



## **esXpress 4.0**

### Installing esXpress (stand-alone)

Software Release Date: March 2010

Document Date: May 17, 2010

[www.phdvirtual.com](http://www.phdvirtual.com)



## Legal Notices

Copyright © 2005-2010 PHD Virtual Technologies Inc. All rights reserved. [www.phdvirtual.com](http://www.phdvirtual.com)

PHD Virtual believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.

THE INFORMATION IN THIS PUBLICATION IS PROVIDED "AS IS." PHD VIRTUAL TECHNOLOGIES MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WITH RESPECT TO THE INFORMATION IN THIS PUBLICATION, AND SPECIFICALLY DISCLAIMS IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Use, copying, and distribution of any PHD Virtual software described in this publication requires an applicable software license.

Linux® is a registered trademark of Linus Torvalds.

Microsoft®, Windows® and MS-DOS are registered trademarks of Microsoft Corporation.

VMware®, VMware® ESX Server, VMware® VMotion™, VMware® VirtualCenter, vCenter™, and vSphere™ are registered trademarks of VMware Corporation.

All other trademarks and copyrights referred to are the property of their respective owners.

## Support, Sales, Renewals, and Licensing

For information on new sales, licensing and support renewals you can email [sales@phdvirtual.com](mailto:sales@phdvirtual.com) or [info@phdvirtual.com](mailto:info@phdvirtual.com).

For additional information about PHD Virtual's products and services, go to: <http://www.phdvirtual.com>.

To license and register this product, go to: <http://www.phdvirtual.com>.

For customers and partners with an active support agreement, you can use the esXpress support web board or <http://phdvirtual.com> or email [support@phdvirtual.com](mailto:support@phdvirtual.com) for information about software patches, technical documentation, and support programs.

Note: A valid support agreement is necessary to receive new esXpress release and software updates.

## Documentation Updates

The following table contains updates made to this document. To verify that you are using the latest edition of a document, check the PHD Virtual website.

Chapter	Version	Description
All	3.6	Updated guide formatting and editing.

# Contents

---

- Chapter 1 - Installing and Configuring esXpress (stand-alone)..... 6**
- Prerequisites..... 7
- Installing the esXpress RPMs..... 9
- Configuring esXpress..... 10
- The esXpress Setup Quick Menu..... 11
- Assigning a VMFS for the VBAs..... 11
- Assigning a Network to the VBAs..... 12
- Creating a Backup Target..... 12
- Configuring a License..... 13
- Configuring email..... 13
- Setting the Backup Mode..... 14
- Advanced Configuration..... 14
- Index..... 16**

# Chapter 1 - Installing and Configuring esXpress (stand-alone)

With esXpress versions 3.5, 3.6, and 4.0, you can choose to install the product without using the Management Appliance (a stand-alone installation). For installations with a small number of ESX hosts that will run esXpress, this may be an option. If you choose to install the product without using the Management Appliance, you will need to install and configure esXpress directly on each of your hosts (ESX 3.x or vSphere).

The purpose of this guide is to provide instructions for installing and configuring the basic minimum esXpress configuration to enable backups to start running on your hosts. For additional detailed information on all of the esXpress options, see the esXpress Reference Manual.

Installing esXpress directly to a host requires the installation of two RPM files. These can be downloaded directly from the [PHD Virtual web site](#).

The two RPMs required to install esXpress are:

1. **esXpress VBA** - esxpressVBA- x.x-x.esx.i386.rpm.
2. **esXpress code** - esxpress-x.x-x.esx.i386.rpm  
*x.x-x represents the current version of the component*

## Prerequisites

Before installing esXpress stand-alone, without the Management Appliance, consider the following:

- What type of backups will you run—Fulls and Delta backups or DeDupe backups?
- What frequency will you run your backups—daily or weekly?
- What will be the retention time for the backups?
- What mode of transport you will use?

With Delta/Full backups esXpress can perform network-less backups (VMFS LUN to VMFS LUN), network backups (VMFS LUN to FTP, SSH or SMB), or both simultaneously. DeDupe backups are run over the network to the esXpress DeDupe Appliance. In either case, you will need to plan and configure your target storage and supporting options.

- For Delta/Full network-less, or VMFS LUN to VMFS LUN backups you will need do 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.

