# Farstone TotalDeploy User Guide

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# **1** Introduction to TotalDeploy

This chapter gives a general idea of how an IT department can face various real life challenges using the Farstone TotalDeploy .

## 1.1 Overview

## 1.1.1 What is TotalDeploy

TotalDeploy is a flexible, efficient software solution that is used for deployment of a fully configured operating system (with or without application software and any other data) to multiple computers.

Because TotalDeploy uses disk imaging technology, it is ideal for rapid bare-metal installations and flexible centralized provisioning.

## 1.1.2 Who needs TotalDeploy?

TotalDeploy is primarily designed to be used by: Small and medium-sized businesses:

- IT service providers
- Hardware retailers
- IT departments of larger corporations
- Schools and universities
- Net bars or internet cafes
- Research & development labs and software testing labs

The rapid deployment features of TotalDeploy can help automate the tasks of the IT department in large enterprise environments.

## 1.1.3 TotalDeploy infrastructure

Components of the Farstone infrastructure are installed on Windows computers. Centralized deployment and managing of the Farstone infrastructure is performed using the TotalDeploy

Console.

A reference image can be taken either in Windows by Total Backup Recovery Pro/Ser or in Pre-OS environment by Total Backup Recovery Express. Under Pre-OS, GUI mode is provided. Deployment is performed in Farstone Pre-OS environment.



# 1.2 What you can do with TotalDeploy

## 1.2.1 Take an image of the master system

First, you create the desired system configuration and save the image of the system hard disk on a network share, detachable media, or removable media. The image is a file that contains the system in a packaged form.

#### Scenarios:

- 1. Company departments such as accounting, sales, or technical support usually use a fixed set of applications for daily work. Capture an entire library of images and deploy them to new hardware without having to manually configure the operating system and applications.
- 2. The administrator might need to deploy a standard configuration (included in the library) onto various hardware. The integrated Farstone Universal Restore option can configure Windows system drivers so that Windows is able to boot on dissimilar hardware. Without this option, the motherboard, processors, and mass storage devices of the imaged and targeted hardware must be identical.
- 3. Export Backup Agent ISO from "Export Backup Agent" from the Tool tab page of main
- UI. Having burned the ISO to a CD/DVD, you boot the master system(also called source

computer) with the CD/DVD. After booting into Farstone Pre-OS, please backup your system partition/whole harddisk(s) to an Image (named Master Image). You can save the Image to a preferred location, such as a network shared folder residing in your console computer.

#### 1.2.2 Manual deployment

Boot the **target computers** (the computers to deploy to) into Pre-OS environment using Farstone bootable media (such as Total Backup Recovery Express) or **PXE** (Preboot eXecution Environment) Server. Set up and save parameters of the deployment operation (**the deployment template**.)

Launch the deployment. The program multicasts the image to the computers you specified and deploys the system on their hard disks. DNS names, domain or workgroup membership, TCP/IP settings, user accounts and security identifiers are assigned on the fly according to the settings you made.

Once the deployment is completed, the computers boot up from their hard disks. The program can shut down or restart the computers according to the settings you made. Sometimes you will have to complete configuration of devices; otherwise, the computers are ready to work. (Activation of the operating system is needed.)

Note: If you have set PXE server, make sure to stop PXE-related services after your deployment job is completed to avoid all clients' booting into Pre-OS environment again.

#### 1.2.3 Template Deployment

After each manual deployment, users can choose to save their deployment template (which may be reused). When templates are reused, the target computers are the current connected computers instead of the computers that were previously connected.

## 1.3 Supported operating systems

Farstone TotalDeploy suite provides full-featured imaging and deployment for the following operating systems.

OS	Deployment	Universal	License
		Restore	type*
MS Windows 7(x86, x64)	Yes	Yes	S
MS Windows Server 2008	Yes	Yes	S
MS Windows Server 2003 Service Pack 2 (x86, x64)	Yes	Yes	S
MS Windows Server 2003 R2 (x86, x64)	Yes	Yes	S
MS Windows Small Business Server 2003	Yes	Yes	S
MS Windows Storage Server 2003 R2	Yes	Yes	S
MS Windows Server 2003 x64 Editions	Yes	Yes	S
MS Windows Vista Home Basic (x86, x64)	Yes	Yes	WS
MS Windows Vista Business (x86, x64)	Yes	Yes	WS

MS Windows Vista Home Premium (x86, x64)	Yes	Yes	WS
MS Windows Vista Ultimate (x86, x64)	Yes	Yes	WS
MS Windows XP Home	Yes	Yes	WS
MS Windows XP Professional	Yes	Yes	WS
MS Windows XP Professional x64 Edition	Yes	Yes	WS
MS Windows XP Professional SP2	Yes	Yes	WS

\* - S – server license, WS – workstation license.

