



**ActiveImage Protector 2022 Express5800/ft Server
Backup and Recovery for VMware ESXi System
User Guide**

Express5800/R320h-E4/M4
Express5800/R320g-E4/M4
Express5800/R320f-E4/M4
Express5800/R320e-E4/M4
for VMware model

1st Edition – April 7, 2022

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Introduction

This guide provides descriptions about the standard operating procedures, for your reference, how to back up and restore VMware ESXi system configured on Express5800/ft server (hereinafter “ft server”) by using ActiImage Protector 2022 Express5800/ft Virtual. No information contained in this document makes guarantees as to backup and recovery operating procedures and/or the results. The contents of this document is subject to change without notice.

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1. Preparation

ActiveImage Protector 2022 Express5800/ft Virtual is designed to cold-back up and protect VMware ESXi system configured on ft server. For the up-dated information on supported models, etc., please visit NetJapan's Web site.

In the event of a failure of ft server for some reason, the use of Bare Metal Recovery feature of ActiveImage Protector enables you to restore the system back to the state in time a backup was taken.

ActiveImage Protector Boot Environment (dedicated to ActiveImage Protector Express5800/ft VMware ESXi R320e/R320f/R320g/R320h) is provided to back up and restore VMware ESXi system configured on ft server. ActiveImage Protector Boot Environment is downloadable from NetJapan's Web site. The bootable media is included in the paid media kit. ActiveImage Protector Boot Environment is useful to temporarily boot up the system, when taking cold backup / restore the system.

2. System Requirements

This document contains the system requirements regarding the use of this product. It is highly recommended that you read the system requirements carefully before using this product.

*For the latest system requirements, please visit [here](#).

2-1 System Requirements

- VMware Model

- Express5800/R320h-E4/M4
- Express5800/R320g-M4/M4
- Express5800/R320f-E4/M4
- Express5800/R320e-M4/M4

*VMware installed model only

2-2 Backup and restore of virtual guest machines configured on VMware virtual environment

User Guide for Backup and Restore of virtual machines running on virtual environment is included in the document in the product media of the respective editions (Server and Linux).

Please make sure that the system requirements for this product and the system requirements officialized by the providers of the respective virtual environments are satisfied before starting to use the respective editions of the product. For further details about the system requirements officialized by the providers of the respective virtual environment, please access the respective providers' Web site.

3. Backup VMware ESXi system on Express5800/ft Server

ActiveImage Protector offers Cold Backup feature to protect VMware ESXi system configured on ft Server.

This chapter provides the description about the operating procedures how to back up and save the created backup files in a network drive as shown in Fig. 1.