For Delta/Full 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, for example, 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 plan to run DeDupe backups you will need to do the following:

- Install and configure the esXpress DeDupe Appliance Virtual Machine, which is provided as an OVF file in the esXpress zip file download.
- Determine the type of storage you will attach to the DeDupe Appliance, either a NFS share or a VMDK.
- For complete information on installing and configuring the DeDupe Appliance see the esXpress DeDupe Appliance Guide.

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 3.6 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.

**Note:** vSphere hosts are supported for esXpress versions 3.5-9 and above.

## Installing the esXpress RPMs

If you will be installing esXpress without the Management Appliance, you will need to install the esXpress RPMs to each host. These RPMs must be installed on each host on which you plan to run esXpress backups.

### To install the esXpress RPMs

1. Copy the RPM files to the /tmp directory of the target ESX server using an SCP utility.
2. Log on to your ESX Server from the console via SSH and change to the /tmp directory.
3. Install the esXpress VBA. Use the following commands (Note: replace the filenames in the examples below with the filename for the version you are installing):

```
rpm -i espressVBA-x.x-x.esx.i386.rpm
```

If you are installing the VBA on a vSphere host, use the following command:

```
rpm -i espressVBA-x.x-x.esx.i386.rpm --nodeps
```

4. Next, install the esXpress code base by running the following command:

```
rpm -i espress-x.x-x.esx.i386.rpm
```

**Note:** By default, after installation, esXpress will turn on Automatic Backups and start backing up all the VMs on your host. If you do not want this to occur you must turn Automatic Backups Off.

## Configuring esXpress

After you've installed the esXpress RPMs manually, use the esXpress text menu to configure the product.

### To access the esXpress text menu

1. Log in to the host where esXpress was installed.
2. From a command prompt, type: **phd** and hit **Enter**.

As this is your first time running esXpress, you will need to read through and agree to the End User License Agreement (EULA).

3. Press **Enter** to continue.
4. 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.

When you launch the esXpress menu you are presented with configuration options. The esXpress menu can be navigated easily with either the arrow keys or with the mouse.

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

5. To begin with the Quick Start Install, select **U Setup Quick Menu**.

## The esXpress Setup Quick Menu

When configuring esXpress without the Management Appliance, you will use the Setup Quick Menu on the host where esXpress RPMs were installed. The esXpress Setup Quick Menu provides a shortcut method for the initial configuration and setup needed to get esXpress up and running.

```
- PHD esXpress Backups, www.esxpress.com -  
- esXpress Setup Quick Menu -  
  
E Help for esXpress Menus  
H Configure Helper Options  
O Network Options for VBAs  
T Tail Backup Log - /var/log/esxpress.log  
  
L License Configuration  
S SMTP Server Options  
M SMTP Email Options  
B Backup Targets  
  
N Test SMTP with Notify Status Report  
R Re-index Backup Targets for restores  
Q Quit  
  
< CK > <Cancel>
```

Key areas of the Quick Menu:

- Configure Helper Options to set the VMFS for the VBAs.
- Setting the Default Network for the VBAs.
- Configuring the VBA helpers to use DHCP or assign static IPs.
- Configuring your esXpress licensing.
- Backup Targets to setup your initial backup target for esXpress backups.
- Tailing the esXpress backup log.
- Setting up and testing SMTP for esXpress backup reporting.
- Re-indexing your backup targets to provide current backup information for restores.

## Assigning a VMFS for the VBAs

When installing and configuring esXpress without the Management Appliance, the first component to configure after the RPMs are installed is the VMFS where the esXpress VBAs will exist.

### To configure the VBAs

1. On the host where esXpress was installed, from the Setup Quick Menu, select **H - Configure Helper**

**Options.**

The Configuration Options for ALL VBA Helpers screen allows you to configure most of the minimum requirements needed in order to install, register and power on the esXpress VBAs.

