



esXpress v3.1

Quick Start Guide

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www.espress.com www.p2v.net

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esXpress Quick Start Guide

Purpose

The purpose of this guide is to provide a Quick Start for installing and configuring the basic minimum esXpress configuration to enable backups to start running on your host. esXpress is easy to install, modify, upgrade and uninstall. For additional detailed information see the Full Installation Guide and User Manual.

Installation

esXpress is easy to download and install and takes only minutes. If you have not yet downloaded the installation program or *rpm* go to <http://www.esxpress.com>. From here you can register to download esXpress. After registering you will be emailed a link to your personal download page and temporary license key. With esXpress version 3.-1-21 you need to enter a valid license key to run backups. There is no Free Mode in 3.1-21.

Prerequisites

With esXpress there are some key points to consider before installing. You need to decide exactly what kind of backups you want to run, Fulls or Deltas and at what frequency. What will be the retention time for the backups? In addition you need to decide what mode of transport you will use.

esXpress can perform network-less backups (VMFS LUN to VMFS LUN), network backups (VMFS LUN to FTP, SSH or SMB), or both simultaneously. You will need to plan and configure your target storage and supporting options.

For network-less, or VMFS LUN to VMFS LUN backups you will need the following:

- Select a VMFS LUN to store the esXpress archives. Preferably its own LUN, not one shared with running or production VMs.
- It is recommended that the LUN be local SAN, iSCSI or other high performance systems. VMFS across NFS is not recommended. This protocol is too slow and unreliable.
- If you use shared storage make sure the VMFS LUN is visible by all ESX hosts in the backup farm
- For VMFS backups you need to initially for the space of each vmdk to be backed up. With VMFS backups esXpress pre-creates the entire vmdk and then compresses it at the backup completion.

If network or FTP/SSH backups you will need to do the following:

- Have access to a running FTP/SSH server. FTP/SSH server can be Windows, Linux, or any other operating system that support large files (>4GB)
- Create or use a valid account and password. Make sure you have read, write, delete and make directory rights
- Do not use anonymous FTP account
- Have a directory on the FTP server established for your backups (e.g. */phd/backups/*) and the proper permissions set. Make at least one subdirectory on the FTP server; do not use the server root as the backup repository.
- The backup folder entered in esXpress needs to be the absolute path, not a relative path.
- Note for Windows host servers: The FTP server included with Microsoft IIS can have issues with files larger than 28GB. It is recommended you instead use a commercial quality FTP server program, our recommendation is FileZilla.

- Note for Windows FTP servers: Only use Microsoft Server products (2000/2003 Server) as FTP/SSH target servers. Workstation products (XP, 2000 Pro) have limited large file transfer capabilities and absolutely will cause your backups to be un-restorable
- Test you FTP/SSH connection. Make sure you can log on to the FTP server and have read, write, delete and directory create permissions.
- For network backups esXpress does the compression in the same pass as the backup.

If you are going to enable email reporting, you will need to make sure of the following:

- Determine if email should be sent via the console network or from a VMNET.
- IP address, subnet mask, default gateway, DNS setting for the email virtual appliance, unless using DHCP.
- SMTP server DNS name or IP address as well as port
- If sending via console network, make sure the specified port is opened for out-going packets in the ESX firewall.

For the Virtual Backup Helpers or VBAs, you will need to plan network and storage locations:

- IP address, subnet mask, default gateway, DNS setting for the email virtual appliance, unless using DHCP
- VMFS space for the **esXpress_helpers** folder. esXpress requires 3GB of free VMFS space to install
- It is recommended to put the esXpress helpers on a local vmfs partition (especially for ESX 3.5 hosts), if possible. While the helpers can be run from shared storage esXpress will perform much better from a local vmfs.
- Each VBA, while running, will need at least 3GB of free space.

Installing the RPMs

The installation of esXpress itself is very easy and takes less than a minute. Simply download and transfer the **rpm** files to the host, or install directly from the esXpress CD/ROM, if you have one. RPM files are named similar to **esxpress-3.1-17.esx.i386.rpm** and **esxpressVBA-3.1-1.esx.i386.rpm**.

Note: This installation of the esXpress rpms is done on each host in your farm where you will run backups.

Copy the **rpm** files to the **/tmp** directory of the target ESX server using a SCP utility.

Log on to your ESX Server either from the console via SSH and **cd /tmp**.

First, install the esXpress VBA. From the command line enter:

```
rpm -i esxpressVBA-3.1-1.esx.i386.rpm (or the name/version of the release downloaded)
```

If the install was successful next you would install the esXpress v3.1 code base:

```
rpm -i esxpress-3.1-17.esx.i386.rpm (or the name/version of the release as downloaded)
```

That's it! esXpress is installed.