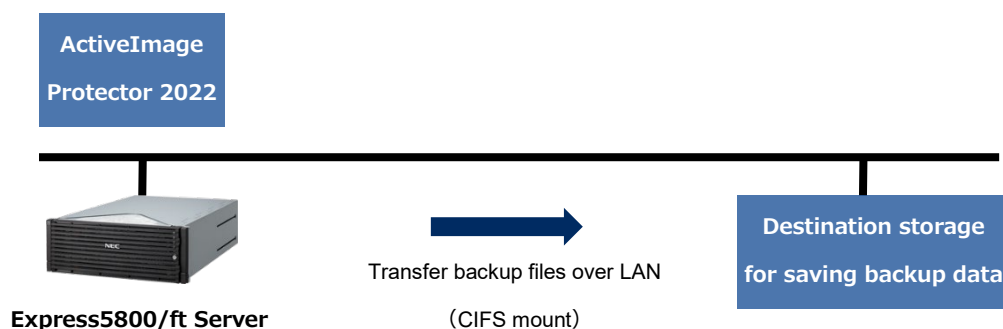


Fig. 1

3-1Boot up Recovery Environment

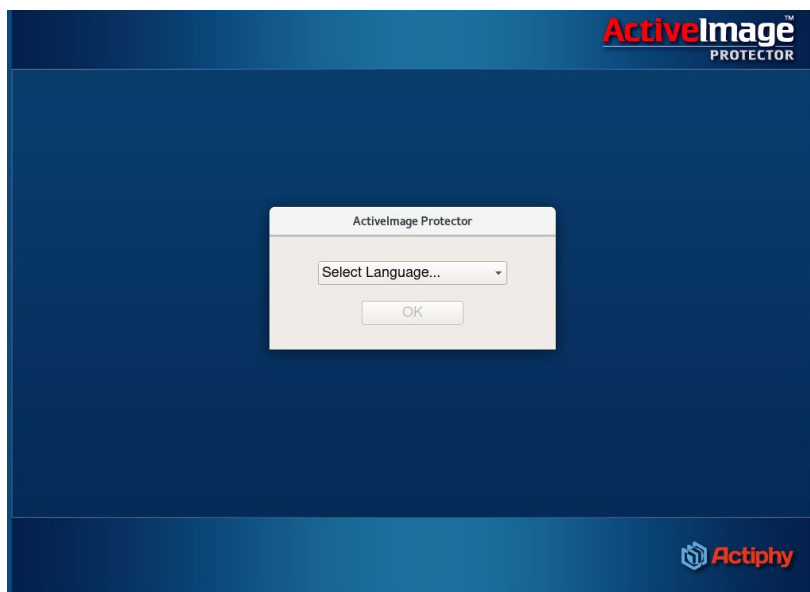
***NOTE:**

- Please use recovery environment built for the VMware compatible model as follows:
ActiveImage Protector Express5800/ft VMware ESXi R320e/R320f/R320g/320h
(Linux-based recovery environment built by using Boot Environment Builder is not supported to use.)
- Before you boot up recovery environment, please make sure that you removed USB Mass Storage such as USB flash memory, USB hard disk, etc., or fibre channel storage.
- Before booting up ActiveImage Protector Boot Environment (AIP BE) on R320e/R320f/R320g, please disable OS Boot Monitoring. For more detailed operating procedures, please refer to [Chapter 1 Installing Operating System] in Installation Guide (for VMware edition).
- Backup task is executed to back up the entire hard disks installed in CPU/IO module 0 and CPU/IO model 1. Before running a backup task, please boot up both CPU/IO module 0 and CPU/IO module 1 (implement and boot up both modules) and make sure that the entire hard disks are connected to the system.

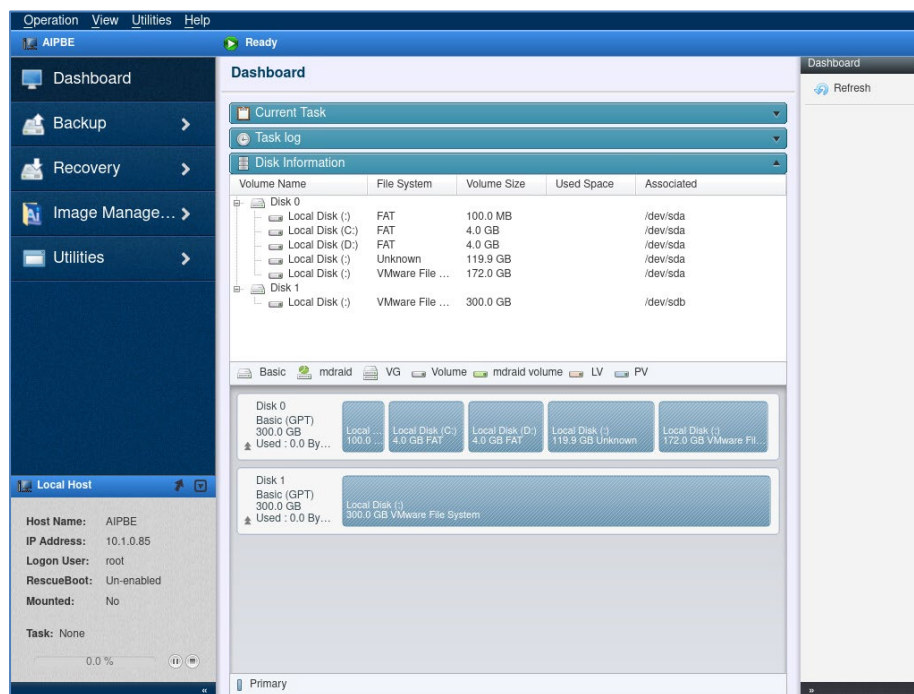
- Please make sure that all of the disks installed in the system are configured as members of RAID device and the status of every RAID device is [in_sync] by executing “esxcli” command before starting to boot up recovery environment.
- Backup of VMFS6 or 2TB volume uses full sector (including unused sectors) backup process and takes longer process time depending on the backup source disk size instead of used data size.
- Please make sure “_conf” file created in the backup destination is saved in the same path as the image file in “.aiv” format to use when restoring the backup image.

