
- Instead of having the hosts at Location #2 pulling the backups from FTP Server #1 across the WAN, you could replicate the FTP Server to Location #2.

There are numerous ways to do this.

- If your FTP server has a SAN backend you could use the SAN to replicate the backups from one location to another.
- If your FTP server is Windows you could use something as simple as RoboCopy to copy the backups from one location to another.
- If you FTP servers are Linux or UNIX you could use rsync to replicate the backup servers.
- Or any other method.

By copying backups from one backup server to another, whether it's in the local datacenter or across the world, you can achieve simple datacenter replication when using esXpress.

Example Scenarios

Have your Exchange server replicated to another host. In case you need to recover a mailbox, it's a lot easier to bring up the replicated copy of your Exchange server on host only network and exmerge the users mailbox or public folders. Then move them back to the real Exchange VM and exmerge them back in.

Have 2 different hosts replicating your main File share. Have host #1 restoring last nights backup, while host #2 is a week behind.

M - Mass Restore/Replication Menu options

The Mass Restore/Replication feature is accessed from the PHD Main Menu. If a Mass Restore is currently running it will be reflected here on the menu.

Note the 'MASS RESTORE RUNNING' in the blue menu bar below.

Figure 130, Main Menu showing Mass Restores

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- esxpress Main Menu - www.esxpress.com -
vers 2.3 - usfpkhost9 - Tue 2006/06/27 23:52:32
License Type: ENT expires 2007-09

S Current Running Status -
L Lock Status - Clear
D Daily Backup Report
O Backup ONE VM Now
A Backup ALL VMs Now
W Wipe Indexes, Make Next Backup FULL
T Tail Backup Log
K Kill Current Running Backup
C Configuration Options
R Reports Menu
M Mass/Auto Restore Menu - MASS RESTORE RUNNING
F FTP Server, Restore esXpress Backups & FTP Reports
Q Quit

< OK >          <Cancel>

```

The Mass Restore Menu contains all the options to configure and run mass restores or replication. See Table 12 below for the options and descriptions.

Figure 131, Mass Restore Menu

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- esXpress Backups, www.esxpress.com -
- esXpress PHD-MASS Restore Menu - MASS RESTORE
RUNNING

Mass Auto Restore is - ENABLED
M Tail MASS Restore Log - /tmp/phd/restore.log
L Lock Status - Clear
T TEST Run Mass Restore
R Run Mass Restore Now
- -----
E Edit 'vmdks' Restore file - /etc/phd/vmdks
F Load 'vmdks' file with distinct VMDK filenames
S Show distinct VMDK filenames
N View MASS Restore Log using nano
V View 'restores' File - /tmp/phd/restores
- -----
K Kill Any Running Restores
D Delete ALREADY RESTORED File - /tmp/phd/restores
B Delete local FTP database (force reindex of FTP)
H Help for 'phd-mass' Mass Restore
Q Quit

< OK >          <Cancel>

```

Table 12, Mass Restore Menu

Option	Description	Function
M	Tail MASS Restore Log	This will tail the mass restore log file /tmp/phd/restore.log. Every time the mass restore runs, this file is overwritten. When you choose M you can watch the mass restore in action.
L	Lock Status	This is for setting replication lock files. This menu line will also reflect the current mass restore lock status. Above it shows Clear .
T	TEST Run Mass Restore	Run the Mass Restore in TEST mode. Always run TEST Mode first to verify what you want to do. It will show you what VMDKs it will download and restore if available.
R	Run Mass Restore Now	Run Mass Restore Now. Actually download and restore VMDK backups if they exist.
E	Edit 'vmdks' Restore file	Use nano to edit the /etc/phd/vmdks file. This file contains the names of the VMDKs to restore, and to what VMFS. This file also contains other options.
F	Load 'vmdks' file with distinct VMDK filenames	A list of all the distinct VMDK filenames as found on the FTP servers will be loaded in the 'vmdks' file so you can easily edit the list.
S	Show distinct VMDK filenames	Show a list of the distinct VMDK filenames as found on the FTP servers.
N	View MASS Restore Log using nano.	View the entire Mass Restore log using the editor nano in view mode.
V	View 'restores' File	When a VMDK is restored, it is logged to the 'restores' file. View this file and see the restored VMDKs.
K	Kill Any Running Restores	Choosing K will kill any running restores cleanly, but only at the point where restoration has started This will only kill the running restore, use it in conjunction with Locks to Stop or Pause restores.
D	Delete ALREADY RESTORED File	When a VMDK is being restored, it is checked against the 'restores' file. If it already exists in this file, then it will not be restored again. By deleting the 'restores' file, all VMDKs will again be restored on the next mass restore run.
B	Delete local FTP database	This will delete the local FTP database. This is the same database the manual restores and FTP reports use. By deleting it here, it will force the mass restore to pull the FTP database. By default, the mass restore will pull the database if it is older then 45 minutes.
H	Help for 'phd-mass' Mass Restore	See the command line help available for the program phd-mass
Q	Quit	Quit this menu and return to the main menu.