## 1.4 License policy

Farstone TotalDeploy licensing is based on the number of deployed and/or managed computers (servers or workstations.) For example, to deploy a system on 100 computers, you need 100 deployment licenses. No additional licenses are required to manage the deployed computers or to redeploy any of them.

#### 1.4.1 Server and workstation licenses

Farstone TotalDeploy has two types of licenses:

- A license for the server product is needed to deploy a server operating system or install the Deploy Agent on a server operating system.
- A license for the workstation product is needed to deploy a workstation operating system or install the Deploy Agent on a workstation operating system. A workstation license is needed to deploy a disk or partition that does not contain an operating system, if the target computer has not been assigned a license before.

If Farstone TotalDeploy fails to identify the type of operating system, the operating system is considered as a workstation OS.

A server license may be used instead of a workstation license automatically or through a prompt.

# 2 Installation

## 2.1 System requirements

The Farstone TotalDeploy components can be installed on computers running the following operating systems:

OS	License
MS Windows Server 2008 (TBD)	S

MS Windows Server 2003 Service Pack 2 (x86, x64)	S
MS Windows Server 2003 R2 (x86, x64)	S
MS Windows Small Business Server 2003	S
MS Windows Storage Server 2003 R2	S
MS Windows Server 2003 x64 Editions	S
MS Windows Vista Home Basic (x86, x64)	WS
MS Windows Vista Home Premium (x86, x64)	WS
MS Windows Vista Business (x86, x64)	WS
MS Windows Vista Ultimate (x86, x64)	WS
MS Windows XP Home	WS
MS Windows XP Professional	WS
MS Windows XP Professional x64 Edition	WS
MS Windows XP Professional SP2	WS

\* - S – server license, WS – workstation license.

Tip: To assure deployment efficiency, we recommend using a server with up-to-date configuration to install Console module. The Master Image is saved in that server where Console resides in, which will minimize use of network capacity.

#### 2.2 Used ports and IP addresses

The Farstone TotalDeploy Console use the following ports and IP addresses for remote operation:

- UDP port: 5002, 5004
- TCP port: 5001, 5003
- IPv4 multicast address: 239.254.1.1 and 239.254.1.2

#### 2.3 General steps of installation

Farstone TotalDeploy Console is an administrative tool that is used for remote access to Farstone TotalDeploy Agent. Install Farstone TotalDeploy Console on any networked computer from which you prefer to operate.

Before installation, please make sure the Console-residing computer and all target clients must be on the same subnet.

- To install Farstone TotalDeploy Console:
- 1. Run the Farstone TotalDeploy Console setup program.
- 2. Follow the Install Wizard instructions on the screen.
- 3. Input Serial number and activate it.

# 3 General steps for Deployment

There are two standard deployment methods:

- 1. Deploy by PXE booting
- 2. Deploy by bootable media.

## 3.1 Deployment by PXE

Follow these steps:

- 1. Start Deploy Console, and Export PXE Files from Tool tab page.
- 2. Configure and start your PXE Server.
- 3. Enter all target computers' BIOS, and set their "Boot from LAN" as 1<sup>st</sup> priority.
- 4. Restart all target computers. To make sure all clients are booted by PXE successfully, do not restart computers at the same time, especially when there are many target computers.
- 5. Deploy the master image to all the target computers.
- 6. After all computers are deployed, stop PXE-related applications to avoid the targeted computers to reboot into Farstone pre-OS again.

(Please refer to Appendix 1 for detailed steps.)

## 3.2 Deployment by Bootable Media

Follow these steps:

- 1. Start the TotalDeploy Console and Export Client Agent from the Tool tab page. (You may also retrieve the ISO file from the installation package.) Use this to make your bootable media.
- 2. Start the TotalDeploy Console if it has not yet been started.
- 3. Boot all target computers into Farstone Pre-OS environment with the bootable media.
- 4. Deploy the master image to all target computers.

Tip: If you use USB hard drives as the bootable media, first use TBR/Ser software to make the bootable USB, and then export PXE files. The exported files with extension of "wim" should substitute the files whose extended name is "wim" in the USB hard drive.