<Operating Procedures>

- 1) Shut down operating system while ft server is duplexed.
- 2) Boot up the computer using the bootable media.
- 3) When the following [Select Language] dialog is displayed, select [English] and click [OK].

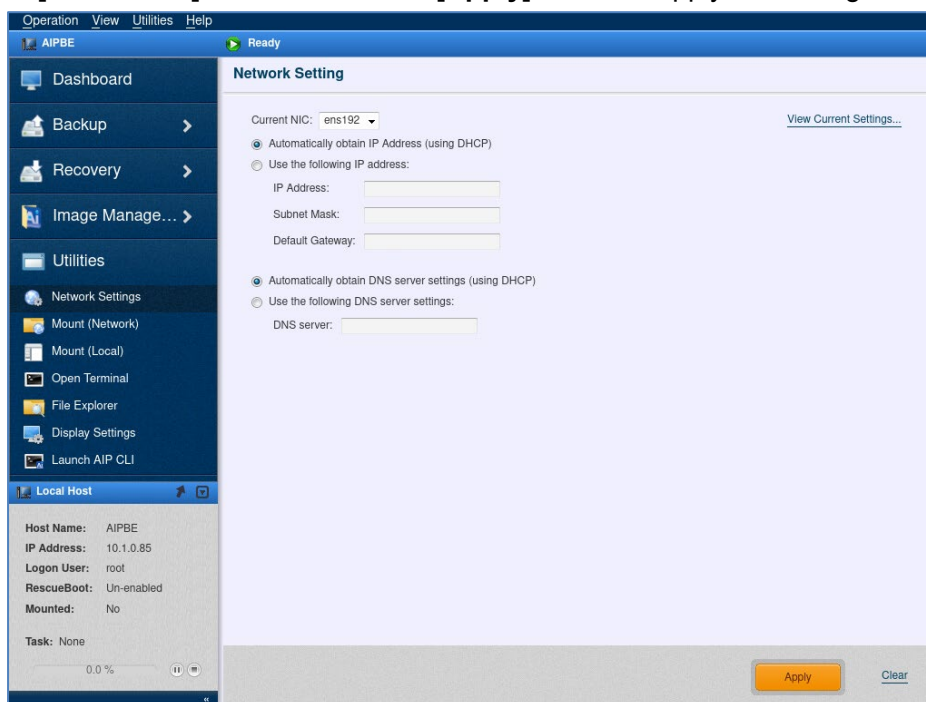


- 4) [Dashboard] window is displayed as follows.



- 5) In AIP boot environment, IP address associated with the respective network interface is obtained from DHCP by default. If there is no networked DHCP server, you can take the following procedures to configure the network interface settings.

Click on **[Utilities]** – **[Network Setting]** from the menu in the left pane. Select network interface in **[Current NIC]** to change the setting. Select **[Use the following IP address]** to configure the settings for **[IP Address]** and so on. Click **[Apply]** button to apply the settings to the network interface.



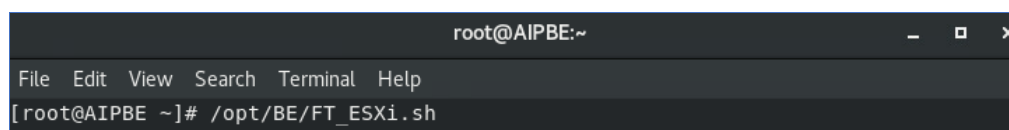
3-2 Run Backup Script

This chapter provides the description how to cold-back up VMware ESXi configured on Express5800/R320e/R320f/R320g/320h in boot environment.