**** Important Note – By Default after installation esXpress will set Automatic Backups on and starting backing up all the VMs on your host. If you do not want this to occur you Must turn Automatic Backups Off. ****

To configure esXpress, from the command line of your ESX Server, type:

```
# phd
```

As this is your first time running esXpress, you will need to read through and agree with the End User License Agreement (EULA). Press **Enter** to continue as shown below in Figure 3.

After you have thoroughly read the EULA, type **yes** to accept all of its terms. It is only after you have accepted the terms of the EULA that you will be shown the esXpress Backup Menu.

esXpress phd Main Menu

When you run **phd** you are presented with a simple to use text menu. The esXpress Backup Menu is easy to use and can be navigated either with the arrow keys on the keyboards or with the mouse.

At the top of the menu you see the name of the ESX host, the esXpress version number, license type and the expiration of your support contract if you have one.

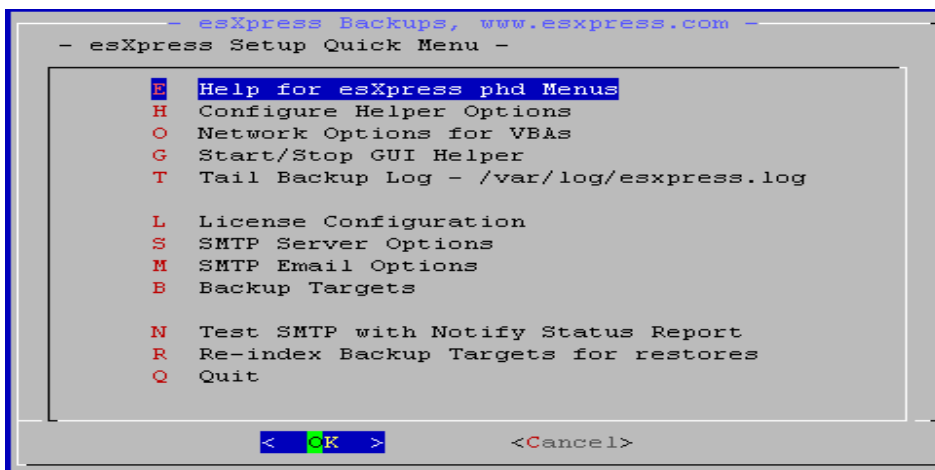
For a quick start install select Option U – Setup Quick Menu

```
U Setup Quick Menu
```

The esXpress Setup Quick Menu

The esXpress Setup Quick Menu provides a shortcut method for the initial configuration and setup needed to get esXpress up and running.

Figure 1.1: esXpress Setup Quick Menu



Key areas of the Quick Menu are:

- Configure Helper Options to set the vmfs for the VBAs to live on.
- Setting the Default Network for the VBAs
- Configuring the VBA helpers to use DHCP or assign static IPs
- Starting and stopping the GUI helper
- Backup Targets to setup your initial backup target for esXpress backups
- Tailing the esXpress backup log

- o setting up and testing smtp for esXpress backup reporting
- o re-indexing your backup targets to provide current backup information for restores

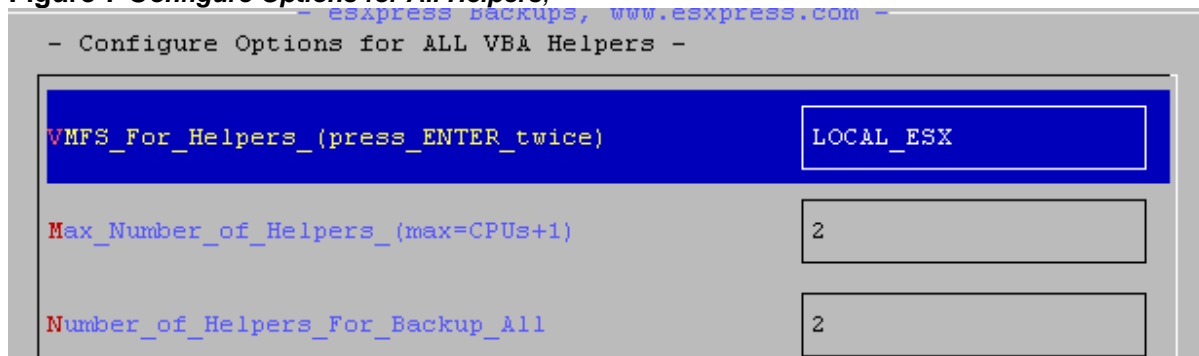
Assign a VMFS for the VBA Helpers

The first component you want to configure is the VMFS from which to run the esXpress VBAs on.