# 4 Using TotalDeploy Console

## 4.1 Main UI

In the Main console after starting TotalDeploy Console, you will see this in the Main UI:



In the Main UI, you can create a new deployment template or load an existing template from the "Operations page". You may also check master image, view deployment logs, export PXE bootable files, and set template-stored path from the "Tools page".

Before starting deployment, all target computers must be booted. Please refer to Chapter 3.1 or 3.2 for how to boot target computers by PXE or by bootable media for details.

If all target computers are ready, click "Deployment solution", and you will see the screen below. All connected computers will be displayed in the computer list. These computers are available for your later deployment operations.

🚳 TotalDeploy Server			
Operation(O) Tools(T) H	elp( <u>H</u> )		31
	2 🌈 🛛 🔞		
Operations 🔅	🦧 Main console 💐 Dep	loyment solution	
Start deployment	IP address	MAC address	Restore process
	Computer list		
Existing templates	9192.168.0.10	00-11-5B-20-BD-68	
之 Refresh computer list	💭 192.168.0.16	00-B0-C2-03-1D-9E	
	4		
	Connected Clients: 2		.:
	C		

# 5 Taking an image

To be able to deploy a system, you must create the desired system configuration and save the image of the system hard disk on a network share, detachable media, or removable media. Farstone TotalDeploy also supports images (including password protected images) taken with the Total Backup Recovery (TBR) product series.

## 5.1 Preparation of the master OS

It is very common to prepare a master operating system with the Microsoft System Preparation Tool (Sysprep) before creating the system image. Sysprep is designed for corporate system administrators, OEMs, and others who need to deploy and automatically configure operating systems on multiple computers.

After a Sysprep operating system is deployed, Sysprep generates a unique security ID (SID) for the new host, initiates Windows mini-setup for plug-and-play devices, applies the computer name, domain or workgroup membership and other settings specified in the Sysprep.inf answer file.

You can download Sysprep from <u>www.microsoft.com</u> or extract it from deploy.cab located on **Windows XP/Server 2003/Server 2008/Vista/Win 7** installation CD.

We strongly recommend that you read articles about Sysprep and disk duplication in the Microsoft Knowledge Base.

## 5.2 Online vs. offline imaging

A master image can be taken:

- offline, in Pre-OS environment, using Farstone bootable CD/DVD made by "Export Backup Agent" from the Tool tab page or Bootable CD/DVD/USB made by TBR Pro/Ser
- online, in Windows, using any one of the TBR series product installed on the master computer

Running the agent in Windows is an obvious choice if you plan periodic remote imaging. Imaging with the agent does not require the master computer to reboot.

## 5.3 Starting offline imaging

Offline imaging means that the master system is stopped and the master computer boots into Farstone Pre-OS environment.

- 1. Configure the master system.
- 2. Create a bootable CD/DVD with a ISO file exported by "Export Backup Agent" from the Tool tab page, or create a bootable USB device by TBR Express or any other TBR Series products,

Or

Configure PXE Server, and upload PXE files (exported from TBR Series products) to the PXE server. Make sure that network booting is enabled on the master computer (see "Appendix 1 Setting up a computer to boot from PXE" for details.)

- 3. Do one of the following:
  - Boot the master computer into Farstone Pre-OS environment from bootable media or
  - Boot the master computer into Farstone Pre-OS environment from the PXE Server.
- 4. The Farstone Pre-OS environment establishes network connection to be able to save the image on a network share. A dialog box should come up, suggesting that you configure the network connection.

By default, Farstone Pre-OS uses DHCP auto configuration, and applies the default network settings automatically on timeout.

Manual configuration is needed if auto configuration is not possible (no DHCP server on the network) or does not succeed.

5. Click the **"Back up computer(s)**" button in the Main UI to backup the system partition or all hard disks of the master computer.



## 5.4 Starting online imaging

Online imaging means that the master system is imaged live (without rebooting or suspending operations). Online imaging can be performed whenever you need, but you must install the imaging software that is included in the master image. This is not always rational.

- 1. Configure the master system.
- 2. Install a TBR series product in the master system.

3. Run a job to backup the system partition or all hard disks of your master computer. Please refer to the corresponding manual for detailed steps.

# 6 Manual Deployment

A deployment template is a set of configuration parameters of the deployment operation. This includes:

- 1. A path to the master image
- 2. Settings to be applied to the deployed systems (DNS names, user accounts etc.)