- 1) Select **[Utilities]** – **[Open Terminal]** in the left pane.

Run the following command from the terminal to start backup script.

```
# /opt/BE/FT_ESXi.sh
```



- 2) When backup script starts, select the backup option according to the instructions on the screen, select “NAS” as the destination to save the backup images and run Mount command.

Thereafter, scanning of the disks connected to the system is started. These processes are automatically performed. When scanning completed, “**Would you like to start backup? [Y/N]**” message prompts you to press **[Y]** key to start backup task.

After entering “Y” key, backup task will be immediately executed.

```

*****
***      Backup and Recovery for ftserver (ESXi)      ***
*****

Backup and Recovery for ftserver (ESXi)

** 2022-03-31 14:16:26 -Ver 1.0.23 START

[1] Backup
[2] Restore
[3] Exit

Please select operation [1-3]:1

[1] NAS
[2] Exit

Please select Destination [1-2]:1
sda7      VMFS_volume_member 119.9G
sda8      VMFS_volume_member 172G
sdb1      VMFS_volume_member 300G
sda7 datastore is vmfs6.
sda8 datastore is vmfs6.
sdb1 datastore is vmfs6.
Do you mount cifs? [Y/n] y
Input the IP Address of NAS:10.1.0.68
Input the shared folder name:share3
Input the user name:aip
Password:
mount command successful.
Checking system.....
md raid does not exist.
-----
FSTYPE:vmfs
Enable Full sector
'/opt/BE/profiles/sample.xml' -> '/opt/BE/profiles/sda.xml'
-----
FSTYPE:vmfs
Enable Full sector
'/opt/BE/profiles/sample.xml' -> '/opt/BE/profiles/sdb.xml'
2 disks are detected.
/dev/sda
/dev/sdb
Backup images checking...
Would you like to start backup? [Y/n]

```

After “Checking system...”, you will get “mdadm: stopped /de/mdXXX” message for the same number of lines as the number of RAID members.

- 3) Backup task starts running. Every process is automatically performed until execution of backup task completes.

```
***** Thu Mar 31 14:20:04 JST 2022 *****  
Actiphy Controller [Version 6.0.0.7292]  
Task started. ID = 1001  
10% Backup /dev/sda7
```

- 4) Upon completion of the backup task, the task execution result is displayed. Please make sure that the task successfully completed with '**Exit Code = 0**'. "**Would you like to collect logs? [Y/N]**" message prompts you to press **[Y]** key to collect the log records. Press 'Y' key to collect log records.

```
***** Thu Mar 31 14:24:12 JST 2022 *****  
Actiphy Controller [Version 6.0.0.7292]  
Task started. ID = 1002  
100% {IDS_STRING3085}Create a image complete  
DONE Exit Code = 0  
Backup of sdb is successful.  
***** Thu Mar 31 14:28:22 JST 2022 *****  
** 2022-03-31 14:28:22 -END  
Would you like to collect logs? [Y/n]
```

The support information files including the log files are created at the location "/store" is mounted.

```
The support information archive is collected at:  
/opt/BE/AipSupportInfo_20220331_1505.zip  
  
Finished.  
2022-03-31 15:05:40 *** Working directory will be cleaned up.  
Log collection is successful  
Copy is successful to /store.  
[root@AIPBE ~]#
```

- 5) Upon completion of the backup task, go to [Operation] – [Exit] – [Shutdown] to shut down the computer. At this point, as you are not allowed to eject the bootable media, please leave it.
- 6) Power on the computer.
Please configure the original settings in BIOS menu.
(OS Boot Monitoring)
Now, please eject the bootable media.
- 7) When the computer boots up, you can normally operate the computer.

4. Recovery of VMware ESXi system on Express5800/ft server

This chapter provides the operating procedures how to restore VMware ESXi system configured on Express5800/R320e/R320f/R320g/R320h.