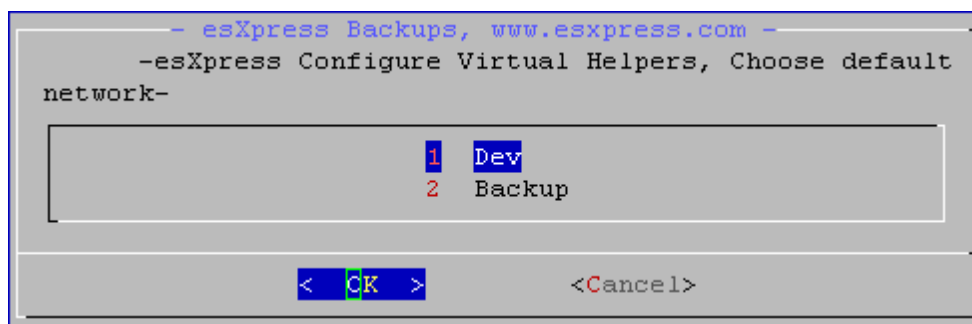
2. By default, the **VMFS\_For\_Helpers** parameter is highlighted. To select a VMFS ensure that Edit is also highlighted and press **Enter**. In edit mode, press **Enter** again to see a list of available VMFS file systems.
3. Use the arrow keys or mouse to select the VMFS volume on which to create the esXpress\_backups folder and press **Enter**. The **VMFS\_For\_Helpers** field should display the entry you selected.
4. When finished, select **OK** and press **Enter**. You will be prompted to save the Virtual Helper Options.
5. Select **Yes** and press **Enter**. You are returned to the esXpress Quick Start menu.

## Assigning a Network to the VBAs

When installing and configuring esXpress without the Management Appliance, the second item to configure after the RPMs are installed is to configure a valid network on your host. Without a valid network, the esXpress VBAs will not start properly.

### To configure a VBA network

1. On the host where esXpress was installed, from the Setup Quick Menu, select **O Network Options for VBAs**.
2. Then select **Network\_for\_Helpers\_(enter\_twice)**.



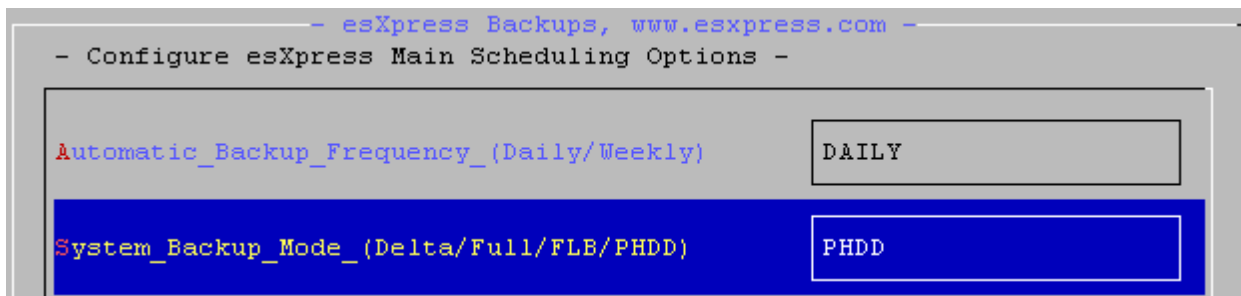
3. Select a valid Network from your host that you want the esXpress VBAs to use.
4. After selecting the Network, hit **OK** to confirm and save the changes.
5. At this point, you need to decide if you are going to run the VBA helpers using DHCP or with static IPs. If you are using DHCP, that is default, so no action is required. If you plan to use static IPs you would also configure that here. Assign the static IP to each VBA helper to be used along with the overall network, default gateway and DNS server to use.
6. Next, select **Q Quit** to return to the esXpress Quick Start Menu.

## Creating a Backup Target

When installing and configuring esXpress without the Management Appliance, the third item to configure after the RPMs are installed is to decide where to send the backups. If you are going to send to a network target for Delta/Fulls ( FTP/SSH/SMB ) or you will be using DeDupe (PHDD) you will need to configure a backup target.

### To create a backup target

1. On the host where esXpress was installed, from the Setup Quick Menu, select, **B Backup Targets**.
2. Select the first backup target (the default target) and select **OK**.



This will open the configuration screen for the first target.

3. Here you will assign a Name to the Target, 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. It is recommended to set the Target Type to Both so the new backup target can be used for backups and restore.

For the Transport Type the options are:

- **FTP** – Delta/Full backups to a FTP server
- **SSH** – Delta/Full backups to a server via a SSH connection
- **SMB** – Delta/Full backups to a CIFS/samba share
- **PHDD** – DeDup backups to the esXpress DeDup appliance

For full detail on each field refer to the Reference Manual.

The other option would be to backup to VMFS. For details on configuring esXpress to backup to VMFS see the 3.5/3.6 Reference Manual. Backups to VMFS are only supported for Delta/Full backups.