3. Operations to be performed on the deployed systems (transfer files, execute applications, shut down, restart)

## 6.1 Why save templates?

Deployment templates can be saved on the Farstone TotalDeploy Console. Once you save a deployment template, you may use it again in the future. When setting up a manual deployment, simply select a template and start the deployment. Otherwise, you will have to configure the above parameters while setting up the deployment operation.

## 6.2 Creating templates

- 1. Enter the Farstone TotalDeploy Console
- 2. Click Start deployment on the left panel



3. Select the target clients

🚳 TotalDeploy Server
· Operation(O) Tools(I) Help(H)
Operations StotalDeploy Server
Start de Select computers to deploy
Existing
Refrest Computer list
Termin [2] 192 168 0 10
✓ 10111 ( 1011)
✓ Select all         Previous(P)         Next(N)         Cancel(C)
Connected Clients: 2

Further sections of this chapter tell you how to use the Create Deployment Template Wizard.

## 6.2.1 Master image selection

Specify

- the master image
- the user name and password for the network shared folder if the image is on the network.

The best practice is to map the shared folder as a local drive (Windows Explorer -> Tools -> Map Network Drive.)

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Operation(O)	Tools( <u>T</u> ) He	lp(Щ)	51
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Operations		Main console	
Start de	] IotalDeploy	Server	re process
	Diease brows	Tage for current	
Existing	products such	as Pro, Server or Express	
Refresh	a 🧕 My compute	er -	^
	⊞ 🥯 D: ⊟ 🏈 D:		
U Termina	🗉 😂 \$REC	YCLE.BIN	
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	🗋 🤤 deplo	у	
	🕀 😂 efb	den	
	Con Kor	den	
	· 🔁 REC`	(CLER	
	🖂 🖸 Syste	em Volume Information Deploy0301	
	8 T	stDeploy0301.sco	
	🕀 😂 testF	_28	~
	± 🛶 10015	·	
	Image location	D:\TestDeploy0301\TestDeploy0301.sco	
_			
		Previous(P) Next (N) Cancel(C	)
		T with	
			>
		Connected Clients: 2	

#### Farstone TotalDeploy Console can deploy images located...

- in network shared folders
- on the deploy console internal hard drive
- on USB and FireWire (IEEE-1394) storage devices (hard drives, flash drives) attached to the deploy console
- on DVD+R/RW, DVD-R/RW, CD-R/RW loaded in the deploy console media drive

The best practice is keeping images on the deploy console hard drive. This minimizes network traffic during deployment.

The image created on removable or detachable media must fit onto one media disk. To deploy an image spread on several CDs, DVDs or other media, copy all parts of the image to the same folder on the deploy console or on a network share.

#### 6.2.2 Disk/partition selection

Specify:

- The disk to deploy. (Multiple disk selection isn't supported in this version.)
- The disk partitions to deploy, if the image of the selected disk contains multiple partitions.

🚳 TotalDeploy	Server		
Operation( <u>O</u> )	Tools( <u>T</u> )	Help( <u>H</u> )	En l
	ê 🌶		
Operations Start de	TotalDepl	Main console W Deployment solution V* Tools	s
	Select pa	a duon(s) and a disk in the image to deploy	
之 Refresh	Disk list		
<b>O</b> Termina	Disk		
	Partition list		
	Partition	Volume label Used space Total space	
		Previous(P) Next(N) Cancel(C)	
			>
		Connected Clients: 2	

By default, the system partition and active primary partition are checked. In general, the system partition and active primary partition is the same partition aside from the Windows 7 OS.

If you deploy one partition, it is assumed that the target disk has partitions and you will have to select the target partition to deploy over it. Other partitions will be cleared.

The Master Boot Record (MBR) is always deployed from the image.

If your operating system and its loader reside on different partitions, always include both partitions in the image. The partitions must also be deployed together; otherwise, there is a high risk that the operating system will not start.

## 6.2.3 Target disk and partition selection

Select the target disk for deployment. By default, the image will be deployed to the hard disk, which is specified in BIOS as number 1 (0X80).

🚳 TotalDeplo	y Server			
Operation( <u>O</u> )	Tools( <u>T</u> ) H	elp( <u>H</u> )	- F	
	1			
Operations	TetelDeele	Main concolo C Denloyment solution V Tools		
Start de	Select disk	of your target computers	re process	
	Ocicie disk	or your target compaters		
🥏 Refrest				
<b>O</b> Termina	lf your targ the selecte disk in belo	et computer has multiple disks, please select one of them to restore d image. You can select default setting or manually select a hard w list:		
	⊚ т	he first disk O Disk number in BIOS Disk0 💌		
	Description By default,image v	vill be deployed to hard disk which is specified in BIOS as number 1(0x80)		
	Warning:Data in yo have important data	ur target computers will be destroyed during the restoration process. Please make sure you a backuped before proceeding deployment!		
		Previous(P) Next(N) Cancel(C)		
				>
		Connected Clients: 2		

## 6.2.4 User accounts

[OPTIONAL] Specify local user accounts that you want to create on the target computers in addition to the accounts that exist in the master system.