Select **H Configure Helper Options**.

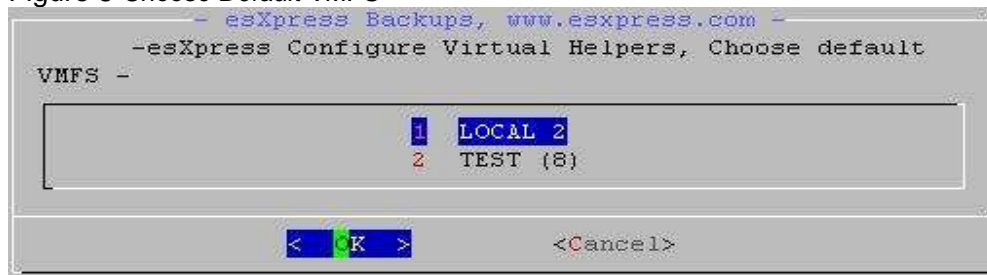
This **Configuration Options for ALL Helpers** screen allows you to configure most of the minimum requirements needed in order to install, register and power on the esXpress GUI Appliance as well as run the VBAs.

Figure 7 Configure Options for All Helpers,



By default, the **VMFS_For_Helpers** parameter is highlighted. To select a VMFS ensure that **Edit** is also highlighted and press **Enter**. One in edit mode, press **Enter** again to see a list of available VMFS file systems. Figure 8 shows an example.

Figure 8 Choose Default VMFS



Use the arrow keys or mouse to select the VMFS volume on which to create the **esXpress_backups** folder and press **Enter**.

When done, the **VMFS_For_Helpers** field should show the entry you selected.

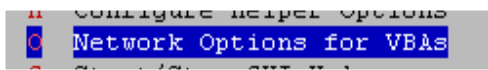
When finished, select **OK** and press **Enter**. You will be prompted to save the Virtual Helper Options. Select **Yes** and press **Enter**.

You will be returned to the **esXpress Quick Start** (figure 1.1).

Assign a Network to the VBAs

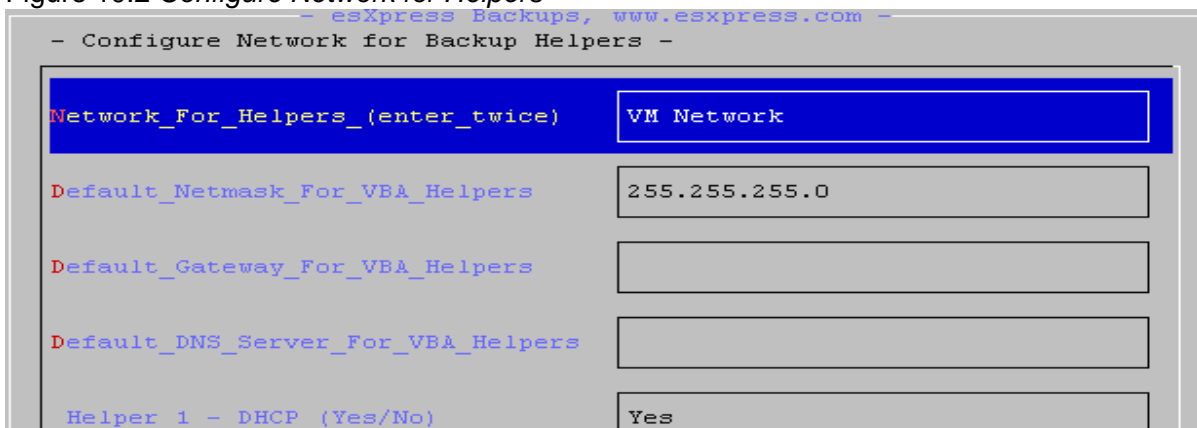
You now need to configure a **valid network** on your host to esXpress. Without a valid network the esXpress VBAs and the GUI will not start properly.