*NOTE:

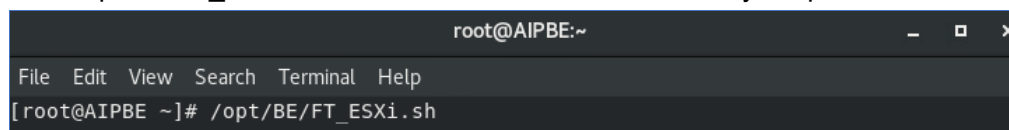
- You do not have to physically format the hard disk in the restore target. Please remember that the existing data in the restore target disk are purged through the restore process.
- For more detailed operating procedures how to boot up recovery environment, please refer to "2-1 Boot up Recovery Environment".

4-1 Run Recovery Script

This chapter provides the description how to restore VMware ESXi system configured on Express5800/ft server. Please be aware that the entire data on the local disk will be purged.

- 1) Select [Utilities] – [Open Terminal] in the left pane.

Run '/opt/BE/FT_ESXi.sh' from the terminal to start recovery script.

A screenshot of a terminal window. The title bar shows 'root@AIPBE:~' and standard window controls. The menu bar includes 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The command prompt shows '[root@AIPBE ~]# /opt/BE/FT_ESXi.sh'.

- 2) When running the script, follow the instructions on the screen and select restore option, select NAS as the destination for saving the image files and run mount command. Thereafter, scanning of the disks connected to the system and checking the image files located in the destination storage will start.
- 3) When scanning completed, **"Would you like to start recovery? [Y/N]"** message prompts you to press 'Y' key to start recovery task. When you press 'Y' key, restore task will be immediately started.

```

*****
***      Backup and Recovery for ftserver (ESXi)      ***
*****

Backup and Recovery for ftserver (ESXi)

** 2022-04-01 11:14:55 -Ver 1.0.23 START

[1] Backup
[2] Restore
[3] Exit

Please select operation [1-3]:2

[1] NAS
[2] Exit

Please select Destination [1-2]:1
Do you mount cifs? [Y/n] y
Input the IP Address of NAS:10.1.0.68
Input the shared folder name:share3
Input the user name:aip
Password:
mount command successful.
Checking system....
md raid does not exist.
2 disks are detected.
/dev/sda
/dev/sdb
Backup images checking...
This machine and the backup image matched.
Already backup images AB631773-7F43-4CD1-9B80-FA73BD07B857_7364615F30303030315F6
930303030302D3030303030.aiv exist.

This machine and the backup image matched.
Already backup images AB631773-7F43-4CD1-9B80-FA73BD07B857_7364625F30303030315F6
930303030302D3030303030.aiv exist.

Would you like to start recovery? [Y/n]

```

When recovery script is executed on ft server for overwriting-restore to the existing area, you will get "mdadm: stopped /de/mdXXX" message after "Checking system..." for the same number of lines as the number of RAID members.

- 3) Recovery task is started. Every process is automatically performed until execution of recovery task completes.

```

***** Fri Apr 1 11:56:19 JST 2022 *****
Actiphy Controller [Version 6.0.0.7292]
Task started. ID = 1003
28% Restoring

```

- 4) Upon completion of recovery task, the task execution result is displayed. Please make sure that the task successfully completed with '**Exit Code = 0**'. "**Would you like to collect logs? [Y/N]**" message prompts you to press **[Y]** key to collect the log records. Press 'Y' key to collect log records.

```
***** Fri Apr 1 13:09:38 JST 2022 *****
Actiphy Controller [Version 6.0.0.7292]
Task started. ID = 1004
100% Restoring
DONE Exit Code = 0
Recovery of sdb is successfully.
***** Fri Apr 1 14:23:19 JST 2022 *****
** 2022-04-01 14:23:24 -END
Would you like to collect logs? [Y/n]
```

The support information files including the log file is created at the location "/store" is mounted. This is the end of recovery process.

- 5) Select [Operation] - [Exit] - [Shutdown] and shut down the computer. At this point, as you are not allowed to eject the bootable media, please leave it.
- 6) Power on the computer.
Please configure the original settings in BIOS menu.
(OS Boot Monitoring)
Please eject the recovery environment media.
- 7) When rebooting the computer, you can normally operate the computer.