Users can be added to the **Administrators**, **Power Users** or **Users** groups. Here you have an opportunity to add a unified administrator account to all the systems, if needed. The **Edit** and **Delete** buttons are provided to change the accounts you typed in.

🚳 TotalDeploy Server	
Operation(O) Tools(T) H	elp( <u>H</u> )
	2 🚈 🛛
Operations       Initial Construction         Start de       Start de         Existing       Create user accord You can creat computers.         Refrest       User name         Termina       User name	Main console Deployment solution Server  re process  re process
	< >
	Connected Clients: 2

The password complexity must meet the password policy set for the master computer. To view or edit the password policy on the master computer:

- 1. Run Microsoft Management Console (MMC)
- 2. File -> Open -> %windir%\system32\secpol.msc
- 3. Select Account Policies\Password Policy.

#### 6.2.5 Computer names and domain/workgroup

[OPTIONAL] Specify DNS names and domain or workgroup membership of the target computers. If you have selected the domain membership, you will later be asked for the domain administrator's name and password.

<b>6</b>	TotalDeplo	y Server			l.	
1	Operation( <u>O</u> )	Tools( <u>T</u> ) H	lelp( <u>H</u> )			-iti
		6	2 👘 🛛			
1	Operations		🦉 Main concolo 👪 🛙	enloyment solution		
	Start de	📸 TotalDeploy	y Server		🞽 re proce	SS
		Computer na You can speci	<b>ame</b> fy computer name, domain c	r workgroup		
	2 Refrest	Set computer group). To get	r names for the deploying c nerate a unique name, a nu	omputers and add them to the domain(working Imber starting from 100 will be surfixed.		
	<b>O</b> Termini	Computer Na	ame(Max 12 characters):	Belong to		
		testname		O Domain		
		(Suffixing a nur number)	mber from 100, default 3	<ul> <li>Workgroup</li> </ul>		
				testgroup		
		Description				
		If you want add t input a workgrou name. You can i to user guide foi	target computers into Workg up name. Otherwise, please also use wildcard character r details)	oup, please select the default option and then choose Domain option and then input a domain to generate the unique target computer name(refer		
				Previous(P) Next(N) Cancel(	3	
			<			>
			Connected Clients: 2			

## 6.2.6 Network settings

Configure the Internet Protocol (IP) settings for the target computers. You have the option to preserve the master system network settings, obtain IP addresses automatically from DHCP server or to specify a range of static IP's, subnet mask, and default gateway in case your network does not have DHCP capability.

[OPTIONAL] If you have not selected to preserve the master system settings, specify DNS properties as well.

🔯 TotalDeploy Ser	rver			
Operation( <u>O</u> ) To	ools( <u>T</u> ) He	lp( <u>H</u> )		Bit
	1 🖻 🕻	] 🔎 🕜		
Operations	ot alDeploy	Main consola 👪 Del Server	ployment solution 🛛 😕 Tools	
Start de Netwo	<b>vork setting</b> Specify target c	omputer's TCP/IP properties		re process
之 Refresh	0	Automatically obtain IP address		
Termin:	۲	Use following IP address		
		IP addresses ranging	192 . 168 . 0 . 10	
		to	192 . 168 . 0 . 20	
		Subnet mask	255 . 255 . 255 . 0	
		Default gateway	192 . 168 . 0 . 1	
		Automatically obtain DNS ser	ver addresses	
	۲	Use following DNS server ad	dresses	
		IP address	192 . 168 . 0 . 1	
F	escription Please choose	this option if you want to set y	vour IP address manually.	
			Previous(P) Next(N) Cancel(C)	
		<		>
		Connected Clients: 2		.ii

## 6.2.7 Security identifiers

Farstone TotalDeploy can generate unique security identifiers (SIDs) for the target computers. This option is automatically enabled. The SID can remain unchanged if there is no computer with the same SID in the same workgroup or domain. Also, it is recommended not to change the SID if the image is deployed on the same computer where the image was taken from.