Select (H) Network Options for VBAs



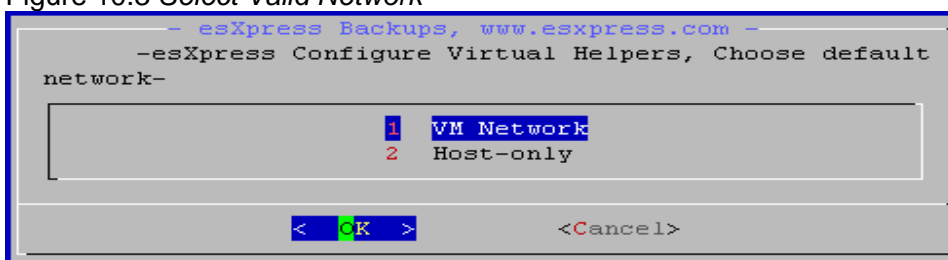
Select the 'Network_for_Helpers_(enter_twice)' option (Figure 10.2), remember to hit Enter twice.

Figure 10.2 Configure Network for Helpers



Select a valid Network from your host that you want the esXpress VBAs to use from the presented choices (Figure 10.3)

Figure 10.3 Select Valid Network



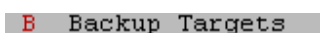
After selecting the Network then hit **OK** to confirm and save the changes (Figure 10.4).

Also at this point decide if you are going to run the VBA helpers using DHCP or with static IPs. If you are using DHCP that is default so no action is required. If you plan to use static IPs you would also configure that here. You would assign the static IP to each VBA helper to be used along with the overall network, default gateway and DNS server to use.

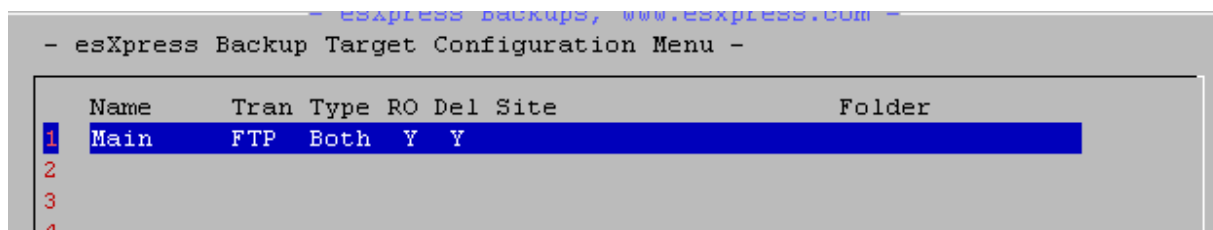
Next, again select **Q Quit** to return to the **esXpress Quick Start Menu**, figure 11.

Create a Backup Target

The third required step before you can run esXpress backups is to decide where to send the backups to. If you are going to send to network target (ftp/ssh/smb) you will need to configure a backup target. Select **Option B Backup Targets**.



Select the 1st backup target which is the default target and the highlight OK and press ENTER.



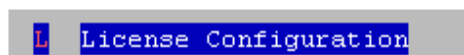
This will bring up the configuration screen for the Target # 1.

Here you will assign a Name to the Target, determine which Target Type it will be (ftp/ssh/smb), define the target IP or Fully Qualified name, assign a user and password to use as well as a backup folder to use on the target. For full detail on each field refer to the User Manual.

The other option would be to backup to vmfs. For details on configuring esXpress to backup to VMFS see the User Manual.

License Configuration

If you have received an esXpress valid license or a temporary license use Option **L License Configuration** to enter it.



Advanced Configuration

At this point you have configured the basic information needed to start running esXpress backups every day. With the esXpress advanced configuration options you can refine your configuration in a number of areas among others

- Setting the backup frequency and scheduling
- Backup Target retention and auto delete policies
- Notification reporting
- Compression and throttling options
- File Level Backups
- Encryption
- Special and Template Backups
- Replication and Restore Options

All of the advanced options can be configured from the Configuration Options section of the phd menu or from the esXpress GUI. For full information on all of these options refer to the User Manual.

Start the esXpress GUI

In addition to the phd menu all of the esXpress configuration options can also be maintained in the esXpress GUI. To start the GUI choose Option **G Start/Stop GUI Helper** from the Quick Start Menu

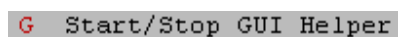


Figure 12 *Confirm GUI Startup*

```

- esXpress Backups, www.esxpress.com -
Start esXpress v3.1 GUI Helper VM now?

This will startup a virtual helper and run the esXpress v3.1 GUI.
It could take up to 3 minutes to create and start with Virtual
GUI.
Open the console on this VM in the VC/VI3 Client.

Make sure you have defined a VMFS for the Helpers to use first.

You can also run the GUI by adding text to the displayName of any
VM on this host. [xGUI] or [xcfg] or [xCONFIG] or [xHELP]

Continue and run esXpress v3.1 GUI Helper Now?

< Yes >          < No >

```

Select **Yes** to confirm. The system will create the GUI helper, register the new virtual machine and then power it on. Depending upon your system, this process can take a few minutes to complete. The GUI helper only needs to be created the first time you launch it.