**Note:** For DeDuplication backups (DeDupe) set your transport type to PHDD. Also the username, password, port and backup folder options are not needed for DeDupe.

## Configuring a License

In order to run esXpress you will need to enter an esXpress valid license. To enter your licensing information, on the host where esXpress was installed, from the Setup Quick Menu, select **L License Configuration**.

## Configuring email

If you are not using the Management Appliance, if you wish to setup esXpress for email notifications you will need to define an SMTP server and email addresses using the PHD text menu.

### To configure an email server

1. On the host where esXpress was installed, from the Setup Quick Menu, select **S SMTP Server Options**.

2. Define the settings for your email server and add email addresses to receive the notifications.

For complete information on the various SMTP options, refer to the esXpress Reference Manual.

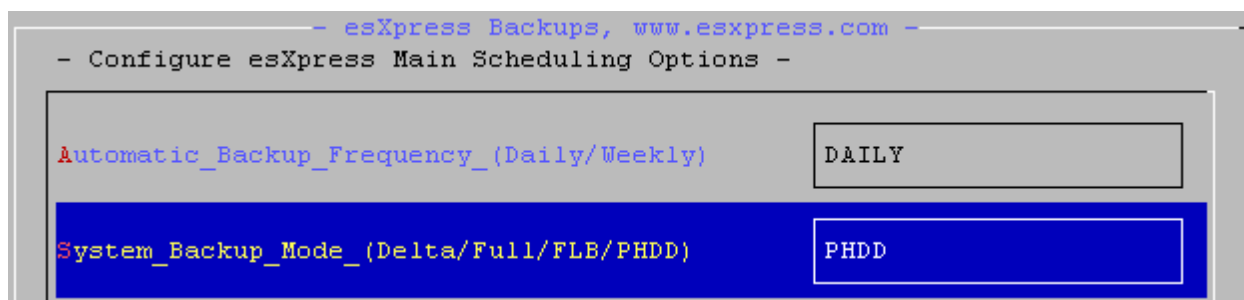
## Setting the Backup Mode

If you are installing esXpress without the Management Appliance, one other important esXpress configuration option you should review after installing is the Backup Mode. This determines what type of esXpress backups you wish to run, either Delta/Full backups or DeDupe (PHDD) backups.

This option is not found from the **Quick Start** menu; it is under the **Configuration Options**.

### To set the backup mode

1. On the host where esXpress is installed, from the Configuration Options menu, select **O Main Scheduling Options**.



The options for the System Backup Mode are:

- Delta** – run Delta backups on schedule and also run Fulls as per the scheduling rules.
- Full** – only run Full backups, no deltas.
- FLB** – only run file level backups.
- PHDD** – esXpress will run data deduplication backups. You must configure the esXpress DeDupe Appliance and define it as your backup target to run PHDD backups.

**Note:** the esXpress 3.6 default system backup mode is DeDupe (PHDD).

## Advanced Configuration

After installing the RPMs and running through the required configuration steps, you are finished configuring 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:

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

## Chapter 1 - Installing and Configuring esXpress (stand-alone)

- Special and Template Backups
- Replication and Restore Options

For information about advanced configuration options available in the PHD text menu, refer to the esXpress Reference Manual.

## Index

<b>A</b>		<b>F</b>	
Assigning a Network	12	File Level Backups	14
Assigning a VMFS	11		
auto delete	14	<b>I</b>	
		Installing esXpress	6
<b>B</b>		without GUI Appliance	6
backup frequency	14		
Backup Target retention	14	<b>L</b>	
		license	13
<b>C</b>			
Compression	14	<b>M</b>	
Configuring a License	13	Management Appliance	6
Configuring email	13		
Configuring esXpress		<b>N</b>	
without the Management Appliance	10	Notification	14
Creating a Backup Target	12		
		<b>P</b>	
<b>D</b>		PHD text menu	13
Documentation Updates	4	Prerequisites	
		installing without the GUI Appliance	7
<b>E</b>			
email server		<b>R</b>	
configuring	13	Replication	15
Encryption	14	RPMs	6
esXpress			
RPMs	6	<b>S</b>	
esXpress code	6	Setting the Backup Mode	14
esXpress RPMs		Special Backups	15
installing	9	Support	3
esXpress Setup Quick Menu	11		
esXpress VBA	6	<b>T</b>	
		Template Backups	15

## Index

the PHD Virtual web site 6

throttling 14

### **V**

VBAs 12

VMFS 11