## 6.2.8 Transferring files

[OPTIONAL] Select files to be transferred to all target computers after deployment (such as installation files). The files must be located on a network share. Check **Execute file** if you want to execute the files after deployment.

🗟 TotalDeploy Server
Operation(O) Tools(T) Help(H)
Operations       Initial beploy Server         Start de       Transi         Existing       Tot al Deploy Server         Refrest       Select file(s):         D'Main console       Browse(B)         Please input Target folder path blew, such as "\windows\temp\". The current system partition letter will be prefixed automatically.         System Partition:       \violaget folder path blew, such as "\windows\temp\". The current system partition letter will be prefixed automatically.         System Partition:       \violaget folder path blew, such as "\windows\temp\". The current system partition letter will be prefixed automatically.         System Partition:       \violaget folder path blew, such as "\windows\temp\". The current system partition letter will be prefixed automatically.         System Partition:       \violaget folder path blew, such as "\windows\temp\". The current system         Previous(P)       Next(N)         Cancel(C)       Please input Target folder path blew, such as "\windows\temp\". The current system
Connected Clients: 2

## 6.2.9 Executing applications

[OPTIONAL] You can specify service applications (from the master system image) to execute on the target computers after deployment.

## 6.2.10 ADD Custom Hard-disk Driver

[OPTIONAL] If the Master image is deployed to dissimilar target computers, you may need to inject corresponding hard disk drives into these computers.

🖗 TotalDeploy Server	
Operation(O) Tools(I)	Help(H) El
Operations	Main console 🙀 Deployment solution 💉 Tools
Start de	re process
Existing	of your custom hard-disk driver file(s)
🥏 Refresh	浏览文件夹 ? 🔀
Termina 🔽 Add cust	om
If you need to d driver file(*.inf, following interfa process of rest	eplo sys ice.
	Previous(P) Next(N) Cancel(C)
	Connected Ulients: 2

## 6.2.11 Options After Deployment

The preset function is to Shutdown.

Choose whether you would like to shut down, restart or do no operation to the target computer after the deployment and all associated operations, scheduled in this wizard (transferring files, executing applications) are completed.

## 6.2.12 Summary Window

Check your settings in the summary window and check "Save deployment setting".



# 7 Template Deployment

All saved templates generated during manual deployment are saved in a given folder, which can be changed by clicking "Set Template Path" on the Tool tab page. You may also do a deployment job by selecting an existing template (if it is not a manual deployment). "Template Deployment" is based on the saved template, but the target computers are all currently connected computers.

## 7.1 Template selection

1. Template Selection. Select a template from all saved deployment templates.



2. *Template Summary information.* Display summary information of the saved template.



3. *Starting deployment.* The selected template will be deployed to all connected target computers.

# 8 Tools

## 8.1 Export Backup Agent

- 1. Click "export backup agent" in the tools interface.
- 2. Select location for ISO image files to save.

The ISO image can be directly burned onto CD/DVD in Windows 7.

🚳 TotalDeploy Server	
Please Select a path to save the backup ISO file!	
File location:	Browse( <u>B</u> )
ΟΚΙ <u>Ϲ</u>	]) Cancel( <u>C</u> )

## 8.2 Export PXE Files

Export the PXE image to restore system without using the Bootable Rescue Disk.

- 1. Click on the Tools tab, and select Export PXE Image.
- 2. Enter the destination path where you want to save the exported files and click OK, or Browse the destination path locally or remotely and click Next.
- 3. After successful exporting PXE files, click OK to return to the main console.

For detailed information about how to set up a PXE Server and boot targets into Farstone Pre-OS, please refer to "Appendix 1 Setting up a computer to boot from PXE".

## 8.3 Export bootable agent

To save the bootable ISO image, you can do as follows:

1. Click export client Agent.

- 2. Click browse button to select a path to save the bootable ISO image.
- 3. Click **OK**.



## 8.4 Checking image

To be assured that a master image is not damaged, you can check its integrity.

- 1. Select **Check Image** under the Tools page.
- 2. Follow the wizard's instructions to select the image.



3. Click Start button to start checking process.

😵 TotalDeploy Server		
Operation( <u>O</u> ) Tools( <u>T</u> )	Help( <u>H</u> )	
Operations 🔗	📃 🌌 Main console 😻 Deployment solution 🕅 Yr Tools	5
Start deploy	)eploy Server	
Existing ten Check in Choose	mage se an image and check its integrity	$ \prec $
Tools Input a	path for your image, or click "browse" to choose an image	
Export Back	Deploy0301\TestDeploy0301.sco	Browse(B)
Check imag Check imag Check imag	ol is used to check integrity of your selected image	
Export Boot		
Set template		
	Start (S)	Cancel(C)
	Set template patnes	

The checking operation starts. You can stop the operation by clicking **Cancel**. After the check is complete, the program will show the results.