Note : The GUI helper is just a configuration tool, it does not need to be powered on to run esXpress backups.

esXpress ReadMe File Considerations

IMPORTANT: READ THIS

By default once esXpress v3.1 is installed and configured, it will attempt to backup every VM on that host, every night, unless you tell it not to. All VMs are included automatically. **THEY HAVE TO BE EXCLUDED NOT TO BE BACKED UP.** If you create a new VM, and do not exclude it, it will be backed up on the next automatic cycle. (Depends on esXpress configuration options)

IF YOU INSTALLED ESXPRESS, IT WILL AUTOMATICALLY TRY AND BACKUP ALL YOUR VMs TONIGHT AT 00:01 HOURS. PLEASE TURN OFF BACKUPS IF THIS IS NOT DESIRED.

IMPORTANT: READ THIS

Getting Better VBA Performance:

- By default esXpress is using gzip for compression, but you can also use lzop instead, which can be twice as fast as gzip.
- The default Number of CPUs in the VBA is set for 1. Making it 2 will help performance in the VBA. In ESX 3.5 only 1 CPU will be used.
- esXpress will use all the CPU that you give it. Without any limits, each CPU in a VBA will use 100% if allowed.
- Set How Aggressive esXpress will run. Set this more MORE and the VBAs will run more backup threads. This will use more CPU. This only applies to Delta Backups and when the VBA as 2 or more CPUs.
- Make sure you have given your VI3 COS (the Linux Console part of VI3/ESX) more than the minimum memory of 272 meg. The VMware back-end for VI3 is now Java based, and it runs much better with the 800 meg (or at least 512 meg) of COS Memory. Also increase the CPU share for the console. By default VMware will give it 400 mhz.

* When snapshot actions are done, they are done by the VMware hostd process

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that lives in the console. The act of adding or removing a snapshot is all done in the console.

- * When you are backing up a VM, it will have a snapshot file, that is growing in size as the VM writes to its disk. After the backup is complete, the snapshot needs to be committed back to the VMDK. This is all done in the console.
- * Please give the console as much Memory and CPU as you can. Changing this will make all the difference. Also make sure after patching you check the memory settings again.

--Do the phdcat speed tests on your /vmfs/volumes to get some baseline disk speeds. (search for phdcat on support.esxpress.com support board)

--After you know what your max disk speeds are, you should enable throttling in esXpress. If you do not enable throttling, the VBAs will try to run as fast as they can. They will grab the entire disk I/O that is available. On some SANs, having 4 hosts, with 4 VBAs each, all trying to read as fast as they can, and the SANs cannot handle it. Better to enable throttling and let esXpress time-slice the disk I/O.

WARNING!!

--esXpress is designed to use the VMware platform to its full realization of its features. Because of this, improperly installed or badly designed systems will cause esXpress to fail. But these failures will bring to light any limitations in your virtual infrastructure. Many customers do not realize they have a problem until they install esXpress. Please test on one host, then two, before rolling it out everywhere.

--As of version 3.0-15, esXpress is now more aggressive in the VBA. esXpress will use the all the processor that is given to it. esXpress will use 100% of all the CPU that is given to it. If you give the VBAs 2 CPUs then they will run at 100% each. Use resource pools to control and limit the amount of CPU that the VBAs will use.

A 'VBA' is a Virtual

Backup Appliance. All processing in esXpress v3 is now done completely in the virtual space, using our VBA Helper.

SOME ESXPRESS v3 BACKUP THEORY.

--Suppose a 25 host environment using all 4-way servers.

--Using esXpress 2, you were able to backup 25 VMs at once, that is one per host in the console of each ESX Host. If your using a proxy to backup your VMs, then you are limited to the number of backups the proxy can run at once. (If your proxy host has 4 CPUs, then you can run 4 backups at a time max to achieve full speed.)

--Now with esXpress v3.1, you have configured your hosts to run 3 VBA's each, and now you are getting 75 VMs backups at once in the virtual space, not just the 25 VMs being backed up in the console.

--No extra hardware is required to perform the backup of the VMDK files, all work is done by the VBA helper. (With the exception of your backup targets)

Uninstall esXpress

To uninstall esXpress is very simple. From the command line of the service console of your ESX Server type the following command:

```
rpm -e esxpress  
rpm -e esxpressVBA
```

The command above will remove the application but not delete your full or delta backups.