## 8.5 View log

Click View log in Tools tag page to see all logs about up-to-date log information of your deployment jobs.

ି	TotalDeploy	Server				
-	Operation( <u>O</u> )	Tools( <u>T</u> ) I	Help( <u>H</u> )			51
		ê 🖉	2 📬 📀			
	Operations		💐 Main console	🐯 Deployn	nent solution 🛛 💥 Tools	
	Start deploy	🚳 Tot alDe	ploy Server			K
	Existing ten	Deployme	nt logs			
		Computer	Time	Log type	Message	
	Tools Export Back	Deployment Deployment Deployment Deployment Deployment Deployment Deployment	2010-8-16 17:33:59 2010-8-16 17:33:59 2010-8-16 19:44:24 2010-8-16 19:53:46 2010-8-17 9:5:22 2010-8-17 9:48:5 2010-8-17 9:48:5 2010-8-17 10:46:36	Message I Message I Error log Message I Message I Message I Message I	Start Deployment DMmodule[2010-8-16]_1730 Dep Time out of network connection[1 In the deployment job, 7 targets a Export PXE successfully Start Deployment DMmodule[2010-8-17]_0943 Dep In the deployment job, 5 targets a	
		-				
		Back(B)	Next page(N)		Delete(D) Exit(X)	
				et temprate	<u>pames</u>	

# 8.6 Set template path

All saved templates will be saved to a default folder under the installation folder, but you can change the path through the "Set template path" function.

8	TotalDeploy	Server					
	Operation( <u>O</u> )	Tools( <u>T</u> )	Help( <u>H</u> )				50
		6	2 🔎				
	Operations		🖉 Main console 👌	Deployment solution	n 🔀	Tools	
	Start deplo	🚳 Tot al D	eploy Server				×
	Existing ter	Set path You cai	for storing templates n modify the pathes of currer	nt template, and of sav	ed temp	plate(s)	
1	Tools	Set path	n for storing current template	• <del></del>			v .
	Export Bac	Sharin	g directory(s)				
	Charles in	C:\Pro	gram Files\FarStone\Deploy	/ment\DCDeployJob			
	Спеск іта			Set default path		Browse	
	Export PXE						
	Export Boo	Set path	1 for saved templates				
	₩ 1	Saving	directory(s)				
	View log	C:\Pro	gram Files\FarStone\Deploy	/ment\OldTemplate			
	Set templat			Set default path		Browse	
						IK (D) Exit (X)	
				tempiate patries			_

# 9 Setting up a computer to boot from PXE

# 9.1 Exporting PXE files

- (1) Create a folder on your desired location. For example, you may use "PXE", like in the screenshot below.
- (2) Select "Export PXE files" from Tools Tab page, and Browse to "PXE" folder.

🚳 TotalDeploy Server		
Operation( <u>O</u> ) Tools(T)	Help( <u>H</u> )	EN
🗋 🗖 🆓 🖉		
Operations 🌣	🎉 Main console 💐 Deployment solution 🔀 Tools	
Start deployment	Export Backup Agent	
Tools 🚳 Iot	alDeploy Server	
Export Backur Pleas	se select a path to save the PEX files. allows you to boot up target computer(s) over the network.	
Check image		
Export PXE fil		
Export Client. Select to	Browse(B)	
View log		
Set template p	OK(0) Cancel(C)	
	Niew log	
	Set template pathes	

(3) Once PXE image is exported to your selected location, you will find a "Boot" folder which contains all related boot files.



## 9.2 Setting up a PXE Server in Windows?

- (1) Download free TFTPD32 from website: <u>http://tftpd32.jounin.net/</u>, and install it on the machine where the PXE image is exported to.
- (2) Set "Current Directory" to the same folder where you exported the PXE image

	🔖 Tftpd32 by Ph. J	ounin				
	Current Directory	cuments and Settings	:\Sunny\Desktop\P	×E 💌	Browse	
	Server interfaces 192.1	68.142.129		-	Show Di	r
	Tftp Server Tftp Client	DHCP server Sys	log server Log vie	wer		
	peer	file	start time progr	ess	bytes	tot
- 1						
	<					≥
	About		Settings		Help	

(3) Configure TFTPD32's DHCP Server

**Server interfaces**: It shows IP address for current system. In this case, it uses 192.168.142.129

**IP pool starting address**: It shows the initial IP address that was assigned by DHCP. Be sure this IP is in the same WAN as your local network. In this case, it started from "200".

Boot File: Please type in boot\pxeboot.com

Fill in rest of columns with the appropriate information. Once you are done, click Save.

🏘 Tftpd32 by Ph. Jounin	
Current Directory C:\Documents and Settings\Sunny\Desktop\PXE  Server interfaces 192.168.142.129 Tftp Server Tftp Client DHCP server Syslog server Log viewer IP pool starting address 192.168.142.200 Size of pool 20 Boot File boot\pxeboot.com S WINS/DNS Server 192.168.142.129 a Default router 192.168.142.129 v Mask 255.255.0 Domain Name Additional Option 0	Browse Show Dir
allocated at         IP         MAC         renew at           05/12 16:25:02         192.168.142.200         00:0C:29:F7:C1:         05/12 16:25:03	3
About Settings	Help

## 9.3 Setting a computer to boot from PXE server

The BIOS must first be configured so that the network interface card is either the first bootable device or prior to the Hard Drive device boot. The example below shows one of the reasonable BIOS configurations. If you don't insert bootable media, the computer will boot from the network.

			tility			
Ma	tin Ad	lvanced	Security	Power	Boot	Exit
	+Removabl	le Devices				Item Specific Help
	CD-ROM I Network +Hard Dr	Drive boot from ive	AMD Am79C970A			Keys used to view or configure devices: <enter> expands or collapses devices with a + or - <ctrl+enter> expands all <shift +="" 1=""> enables or disables a device. &lt;+&gt; and &lt;-&gt; moves the device up or down. <n> May move removable device between Hard Disk or Removable Disk <d> Remove a device that is not installed.</d></n></shift></ctrl+enter></enter>
F1 Esc	Help Exit	14 Select → Select	Item -/+ Menu Enter	Change Select	Values ► Sub-Me	F9 Setup Defaults mu F10 Save and Exit

#### Setting up the BIOS (example) for network boot

In some BIOS versions, you must save changes to BIOS after enabling the network interface card so the card will appear in the list of boot devices.

If the hardware has multiple network interface cards, make sure all of the cards are supported by the BIOS that has the network cable plugged in.

After setting configuration and rebooting the computer, you'll see the networking-booting screens below.



At the same time, on the PXE server, you will see the picture below.

🔆 Títpd32	by Ph. Jo	ounin					
Current Directory C:\Documents and Settings\Sunny\Desktop\PXE						Browse	
Server interfa	ices 192.16	8.142.129			-	Show Dir	
Tftp Server	Tftp Client	DHCP server Sys	log server	Log viewer			
peer		file	start time	progress	bytes	tot	
192.168.142	2.200:17163	<\Boot\BOOT	16:52:41	34%	61936140	17768670	
		61936140 Bytes se	nt 1(		/sec		
<	E			ī		>	
About		Settings			H	Help	

After the deployment, if you do not want the target computers to boot into the Farstone Pre-OS again, stop all PXE-related services, like the program "Tftpd32".

# 10 Appendix Terminology

The following table lists the common terms and descriptions used in this document. **Master system** The system to be deployed.

**Master image (Image)** A file that contains the master system in a packaged form. The file has a ".sco" extension.

**Online imaging** Taking an image while the master system is in a production state (the operating system is running on the master computer).

**Offline imaging** Taking an image while the master computer is booted into Farstone Pre-OS environment.

**Deployment** Transferring the operating system (OS), applications and data from the master image file to a physical hard disk. In most cases, deployment is performed by multicasting the image through the network.

**Target disk** The physical disk to be deployed to (an internal hard disk of the target computer.)

Target computer (Target) The hardware to be deployed to.

**Deployment template (Template)** Configuration parameters of the deployment operation:

- 1. Path to the master image
- 2. The operation mode (multicast, how to handle the target disk free space etc.)
- 3. Settings to be applied to the deployed systems (DNS names, user accounts etc.)
- 4. Operations to be performed on the deployed systems (transfer files, execute applications, shut down, restart)

Once you save a deployment template, you can use it in the future.

Administrator The person who has rights to manage Farstone TotalDeploy infrastructure.

**Custom deployment mode** The mode when deployment can be initiated on the target side only.

**User** The person on the target side who initiates the custom deployment. This term relates to the custom deployment mode only.